Appendix A Land use data for Source catchment modelling

Appendix A1 Introduction

The Source catchment models generate daily timestep data on catchment runoff flows and pollutant export loads for key water quality constituents including nutrients, sediment and pathogens. Land use data represents a key input dataset for the Source catchment modelling. Each land use type has assigned permeable/impermeable fractions as well as water quality constituent Event Mean Concentration/Dry Weather Concentration (EMC/DWC) parameter values. As the land use distributions change due to future development scenarios, the distribution and application of the EMC/DWC values change accordingly, and the pollutant export loads vary as a consequence.

The following data sources were used to prepare land use datasets for the baseline scenario, 2036 and 2056 scenarios.

- OEH land use data (2011)
- Sydney Water corporation Hydra Lot Coverage (2017)
- Google Earth aerial imagery (2017)
- Land Zoning based on the most recent Local Environmental Plans (LEP’s)
- Typology metrics spreadsheet prepared by Cox Architect for iNSW for the Western Sydney Aerotropolis (date)
- Consolidated growth forecast geospatial data prepared by Sydney Water (April 2020) which includes Aerotropolis growth precinct projections provided by DPIE in February 2020.
- Western Sydney Aerotropolis (Initial Precincts) Stormwater and Water Cycle Management Study Interim Report (October 2020).

Appendix A2 Baseline scenario land use

A 2017 land use layer was used for the baseline scenario. This land use layer was initially generated using 2011 land use data from OEH. The land use distribution was then modified, and cross checked with Sydney Water Hydra Lot coverage, Google Earth images, land zoning from LEPs, and other data layers available from the OEH. Land use categories applied in this layer included: High Density Urban, Urban, Peri-Urban, Commercial, Industrial, Environmental Living, Cropping, Agriculture, Grazing, Infrastructure/Utilities, Forest, Airport, Mining, Open Space and Developable land. Figure A-1 and A-2 shows the 2017 land use maps for both the Hawkesbury Nepean and South Creek catchments.

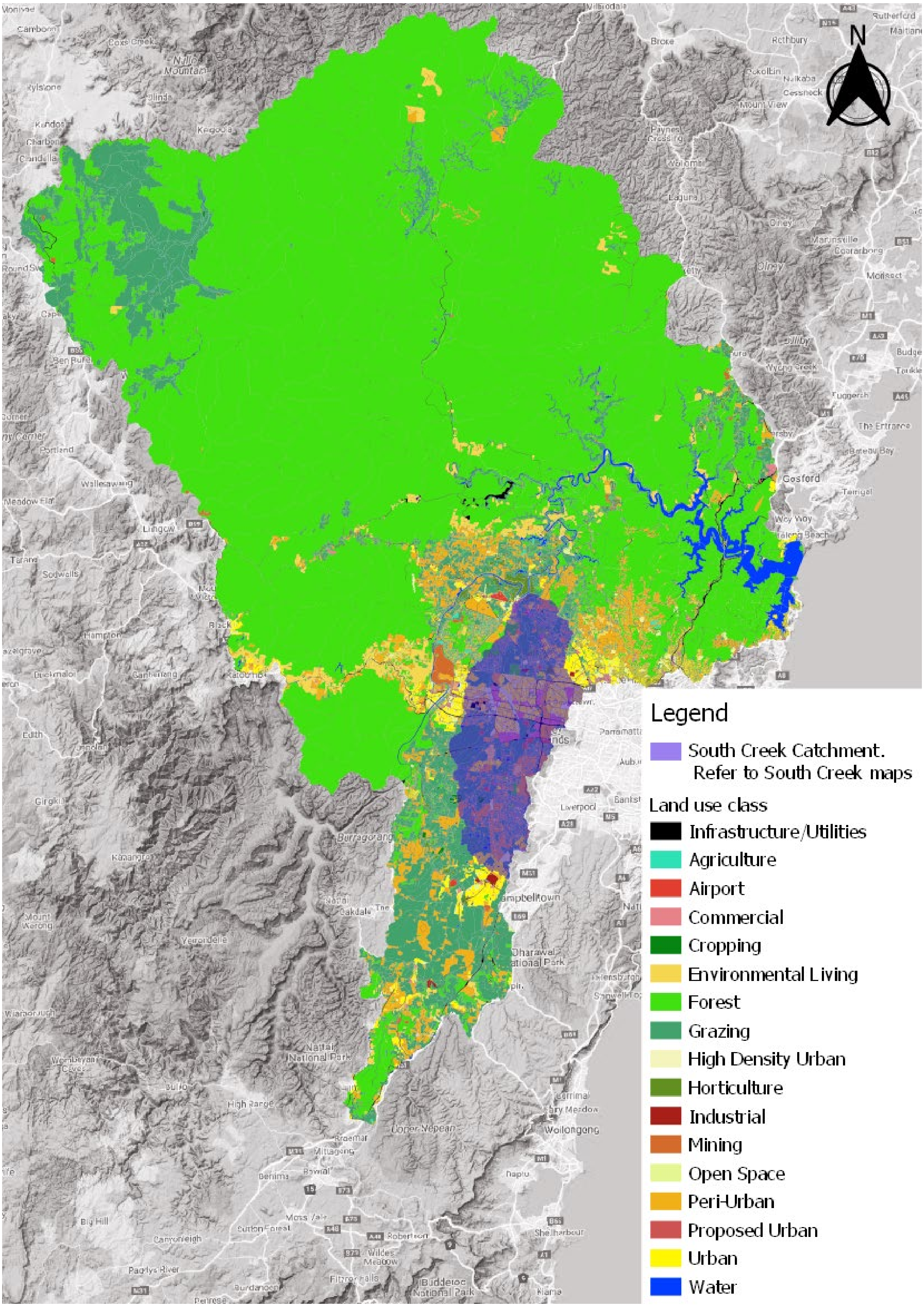


Figure A-1 Land use categories for Hawkesbury Nepean based on 2017 land use data

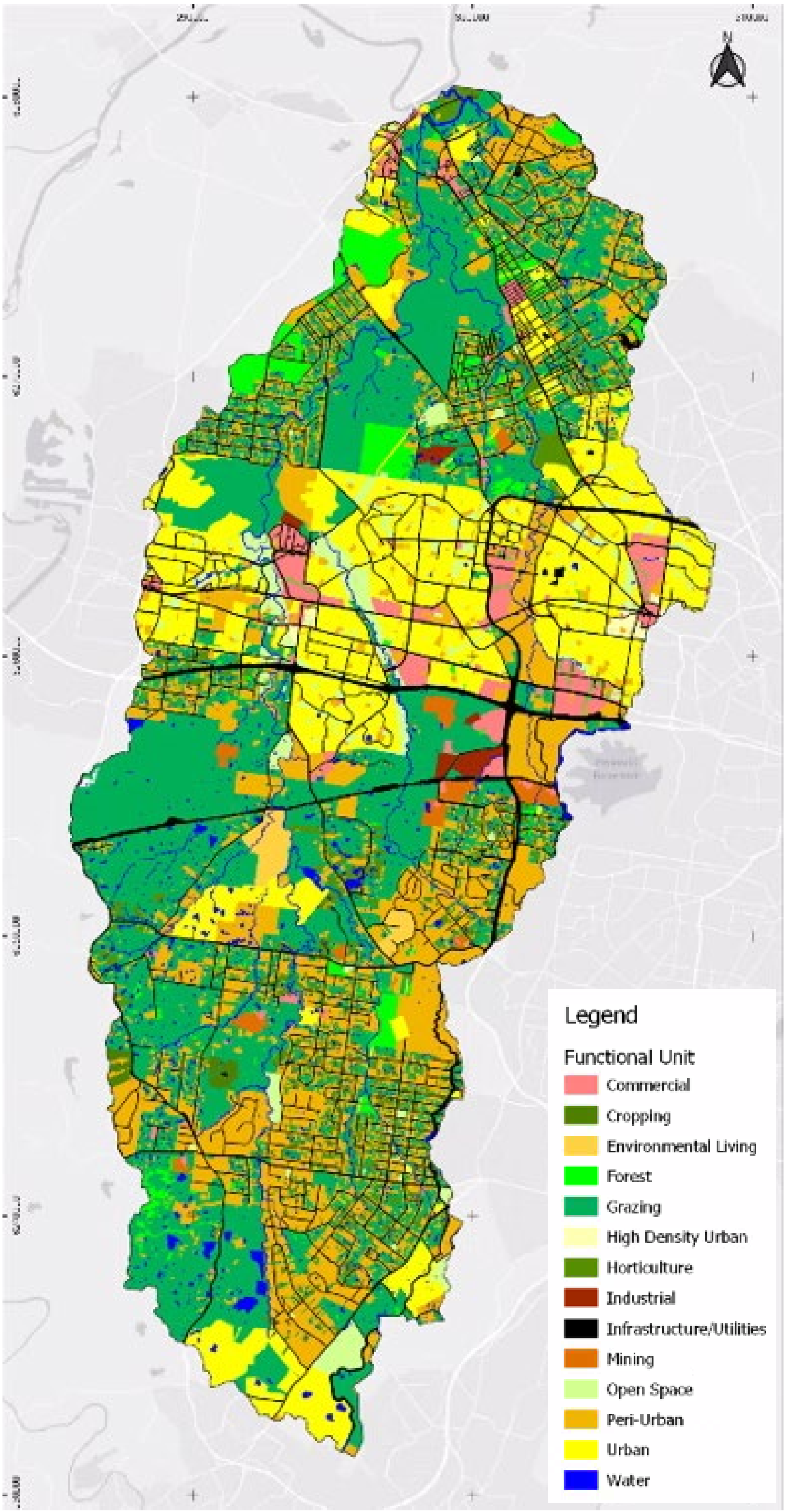


Figure A-2 Land use categories for South Creek based on 2017 land use data

Appendix A3 Future scenario land use

Appendix A3.1 Stormwater management in South Creek

The Western Sydney Aerotropolis (Initial Precincts) Stormwater and Water Cycle Management Study (Sydney Water, 2020) is an interim document that outlines how stormwater, wastewater, recycled water as well as trunk drainage and riparian zones should be managed in an integrated way to achieve the Western Parkland City vision within the Agribusiness, Aerotropolis Core, Badgerys Creek and Northern Gateway precincts. These precincts account for approximately half of the Western Sydney Aerotropolis and lie within the South Creek catchment.

Currently, the South Creek catchment is the most degraded catchment in the Hawkesbury-Nepean River system due to historical vegetation clearing and urbanisation. The vision for South Creek (and its tributaries) is to become a cool green corridor through the Western Parkland City, and be the core element of liveability and amenity for the residents. This vision relies on keeping water in the landscape by integrating waterways into the design of the city and residential neighbourhoods.

Appendix A3.1.1 Flow management strategy

Precincts have been categorised in accordance with their land use zoning under the Western Sydney Aerotropolis (Aerotropolis) State Environmental Planning Policy (SEPP), being:

- Enterprise
- Agribusiness
- Environmental and Recreation
- Mixed-use
- SP2 – Infrastructure

A shortlist of stormwater management elements has been developed based upon Council preferences, ability to mimic natural flow regimes and cost effectiveness.

Appendix A3.1.1.1 Reduced imperviousness

The Western Sydney Planning Partnership (WSPP) is endorsing new urban forms that reduce the level of imperviousness and provide more landscaped areas in line with the Greater Sydney Commission's vision for the Western Parkland City. Urban form is an important factor in urban water demand and stormwater runoff volumes. At the time of preparing the scenarios, draft data on the imperviousness values to be adopted was made available to the project and is provided in Table A-1. These values show the potential reduction in imperviousness possible when more compact urban forms are delivered to support the Western Parkland City (Parkland) vision of a greener and cooler landscape for Western Sydney than current urban forms being delivered under Business as Usual (BaU) conditions.

Table A-1 Imperviousness values used for BaU and Parklands urban forms

	Impervious values (%)	
Post development land use zone	Business as Usual (BaU)	Western Parkland City (Parkland)
Enterprise Zone - industrial and commercial (large format)	76%	53%
Mixed Use - integrated commercial	89%	67%
SP1 - Airport and Associated	80%	75%
Residential - typical low density	67%	50%
Residential - typical medium density	80%	51%
Residential - typical high density	79%	65%

Each land use zone comprises different urban typologies that reflect the character and potential layout of development. Through the precinct plans, the WSPP has defined the land distribution split of urban typologies for each land use zone which informs where the potential stormwater harvesting end uses and WSUD approaches can be deployed.

Appendix A3.1.1.2 Water Sensitive Urban Design

Stormwater management targets are being developed by DPIE that will put controls on both stormwater volumes and stormwater pollution concentrations. Water quality objectives will be achieved through conventional water sensitive urban design (WSUD) measures such as stormwater filtration via biofiltration or wetlands to reduce pollutant loads and volumetric controls which prevent stormwater from entering creeks. The BaU approach, without volumetric controls, can achieve pollution reduction targets through filtration without any significant stormwater volume reductions. By adopting Western Parkland City typologies stormwater volumes will be reduced.

Final stormwater management objectives and targets developed by DPIE will ultimately inform the size, distribution and function of stormwater management elements across the precincts.

Appendix A3.2 2036 land use

Appendix A3.2.1 Hawkesbury Nepean

Outside of the South Creek catchment, there is expected to be relatively lower levels of development and growth within the wider Hawkesbury Nepean catchment. The future scenario land uses for the Hawkesbury Nepean catchment were developed using the consolidated growth forecast geospatial data (April 2020) and the 2017 land use dataset.

Sydney Water produces consolidated growth forecast data is based on both government (state and local) and development industry data. This is mapped spatially and is updated regularly as new intelligence is received. The Sydney Water CGD Growth team meet with DPIE teams on a regular basis to get updates on growth across Sydney Water’s servicing area.

The growth forecast data contains spatial data on the additional dwelling required for future years. The data was summed to generate a dataset identifying the number of dwelling forecast for 2036. The number of dwellings was categorised into densities to identify polygon areas where the density exceeded 15 dwellings per hectare, the threshold adopted for categorising urban areas. The 2017 land use layer was updated to include these new urban area polygons. Figure A-3 presents the 2036 land uses for the Hawkesbury Nepean catchment based on this methodology.

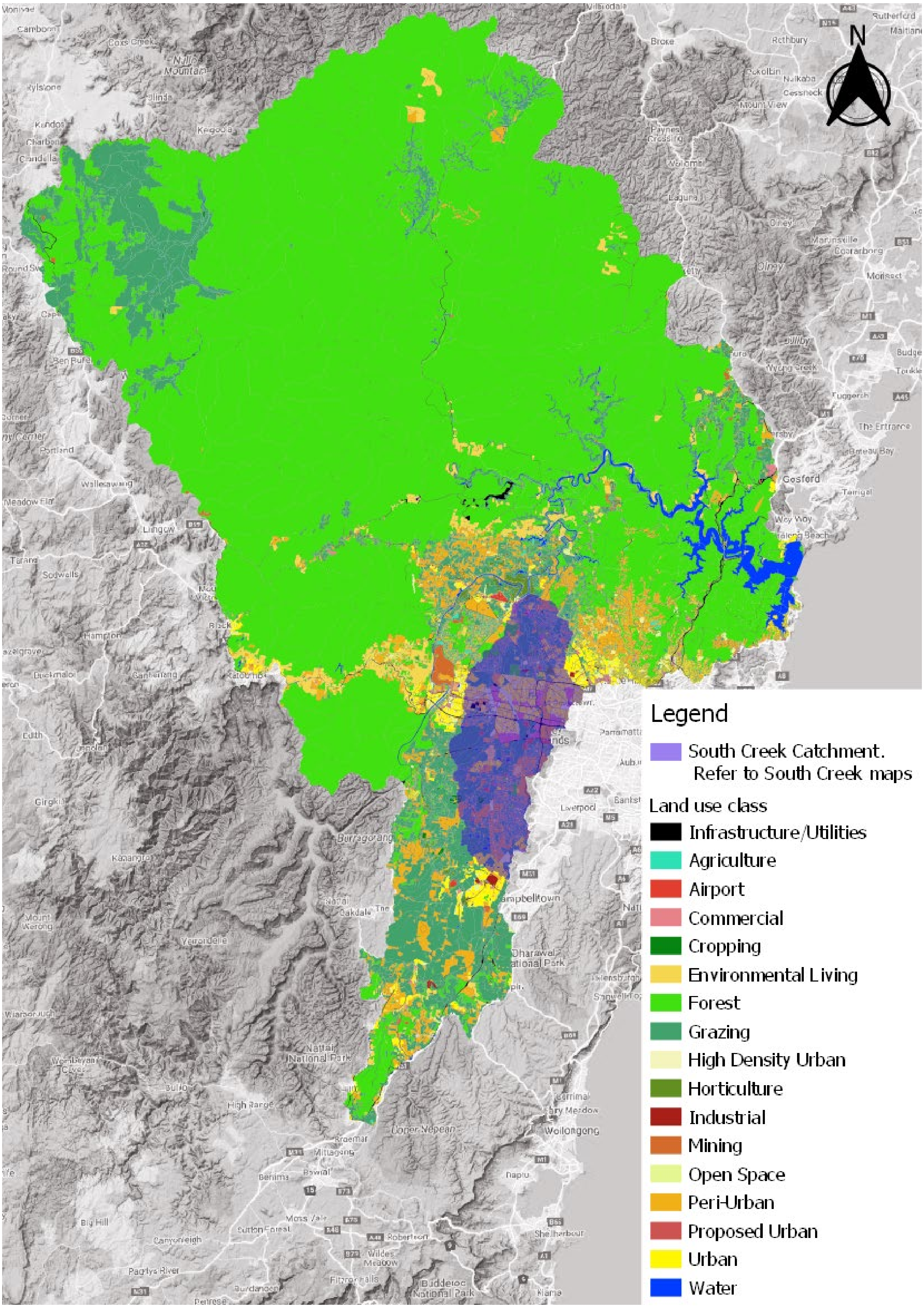


Figure A-3 2036 land use categories for Hawkesbury Nepean

Appendix A3.2.2 South Creek

The 2036 land use data for South Creek was generated based on a combination of datasets including the consolidated growth forecast geospatial data, typology data prepared by Cox Architect for iNSW, the impervious values adopted for BaU and Parkland urban forms set out in Table A-1 and the 2017 land use dataset.

Developable land was identified using a combination of the dwelling densities and jobs data in the consolidated growth forecast geospatial data for the year 2036. The identified developable land was used in conjunction with Cox Architect typology data which identifies land uses for the developable areas, which align with the land use urban forms listed in Table A-1. The Cox Architect typology data further breaks South Creek into precincts where different proportions of each of the land uses are applied.

A number of GIS steps and processes within the Source catchment model were undertaken to assign land use types to areas identified as developable land. The percentage of impervious surfaces for each land use type was also used to distinguish between the BaU and Parkland urban forms. Figure A-4 and B-5 presents the 2036 land use map for South Creek with the developable land areas identified for both BaU and Parkland urban forms.

At the time of undertaking this analysis, specific stormwater management measures had not been identified for the Western Sydney Aerotropolis. Stormwater management measures for BaU and Parkland urban forms have been represented in the model through reduced imperviousness as discussed in Section A3.1.1.1.

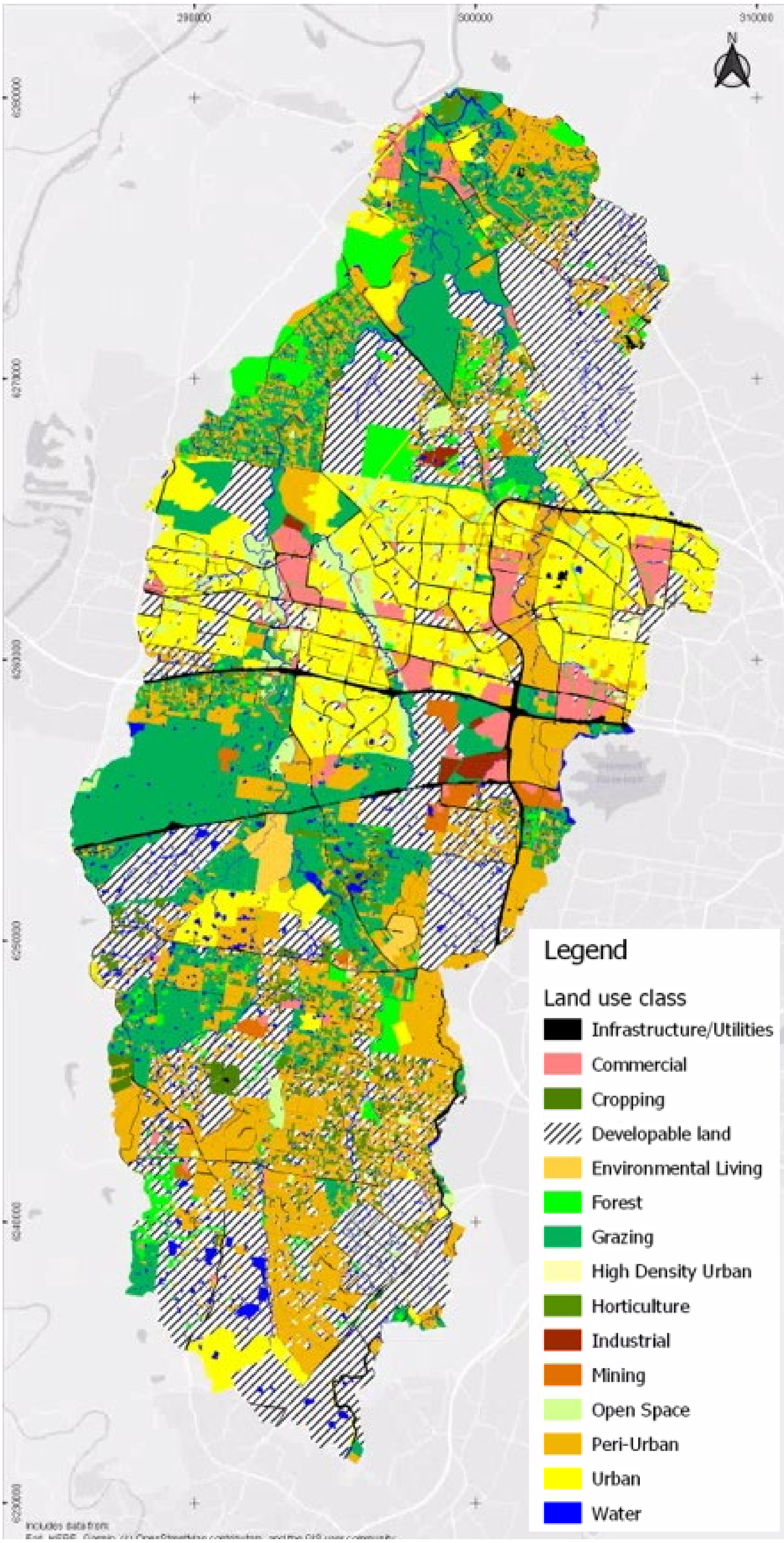


Figure A-4 2036 land use for South Creek catchment for BaU typology outcome

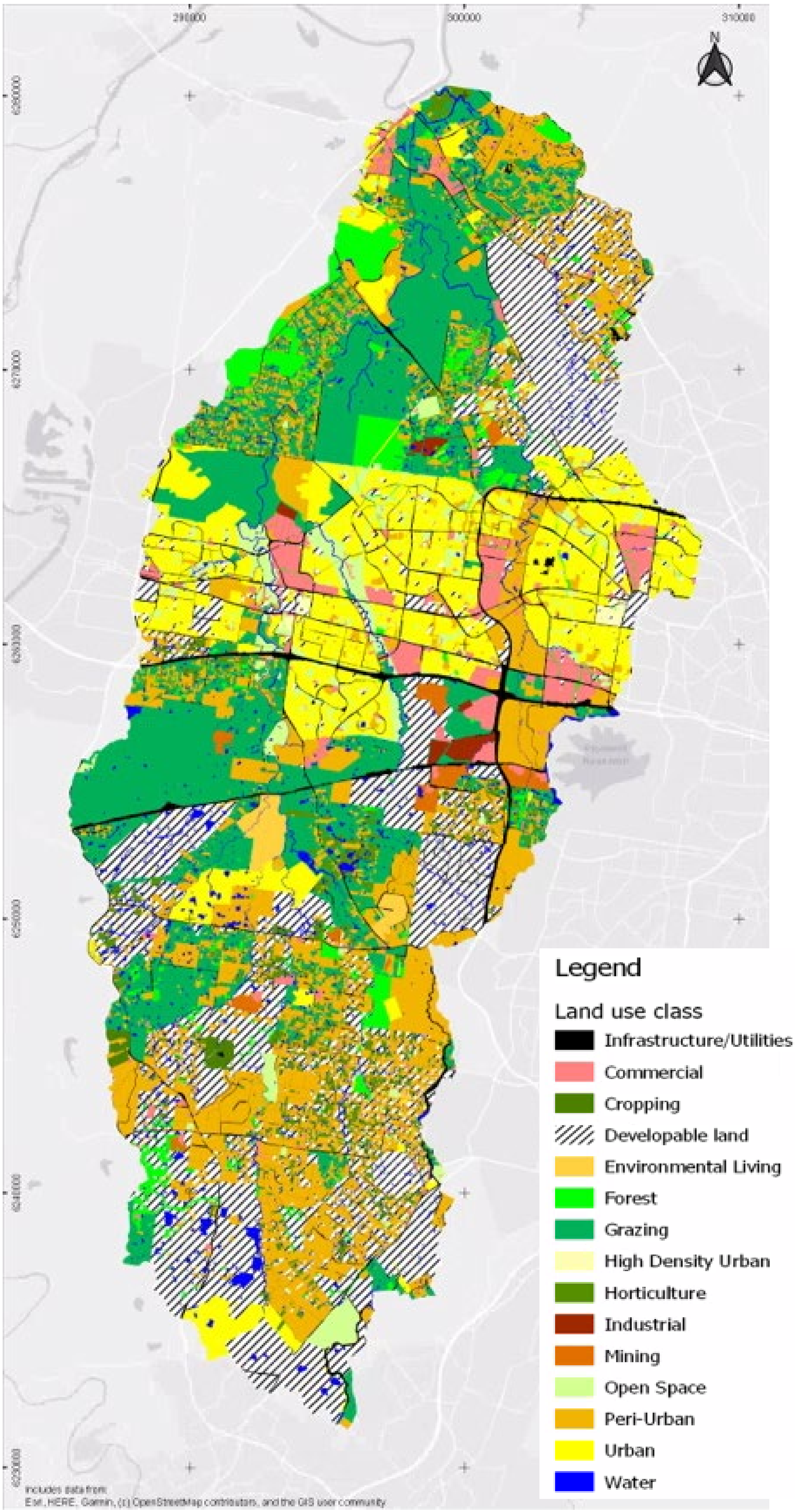


Figure A-5 2036 land use for South Creek catchment for Parklands typology outcome

Appendix A3.3 2056 land use

Appendix A3.3.1 Hawkesbury Nepean

The land use data for 2056 was generated using the same approach set out in Section A3.2.1. Figure A-6 presents the 2036 land uses for the Hawkesbury Nepean catchment.

Appendix A3.2.2 South Creek

The land use data for 2056 was generated using the same approach set out in Section A3.2.2.
Figure A-7 and A-8 presents the 2036 land use map for South Creek with the BaU and Parkland urban forms.

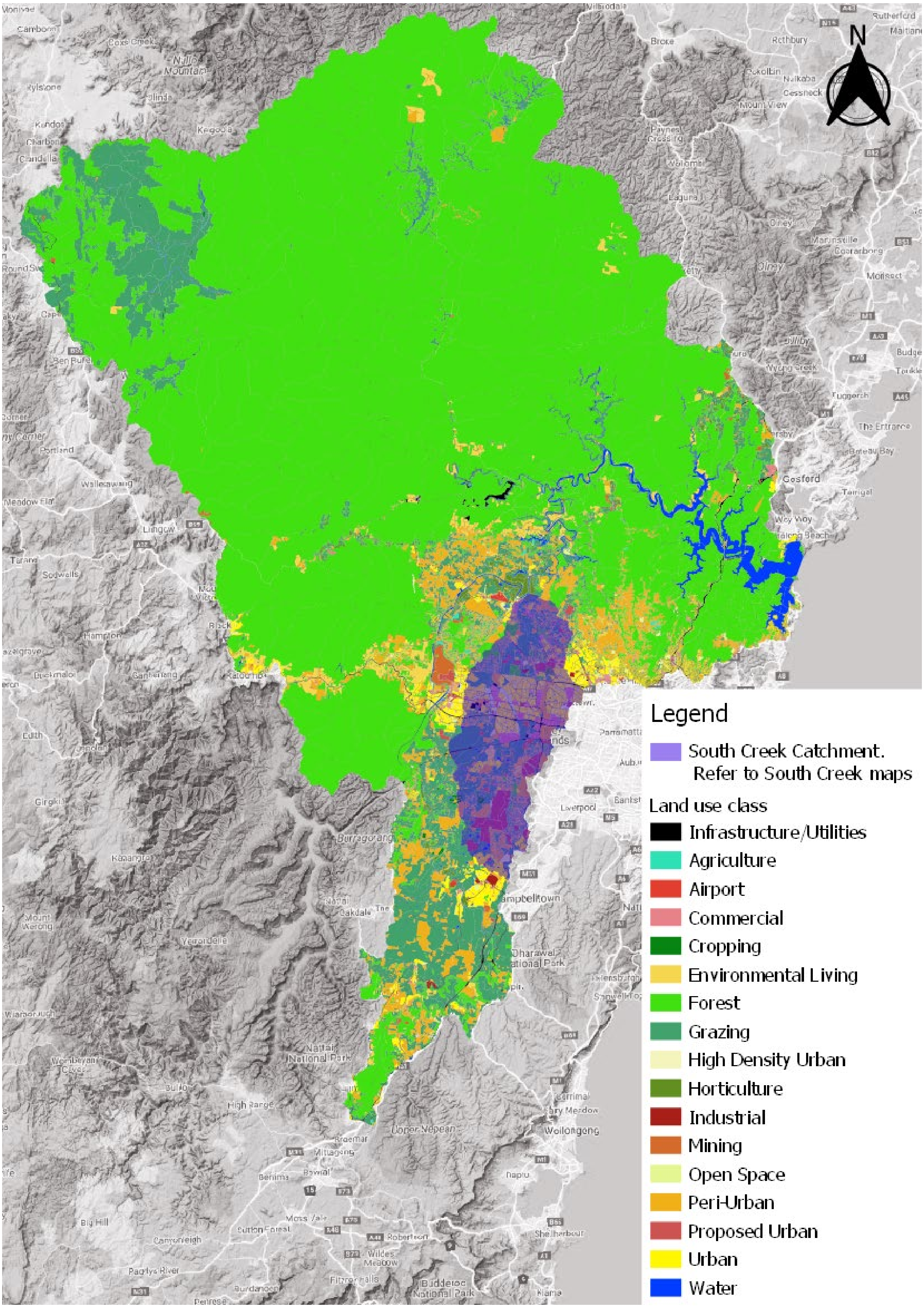


Figure A-6 2056 land use categories for Hawkesbury Nepean

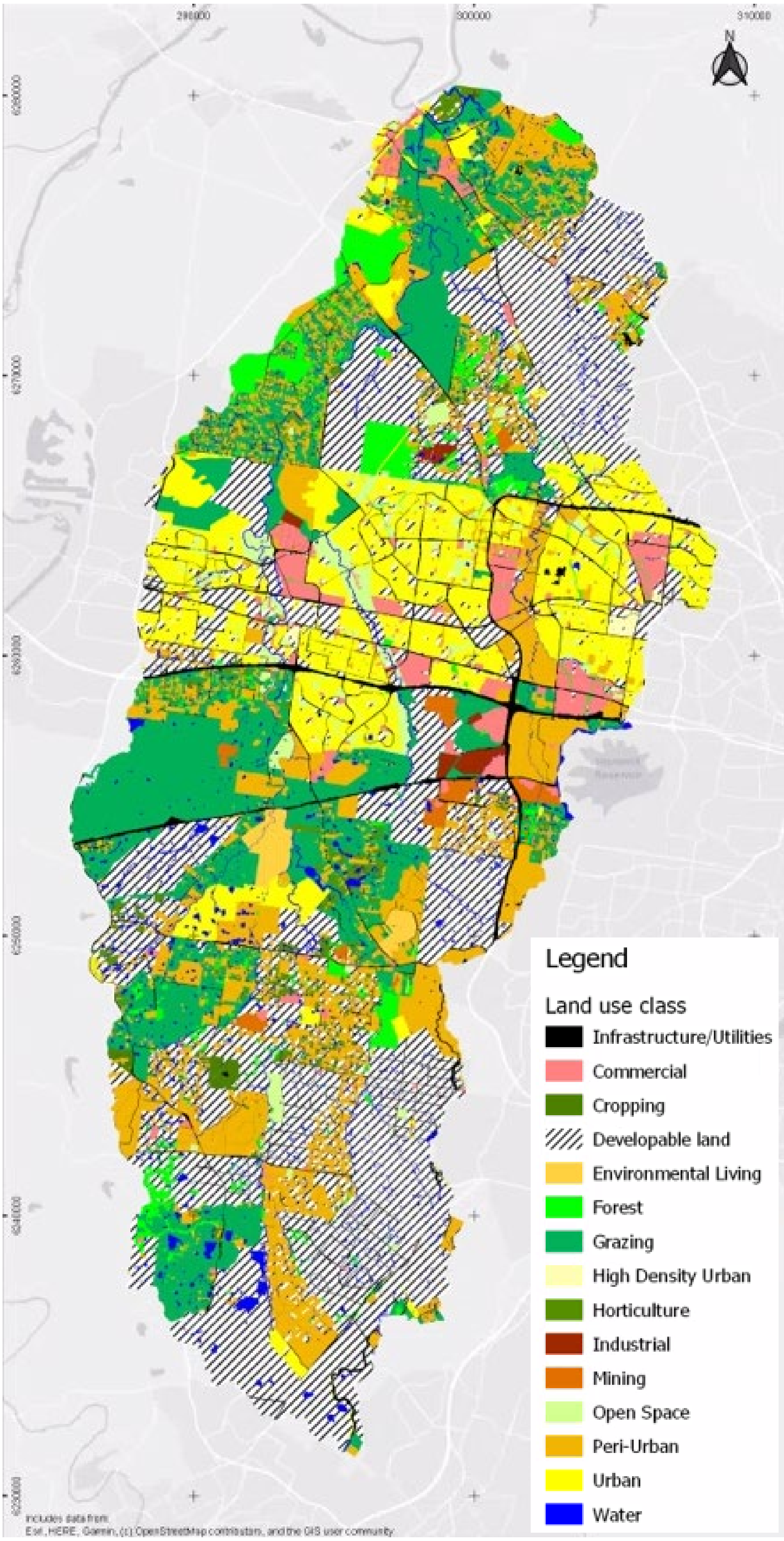


Figure A-7 2056 land use for South Creek catchment for BaU typology outcome

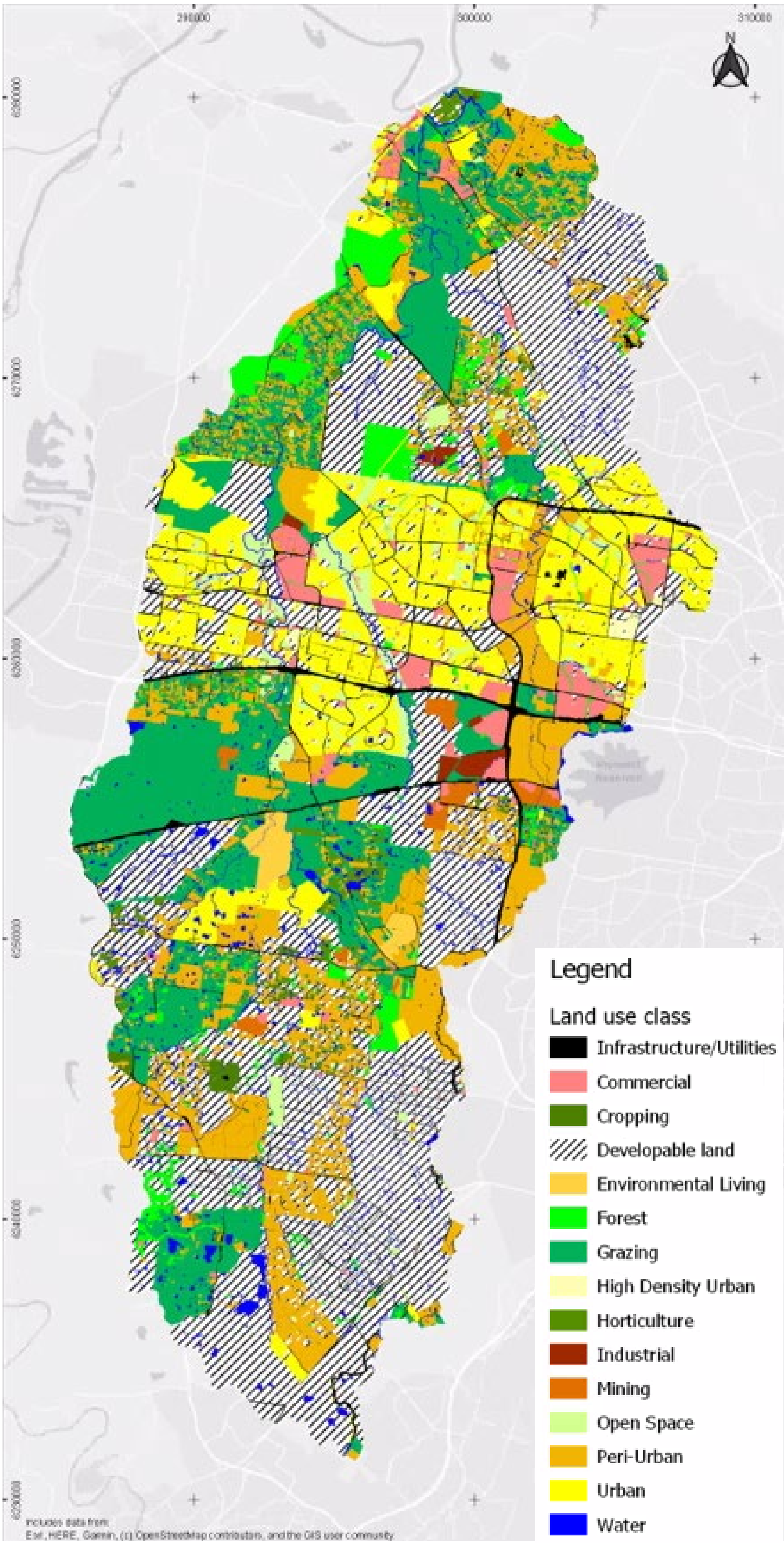


Figure A-8 2056 land use for South Creek catchment for Parklands typology outcome

Appendix B USC AWRC – Summary of toxicants in tertiary and advanced treated wastewater

Upper South Creek Advanced Water Recycling Centre

Review of potential toxicants in release streams (September 2021)

Sydney WATER

Table of contents

1 Introduction 3
1.1 Background 3
1.2 Purpose and scope 4
1.2.1 Advanced treated water 4
1.2.2 Tertiary treated water 4
1.2.3 Wet weather treated water 4
1.3 Approach 4
1.3.1 Desktop review 4
1.3.2 Analysis of selected toxicants 5
1.4 Guideline values 5
1.4.1 Desktop review 5
1.4.2 Analysis of Ammonia, Nitrate and Chlorine 7
2 Desktop review of advanced and tertiary treated water 8
2.1 Review of advanced treatment performance 8
2.1.1 St Marys Advanced Water Treatment Plant 8
2.1.2 Fairfield Water Recycling Plant Water Quality Monitoring: December 2019 – March 2020 (Sydney Water 2021) 9
2.2 Review of tertiary treatment performance 10
2.3 Ecotoxicology testing 14
2.4 Summary 14
3 Analysis of ammonia, nitrate and chlorine 18
3.1 Predicted water quality in release streams 18
3.1.1 Advanced treated water quality 18
3.1.2 Tertiary treated water quality 18
3.1.3 *Refer to Table 1-2 for explanationWet Weather treated flows 18
3.2 Analysis 19
3.2.1 Results for Nepean River releases 19
3.2.2 Results for South Creek releases 20
4 Recommendations 22
Appendix 1 Monitoring results for advanced treated water at St Marys AWTP 23
Appendix 2 Monitoring results for tertiary treated water 25

Tables

Table 1-1 Summary of water quality guidelines and relevant waterway values 6
Table 1-2 Guideline values for Ammonia, Nitrate and Chlorine 7
Table 2-1: Summary of tertiary parameters where guideline values have been exceeded 12
Table 2-2 Summary of review for advanced and tertiary treated water 15
Table 3-1: Adopted performance for advanced treated water (all values mg/L) 18

Table 3-2: Adopted Tertiary MBR performance (all values mg/L) ... 18
Table 3-3: Preliminary analysis of AWRC performance compared to guideline values for releases to Nepean River (all values as mg/L) ... 19
Table 3-4: Preliminary analysis of AWRC performance compared to guideline values for releases to South Creek (all values as mg/L) ... 20

1 Introduction

1.1 Background

Sydney Water has developed specific waterway objectives for the Upper South Creek Advanced Water Recycling Centre Environmental Impact Statement (USC AWRC EIS). These waterway objectives relate to the environmental values and uses of the receiving waterways. The objectives consist of indicators and corresponding numerical criteria to assess whether the waterways will support a particular environmental value or use.

The waterway objectives will be used as a benchmark to understand the existing condition of the waterways and as a way of estimating predicted impacts on water quality.

The environmental values and uses of the waterways relevant to the EIS and the receiving waters of the USC AWRC have been identified as:

- aquatic ecosystems
- recreation and aesthetics
- primary industries (irrigation and livestock drinking)
- drinking water.

Relevant indicators and criteria have been developed for each of these values and uses.

Sydney Water's Hawkesbury Nepean Water Quality Response Model (WQRM) is being used as a tool to assess the impacts on water quality from the AWRC releases. The WQRM models a suite of conventional indicators including: nutrients; total suspended solids; dissolved oxygen; salinity; chlorophyll *a*; enterococci; *E.coli;* and cyanobacteria risk.

The assessment of other indicators relies on an understanding of the AWRC treatment process and monitoring data from similar treatment plants in the region. These indicators include:

- toxicants:
  - metals
  - pharmaceuticals & personal care products
  - endocrine disruptors
  - industrial and domestic chemicals
  - pesticides and biocides
  - disinfection by-products
- microbial water quality – viruses, protozoa & helminths

1.2 Purpose and scope

The AWRC will produce three different levels of treated water, including advanced, tertiary and wet weather treated water. Advanced and tertiary treated water will be released to the Nepean River. Wet weather treated water, consisting of a blend of primary and/or advanced treated water, will be released to South Creek.

Reviews were undertaken with respect to wastewater treatment plants that were considered to have similar levels of advanced, tertiary or primary treatment as proposed at the AWRC. Details of these datasets are presented below.

1.2.1 Advanced treated water

For the review of advanced treated water quality, data were available from two treatment plants, St Marys Advanced Water Treatment Plant (AWTP) and Fairfield Water Recycling Plant (WRP). Both of these plants use reverse osmosis (RO) to treat wastewater to a very high quality. The performance of these plants is similar to what is proposed at the AWRC.

1.2.2 Tertiary treated water

For the review of tertiary treatment performance, water quality data from three similar treatment plants were reviewed, including St Marys AWTP (prior to advanced treatment), Penrith WRP and Rouse Hill WRP.

1.2.3 Wet weather treated water

For the wet weather treated water, analysis was undertaken on event-based water quality data assuming raw sewage and wet weather overflow monitoring data, as well as with consideration of standard removal rates from primary treatment under wet weather conditions.

1.3 Approach

As detailed below, two assessments were undertaken to determine the expected water quality of each release stream and the potential for toxicity within these streams.

1.3.1 Desktop review

The results of the desktop review demonstrate the quality of advanced and tertiary treated water expected to be produced at the AWRC. From this review, potential toxicants of concern could be identified by comparing the results to relevant water quality guideline values, where available.

The desktop review was limited to a review of advanced and tertiary treatment performance only. Wet weather treated flows were excluded from this review for the following reasons:

- Most of the releases from the AWRC will be advanced and tertiary treated water. Releases to South Creek containing primary treated and advanced treated water are forecast to occur approximately 6 times in a wet year and not at all during a dry year. At other times, releases will be advanced treated water only.

- Wet weather treated water will only be released to South Creek during wet weather and therefore will be subject to higher levels of dilution from flow in the creek. They will also be diluted with advanced treated water.
- The existence of toxicants in wet weather treated water is more variable, depending on the level of treatment, stormwater ingress and the type of development in the catchment (e.g. industrial/commercial/residential). It is therefore more challenging to draw reliable conclusions from the review of such data. As such the toxicant analysis for wet weather treated water has been restricted to the analysis of ammonia, nitrate and chlorine (described below).

1.3.2 Analysis of selected toxicants

A more detailed analysis was undertaken for the following contaminants:

- total ammonia as N (TAN)
- nitrate as N (NO_3)
- free chlorine (Free Cl)
- total chlorine (Total Cl)

These constituents are generally determined as the toxicants most relevant to the operation of an urban wastewater treatment plant that discharges to freshwater or tidal environments.

The expected quality in each AWRC release stream (advanced, tertiary and wet weather treated water) was analysed against the guideline values presented in Section 1.4, for all operational phases and climatic conditions. The flow profiles used for the WQRMs were adopted for this analysis. The profile provides daily flow variation based on historical flow data from West Camden WRP for 2012 to 2018. Full details and results are provided in section 3.

1.4 Guideline values

1.4.1 Desktop review

Relevant water quality guidelines that were considered in the desktop review include:

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000 and ANZG 2018)
- Australian Drinking Water Guidelines (ADWG) 2011, Version 3.5 Updated August 2018 (NHMRC, NRMMC 2011)
- Guidelines for managing risks in recreational water (NHMRC 2008).

Relevant guideline values were selected from these guidelines with consideration of the environmental values that were relevant to the USC AWRC EIS. A summary of the guidelines and relevant environmental values is provided in Table 1-1.

The ANZG (2018) water quality guidelines generally refer back to ANZECC (2000) for many of the indicators but updates are included where applicable. Guideline values from ANZECC (2000) have been sourced from various sections of the guidelines and these are noted in Table 1-1. When comparing data to ANZECC (2000) and ANZG (2018) guidelines, the most stringent guideline value has been adopted.

When comparing monitoring data to the guideline values, the median value has been compared to ADWG guideline values and the 95th percentile value has been compared to the ANZECC (2000)/ANZG (2018) guideline value. This is in accordance with the guideline recommendations.

Table 1-1 Summary of water quality guidelines and relevant waterway values

Guideline	Section	Relevant value
Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000 and ANZG 2018)	ANZECC (2000) Table 3.4.1 – Trigger values for toxicants at alternative levels of protection (95% protection trigger values adopted).	Aquatic ecosystems
	ANZECC (2000) Table 5.2.3 - Summary of water quality guidelines for recreational purposes: general chemicals	Recreation and aesthetics
	ANZECC (2000) Table 4.2.8 - Sodium concentration (mg/L) causing foliar injury in crops of varying sensitivity	Primary industries
	ANZECC (2000) Table 4.2.9 - Effect of sodium expressed as sodium adsorption ratio (SAR) on crop yield and quality under non-saline conditions	
	ANZECC (2000) Table 4.2.10 - Agricultural irrigation water long-term trigger value (LTV), short-term trigger value (STV) and soil cumulative contaminant loading limit (CCL) triggers for heavy metals and metalloids	
	ANZECC (2000) Table 4.2.12 – Interim trigger value concentrations for a range of herbicides registered in Australia for use in or near waters (includes residual limits in irrigation water)	
	ANZECC (2000) Table 4.3.2 - Recommended water quality trigger values (low risk) for heavy metals and metalloids in livestock drinking water	

Guideline	Section	Relevant value
Australian Drinking Water Guidelines (ADWG) 2011, Version 3.5 Updated August 2018 (NHMRC, NRMMC 2011)	N/A	Drinking water
Guidelines for managing risks in recreational water (NHMRC 2008)	N/A	Recreation and aesthetics

1.4.2 Analysis of Ammonia, Nitrate and Chlorine

The guideline values for each of these toxicants are provided in Table 1-2.

For ammonia (TAN), the adopted guideline value has been taken from Table 3.4.1 of ANZECC (2000) for slightly to moderately disturbed freshwater systems. This value relates specifically to total ammonia as N at pH 8. For changes in guideline value with pH, further guidance is presented in Section 8.3.7.2 of ANZECC (2000).

For nitrate (NO_3), the updated ANZG guidelines (2018) state that the ANZECC (2000) default guideline value of 0.7 mg/L for nitrate was erroneous and recommends the use of the guideline values published in the NIWA report "*Updating nitrate toxicity effects on freshwater aquatic species*" (NIWA, 2013). From the NIWA study, two guideline values are presented including a grading value (notated *) and a surveillance value (notated ^). The grading value is derived from the species no observed effect concentration (NOEC) values and recommended for compliance assessment based on annual median concentrations. The surveillance value is derived from the species threshold effect concentration (TEC) values and is recommended for compliance assessment based on the annual 95th percentile concentrations.

For chlorine (Total Cl), the guideline value is again taken from Table 3.4.1 of ANZECC (2000) for slightly to moderately disturbed freshwater systems and Batley et al (2021). No guideline value is provided for free chlorine.

Table 1-2 Guideline values for Ammonia, Nitrate and Chlorine

Contaminant	Guideline value (mg/L)
Total ammonia as N (TAN)	0.9
Nitrate as N (NO3)	3.5^ (2.4*)
Chlorine (Total Cl)	0.003**/0.007***

Table Notes:

^ Surveillance value * Grading value

** Toxicant DGV for the protection of aquatic ecosystems (95% protection) from ANZECC (2000)/ANZG (2018).

*** Guideline Value (GV) derived for chlorine in freshwater by Batley et al. (2021).

2 Desktop review of advanced and tertiary treated water

2.1 Review of advanced treatment performance

2.1.1 St Marys Advanced Water Treatment Plant

Western Sydney Recycled Water Initiative – Replacement Flows Project Process Proving Verification (Sydney Water, November 2010)

In 2010, as part of process proving, Sydney Water undertook microbial and chemical validation of the St Marys AWTP over a 10 week period. This included sampling of the advanced treated water (RO treated).

Twelve parameters were tested as part of the microbial monitoring, including:

- bacteria - total coliforms, *E.coli*, clostridium perfringens spores, F-specific bacteriophage
- viruses - reovirus, enterovirus, adenovirus, norwalk virus, rotavirus, hepatitis A
- parasites - giardia cysts, cryptosporidium oocysts.

Parameters were either absent or below the detection limit for all but one sample where total coliforms of 2 orgs/100mL were detected. The results met performance values specified in the Conditions of Approval for the project, including:

- *E. coli* less than 1 in 100mL (90%ile)
- viruses less than 1 in 50L (90%ile)
- parasites less than 1 in 50L (90%ile).

Sixteen chemicals were monitored for their removal in the AWTP, including seven pharmaceuticals, one nitrosamine, five estrogenic hormones and three trihalomethanes. The full scale AWTP was shown to effectively remove the following:

- pharmaceuticals, including caffeine, atenolol, carbamazepine, dilantin, ibuprofen, naproxen and TCEP
- nitrosamines – NDMA (disinfection by-product)
- trihalomethanes, including chloroform, bromodichloromethane and dichloromethane.

None of the estrogenic steroids were detected in any samples from the AWTP, including those prior to reverse osmosis. There was no detection of the 16 chemicals in any finished water sample.

Ongoing monitoring under the Recycled Water Quality: Compliance & Operational Monitoring

Sydney Water undertakes regular monitoring across all of its wastewater treatment plants where recycled water is produced, as required by recycled water quality management plans and environment protection licences. At St Marys AWTP, metals, disinfection by-products and pharmaceuticals are monitored. A summary of results since 2010 for the advanced treated water is included in Appendix 1. All results have been below guideline values, where guideline values are specified.

2.1.2 Fairfield Water Recycling Plant Water Quality Monitoring: December 2019 – March 2020 (Sydney Water 2021)

Between December 2019 and January 2020, Sydney Water undertook a sampling program at Fairfield WRP. The monitoring program was designed to sample influent secondary treated wastewater from the Liverpool-Ashfield Pipeline at the inlet to the plant and sample the advanced treated water (RO treated) at the outlet of the plant.

In total there were 10 sampling events. Samples were tested against 371 parameters grouped into the following categories:

- operational parameters (e.g. pH, DO, TDS, etc.)
- chemicals:
  - pesticides, fungicides and herbicides
  - metals
  - nutrients and other inorganic chemicals
  - dioxins
  - disinfection by-products (including NDMA and NDEA)
  - per – and polyfluoroalkyl substances (PFAS)
  - organotin compounds
  - miscellaneous chemicals
  - antibiotics
  - illicit pharmaceuticals
  - general pharmaceuticals (including endocrine disrupters)
  - bioassays
- radiological
- microbiological
  - protozoa - Cryptosporidium and Giardia
  - bacteria and bacterial phage

  - parasitic helminths
  - viruses.

The monitoring report compared results to the ADWG (2011) and the Australian Guidelines for Water Recycling (2006) (AGWR) (NRMMC, EPHC, NHMRC 2006). Results were also compared to ANZG (2018) and ANZECC (2000) as part of this review.

A large variety of parameters were detected in the secondary treated water from the Liverpool-Ashfield pipeline that feeds to Fairfield WRP. Of the 371 parameters, 144 were detected in the secondary treated water.

Thirty-two (32) parameters were detected in the finished water following advanced treatment by Fairfield WRP:

- twenty-two were below AGWR, ADWG, ANZG (2018) and/or ANZECC (2000) guideline values
- three were above AGWR, ADWG, ANZG (2018) and/or ANZECC (2000) guideline values, including:
  - Total nitrogen and nitrate were detected above ANZECC (2000) guideline values. Nutrients, and potential impacts on aquatic ecology, will be covered in detail as part of the Hydrodynamic and Water Quality Impact Assessment and Aquatic Ecology Impact Assessment.
  - N-Nitrosodimethylamine (NDMA) was detected in 2 of 5 finished water samples tested, at concentrations of 11 and 14 ng/L. These concentrations are above the AGWR guideline value (10 ng/L), but well below the ADWG guideline value (100 ng/L).
- Seven parameters were detected in the finished water that do not have guideline values under ADWG, AGWR, ANZG (2018) or ANZECC (2000), including:
  - Two PFAS compounds (8:2 diPAP and PFDS). The three PFAS compounds for which there are guidelines (PFOS, PFHxs and PFOA), were not detected in the finished water and were therefore below guideline limits.
  - Metals – potassium.
  - Nutrients – total organic nitrogen.
  - Illicit pharmaceuticals - buprenorphine, cocaine and tramadol.

2.2 Review of tertiary treatment performance

Based on the reference design for the AWRC, the tertiary treated water produced by the AWRC will be similar to, or better than that of the tertiary treated water currently produced by St Marys, Penrith and Rouse Hill treatment plants.

Water quality monitoring is undertaken at these treatment plants as part of the environment protection licences and recycled water quality management plans. A review of available toxicant monitoring data over a ten year time frame (January 2011 – December 2020) was undertaken and compared to guideline values. Full results are included in Attachment 2.

Results for a total of 98 parameters were reviewed across the three treatment plants. Of these parameters:

- 56 were below the level of detection. Of these 56, five had detection limits above a guideline value. The detection levels for diquat, diazinon, azinphos methyl and parathion were above the ANZECC (2000) guideline value for the protection of 95% of species (Table 3.4.1). The detection level for diuron was above the ANZECC (2000) residual limit in irrigation water (Table 4.4.2). Therefore, it was not possible to conclude that the concentrations of these toxicants in tertiary treated water were below the adopted guideline value. Detection limits were compared to the guideline values for the 95%, 90% and 80% protection levels. Results as follows:
  - diquat - detection limit lies between the 90% and 95% protection level
  - diazinon – detection limit lies between the 90% and 95% protection level
  - azinphos methyl – detection limit lies between the 80% and 90% protection level
  - parathion – detection limit of 0.1ug/L lies below the 80% protection level of 0.04ug/L, however lies well below ADWG guideline value of 20ug/L
  - for diuron, while the detection limit (3ug/L) is above the ANZECC guideline value (2ug/L), it is well below the ADWG guideline value of 20ug/L.
- 21 were detected but below guideline values.
- 11 were detected with no guideline value, including:
  - potassium
  - strontium
  - bromodichloromethane
  - bromoform
  - chloroform
  - dibromochloromethane
  - bromoacetic acid
  - bromochloroacetic acid
  - bromodichloroacetic acid
  - chlorodibromoacetic acid
  - dibromoacetic acid.

Ten were above the applicable guideline value. These are summarised in Table 2-1.

Table 2-1: Summary of tertiary parameters where guideline values have been exceeded

Category	Analyte	Location	No. of samples	Median concentration (ug/L)	95th percentile (ug/L)	Summary of exceedance	Relevant value(s) potentially impacted
Metals	Sodium	St Marys	23	123,000	150,000	95th percentile results are within the range to impact sensitive to moderately sensitive crops (ANZECC - Table 4.2.8).	Irrigation
		Rouse Hill	37	110,000	140,200		
		Penrith	24	109,500	124,550		
	Sodium Absorption Ratio (filtered)	St Marys	75	4.96	5.5	Within the range to impact extremely sensitive crops, however such crops not grown commercially along Nepean River (ANZECC Table 4.2.9).	Irrigation
		Rouse Hill	76	4.4	4.9		
	Aluminium*	St Marys	385	65	145	Median and 95th percentile values above ANZECC guideline value of 55ug/L where pH>6.5 (Table 3.4.1).	Aquatic ecosystems
		Rouse Hill	10	72.5	121.9		
		Penrith	308	186	339.4		
	Copper*	St Marys	121	3	5	Median and 95th percentile values above ANZECC guideline value of 1.4ug/L (Table 3.4.1).	Aquatic ecosystems
		Rouse Hill	9	2.9	4.88		
		Penrith	115	4	6		
	Manganese*	St Marys	60	31	132.45	95th percentile value above ANZECC water quality guideline of 100 ug/L for recreational purposes (Table 5.2.3). This guideline value is superseded by NHMRC (2008). NHMRC (2008) refers to ADWG for guideline values for manganese. The results are below the ADWG guideline values. However, a conservative approach has been taken and further investigation of manganese recommended.	Recreation and aesthetics
	Zinc*	St Marys	121	21	32.4	95th percentile value above ANZECC guideline value of 8ug/L (Table 3.4.1).	Aquatic ecosystems
		Rouse Hill	9	20	25.6		
		Penrith	115	39	60.3		

Category	Analyte	Location	No. of samples	Median concentration (ug/L)	95th percentile (ug/L)	Summary of exceedance	Relevant value(s) potentially impacted
Pesticides	Chlorpyrifos	Penrith	40	39 of 40 samples below detection level of 0.05ug/L. One sample above guideline value – 0.39ug/L		One sample at Penrith above ANZECC guideline of 0.01ug/L (Table 3.4.1). Note – also tested at St Marys, 40 out of 40 samples below detection limit of 0.05ug/L. The detection levels for Chlorpyrifos is above the ANZECC guideline value for the protection of 95% of species. The detection limit for Chlorpyrifos lies between the 90% and 95% protection level. Therefore, it is not possible to conclude that the concentrations of these toxicants in tertiary treated water were below the relevant guideline value for the protection of 95% of species.	Aquatic ecosystems
Microbial	Adenovirus	Rouse Hill	20	Not able to be calculated.		Detected in 5 of 21 samples (none since March 2013).	Drinking water
	Cryptosporidium	Rouse Hill	21	Not able to be calculated.		Detected in 2 of 21 samples (February 2013, March 2020).	Drinking water
	Enterovirus	Rouse Hill	20	Not able to be calculated.		5 of 20 samples (none since March 2013).	Drinking water

*Values for aluminium, copper, manganese and zinc are based on total concentrations, as filtered concentrations were not available. Thus, comparison of these values to the guideline values in ANZECC (2000) Table 3.4.1, which are based on filtered metal concentrations, represents a conservative approach.”

2.3 Ecotoxicology testing

Ecotoxicology, examining immobilisation in the water flea *Ceriodaphnia dubia,* is a routine (monthly) test of treated water quality from inland treatment plants. A review of the St Mary's data for the last ten years revealed that in the 120 tests performed, there was only 1 non-compliance. This indicates that, despite exceedances of some parameters in treated wastewaters above guideline values, the wastewaters rarely if ever exhibit toxicity to a species that is known to be sensitive to sewage effluent.

2.4 Summary

Historical and on-going monitoring at Fairfield WRP, St Marys AWTP, Penrith WRP and Rouse Hill WRP provide a useful reference for the potential presence of toxicants in the treated water that will be produced by the AWRC. Table 2-2 provides a summary of results. Results are colour coded as follows:

- green shading – parameters not detected or detected below relevant guideline values
- orange shading – parameters detected but no guideline value exists
- pink shading – parameters detected above relevant guideline values
- grey – parameters not tested at this location.

Results show that the levels of toxicants detected in the advanced treated water at St Marys AWTP and Fairfield WRP is very low and generally complies with ANZG (2018), ANZECC (2000) and ADWG (2011) guidelines.

Results for the tertiary treated water show exceedances for a number of parameters. The need for further investigation of these exceedances is noted in Table 2-2.

Table 2-2 Summary of review for advanced and tertiary treated water

Category	Advanced treated water (reverse osmosis) Fairfield WRP –	St Marys AWTP	Tertiary treated water St Marys	Rouse Hill	Penrith	Further investigations required
Metals	Potassium detected – no guideline value	All results below detection level or guideline value.	**Sodium** – within range to impact sensitive crops **Aluminium** – above ANZECC guideline value **Copper** – above ANZECC guideline value **Manganese** – above ANZECC guideline value **Zinc** - above ANZECC guideline value	**Sodium** – within range to impact sensitive crops **Aluminium** – above ANZECC guideline value **Copper** – above ANZECC guideline value **Zinc** - above ANZECC guideline value	**Sodium** – within range to impact sensitive crops **Aluminium** – above ANZECC guideline value **Copper** – above ANZECC guideline **Zinc** - above ANZECC guideline	Given irrigation unlikely during wet weather, impacts from higher sodium levels not assessed further. Salinity is being addressed in the Hydrodynamic and Water Quality Impact Assessment. Aluminium, copper, manganese and zinc to be considered as part of near field and toxicity modelling for the Nepean River tertiary treated releases.
Pharmaceuticals & personal care products Endocrine disrupters	Three illicit pharmaceuticals detected – no guideline value. Endocrine disrupters - All results below detection levels.	All results below detection levels.	Limited testing only. 3 samples taken in 2011, tested for b-Estradiol, Ethynylestradiol, Estrone – all below detection levels.	Limited testing only. 3 samples taken in 2011, tested for b-Estradiol, Ethynylestradiol, Estrone – all	Not tested.	No further investigation proposed.

Category	Advanced treated water (reverse osmosis) Fairfield WRP –	St Marys AWTP	Tertiary treated water St Marys	Rouse Hill	Penrith	Further investigations required
				below detection levels.		
Industrial and domestic chemicals	Two PFAS compounds detected – no guideline value	All results below detection levels.	All below levels of detection.	All results below detection levels.	All results below detection levels.	No further investigation proposed.
Pesticides and biocides	All results below detection levels.	Not tested.	All results below detection levels, Detection levels for chlorpyrifos, diazinon, azinphos methyl and parathion above the ANZECC (2000) guideline value (refer section 2.2 for more details).	All results below detection levels.	Chlorpyrifos - One of 40 samples above detection limit of 0.05ug/L, and above ANZECC (2000) guideline value. Detection limit is above ANZECC guideline value. Diazinon and parathion also have detection limits above ANZECC guideline value but were not detected (refer section 2.2 for more details) ..	Given small number of confirmed exceedances, no further investigation proposed.

Category	Advanced treated water (reverse osmosis)		Tertiary treated water			Further investigations required
	Fairfield WRP –	St Marys AWTP	St Marys	Rouse Hill	Penrith	
Disinfection by-products - particularly NDMA	NDMA detected in 2 of 5 samples – above AGWR value but below ADWG guideline value.	All results below detection levels.	All results below detection levels.	Nine disinfection by-products detected with no guideline value	All results below detection levels.	No further investigation proposed.
Microbial Water Quality –viruses, protozoa & helminths	All results below detection levels.	All results below detection levels.	No results available.	No results available.	Adenovirus and enterovirus – not detected since March 2013. Cryptospiridium detected in two of 21 samples.	Given small number of exceedances, no further investigation proposed.

3 Analysis of ammonia, nitrate and chlorine

3.1 Predicted water quality in release streams

3.1.1 Advanced treated water quality

Water quality predictions for ammonia and nitrate were based on water quality data from St Marys AWTP for 2018-19. No chlorination is proposed for the advanced treated water. The predicted performance is summarised in Table 3-1.

Table 3-1: Adopted performance for advanced treated water (all values mg/L)

	50%ile	80%ile	95%ile	Standard deviation	Guideline value*
Ammonia (TAN)	0.08	0.1	0.13	0.02	0.9
Nitrate (NO_3)	0.12	0.17	0.24	0.05	3.5 (2.4)
Total chlorine	0	0	0	-	0.003/0.007

*Refer to Table 1-2 for explanation

3.1.2 Tertiary treated water quality

Water quality predictions for ammonia and nitrate in the tertiary treated water were based on the Final Effluent Water Quality Analysis Upper South Creek AWRC (Sydney Water, 2020) report prepared for the Upper South Creek AWRC Reference Design. No chlorination is proposed as MBR technology adopted. The predicted performance is summarised in Table 3-2.

Table 3-2: Adopted Tertiary MBR performance (all values mg/L)

	10%ile	50%ile	90%ile	Standard deviation	Guideline value*
Ammonia (TAN)	0.07	0.1	0.2	0.023	0.9
Nitrate (NO_3)	1.23	1.7	4.6	0.367	3.5 (2.4)
Total chlorine	0	0	0	-	0.003/0.007

3.1.3 *Refer to Table 1-2 for explanationWet Weather treated flows

The following dot points outline the datasets analysed and the assumptions made when predicting the water quality in the AWRC wet weather treated water stream:

- anticipated performance for nitrate of 0 mg/L as per raw sewage and wet weather overflow data

- partial disinfection is proposed for flows above 3xADWF, with a target residual of 90%ile total chlorine of 0.1 mg/L, and median of 0.05 mg/L
- West Camden historical influent values for ammonia used where available for determination of wet weather performance
- adopted standard influent concentration for ammonia of 55 mg/L with dilution factor applied and no removal in primary sedimentation tanks
- reduction of ammonia with chlorine dosed in a ratio of 8:1 through chloramine formation, adopted peak dose of 10 mg/L Cl as per current basis of design.

3.2 Analysis

3.2.1 Results for Nepean River releases

Table 3-3 outlines the predicted performance of releases to the Nepean River from the AWRC compared to the guideline values outlined in section 1.4.2. Median, 95th percentile and maximum values are provided for the 2012-18 flow profile as well as the representative dry and wet year (2013-14 and 2014-15 respectively).

There are no expected or modelled exceedances. No total chlorine is expected as there is no chlorination of advanced or tertiary treated streams. There are also no exceedances for ammonia (TAN) or nitrate as maximum values from expected performance of advanced and tertiary treatment are well below guideline values.

Table 3-3: Preliminary analysis of AWRC performance compared to guideline values for releases to Nepean River (all values as mg/L)

	TAN	Nitrate	Total Cl
Guideline value (median)	0.9	2.4	0.003
Guideline value (95th%ile)		3.5	
Nepean Discharge			
2012-2018			
median	0.1	0.1	0.000
95%ile	0.1	0.4	0.000
maximum	0.1	2.3	0.000
Adopted dry year (13-14)			
median	0.1	0.1	0.000
95%ile	0.1	0.2	0.000
maximum	0.1	0.5	0.000

	TAN	Nitrate	Total Cl
Adopted wet year (14-15)			
	TAN	**Nitrate**	**Total Cl**
median	0.1	0.1	0.000
95%ile	0.1	0.4	0.000
maximum	0.1	2.3	0.000

3.2.2 Results for South Creek releases

Table 3-4 outlines the predicted performance of releases to South Creek compared to the guideline values. There are no expected or modelled exceedances for nitrate, as maximum values from expected performance of advanced and wet weather treated water are well below the guideline values.

However, guideline values for ammonia (TAN) and total chlorine are exceeded during severe wet weather events (highlighted in red). Ammonia can be reduced further with additional chlorine dosing, however, this would need to be closely monitored and controlled to maintain residual chlorine.

The frequency and duration of these exceedances is also provided in Table 3-4.

Near field and toxicity modelling is recommended for wet weather events, where flows are greater than 3xADWF.

Table 3-4: Preliminary analysis of AWRC performance compared to guideline values for releases to South Creek (all values as mg/L)

	TAN	Nitrate	Total Cl
Guideline value (median)	0.9	2.4	0.003
Guideline value (95th%ile)		3.5	
South Creek Discharge			
2012-2018			
Median	0.1	0.1	0.000
95%ile	6.1	0.2	0.024
Maximum	6.2	0.3	0.069
Days above guideline value	24	0	24
Max consecutive days above guideline value	3	0	3
Adopted dry year (13-14)			
Median	0.0	0.1	0.000

	TAN	Nitrate	Total Cl
95%ile	0.1	0.2	0.000
Maximum	0.1	0.2	0.000
Days above guideline value	0	0	0
Max consecutive days above guideline value	0	0	0
Adopted wet year (14-15)			
Median	0.1	0.1	0.000
95%ile	6.0	0.2	0.025
Maximum	6.2	0.3	0.029
Days above guideline value	6	0	6
Max consecutive days above guideline value	3	0	3

4 Recommendations

Based on the results presented in this report, near field and toxicity modelling is recommended for the following parameters:

- South Creek: ammonia and total chlorine
- Nepean River: metals including aluminium, copper, zinc and manganese.

5 References

ANZECC & ARMCANZ 2000, Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, Commonwealth of Australia, Canberra

ANZG 2018, Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Commonwealth of Australia, Canberra

Batley G, Adams M and Simpson S 2021, Short-Term Guideline Values for Chlorine in Freshwaters, Environmental Toxicology and Chemistry, Volume 40, Number 5.

National Health and Medical Research Council (NHMRC) 2008, Guidelines for Managing Risks in Recreational Water, Commonwealth of Australia, Canberra

National Institute of Water & Atmospheric (NIWA) Research New Zealand 2013, Updating nitrate toxicity effects on freshwater aquatic species

National Resource Management Ministerial Council (NRMMC) 2011 updated 2018, Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy, National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra

Sydney Water 2010, Western Sydney Recycled Water Initiative – Replacement Flows Project Process Proving Verification, November 2010.

Sydney Water 2021, Fairfield Water Recycling Plant Water Quality Monitoring Program – Monitoring to inform purified recycled water from the Rosehill-Camelia scheme, December 2019 – March 2020.

Appendix 1 Monitoring results for advanced treated water at St Marys AWTP

Table A1 - Summary of monitoring results from St Marys AWTP - advanced treated water (2011-2020)

Analyte	Unit of measurement	ANZECC (2000) guideline values					Adopted guideline values		Results - St Marys AWTP[3]		
		Table 3.4.1 Toxicants (95thile)	Table 4.2.10 LTV irrigation	Table 4.2.10 STV irrigation	Table 4.3.2 Livestock Drinking	Table 5.2.3 Recreation	Adopted ANZECC (2000)[4]	ADWG	No. of samples	Median	95%
Metals											
Calcium	ug/L				1000000		1000000		31	24	96.00
Aluminium	ug/L	55ug/L if pH>6.5 (95%ile)	5000	20000	5000	200	55	200	10	2.5	14.95
Arsenic	ug/L		100	2000	500-5000	50	50	7	10	ALL BLD (<1)	ALL BLD (<1)
Cadmium	ug/L	0.2	10	50	10	5	0.2	2	10	ALL BLD (<0.1)	ALL BLD (<0.1)
Cobalt	ug/L	ID	50	100	1000		50		10	ALL BLD (<0.1)	ALL BLD (<0.1)
Copper	ug/L	1.4	200	5000	400-5000	1000	1.4	2000	10	ALL BLD (<1)	ALL BLD (<1)
Iron	ug/L	ID	200	10000	n/a	300	200	300	10	5	27.3
Nickel	ug/L	11	200	2000	1000	100	11	20	10	ALL BLD (<1)	ALL BLD (<1)
Zinc	ug/L	8	2000	5000	20000	5000	8	3000	10	2.5	7.1
Pharmaceuticals and estrogenic compounds											
b-Estradiol	ng/L								10	ALL BLD (<10)	ALL BLD (<10)
Ethynylestradiol	ng/L								10	ALL BLD (<5)	ALL BLD (<5)
Estrone	ng/L								10	ALL BLD (<5)	ALL BLD (<5)
Atenolol	ng/L								10	ALL BLD (<5)	ALL BLD (<5)
Caffeine	ng/L								10	ALL BLD (<10)	ALL BLD (<10)
Carbamazepine	ng/L								10	ALL BLD (<5)	ALL BLD (<5)
Dilantin	ng/L								10	ALL BLD (<5)	ALL BLD (<5)
Ibuprofen	ng/L								10	ALL BLD (<10)	ALL BLD (<10)
Mestranol	ng/L								10	ALL BLD (<10)	ALL BLD (<10)
Naproxen	ng/L								10	ALL BLD (<10)	ALL BLD (<10)
Tris(2-carboxyethyl)phosphine	ng/L								10	ALL BLD (<10)	ALL BLD (<10)
Disinfection by-products											
NDMA	ng/L							100	9	All BLD (<20)	All BLD (<20)

Notes:
1. BLD - Below Detection Limit.
2. Value in brackets shows detection limit.
3. Monitoring data taken from 1 January 2011 to 31 December 2020.
4. Adopted ANZECC (2000) value is the most stringent of those listed.

Appendix 2 Monitoring results for tertiary treated water

Table B1 - Summary of monitoring results from St Marys AWTP, Rouse Hill WRP and Penrith WRP - tertiary treated water (2011-2020)

Analyte	Unit of measurement	ANZECC (2000)								Adopted guideline values		Monitoring results[3]								
												St Marys			Rouse Hill			Penrith		
		Table 3.4.1	ANZECC Table 4.2.10 LTV irrigation	ANZECC Table 4.2.10 STV irrigation	ANZECC Table 4.2.12	ANZECC Table 4.3.2 Livestock Drinking	ANZECC Table 5.2.3	ANZECC Table 5.2.4	Other	ANZECC (2000)[4]	ADWG	No. of samples	Median	95%	No. of samples	**Median**	**95%**	No. of samples	**Median**	**95%**
Metals																				
Beryllium	ug/L		100	500						100	600	59	All BLD (<1)	All BLD (<1)	9	ALL BLD (0.5)	ALL BLD (0.5)	115	ALL BLD (<1)	ALL BLD (<1)
Calcium	ug/L					1000000				1000000		22	24500	30015	37	24800	32860	23	27600	30760
Hexavalent Chromium	ug/L	1								1	50	1	BLD (<0.4)	BLD (<0.4)	NM	NM	NM	9	ALL BLD (<0.4)	ALL BLD (<0.4)
Fluoride	mg/L		1000	2000		2000				1000	1500	10	0.68	0.952	12	0.47	0.56	16	0.745	0.9425
Potassium	ug/L											23	14600	17240	35	19800	22720	22	16500	19380
Lithium	ug/L		2500	2500						2500		59	6	7.25	9	8	11.1	115	6	10.7
Magnesium	ug/L								No GV - however section 4.3.3.2 suggests drinking water at concentrations of up to 2000mg/L have no adverse impact on cattle.	2000000		23	13000	17330	37	9850	12060	24	9480	12540
Sodium	ug/L						300000		Table 4.2.8 - most sensitve crops 115mg/L, moderate - 115-230mg/L, 300000ug/L for recreation	115000	180000	23	123000	150900	37	110000	140200	24	109500	124550
Sodium Absorption Ratio (filtered)	-								Extremely sensitive crops SAR 2 -8	SAR 2-6		75	4.96	5.548	NM	NM	NM	76	4.445	4.9
Aluminium	ug/L,mg/L	55ug/L if pH>6.5 (95%ile)	5000	20000		5000				55	200	385	65	145	10	72.5	121.85	308	186	339.4
Arsenic	ug/L	24ug/L (As III)13ug/L (AsV)	100	2000		500-5000				100	7	59	0.3	0.4	20	0.2	0.37	115	0.3	0.54
Boron	ug/L	370	500			5000				370	4000	59	66	104.7	16	84	103.5	115	67	149.5
Cadmium	ug/L	0.2	10	50		10				0.2	2	76	ALL BLD (<0.1)	ALL BLD (<0.1)	9	ALL BLD (<0.1)	ALL BLD (<0.1)	115	0.15	0.195
Cobalt	ug/L		50	100		1000				50		59	0.7	1.12	9	0.3	0.4	115	1	1.53
Chromium	ug/L	only as III and VI	100	1000		1000	50			50	50	76	0.3	1.7	20	0.3	0.57	107	0.25	2
Copper	ug/L	1.4	200	5000		400-5000	1000		1mg/L tainting of fish flesh	1.4	2000	121	3	5	9	2.9	4.88	115	4	6
Iron	ug/L		200	10000		n/a	300			200	300	121	39	74.2	10	20	35.3	115	139	188.2
Mercury	ug/L	0.6	2	2		2	1			0.6	1	76	0.005	0.025	20	0.005	0.15	62	0.005	0.05
Manganese	ug/L	1900	200	10000		n/a	100		Table 5.2.3 - 100mg/L	100	100	60	31	132.45	9	21.5	38.38	115	20.5	77.26
Molybdenum	ug/L		10	50		150				10	50	59	1.3	2.58	9	0.9	1.28	115	2	3
Nickel	ug/L	11	200	2000		1000			20	11	20	121	2.8	4	20	2	3	115	2.6	4
Lead	ug/L	3.4	2000	5000		100				3.4	10	76	0.1	0.3	9	0.1	0.1	115	0.15	1.365
Strontium	ug/L											NM	NM	NM	9	96	126.8	NM	NM	NM
Selenium	ug/L	11	20	50		20				11	10	76	0.2	0.38	9	0.3	0.3	115	0.3	1.02
Sulphur	ug/L								No GV - however section 4.3.3.4 suggests concentrations of up to 1000mg/L have no adverse impact on stock.	1000000		NM	NM	NM	NM	NM	NM	22	30100	35490
Vanadium	ug/L	ID	100	500		n/a				100		53	ALL BLD (<0.5)	ALL BLD (<0.5)	4	ALL BLD (0.5)	ALL BLD (0.5)	53	ALL BLD (0.5)	ALL BLD (0.5)
Zinc	ug/L	8	2000	5000		20000				8	3000	121	21	32.4	9	20	25.6	115	39	60.3
Herbicides																				
2,4-D	ug/L	280						100		100	200	5	ALL BLD (<5)	ALL BLD (<5)	9	ALL BLD (<0.1)	ALL BLD (<5)	5	ALL BLD (<5)	ALL BLD (<5)
Triclorpyr	ug/L							20		20		5	ALL BLD (<5)	ALL BLD (<5)	9	ALL BLD (<0.1)	ALL BLD (<5)	5	ALL BLD (<5)	ALL BLD (<5)
Amitrol	ug/L				2			1		1	9	1	ALL BLD (<0.5)	ALL BLD (<0.5)	NM	NM	NM	1	ALL BLD (<0.5)	ALL BLD (<0.5)
Atrazine	ug/L	13								13	20	5	ALL BLD (<3)	ALL BLD (<3)	9	ALL BLD (<0.5)	ALL BLD (<5)	5	ALL BLD (<3)	ALL BLD (<3)
Dichlobenil	ug/L							20		20	10	1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	1	ALL BLD (<0.01)	ALL BLD (<0.01)
Dicamba	ug/L							300		300	100	5	ALL BLD (<5)	y	9	ALL BLD (<5)	ALL BLD (<5)	5	ALL BLD (<5)	ALL BLD (<5)
Diquat	ug/L	1.4						10		1.4	7	10	ALL BLD (<5)	ALL BLD (<5)	21	ALL BLD (<0.5)	ALL BLD (<5)	10	ALL BLD (<5)	ALL BLD (<5)
Diuron	ug/L				2			40		2	20	1	ALL BLD (<3)	ALL BLD (<3)	NM	NM	NM	1	ALL BLD (<3)	ALL BLD (<3)
Glyphosate	ug/L	1200						200		200	1000	9	ALL BLD (<10)	ALL BLD (<10)	21	ALL BLD (<10)	ALL BLD (<5)	9	ALL BLD (<10)	ALL BLD (<10)
Hexazione	ug/L							600		600	400	1	ALL BLD (<2)	ALL BLD (<2)	NM	NM	NM	1	ALL BLD (<2)	ALL BLD (<2)
Molinate	ug/L	3.4						1		1	4	5	ALL BLD (<0.1)	ALL BLD (<0.1)	9	ALL BLD (<0.1)	ALL BLD (<0.1)	5	ALL BLD (<0.1)	ALL BLD (<0.1)
Metasulfuron	ug/L										10	8	ALL BLD (<5)	ALL BLD (<5)	21	ALL BLD (<5)	ALL BLD (<5)	8	ALL BLD (<5)	ALL BLD (<5)
Paraquat	ug/L							40		40	20	10	ALL BLD (<5)	ALL BLD (<5)	21	ALL BLD (<5)	ALL BLD (<5)	10	ALL BLD (<5)	ALL BLD (<5)
Picloram	ug/L							30		30	300	1	ALL BLD (<5)	ALL BLD (<5)	NM	NM	NM	1	ALL BLD (<5)	ALL BLD (<5)
2,4,5-T	ug/L	36						2		2	100	1	ALL BLD (<5)	ALL BLD (<5)	NM	NM	NM	1	ALL BLD (<5)	ALL BLD (<5)

Analyte	Unit of measurement	ANZECC (2000)								Adopted guideline values		Monitoring results[3]								
												St Marys			Rouse Hill			Penrith		
		Table 3.4.1	ANZECC Table 4.2.10 LTV irrigation	ANZECC Table 4.2.10 STV irrigation	ANZECC Table 4.2.12	ANZECC Table 4.3.2 Livestock Drinking	ANZECC Table 5.2.3	ANZECC Table 5.2.4	Other	ANZECC (2000)[4]	ADWG	No. of samples	Median	95%	No. of samples	**Median**	**95%**	No. of samples	**Median**	**95%**
Pharmaceuticals and estrogenic compounds																				
b-Estradiol	ng/L											3	ALL BLD (<10)	ALL BLD (<10)	3	ALL BLD (<10)	ALL BLD (<10)	NM	NM	NM
Ethynylestradiol	ng/L											3	ALL BLD (<5)	ALL BLD (<5)	3	ALL BLD (<5)	ALL BLD (<5)	NM	NM	NM
Estrone	ng/L											3	ALL BLD (<5)	ALL BLD (<5)	3	ALL BLD (<5)	ALL BLD (<5)	NM	NM	NM
Disinfection by-products																				
Bromodichloromethane	ug/L											NM	NM	NM	7	49.7	66.9	NM	NM	NM
Bromoform	ug/L											NM	NM	NM	7	1.5	1.91	NM	NM	NM
Trihalomethanes	ug/L										250	NM	NM	NM	9	192	227.2	NM	NM	NM
Chloroform	ug/L											NM	NM	NM	7	116	138.7	NM	NM	NM
Dibromochloromethane	ug/L											NM	NM	NM	7	15.7	23.98	NM	NM	NM
Chlorophenol (2)	ug/L	490								490	300	NM	NM	NM	9	ALL BLD (<10)	ALL BLD (<10)	NM	NM	NM
Dichlorophenol (2,4)	ug/L	160								160	200	NM	NM	NM	8	ALL BLD (<10)	ALL BLD (<10)	NM	NM	NM
Trichlorophenol (2,4,6)	ug/L	20								20	20	NM	NM	NM	9	ALL BLD (<10)	ALL BLD (<10)	NM	NM	NM
Bromoacetic Acid	ug/L											NM	NM	NM	7	0.5	2.7	NM	NM	NM
Bromochloroacetic Acid	ug/L											NM	NM	NM	6	17	26.25	NM	NM	NM
Bromodichloroacetic Acid	ug/L											NM	NM	NM	6	32.5	42.25	NM	NM	NM
Chlorodibromoacetic Acid	ug/L											NM	NM	NM	6	7	15.25	NM	NM	NM
Chloroacetic Acid	ug/L										150	NM	NM	NM	9	2.5	6.8	NM	NM	NM
Dibromoacetic Acid	ug/L											NM	NM	NM	6	3.5	5.75	NM	NM	NM
Dichloroacetic Acid	ug/L										100	NM	NM	NM	9	42	55.2	NM	NM	NM
Tribromoacetic Acid	ug/L											NM	NM	NM	6	ALL BLD (<1)	ALL BLD (<1)	NM	NM	NM
Trichloroacetic acid	ug/L										100	1	ALL BLD (<1)	ALL BLD (<1)	9	51	71.2	1	ALL BLD (<1)	ALL BLD (<1)
Industrial and Domestic Chemicals																				
Benzene	ug/L	950								950	1	NM	NM	NM	9	ALL BLD (<1)	ALL BLD (<1)	NM	NM	NM
Ethylbenzene	ug/L								Table 4.4.5 - 250ug/L	250	300	NM	NM	NM	9	ALL BLD (<1)	ALL BLD (<1)	NM	NM	NM
Styrene	ug/L								Table 4.4.5 - 250ug/L	250	30	NM	NM	NM	9	ALL BLD (<1)	ALL BLD (<1)	NM	NM	NM
Toluene	ug/L								Table 4.4.5 - 250ug/L	250	800	NM	NM	NM	9	ALL BLD (<1)	ALL BLD (<1)	NM	NM	NM
Xylene (m+p)	ug/L										20	1	BLD (<1)	BLD (<1)	9	ALL BLD (<1)	ALL BLD (<1)	1	BLD (<1)	BLD (<1)
Xylene (o)	ug/L	350								350	20	1	BLD (<1)	BLD (<1)	9	ALL BLD (<1)	ALL BLD (<1)	1	BLD (<1)	BLD (<1)
Polychlorinated Biphenols	ug/L											41	ALL BLD (<0.1)	ALL BLD (<0.1)	NM	NM	NM	NM	NM	NM
Nonyl Phenol Ethoxylate	ug/L											3	ALL BLD (<5)	ALL BLD (<5)	3	ALL BLD (<5)	ALL BLD (<5)	NM	NM	NM
Pesticides																				
Benzene Hexachloride (Alpha)	ug/L							1		1		1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	NM	NM	NM
Aldrin	ug/L									1	0.3	42	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	41	ALL BLD (<0.01)	ALL BLD (<0.1)
Benzene Hexachloride (Beta)	ug/L											1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	NM	NM	NM
Benzene Hexachloride (Delta)	ug/L											1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	NM	NM	NM
DDD	ug/L											1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	NM	NM	NM
DDE	ug/L							3		3		42	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	41	ALL BLD (<0.01)	ALL BLD (<0.01)
DDT	ug/L	0.01						1		0.01	9	42	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	41	ALL BLD (<0.01)	ALL BLD (<0.01)
Dieldrin	ug/L							1		1	0.3	42	0.005	0.005	NM	NM	NM	41	ALL BLD (<0.01)	ALL BLD (<0.01)
Endrin	ug/L	0.02						40		0.02		1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	NM	NM	NM
Endosulphan	ug/L	0.2								0.2	20	42	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	41	ALL BLD (<0.01)	ALL BLD (<0.01)
Hexachlorobenzene	ug/L							3		3		1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	NM	NM	NM

Analyte	Unit of measurement	ANZECC (2000)								Adopted guideline values		Monitoring results[3]								
												St Marys			Rouse Hill			Penrith		
		Table 3.4.1	ANZECC Table 4.2.10 LTV irrigation	ANZECC Table 4.2.10 STV irrigation	ANZECC Table 4.2.12	ANZECC Table 4.3.2 Livestock Drinking	ANZECC Table 5.2.3	ANZECC Table 5.2.4	Other	ANZECC (2000)[4]	ADWG	No. of samples	Median	95%	No. of samples	**Median**	**95%**	No. of samples	**Median**	**95%**
Heptachlor	ug/L	0.09								0.09	0.3	42	ALL BLD (<0.005)	ALL BLD (<0.005)	NM	NM	NM	41	ALL BLD (<0.005)	ALL BLD (<0.005)
Heptachlor-epoxide	ug/L											1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	NM	NM	NM
Benzene Hexachloride (Gamma) - Lindane	ug/L										10	42	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	41	ALL BLD (<0.01)	ALL BLD (<0.01)
Methoxychlor	ug/L										300	1	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	NM	NM	NM
Organochlorine Pesticides (Total)	ug/L							6		6		10	ALL BLD (<0.2)	ALL BLD (<0.2)	20	ALL BLD (<0.2)	ALL BLD (<0.2)	NM	NM	NM
Chlordane (Total)	ug/L	0.08						2		0.08	2	42	ALL BLD (<0.01)	ALL BLD (<0.01)	NM	NM	NM	41	ALL BLD (<0.01)	ALL BLD (<0.01)
Chlorpyrifos	ug/L	0.01						30		0.01	10	42	ALL BLD (<0.05)	ALL BLD (<0.05)	NM	NM	NM	40	39 of 40 samples BLD (0.05). One value 0.39	39 of 40 samples BLD (0.05). One value 0.39
Demeton (Dem S-Methyl)	ug/L							10		10		1	ALL BLD (<0.1)	ALL BLD (<0.1)	NM	NM	NM	NM	NM	NM
Diazinon	ug/L	0.01						10		0.01	4	121	ALL BLD (<0.1)	ALL BLD (<0.1)	NM	NM	NM	41	ALL BLD (<0.1)	ALL BLD (<0.1)
Guthion (Methyl Azinphos)	ug/L	0.02								0.02	30	1	ALL BLD (<0.1)	ALL BLD (<0.1)	NM	NM	NM	NM	NM	NM
Malathion	ug/L	0.05								0.05	70	42	ALL BLD (<0.05)	ALL BLD (<0.05)	NM	NM	NM	40	ALL BLD (<0.05)	ALL BLD (<0.05)
Organophosphate Pesticides (Total)	ug/L							30		30		5	ALL BLD (<2.5)	ALL BLD (<2.5)	9	ALL BLD (<2.5)	ALL BLD (<2.5)	NM	NM	NM
Parathion	ug/L	0.004								0.004	20	42	ALL BLD (<0.1)	ALL BLD (<0.1)	NM	NM	NM	40	ALL BLD (<0.1)	ALL BLD (<0.1)
Microbial																				
Adenovirus	MPN IU,-											NM	NM	NM	NM	NM	NM	20	5 of 21 samples (none since March 2013)	
Cryptosporidium	Oocysts,-											NM	NM	NM	NM	NM	NM	21	Detected in 2 of 21	
Giardia	Cysts,-											NM	NM	NM	NM	NM	NM	21	All BLD (<1)	
Enterovirus	Orgs/50L											NM	NM	NM	NM	NM	NM	20	5 of 20 samples (none since March 2013)	

Notes:

1. BLD - Below Detection Limit.
2. Value in brackets shows detection limit.
3. Monitoring data taken from 1 January 2011 to 31 December 2020.
4. Adopted ANZECC (2000) value is the most stringent of those listed.
5. NM - not measured

Legend:

- Results are above guideline value
- Results are below level of detection, but level of detection is above guideline value
- Detected but no guideline value
- Results are below level of detection and/or below guideline value
- No results, or no guideline value

Appendix C Scenario results

Appendix C1 South Creek releases

South Creek WQRM

Total Nitrogen (mg/L)

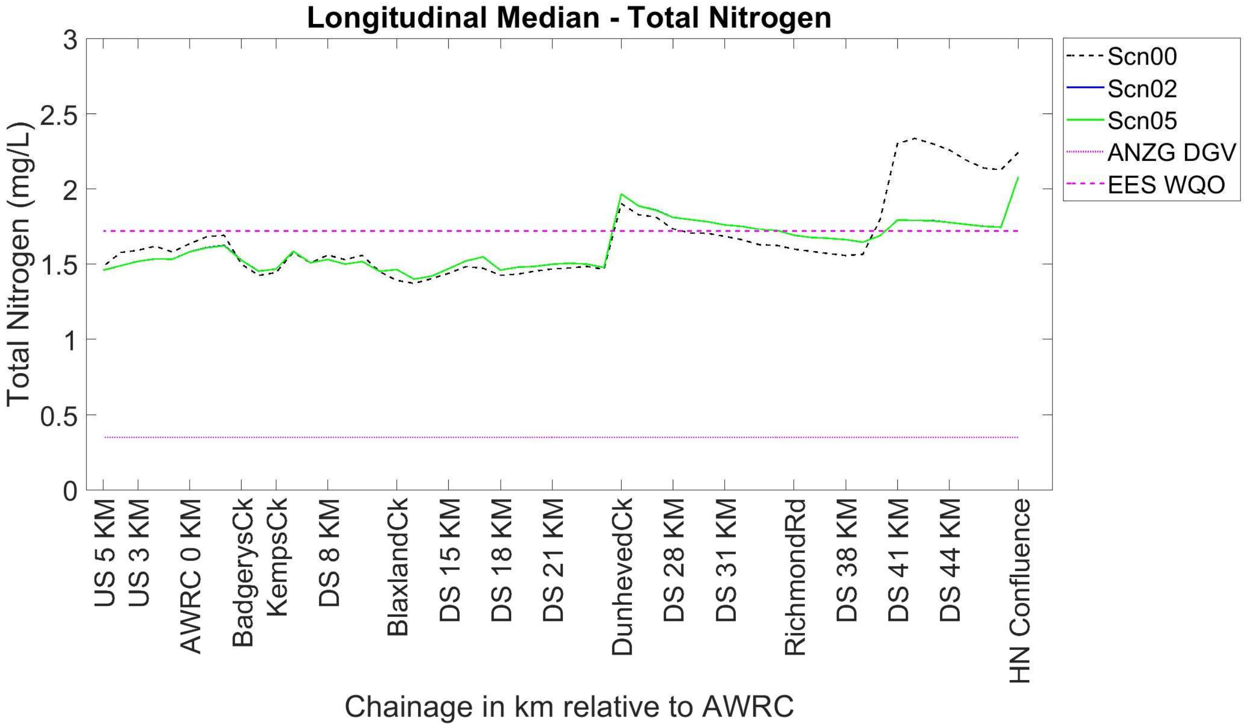
Scenario 05 - dry year

--> Longitudinal plots

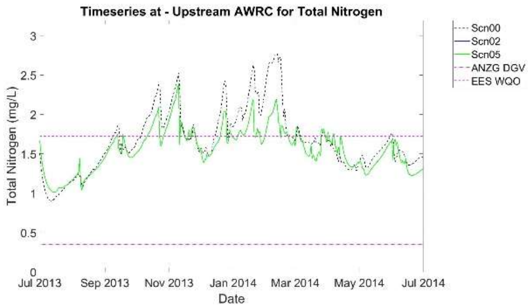
--> Timeseries plots at geographic markers and gauge locations

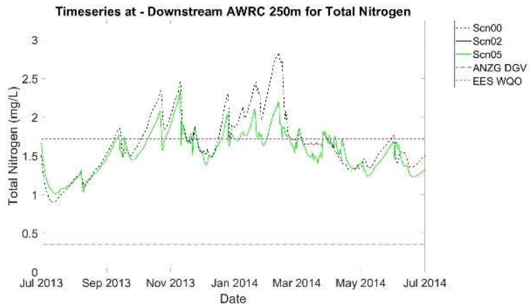
--> Box plots at geographic markers and gauge locations

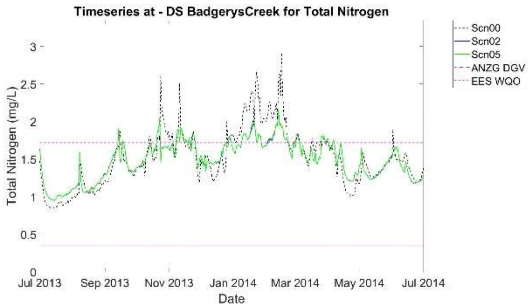
Longitudinal plot

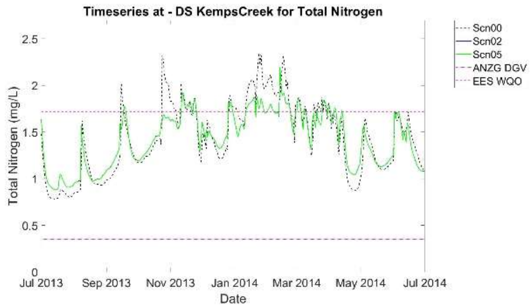


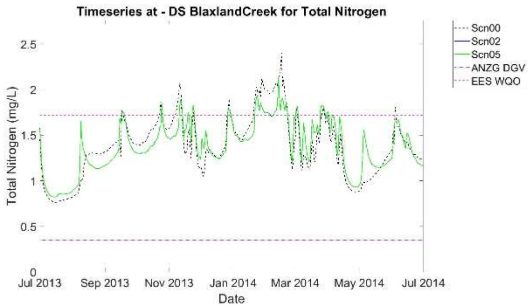
Timeseries plots

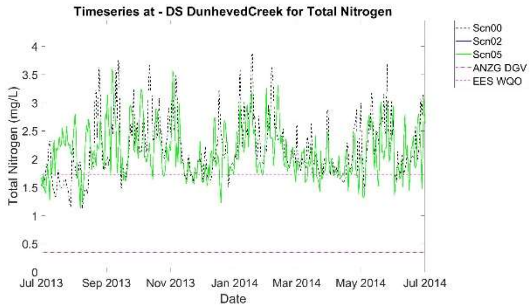


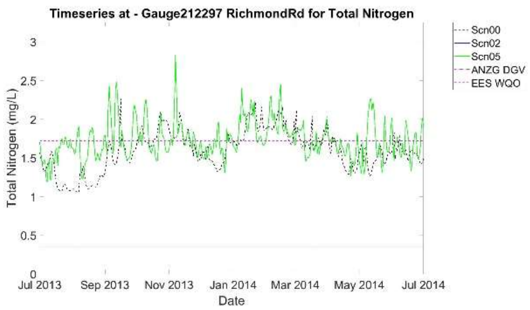


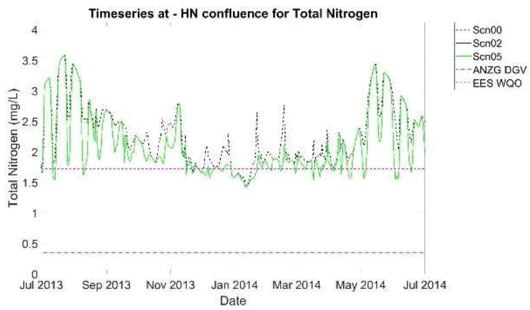




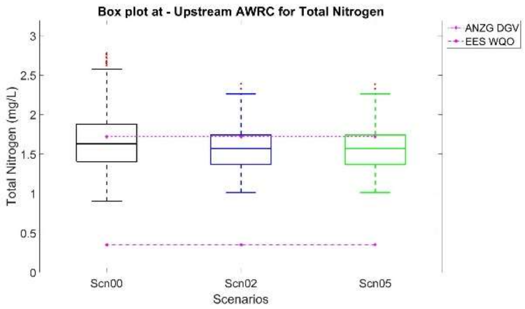


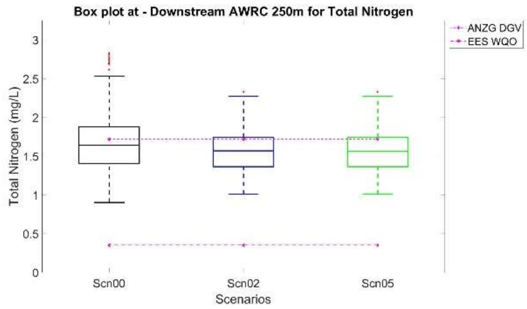


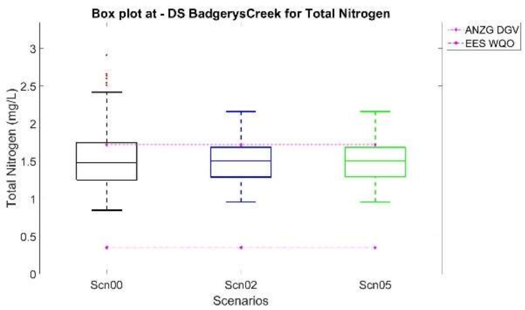


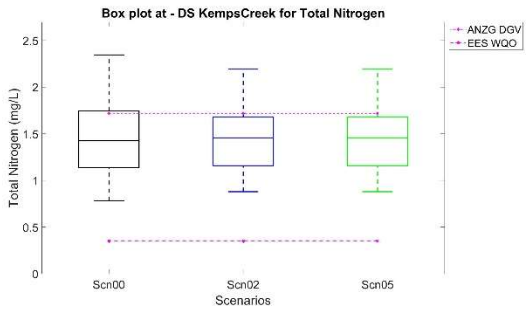


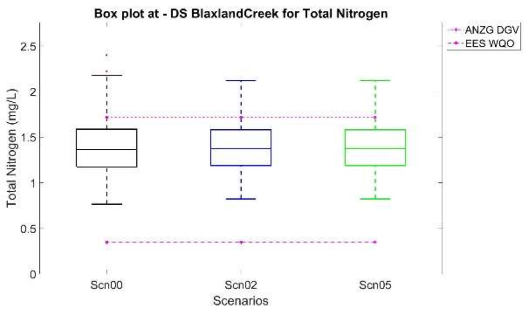
Box plots

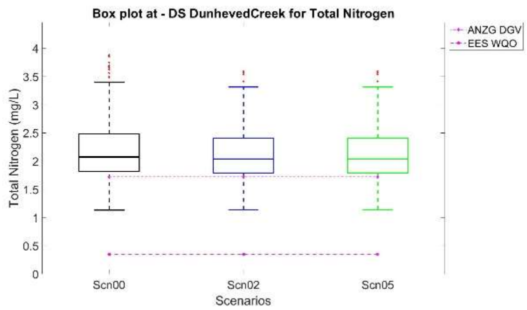

Box plot at - Upstream AWRC for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

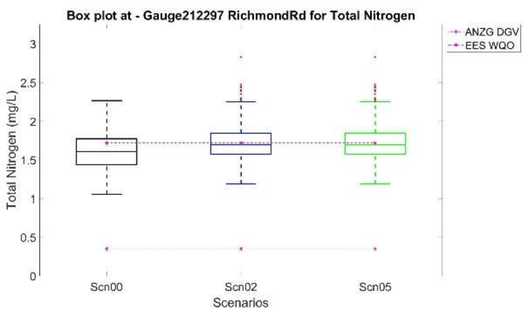

Box plot at - Downstream AWRC 250m for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

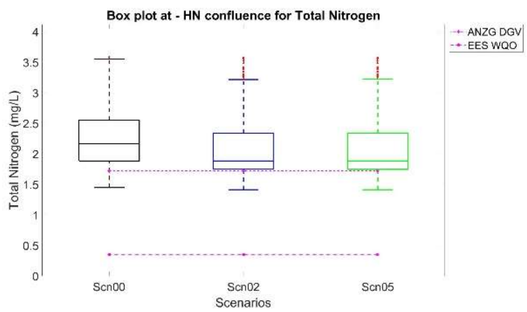

Box plot at - DS BadgerysCreek for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Ammonia (mg/L)

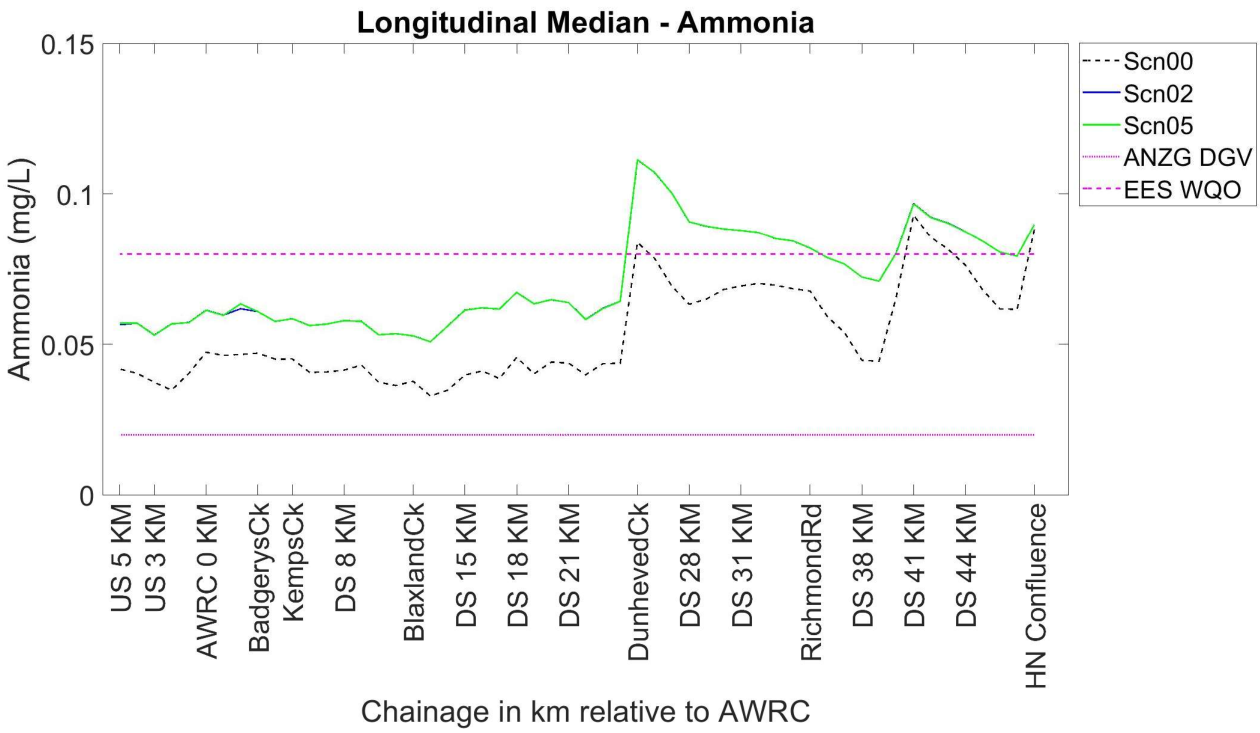
Scenario 05 - dry year

--> Longitudinal plots

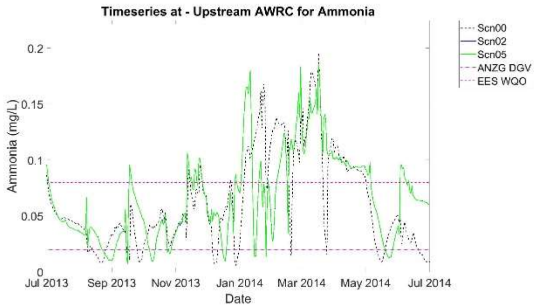
--> Timeseries plots at geographic markers and gauge locations

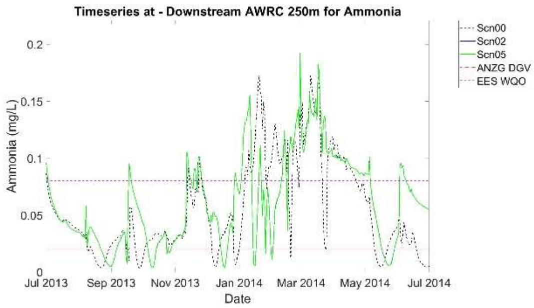
--> Box plots at geographic markers and gauge locations

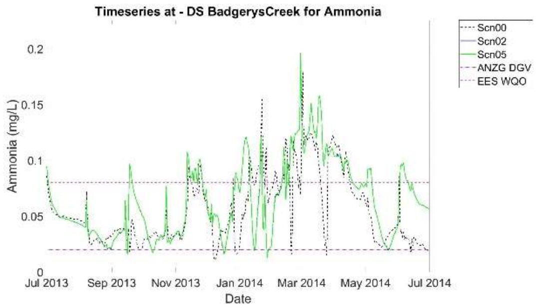
Longitudinal plot

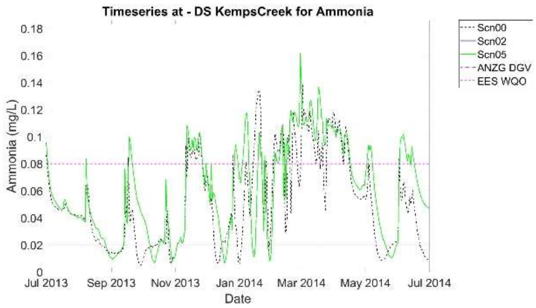


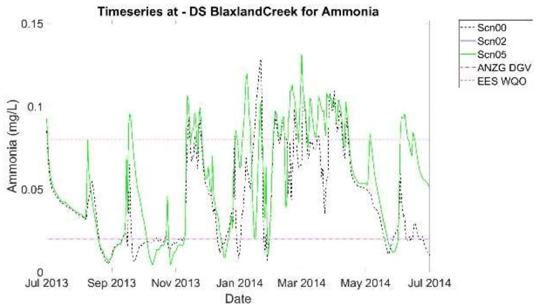
Timeseries plots

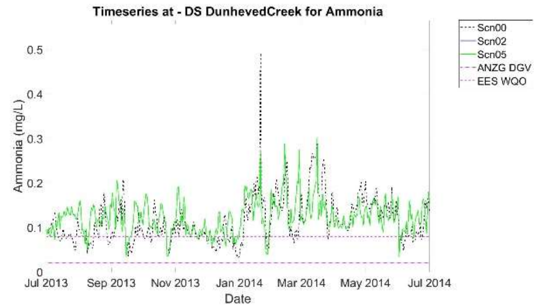


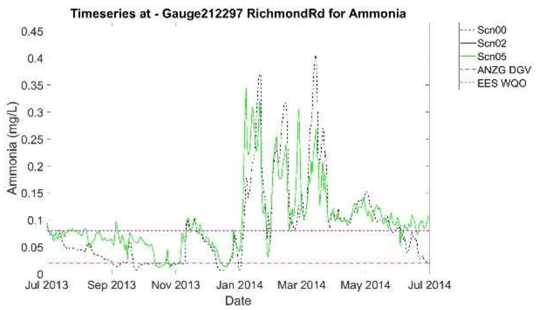


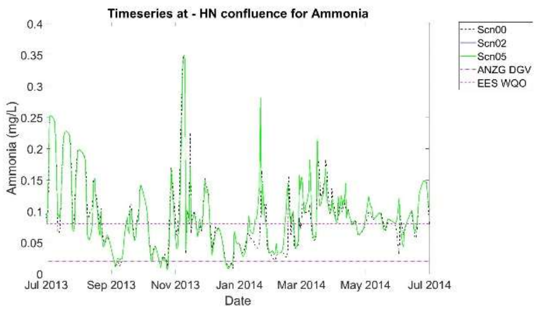




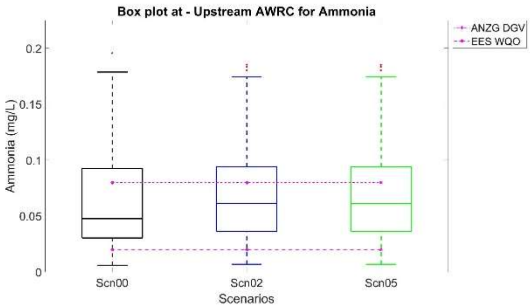


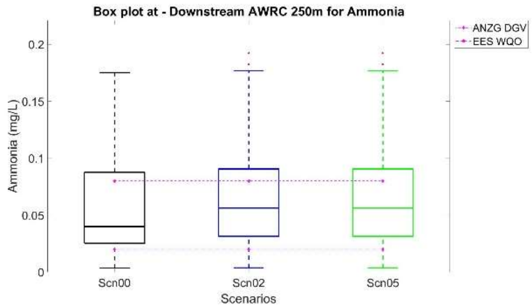


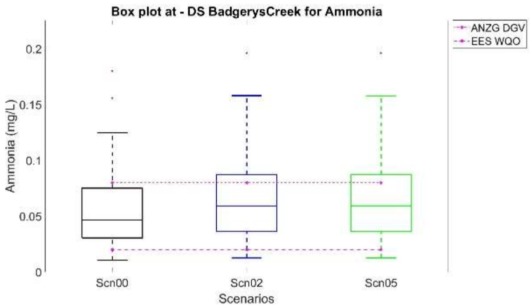


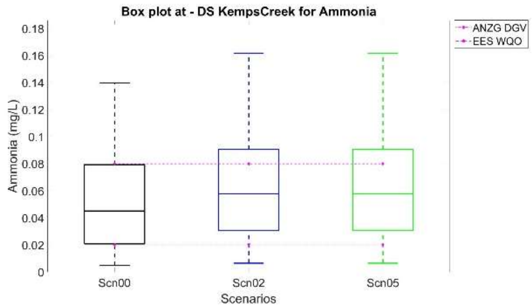


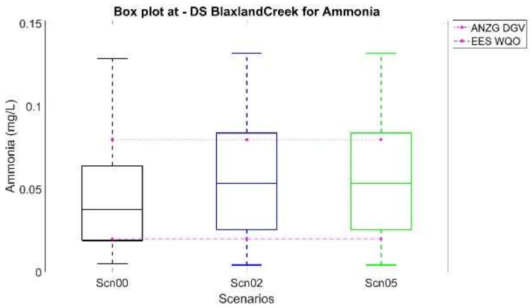
Box plots

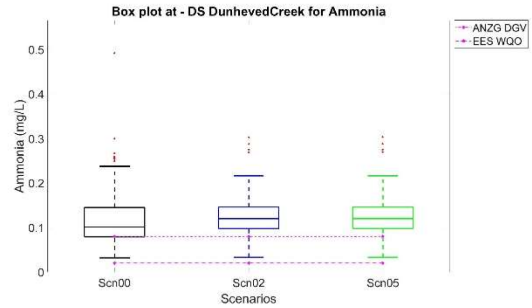

Box plot at - Upstream AWRC for Ammonia
Ammonia (mg/L)
0.2
0.15
0.1
0.05
0
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

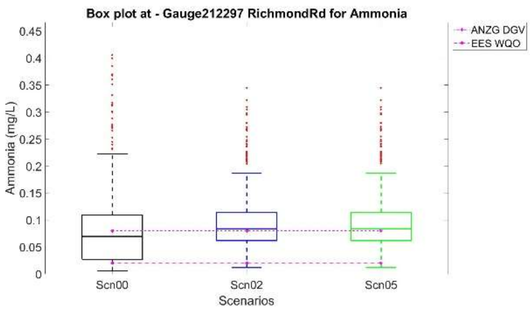

Box plot at - Downstream AWRC 250m for Ammonia
Ammonia (mg/L)
0.2
0.15
0.1
0.05
0
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

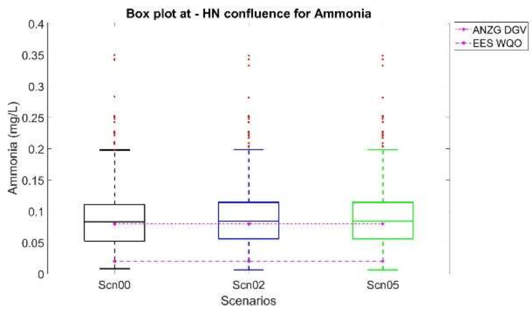

Box plot at - DS BadgerysCreek for Ammonia
Ammonia (mg/L)
0.2
0.15
0.1
0.05
0
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Ammonia
Ammonia (mg/L)
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Ammonia
Ammonia (mg/L)
0.15
0.1
0.05
0
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Ammonia
Ammonia (mg/L)
0.5
0.4
0.3
0.2
0.1
0
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Ammonia
Ammonia (mg/L)
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Ammonia
Ammonia (mg/L)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

NOx (mg/L)

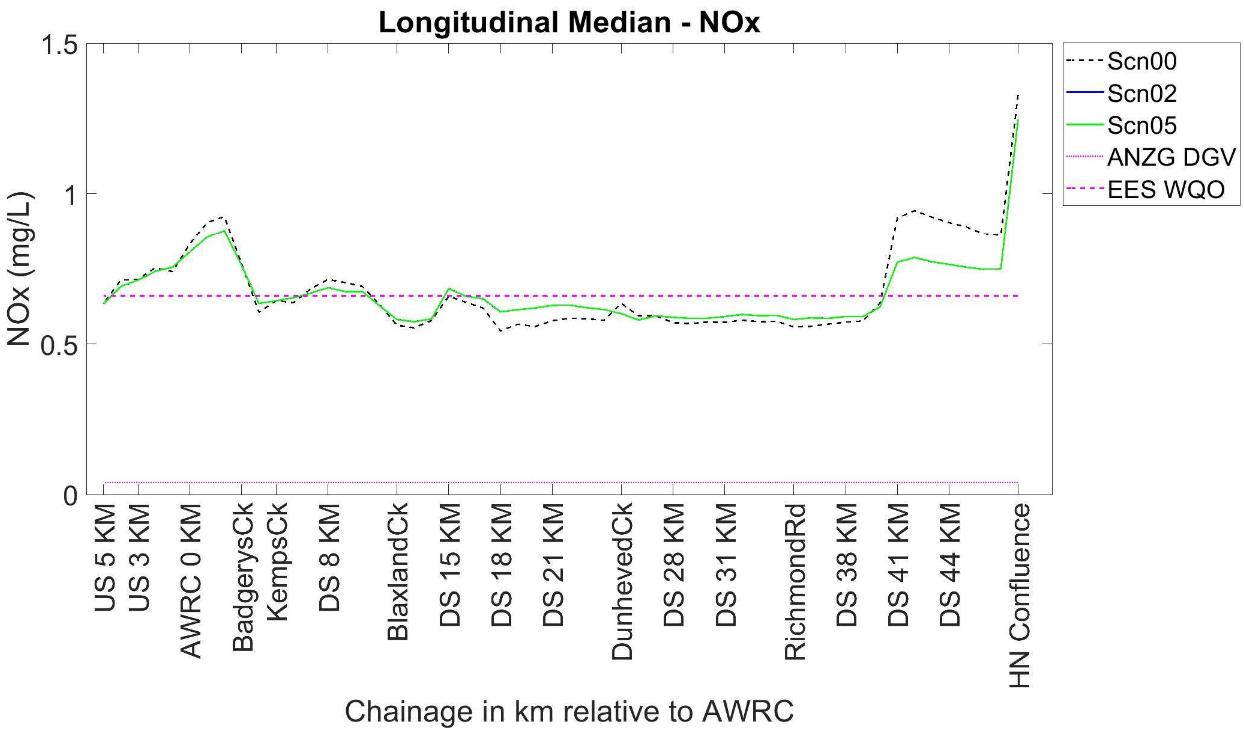
Scenario 05 - dry year

--> Longitudinal plots

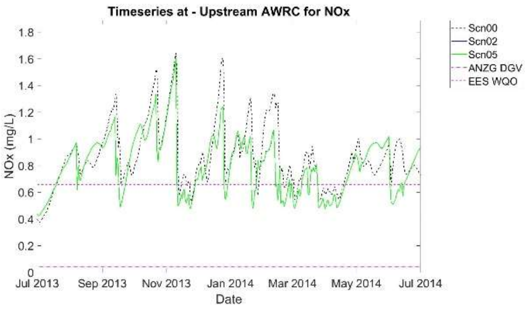
--> Timeseries plots at geographic markers and gauge locations

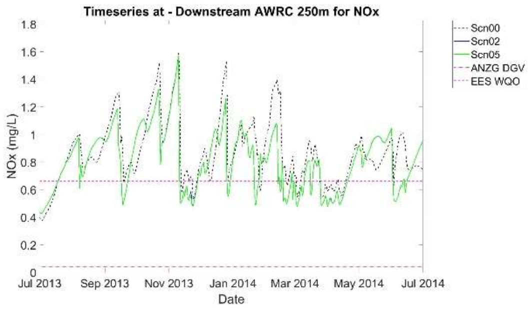
--> Box plots at geographic markers and gauge locations

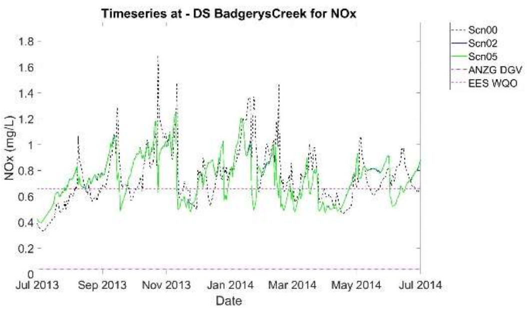
Longitudinal plot

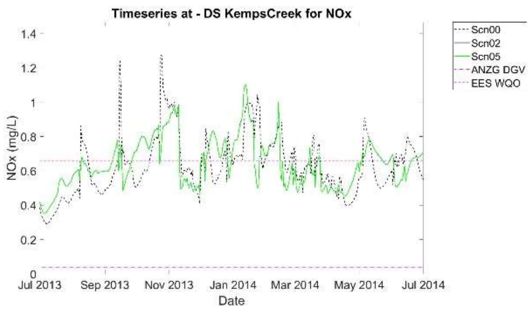


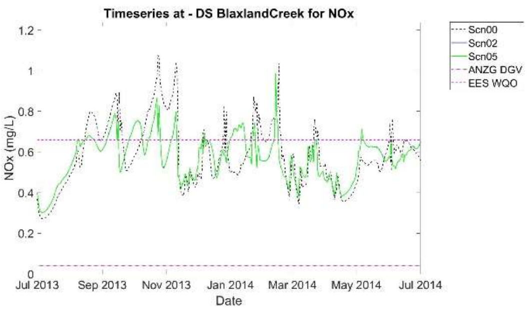
Timeseries plots

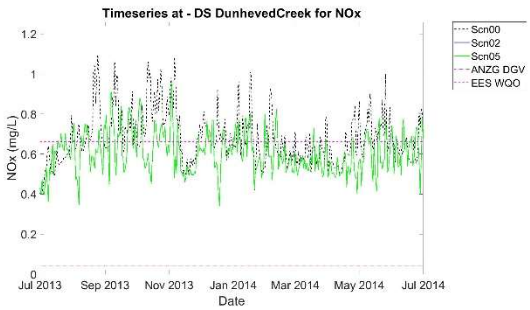


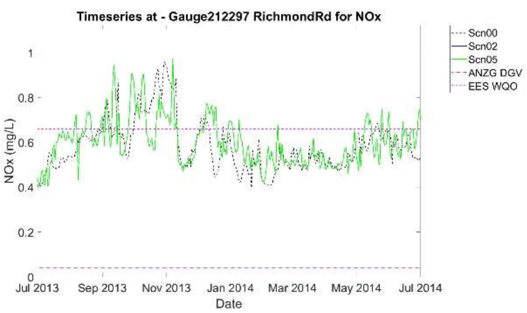


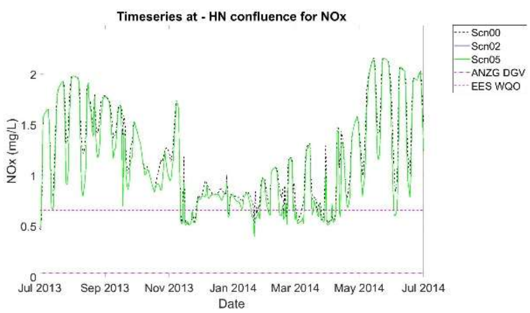




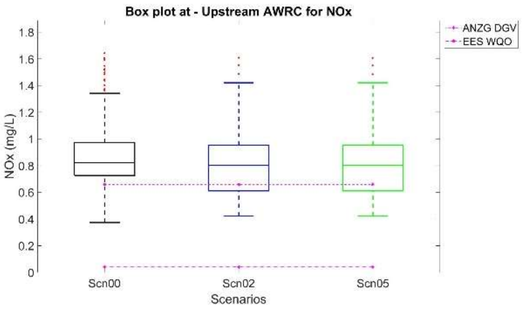


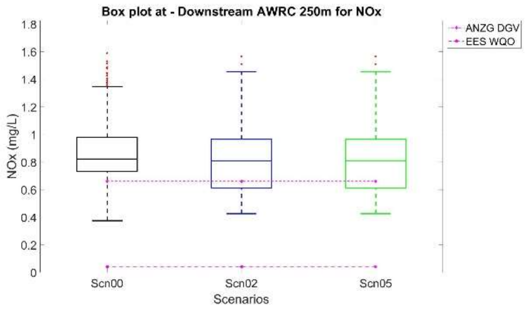


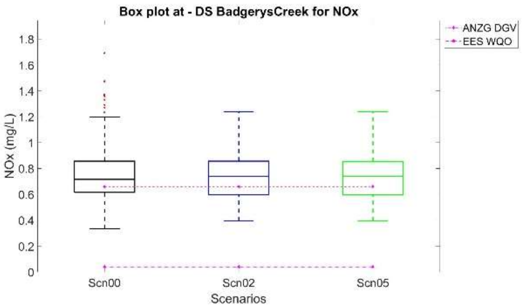


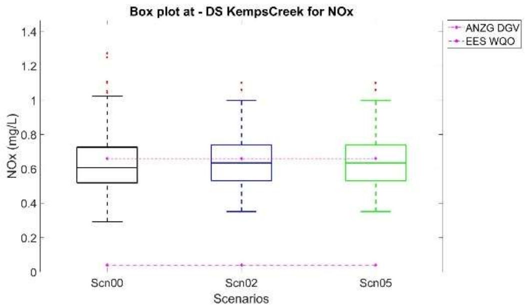


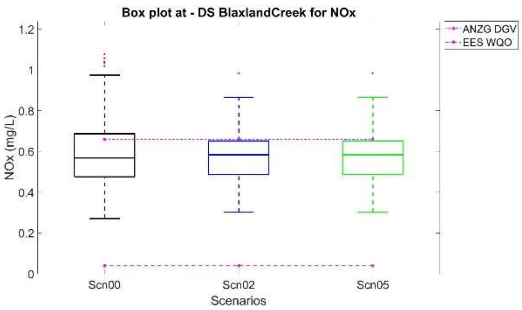
Box plots

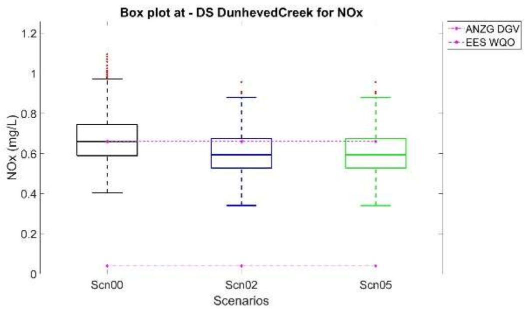

Box plot at - Upstream AWRC for NOx
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

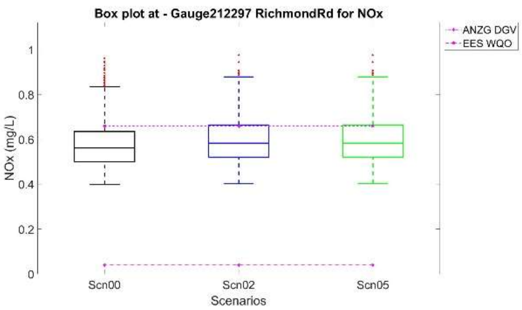

Box plot at - Downstream AWRC 250m for NOx
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

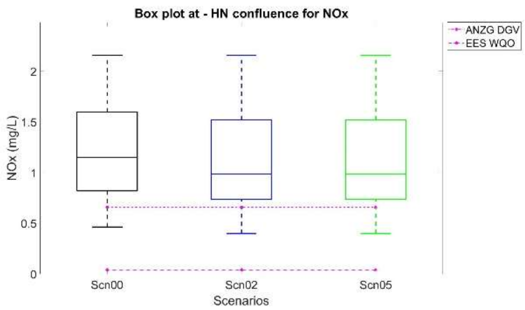

Box plot at - DS BadgerysCreek for NOx
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for NOx
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for NOx
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for NOx
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for NOx
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for NOx
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Total Phosphorus (mg/L)

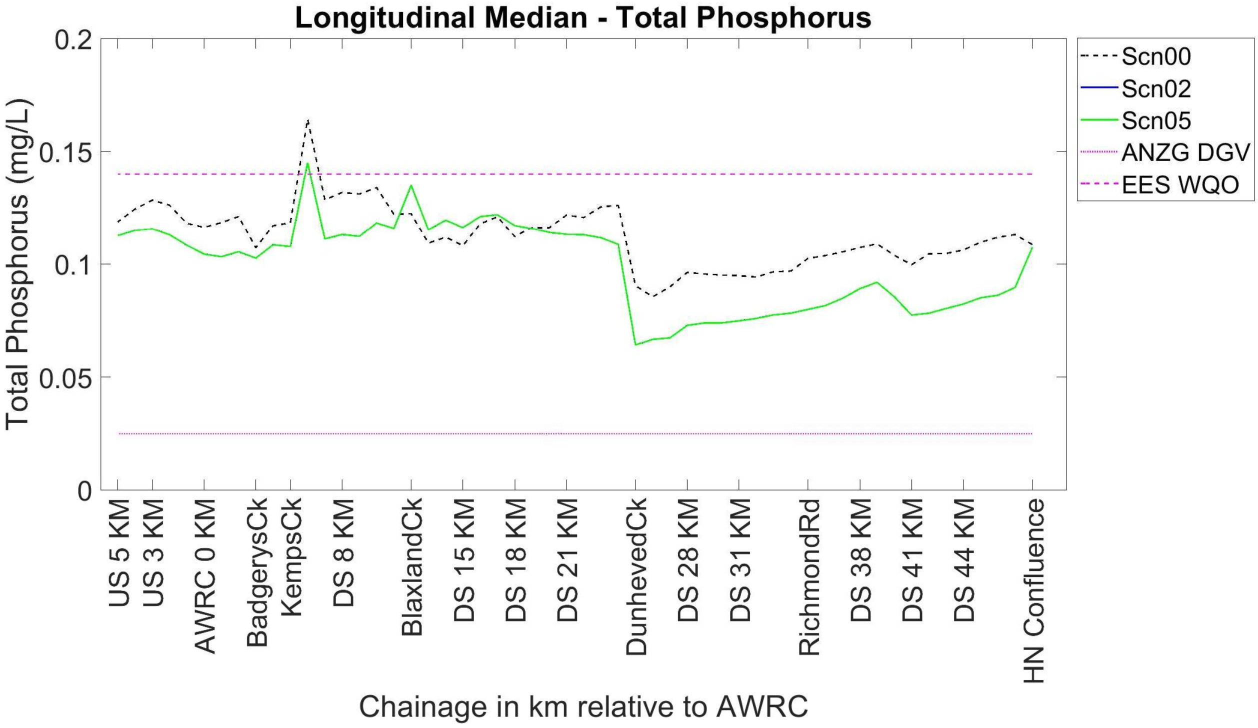
Scenario 05 - dry year

--> Longitudinal plots

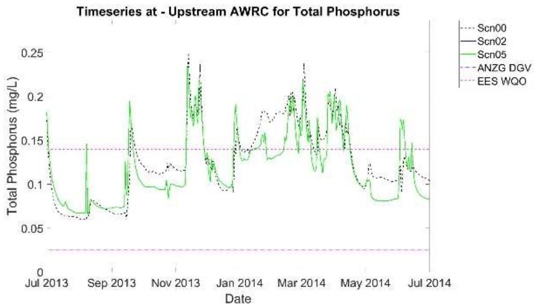
--> Timeseries plots at geographic markers and gauge locations

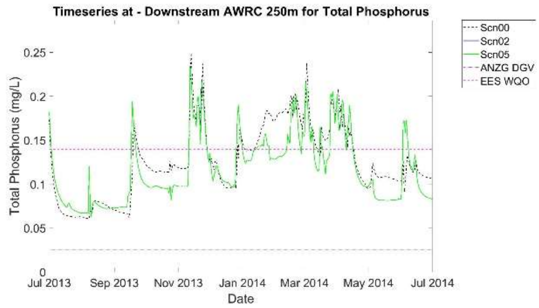
--> Box plots at geographic markers and gauge locations

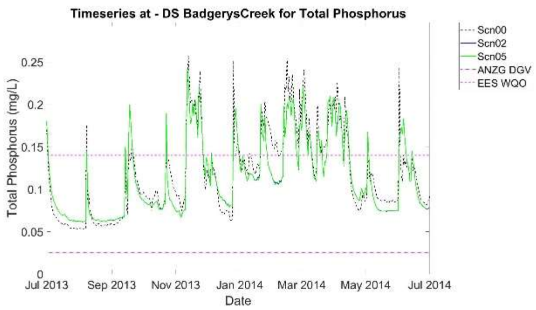
Longitudinal plot

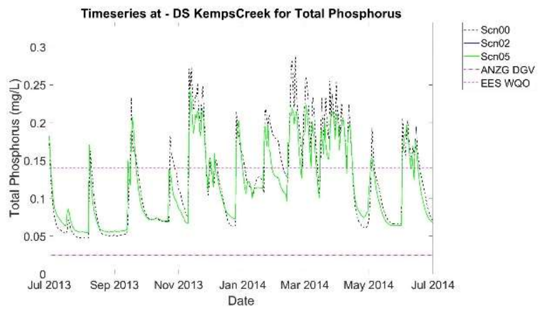


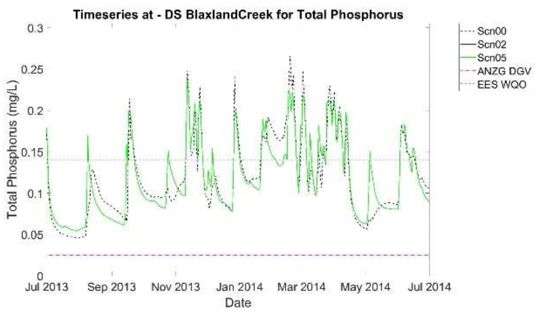
Timeseries plots

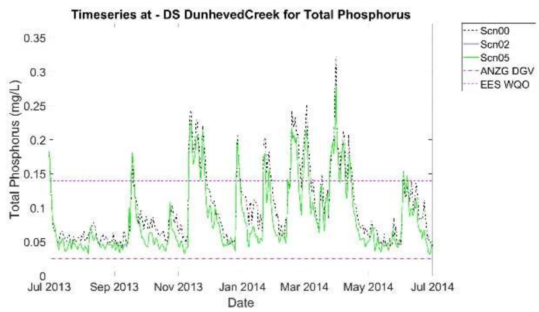


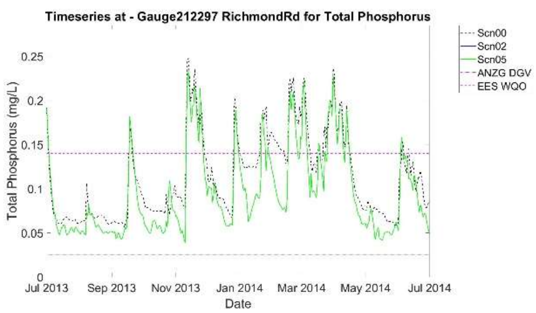


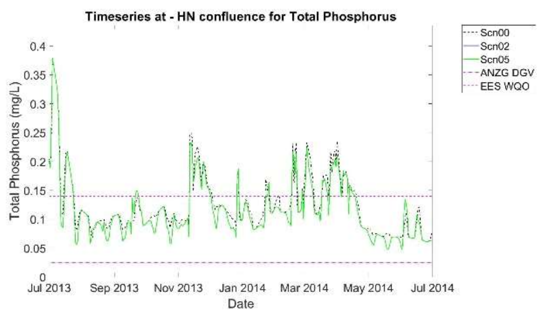




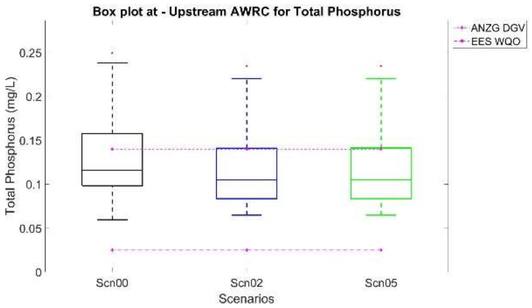


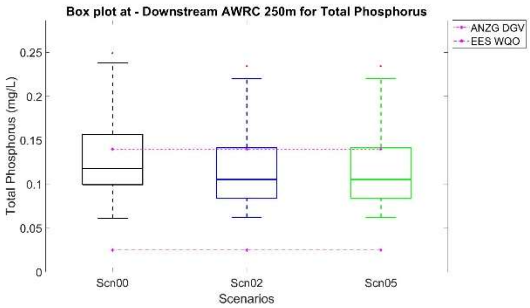


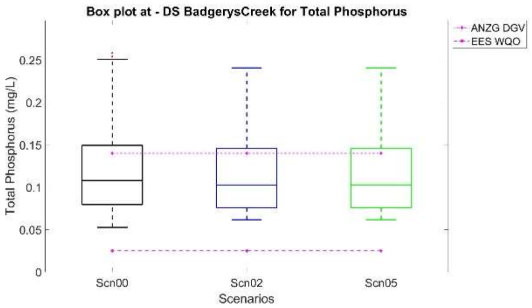


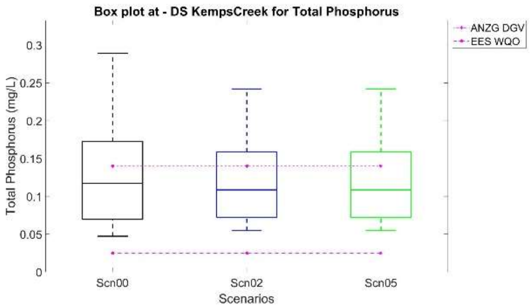


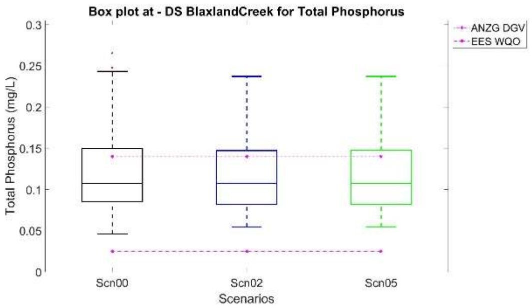
Box plots

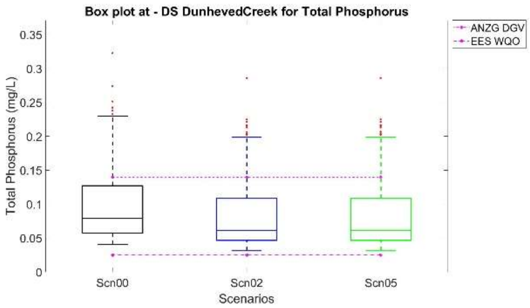

Box plot at - Upstream AWRC for Total Phosphorus
ANZG DGV
EES WQO
Total Phosphorus (mg/L)
Scn00
Scn02
Scn05
Scenarios

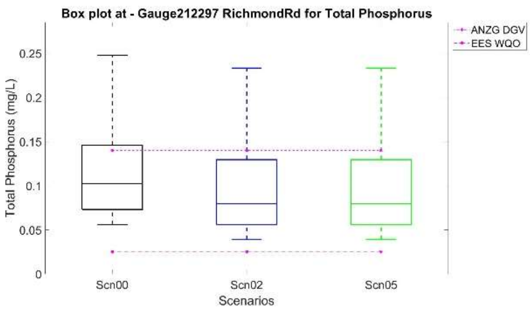

Box plot at - Downstream AWRC 250m for Total Phosphorus
ANZG DGV
EES WQO
Total Phosphorus (mg/L)
Scn00
Scn02
Scn05
Scenarios

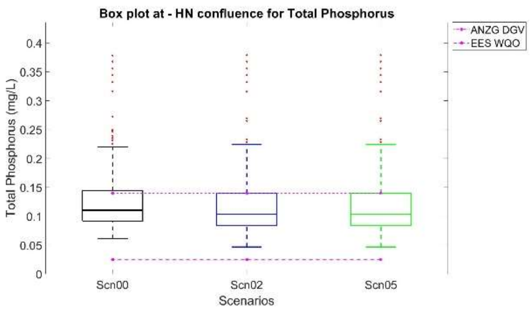

Box plot at - DS BadgerysCreek for Total Phosphorus
ANZG DGV
EES WQO
Total Phosphorus (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS KempsCreek for Total Phosphorus
ANZG DGV
EES WQO
Total Phosphorus (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for Total Phosphorus
ANZG DGV
EES WQO
Total Phosphorus (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for Total Phosphorus
ANZG DGV
EES WQO
Total Phosphorus (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for Total Phosphorus
ANZG DGV
EES WQO
Total Phosphorus (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for Total Phosphorus
ANZG DGV
EES WQO
Total Phosphorus (mg/L)
Scn00
Scn02
Scn05
Scenarios

South Creek WQRM

FRP (mg/L)

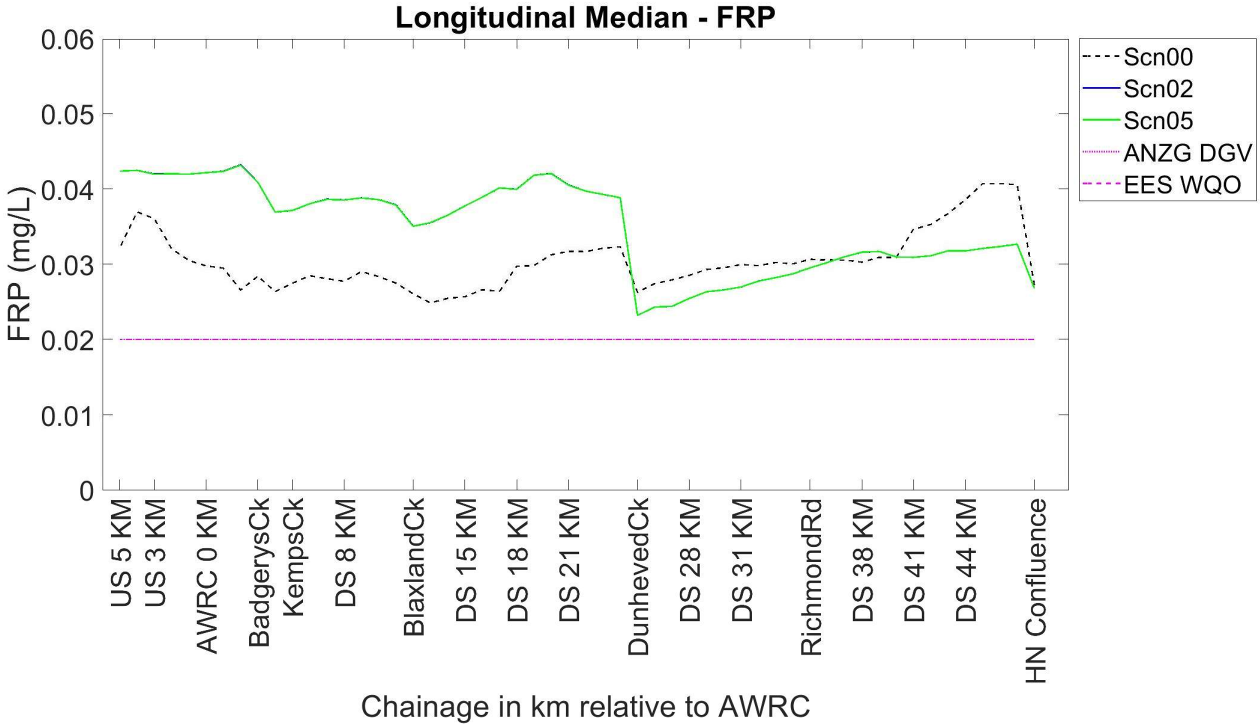
Scenario 05 - dry year

--> Longitudinal plots

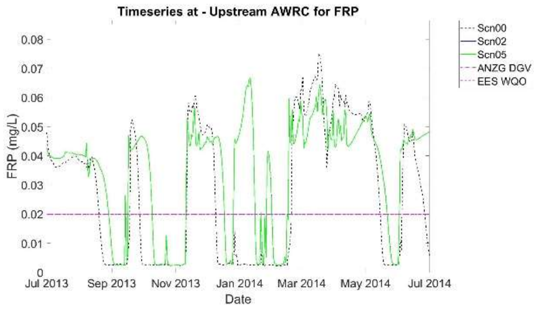
--> Timeseries plots at geographic markers and gauge locations

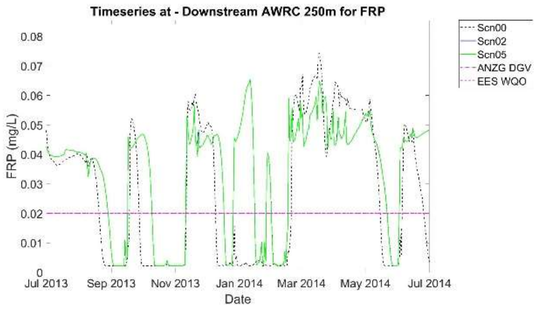
--> Box plots at geographic markers and gauge locations

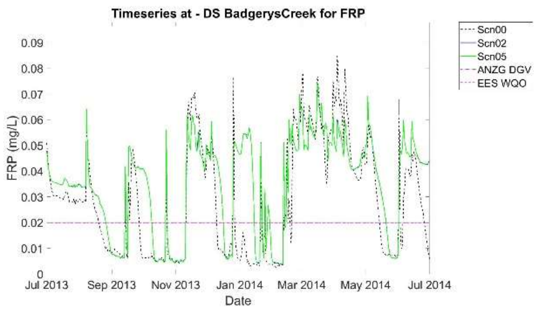
Longitudinal plot

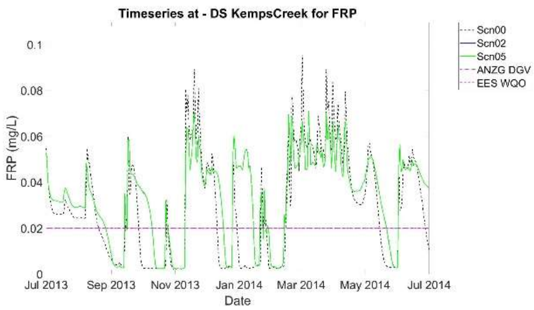


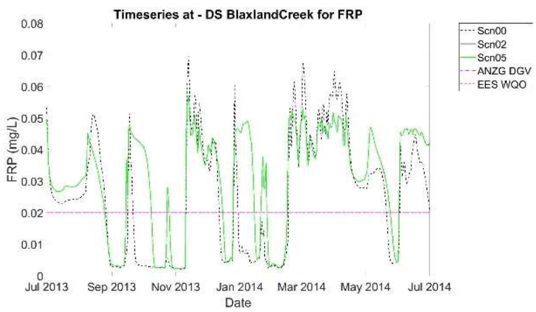
Timeseries plots

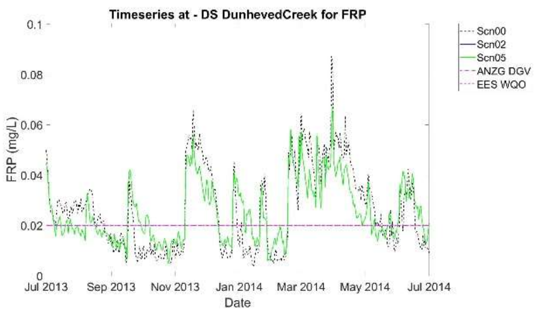


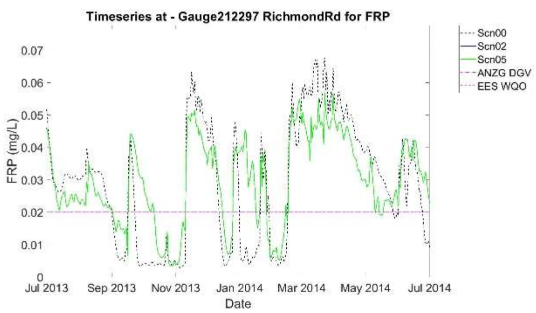


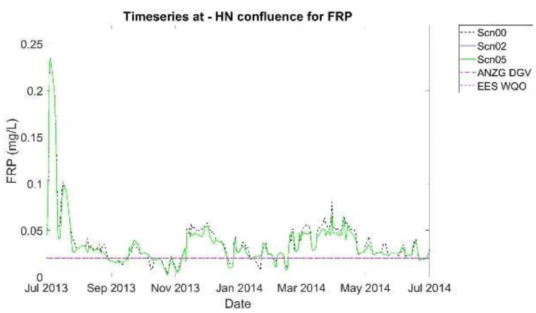




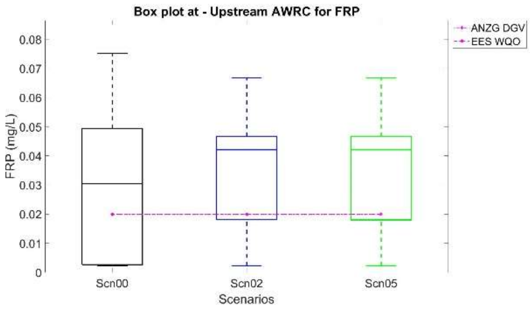


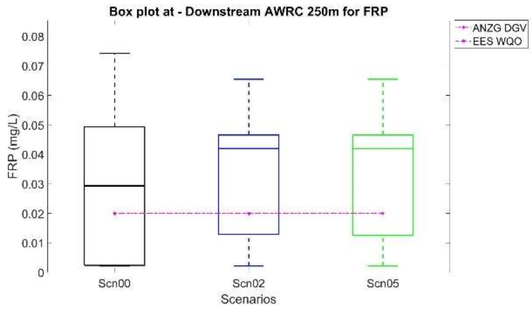


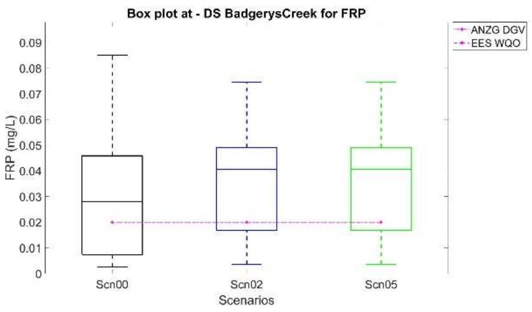


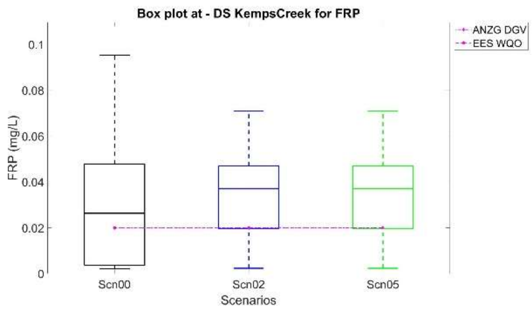


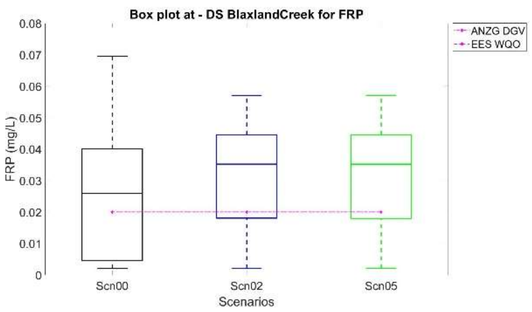
Box plots

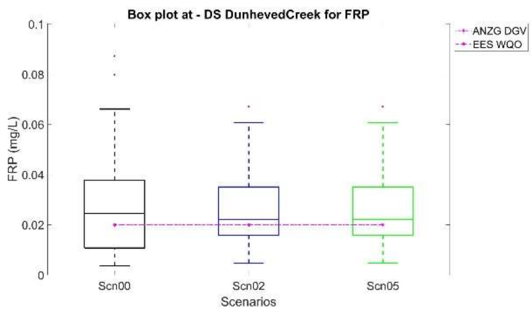

Box plot at - Upstream AWRC for FRP
ANZG DGV
EES WQO
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios

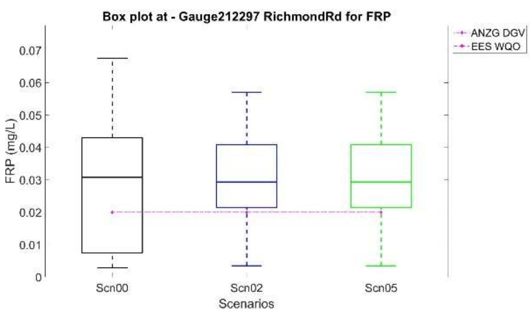

Box plot at - Downstream AWRC 250m for FRP
ANZG DGV
EES WQO
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios

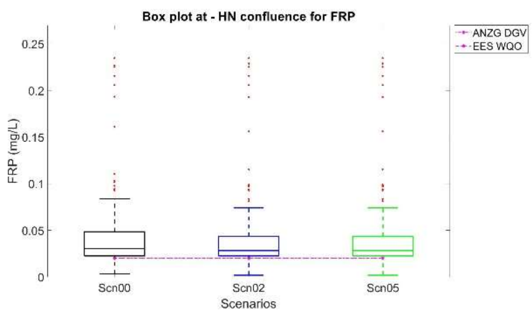

Box plot at - DS BadgerysCreek for FRP
ANZG DGV
EES WQO
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS KempsCreek for FRP
ANZG DGV
EES WQO
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for FRP
ANZG DGV
EES WQO
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for FRP
ANZG DGV
EES WQO
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for FRP
ANZG DGV
EES WQO
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for FRP
ANZG DGV
EES WQO
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios

South Creek WQRM

Total Chlorophyll-a (µg/L)

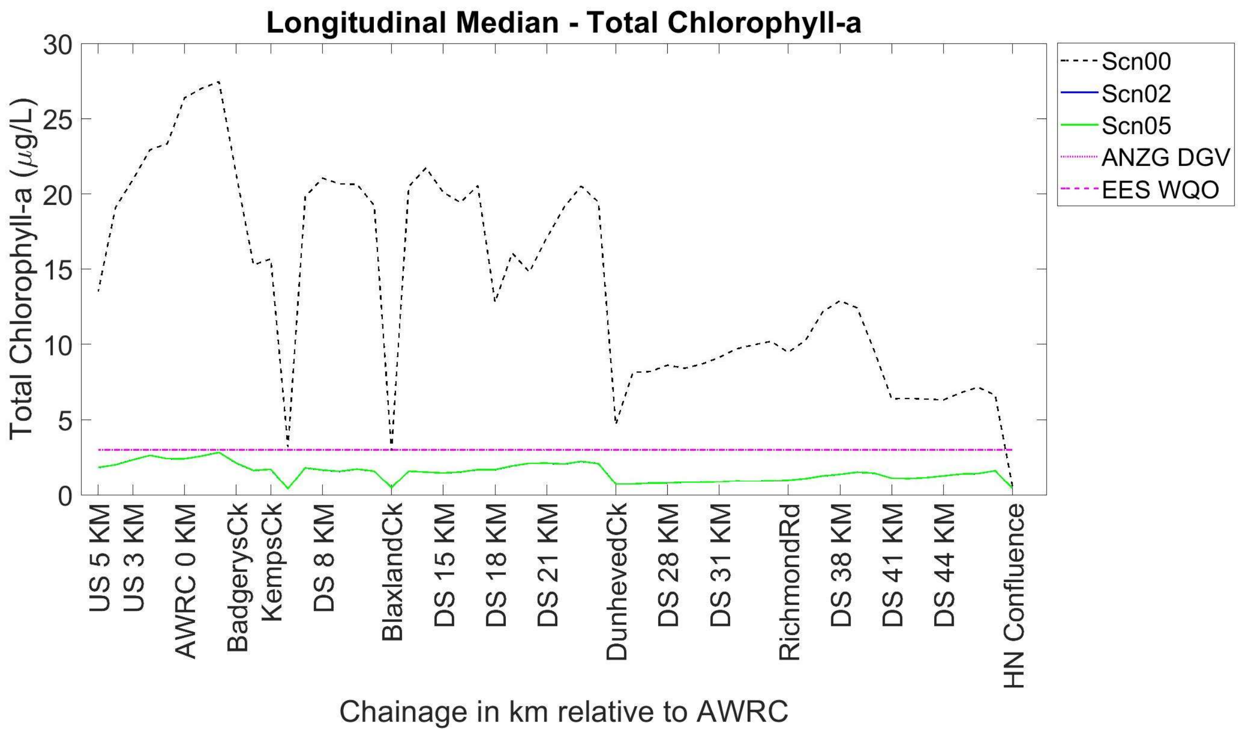
Scenario 05 - dry year

--> Longitudinal plots

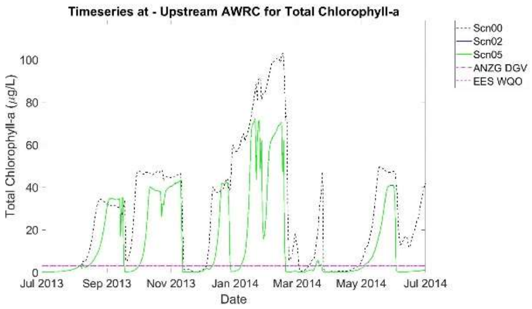
--> Timeseries plots at geographic markers and gauge locations

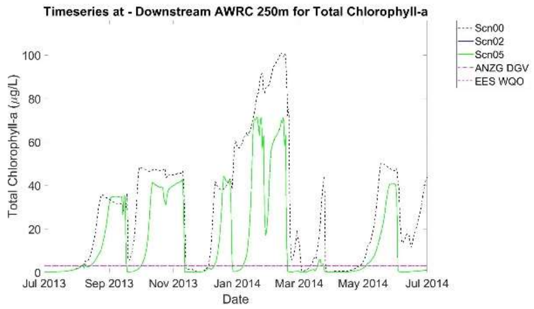
--> Box plots at geographic markers and gauge locations

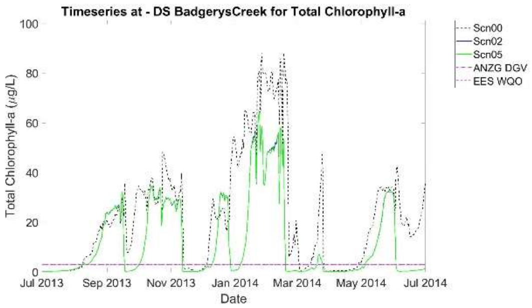
Longitudinal plot

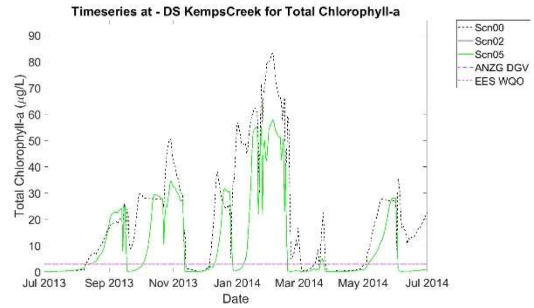


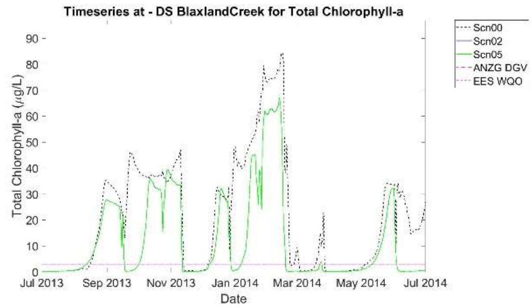
Timeseries plots

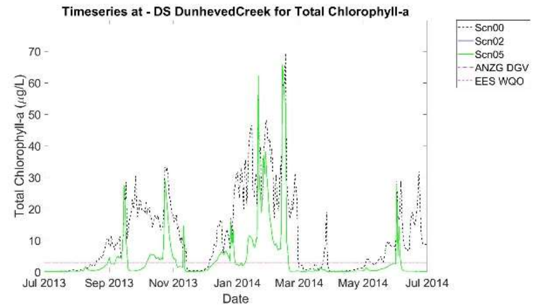


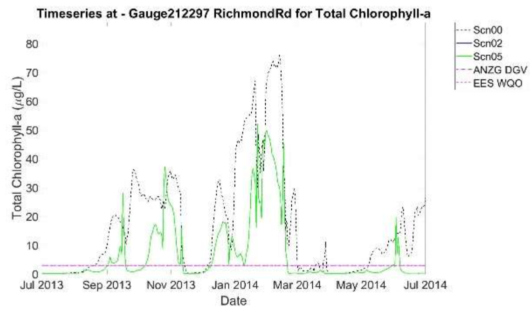


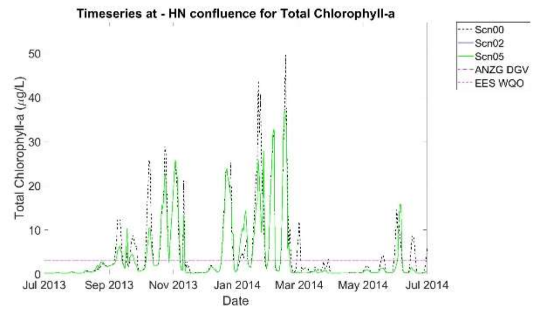




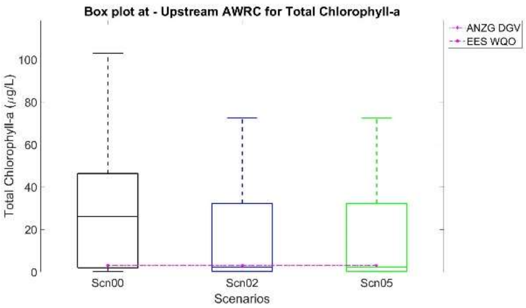


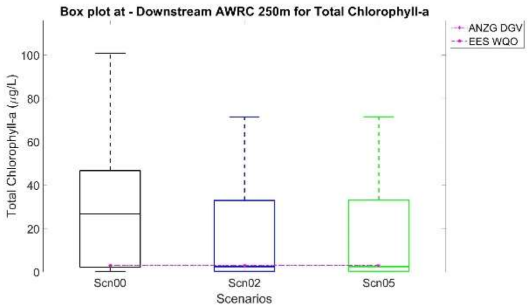


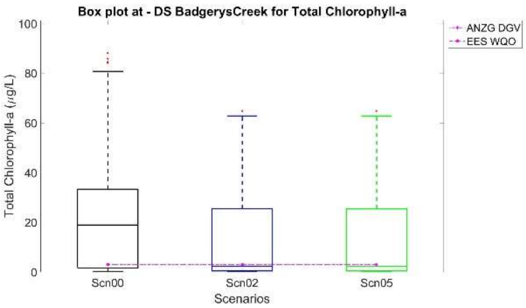


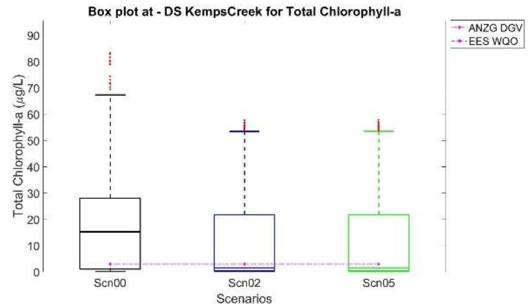


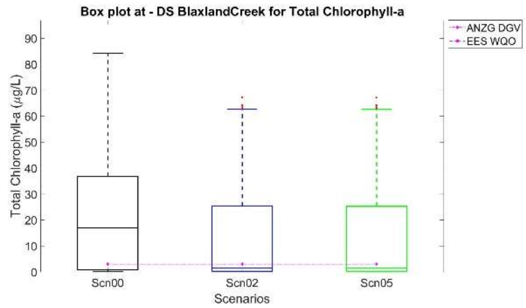
Box plots

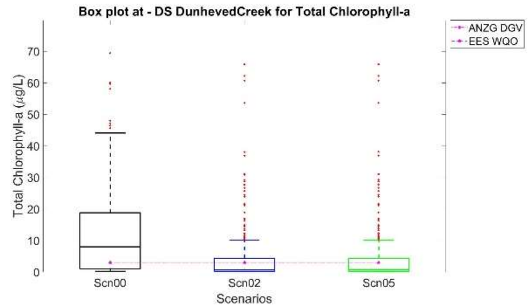

Box plot at - Upstream AWRC for Total Chlorophyll-a
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

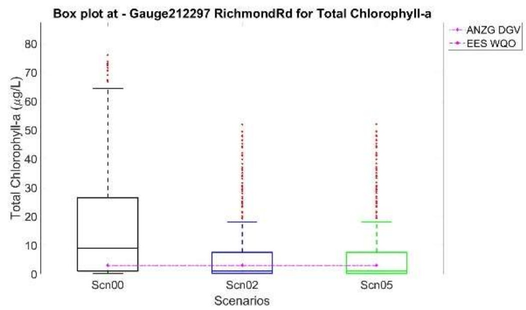

Box plot at - Downstream AWRC 250m for Total Chlorophyll-a
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

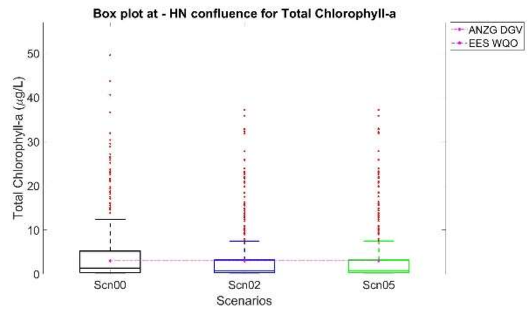

Box plot at - DS BadgerysCreek for Total Chlorophyll-a
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Total Chlorophyll-a
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Total Chlorophyll-a
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Total Chlorophyll-a
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Total Chlorophyll-a
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Total Chlorophyll-a
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Salinity (g/L)

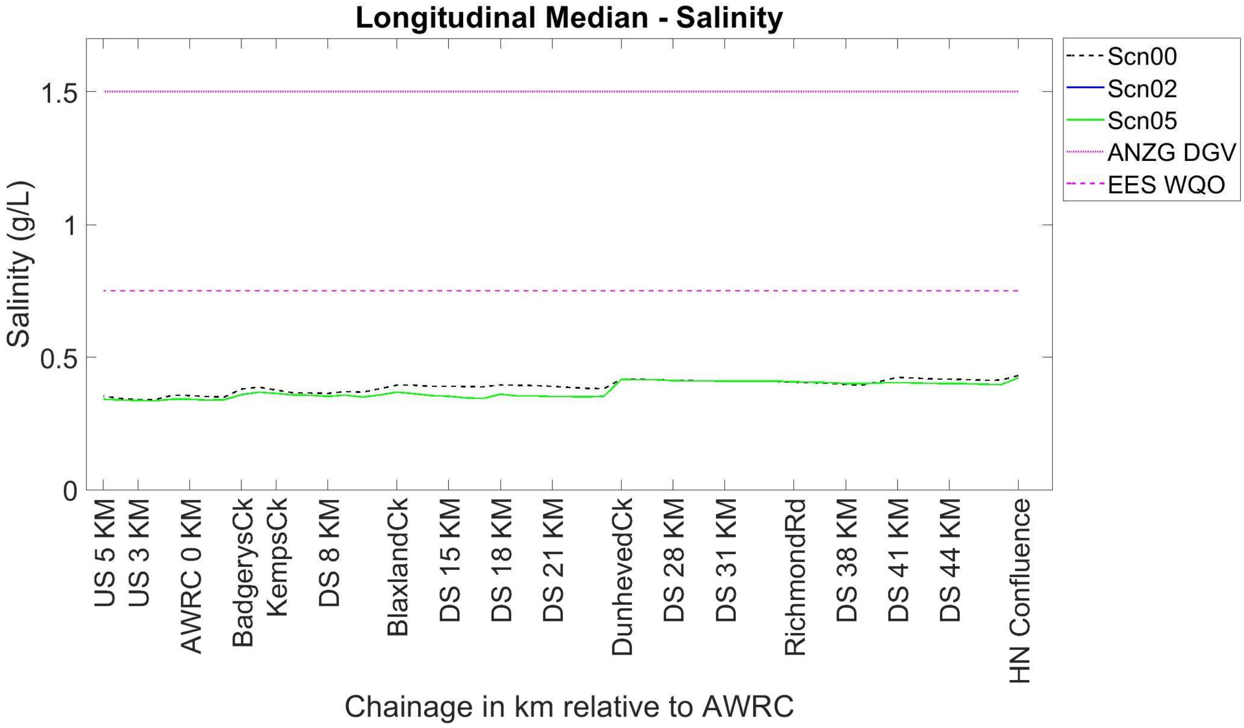
Scenario 05 - dry year

--> Longitudinal plots

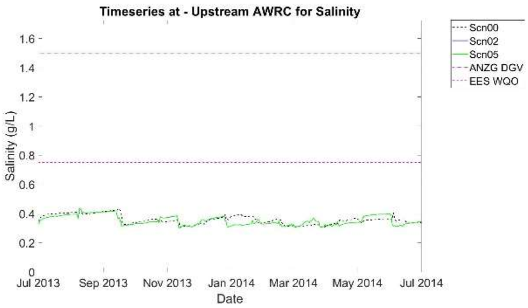
--> Timeseries plots at geographic markers and gauge locations

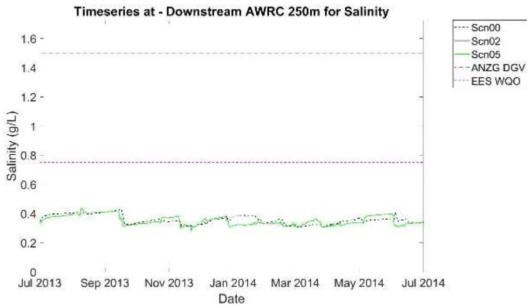
--> Box plots at geographic markers and gauge locations

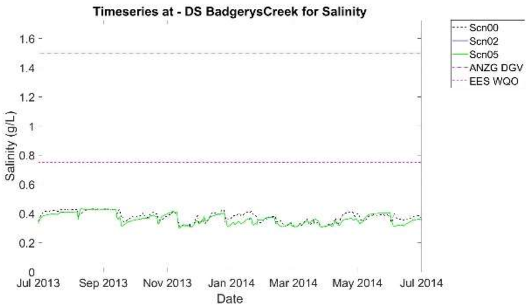
Longitudinal plot

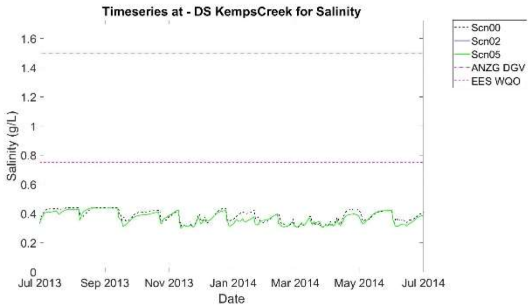


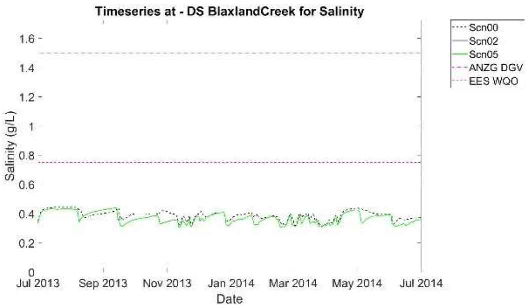
Timeseries plots

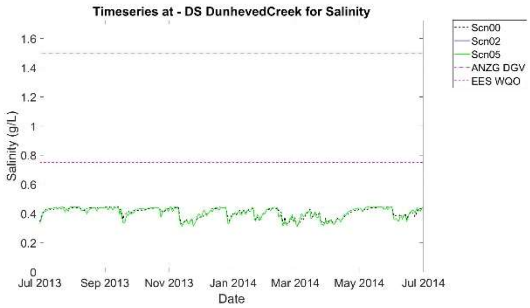


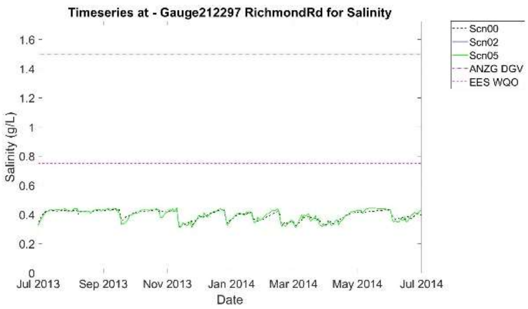


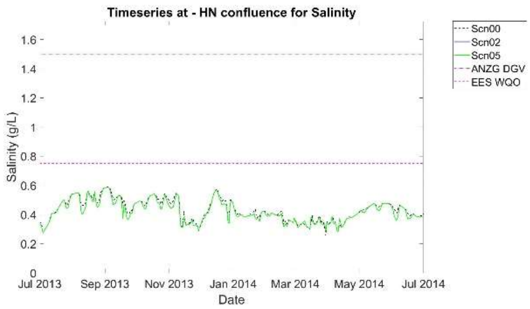




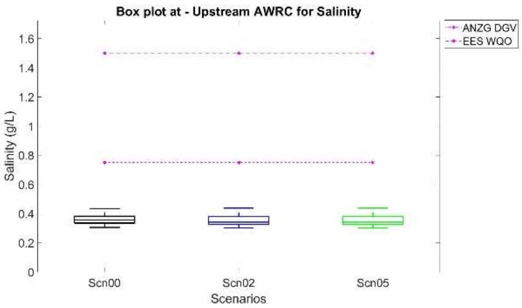


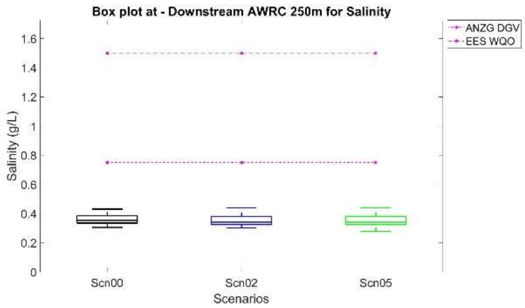


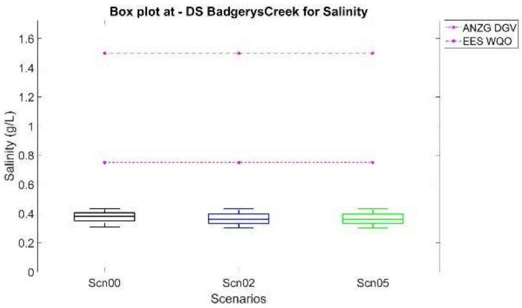


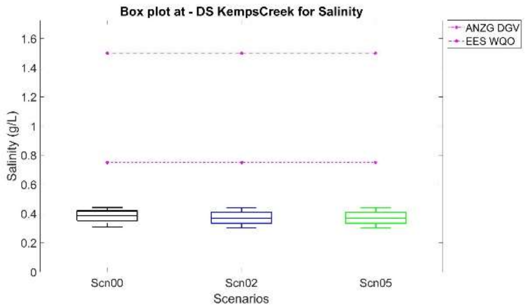


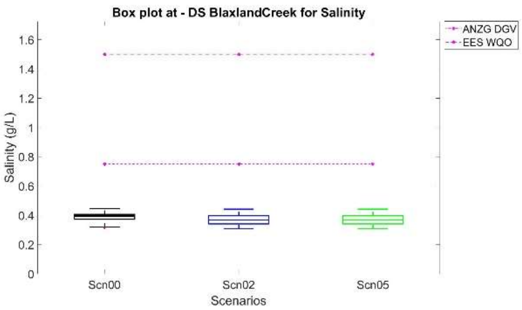
Box plots

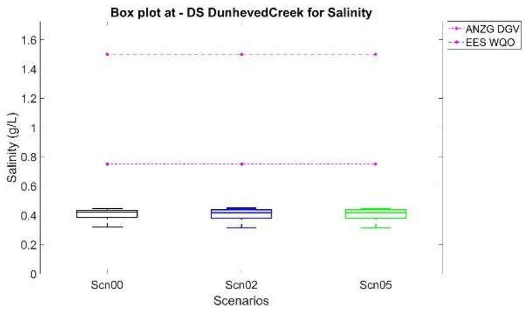

Box plot at - Upstream AWRC for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

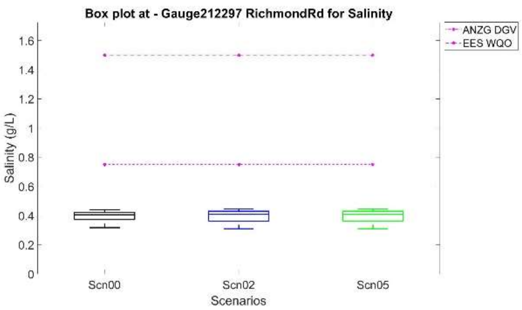

Box plot at - Downstream AWRC 250m for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

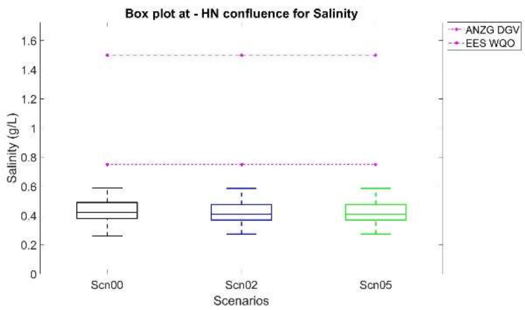

Box plot at - DS BadgerysCreek for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

TSS (mg/L)

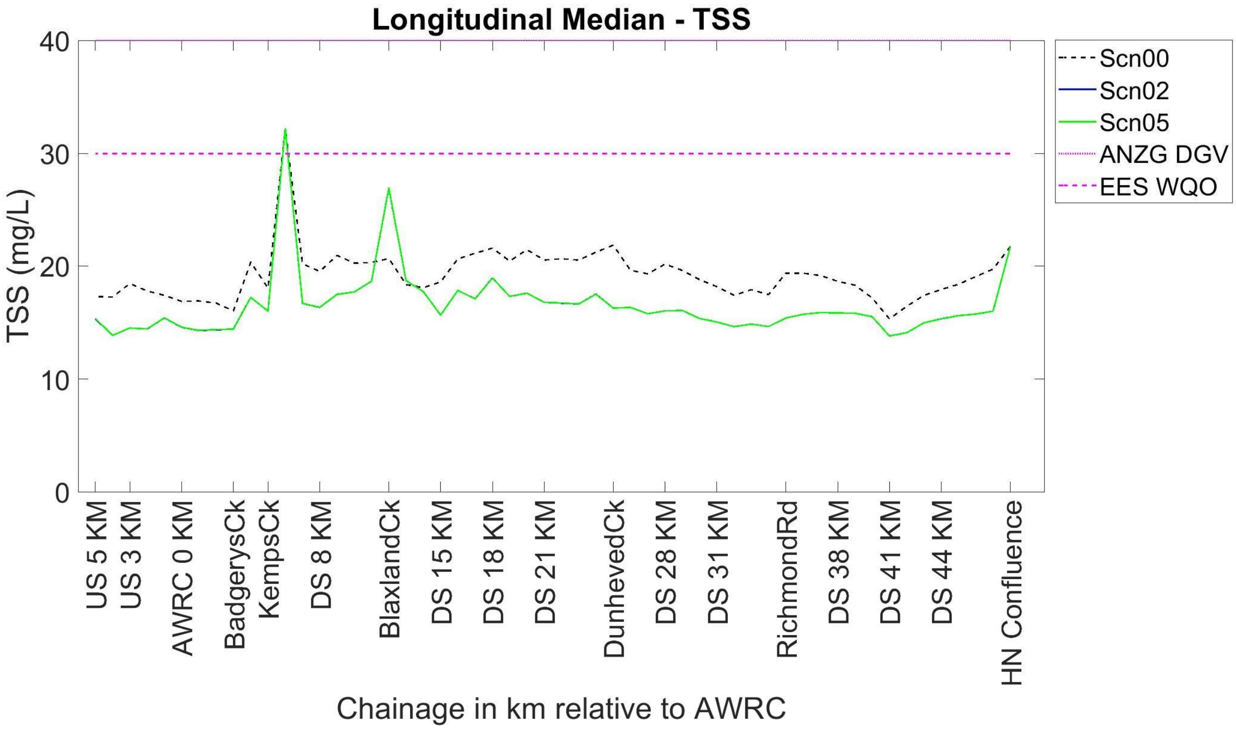
Scenario 05 - dry year

--> Longitudinal plots

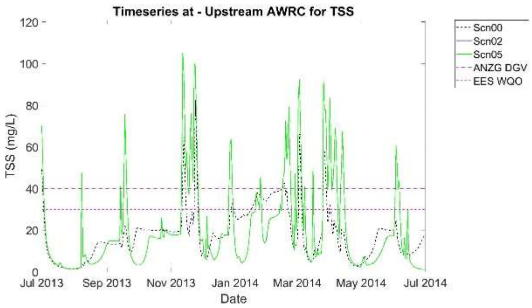
--> Timeseries plots at geographic markers and gauge locations

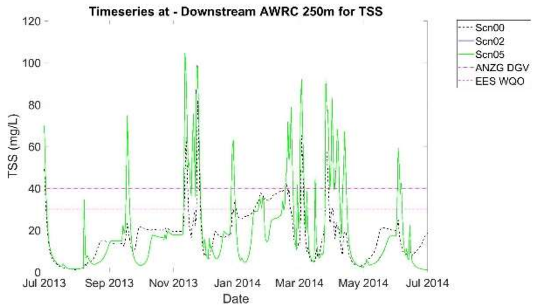
--> Box plots at geographic markers and gauge locations

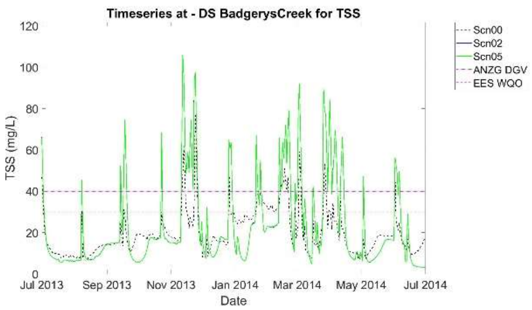
Longitudinal plot

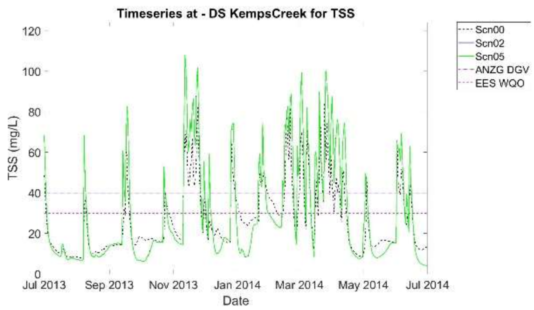


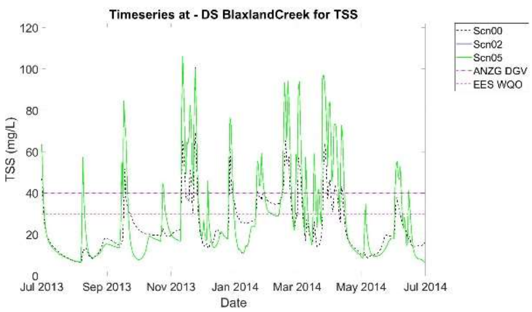
Timeseries plots

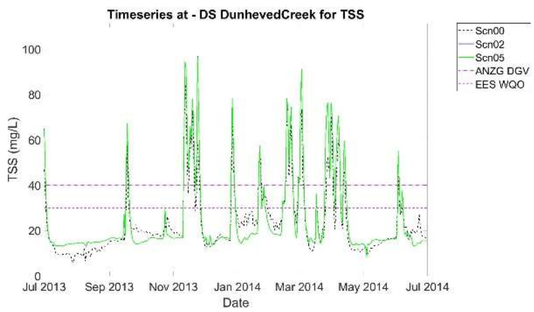


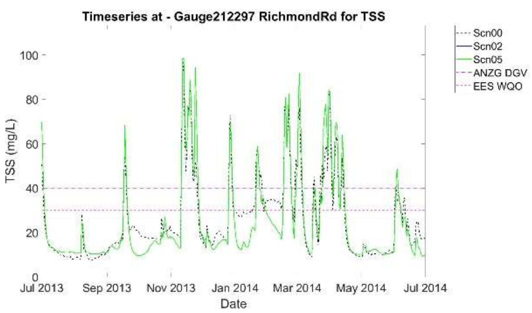


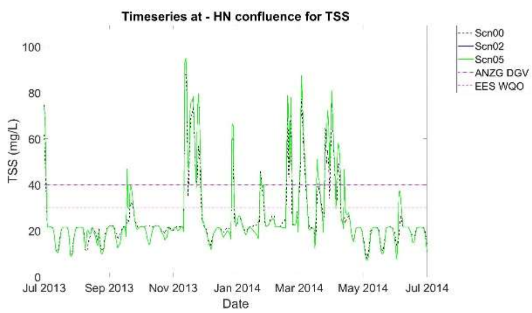




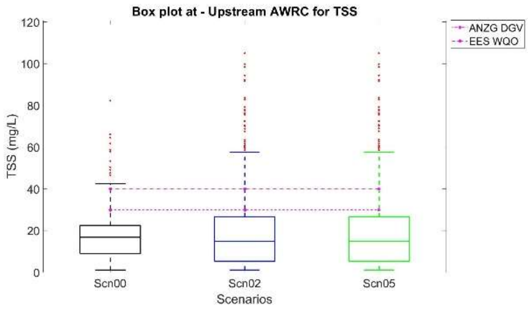


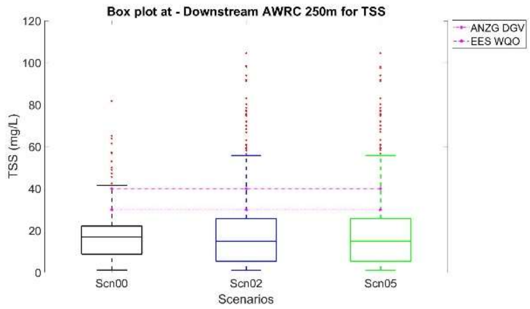


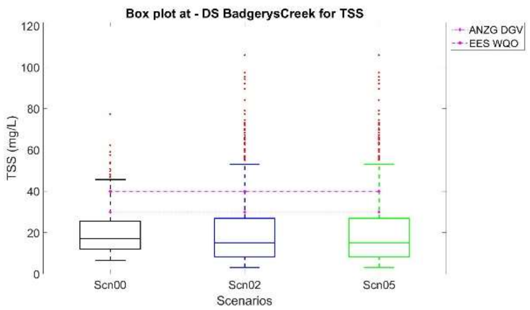


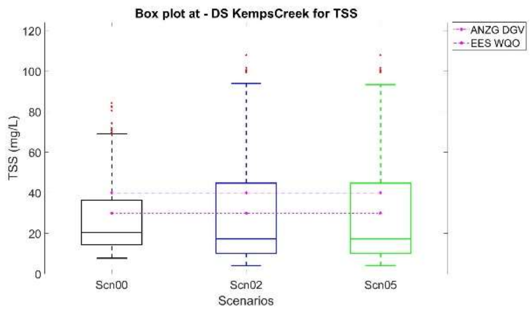


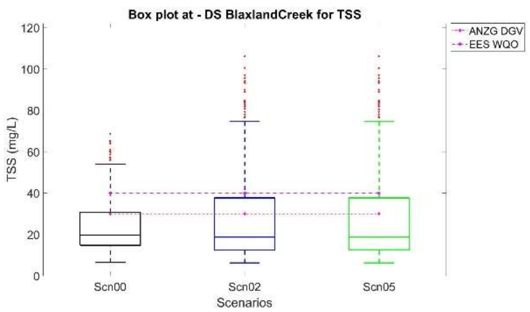
Box plots

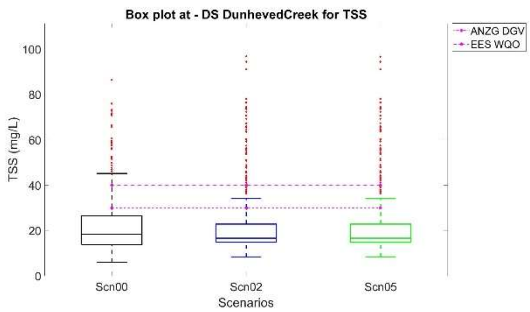

Box plot at - Upstream AWRC for TSS
TSS (mg/L)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios

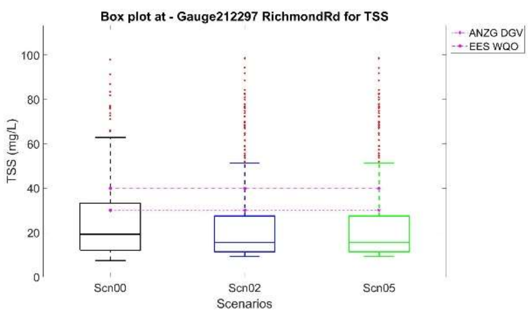

Box plot at - Downstream AWRC 250m for TSS
TSS (mg/L)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios

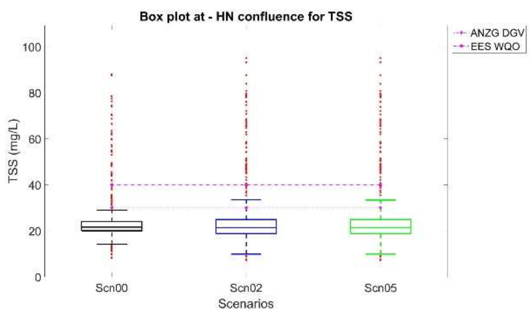

Box plot at - DS BadgerysCreek for TSS
TSS (mg/L)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS KempsCreek for TSS
TSS (mg/L)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for TSS
TSS (mg/L)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for TSS
TSS (mg/L)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for TSS
TSS (mg/L)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for TSS
TSS (mg/L)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios

South Creek WQRM

Dissolved Oxygen (mg/L)

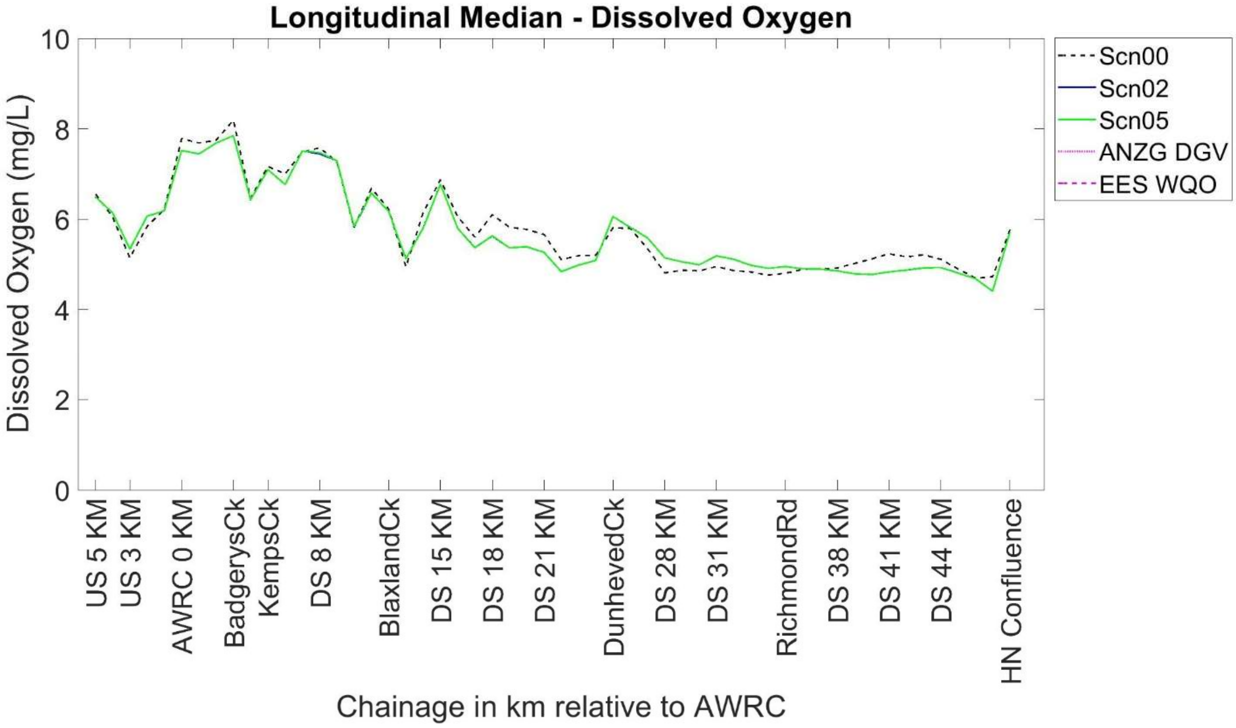
Scenario 05 - dry year

--> Longitudinal plots

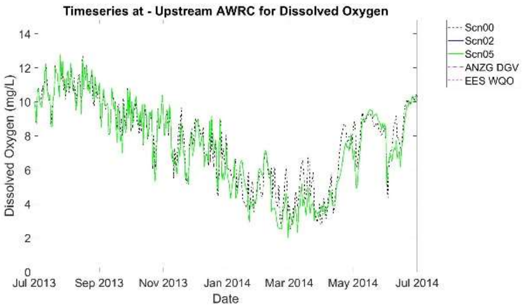
--> Timeseries plots at geographic markers and gauge locations

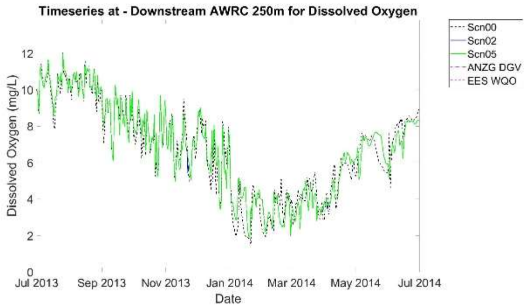
--> Box plots at geographic markers and gauge locations

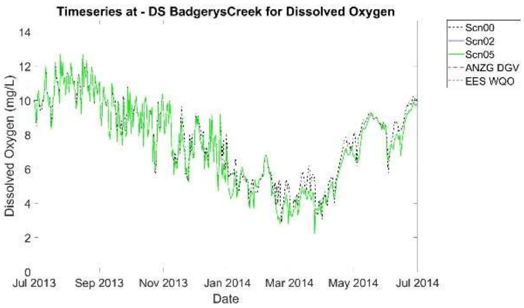
Longitudinal plot

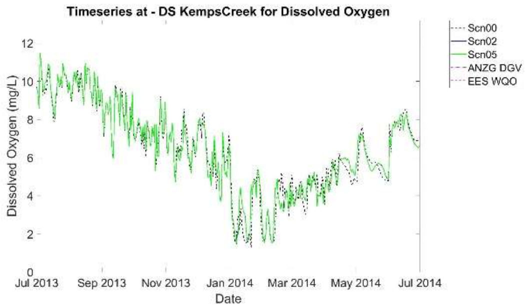


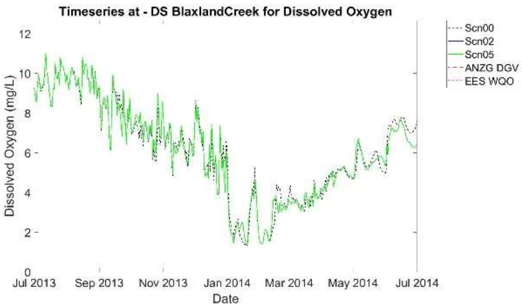
Timeseries plots

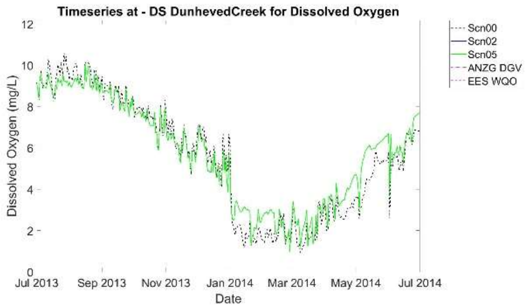


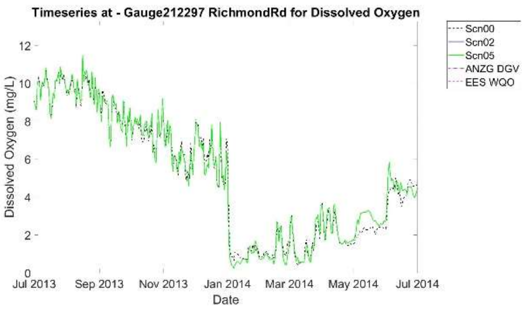


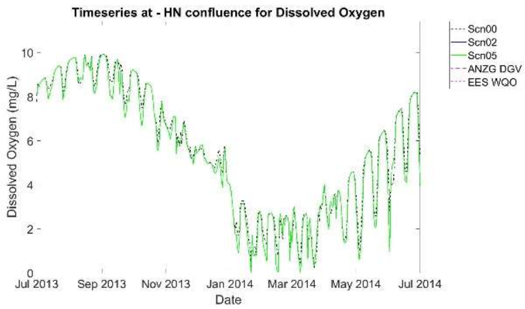




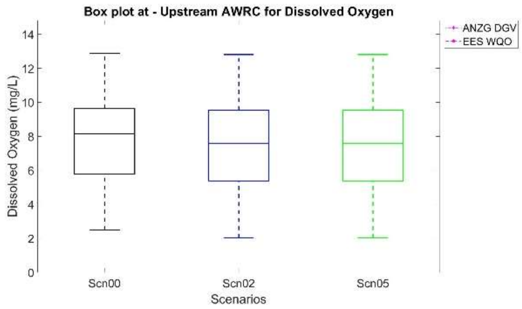


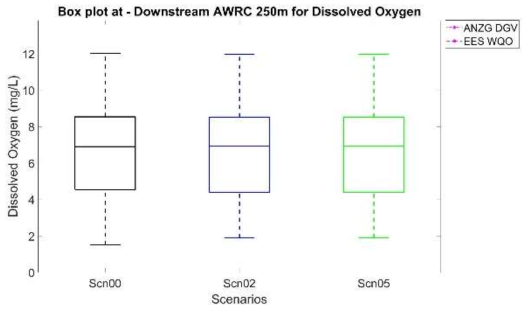


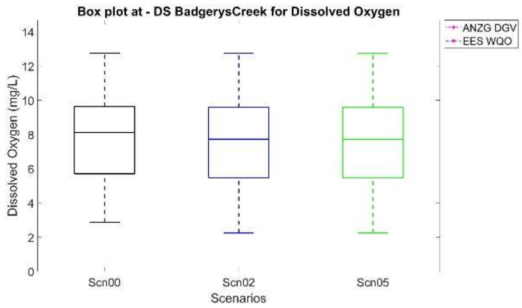


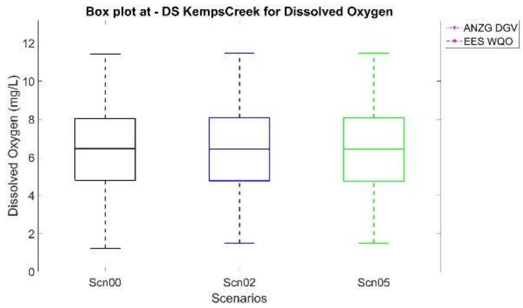


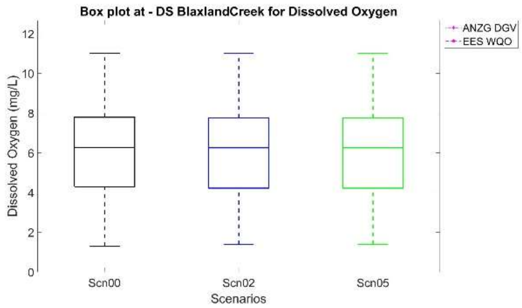
Box plots

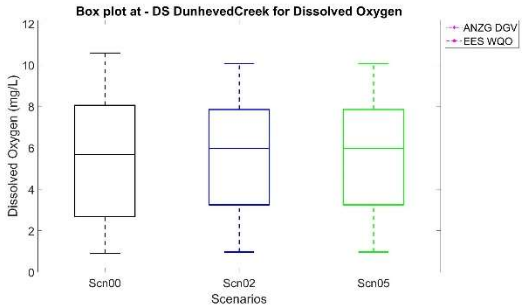

Box plot at - Upstream AWRC for Dissolved Oxygen
ANZG DGV
EES WQO
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios

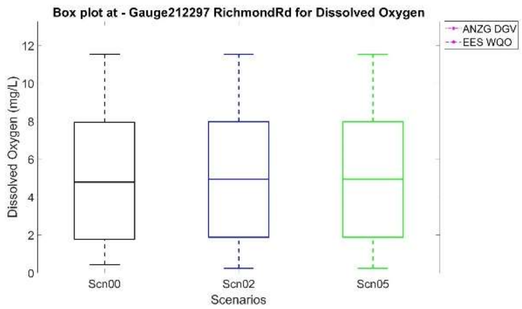

Box plot at - Downstream AWRC 250m for Dissolved Oxygen
ANZG DGV
EES WQO
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios

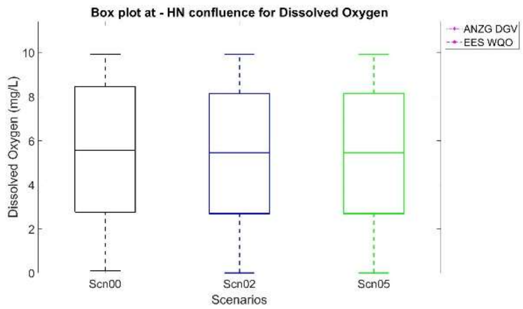

Box plot at - DS BadgerysCreek for Dissolved Oxygen
ANZG DGV
EES WQO
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS KempsCreek for Dissolved Oxygen
ANZG DGV
EES WQO
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for Dissolved Oxygen
ANZG DGV
EES WQO
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for Dissolved Oxygen
ANZG DGV
EES WQO
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for Dissolved Oxygen
ANZG DGV
EES WQO
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for Dissolved Oxygen
ANZG DGV
EES WQO
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios

South Creek WQRM

Dissolved Oxygen Saturation (%)

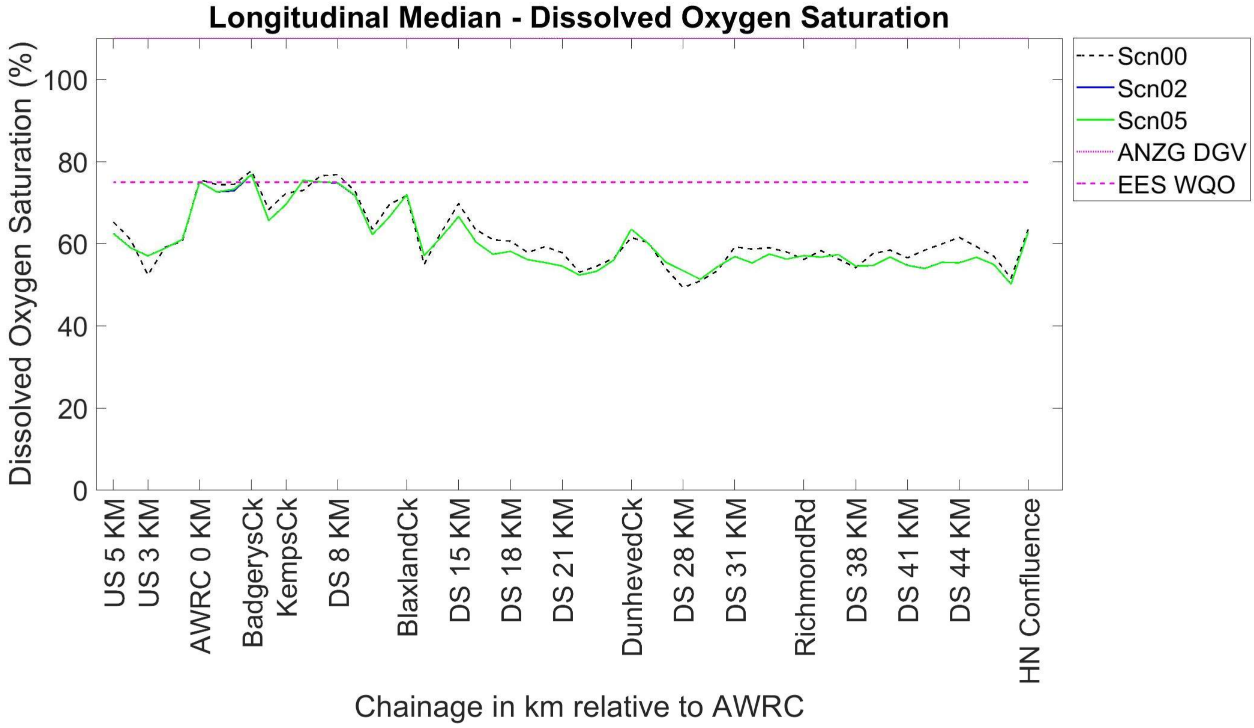
Scenario 05 - dry year

--> Longitudinal plots

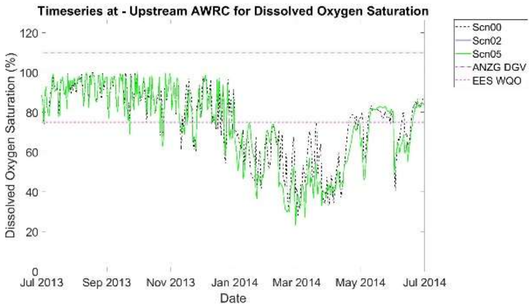
--> Timeseries plots at geographic markers and gauge locations

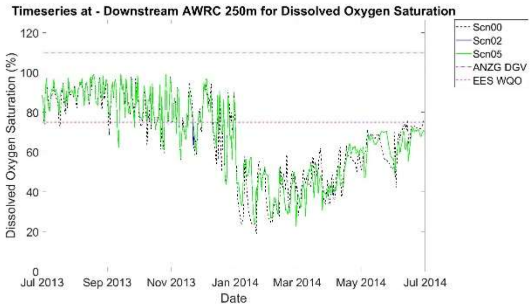
--> Box plots at geographic markers and gauge locations

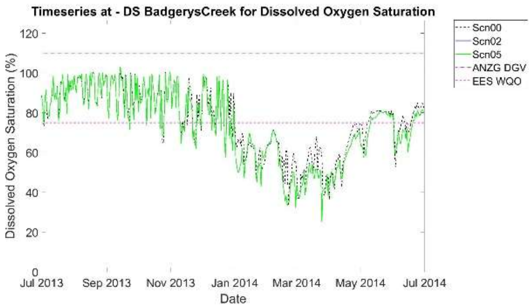
Longitudinal plot

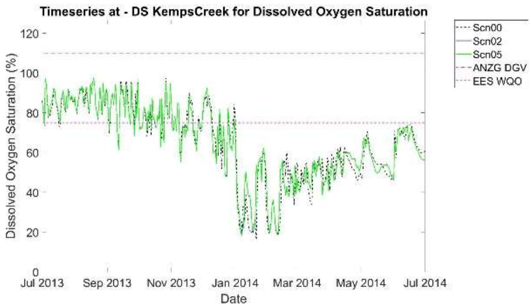


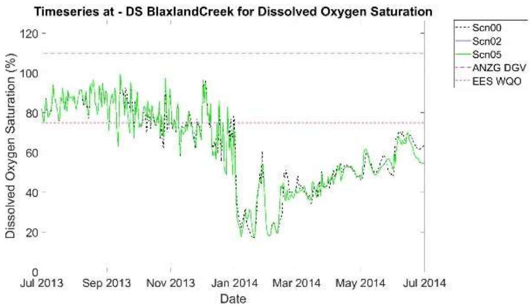
Timeseries plots

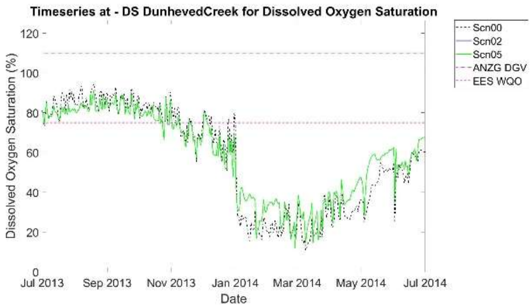


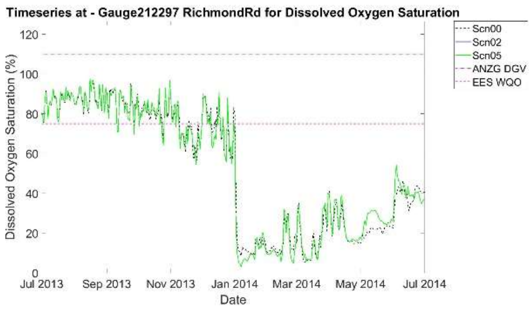


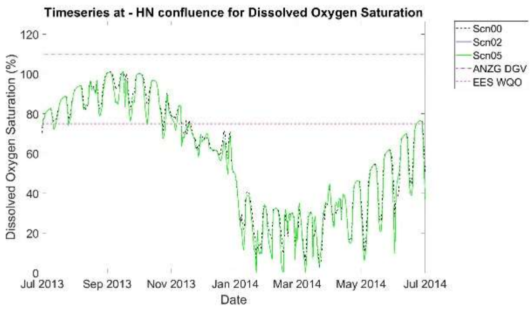




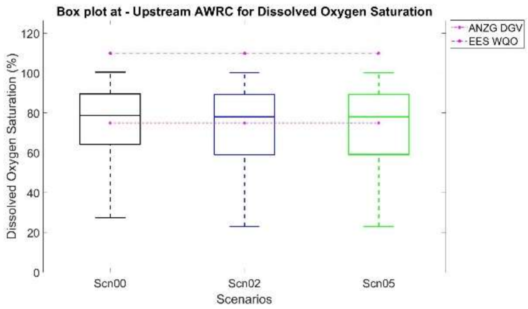


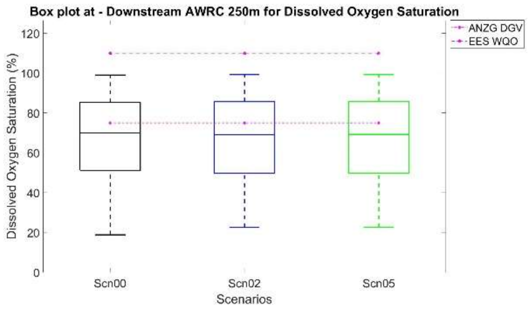


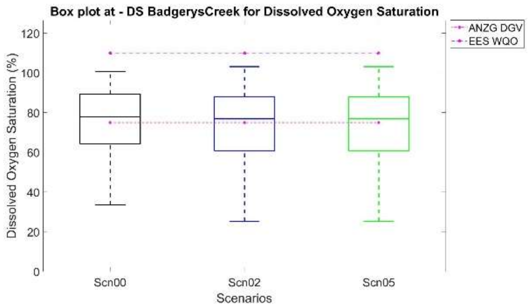


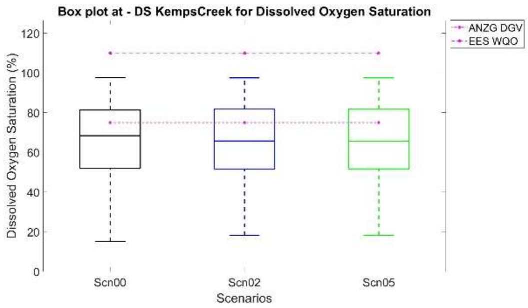


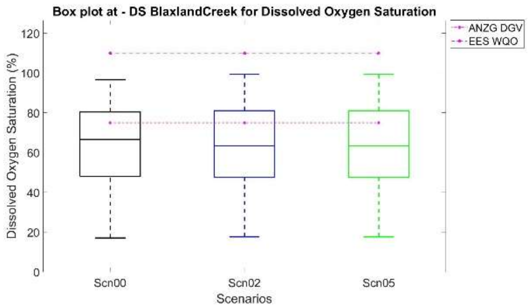
Box plots

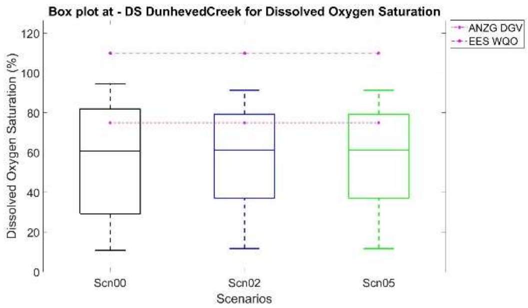

Box plot at - Upstream AWRC for Dissolved Oxygen Saturation
Dissolved Oxygen Saturation (%)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios

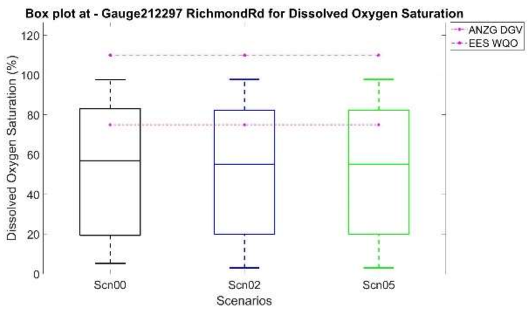

Box plot at - Downstream AWRC 250m for Dissolved Oxygen Saturation
Dissolved Oxygen Saturation (%)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios

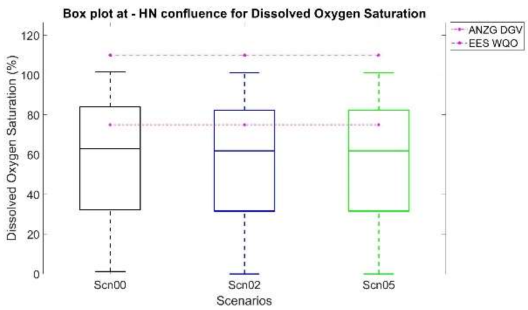

Box plot at - DS BadgerysCreek for Dissolved Oxygen Saturation
Dissolved Oxygen Saturation (%)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS KempsCreek for Dissolved Oxygen Saturation
Dissolved Oxygen Saturation (%)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for Dissolved Oxygen Saturation
Dissolved Oxygen Saturation (%)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for Dissolved Oxygen Saturation
Dissolved Oxygen Saturation (%)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for Dissolved Oxygen Saturation
Dissolved Oxygen Saturation (%)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for Dissolved Oxygen Saturation
Dissolved Oxygen Saturation (%)
ANZG DGV
EES WQO
Scn00
Scn02
Scn05
Scenarios

South Creek WQRM

Ecoli (cfu/100mL)

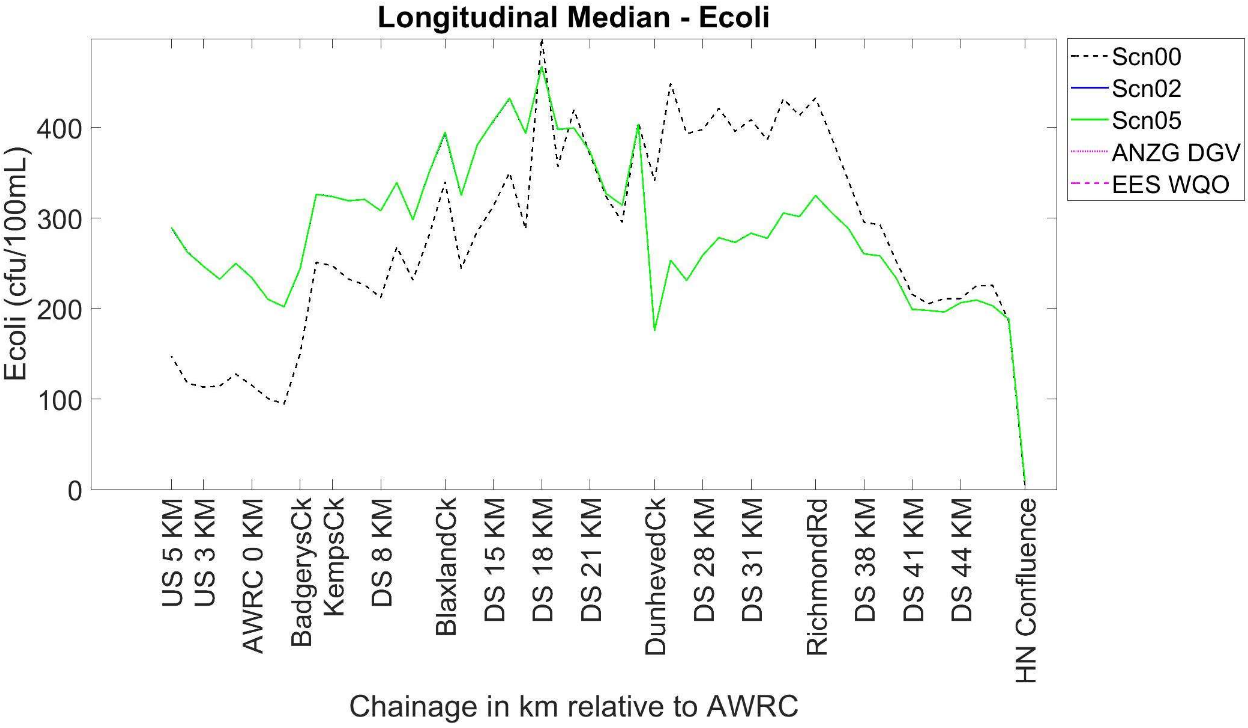
Scenario 05 - dry year

--> Longitudinal plots

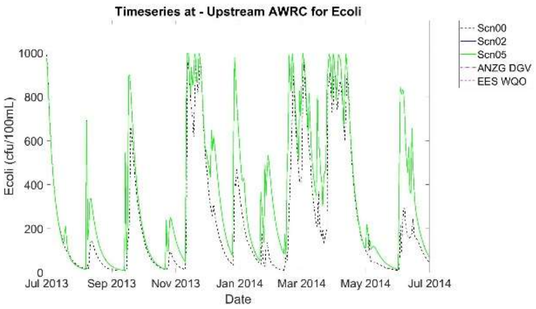
--> Timeseries plots at geographic markers and gauge locations

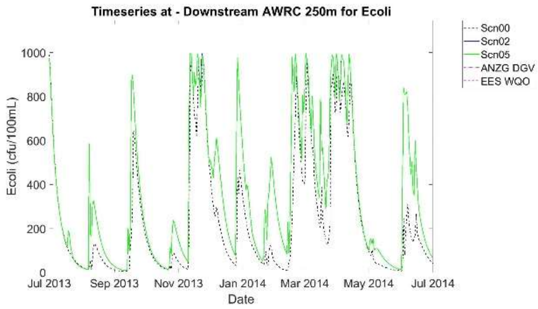
--> Box plots at geographic markers and gauge locations

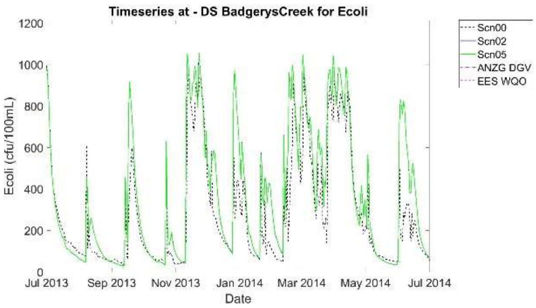
Longitudinal plot

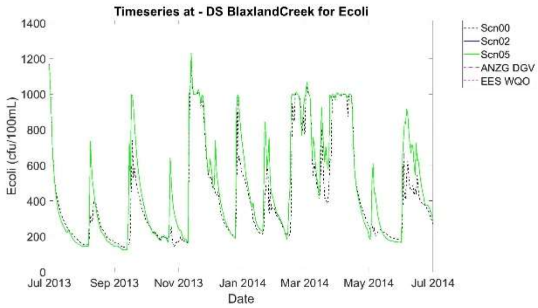


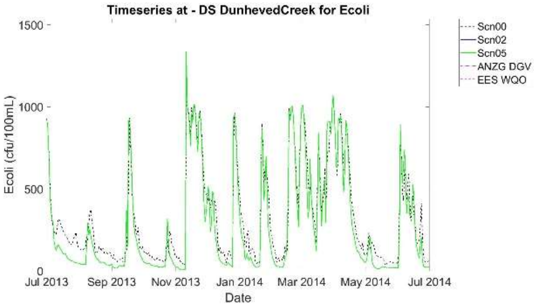
Timeseries plots

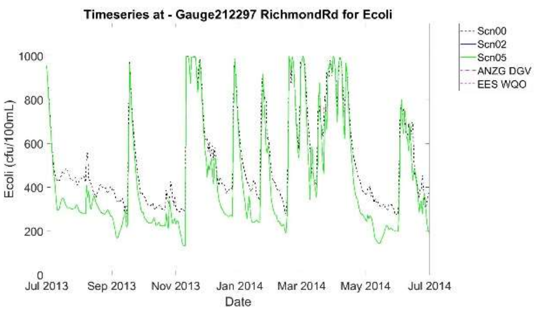


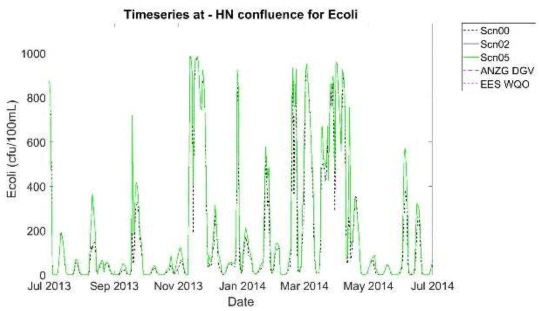




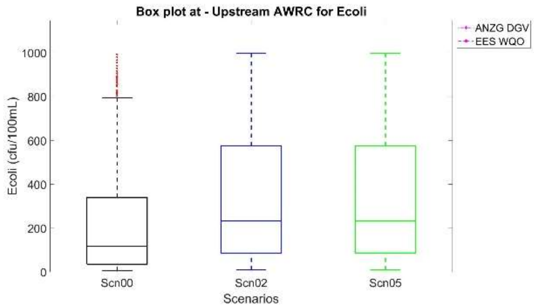


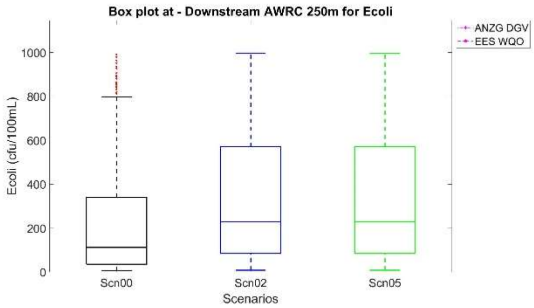


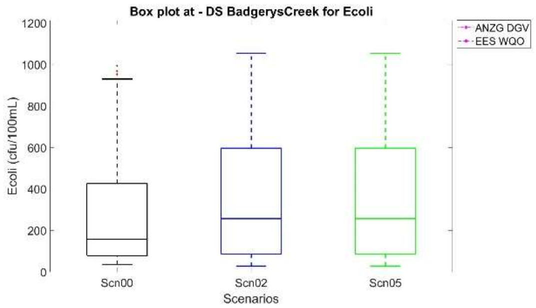


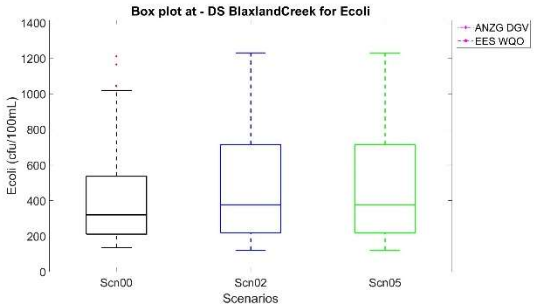


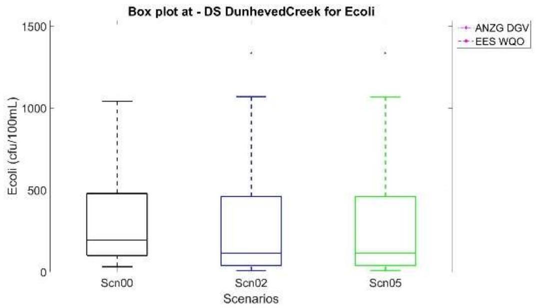
Box plots

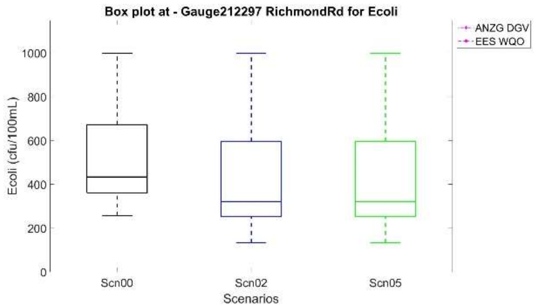

Box plot at - Upstream AWRC for Ecoli
Ecoli (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

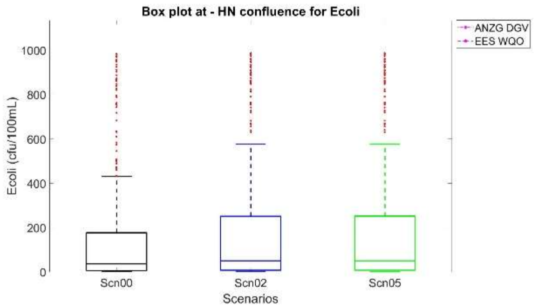

Box plot at - Downstream AWRC 250m for Ecoli
Ecoli (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BadgerysCreek for Ecoli
Ecoli (cfu/100mL)
0
200
400
600
800
1000
1200
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Ecoli
Ecoli (cfu/100mL)
0
200
400
600
800
1000
1200
1400
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Ecoli
Ecoli (cfu/100mL)
0
500
1000
1500
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Ecoli
Ecoli (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Ecoli
Ecoli (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Enterococci (cfu/100mL)

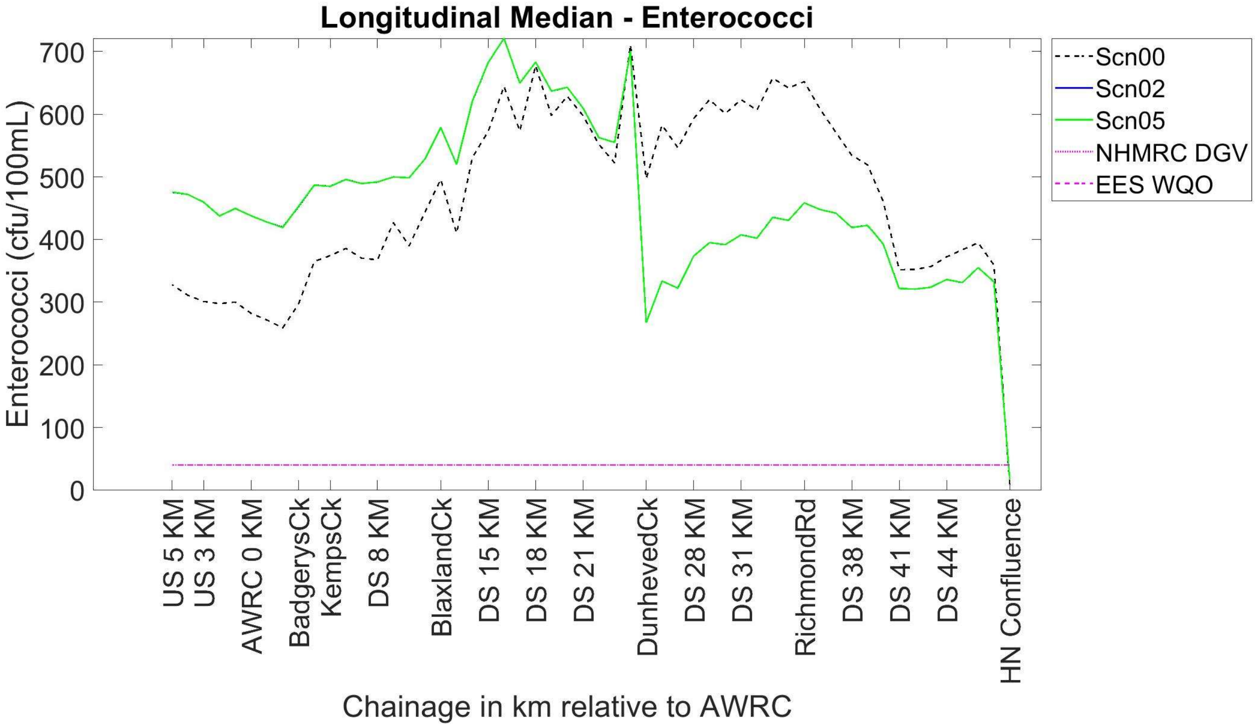
Scenario 05 - dry year

--> Longitudinal plots

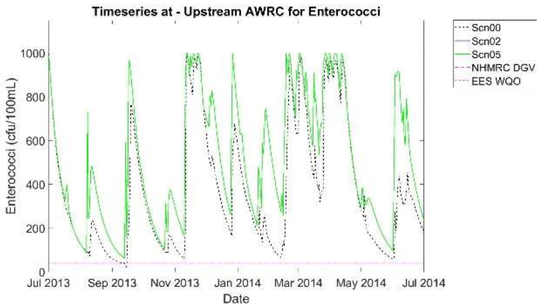
--> Timeseries plots at geographic markers and gauge locations

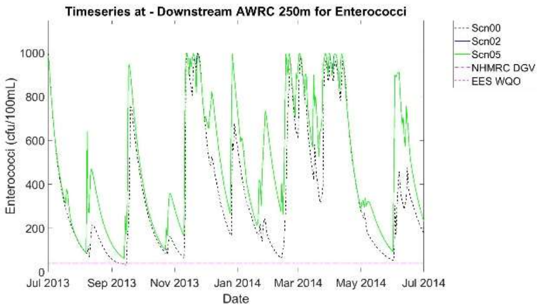
--> Box plots at geographic markers and gauge locations

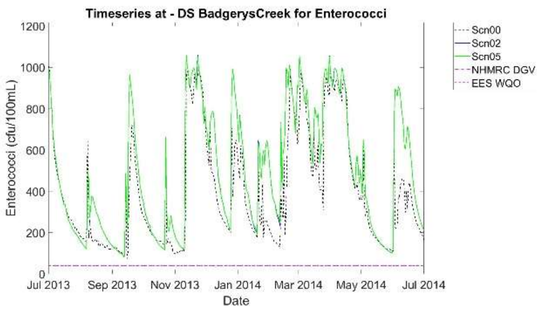
Longitudinal plot

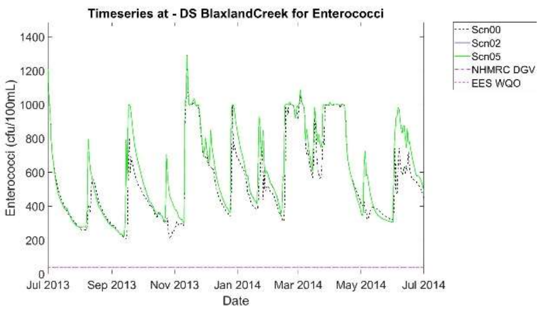


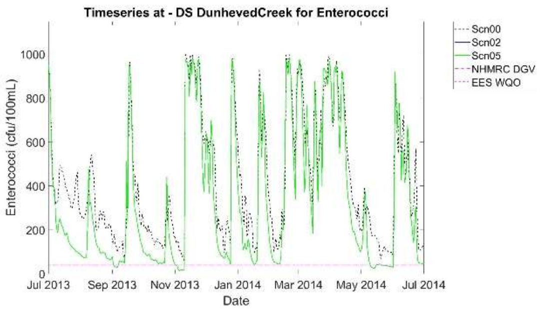
Timeseries plots

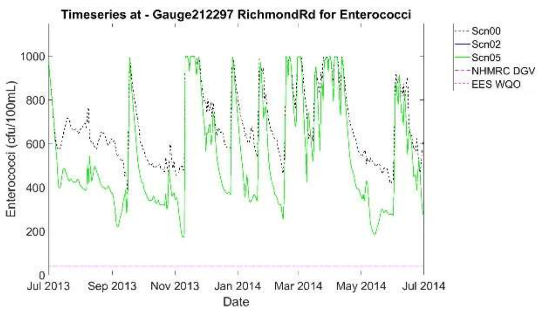


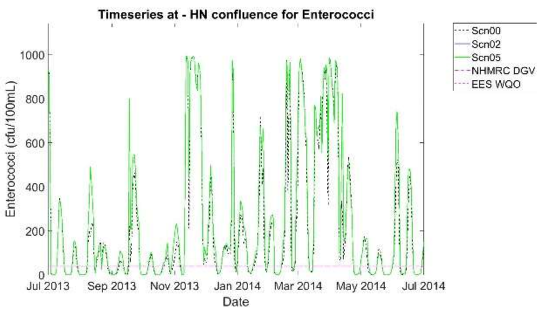




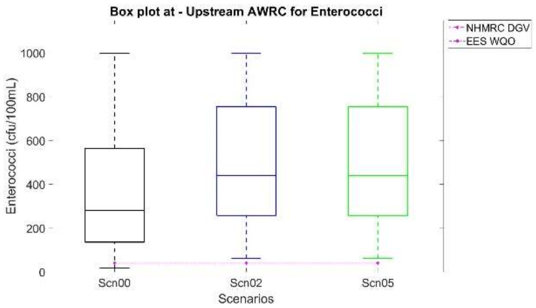


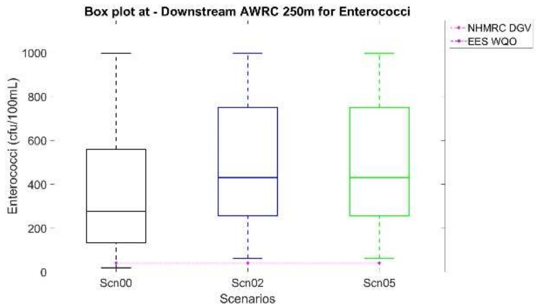


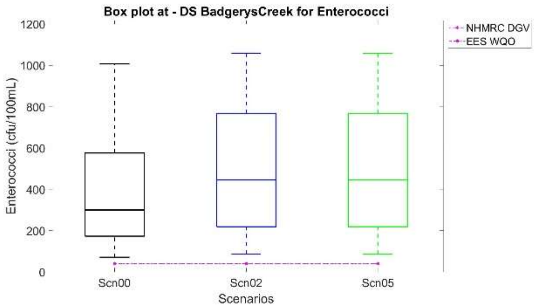


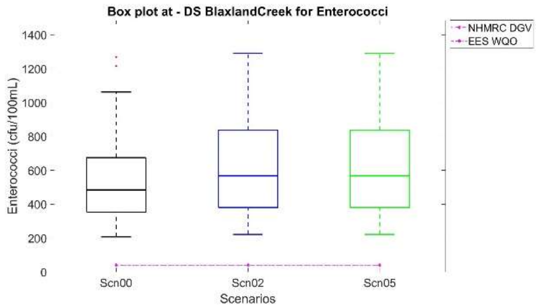


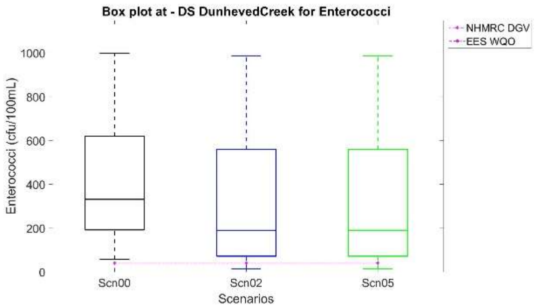
Box plots

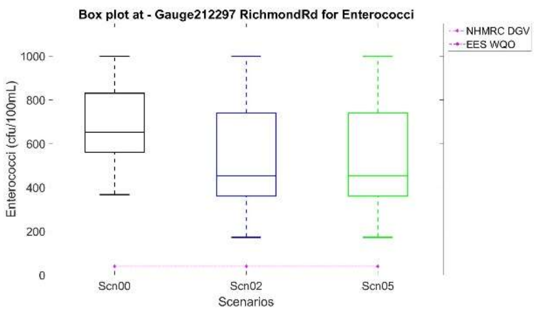

Box plot at - Upstream AWRC for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios

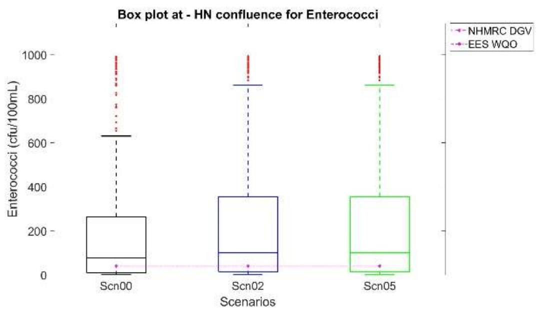

Box plot at - Downstream AWRC 250m for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BadgerysCreek for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
0
200
400
600
800
1000
1200
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
0
200
400
600
800
1000
1200
1400
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
0
200
400
600
800
1000
Scn00
Scn02
Scn05
Scenarios

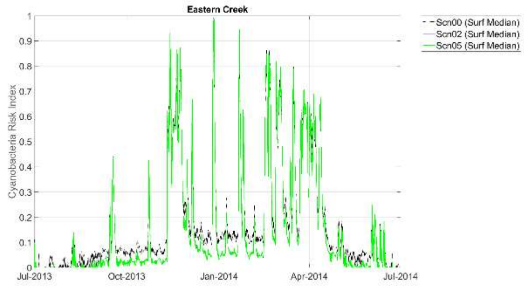
South Creek WQRM

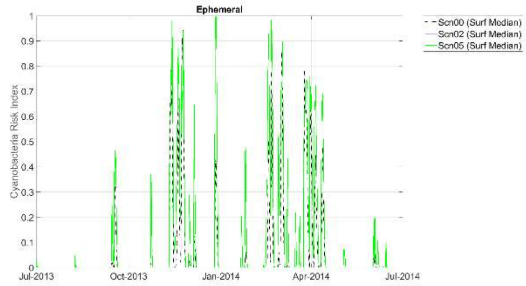
Cyano ()

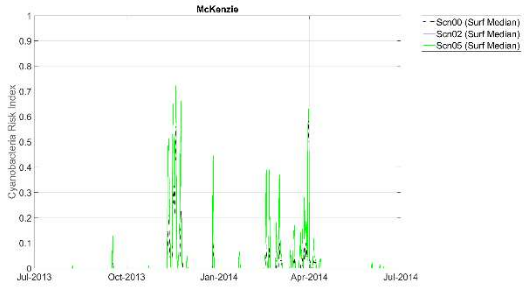
Scenario 05 - dry year

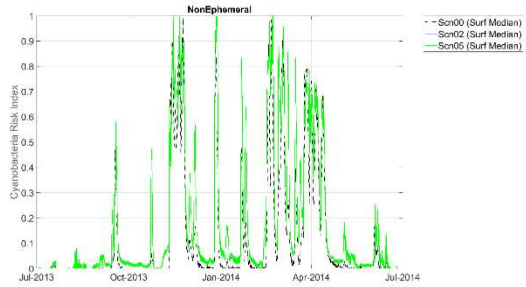
--> Timeseries plots for reaches

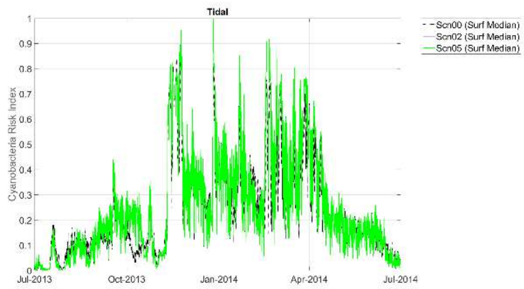
Timeseries plots











South Creek WQRM

Total Nitrogen (mg/L)

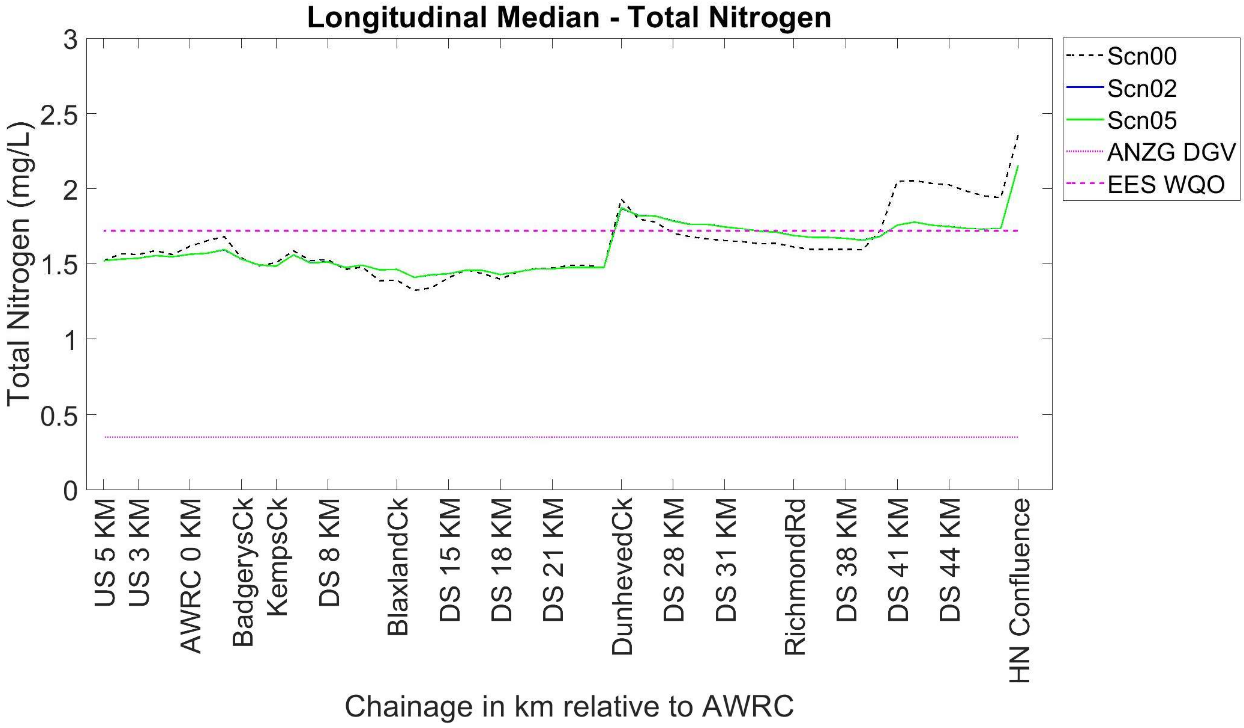
Scenario 05 - wet year

--> Longitudinal plots

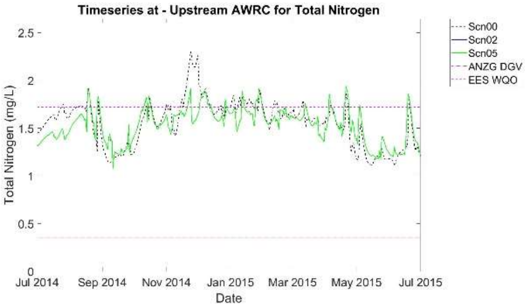
--> Timeseries plots at geographic markers and gauge locations

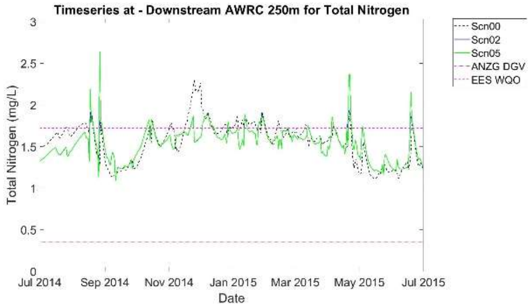
--> Box plots at geographic markers and gauge locations

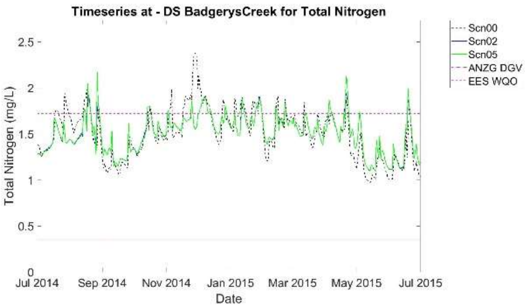
Longitudinal plot

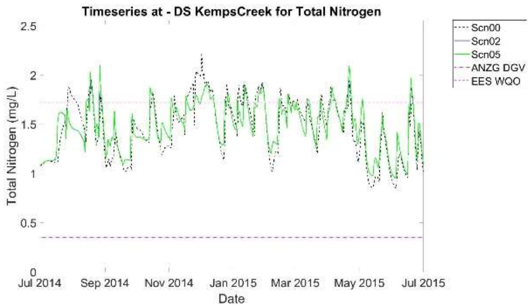


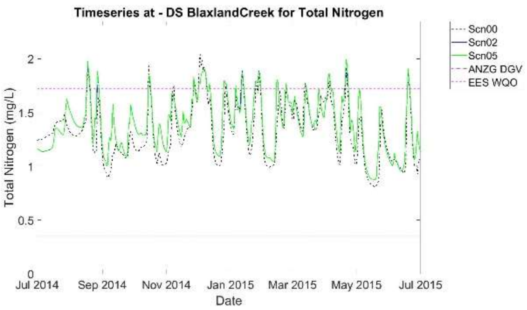
Timeseries plots

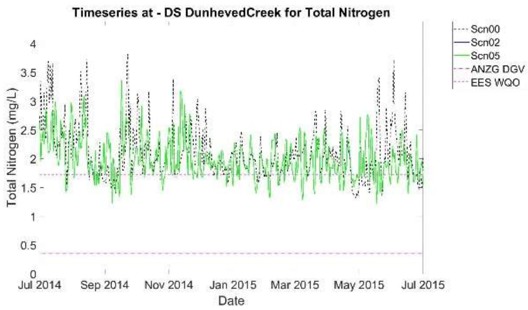


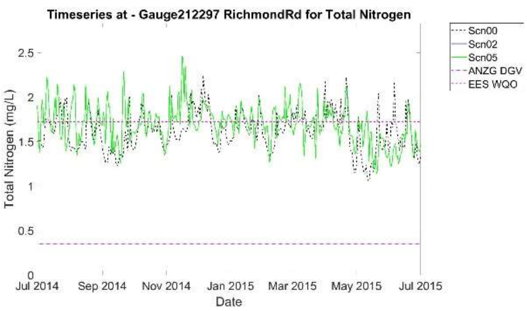


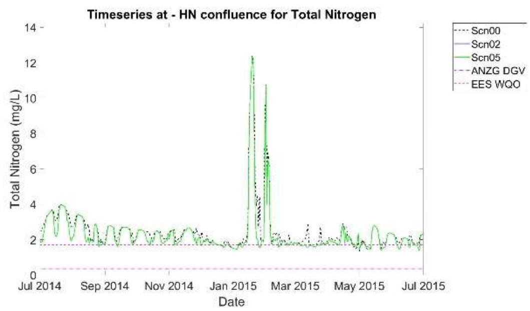




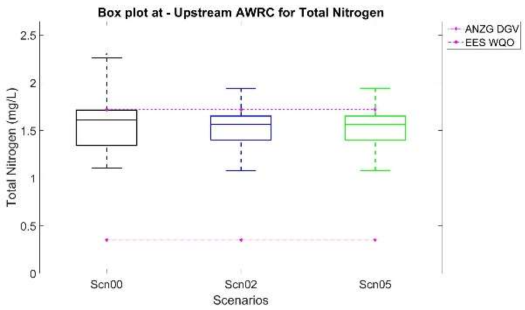


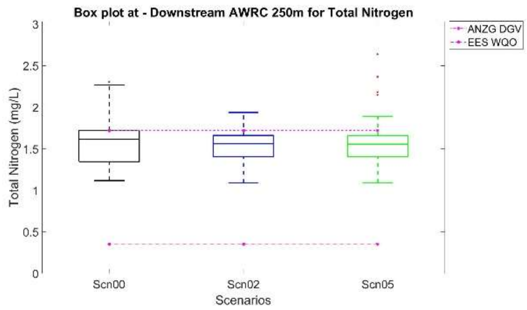


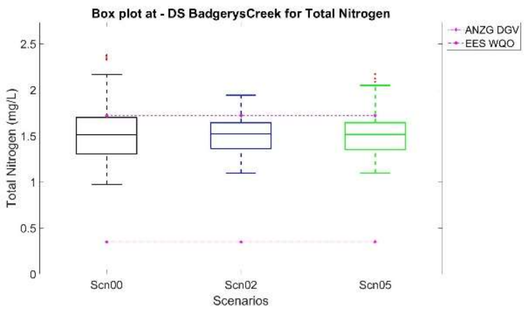


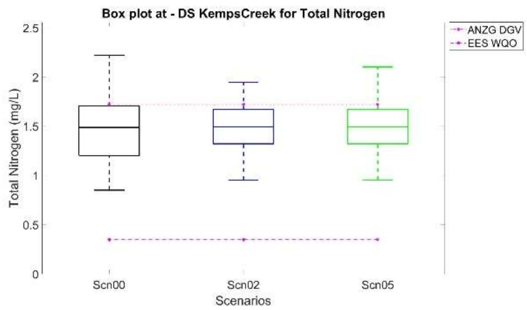


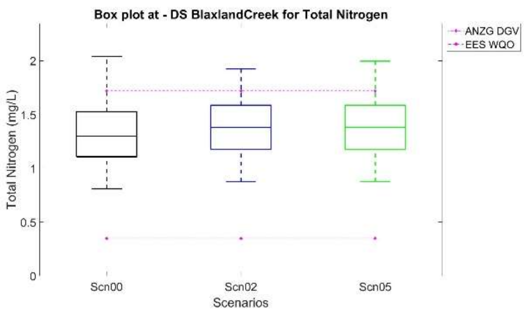
Box plots

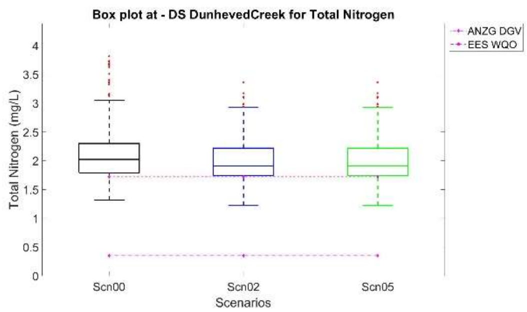

Box plot at - Upstream AWRC for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

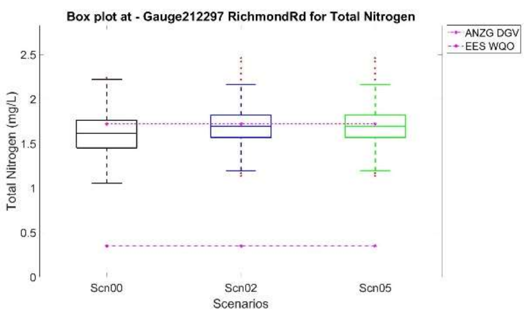

Box plot at - Downstream AWRC 250m for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

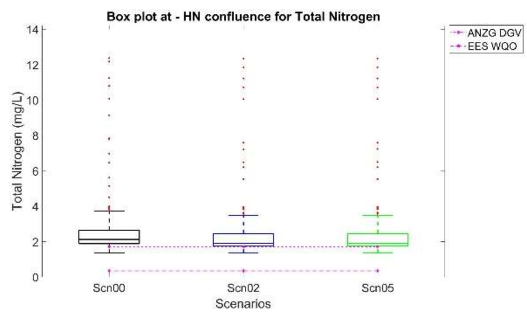

Box plot at - DS BadgerysCreek for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Ammonia (mg/L)

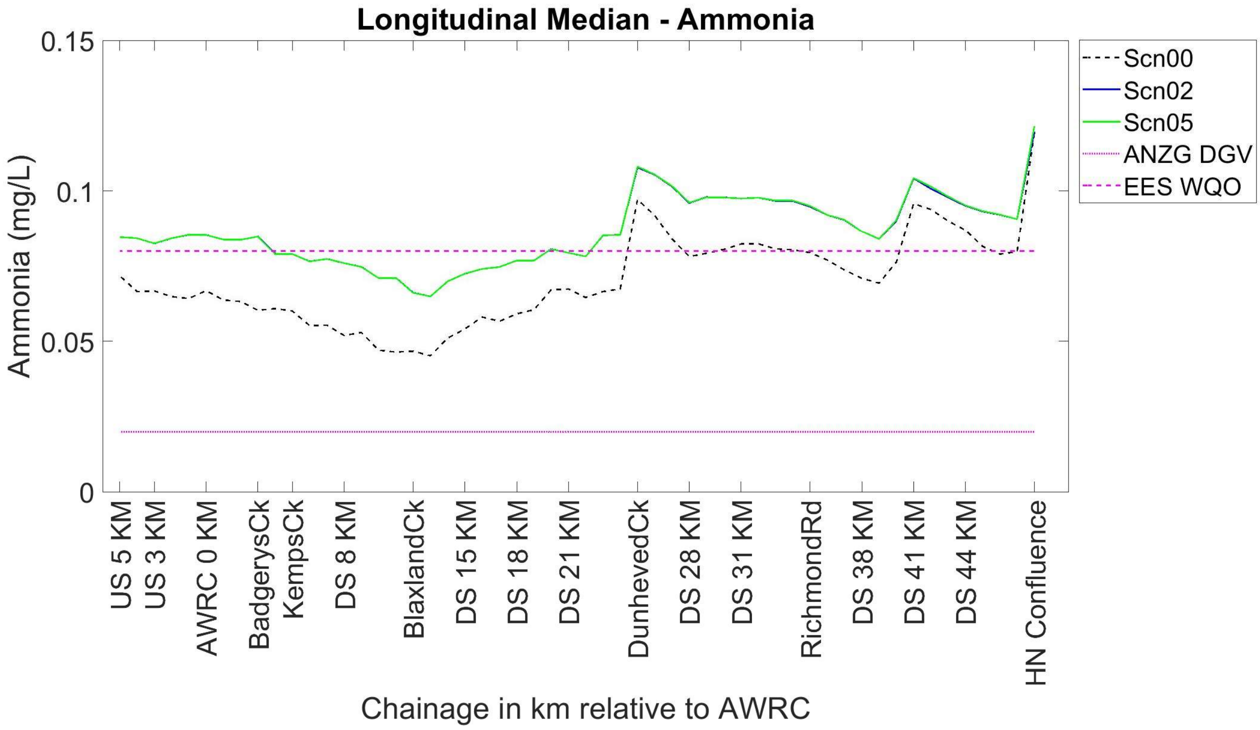
Scenario 05 - wet year

--> Longitudinal plots

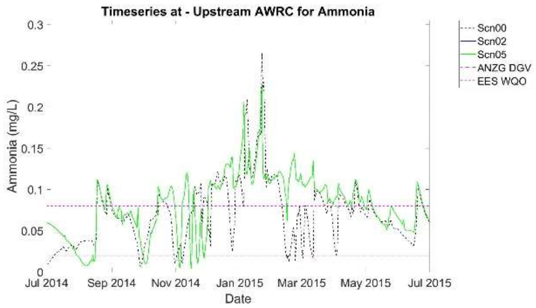
--> Timeseries plots at geographic markers and gauge locations

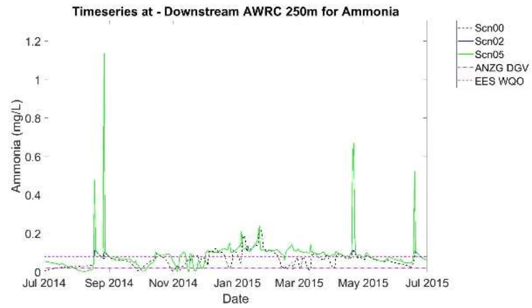
--> Box plots at geographic markers and gauge locations

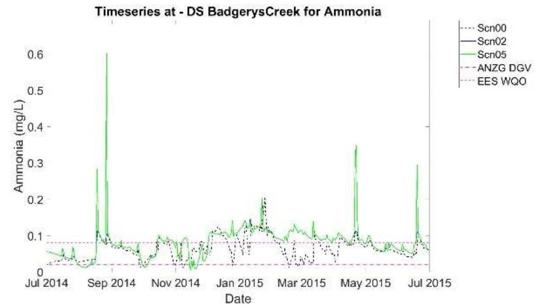
Longitudinal plot

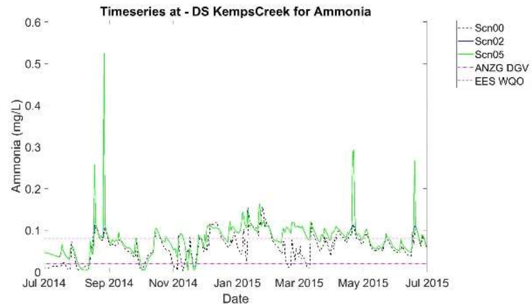


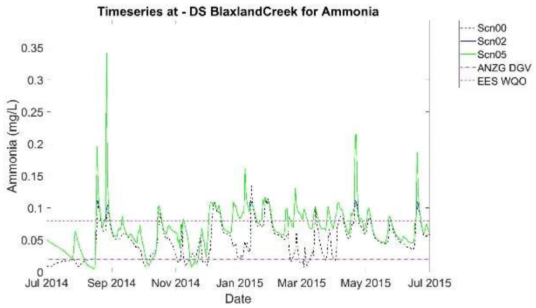
Timeseries plots

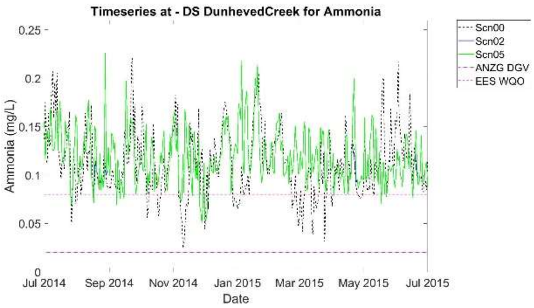


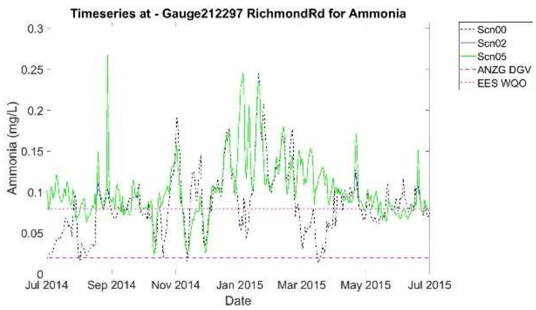


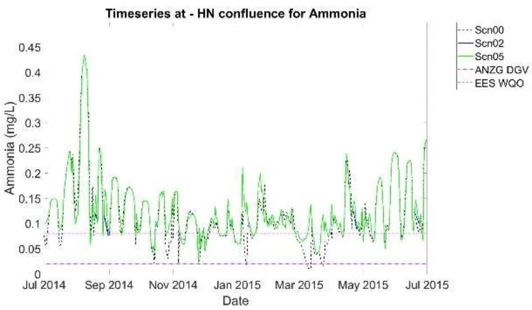




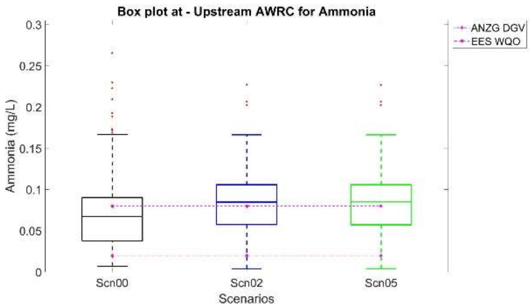


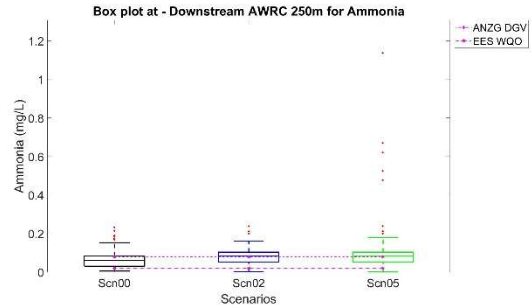


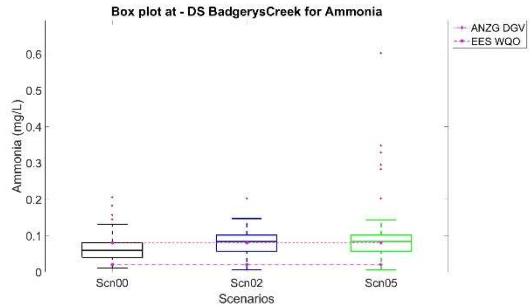


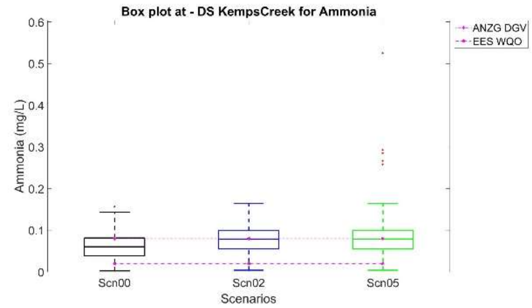


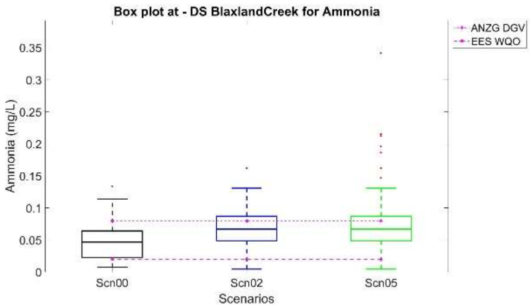
Box plots

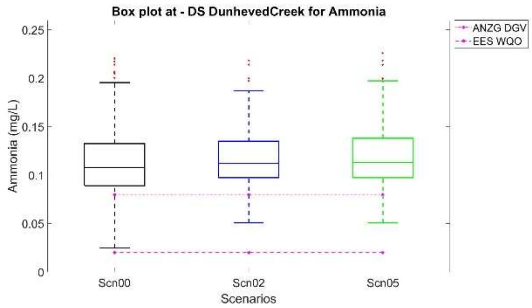

Box plot at - Upstream AWRC for Ammonia
Ammonia (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

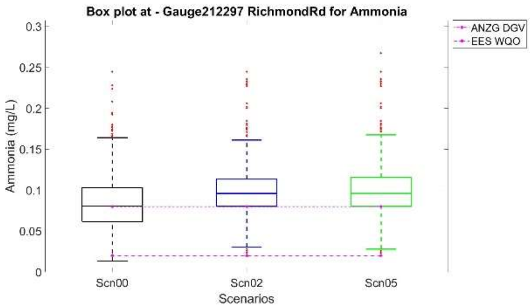

Box plot at - Downstream AWRC 250m for Ammonia
Ammonia (mg/L)
0
0.2
0.4
0.6
0.8
1
1.2
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

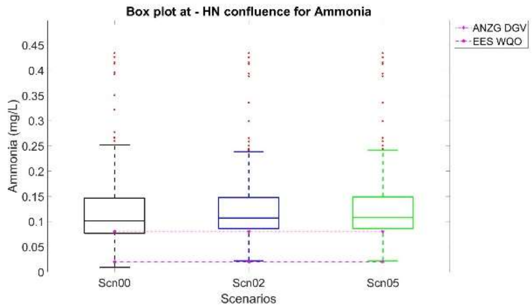

Box plot at - DS BadgerysCreek for Ammonia
Ammonia (mg/L)
0
0.1
0.2
0.3
0.4
0.5
0.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Ammonia
Ammonia (mg/L)
0
0.1
0.2
0.3
0.4
0.5
0.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Ammonia
Ammonia (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Ammonia
Ammonia (mg/L)
0
0.05
0.1
0.15
0.2
0.25
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Ammonia
Ammonia (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Ammonia
Ammonia (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

NOx (mg/L)

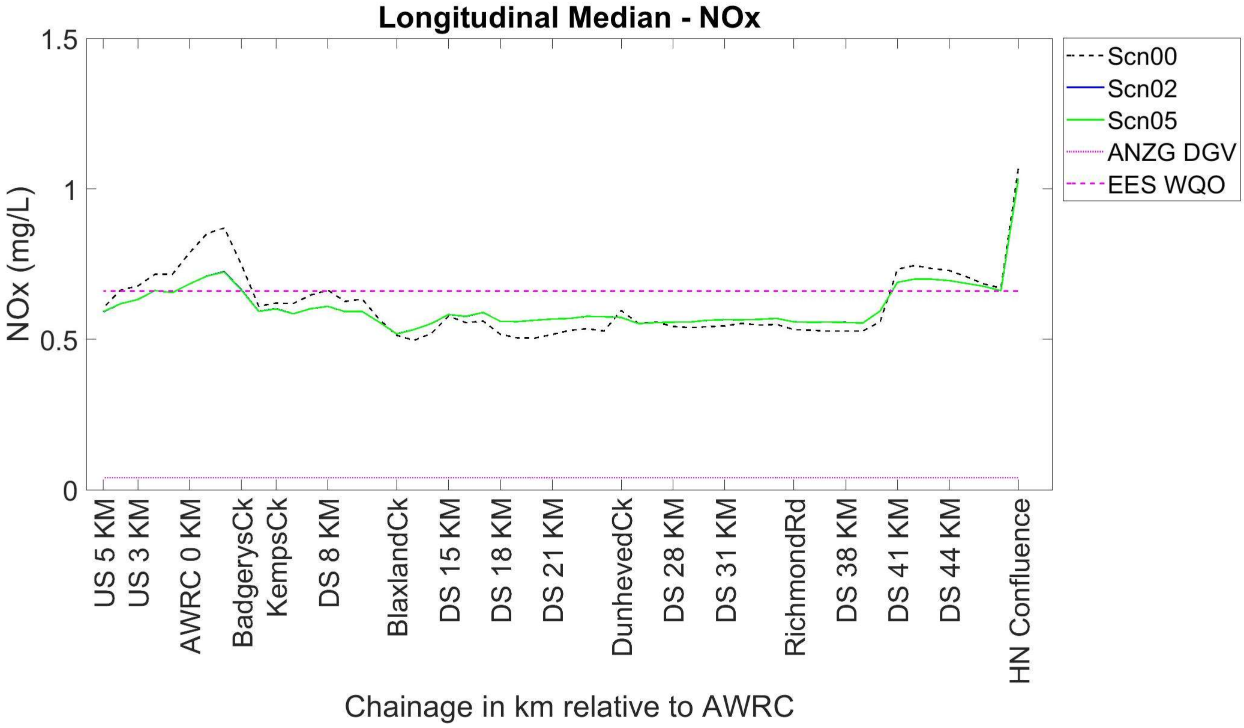
Scenario 05 - wet year

--> Longitudinal plots

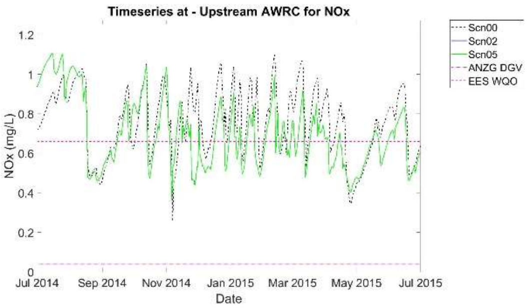
--> Timeseries plots at geographic markers and gauge locations

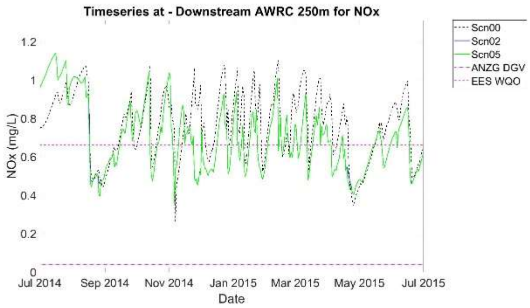
--> Box plots at geographic markers and gauge locations

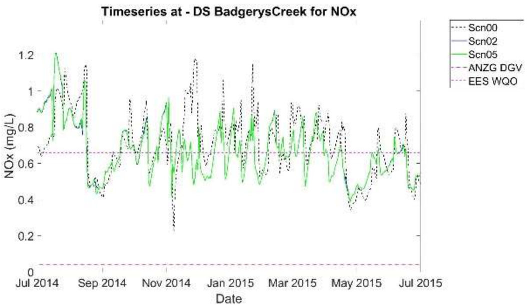
Longitudinal plot

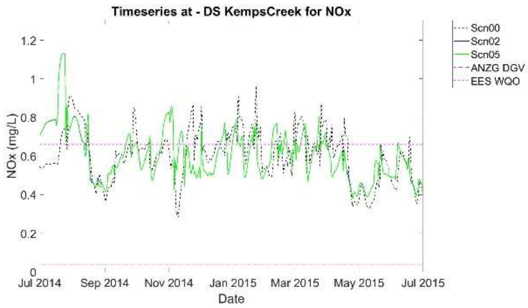


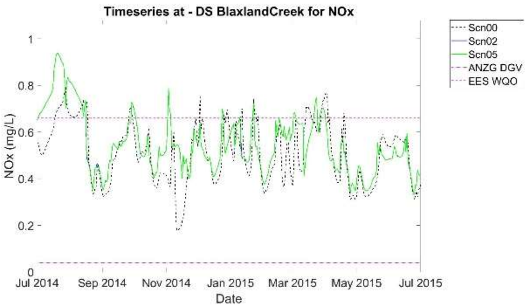
Timeseries plots

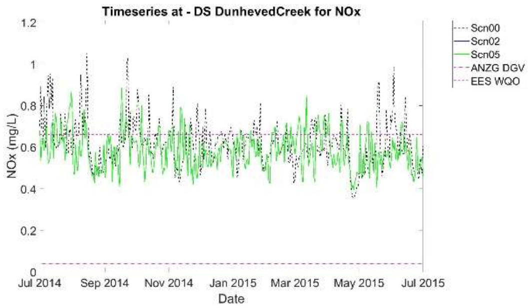


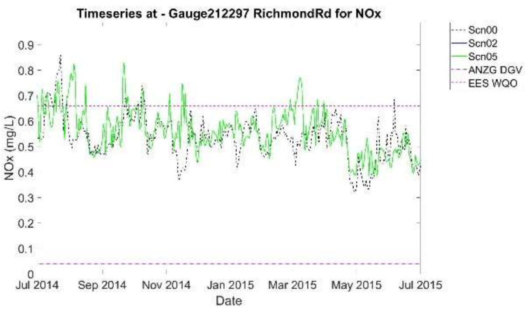


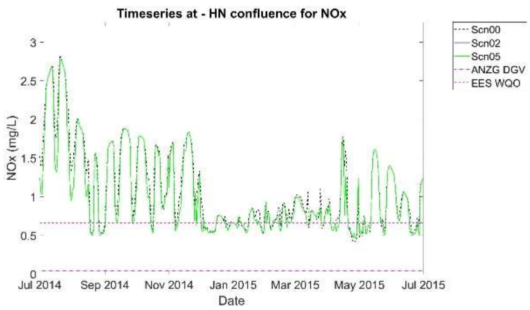




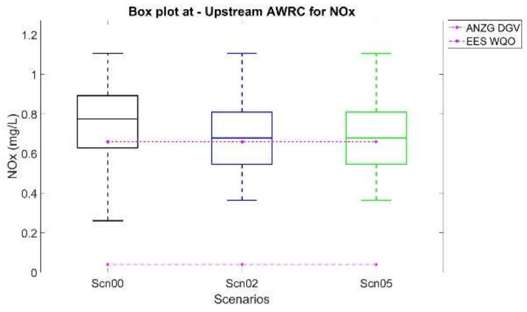


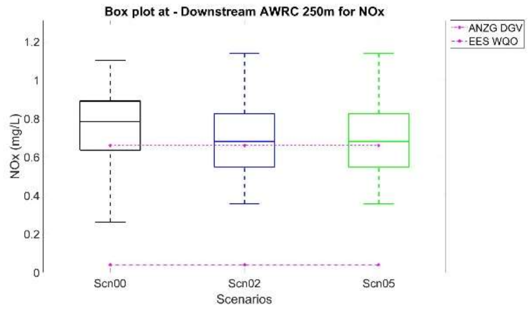


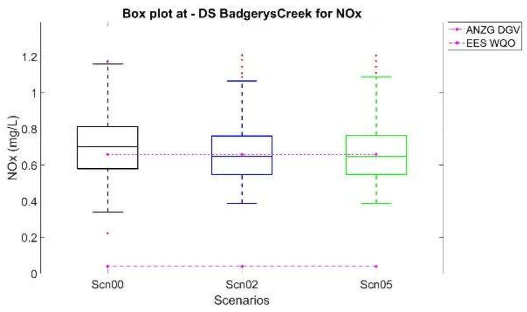


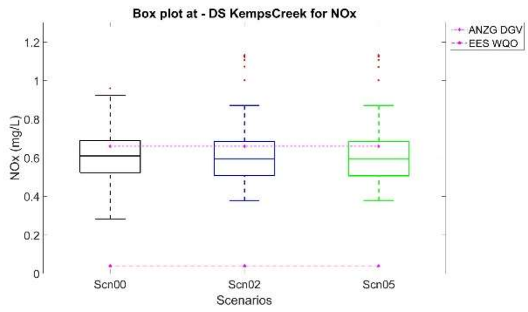


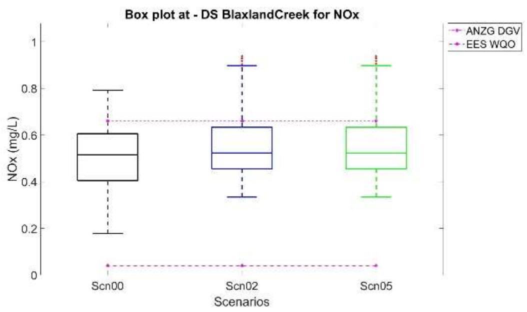
Box plots

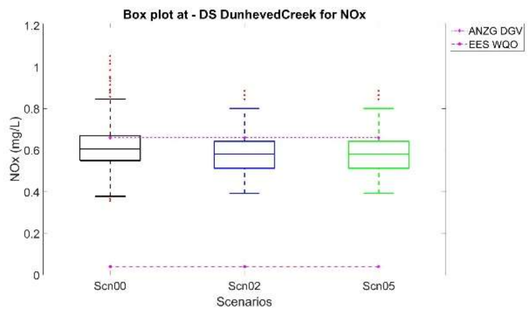

Box plot at - Upstream AWRC for NOx
ANZG DGV
EES WQO
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios

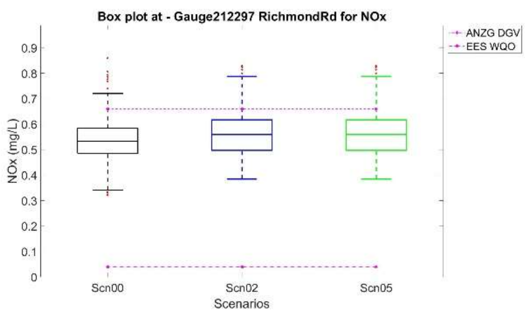

Box plot at - Downstream AWRC 250m for NOx
ANZG DGV
EES WQO
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios

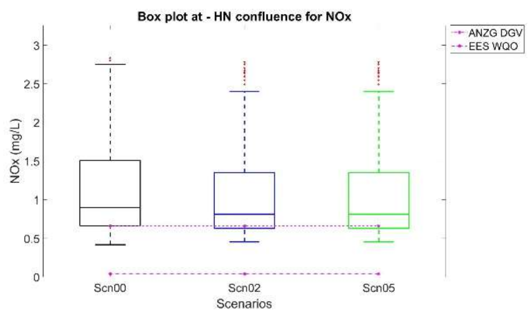

Box plot at - DS BadgerysCreek for NOx
ANZG DGV
EES WQO
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS KempsCreek for NOx
ANZG DGV
EES WQO
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for NOx
ANZG DGV
EES WQO
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for NOx
ANZG DGV
EES WQO
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for NOx
ANZG DGV
EES WQO
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for NOx
ANZG DGV
EES WQO
NOx (mg/L)
Scn00
Scn02
Scn05
Scenarios

South Creek WQRM

Total Phosphorus (mg/L)

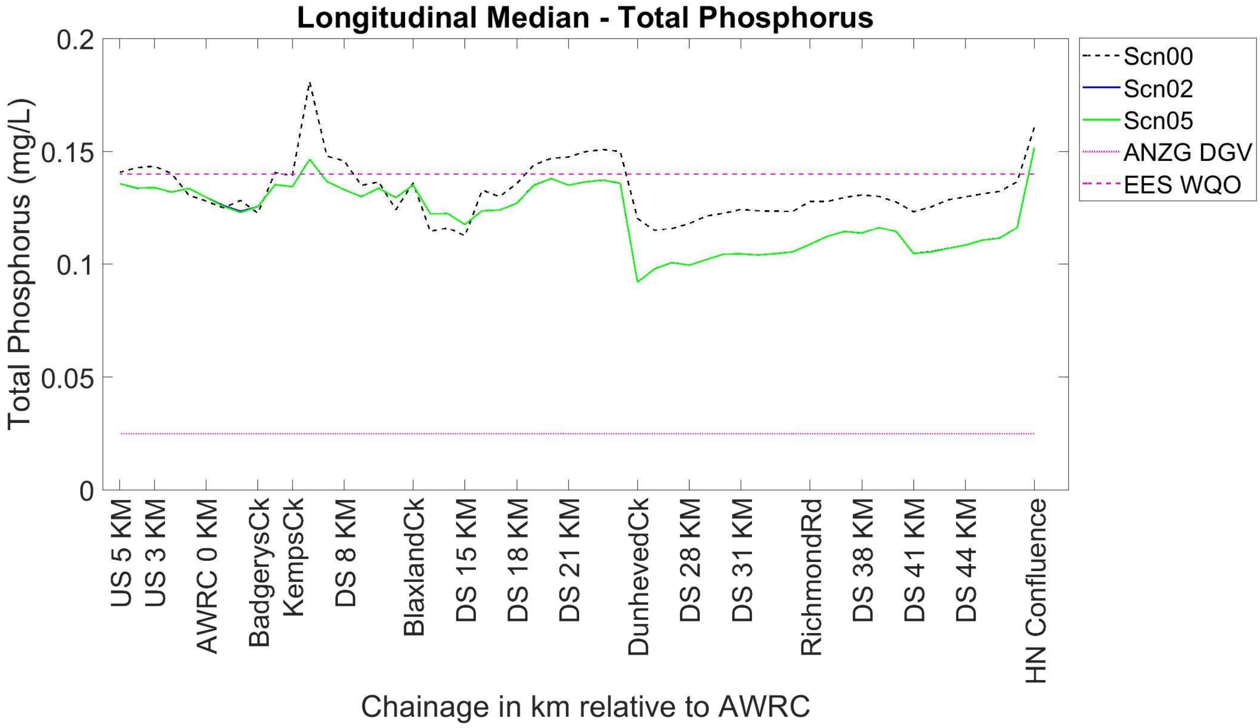
Scenario 05 - wet year

--> Longitudinal plots

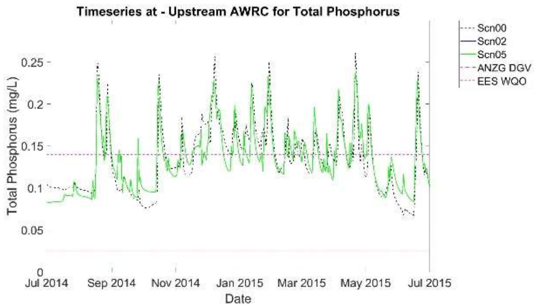
--> Timeseries plots at geographic markers and gauge locations

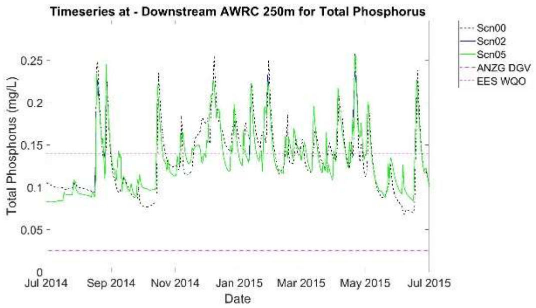
--> Box plots at geographic markers and gauge locations

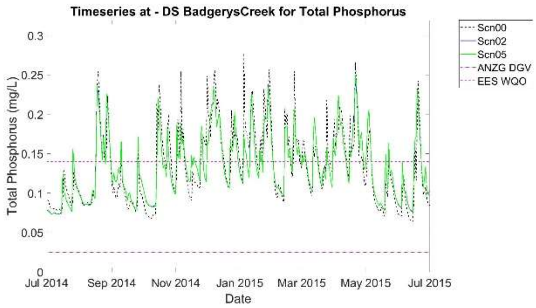
Longitudinal plot

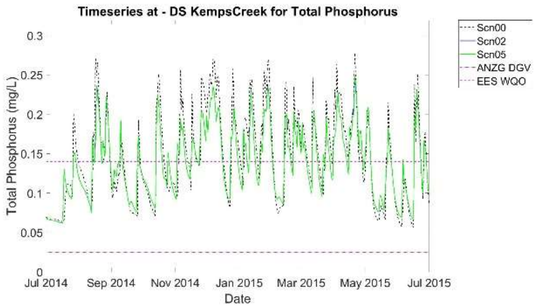


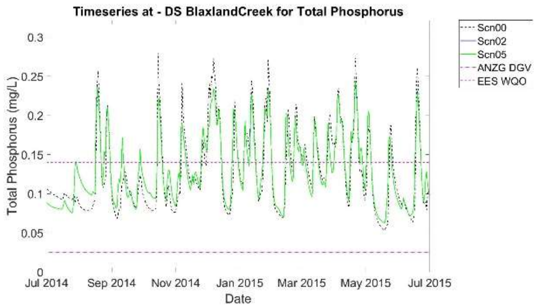
Timeseries plots

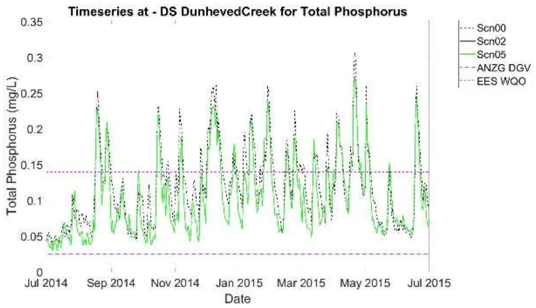


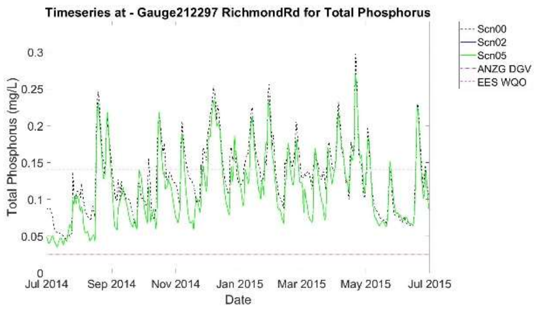


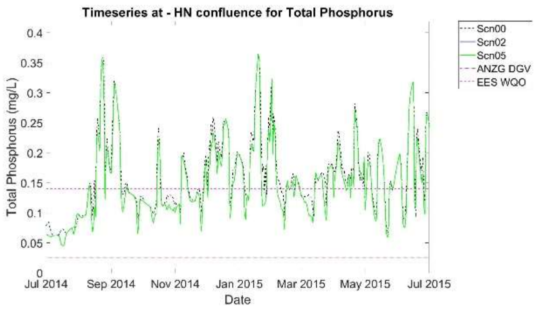




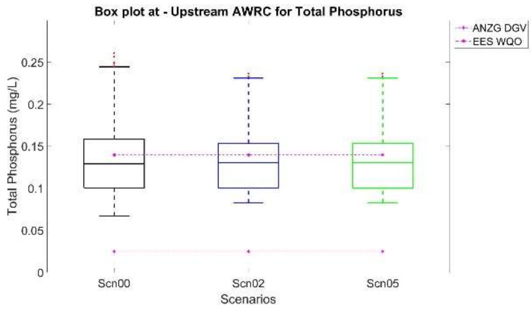


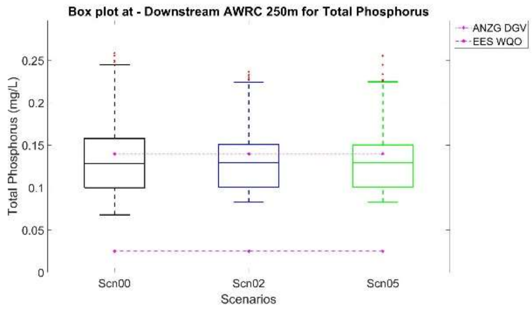


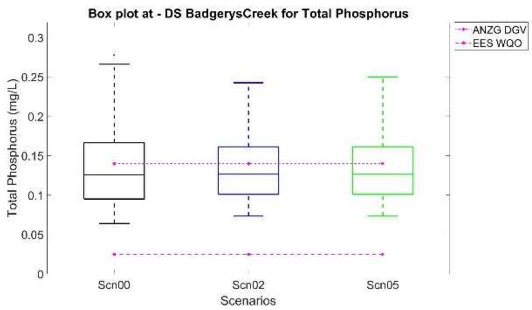


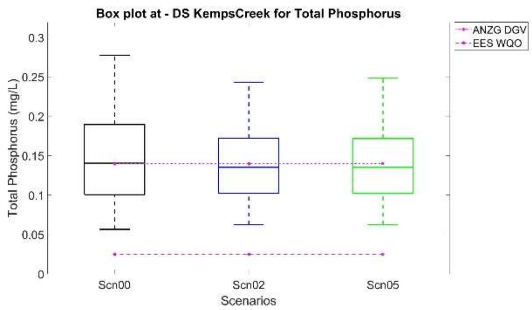


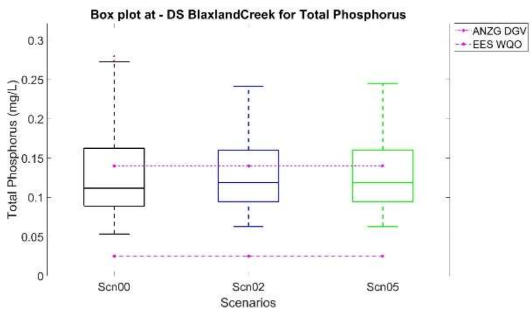
Box plots

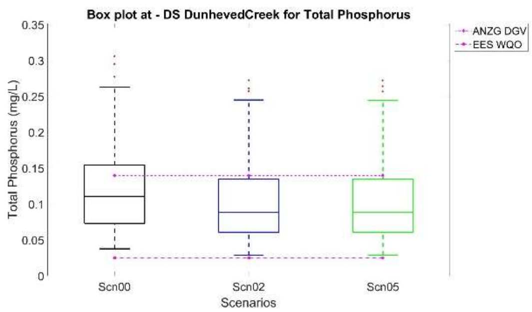

Box plot at - Upstream AWRC for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

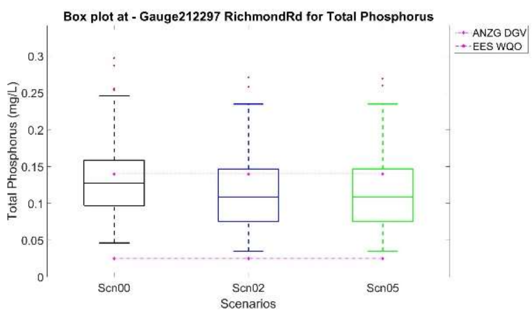

Box plot at - Downstream AWRC 250m for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

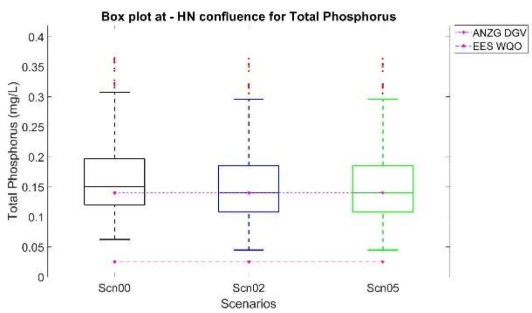

Box plot at - DS BadgerysCreek for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

FRP (mg/L)

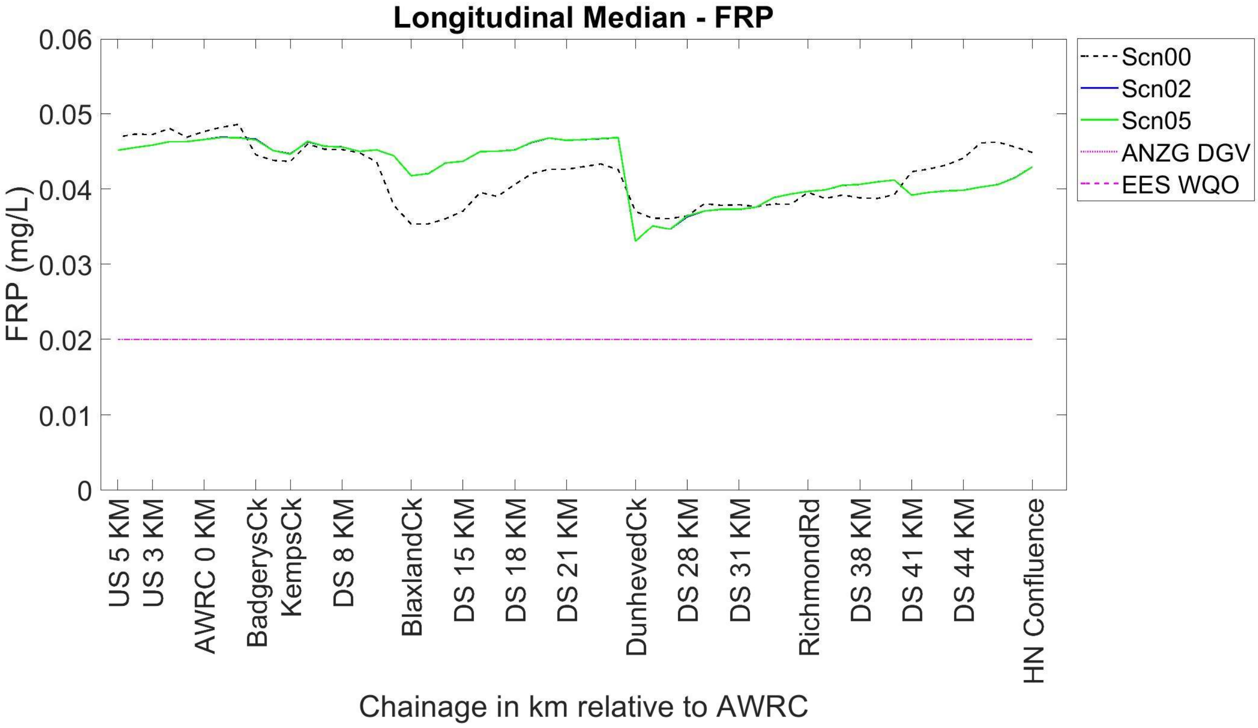
Scenario 05 - wet year

--> Longitudinal plots

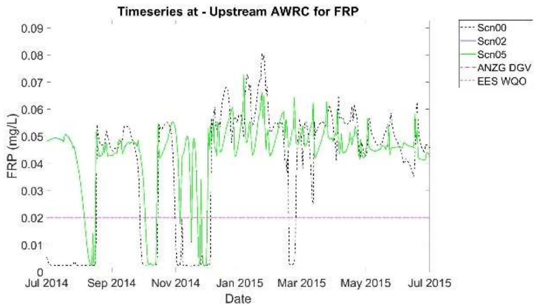
--> Timeseries plots at geographic markers and gauge locations

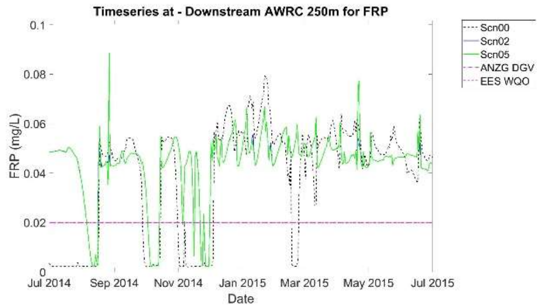
--> Box plots at geographic markers and gauge locations

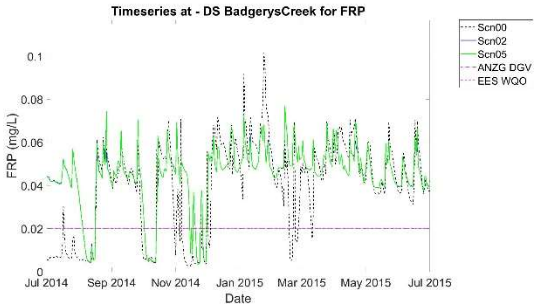
Longitudinal plot

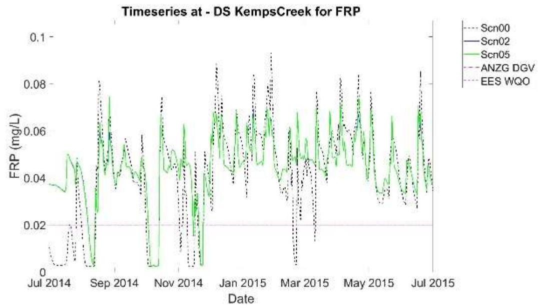


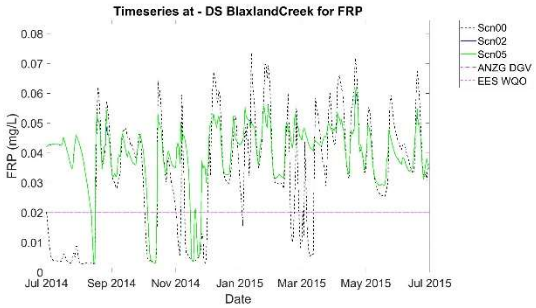
Timeseries plots

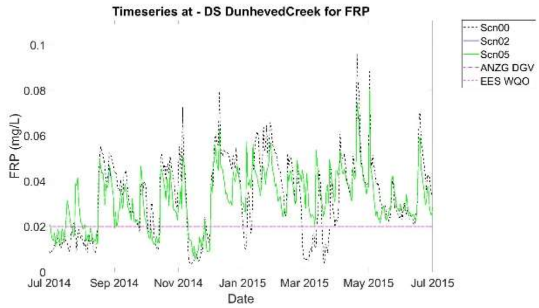


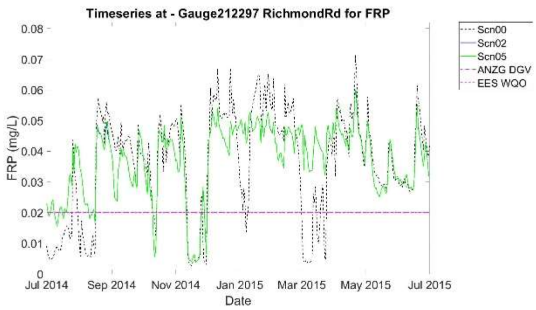


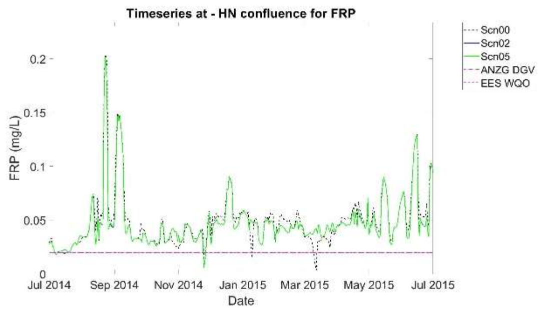




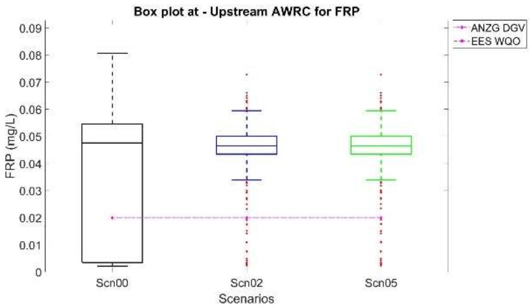


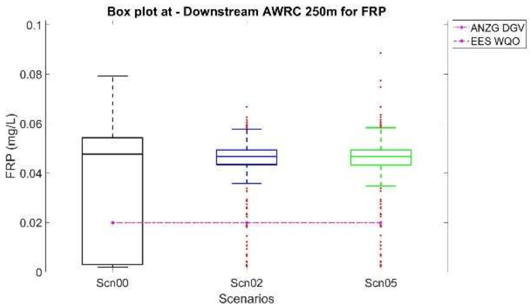


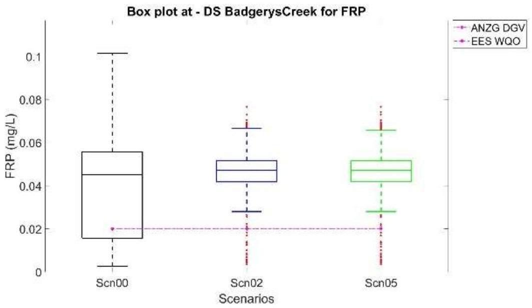


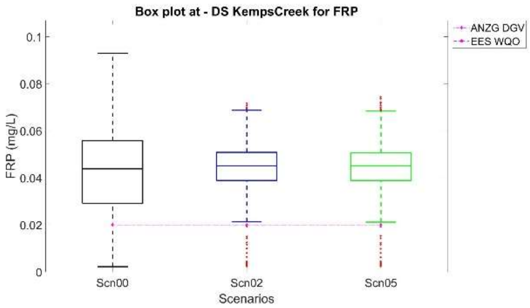


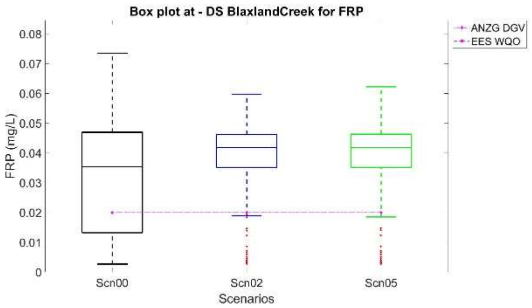
Box plots

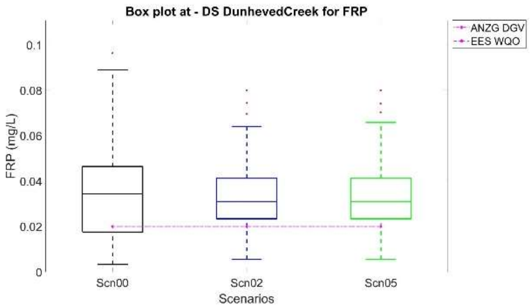

Box plot at - Upstream AWRC for FRP
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

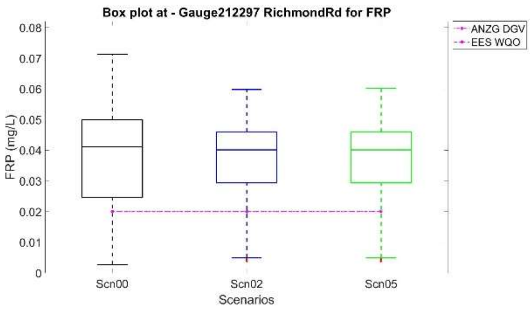

Box plot at - Downstream AWRC 250m for FRP
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

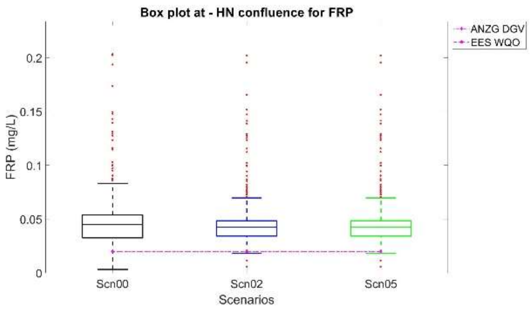

Box plot at - DS BadgerysCreek for FRP
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for FRP
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for FRP
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for FRP
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for FRP
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for FRP
FRP (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Total Chlorophyll-a (µg/L)

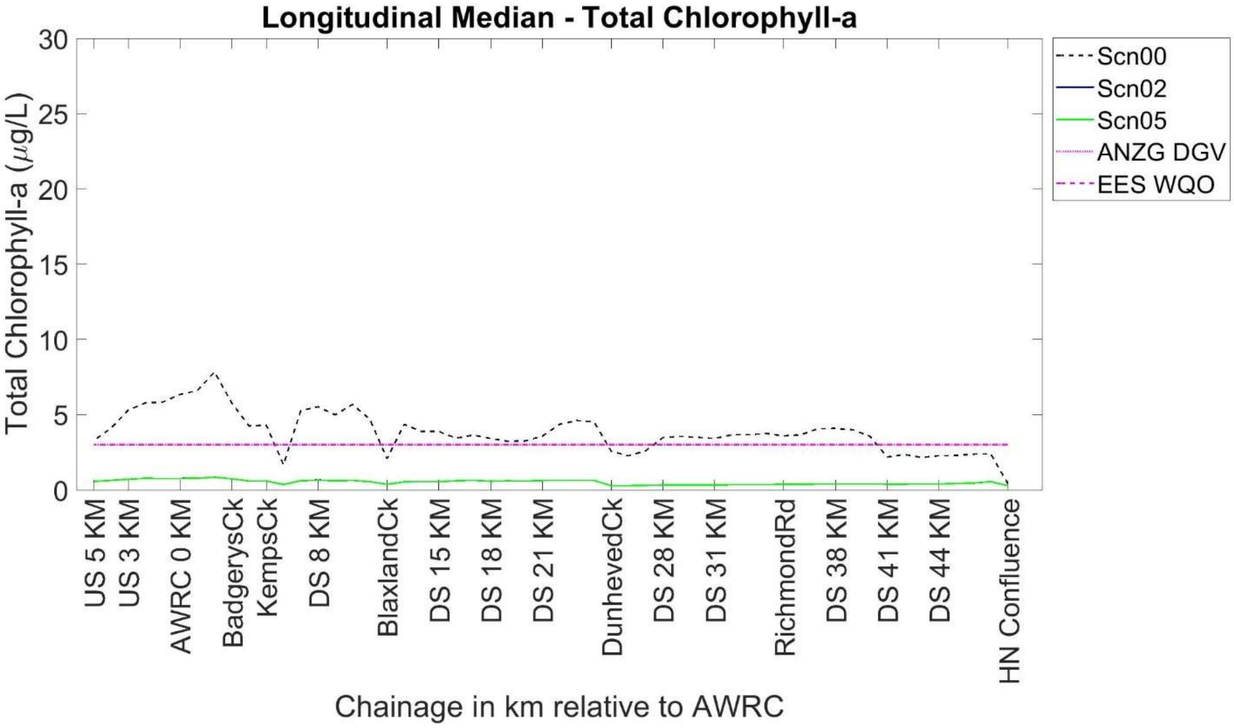
Scenario 05 - wet year

--> Longitudinal plots

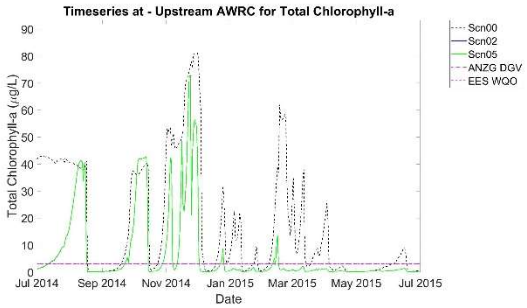
--> Timeseries plots at geographic markers and gauge locations

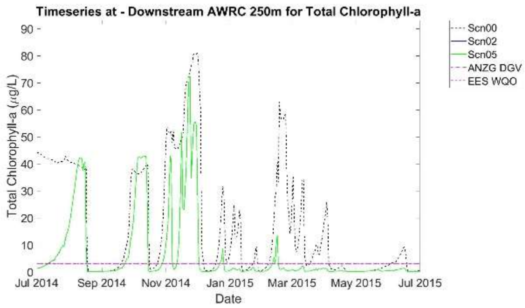
--> Box plots at geographic markers and gauge locations

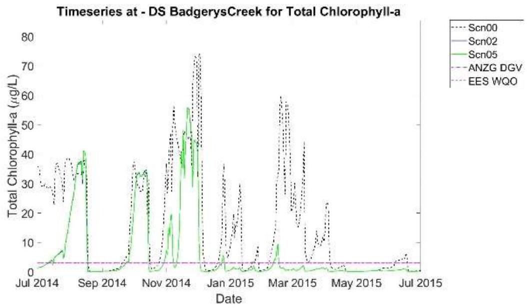
Longitudinal plot

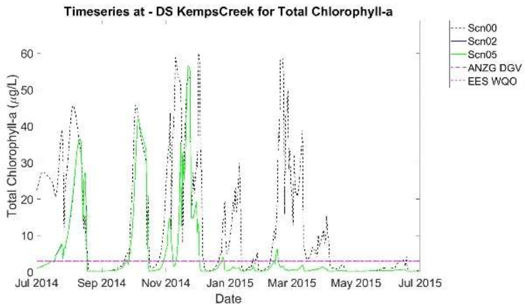


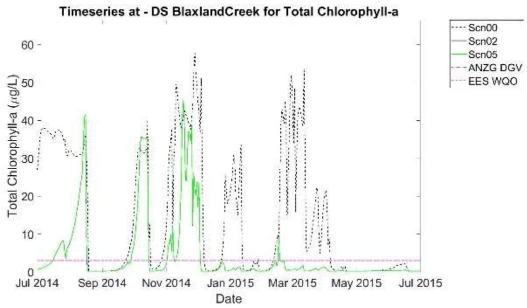
Timeseries plots

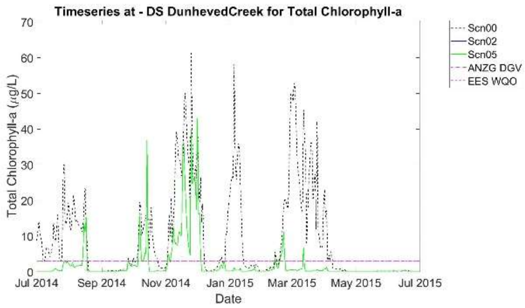


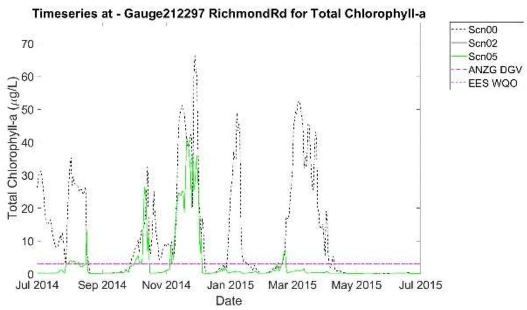


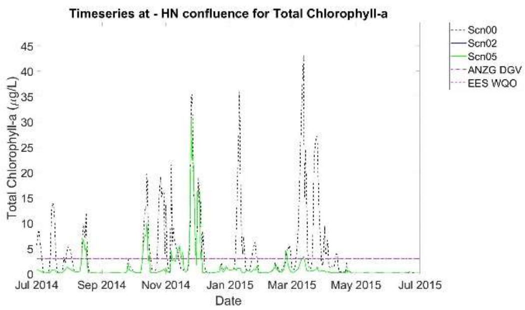




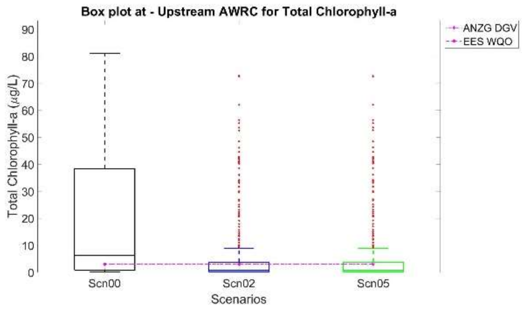


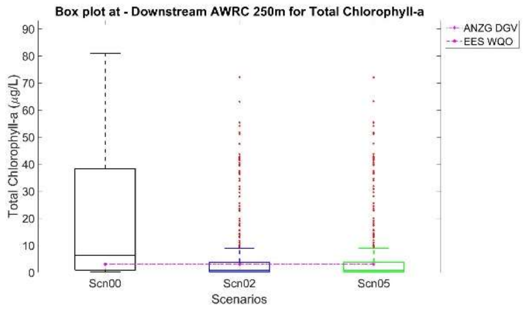


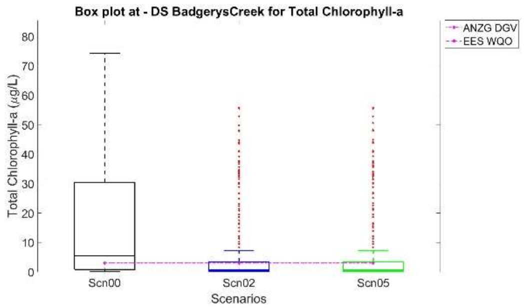


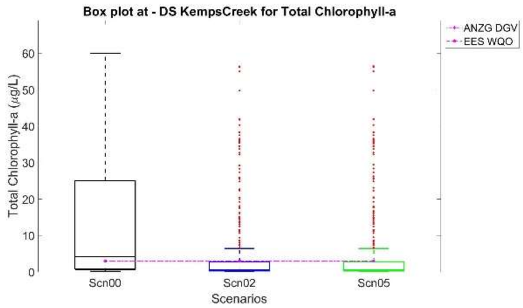


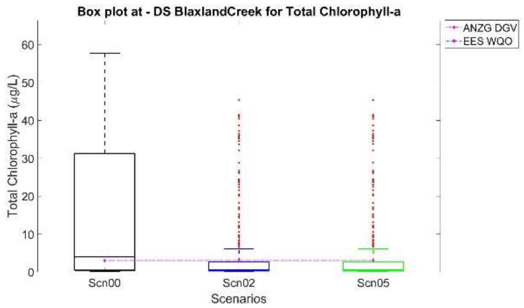
Box plots

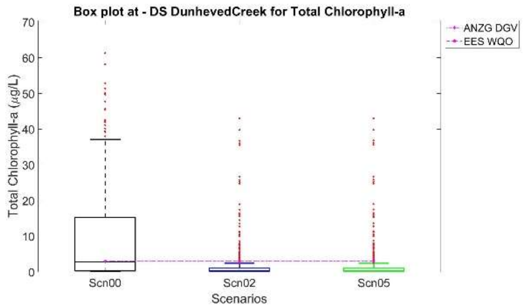

Box plot at - Upstream AWRC for Total Chlorophyll-a
ANZG DGV
EES WQO
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios

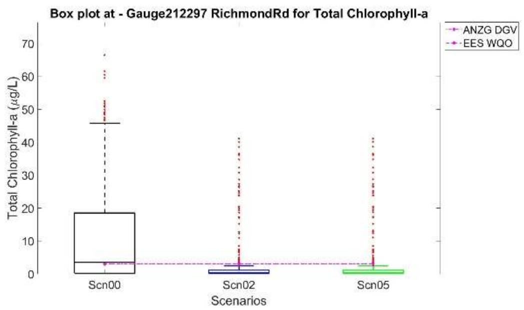

Box plot at - Downstream AWRC 250m for Total Chlorophyll-a
ANZG DGV
EES WQO
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios

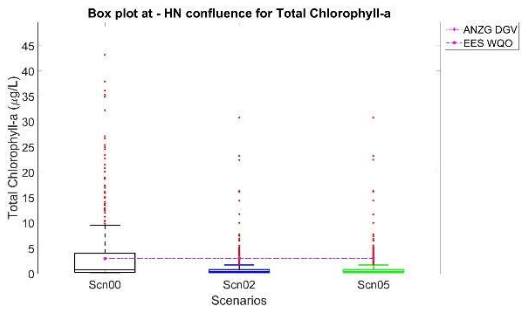

Box plot at - DS BadgerysCreek for Total Chlorophyll-a
ANZG DGV
EES WQO
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS KempsCreek for Total Chlorophyll-a
ANZG DGV
EES WQO
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for Total Chlorophyll-a
ANZG DGV
EES WQO
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for Total Chlorophyll-a
ANZG DGV
EES WQO
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for Total Chlorophyll-a
ANZG DGV
EES WQO
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for Total Chlorophyll-a
ANZG DGV
EES WQO
Total Chlorophyll-a (μg/L)
Scn00
Scn02
Scn05
Scenarios

South Creek WQRM

Salinity (g/L)

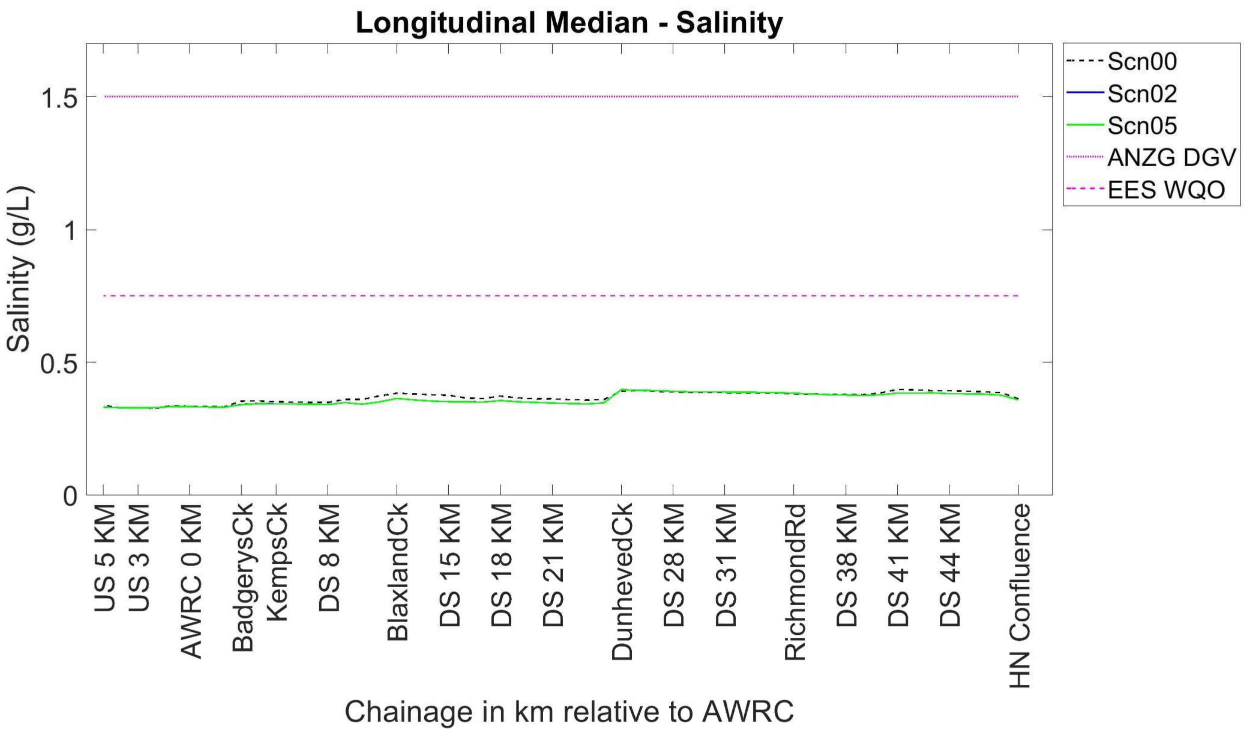
Scenario 05 - wet year

--> Longitudinal plots

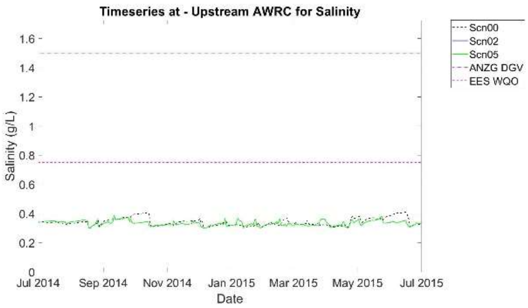
--> Timeseries plots at geographic markers and gauge locations

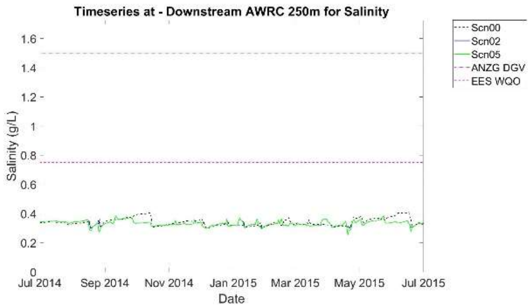
--> Box plots at geographic markers and gauge locations

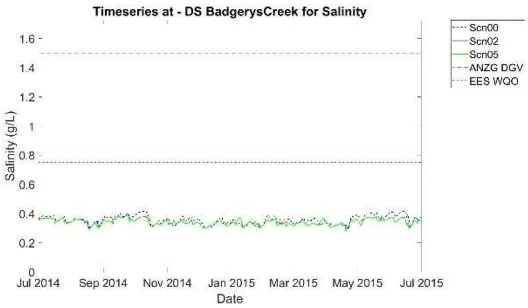
Longitudinal plot

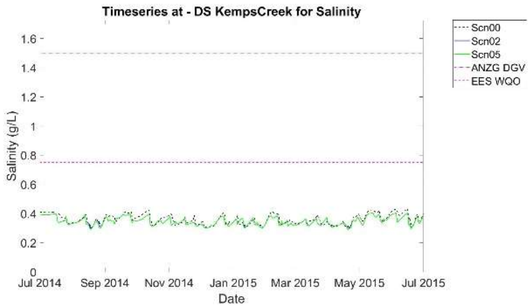


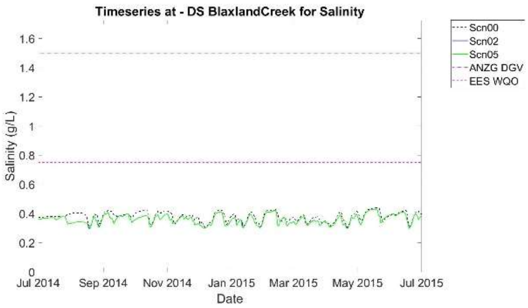
Timeseries plots

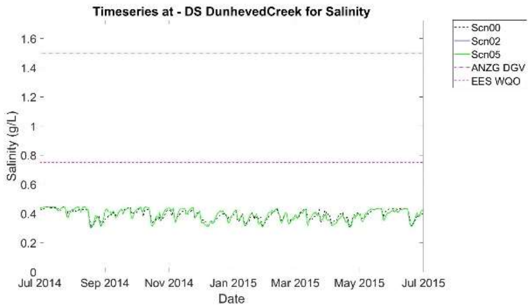


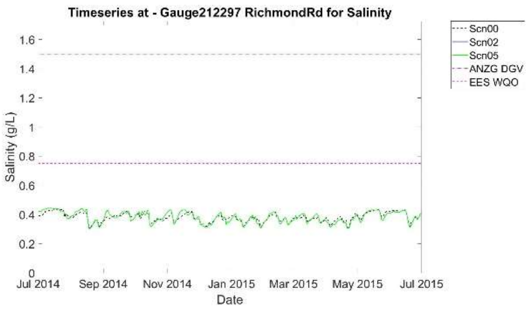


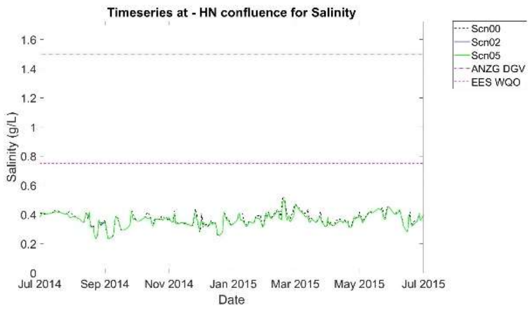




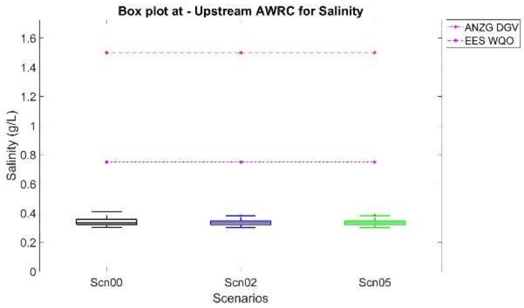


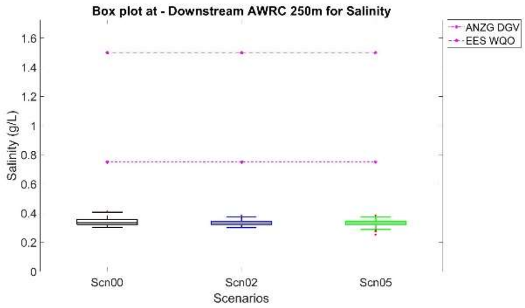


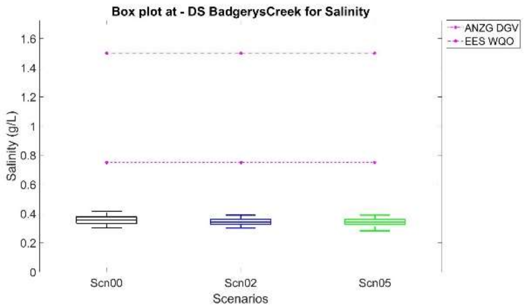


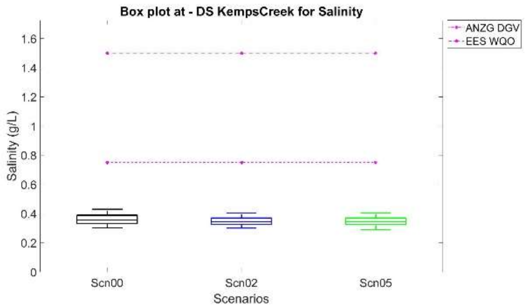


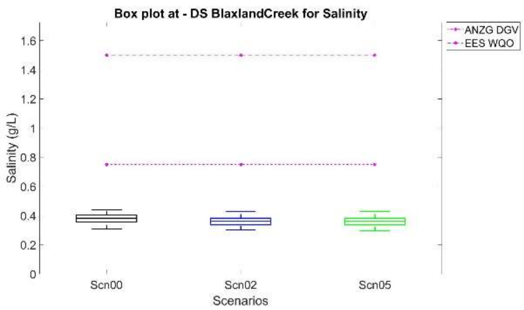
Box plots

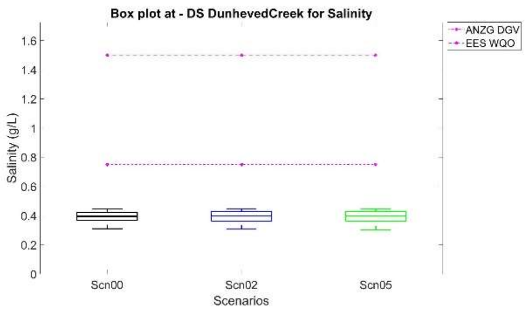

Box plot at - Upstream AWRC for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

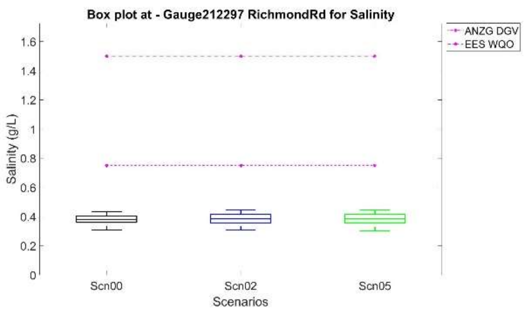

Box plot at - Downstream AWRC 250m for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

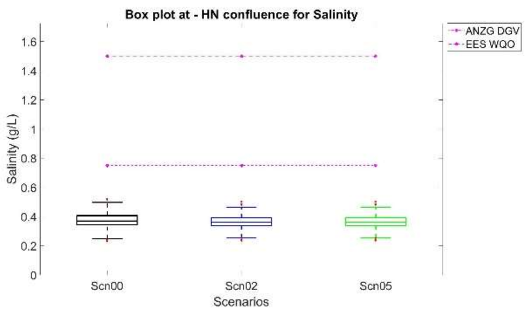

Box plot at - DS BadgerysCreek for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Salinity
Salinity (g/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

TSS (mg/L)

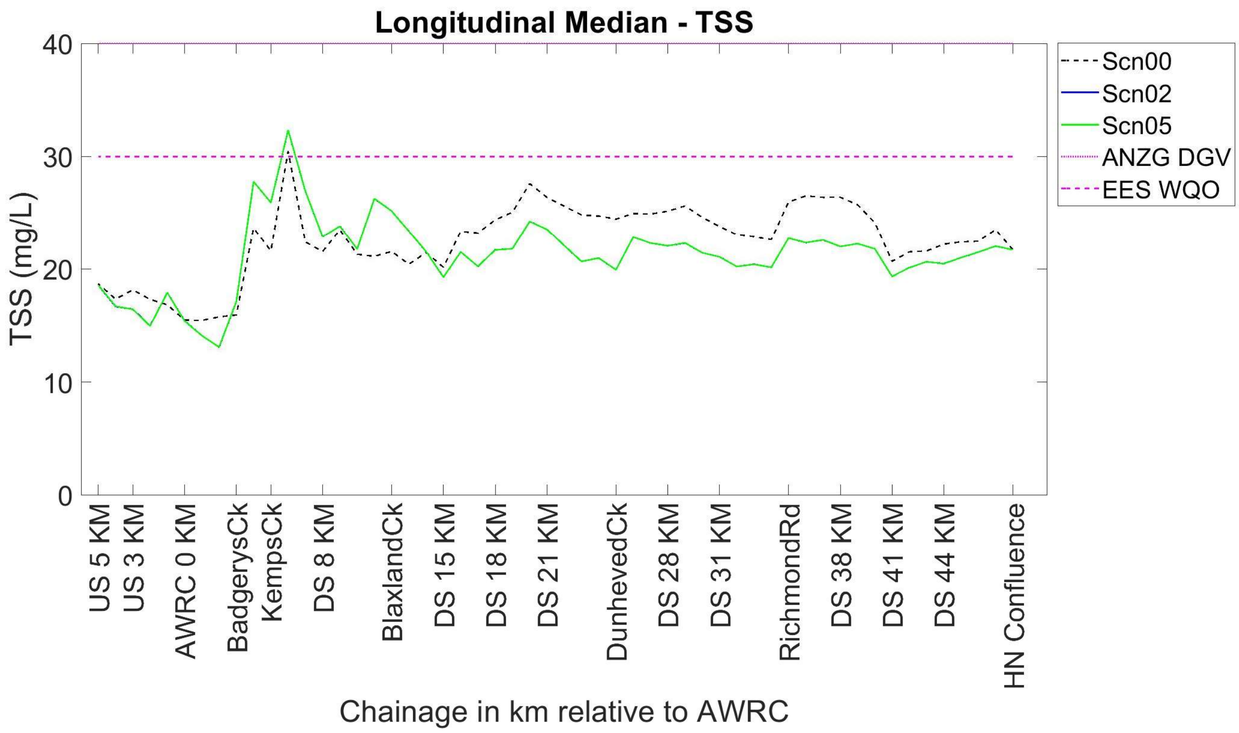
Scenario 05 - wet year

--> Longitudinal plots

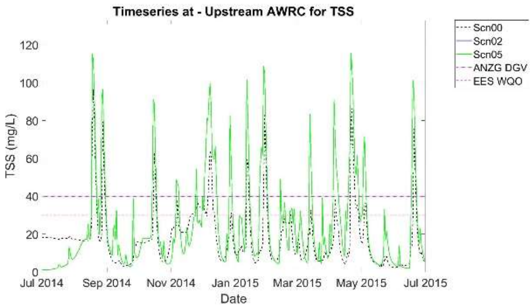
--> Timeseries plots at geographic markers and gauge locations

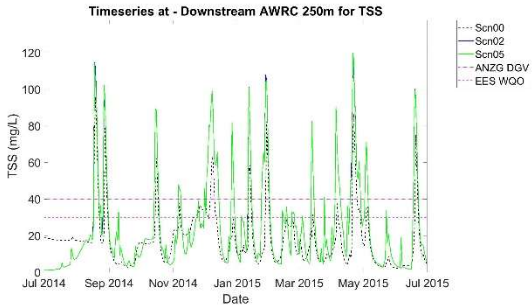
--> Box plots at geographic markers and gauge locations

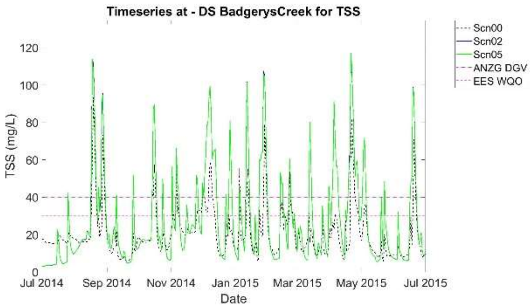
Longitudinal plot

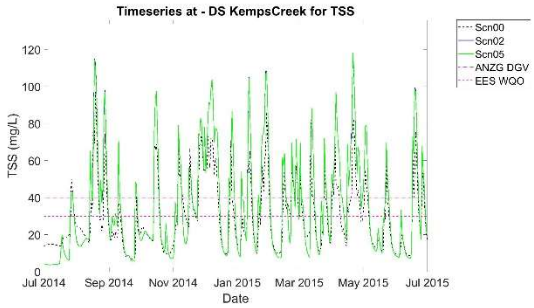


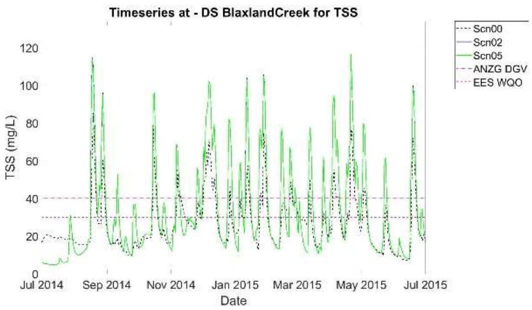
Timeseries plots

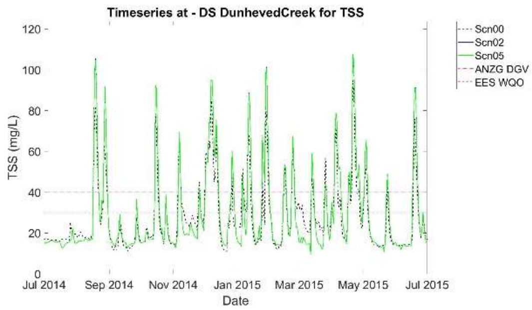


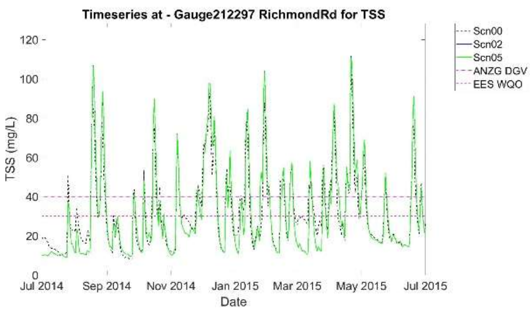


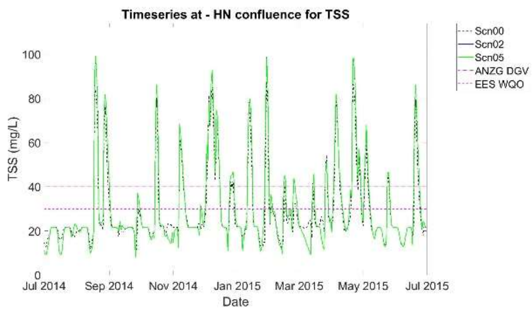




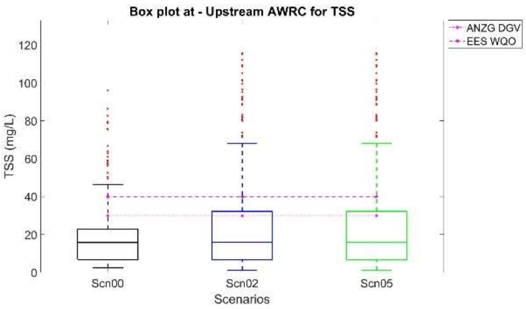


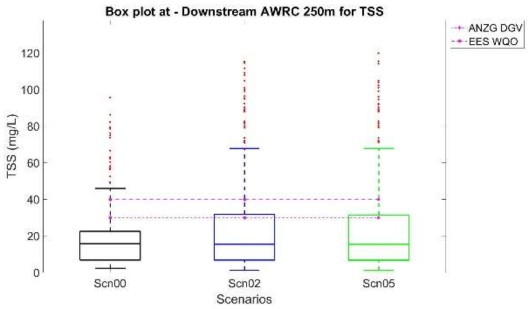


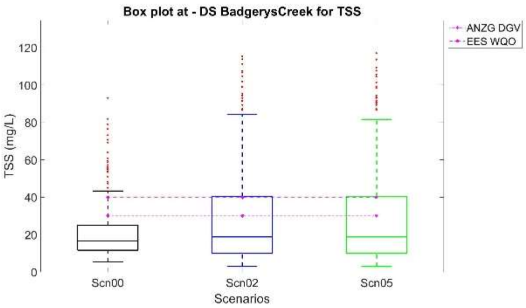


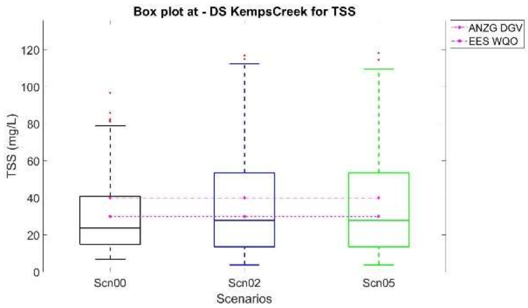


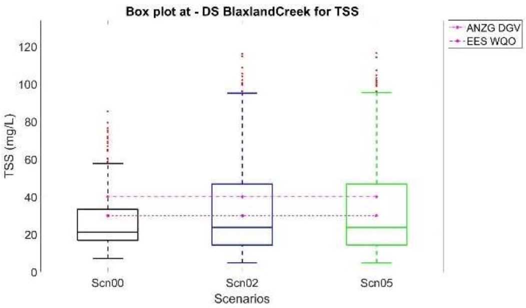
Box plots

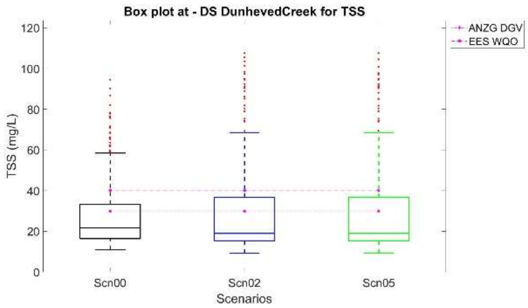

Box plot at - Upstream AWRC for TSS
TSS (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

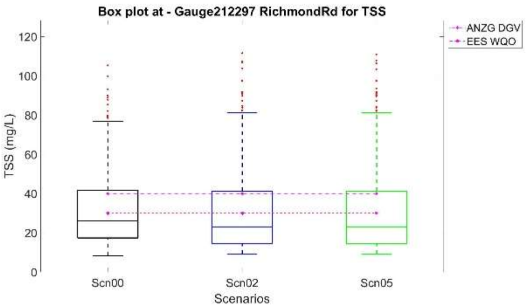

Box plot at - Downstream AWRC 250m for TSS
TSS (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

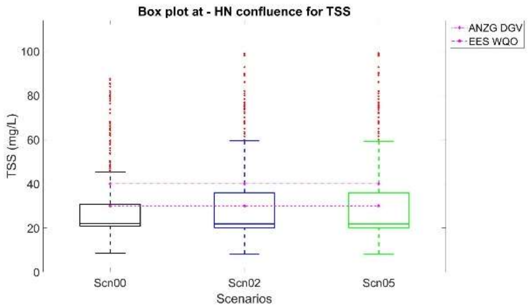

Box plot at - DS BadgerysCreek for TSS
TSS (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for TSS
TSS (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for TSS
TSS (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for TSS
TSS (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for TSS
TSS (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for TSS
TSS (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Dissolved Oxygen (mg/L)

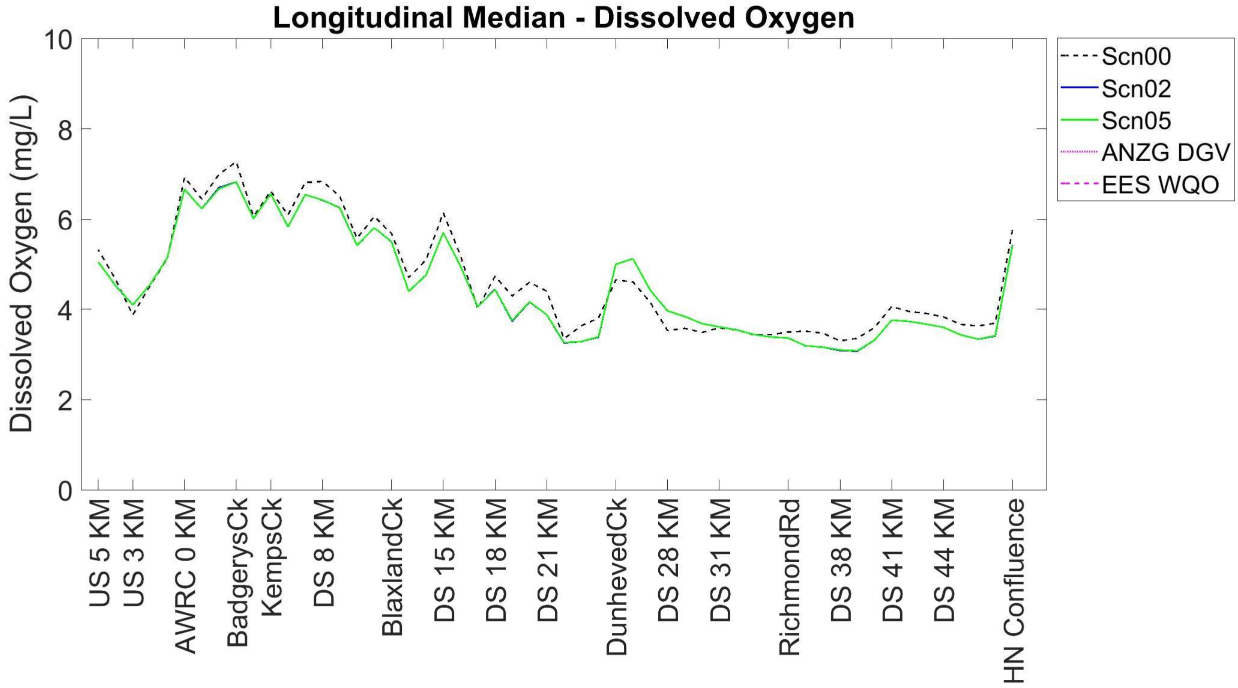
Scenario 05 - wet year

--> Longitudinal plots

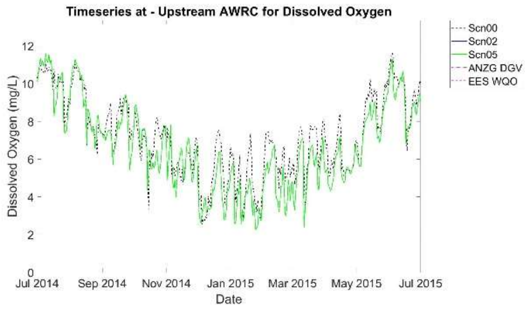
--> Timeseries plots at geographic markers and gauge locations

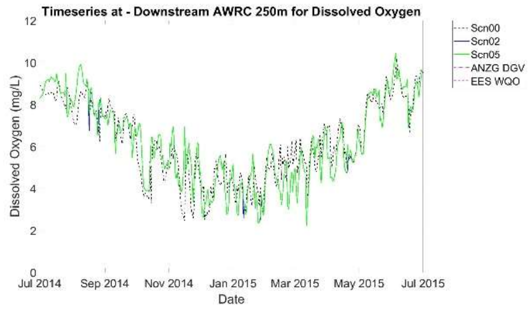
--> Box plots at geographic markers and gauge locations

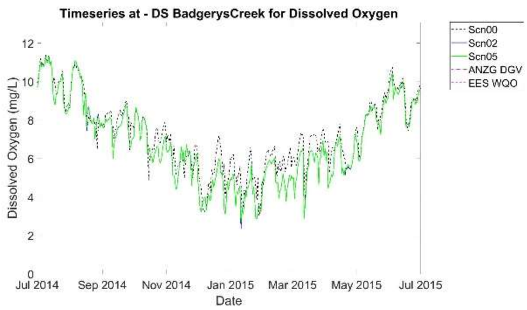
Longitudinal plot

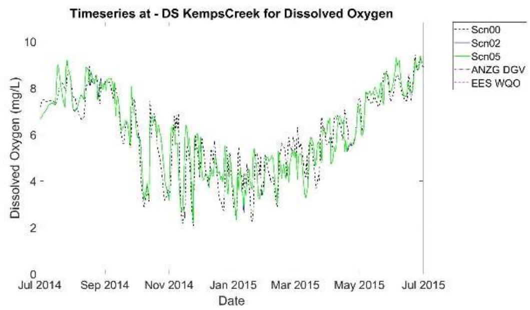


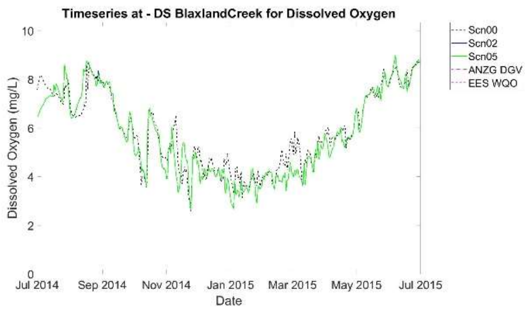
Timeseries plots

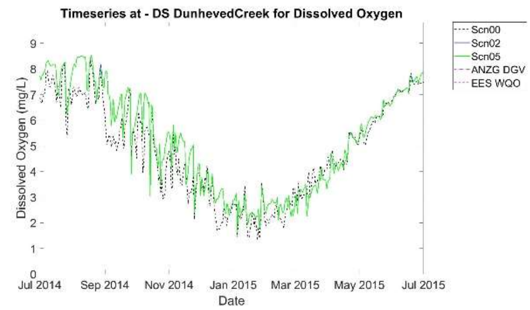


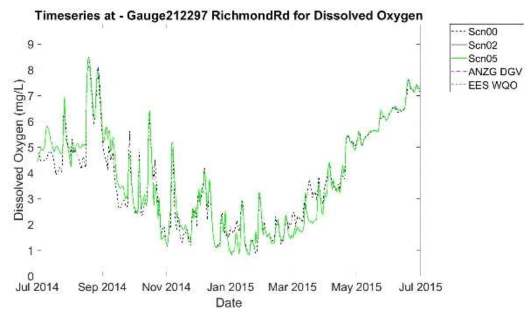


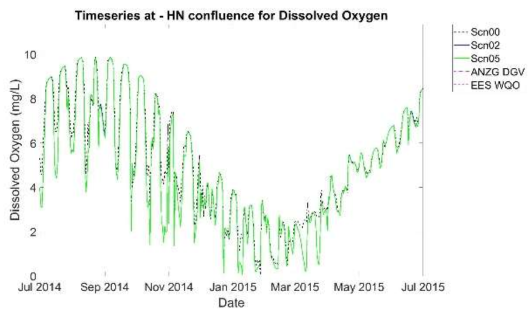




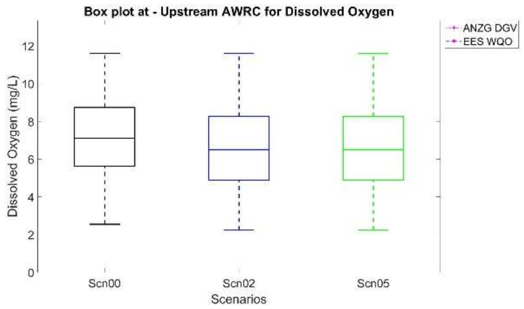


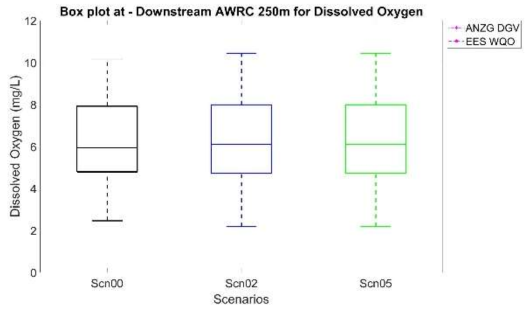


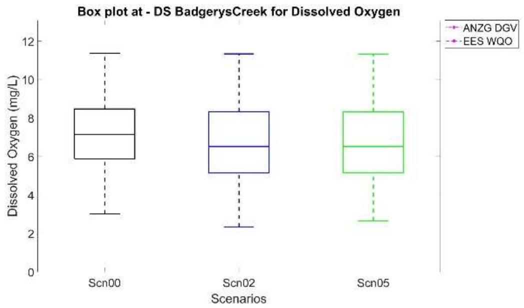


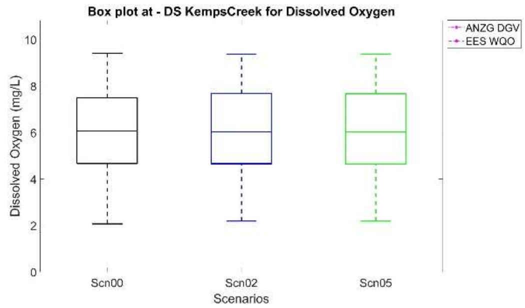


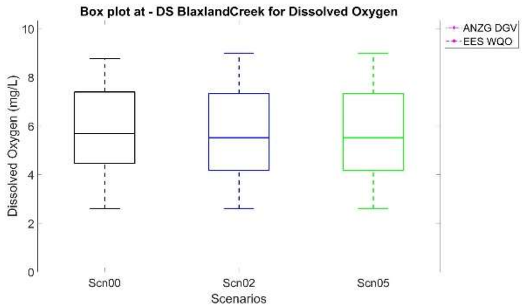
Box plots

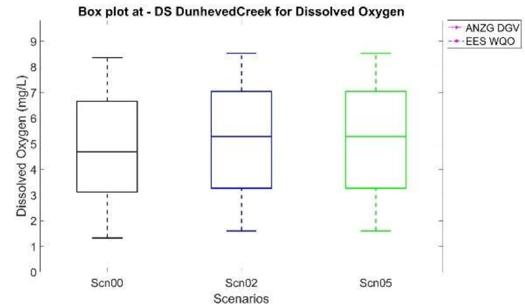

Box plot at - Upstream AWRC for Dissolved Oxygen
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

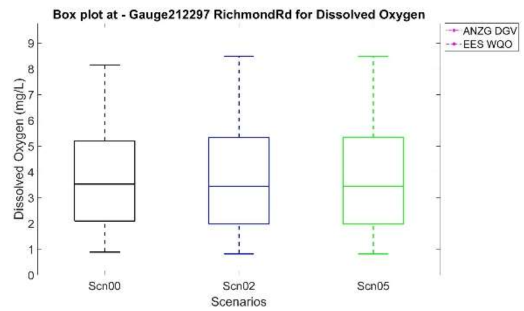

Box plot at - Downstream AWRC 250m for Dissolved Oxygen
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

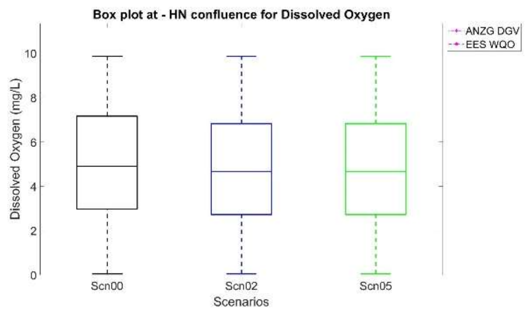

Box plot at - DS BadgerysCreek for Dissolved Oxygen
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS KempsCreek for Dissolved Oxygen
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Dissolved Oxygen
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Dissolved Oxygen
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Dissolved Oxygen
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Dissolved Oxygen
Dissolved Oxygen (mg/L)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Dissolved Oxygen Saturation (%)

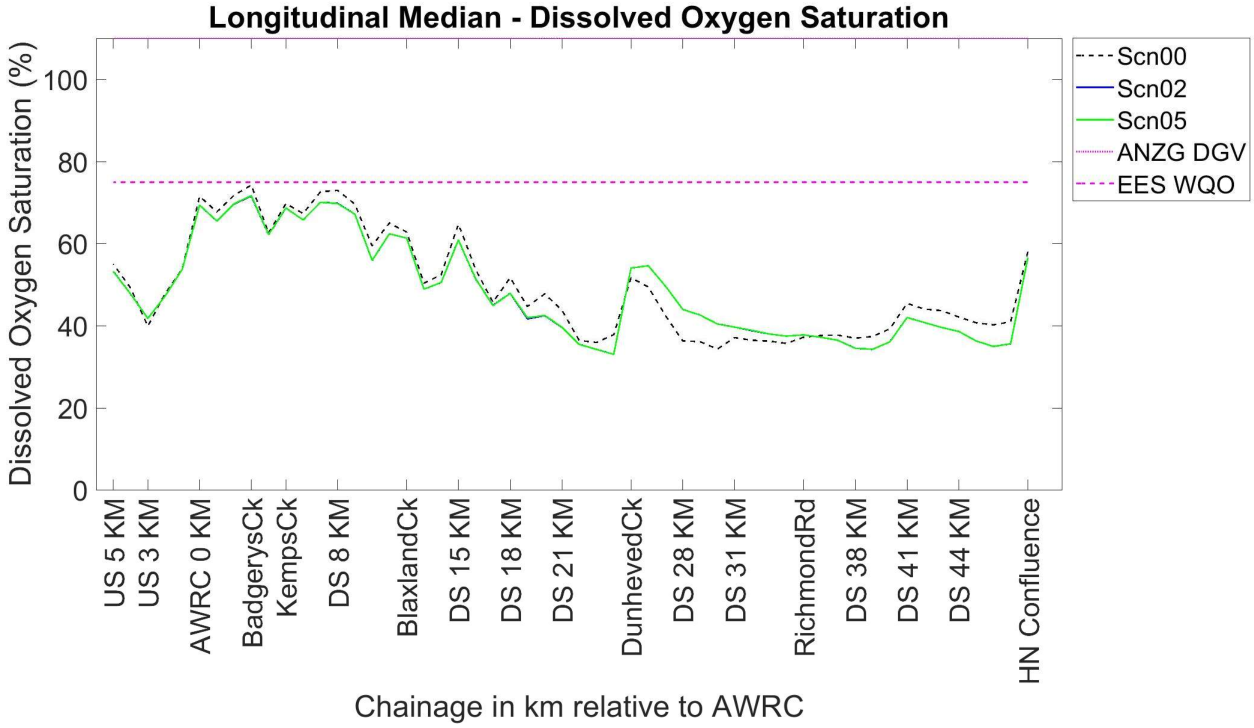
Scenario 05 - wet year

--> Longitudinal plots

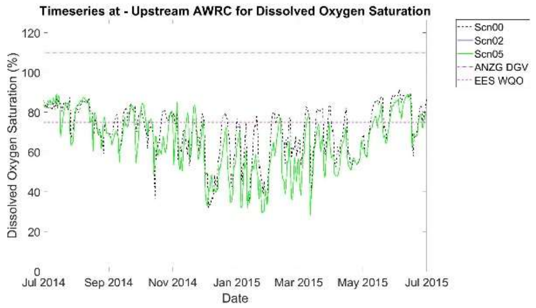
--> Timeseries plots at geographic markers and gauge locations

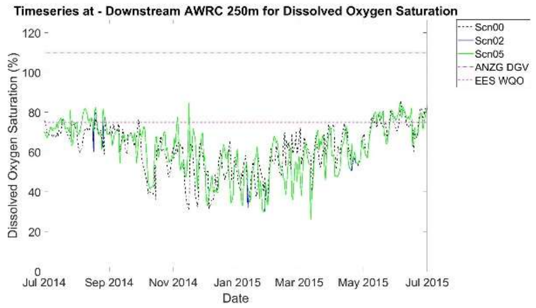
--> Box plots at geographic markers and gauge locations

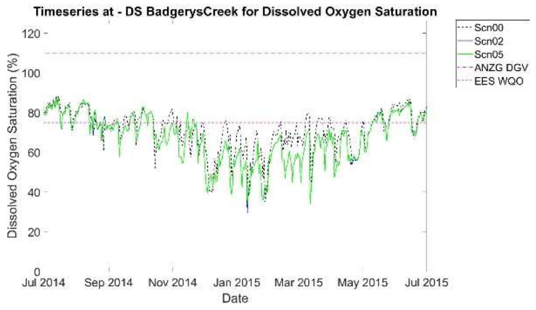
Longitudinal plot

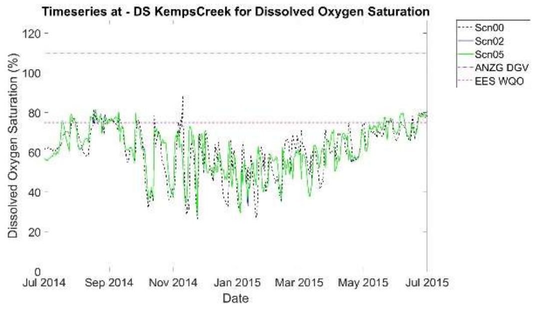


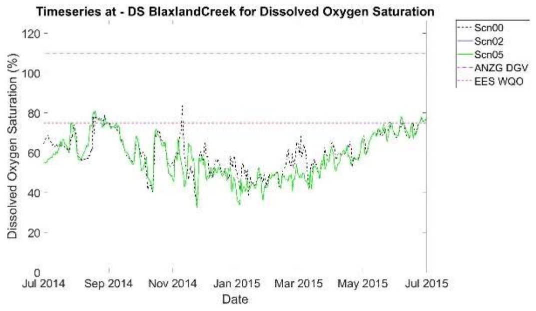
Timeseries plots

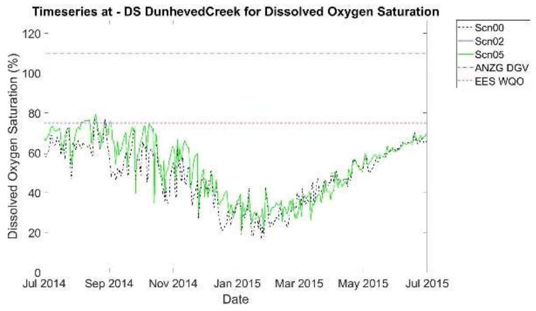


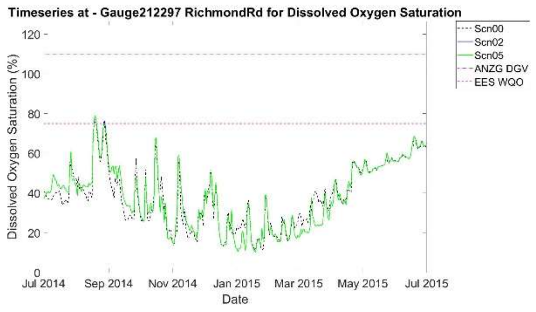


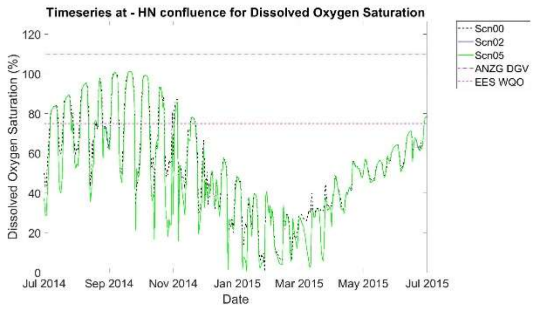




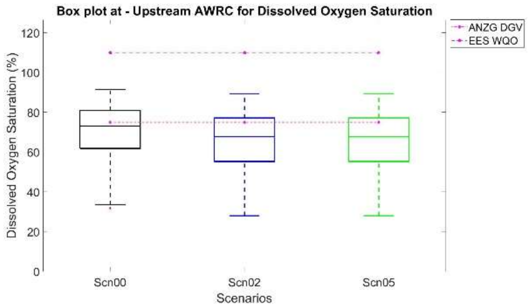


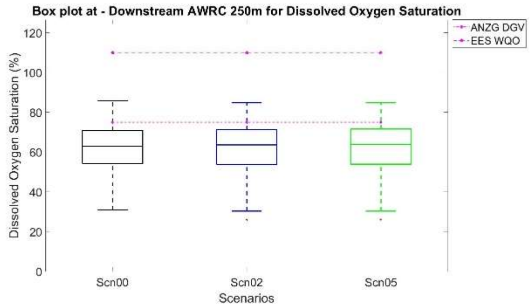


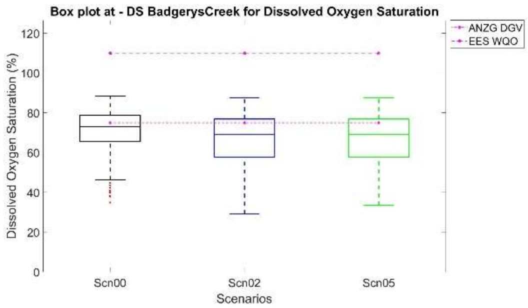


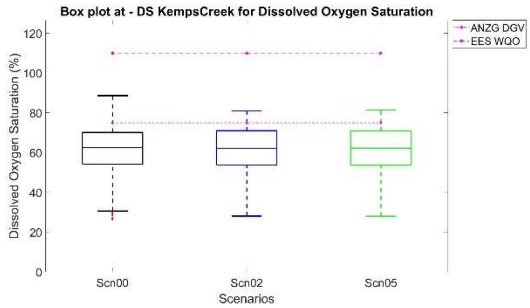


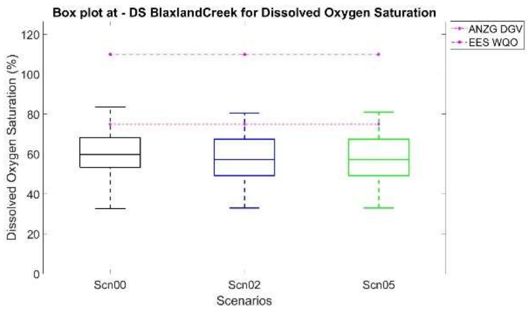
Box plots

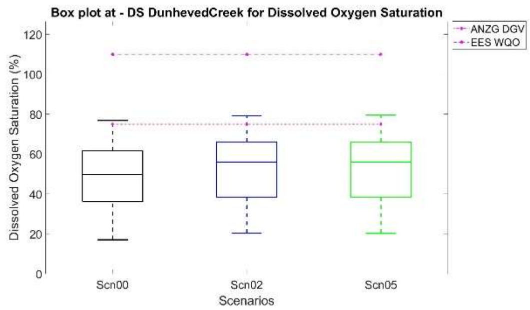

Box plot at - Upstream AWRC for Dissolved Oxygen Saturation
ANZG DGV
EES WQO
Dissolved Oxygen Saturation (%)
Scn00
Scn02
Scn05
Scenarios

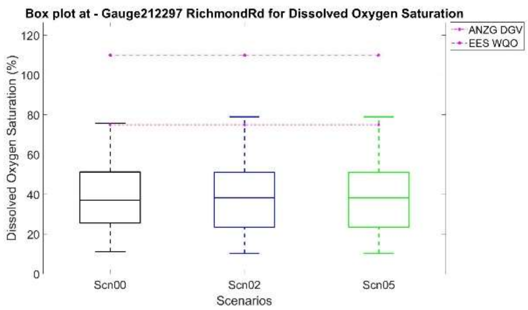

Box plot at - Downstream AWRC 250m for Dissolved Oxygen Saturation
ANZG DGV
EES WQO
Dissolved Oxygen Saturation (%)
Scn00
Scn02
Scn05
Scenarios

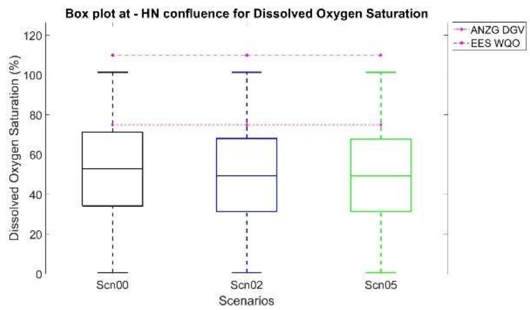

Box plot at - DS BadgerysCreek for Dissolved Oxygen Saturation
ANZG DGV
EES WQO
Dissolved Oxygen Saturation (%)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS KempsCreek for Dissolved Oxygen Saturation
ANZG DGV
EES WQO
Dissolved Oxygen Saturation (%)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for Dissolved Oxygen Saturation
ANZG DGV
EES WQO
Dissolved Oxygen Saturation (%)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for Dissolved Oxygen Saturation
ANZG DGV
EES WQO
Dissolved Oxygen Saturation (%)
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for Dissolved Oxygen Saturation
ANZG DGV
EES WQO
Dissolved Oxygen Saturation (%)
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for Dissolved Oxygen Saturation
ANZG DGV
EES WQO
Dissolved Oxygen Saturation (%)
Scn00
Scn02
Scn05
Scenarios

South Creek WQRM

Ecoli (cfu/100mL)

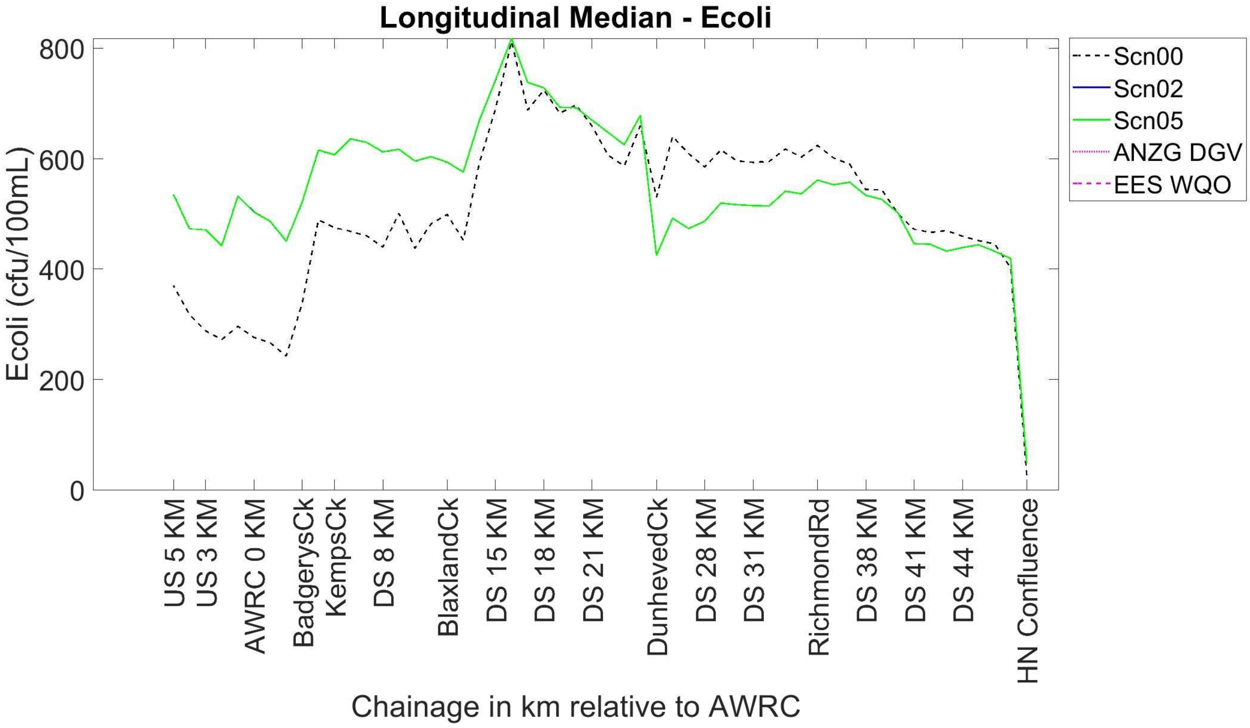
Scenario 05 - wet year

--> Longitudinal plots

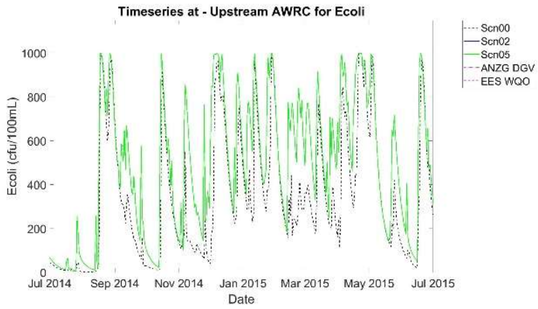
--> Timeseries plots at geographic markers and gauge locations

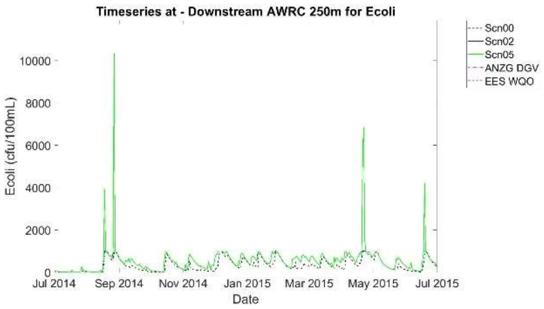
--> Box plots at geographic markers and gauge locations

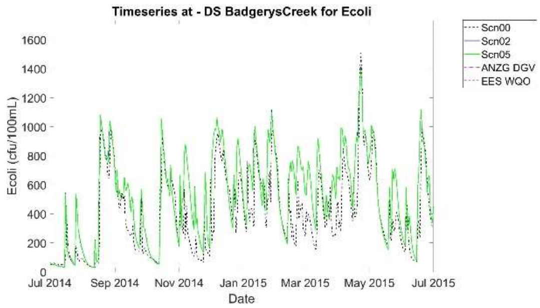
Longitudinal plot

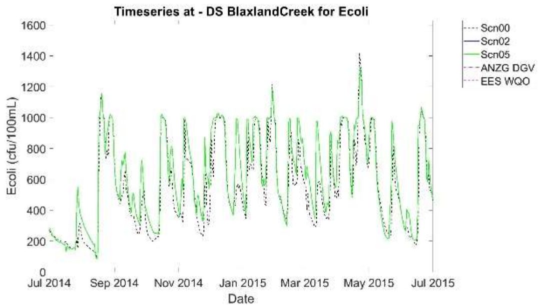


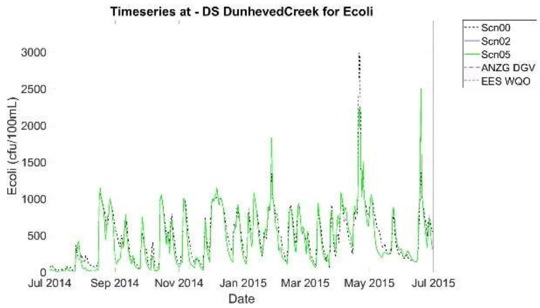
Timeseries plots

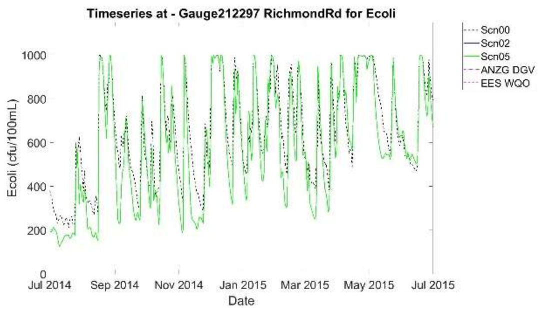


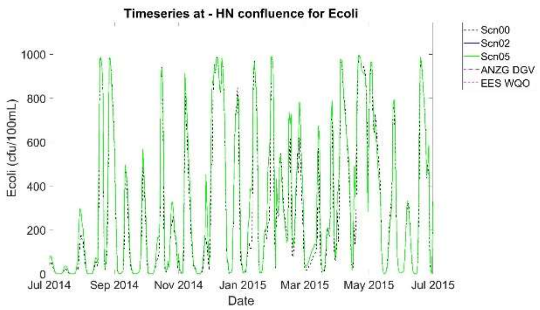




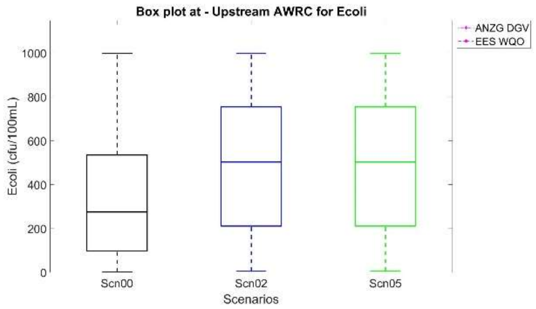


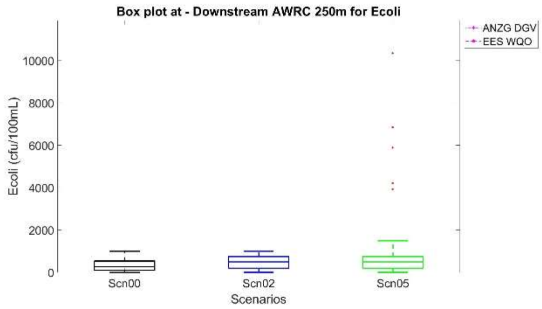


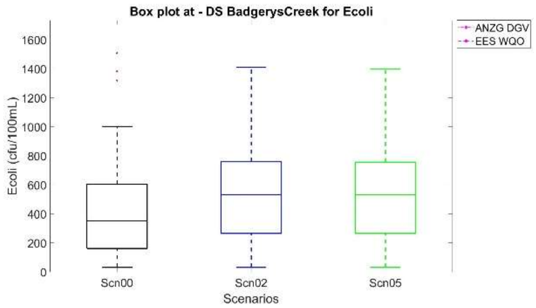


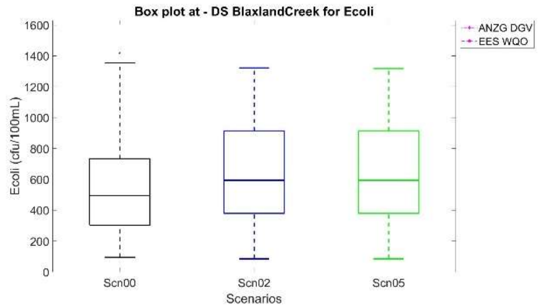


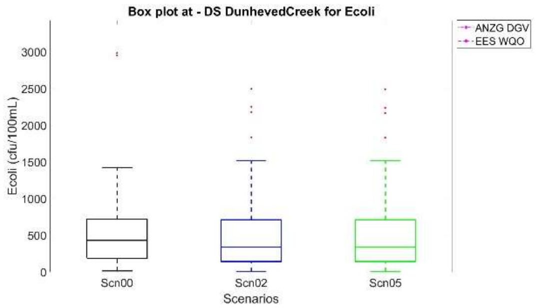
Box plots

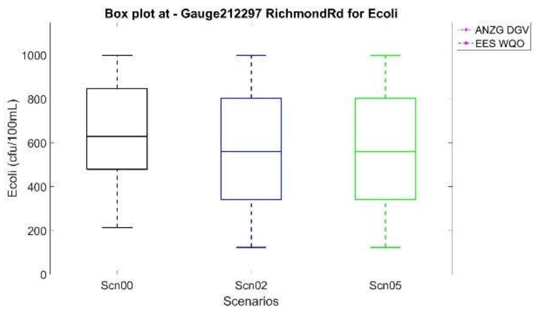

Box plot at - Upstream AWRC for Ecoli
Ecoli (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

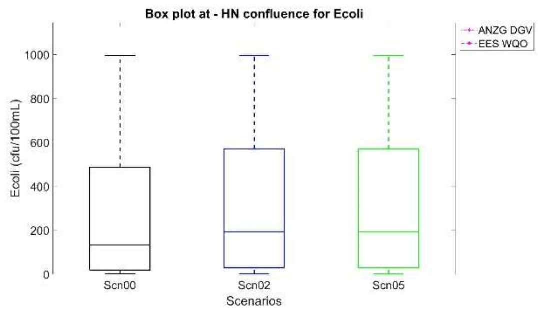

Box plot at - Downstream AWRC 250m for Ecoli
Ecoli (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BadgerysCreek for Ecoli
Ecoli (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS BlaxlandCreek for Ecoli
Ecoli (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - DS DunhevedCreek for Ecoli
Ecoli (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - Gauge212297 RichmondRd for Ecoli
Ecoli (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO


Box plot at - HN confluence for Ecoli
Ecoli (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios
ANZG DGV
EES WQO

South Creek WQRM

Enterococci (cfu/100mL)

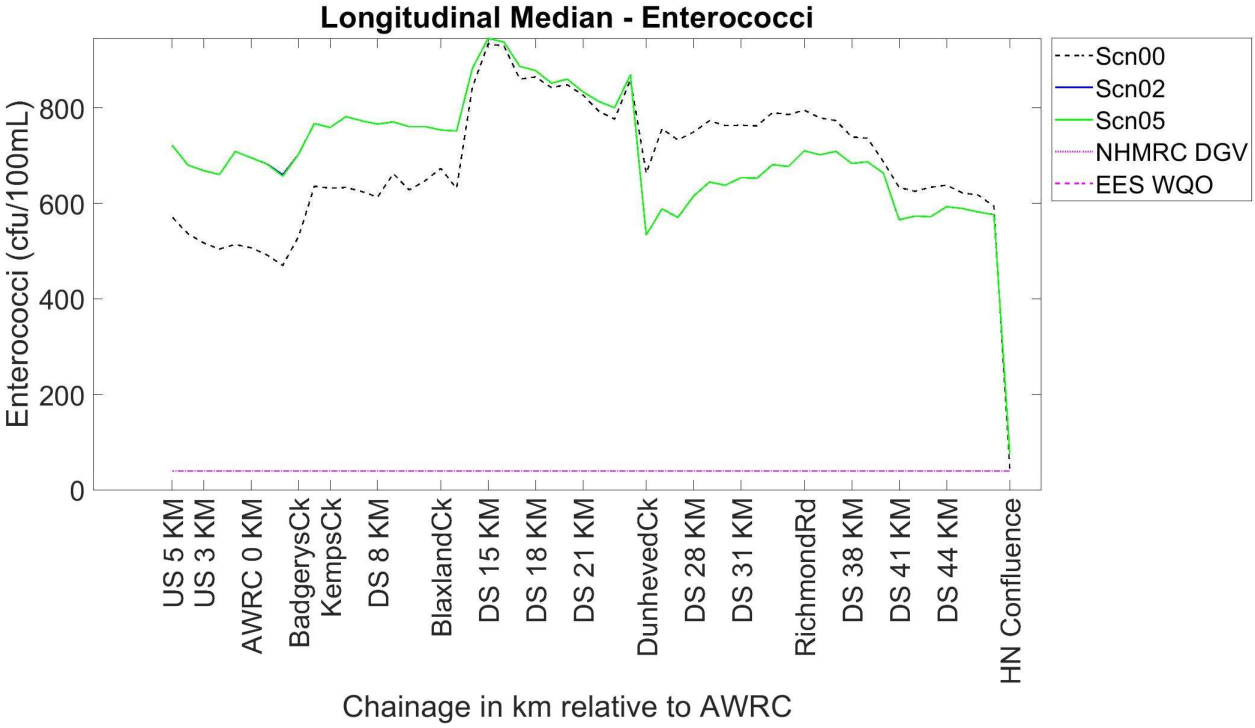
Scenario 05 - wet year

--> Longitudinal plots

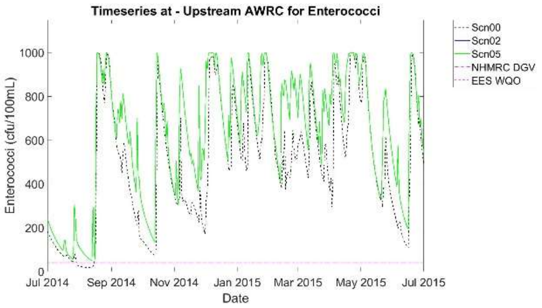
--> Timeseries plots at geographic markers and gauge locations

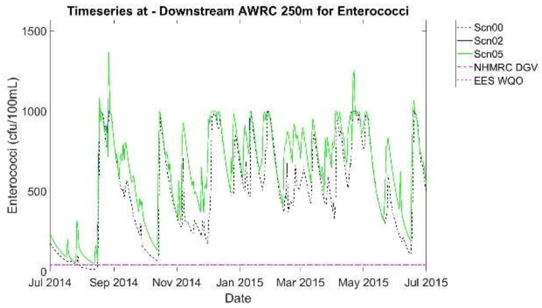
--> Box plots at geographic markers and gauge locations

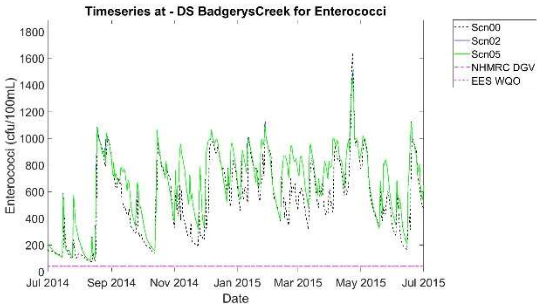
Longitudinal plot

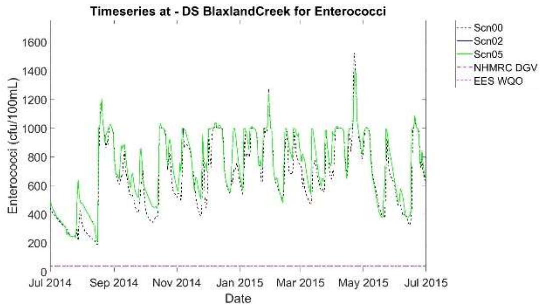


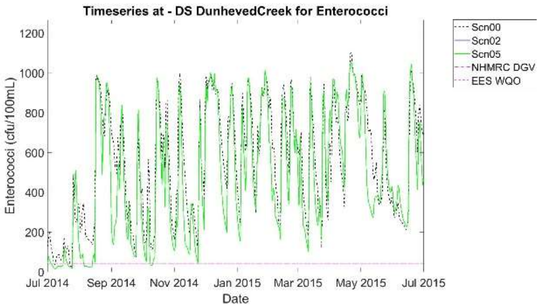
Timeseries plots

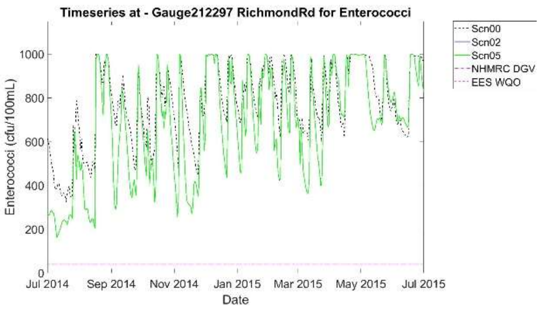


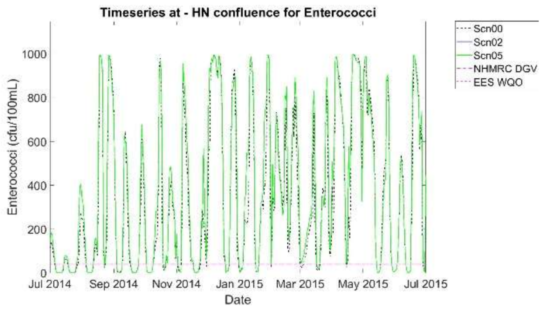




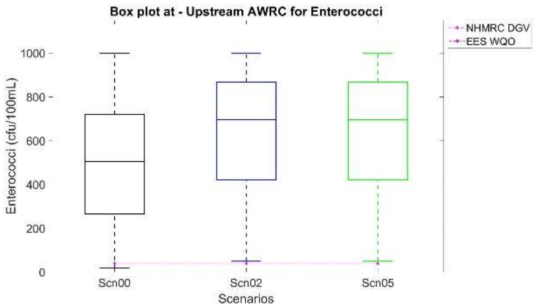


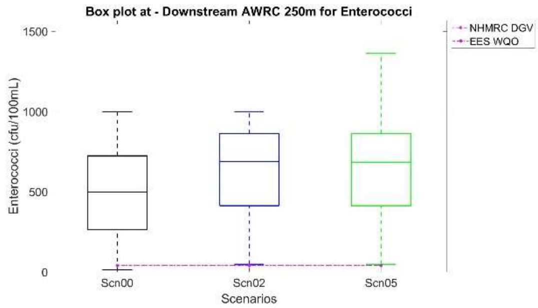


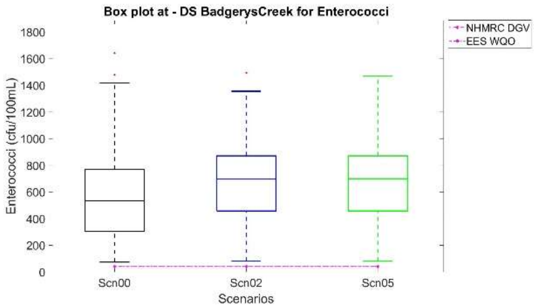


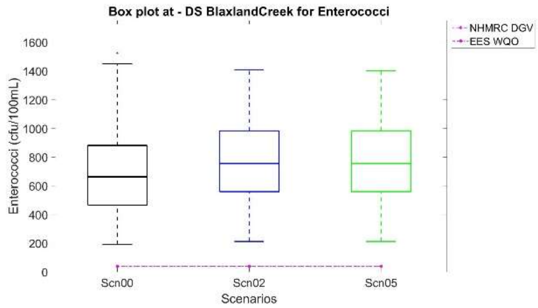


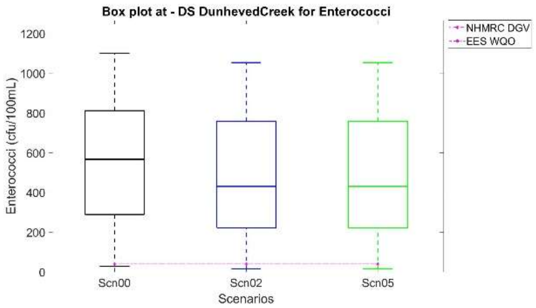
Box plots

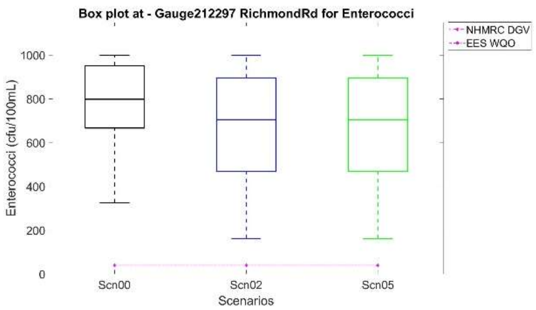

Box plot at - Upstream AWRC for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios

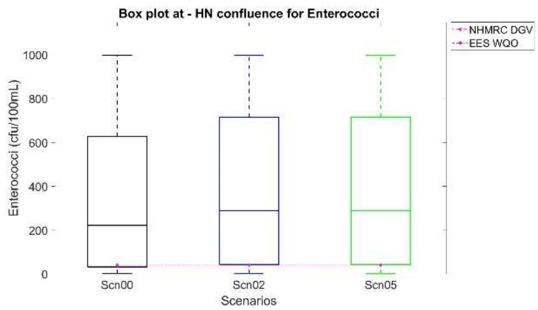

Box plot at - Downstream AWRC 250m for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BadgerysCreek for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS BlaxlandCreek for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios


Box plot at - DS DunhevedCreek for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios


Box plot at - Gauge212297 RichmondRd for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios


Box plot at - HN confluence for Enterococci
NHMRC DGV
EES WQO
Enterococci (cfu/100mL)
Scn00
Scn02
Scn05
Scenarios

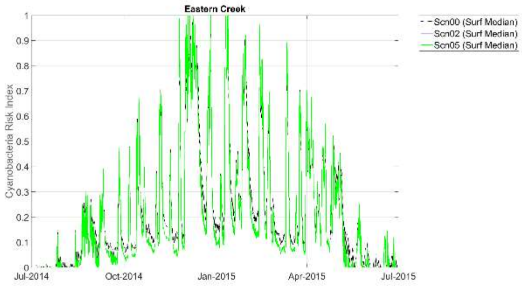
South Creek WQRM

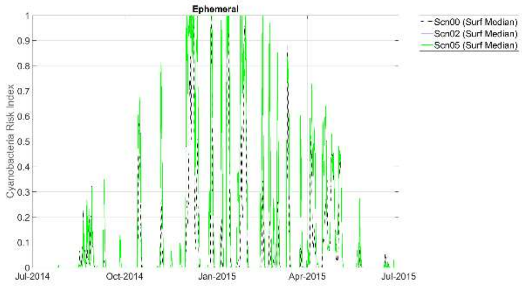
Cyano ()

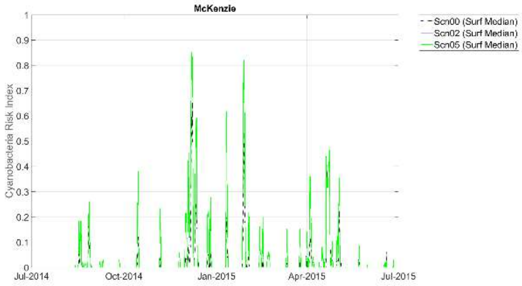
Scenario 05 - wet year

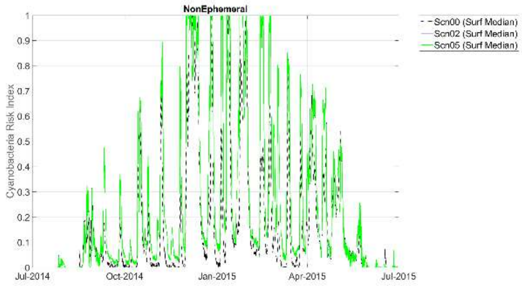
--> Timeseries plots for reaches

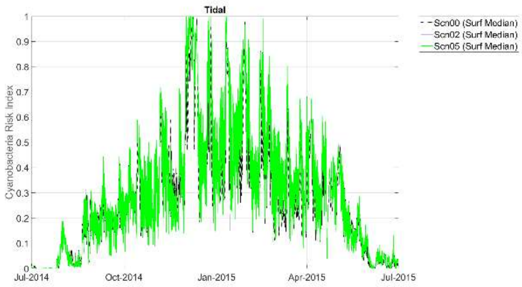
Timeseries plots











Appendix C2 Nepean River releases

Hawkesbury-Nepean WQRM

Total Nitrogen (mg/L)

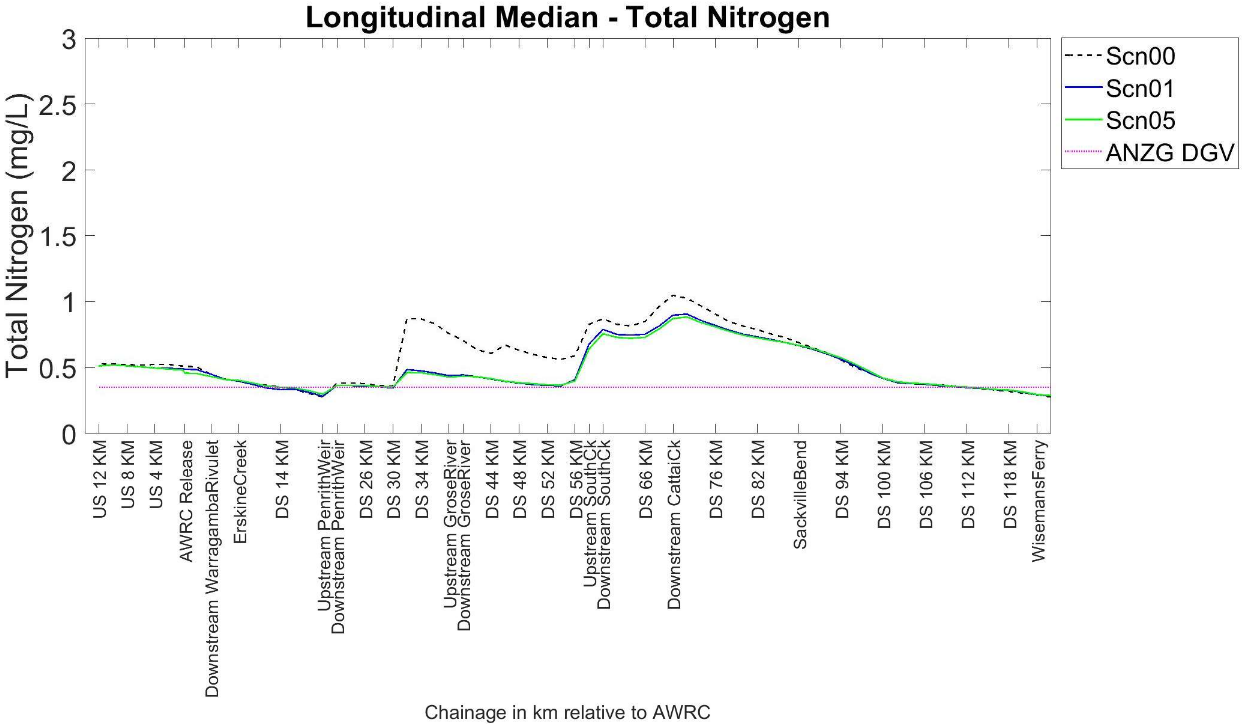
Scenario 05 - dry year

--> Longitudinal plots

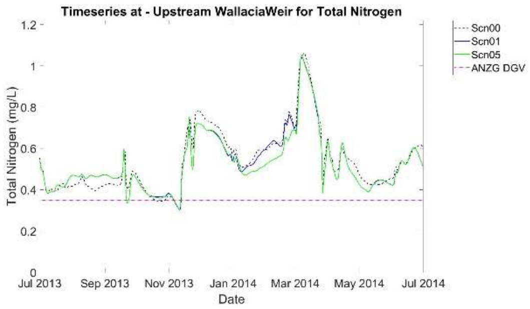
--> Timeseries plots at geographic markers and gauge locations

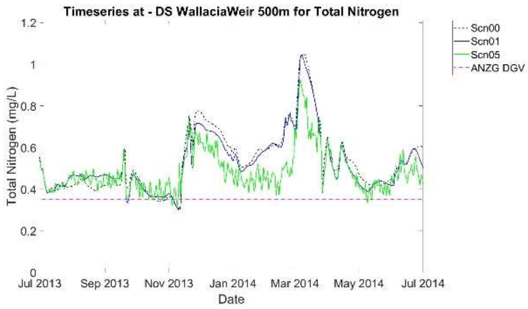
--> Box plots at geographic markers and gauge locations

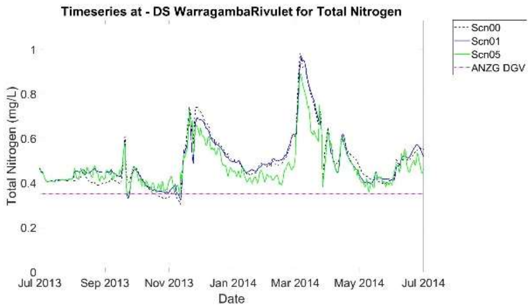
Longitudinal plot

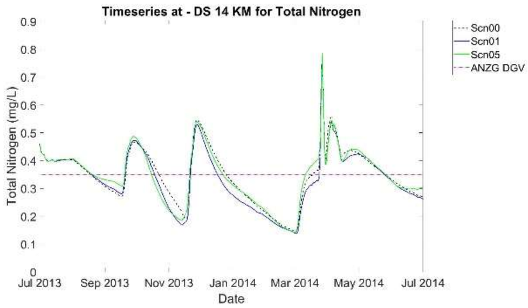


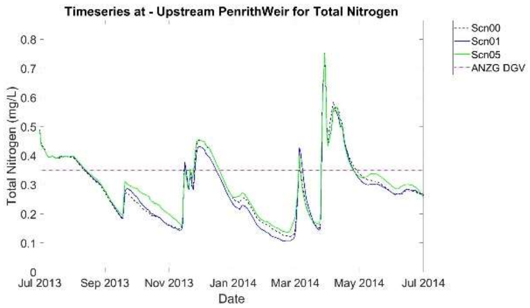
Timeseries plots

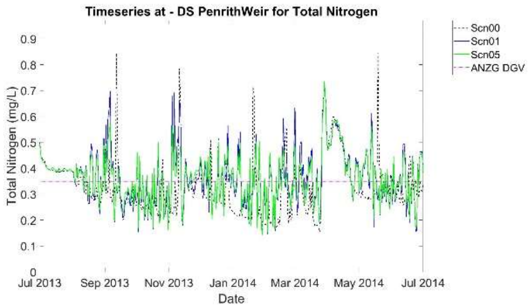


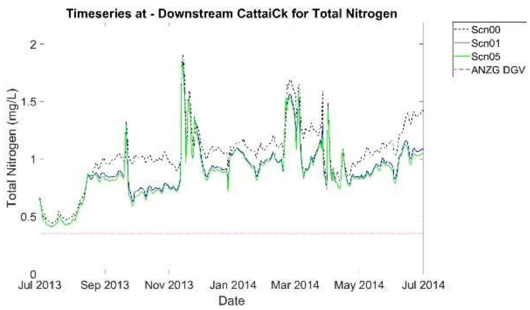


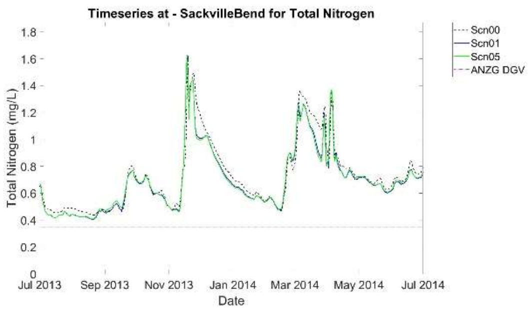




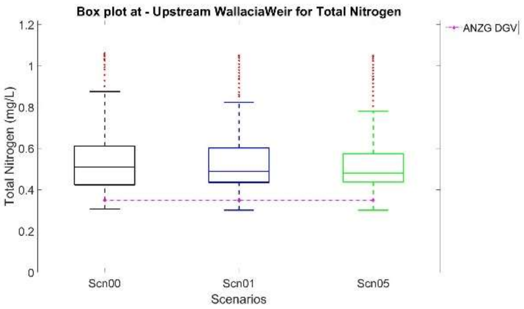




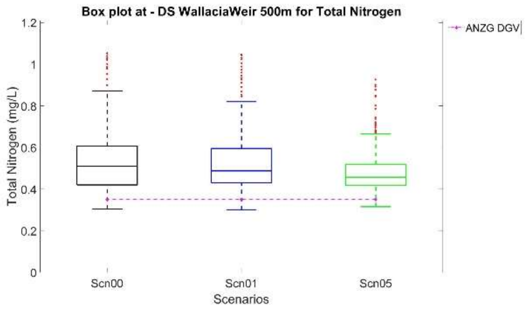




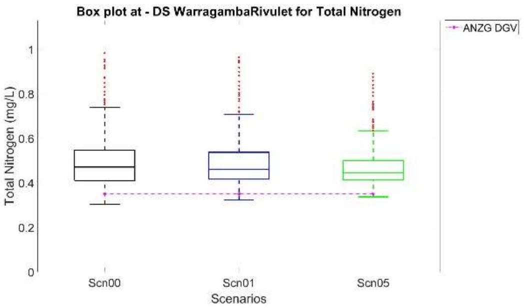
Box plots



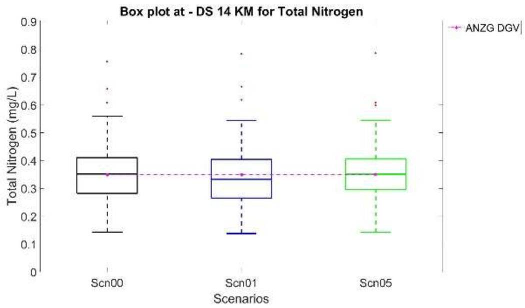
Box plot at - Upstream WallaciaWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
Scn00
Scn01
Scn05
Scenarios



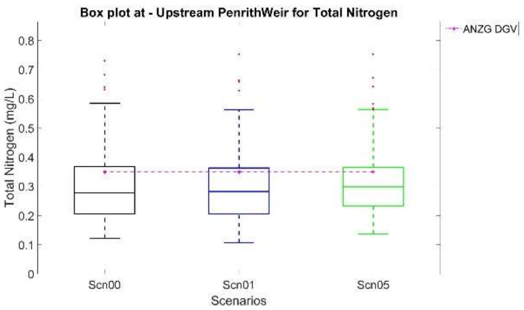
Box plot at - DS WallaciaWeir 500m for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
Scn00
Scn01
Scn05
Scenarios



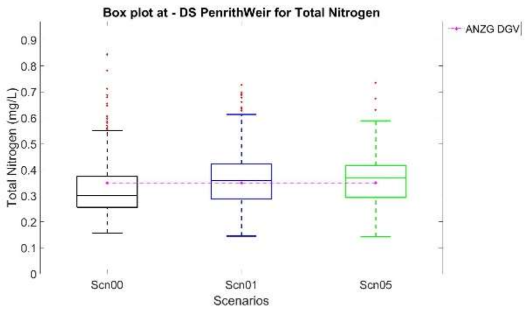
Box plot at - DS WarragambaRivulet for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
Scn00
Scn01
Scn05
Scenarios



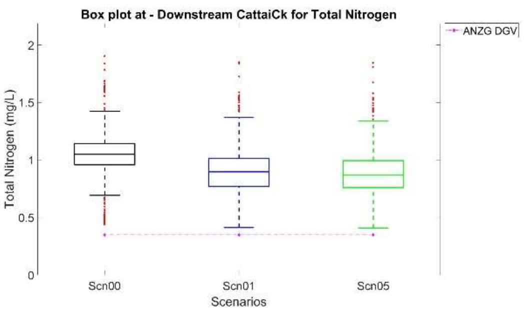
Box plot at - DS 14 KM for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
Scn00
Scn01
Scn05
Scenarios



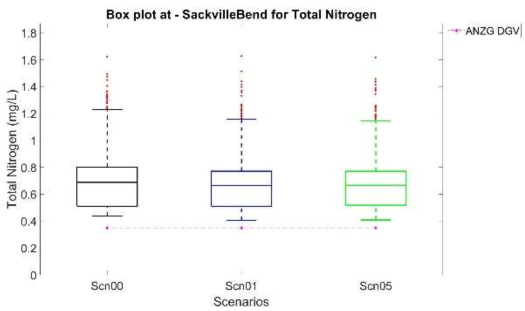
Box plot at - Upstream PenrithWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - DS PenrithWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - Downstream CattaiCk for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - SackvilleBend for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Ammonia (mg/L)

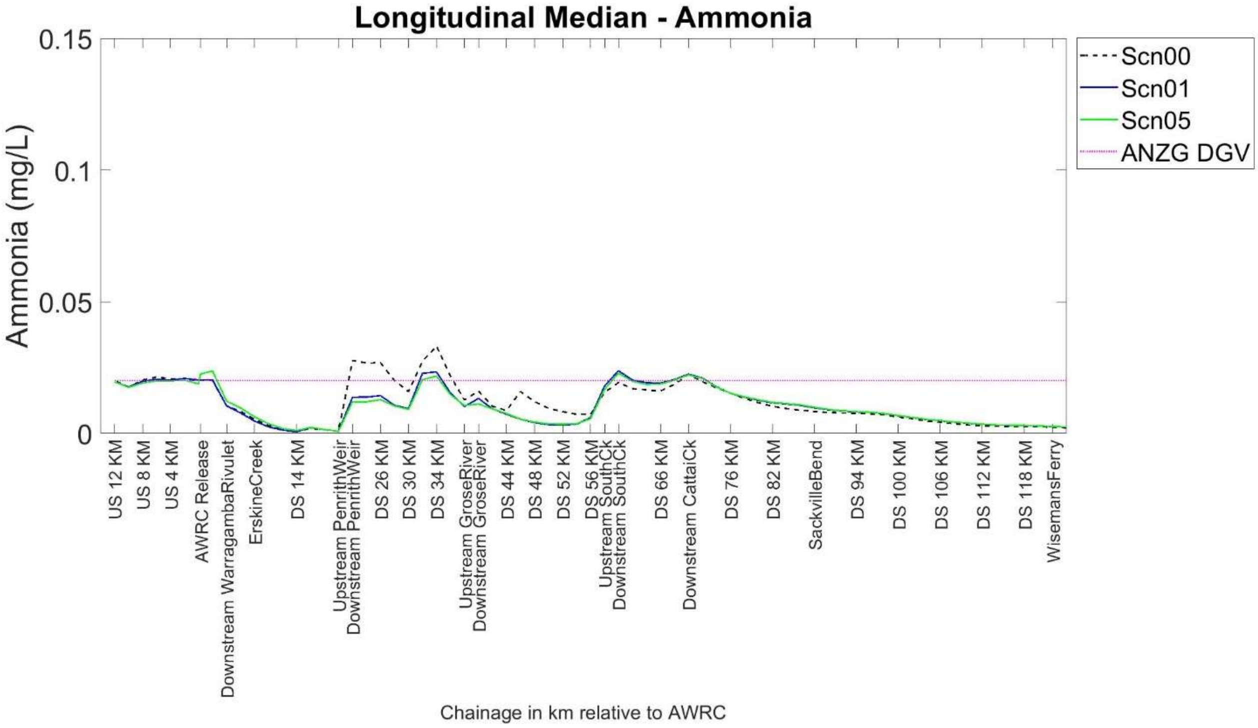
Scenario 05 - dry year

--> Longitudinal plots

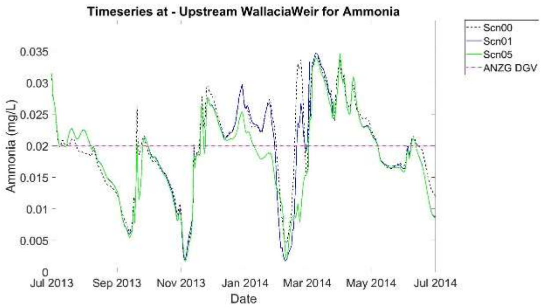
--> Timeseries plots at geographic markers and gauge locations

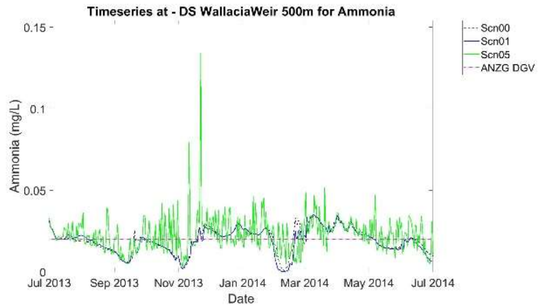
--> Box plots at geographic markers and gauge locations

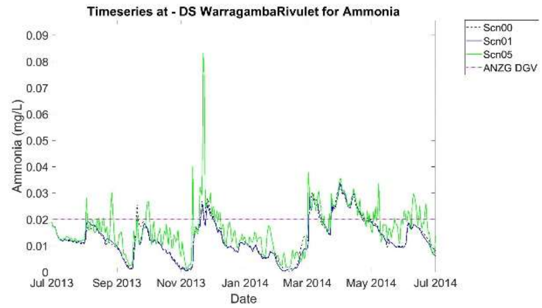
Longitudinal plot

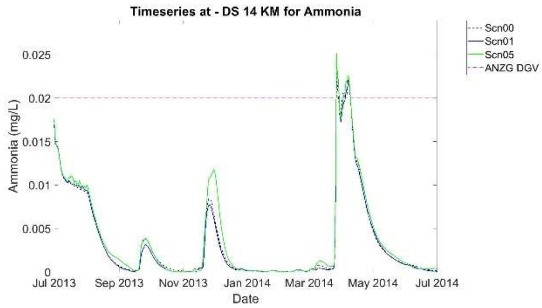


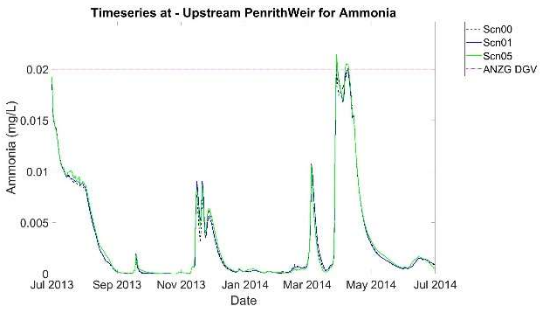
Timeseries plots

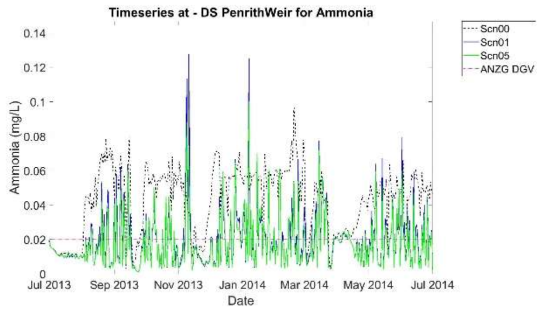


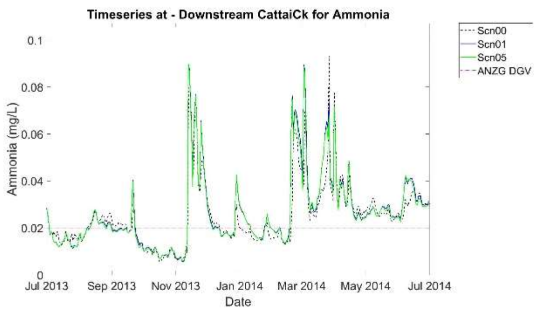


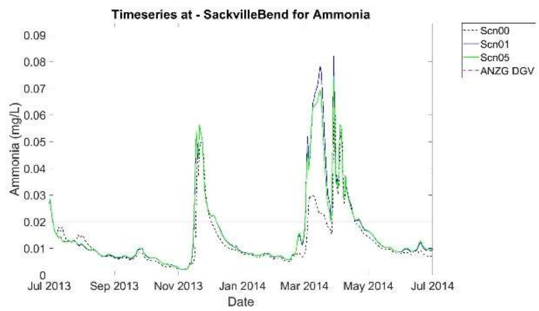




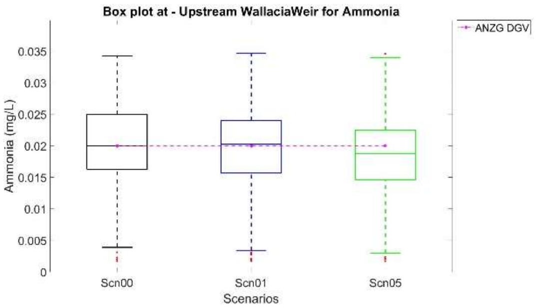


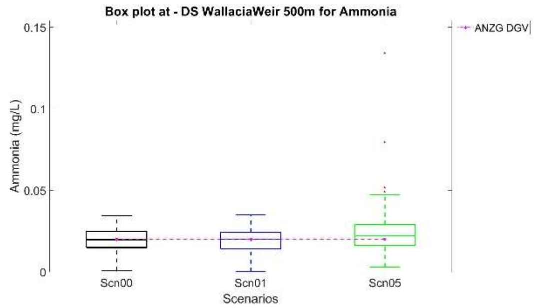


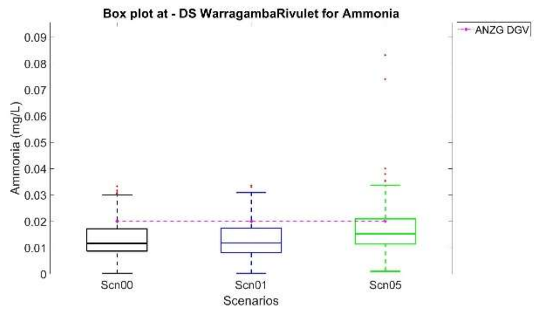


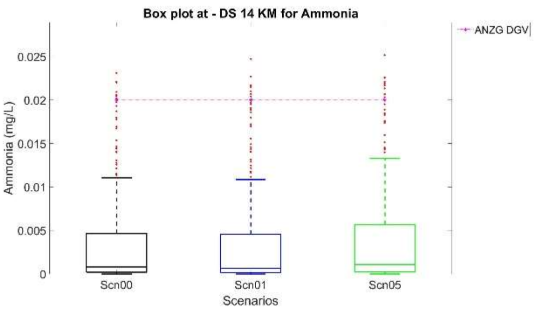


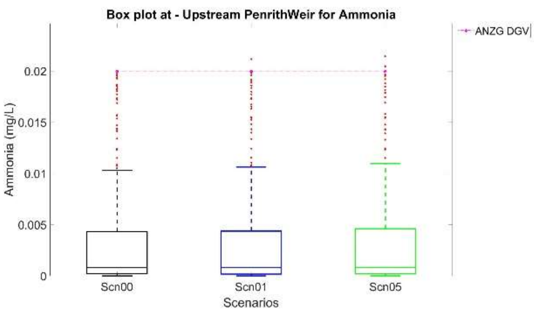
Box plots

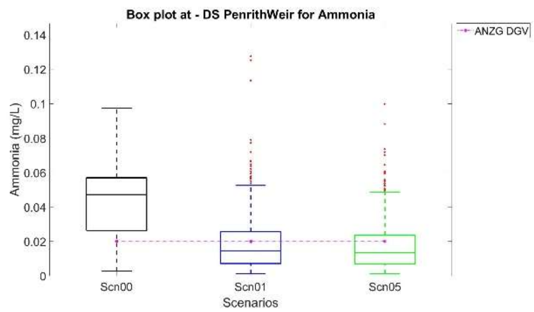

Box plot at - Upstream WallaciaWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn05
Scenarios

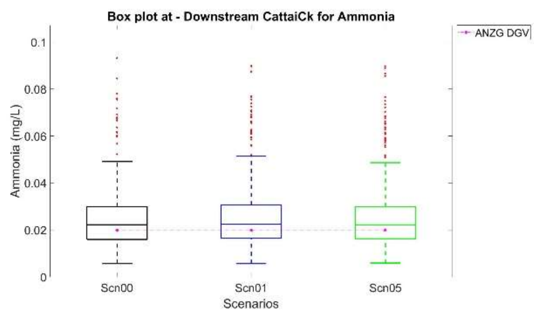

Box plot at - DS WallaciaWeir 500m for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn05
Scenarios

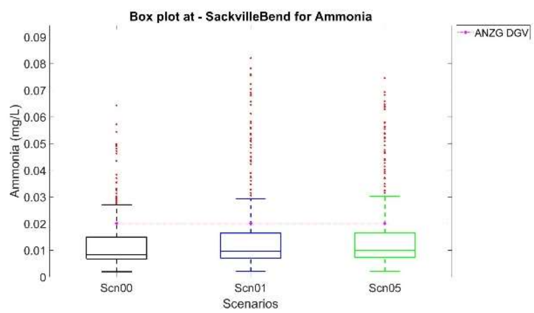

Box plot at - DS WarragambaRivulet for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

NOx (mg/L)

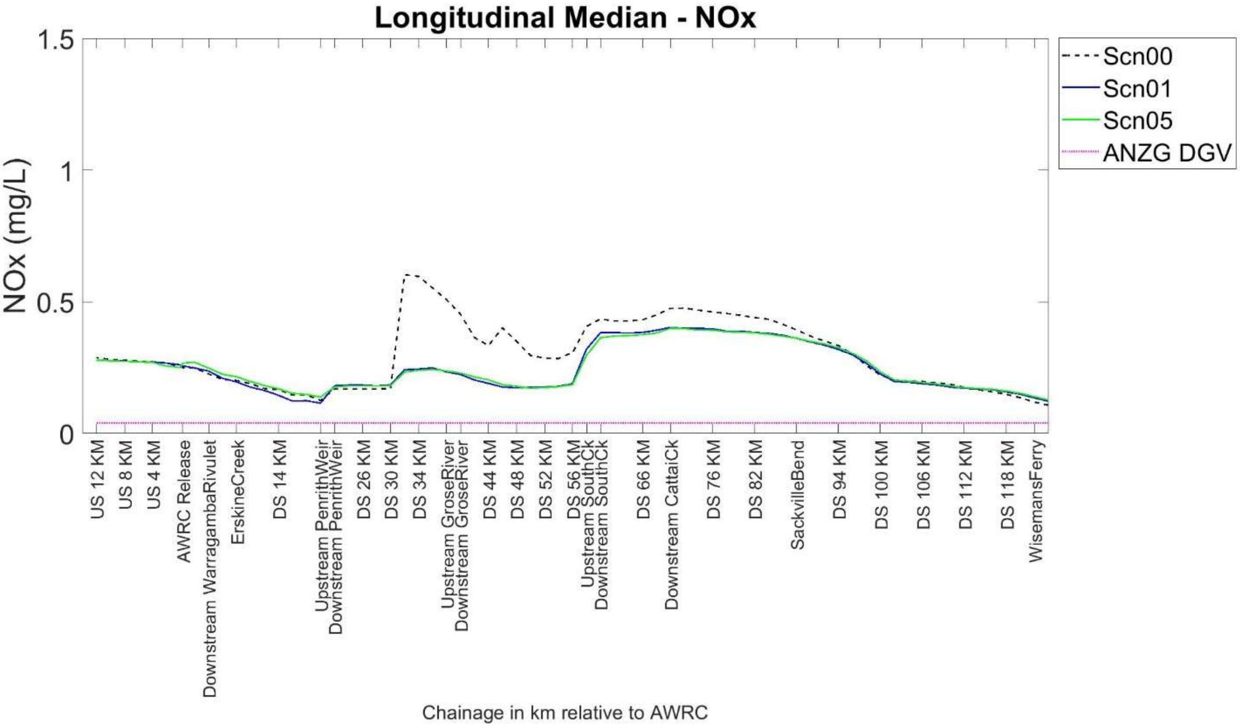
Scenario 05 - dry year

--> Longitudinal plots

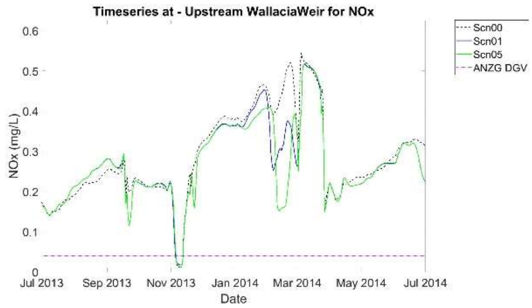
--> Timeseries plots at geographic markers and gauge locations

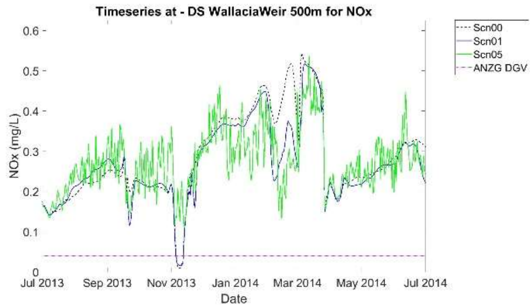
--> Box plots at geographic markers and gauge locations

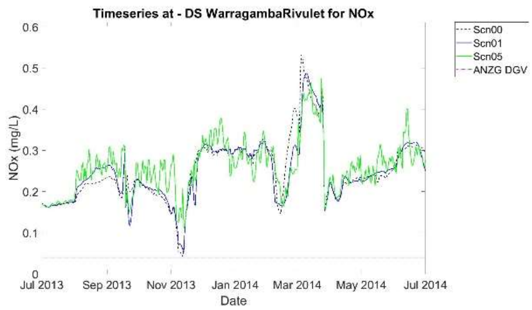
Longitudinal plot

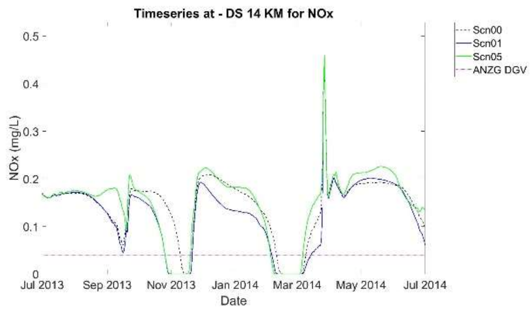


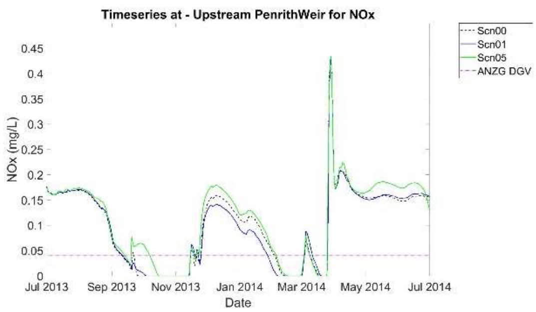
Timeseries plots

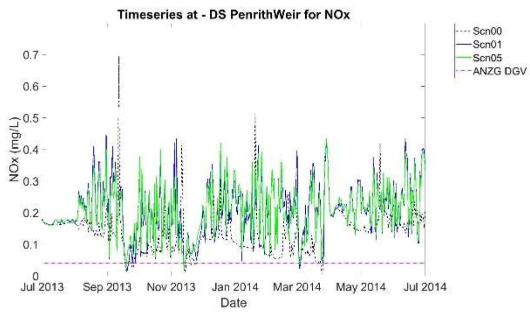


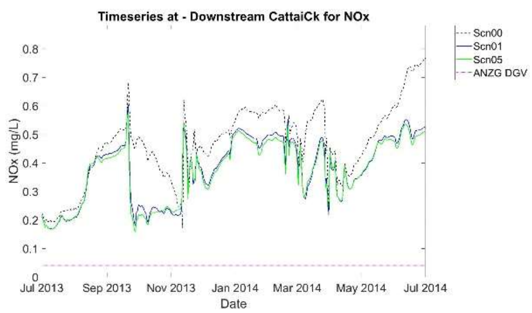


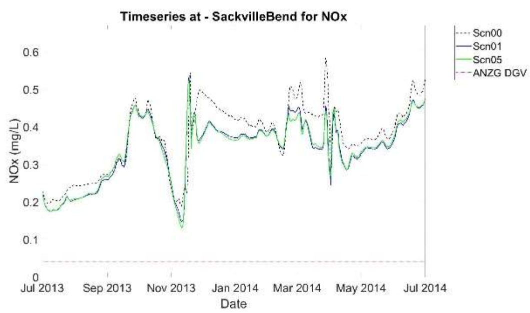




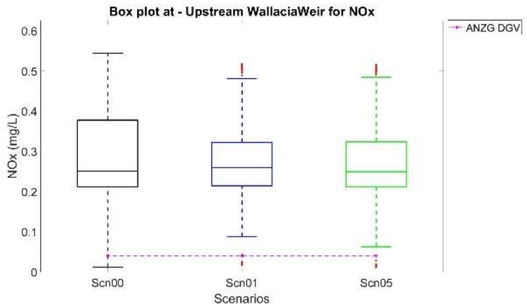


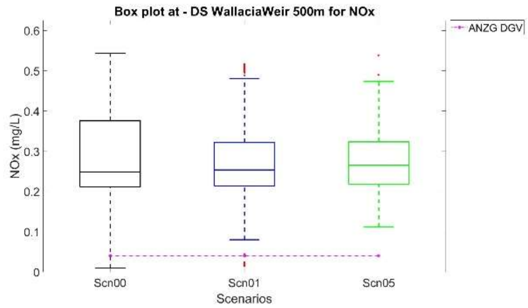


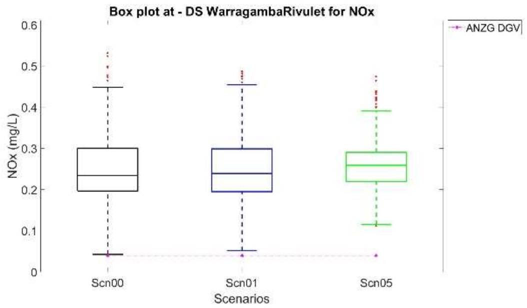


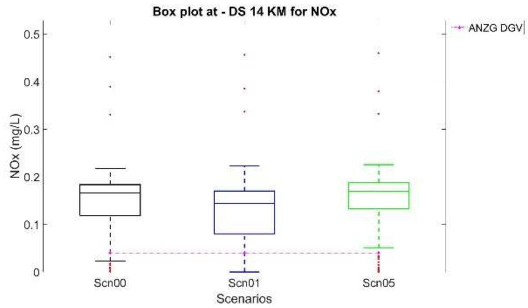


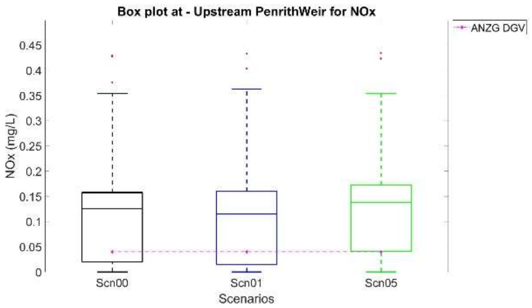
Box plots

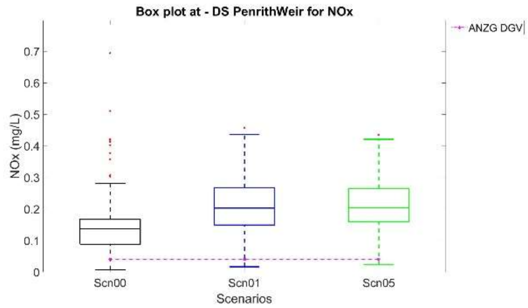

Box plot at - Upstream WallaciaWeir for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV

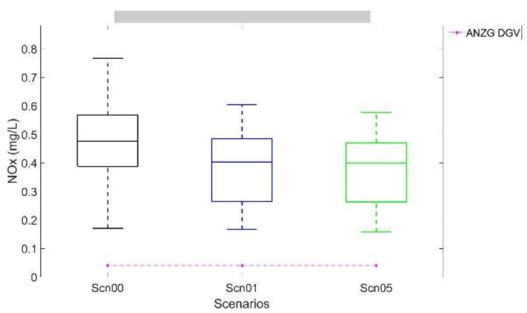

Box plot at - DS WallaciaWeir 500m for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV

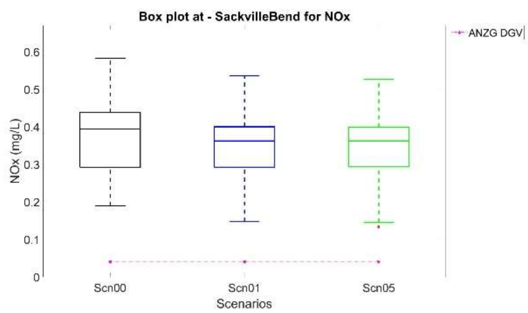

Box plot at - DS WarragambaRivulet for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - DS 14 KM for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - Upstream PenrithWeir for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - DS PenrithWeir for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - SackvilleBend for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

Total Phosphorus (mg/L)

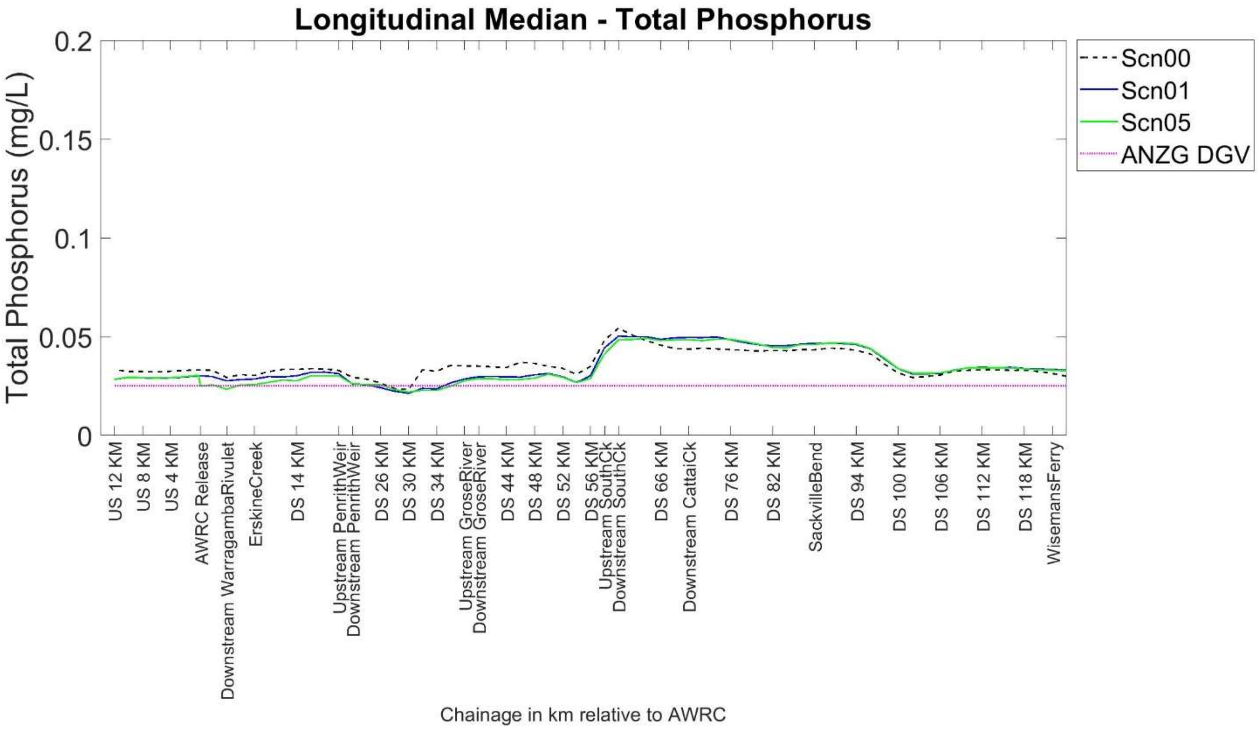
Scenario 05 - dry year

--> Longitudinal plots

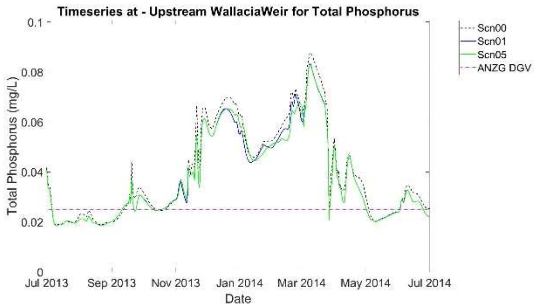
--> Timeseries plots at geographic markers and gauge locations

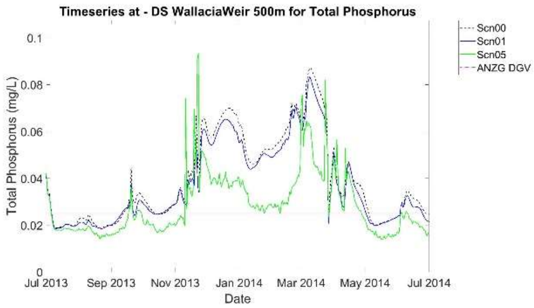
--> Box plots at geographic markers and gauge locations

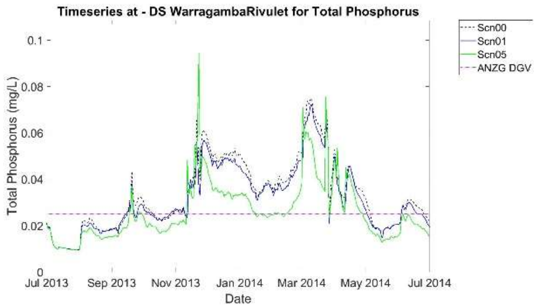
Longitudinal plot

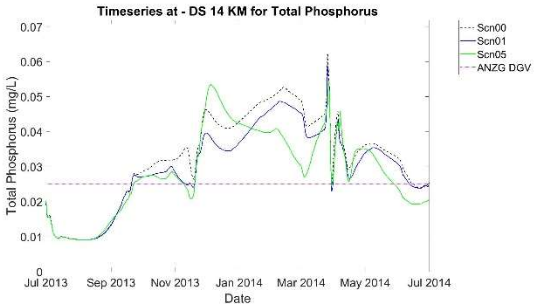


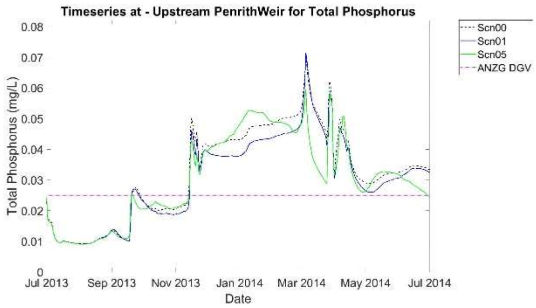
Timeseries plots

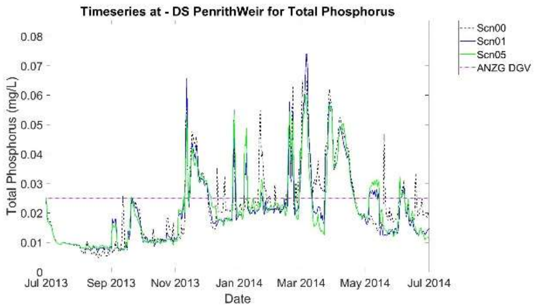


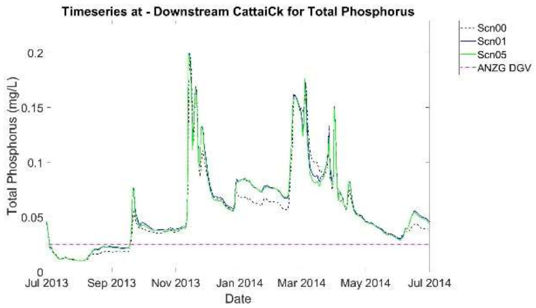


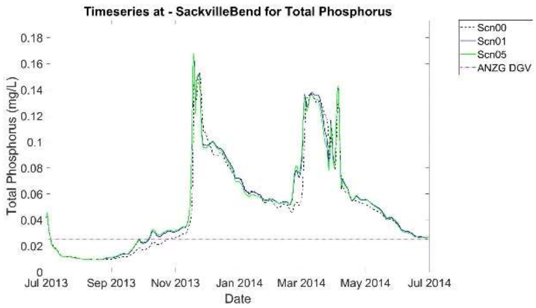




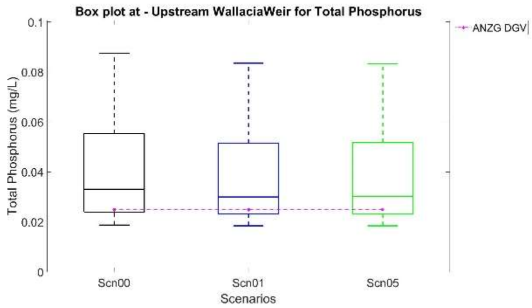


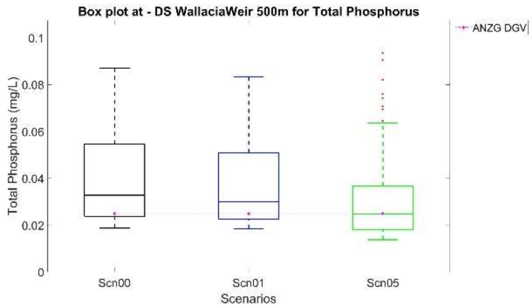


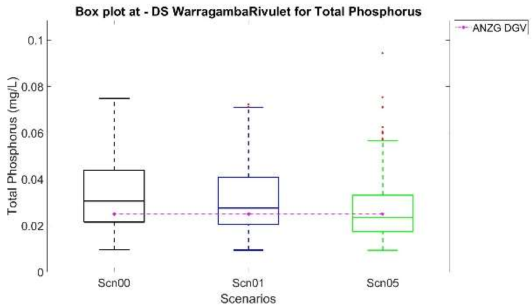


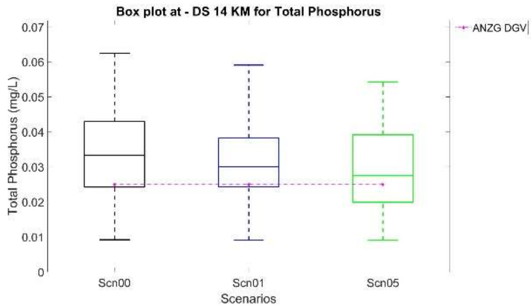


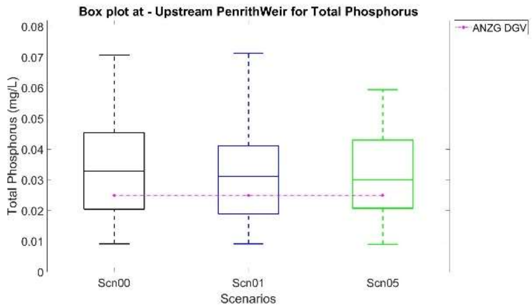
Box plots

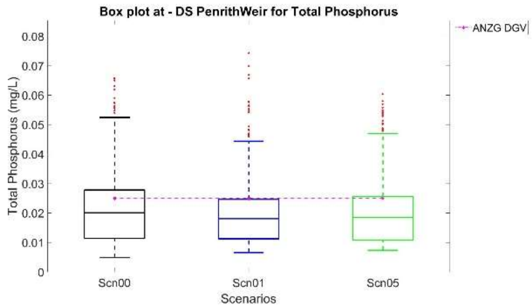

Box plot at - Upstream WallaciaWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
Scn00
Scn01
Scn05
Scenarios

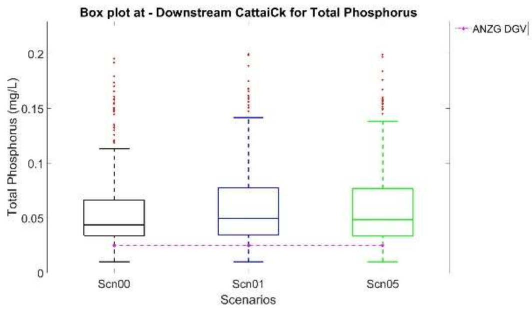

Box plot at - DS WallaciaWeir 500m for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
Scn00
Scn01
Scn05
Scenarios

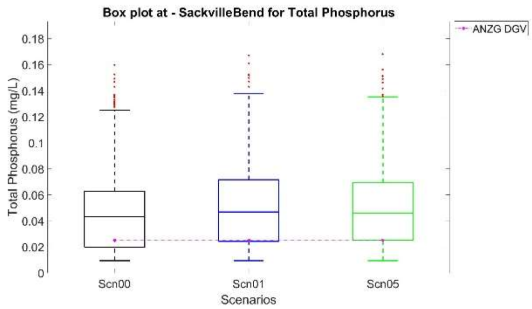

Box plot at - DS WarragambaRivulet for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

FRP (mg/L)

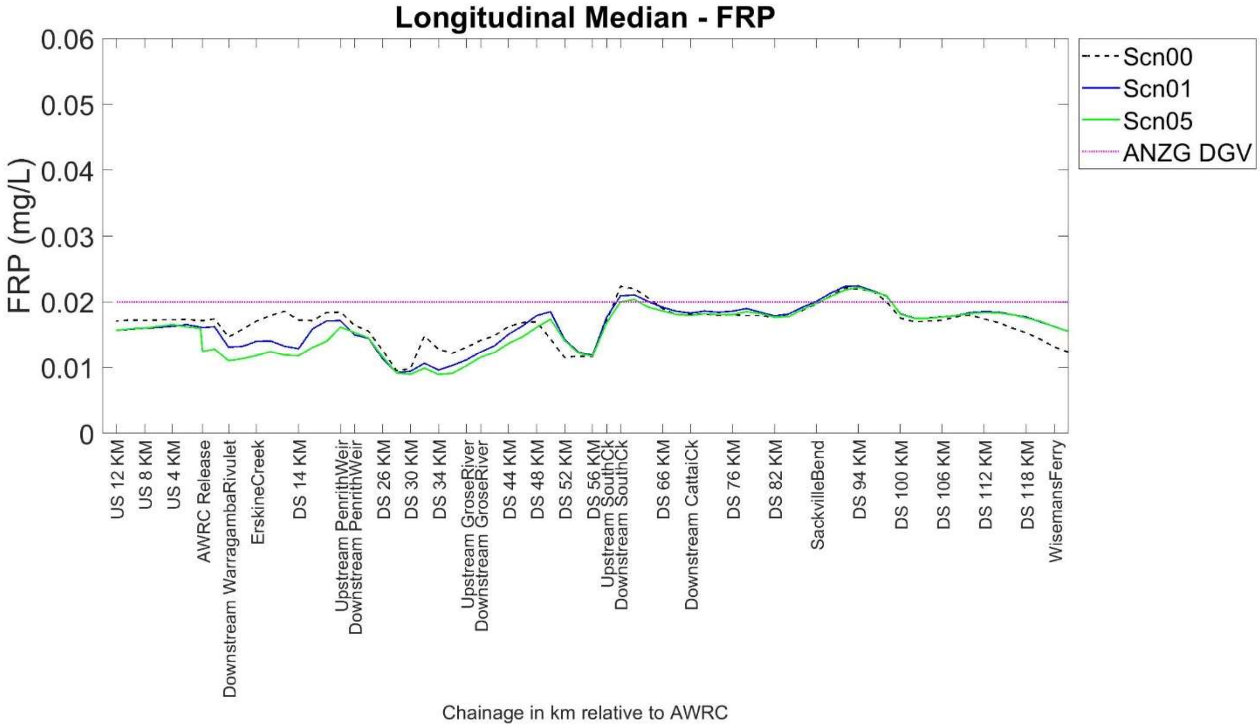
Scenario 05 - dry year

--> Longitudinal plots

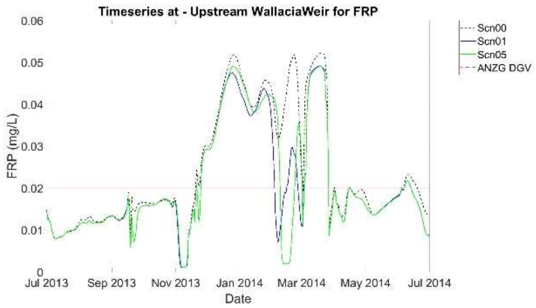
--> Timeseries plots at geographic markers and gauge locations

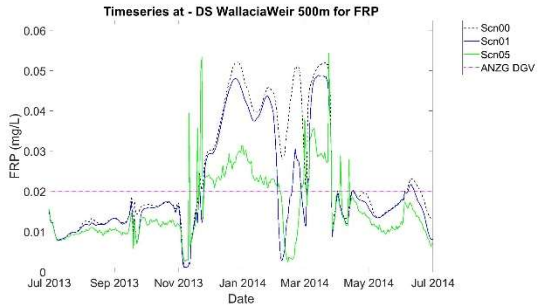
--> Box plots at geographic markers and gauge locations

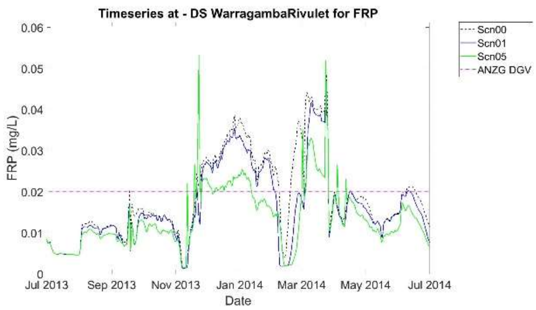
Longitudinal plot

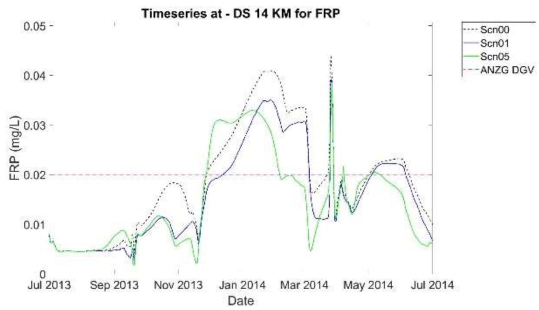


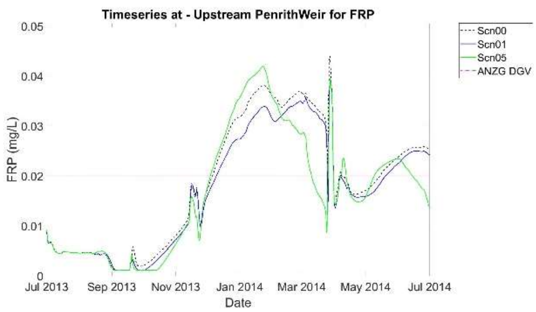
Timeseries plots

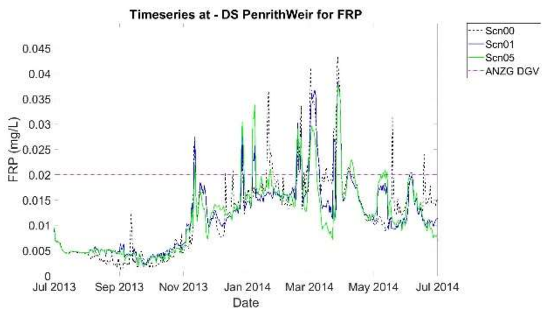


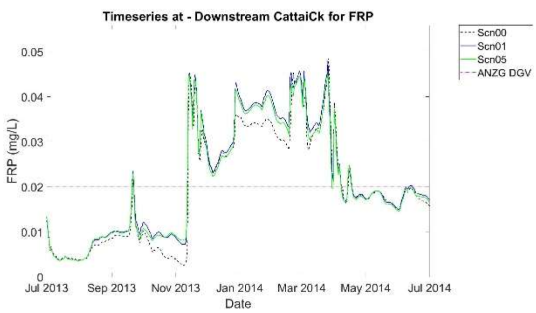


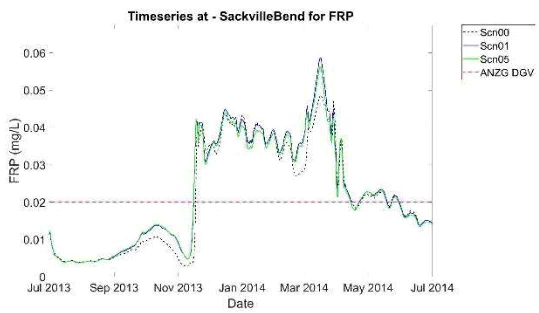




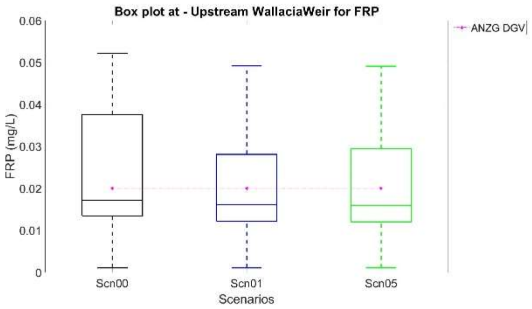


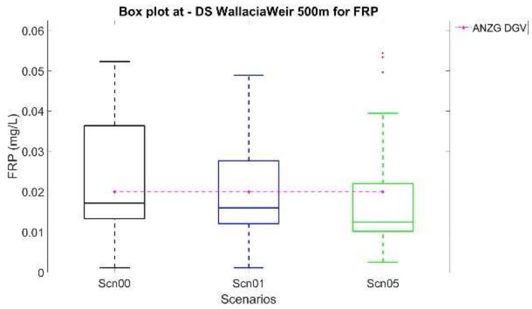


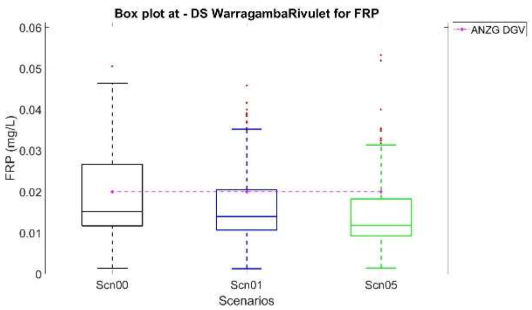


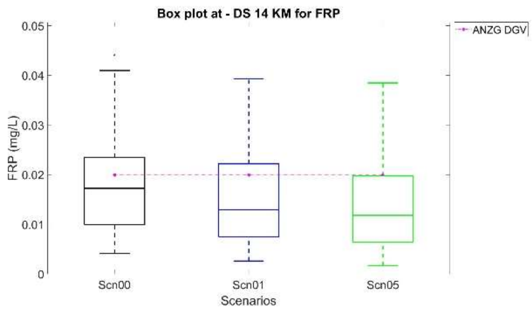


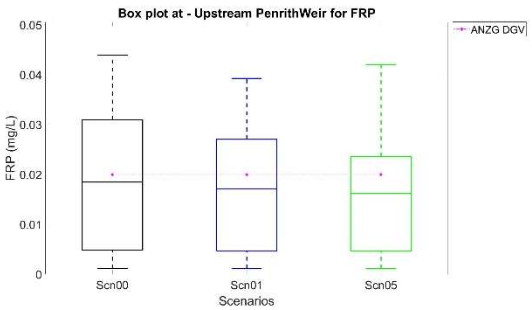
Box plots

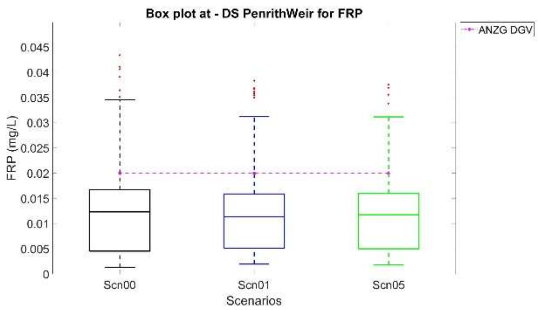

Box plot at - Upstream WallaciaWeir for FRP
ANZG DGV
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios

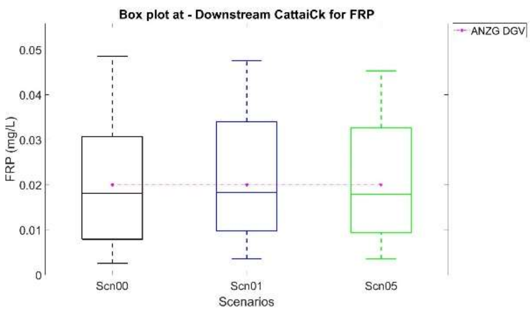

Box plot at - DS WallaciaWeir 500m for FRP
ANZG DGV
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios

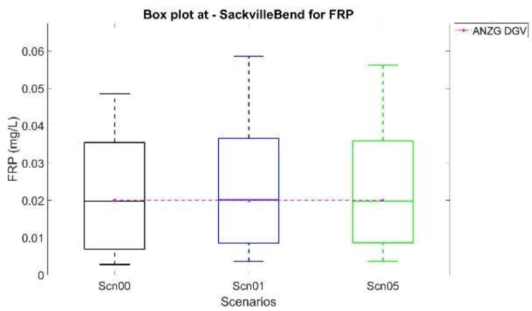

Box plot at - DS WarragambaRivulet for FRP
ANZG DGV
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for FRP
ANZG DGV
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for FRP
ANZG DGV
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for FRP
ANZG DGV
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for FRP
ANZG DGV
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for FRP
ANZG DGV
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Total Chlorophyll-a (µg/L)

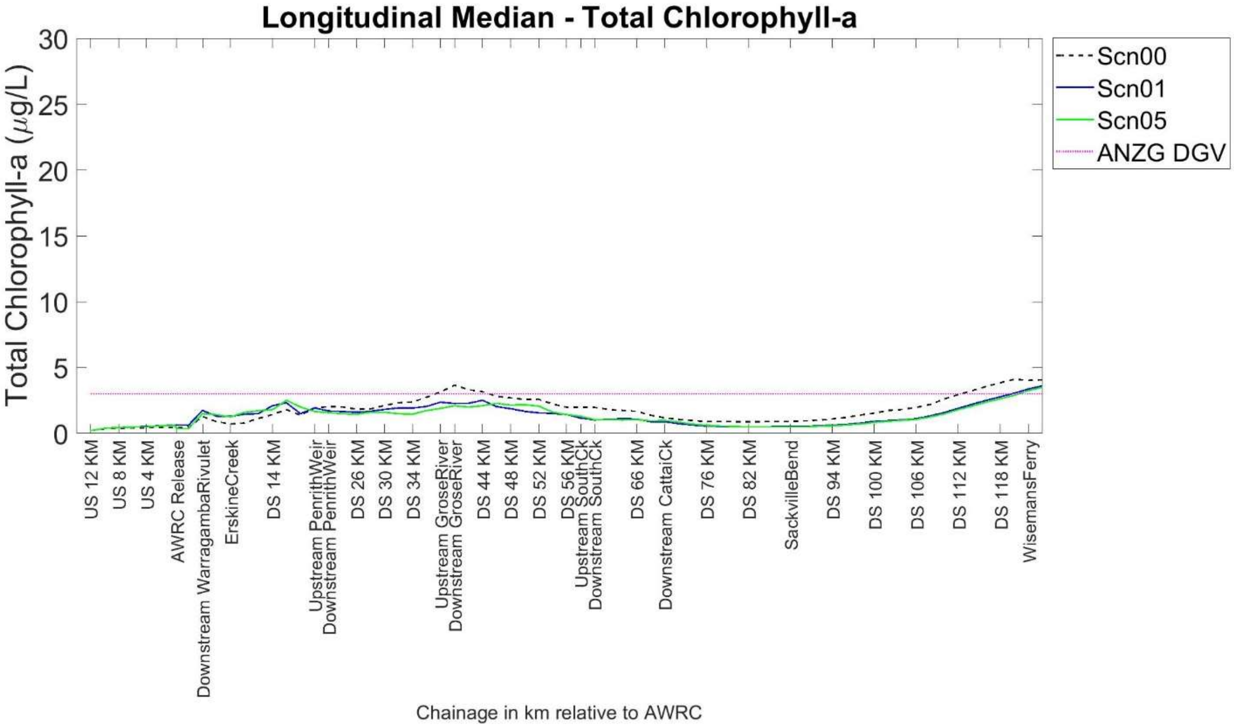
Scenario 05 - dry year

--> Longitudinal plots

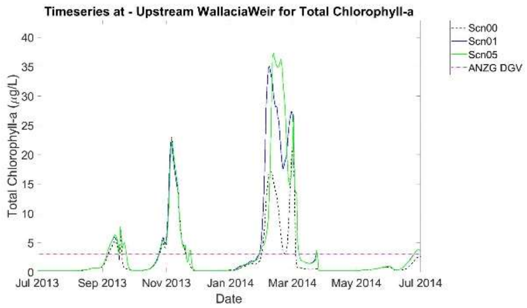
--> Timeseries plots at geographic markers and gauge locations

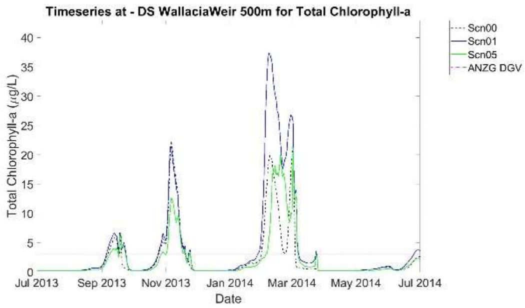
--> Box plots at geographic markers and gauge locations

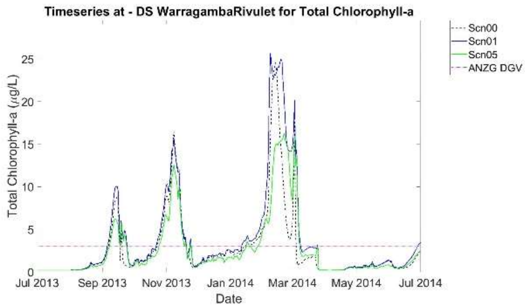
Longitudinal plot

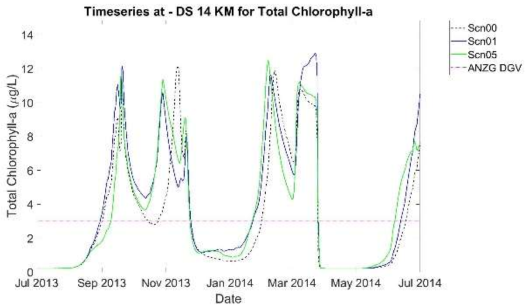


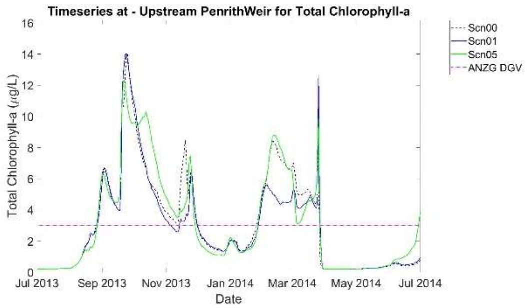
Timeseries plots

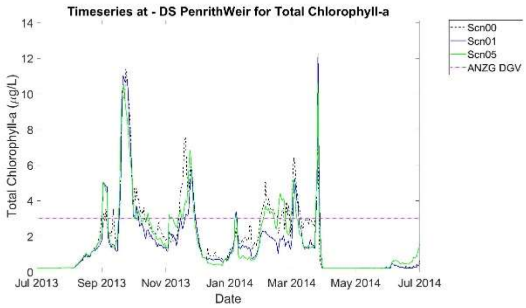


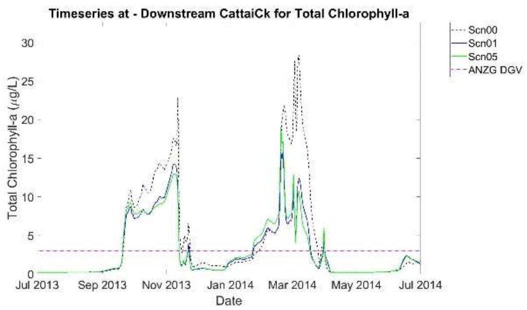


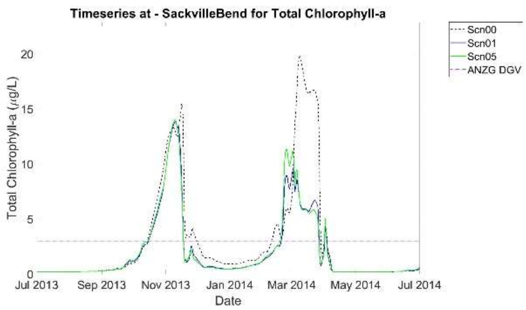




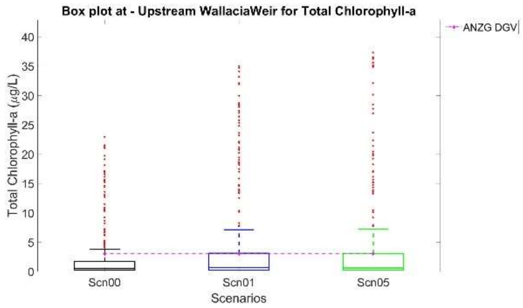


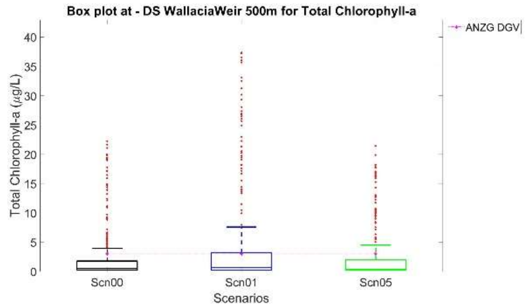


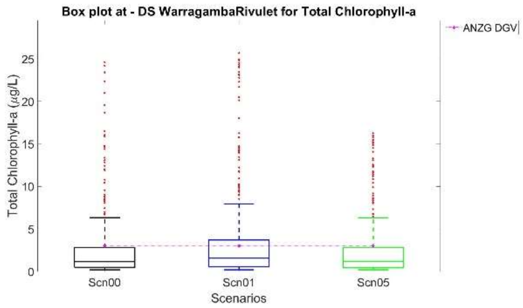


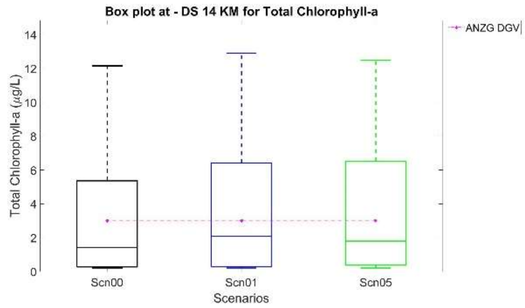


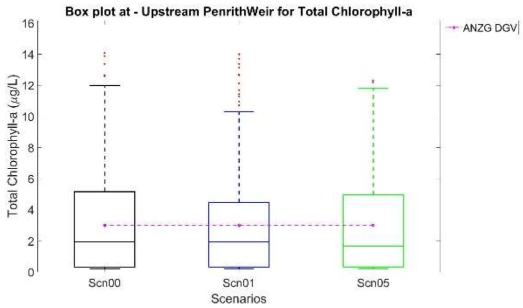
Box plots

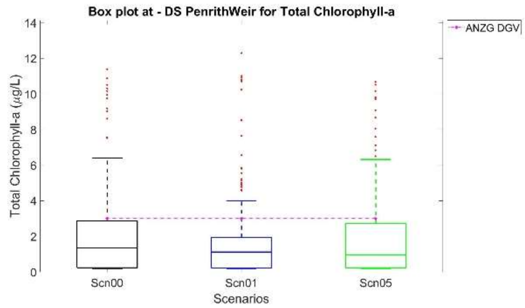

Box plot at - Upstream WallaciaWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn05
Scenarios

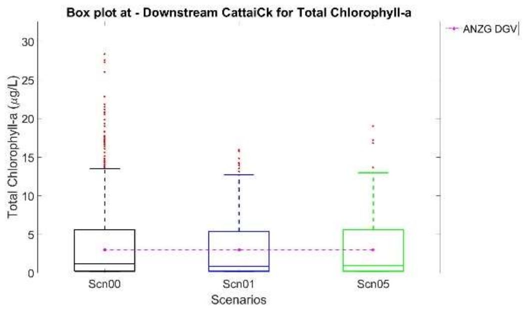

Box plot at - DS WallaciaWeir 500m for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn05
Scenarios

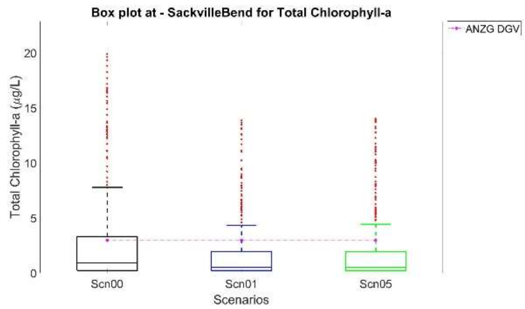

Box plot at - DS WarragambaRivulet for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Salinity (g/L)

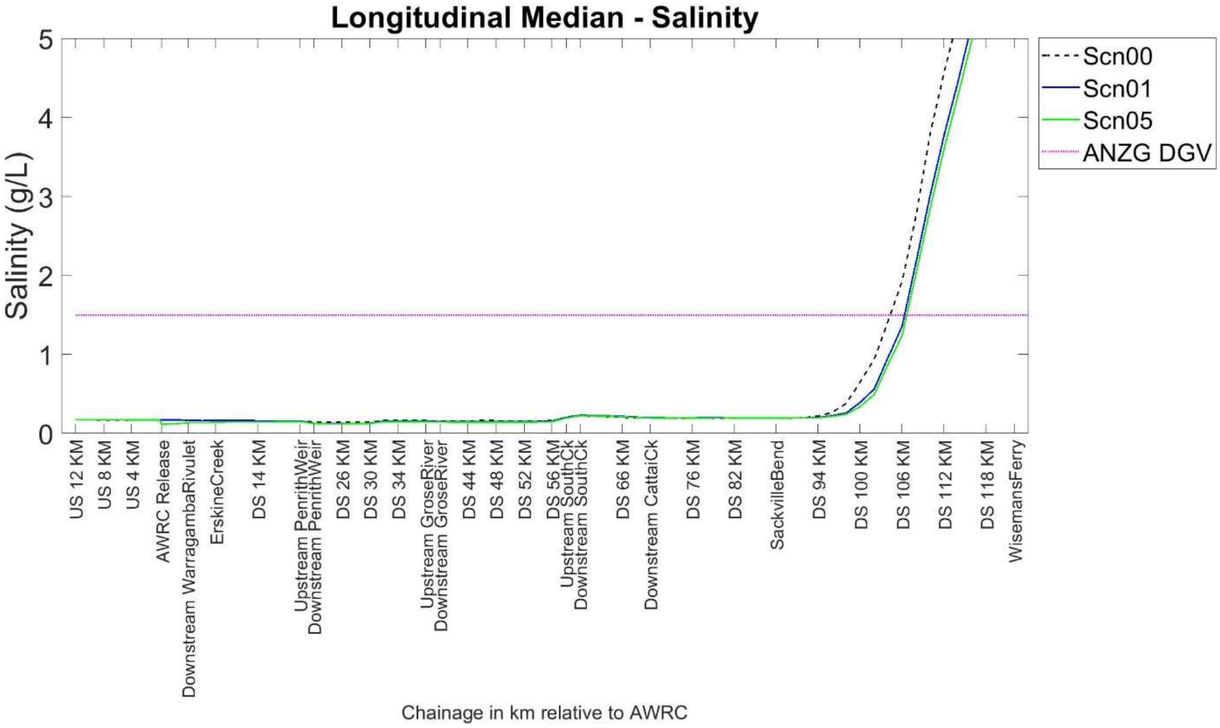
Scenario 05 - dry year

--> Longitudinal plots

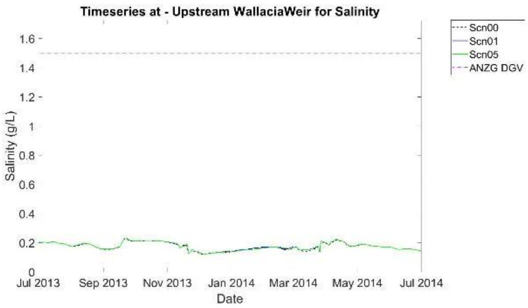
--> Timeseries plots at geographic markers and gauge locations

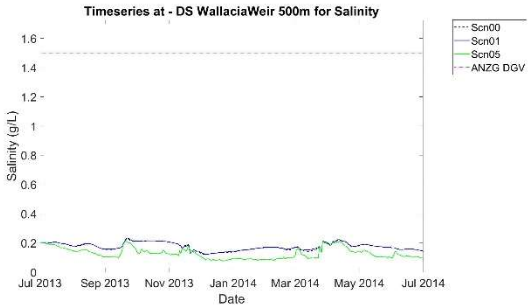
--> Box plots at geographic markers and gauge locations

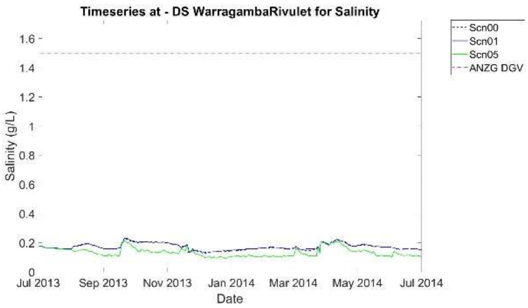
Longitudinal plot

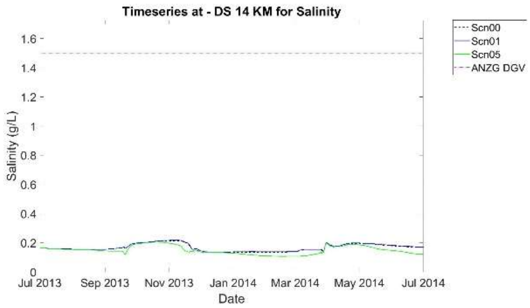


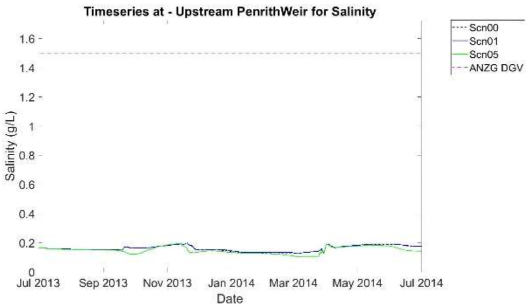
Timeseries plots

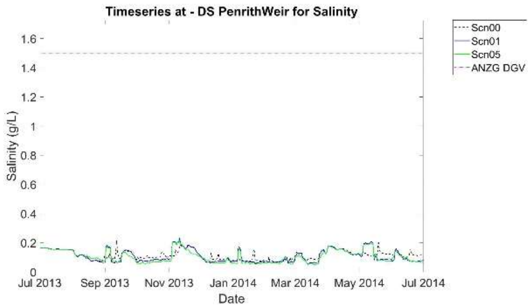


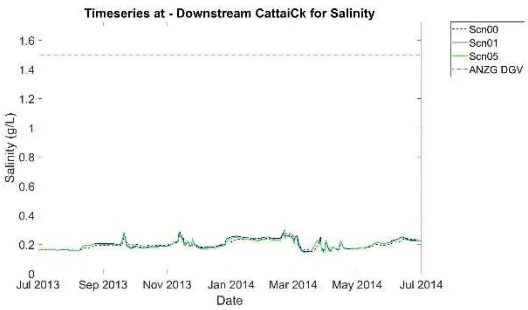


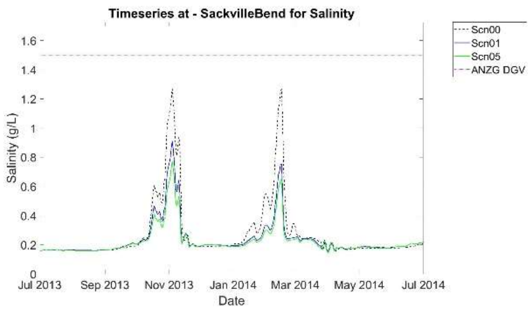




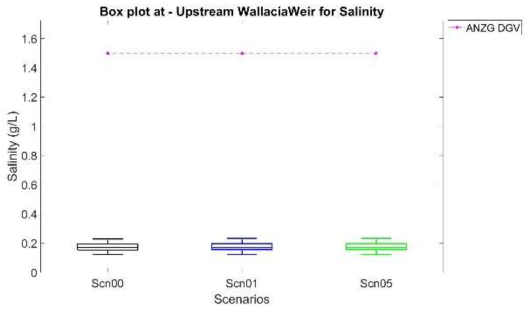




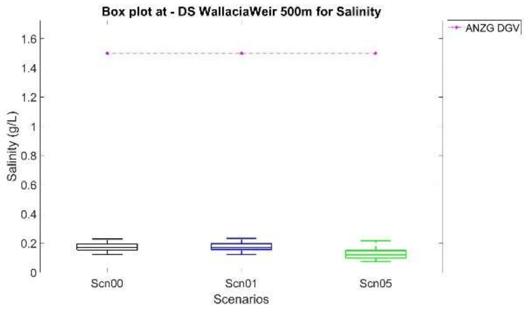




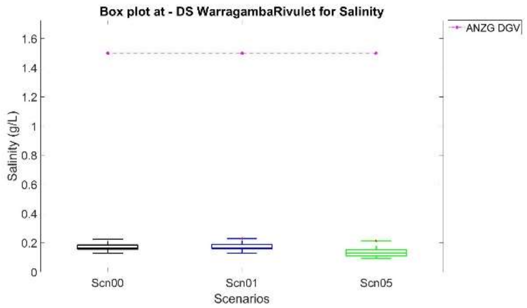
Box plots



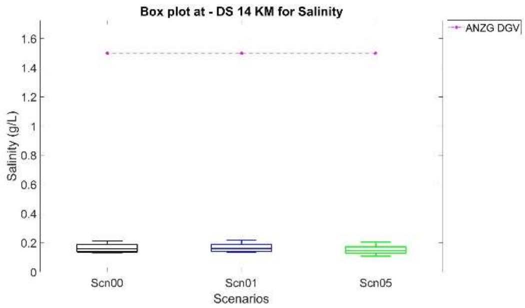
Box plot at - Upstream WallaciaWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios



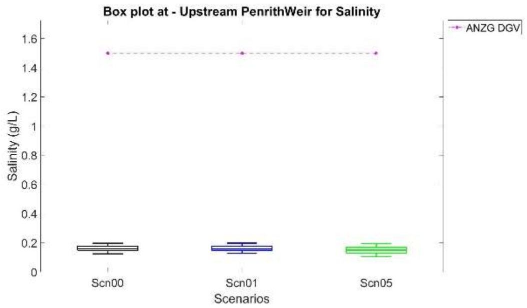
Box plot at - DS WallaciaWeir 500m for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios



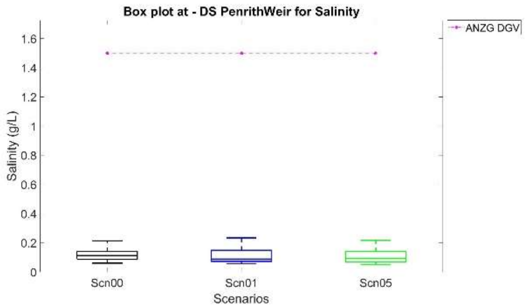
Box plot at - DS WarragambaRivulet for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios



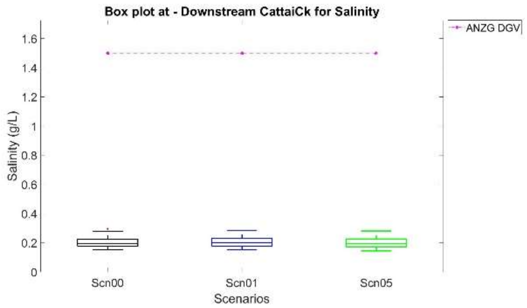
Box plot at - DS 14 KM for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios



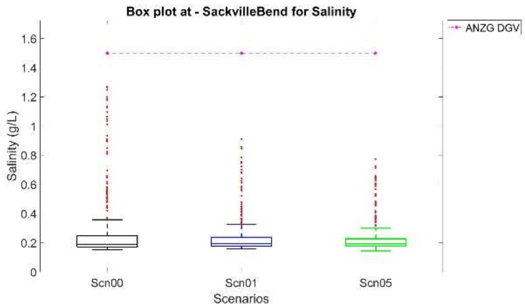
Box plot at - Upstream PenrithWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - DS PenrithWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - Downstream CattaiCk for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - SackvilleBend for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

TSS (mg/L)

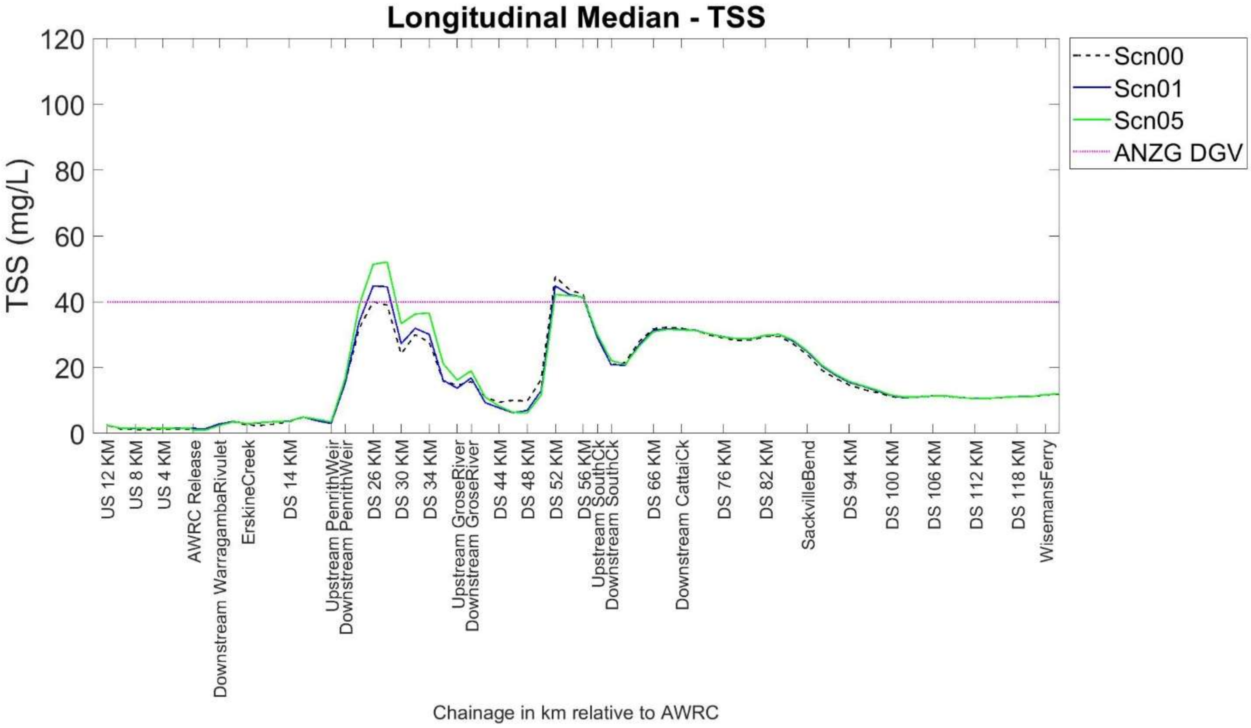
Scenario 05 - dry year

--> Longitudinal plots

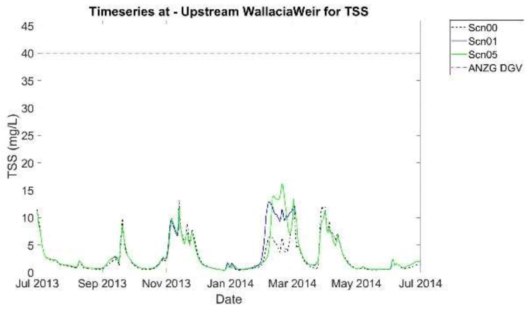
--> Timeseries plots at geographic markers and gauge locations

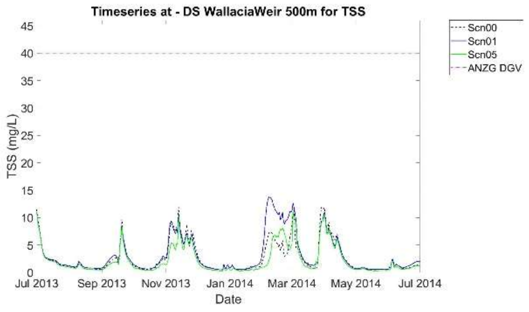
--> Box plots at geographic markers and gauge locations

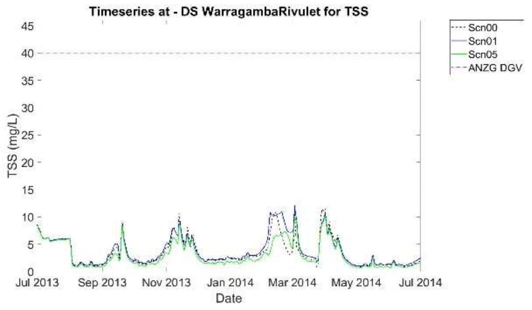
Longitudinal plot

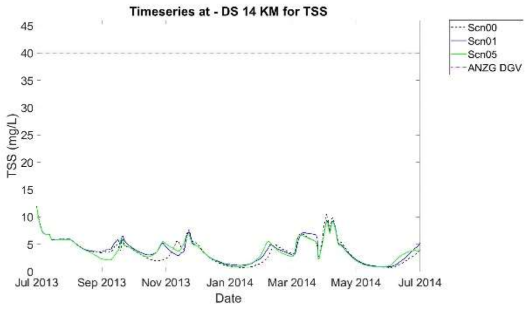


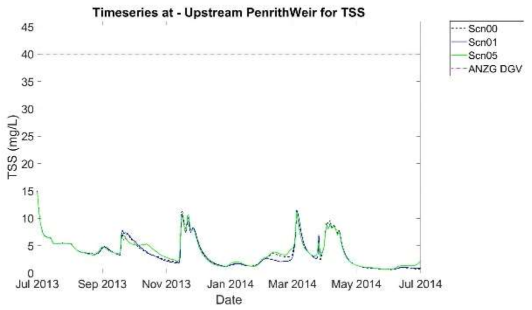
Timeseries plots

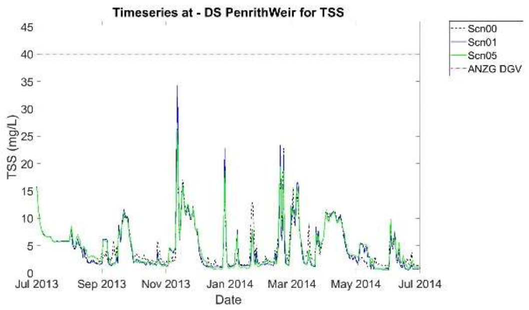


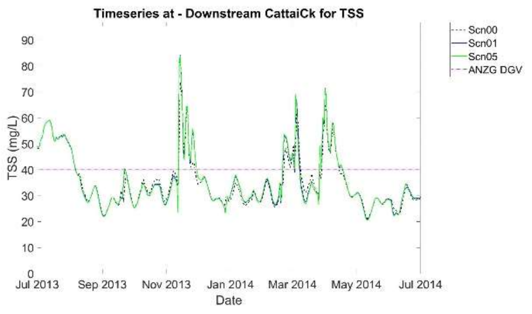


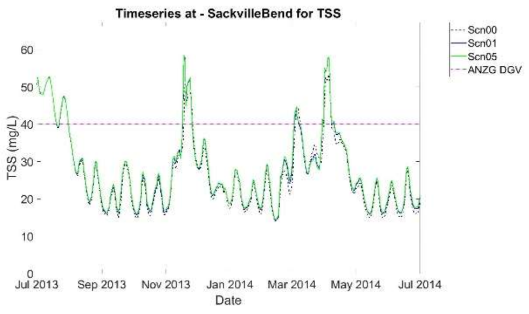




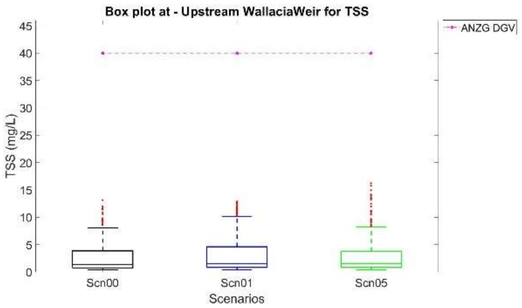


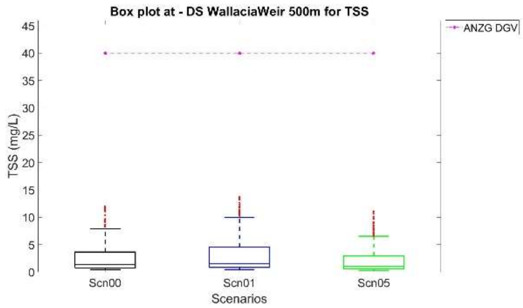


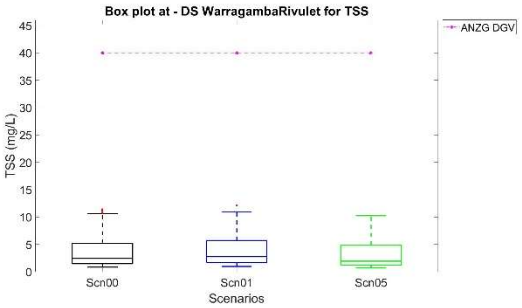


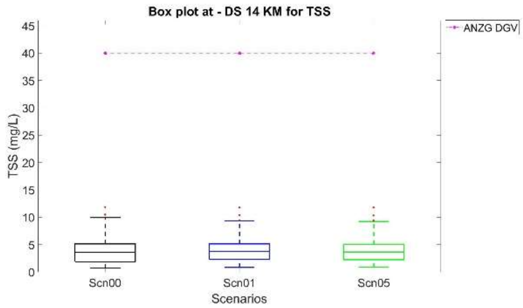


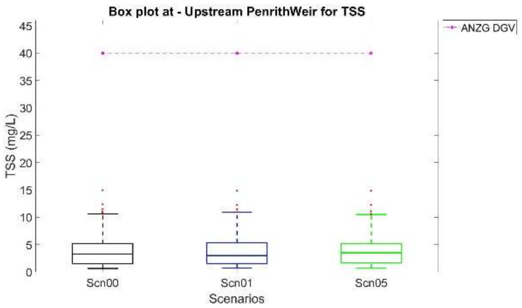
Box plots

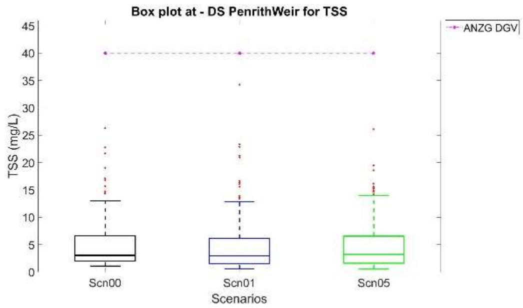

Box plot at - Upstream WallaciaWeir for TSS
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00 Scn01 Scn05
Scenarios
ANZG DGV

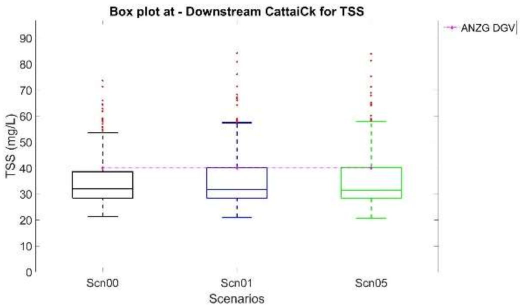

Box plot at - DS WallaciaWeir 500m for TSS
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00 Scn01 Scn05
Scenarios
ANZG DGV

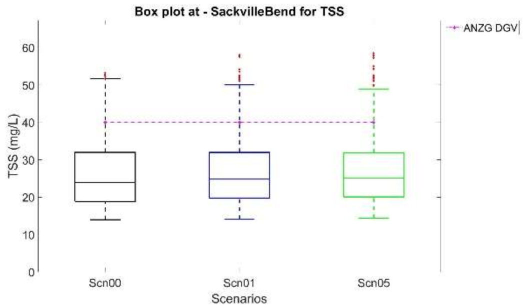

Box plot at - DS WarragambaRivulet for TSS
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00 Scn01 Scn05
Scenarios
ANZG DGV


Box plot at - DS 14 KM for TSS
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00 Scn01 Scn05
Scenarios
ANZG DGV


Box plot at - Upstream PenrithWeir for TSS
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00 Scn01 Scn05
Scenarios
ANZG DGV


Box plot at - DS PenrithWeir for TSS
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00 Scn01 Scn05
Scenarios
ANZG DGV


Box plot at - Downstream CattaiCk for TSS
TSS (mg/L)
0 10 20 30 40 50 60 70 80 90
Scn00 Scn01 Scn05
Scenarios
ANZG DGV


Box plot at - SackvilleBend for TSS
TSS (mg/L)
0 10 20 30 40 50 60
Scn00 Scn01 Scn05
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

Dissolved Oxygen (mg/L)

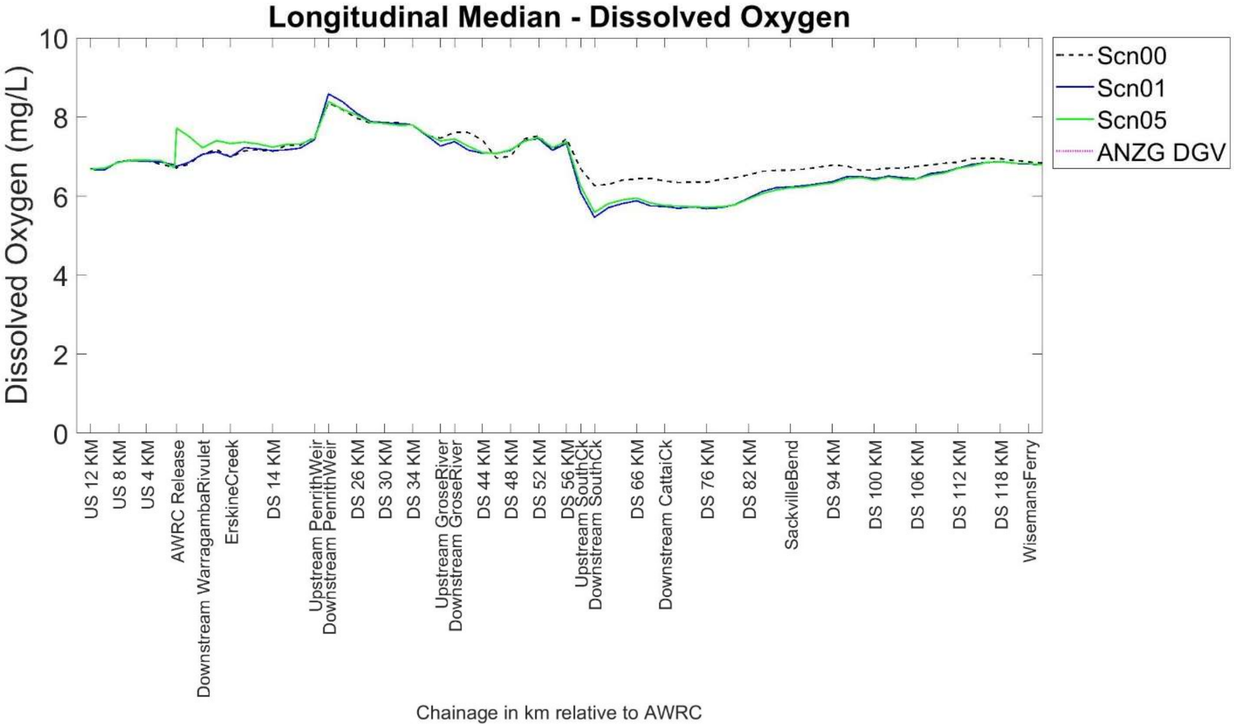
Scenario 05 - dry year

--> Longitudinal plots

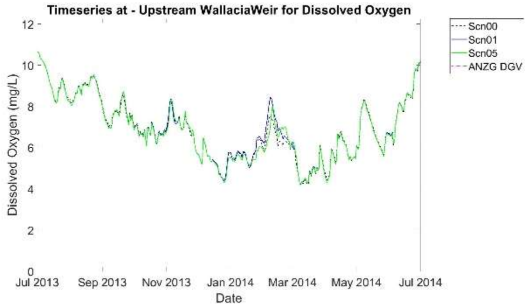
--> Timeseries plots at geographic markers and gauge locations

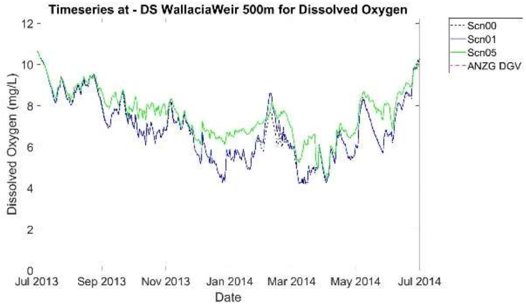
--> Box plots at geographic markers and gauge locations

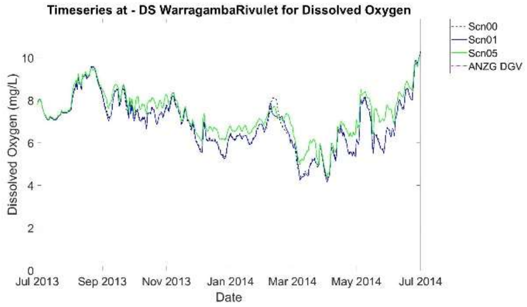
Longitudinal plot

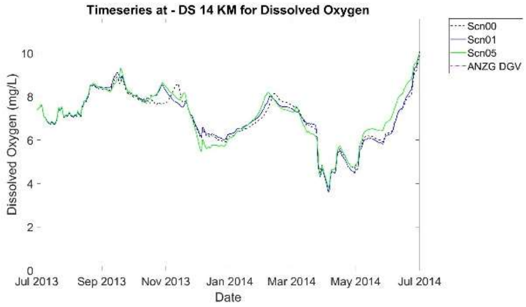


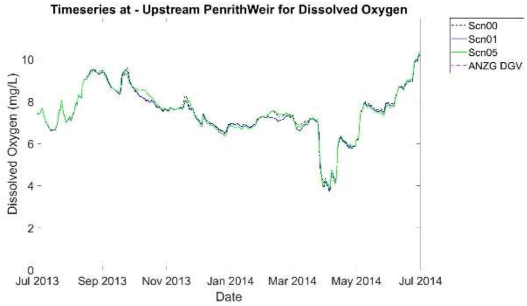
Timeseries plots

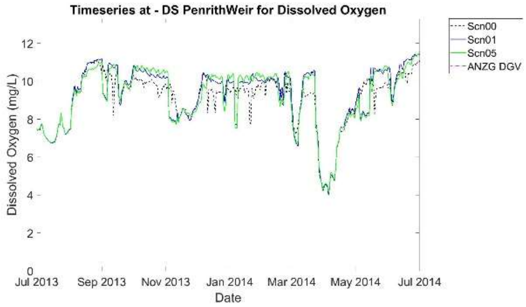


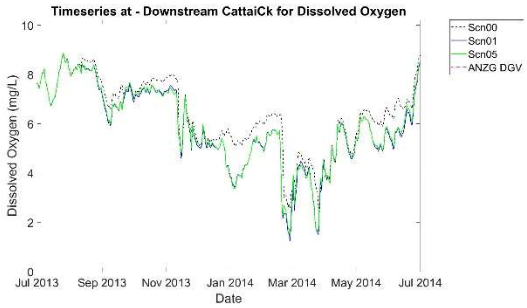


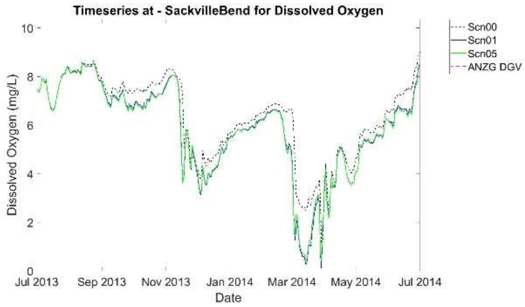




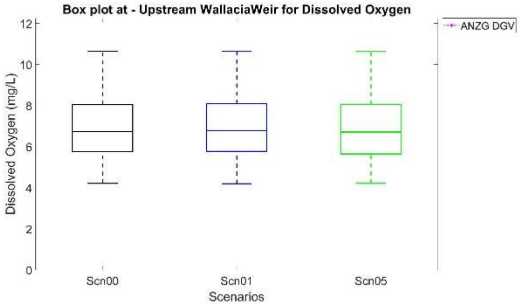


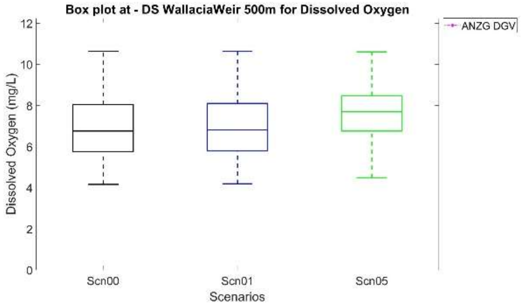


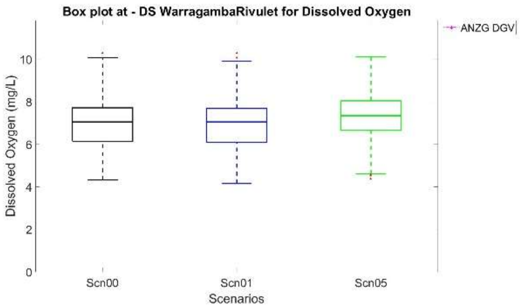


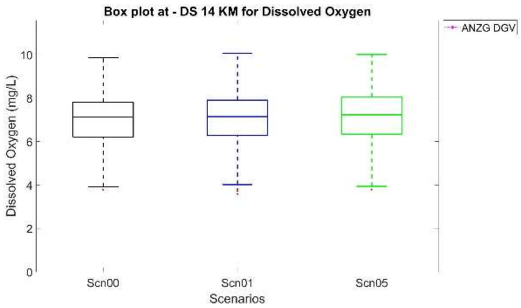


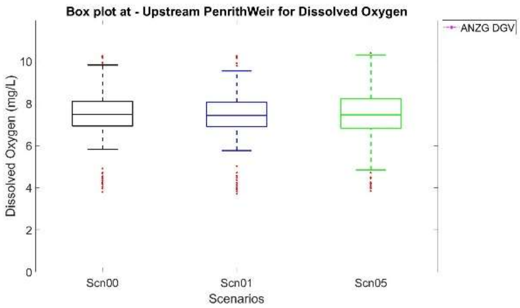
Box plots

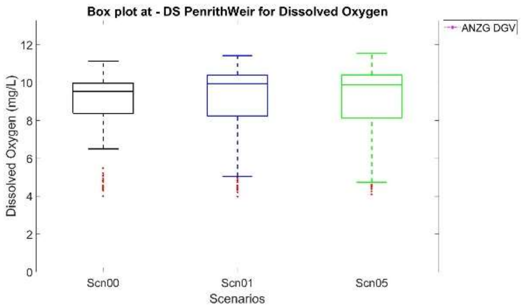

Box plot at - Upstream WallaciaWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
0
2
4
6
8
10
12
Scn00
Scn01
Scn05
Scenarios

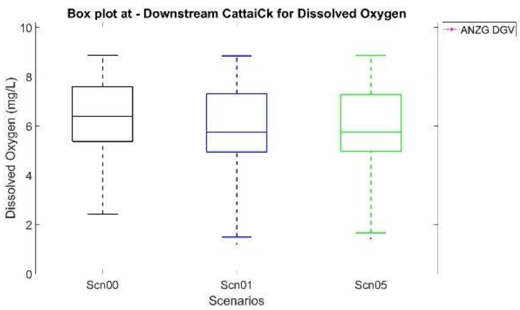

Box plot at - DS WallaciaWeir 500m for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
0
2
4
6
8
10
12
Scn00
Scn01
Scn05
Scenarios

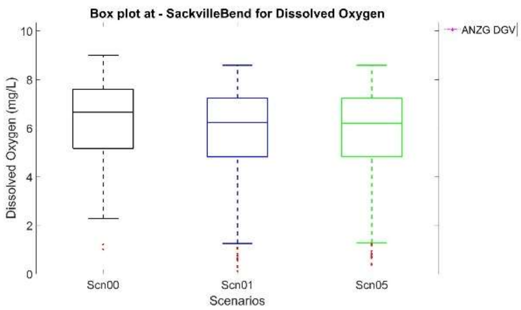

Box plot at - DS WarragambaRivulet for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
0
2
4
6
8
10
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
0
2
4
6
8
10
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
0
2
4
6
8
10
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
0
2
4
6
8
10
12
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
0
2
4
6
8
10
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
0
2
4
6
8
10
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Dissolved Oxygen Saturation (%)

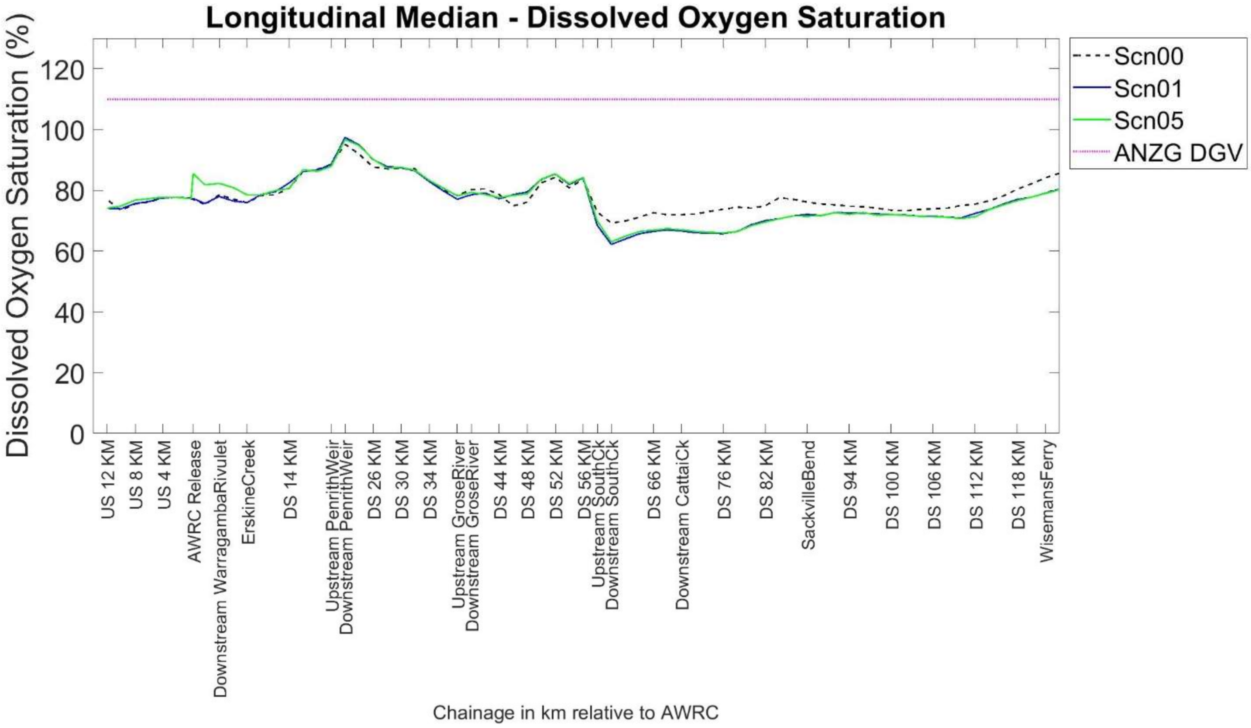
Scenario 05 - dry year

--> Longitudinal plots

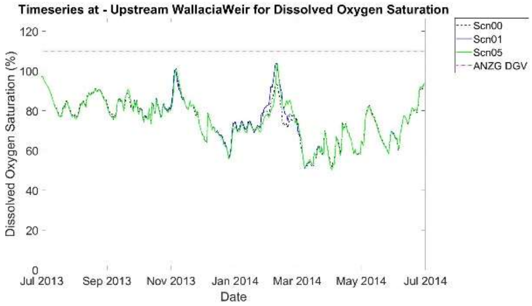
--> Timeseries plots at geographic markers and gauge locations

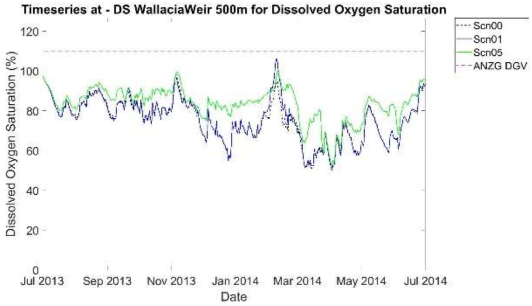
--> Box plots at geographic markers and gauge locations

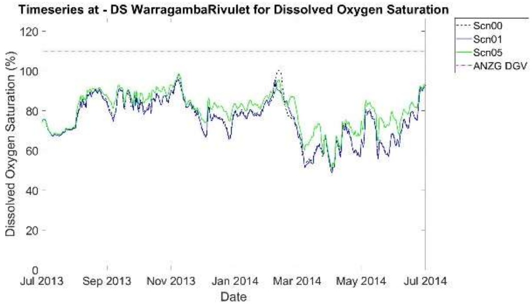
Longitudinal plot

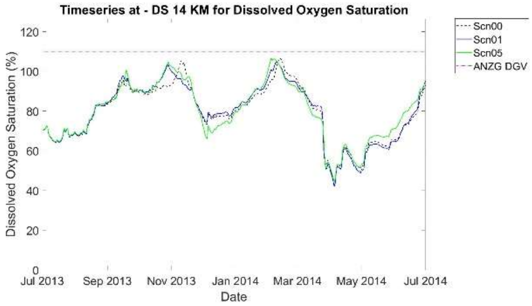


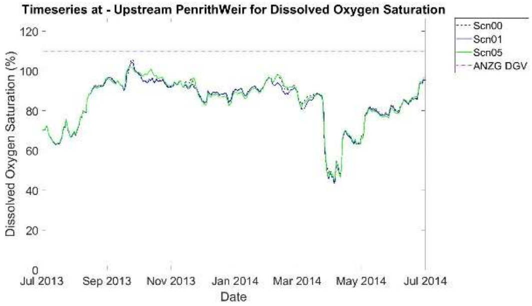
Timeseries plots

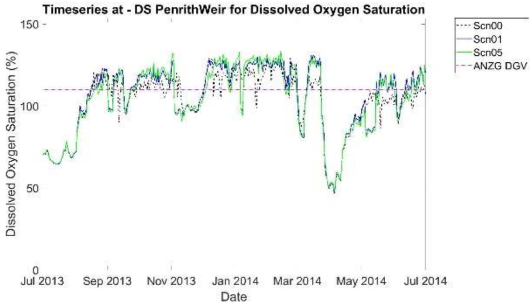


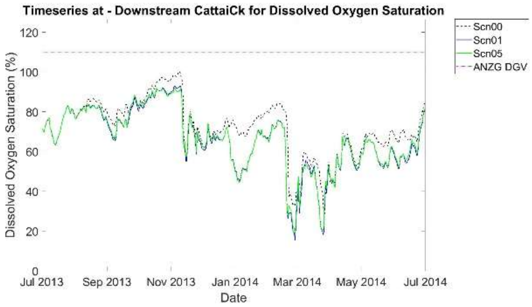


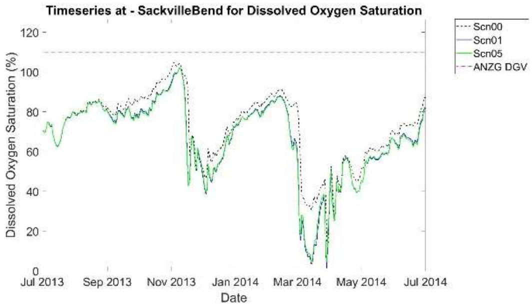




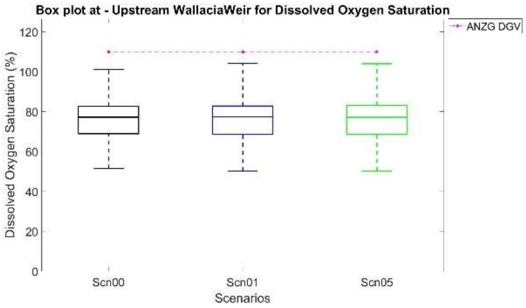


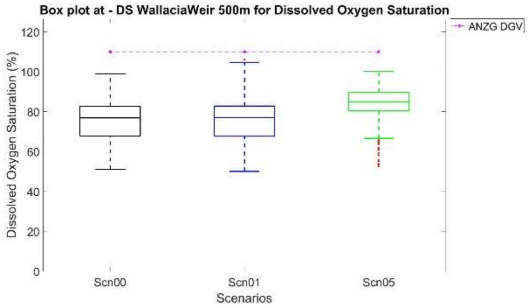


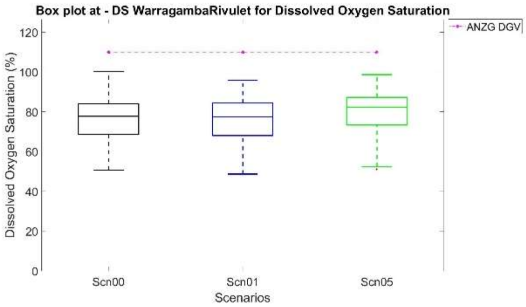


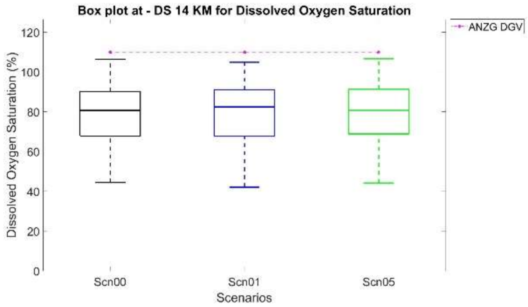


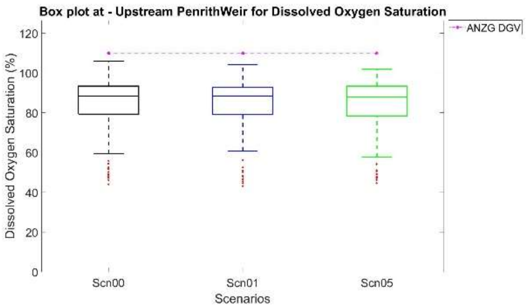
Box plots

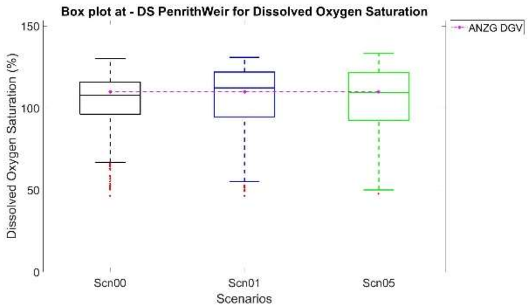

Box plot at - Upstream WallaciaWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios

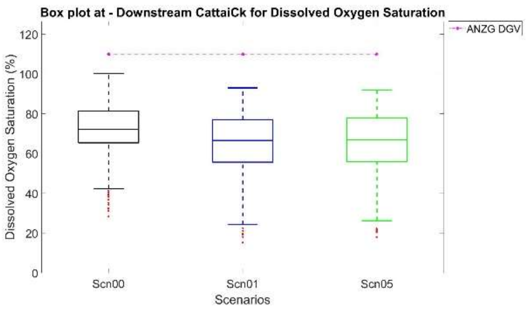

Box plot at - DS WallaciaWeir 500m for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios

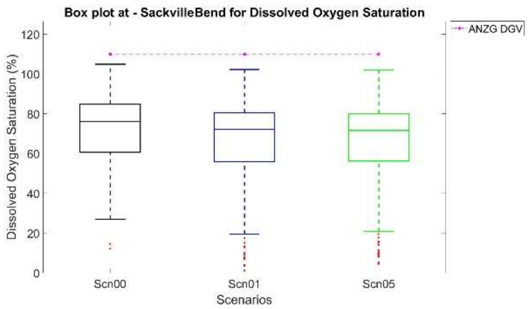

Box plot at - DS WarragambaRivulet for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Ecoli (cfu/100mL)

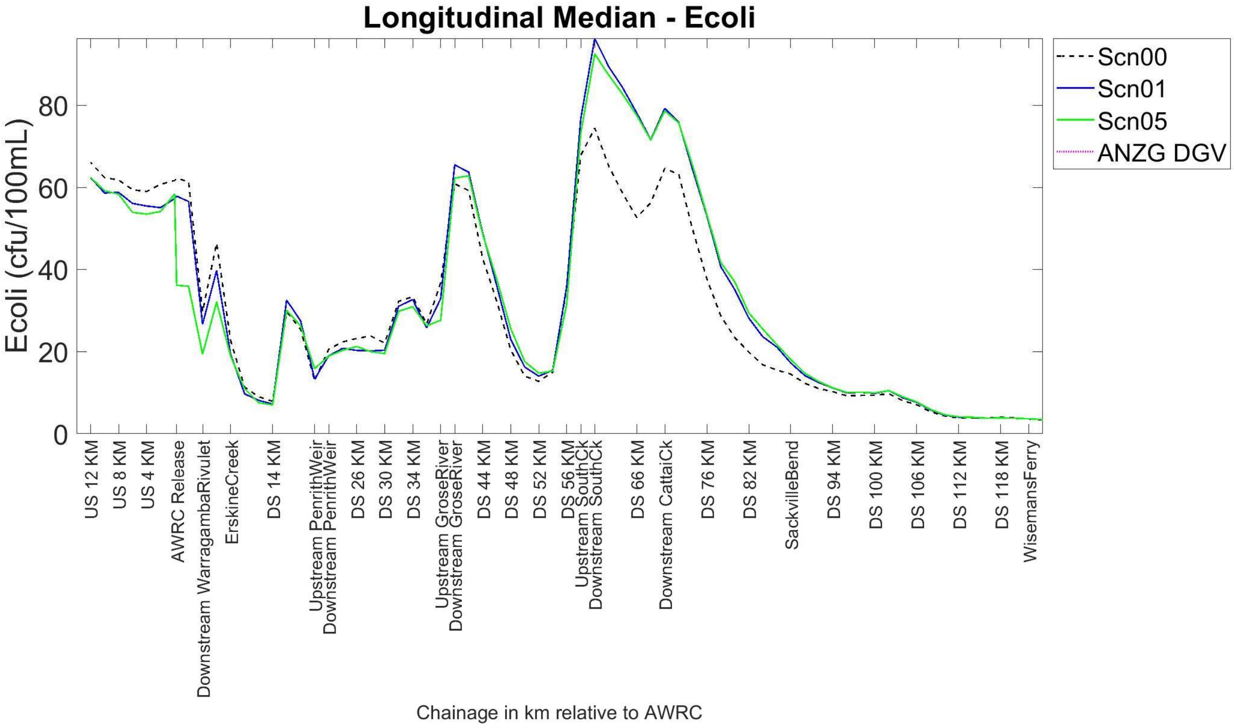
Scenario 05 - dry year

--> Longitudinal plots

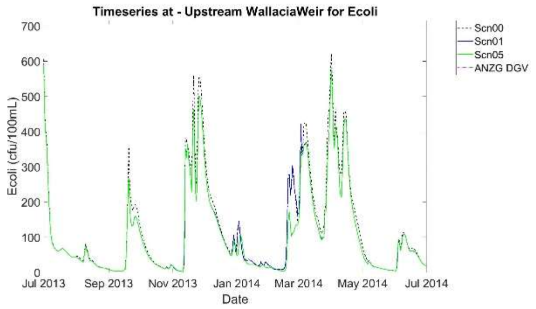
--> Timeseries plots at geographic markers and gauge locations

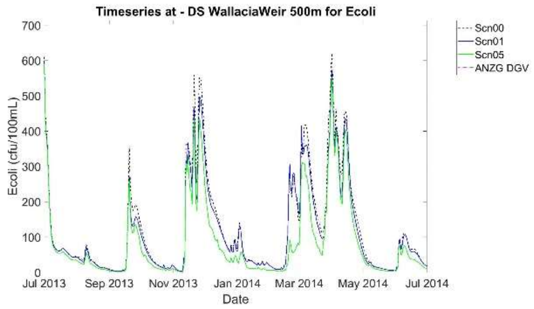
--> Box plots at geographic markers and gauge locations

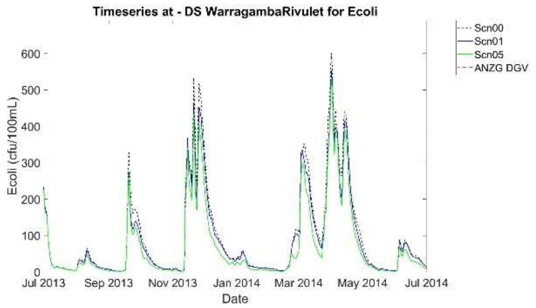
Longitudinal plot

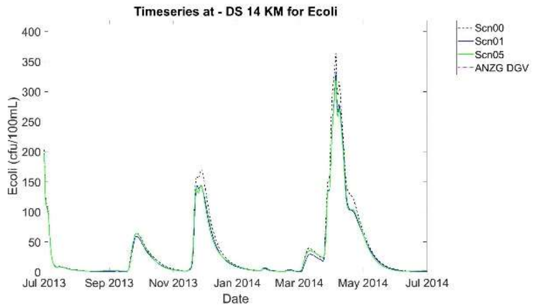


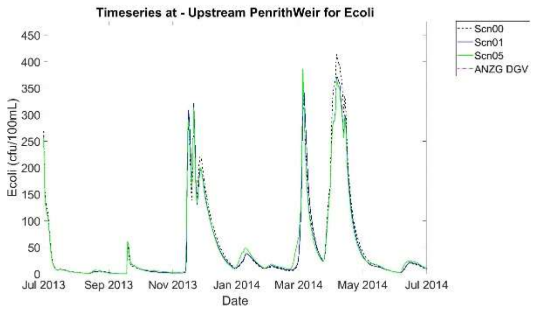
Timeseries plots

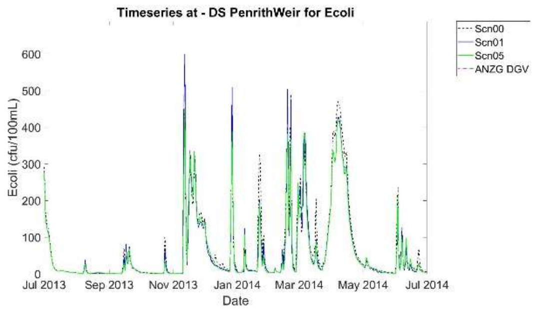


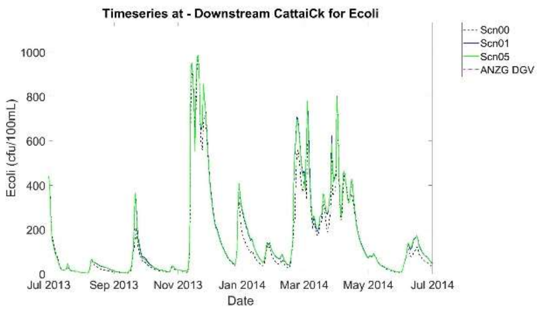


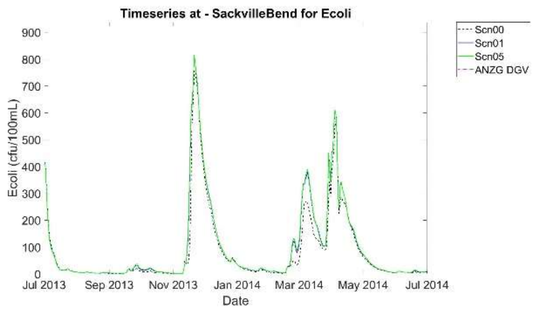




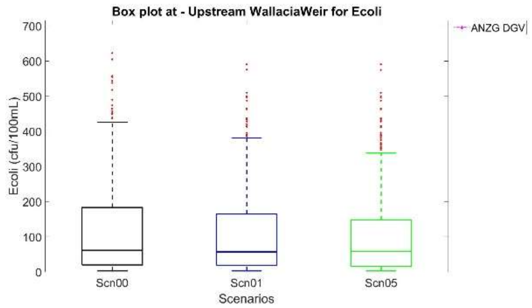


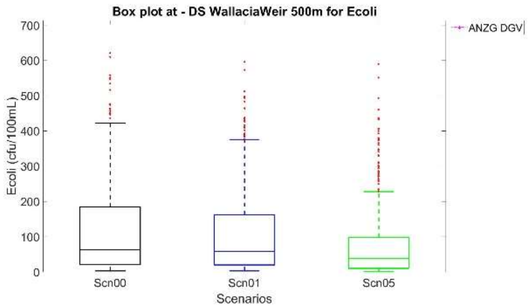


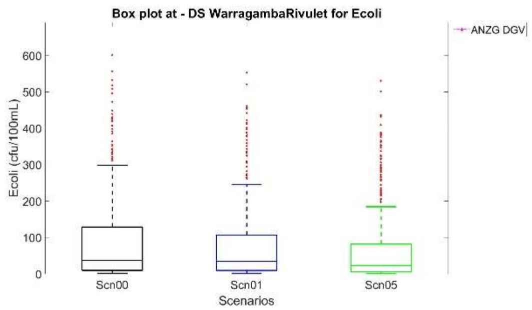


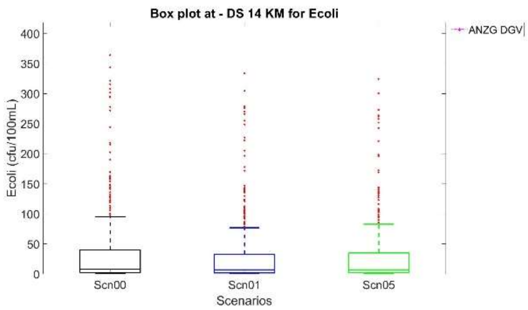


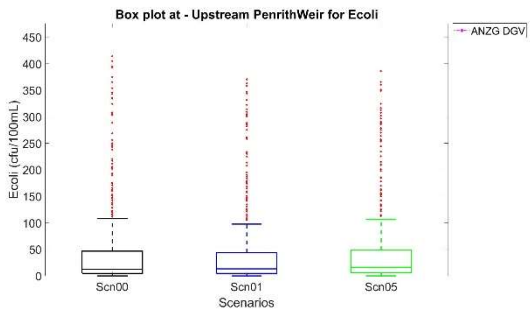
Box plots

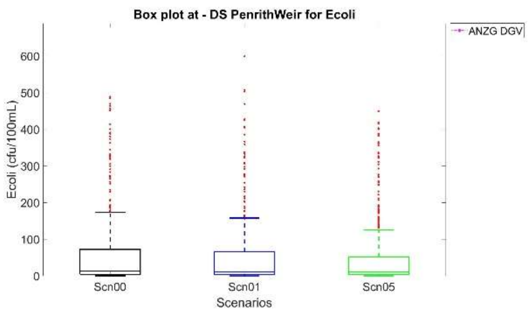

Box plot at - Upstream WallaciaWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

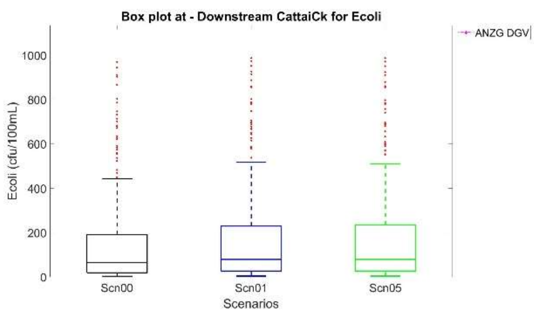

Box plot at - DS WallaciaWeir 500m for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

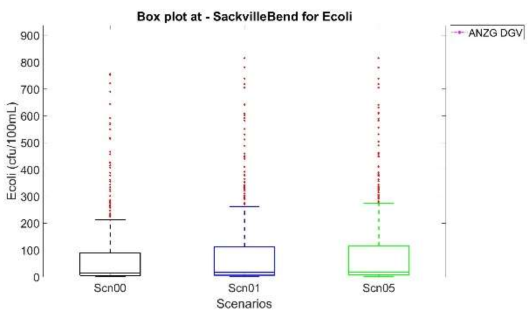

Box plot at - DS WarragambaRivulet for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Enterococci (cfu/100mL)

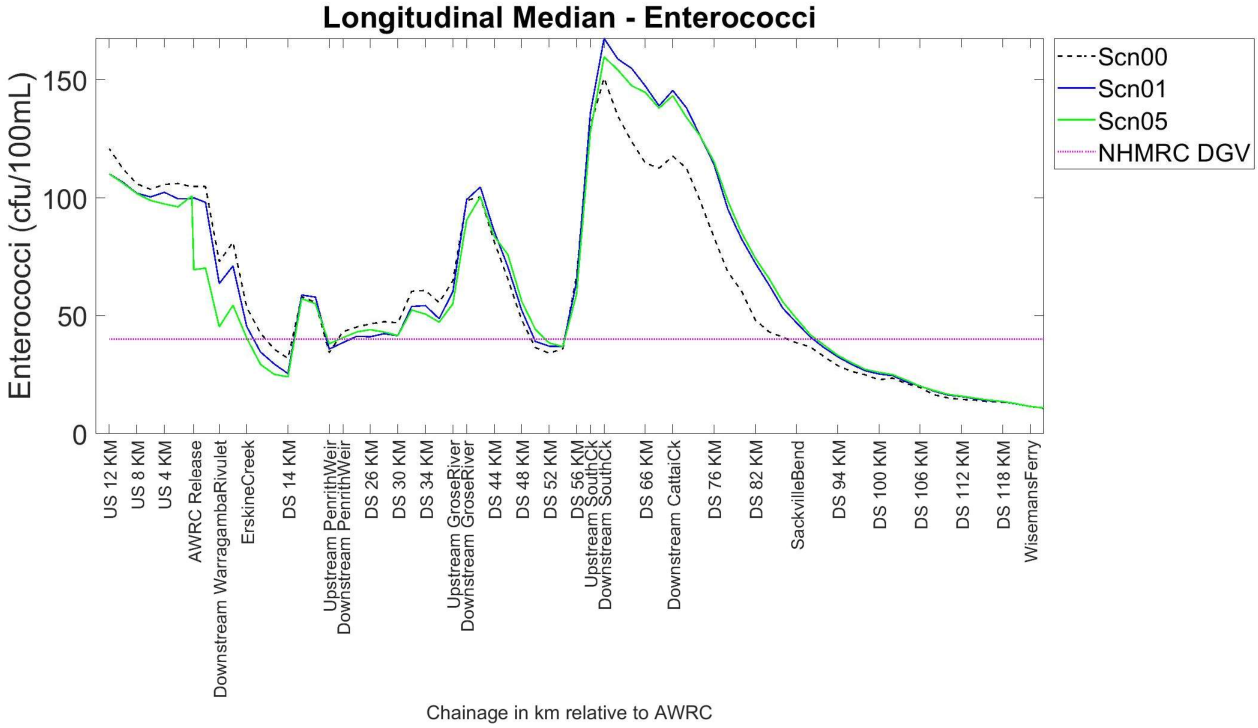
Scenario 05 - dry year

--> Longitudinal plots

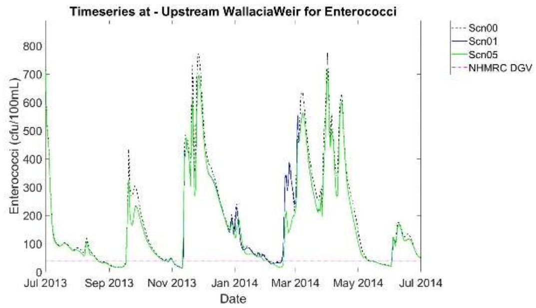
--> Timeseries plots at geographic markers and gauge locations

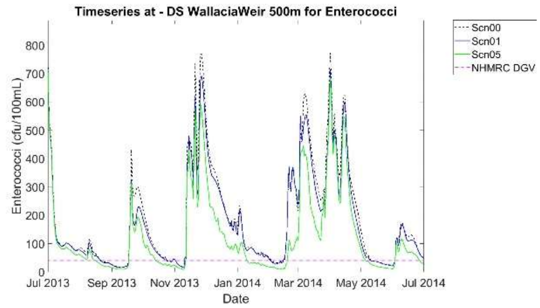
--> Box plots at geographic markers and gauge locations

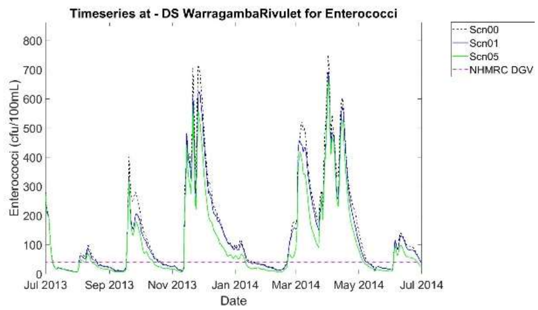
Longitudinal plot

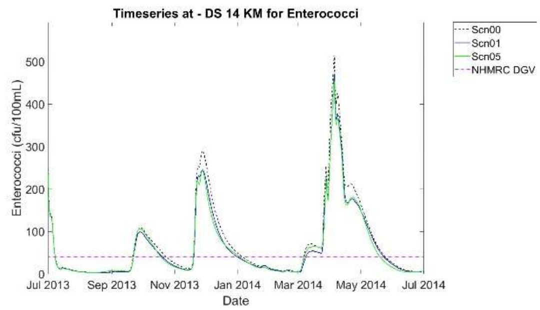


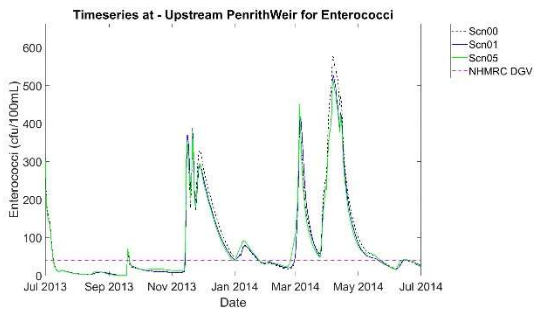
Timeseries plots

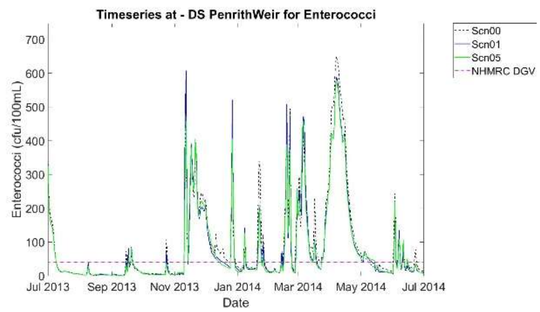


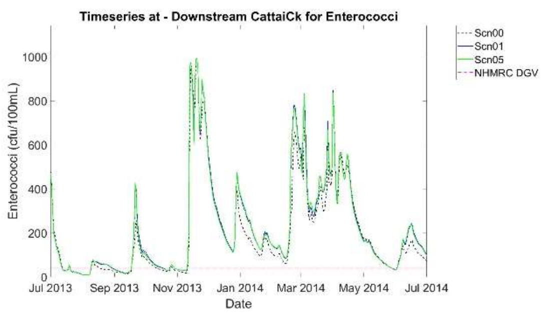


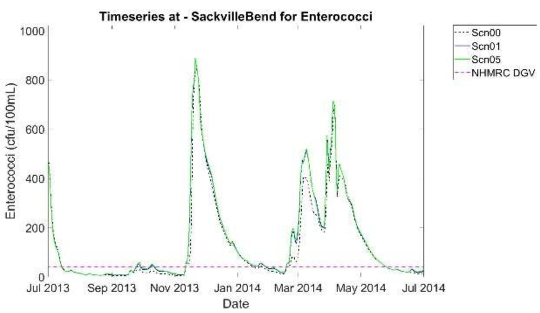




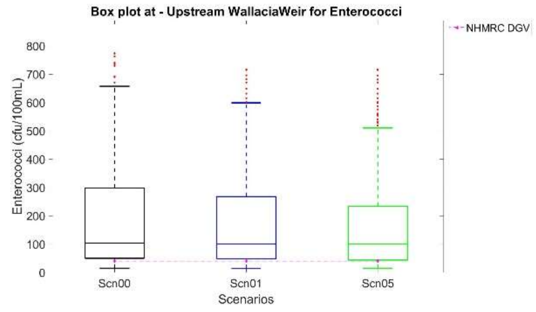




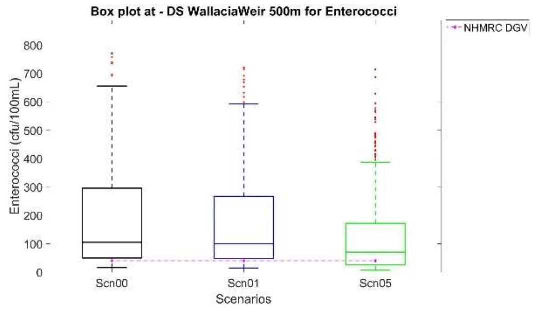




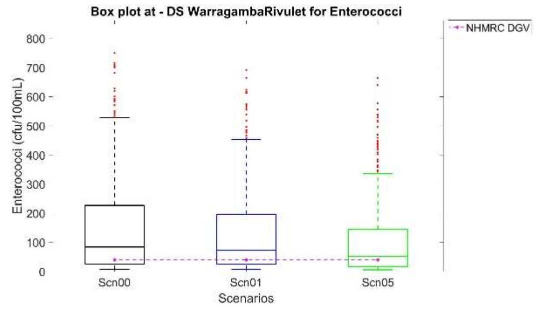
Box plots



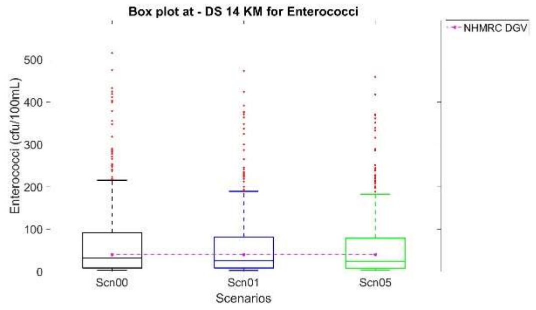
Box plot at - Upstream WallaciaWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios



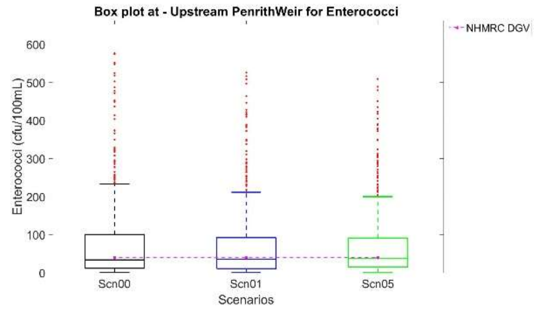
Box plot at - DS WallaciaWeir 500m for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios



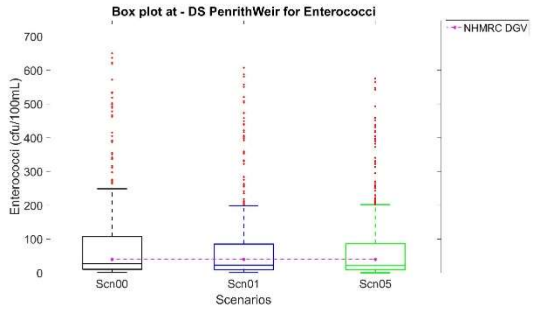
Box plot at - DS WarragambaRivulet for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios



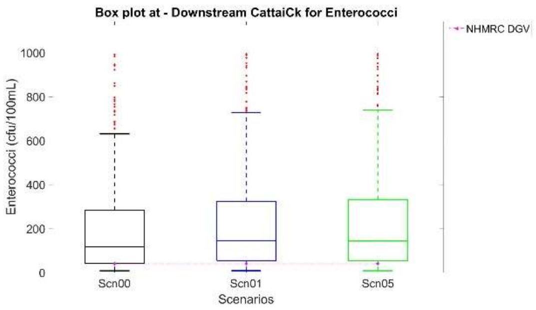
Box plot at - DS 14 KM for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios



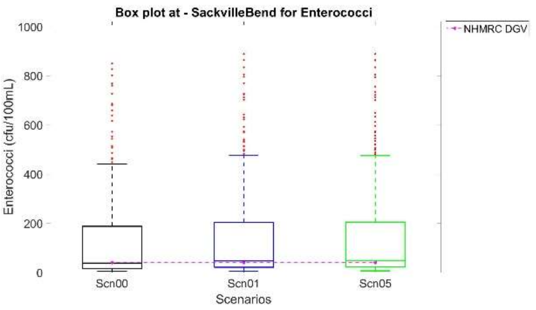
Box plot at - Upstream PenrithWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios



Box plot at - DS PenrithWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios



Box plot at - Downstream CattaiCk for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios



Box plot at - SackvilleBend for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

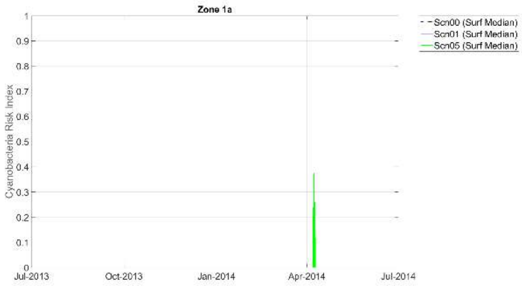
Hawkesbury-Nepean WQRM

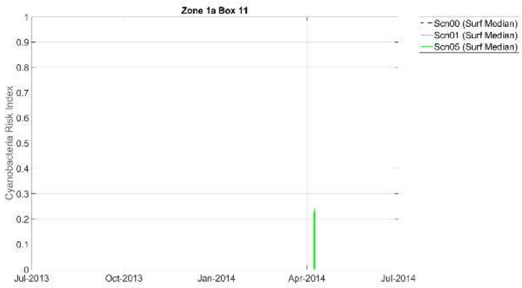
Cyano ()

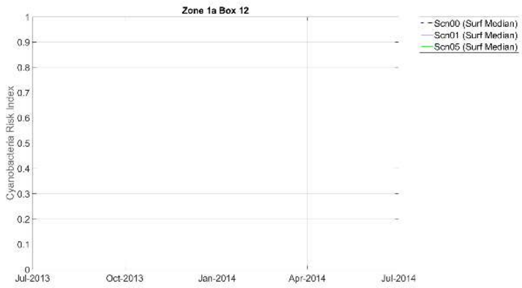
Scenario 05 - dry year

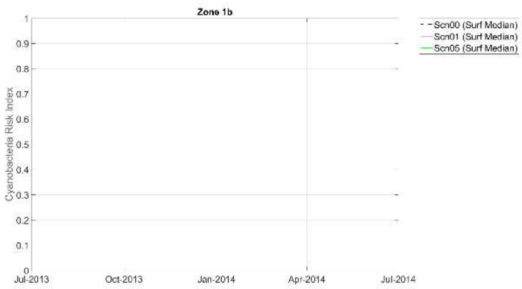
--> Timeseries plots for reaches

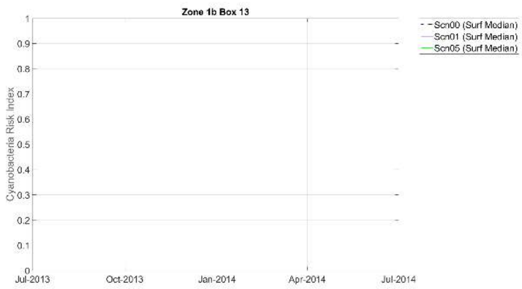
Timeseries plots

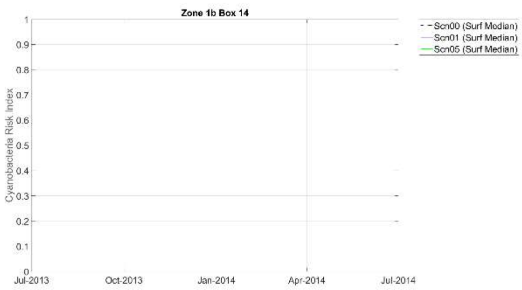


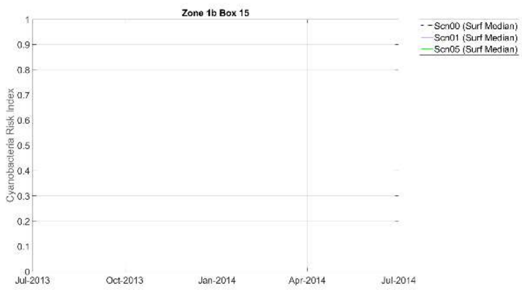


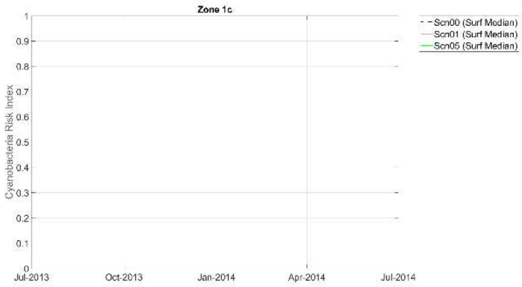


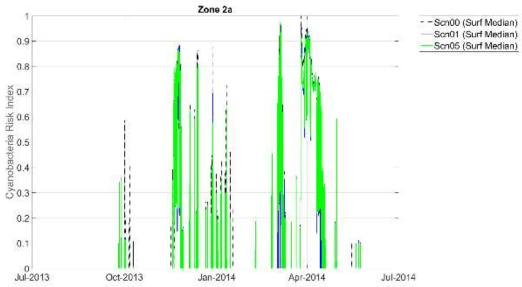


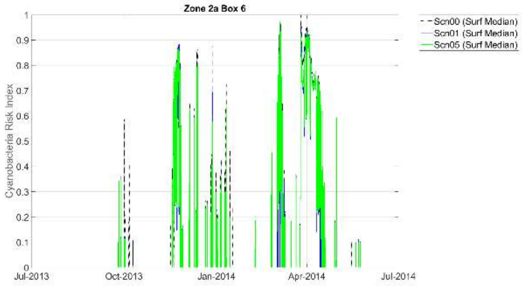




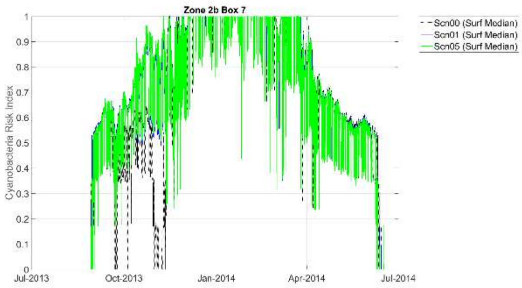


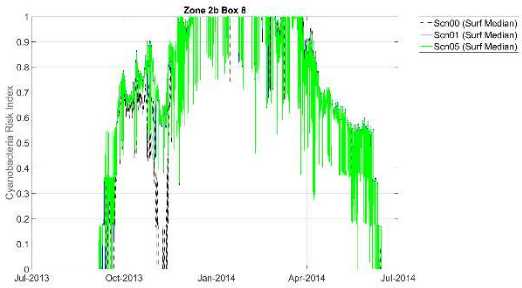

Zone 1c
Cyanobacteria Risk Index
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Jul-2013 Oct-2013 Jan-2014 Apr-2014 Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)

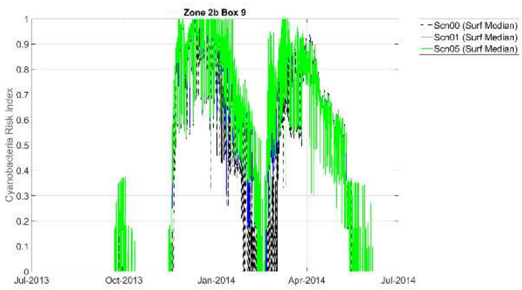

Zone 2a
Cyanobacteria Risk Index
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Jul-2013 Oct-2013 Jan-2014 Apr-2014 Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)

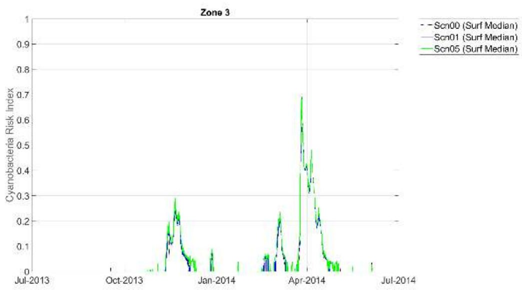

Zone 2a Box 6
Cyanobacteria Risk Index
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Jul-2013 Oct-2013 Jan-2014 Apr-2014 Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)

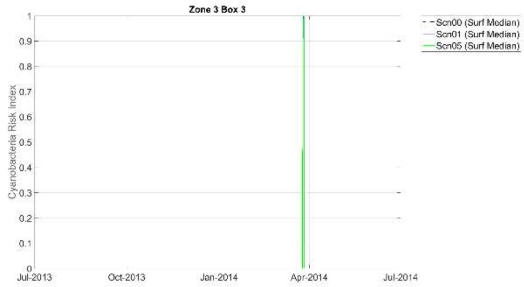

Zone 2b
Cyanobacteria Risk Index
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Jul-2013 Oct-2013 Jan-2014 Apr-2014 Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)

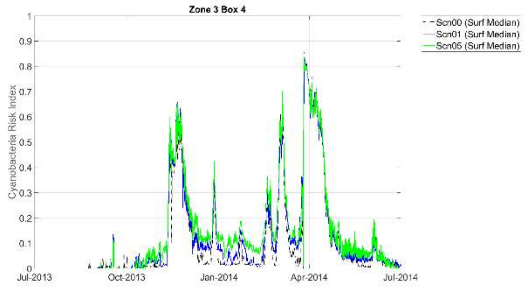

Zone 2b Box 7
Cyanobacteria Risk Index
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Jul-2013 Oct-2013 Jan-2014 Apr-2014 Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)

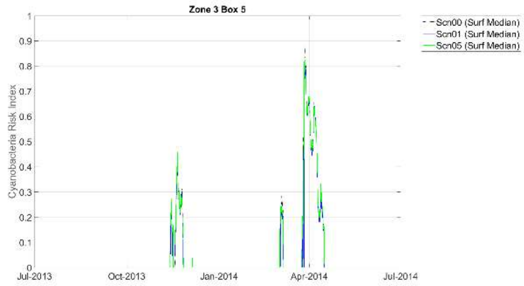

Zone 2b Box 8
Cyanobacteria Risk Index
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Jul-2013 Oct-2013 Jan-2014 Apr-2014 Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)

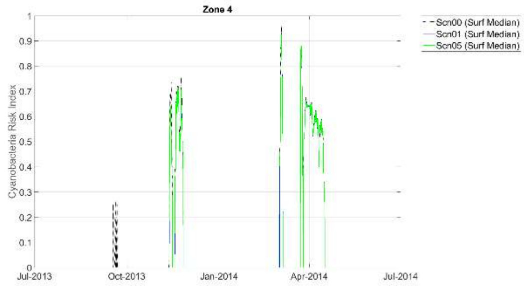

Zone 2b Box 9
Cyanobacteria Risk Index
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Jul-2013 Oct-2013 Jan-2014 Apr-2014 Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)

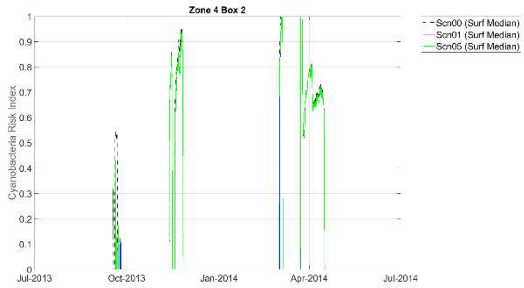

Zone 3
Cyanobacteria Risk Index
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Jul-2013 Oct-2013 Jan-2014 Apr-2014 Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)


Zone 3 Box 3
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014


Zone 3 Box 4
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014


Zone 3 Box 5
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014


Zone 4
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014


Zone 4 Box 2
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014


Zone SC
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014

Hawkesbury-Nepean WQRM

Total Nitrogen (mg/L)

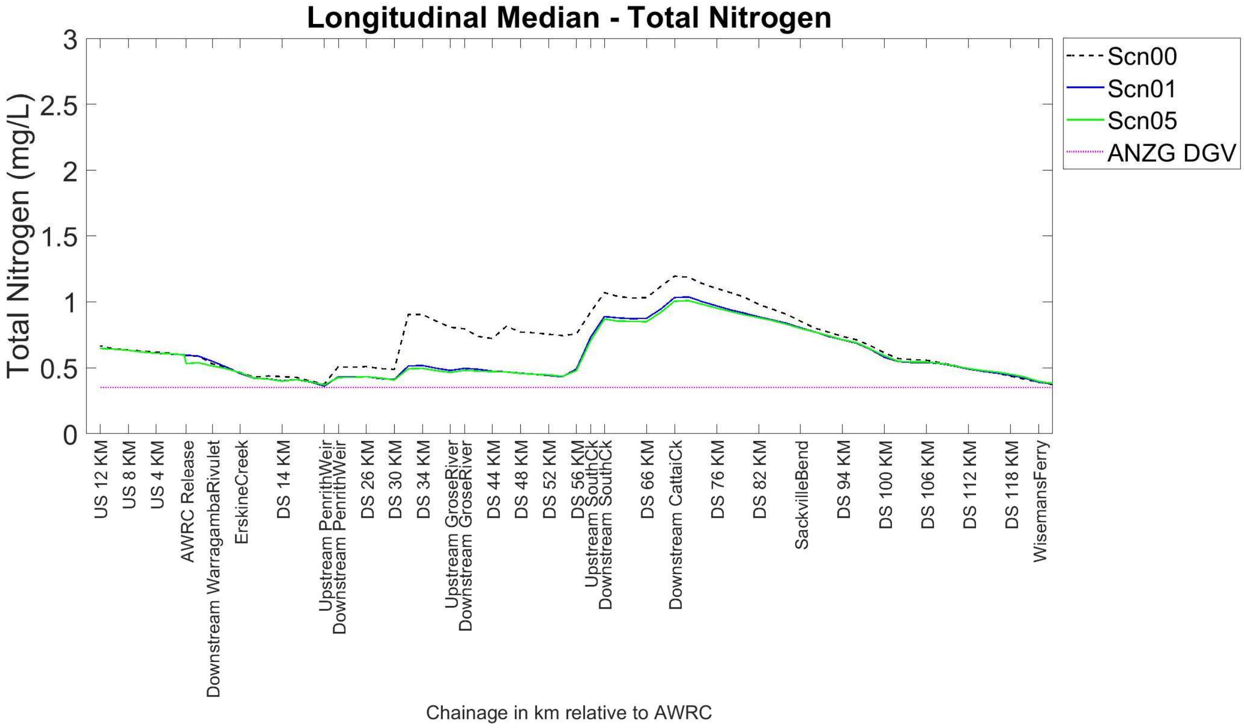
Scenario 05 - wet year

--> Longitudinal plots

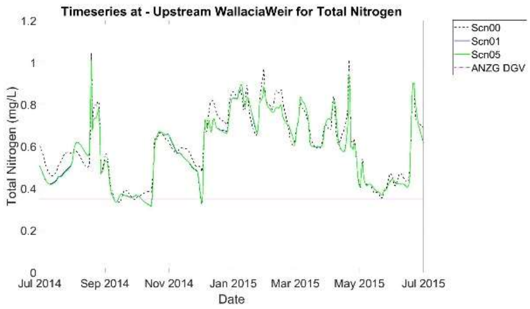
--> Timeseries plots at geographic markers and gauge locations

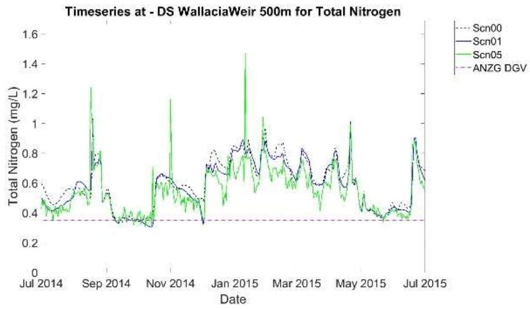
--> Box plots at geographic markers and gauge locations

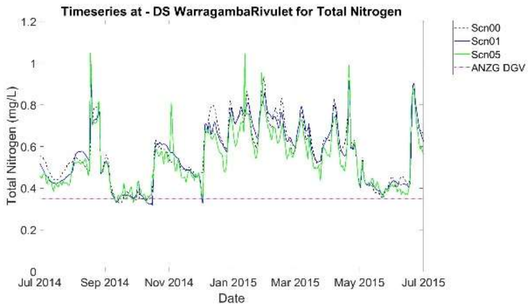
Longitudinal plot

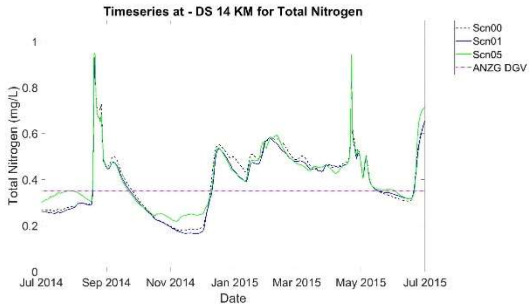


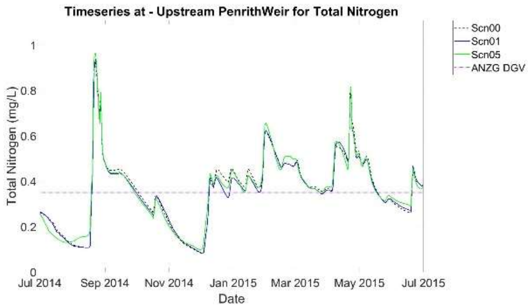
Timeseries plots

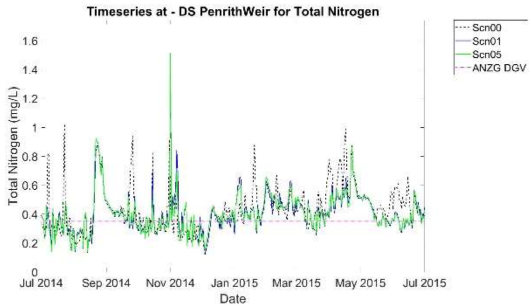


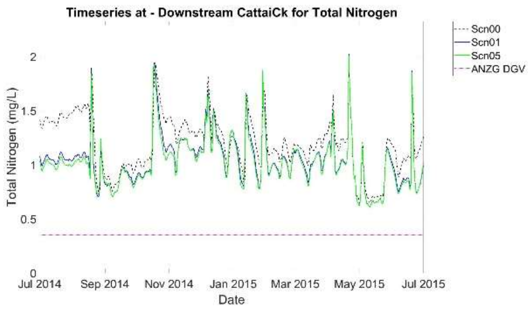


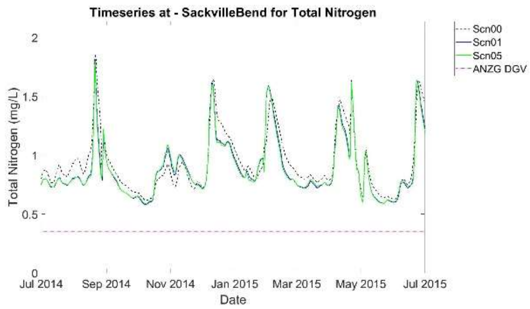




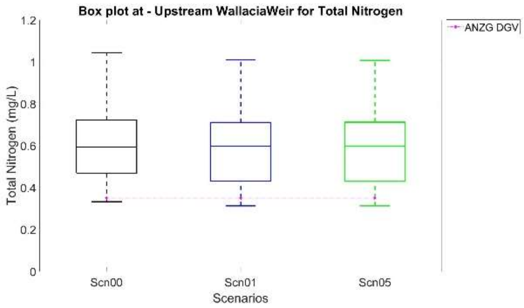




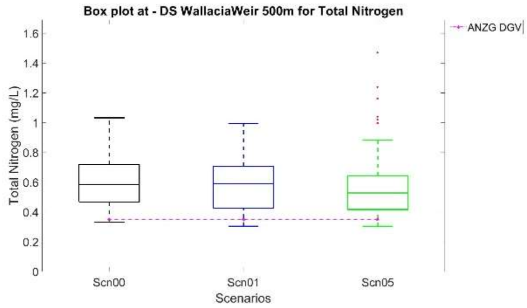




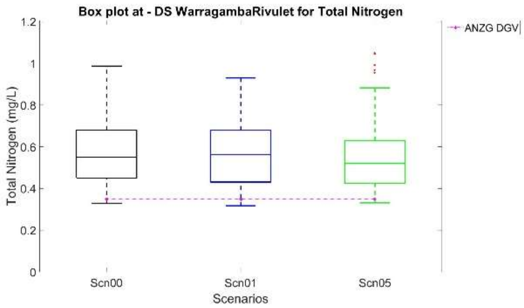
Box plots



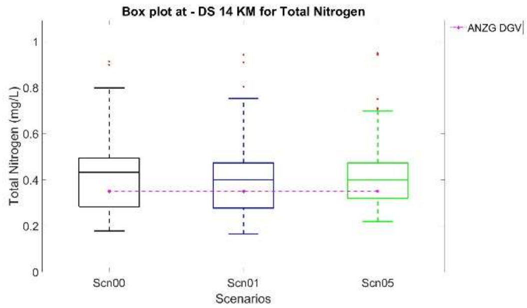
Box plot at - Upstream WallaciaWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0
0.2
0.4
0.6
0.8
1
1.2
Scn00
Scn01
Scn05
Scenarios



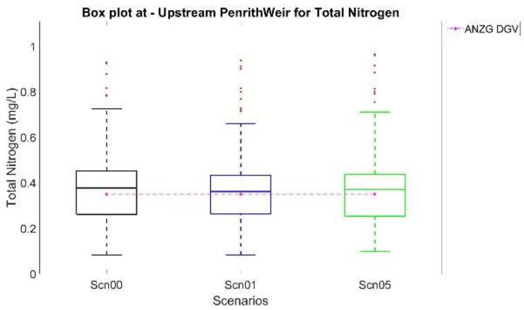
Box plot at - DS WallaciaWeir 500m for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn01
Scn05
Scenarios



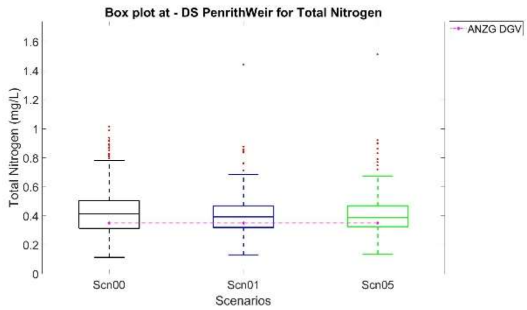
Box plot at - DS WarragambaRivulet for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0
0.2
0.4
0.6
0.8
1
1.2
Scn00
Scn01
Scn05
Scenarios



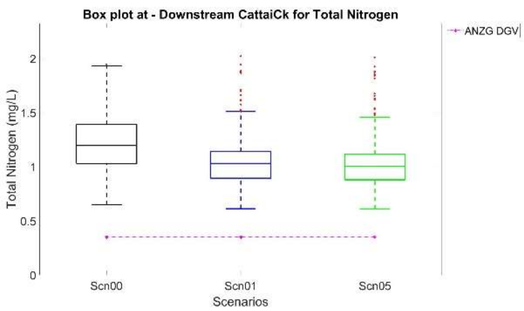
Box plot at - DS 14 KM for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0
0.2
0.4
0.6
0.8
1
Scn00
Scn01
Scn05
Scenarios



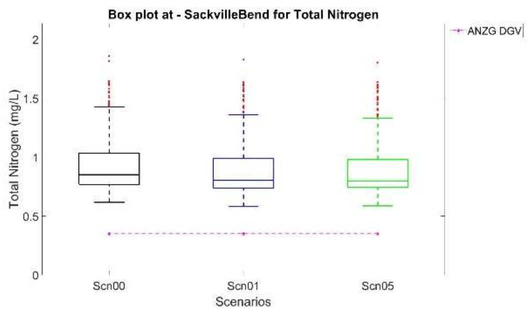
Box plot at - Upstream PenrithWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0
0.2
0.4
0.6
0.8
1
Scn00
Scn01
Scn05
Scenarios



Box plot at - DS PenrithWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Scn00
Scn01
Scn05
Scenarios



Box plot at - Downstream CattaiCk for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0
0.5
1
1.5
2
Scn00
Scn01
Scn05
Scenarios



Box plot at - SackvilleBend for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0
0.5
1
1.5
2
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Ammonia (mg/L)

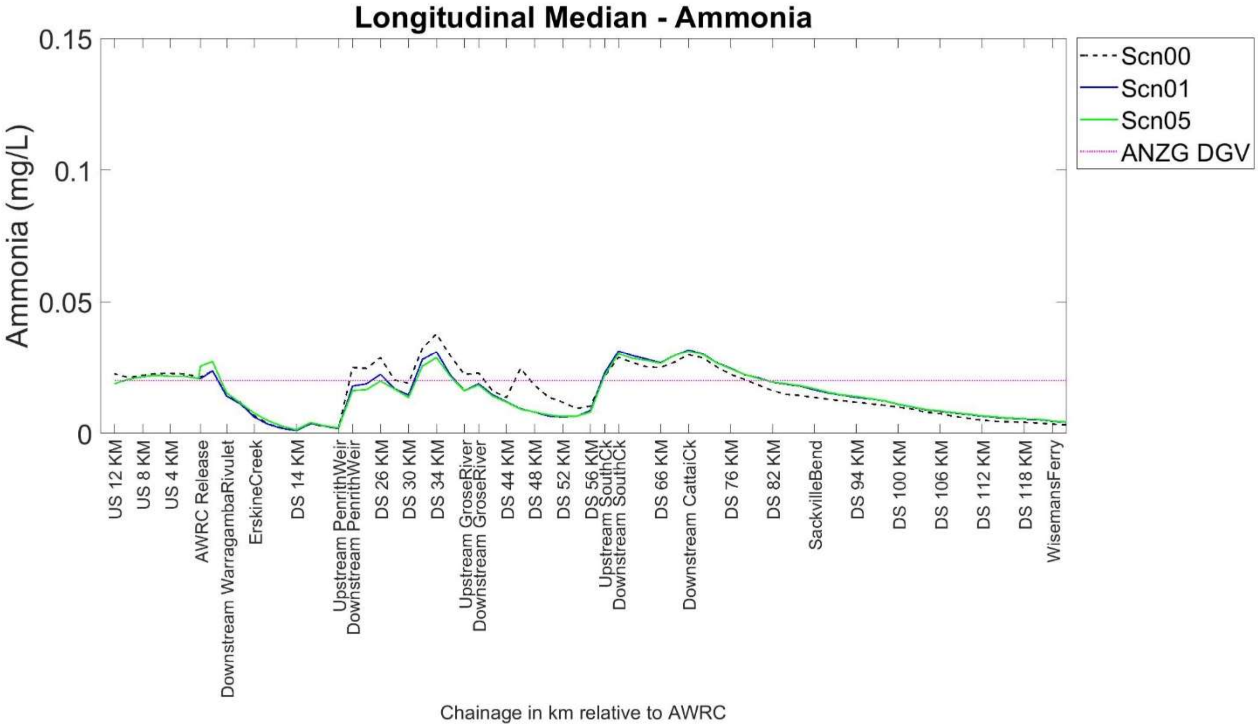
Scenario 05 - wet year

--> Longitudinal plots

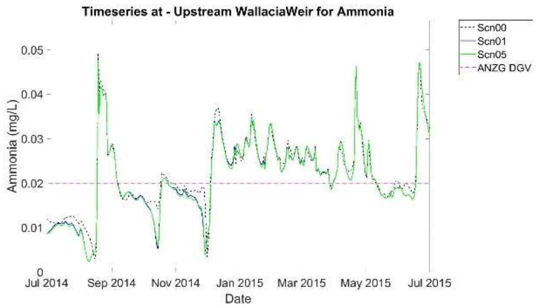
--> Timeseries plots at geographic markers and gauge locations

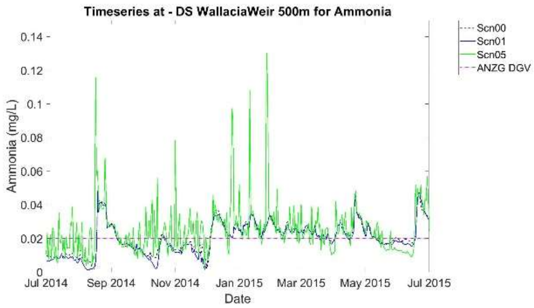
--> Box plots at geographic markers and gauge locations

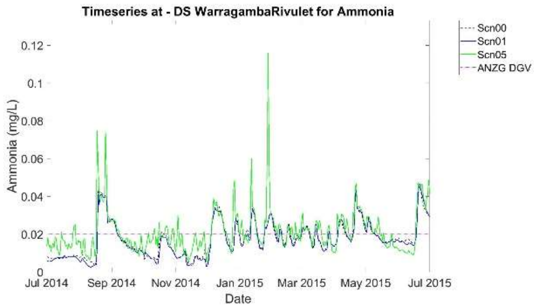
Longitudinal plot

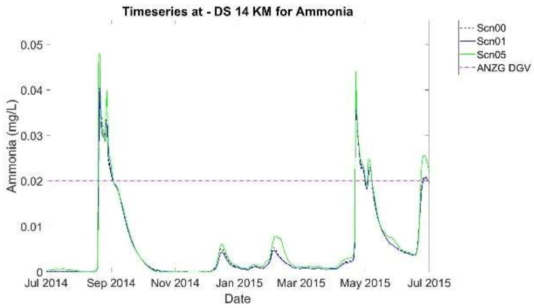


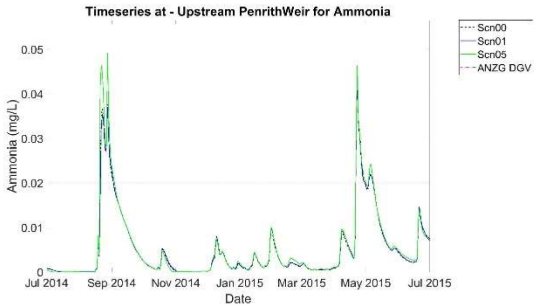
Timeseries plots

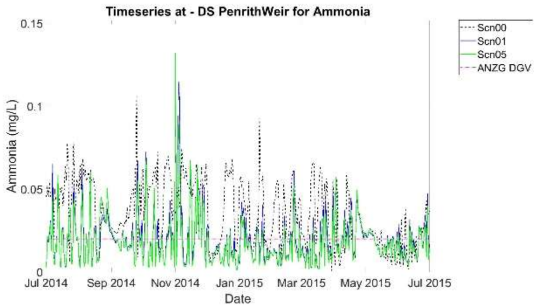


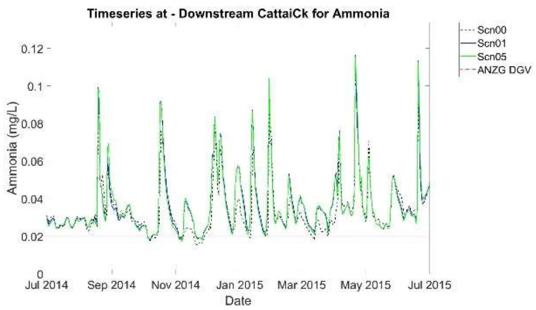


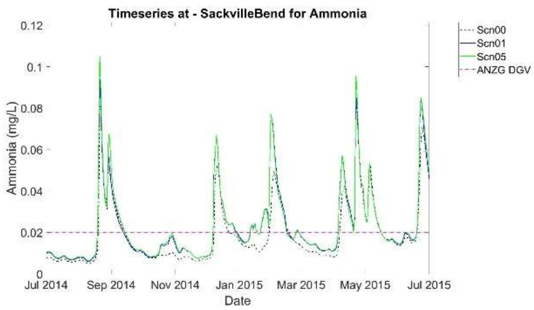




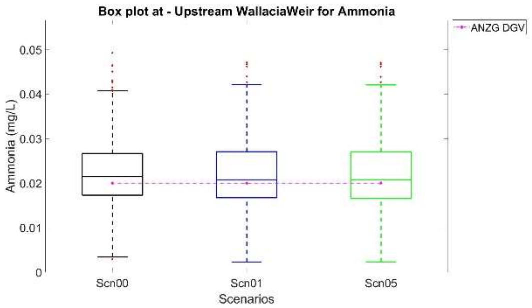


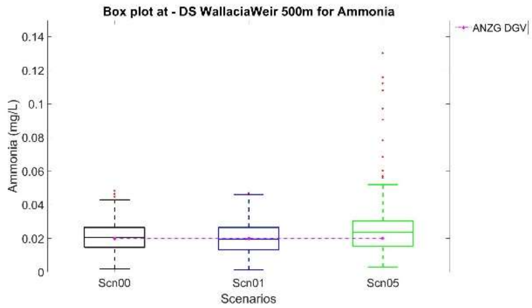


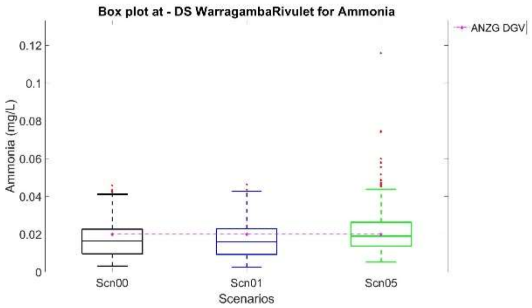


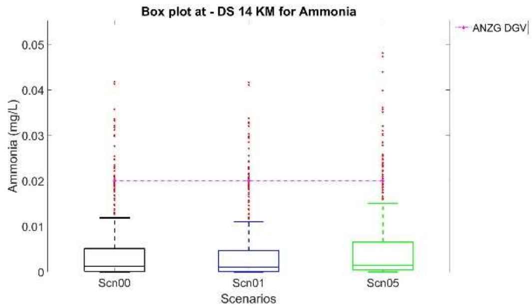


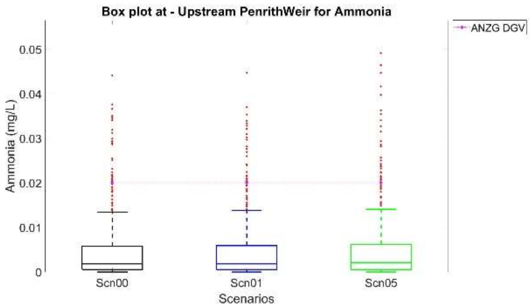
Box plots

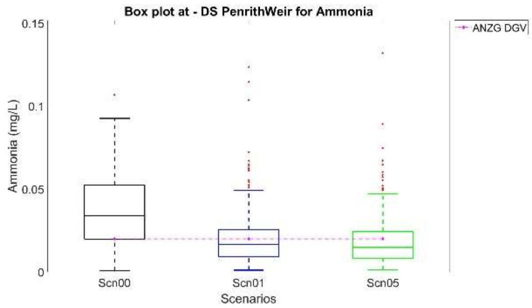

Box plot at - Upstream WallaciaWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
0
0.01
0.02
0.03
0.04
0.05
Scn00
Scn01
Scn05
Scenarios

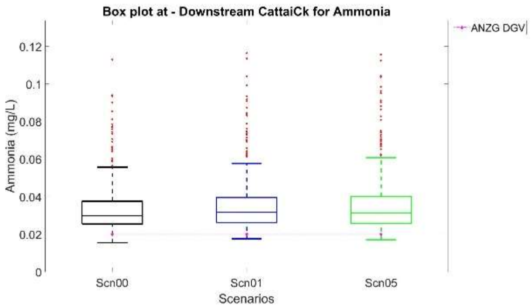

Box plot at - DS WallaciaWeir 500m for Ammonia
ANZG DGV
Ammonia (mg/L)
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
Scn00
Scn01
Scn05
Scenarios

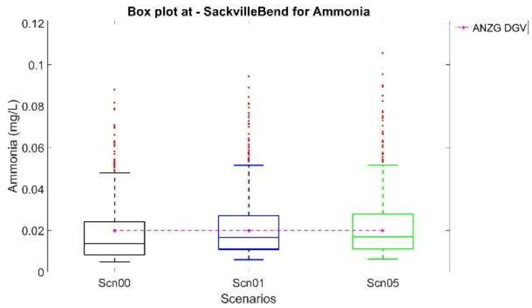

Box plot at - DS WarragambaRivulet for Ammonia
ANZG DGV
Ammonia (mg/L)
0
0.02
0.04
0.06
0.08
0.1
0.12
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Ammonia
ANZG DGV
Ammonia (mg/L)
0
0.01
0.02
0.03
0.04
0.05
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
0
0.01
0.02
0.03
0.04
0.05
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
0
0.05
0.1
0.15
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Ammonia
ANZG DGV
Ammonia (mg/L)
0
0.02
0.04
0.06
0.08
0.1
0.12
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Ammonia
ANZG DGV
Ammonia (mg/L)
0
0.02
0.04
0.06
0.08
0.1
0.12
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

NOx (mg/L)

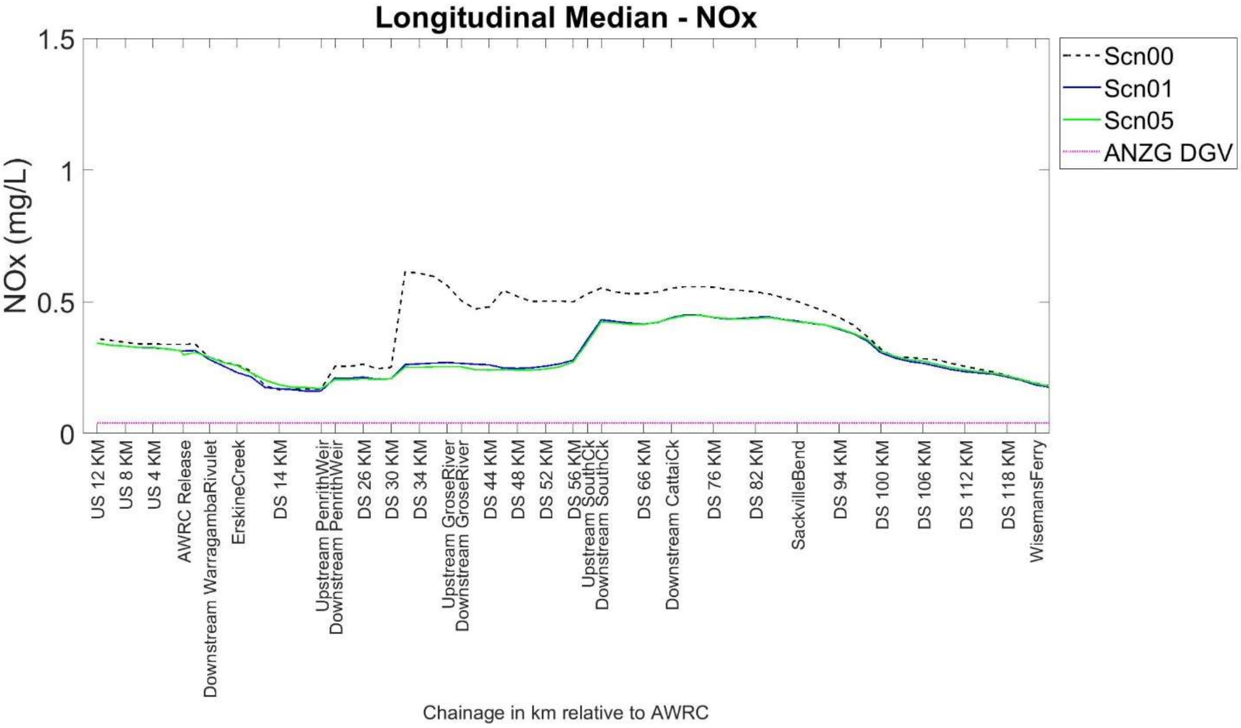
Scenario 05 - wet year

--> Longitudinal plots

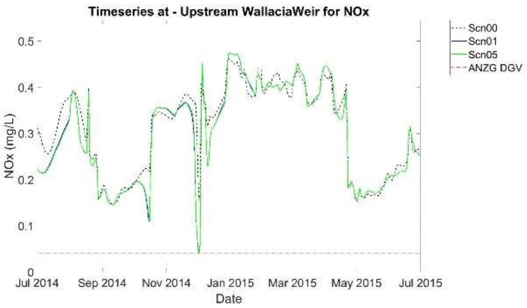
--> Timeseries plots at geographic markers and gauge locations

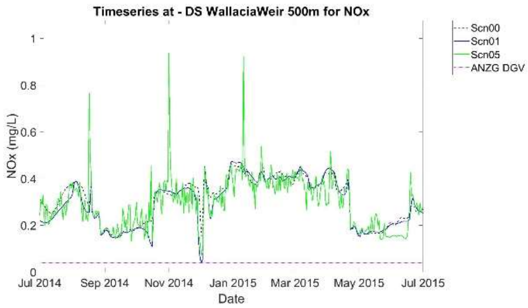
--> Box plots at geographic markers and gauge locations

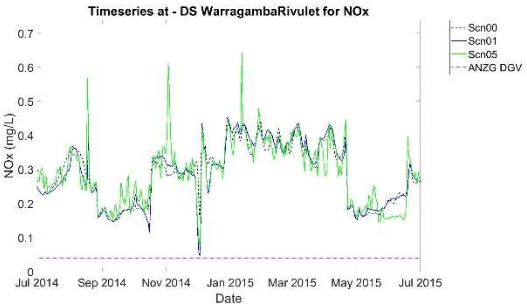
Longitudinal plot

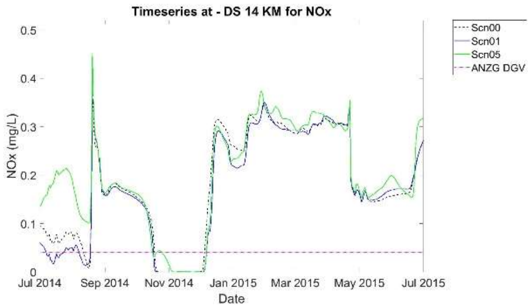


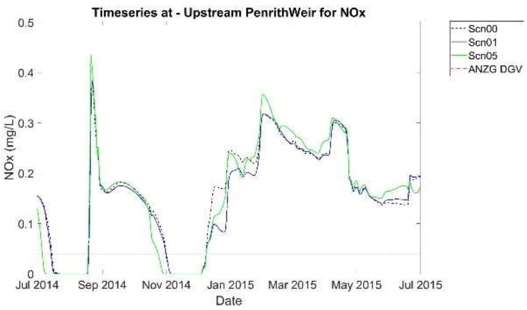
Timeseries plots

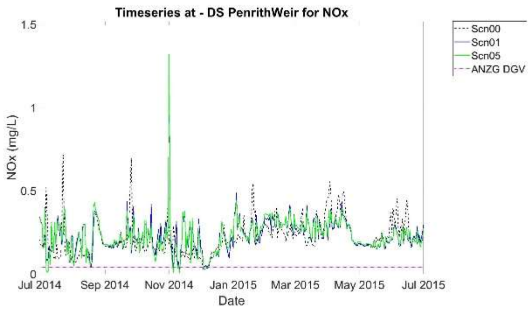


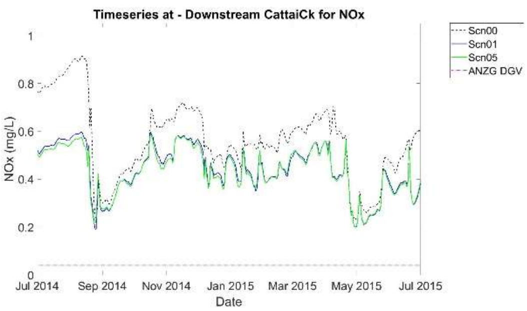


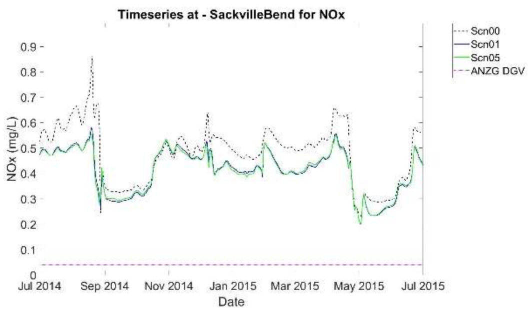




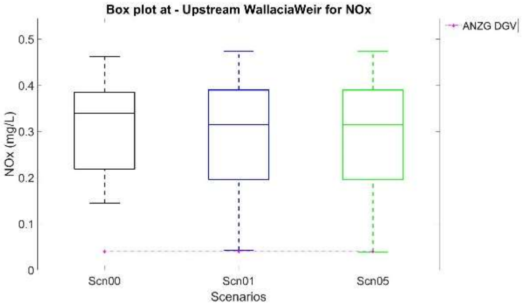




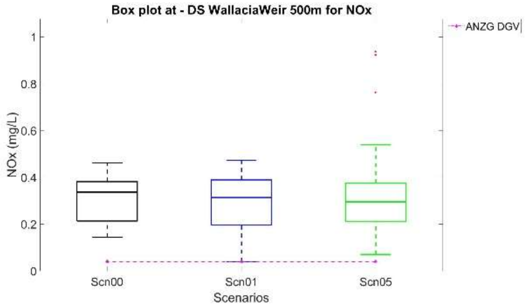




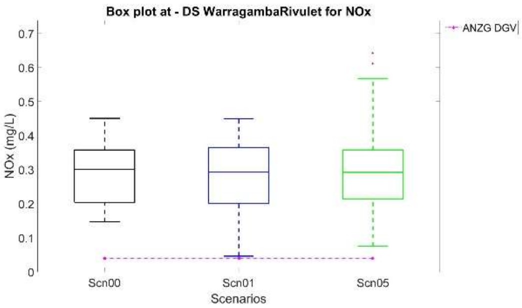
Box plots



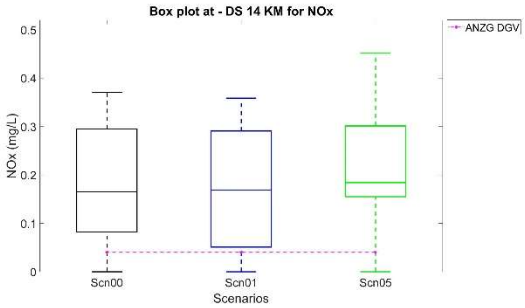
Box plot at - Upstream WallaciaWeir for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV



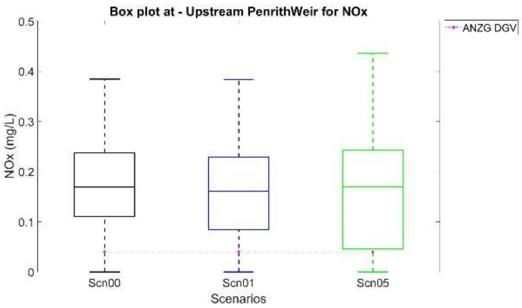
Box plot at - DS WallaciaWeir 500m for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV



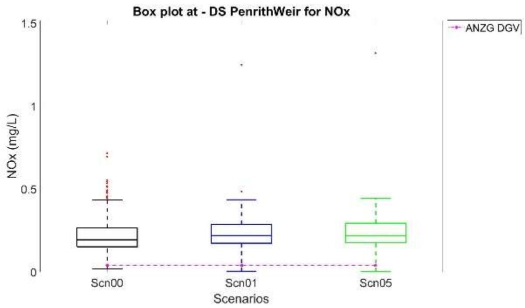
Box plot at - DS WarragambaRivulet for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV



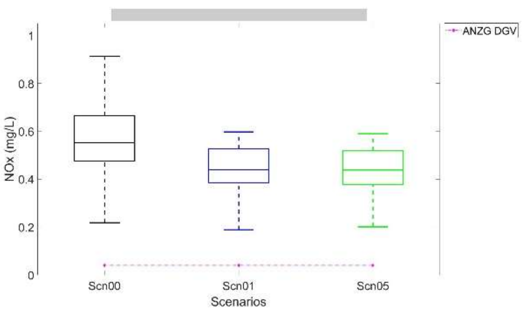
Box plot at - DS 14 KM for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV



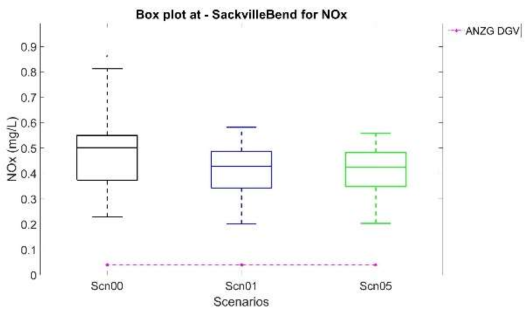
Box plot at - Upstream PenrithWeir for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV



Box plot at - DS PenrithWeir for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV



NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV



Box plot at - SackvilleBend for NOx
NOx (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

Total Phosphorus (mg/L)

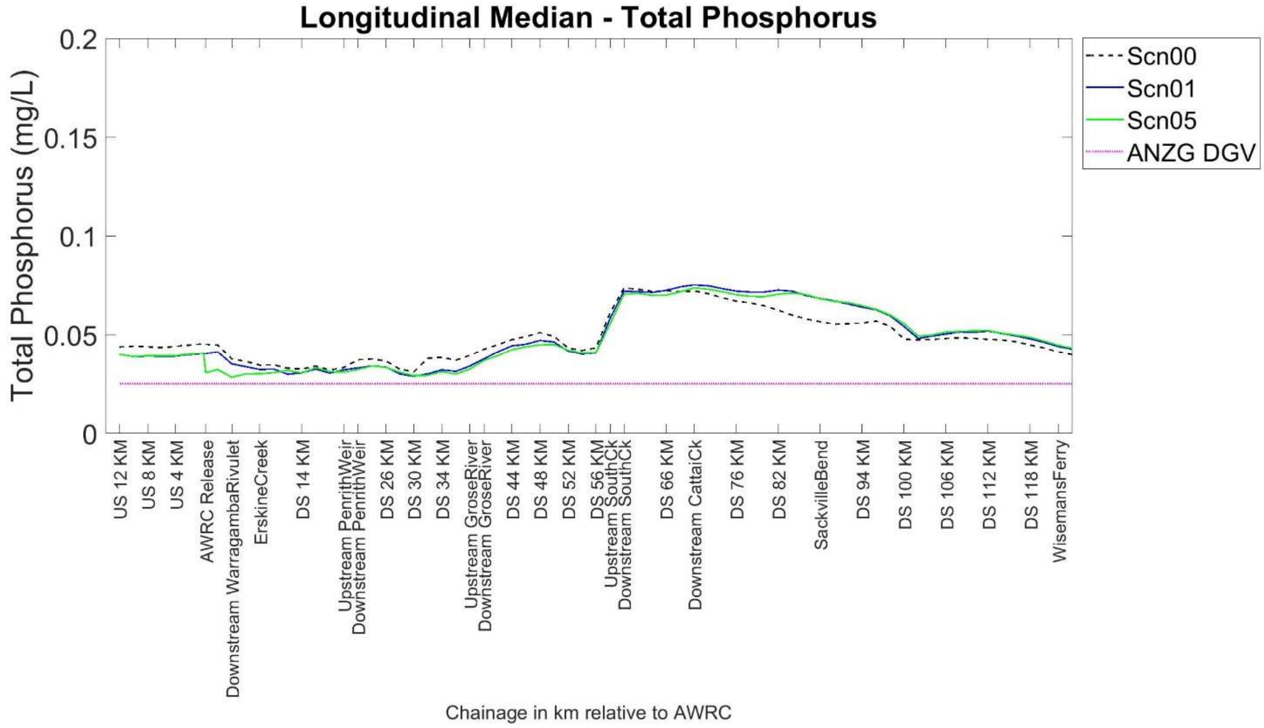
Scenario 05 - wet year

--> Longitudinal plots

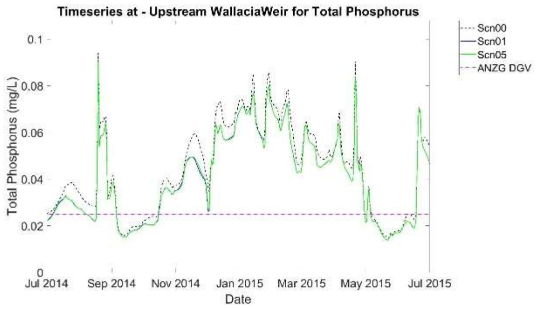
--> Timeseries plots at geographic markers and gauge locations

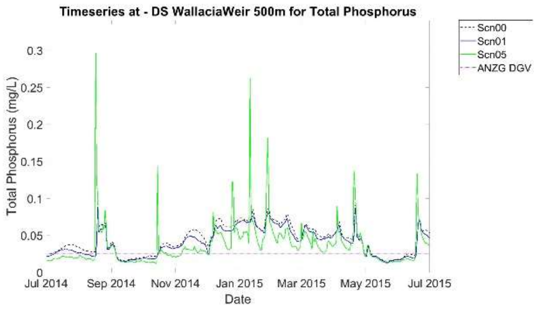
--> Box plots at geographic markers and gauge locations

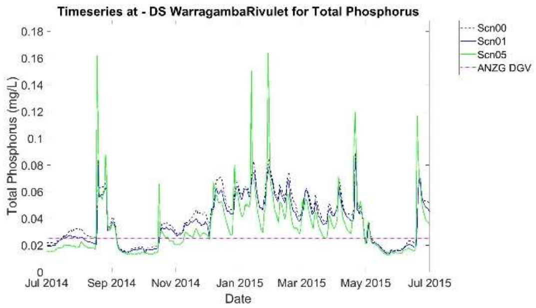
Longitudinal plot

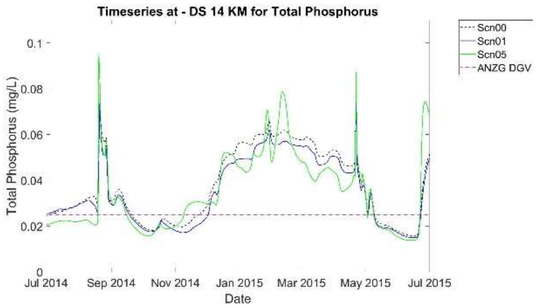


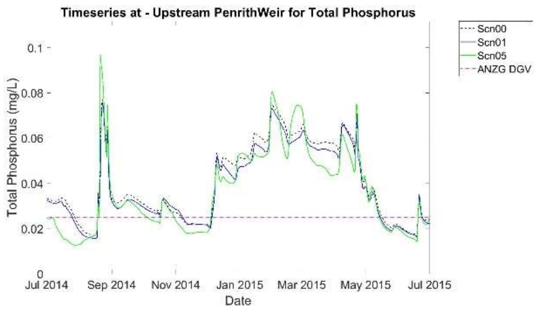
Timeseries plots

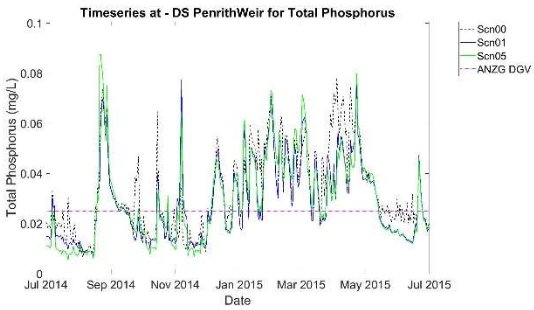


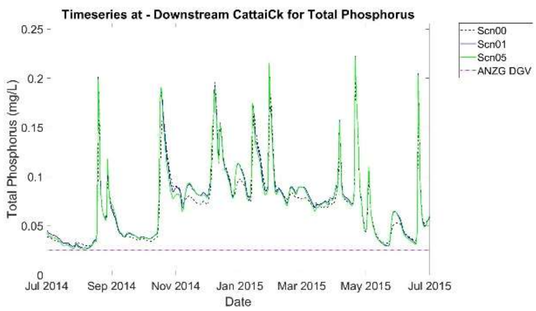


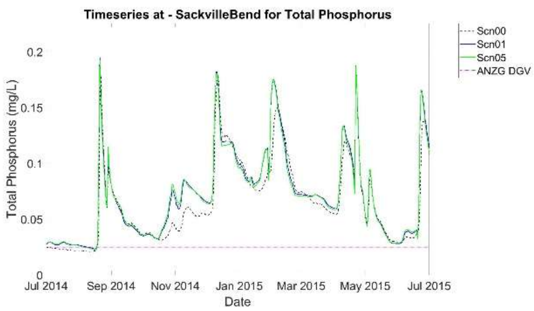




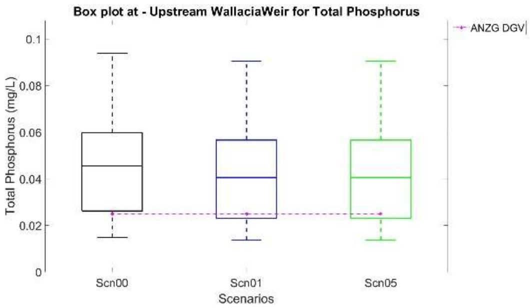




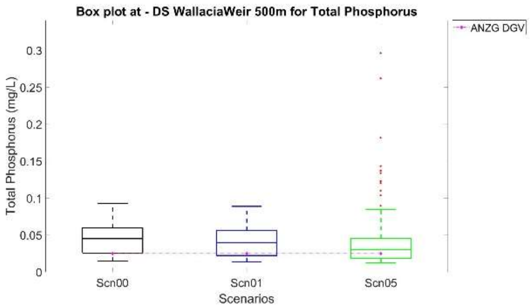




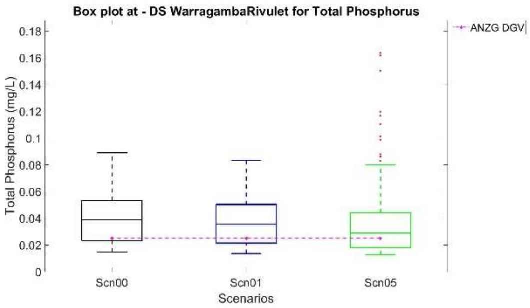
Box plots



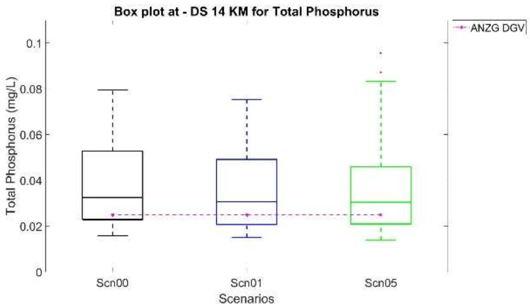
Box plot at - Upstream WallaciaWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
Scn00
Scn01
Scn05
Scenarios



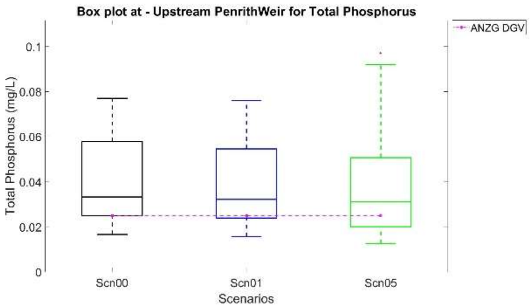
Box plot at - DS WallaciaWeir 500m for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
Scn00
Scn01
Scn05
Scenarios



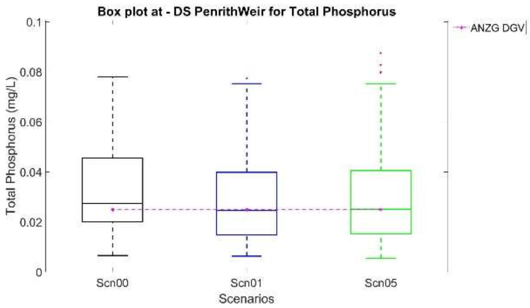
Box plot at - DS WarragambaRivulet for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
Scn00
Scn01
Scn05
Scenarios



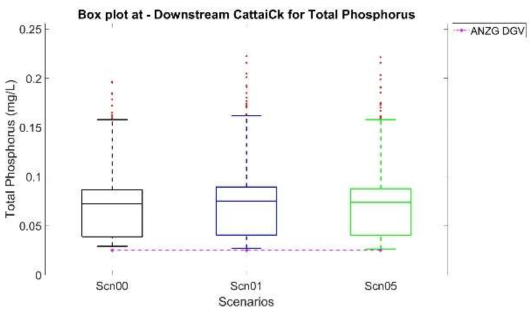
Box plot at - DS 14 KM for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
Scn00
Scn01
Scn05
Scenarios



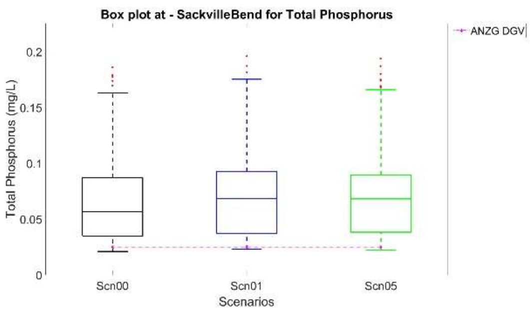
Box plot at - Upstream PenrithWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
Scn00
Scn01
Scn05
Scenarios



Box plot at - DS PenrithWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
Scn00
Scn01
Scn05
Scenarios



Box plot at - Downstream CattaiCk for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
Scn00
Scn01
Scn05
Scenarios



Box plot at - SackvilleBend for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

FRP (mg/L)

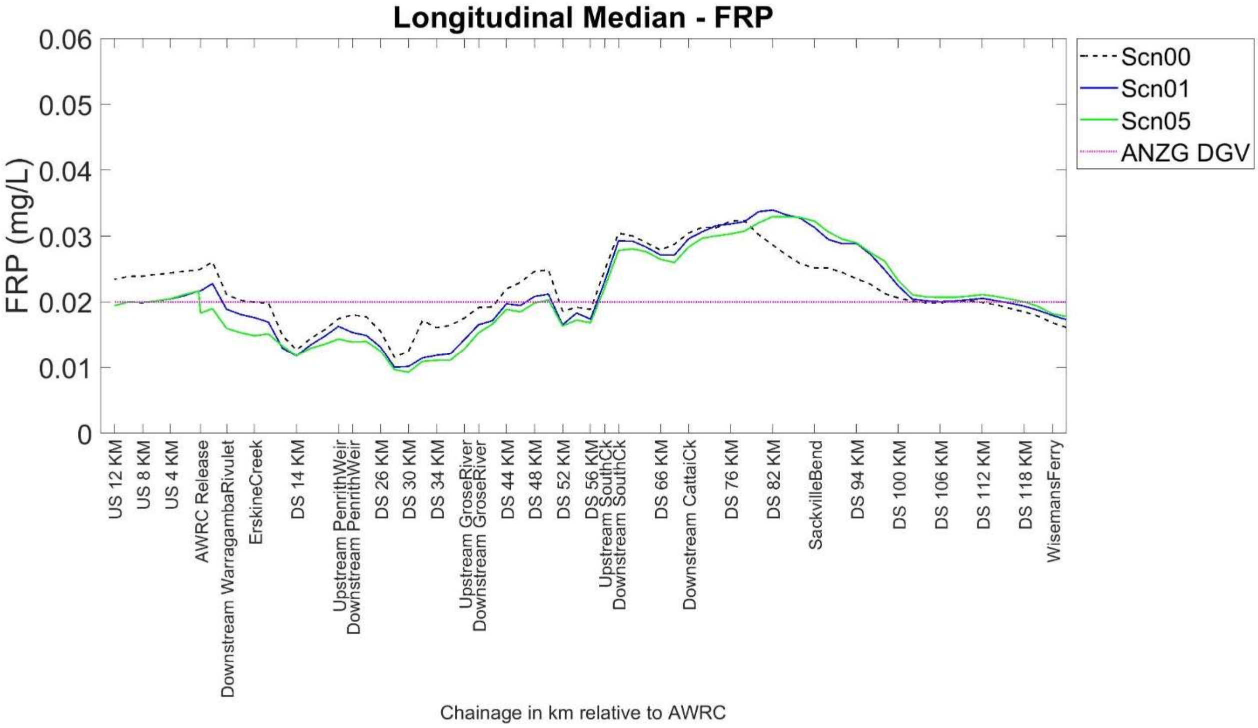
Scenario 05 - wet year

--> Longitudinal plots

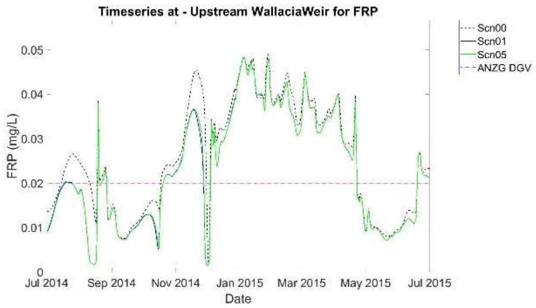
--> Timeseries plots at geographic markers and gauge locations

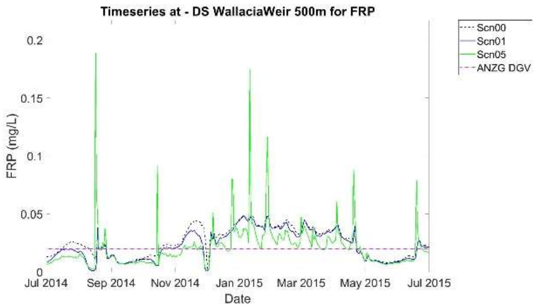
--> Box plots at geographic markers and gauge locations

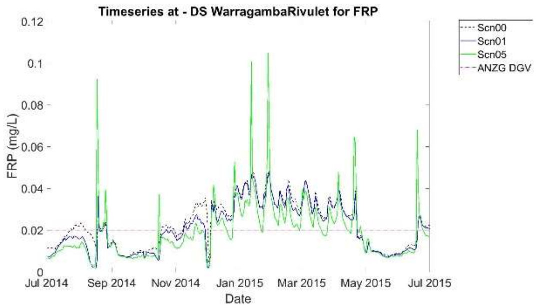
Longitudinal plot

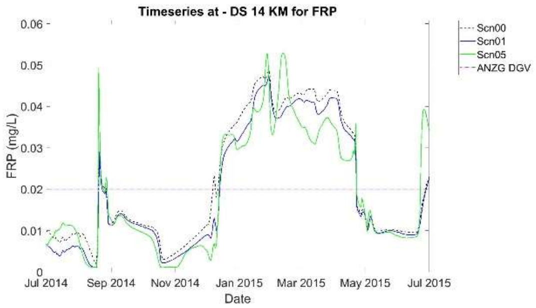


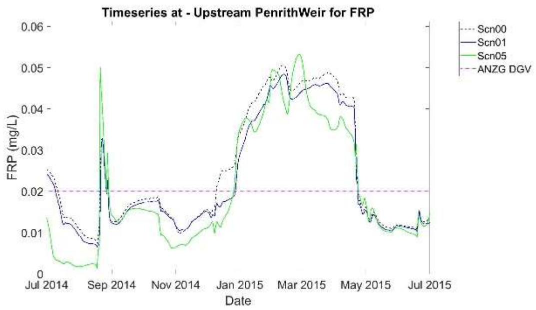
Timeseries plots

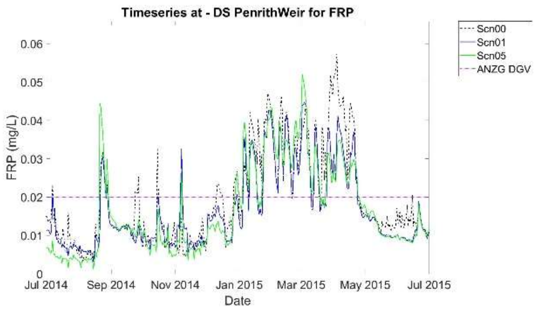


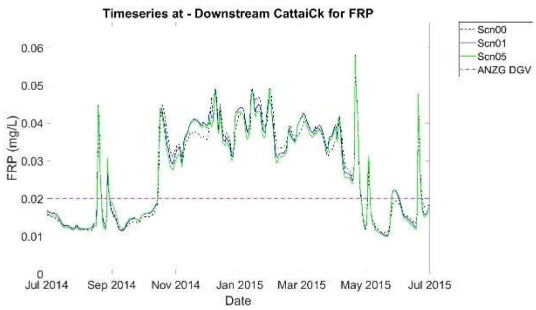


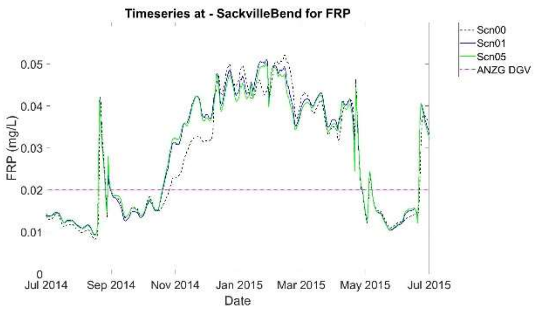




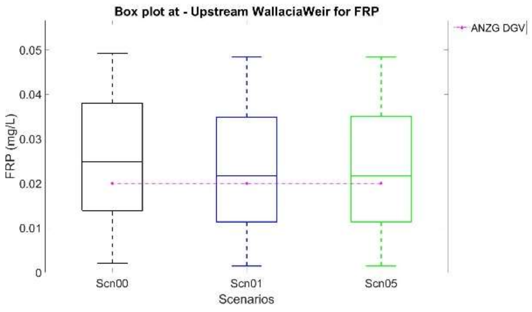


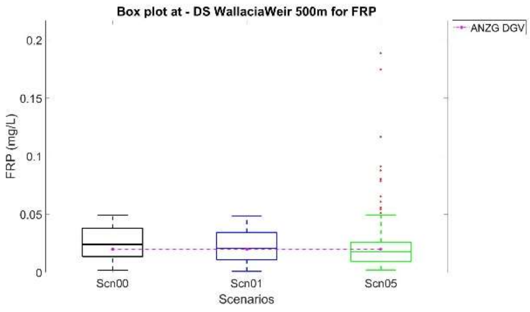


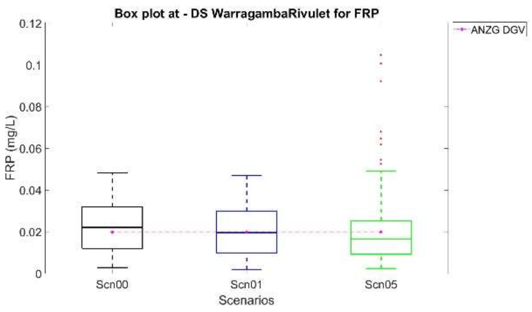


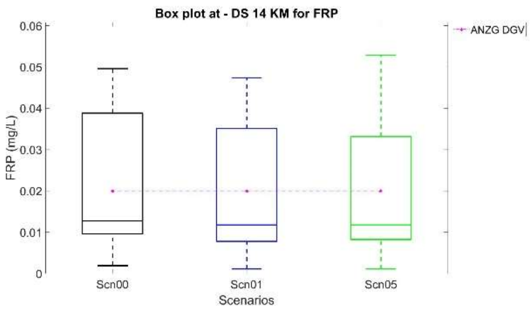


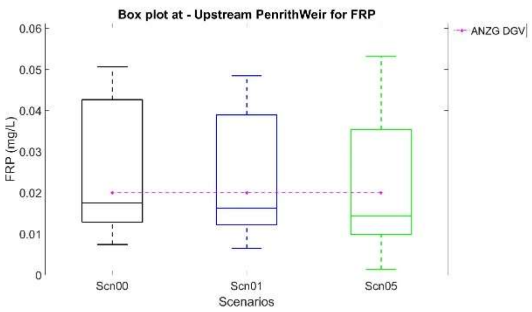
Box plots

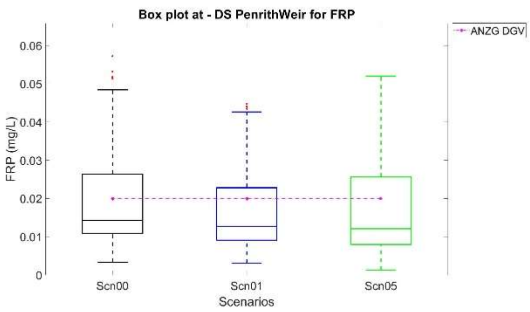

Box plot at - Upstream WallaciaWeir for FRP
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV

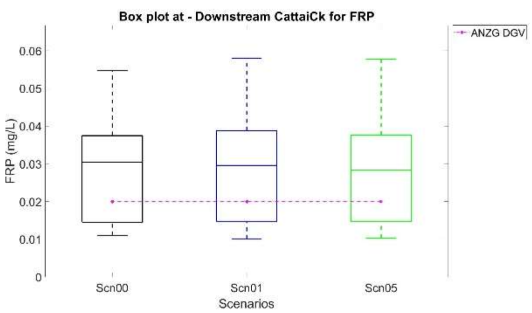

Box plot at - DS WallaciaWeir 500m for FRP
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV

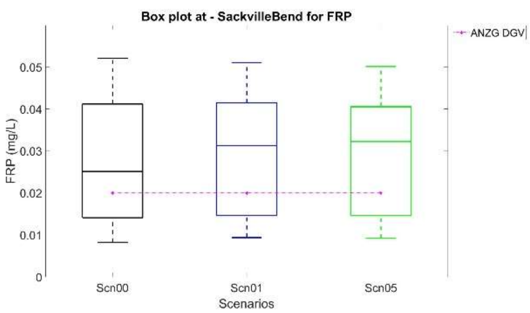

Box plot at - DS WarragambaRivulet for FRP
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - DS 14 KM for FRP
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - Upstream PenrithWeir for FRP
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - DS PenrithWeir for FRP
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - Downstream CattaiCk for FRP
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV


Box plot at - SackvilleBend for FRP
FRP (mg/L)
Scn00
Scn01
Scn05
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

Total Chlorophyll-a (µg/L)

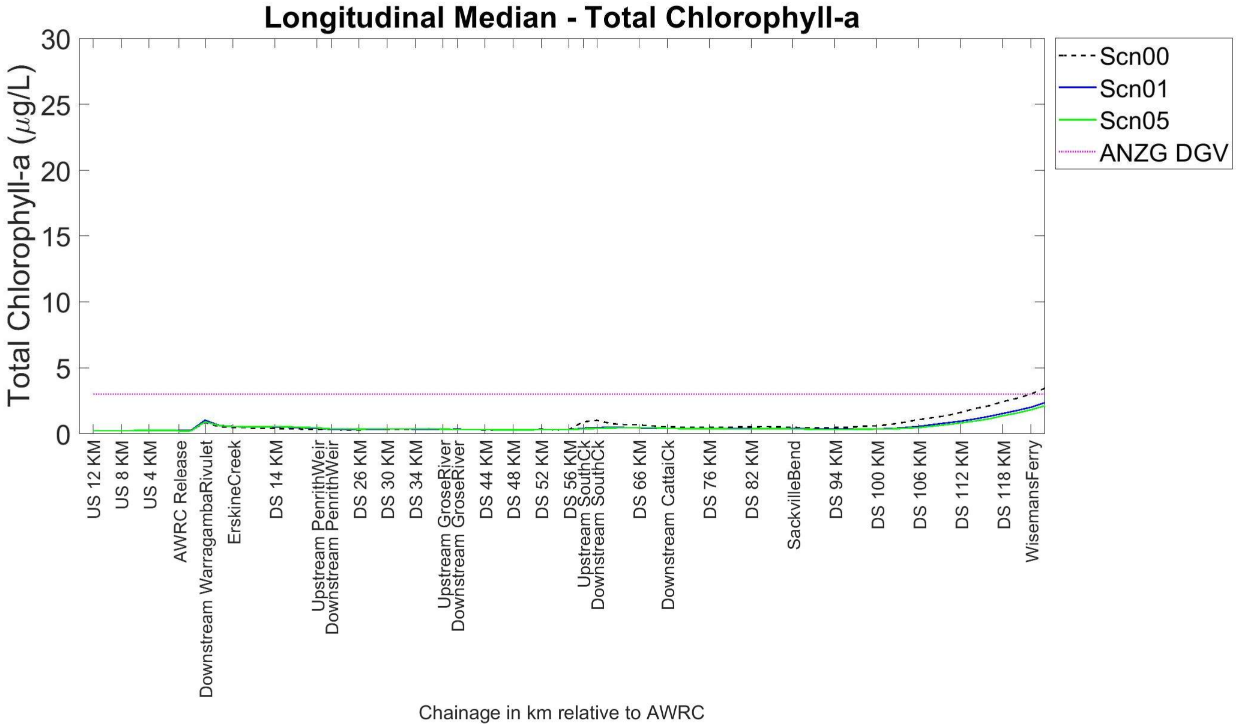
Scenario 05 - wet year

--> Longitudinal plots

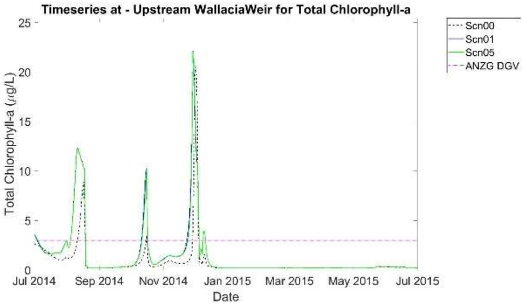
--> Timeseries plots at geographic markers and gauge locations

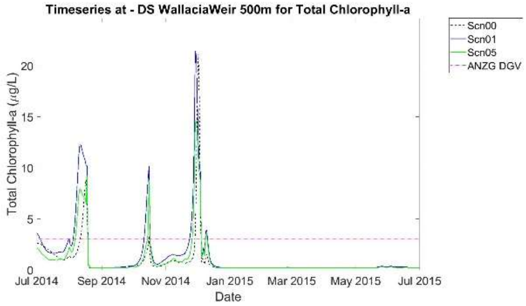
--> Box plots at geographic markers and gauge locations

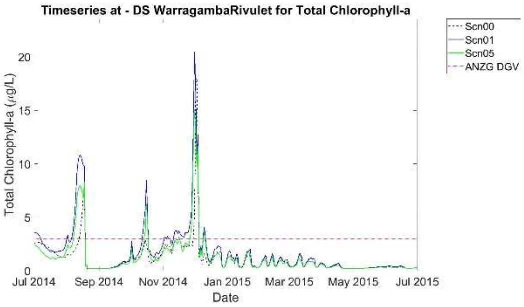
Longitudinal plot

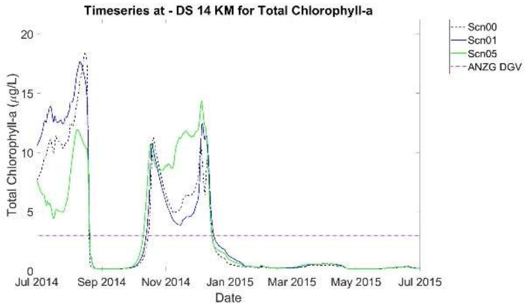


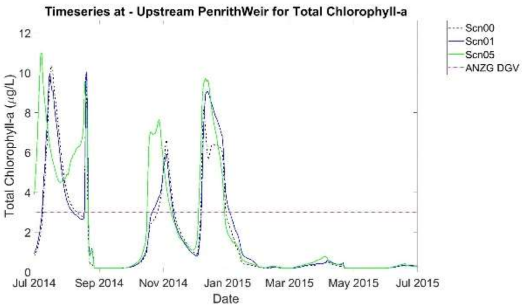
Timeseries plots

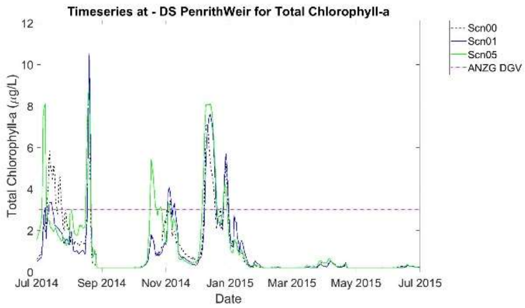


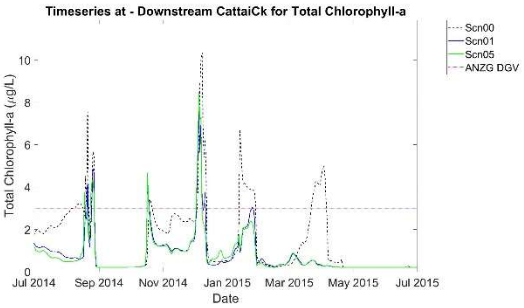


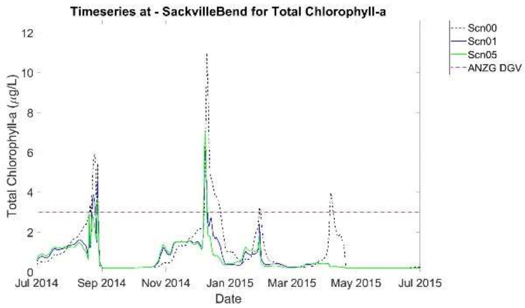




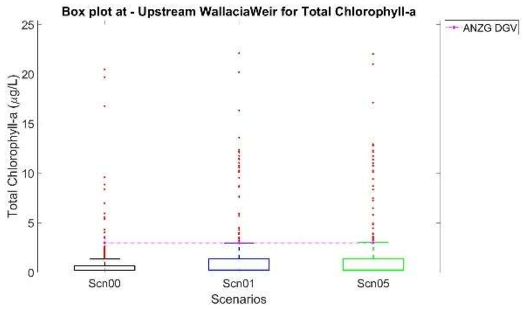


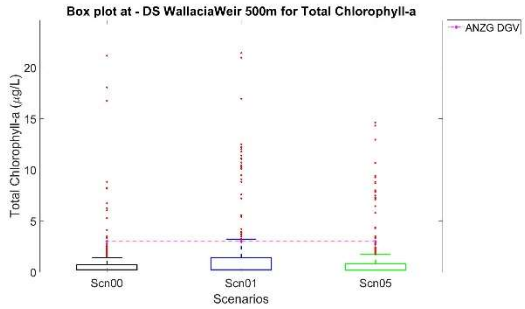


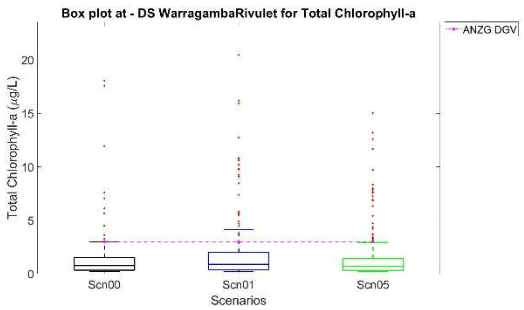


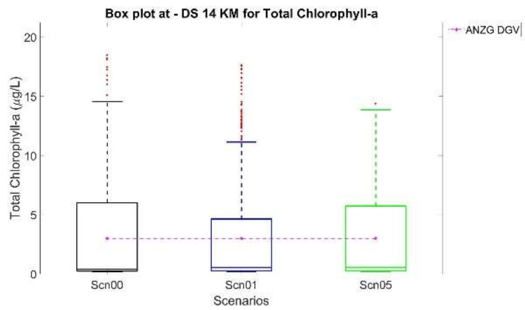


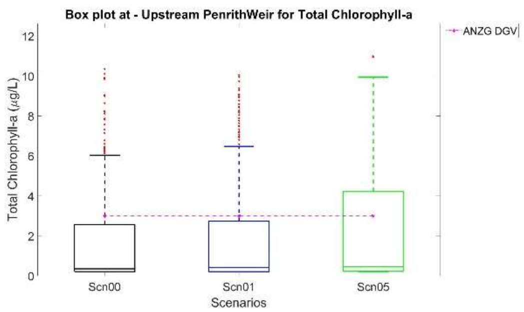
Box plots

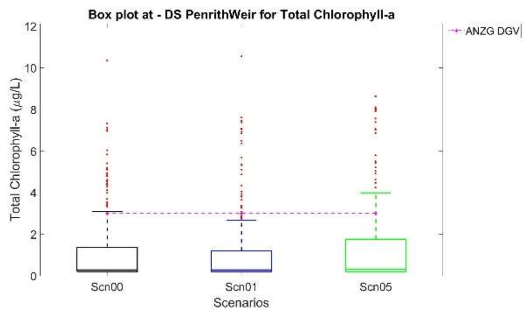

Box plot at - Upstream WallaciaWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a ($\mu g/L$)
Scn00
Scn01
Scn05
Scenarios

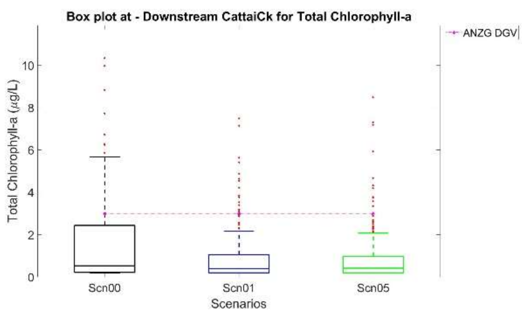

Box plot at - DS WallaciaWeir 500m for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a ($\mu g/L$)
Scn00
Scn01
Scn05
Scenarios

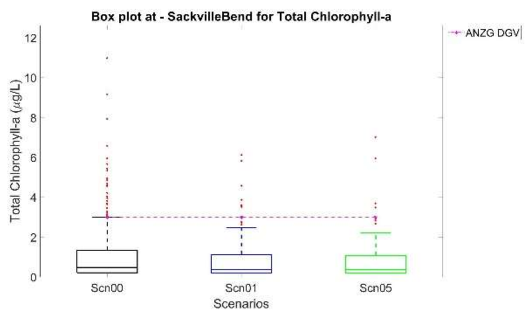

Box plot at - DS WarragambaRivulet for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a ($\mu g/L$)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a ($\mu g/L$)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a ($\mu g/L$)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a ($\mu g/L$)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a ($\mu g/L$)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a ($\mu g/L$)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Salinity (g/L)

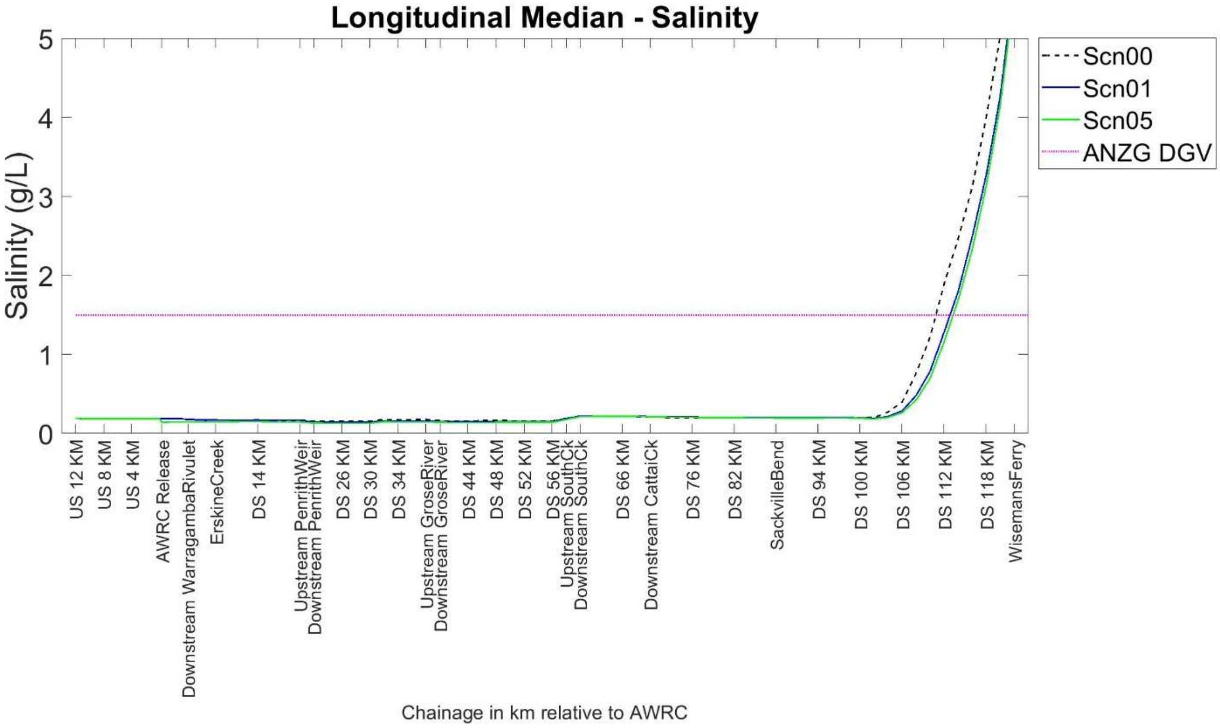
Scenario 05 - wet year

--> Longitudinal plots

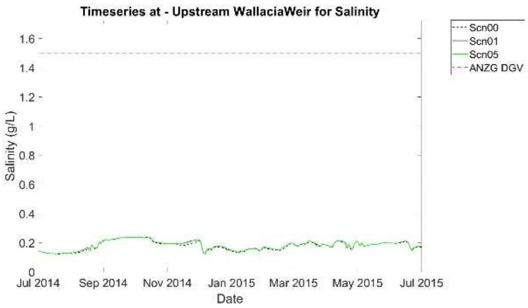
--> Timeseries plots at geographic markers and gauge locations

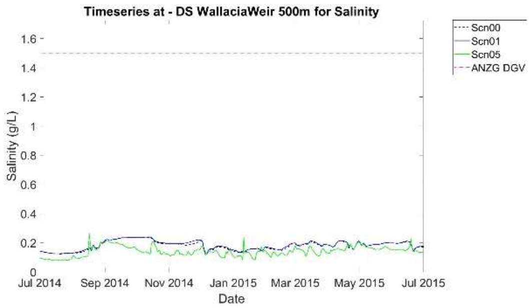
--> Box plots at geographic markers and gauge locations

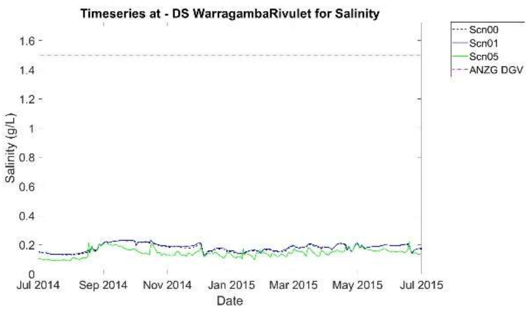
Longitudinal plot

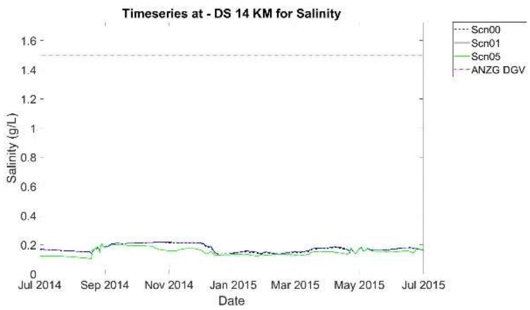


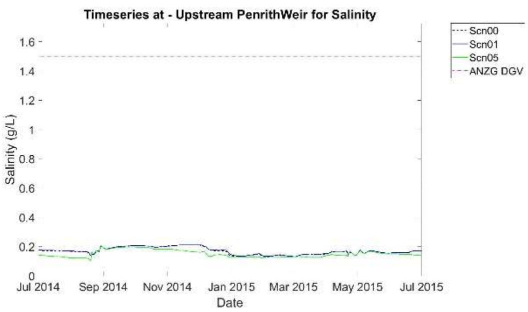
Timeseries plots

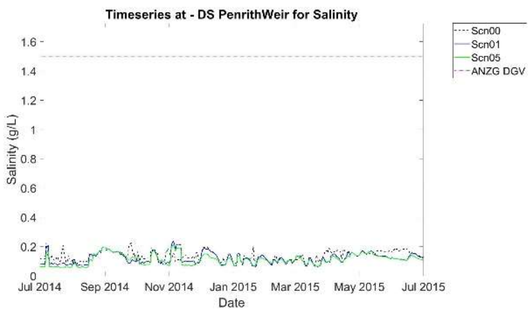


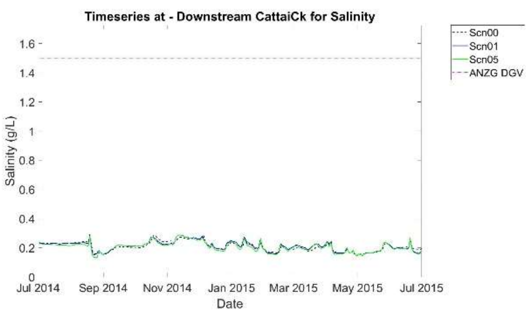


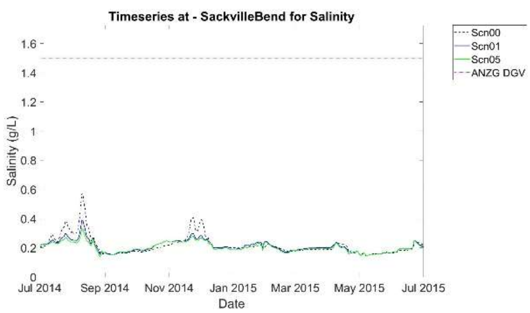




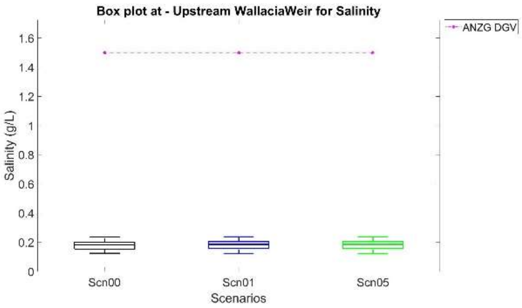


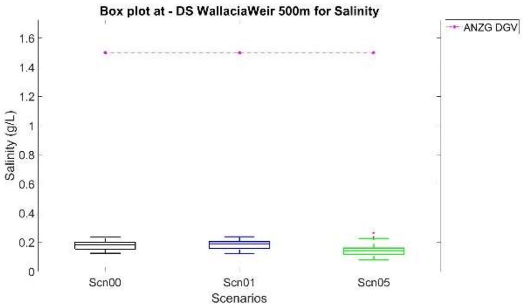


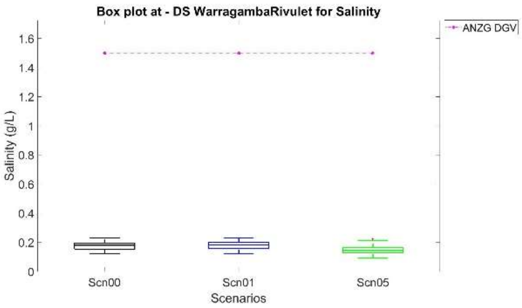


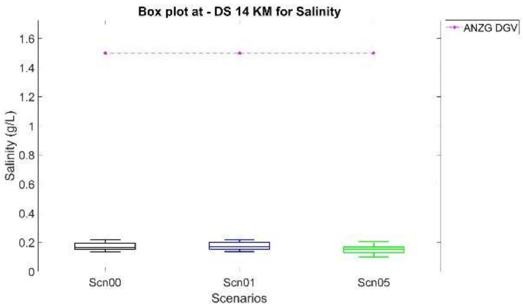


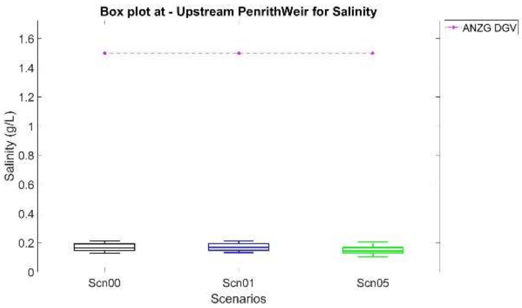
Box plots

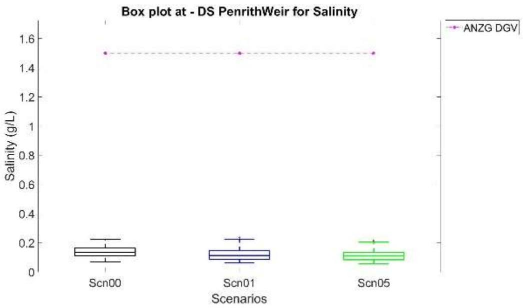

Box plot at - Upstream WallaciaWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios

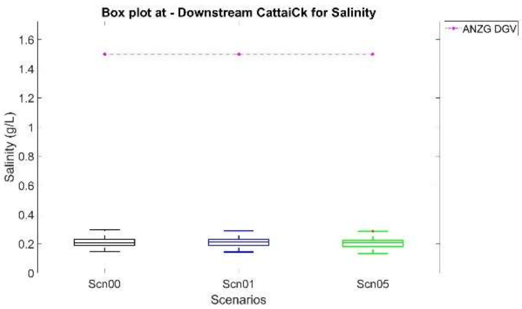

Box plot at - DS WallaciaWeir 500m for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios

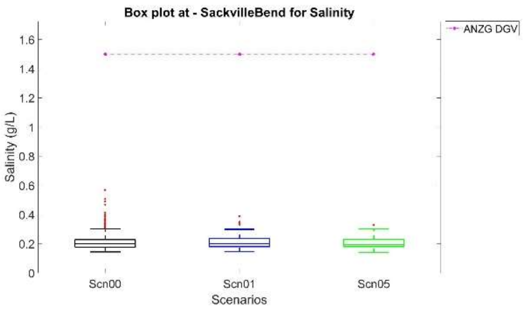

Box plot at - DS WarragambaRivulet for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

TSS (mg/L)

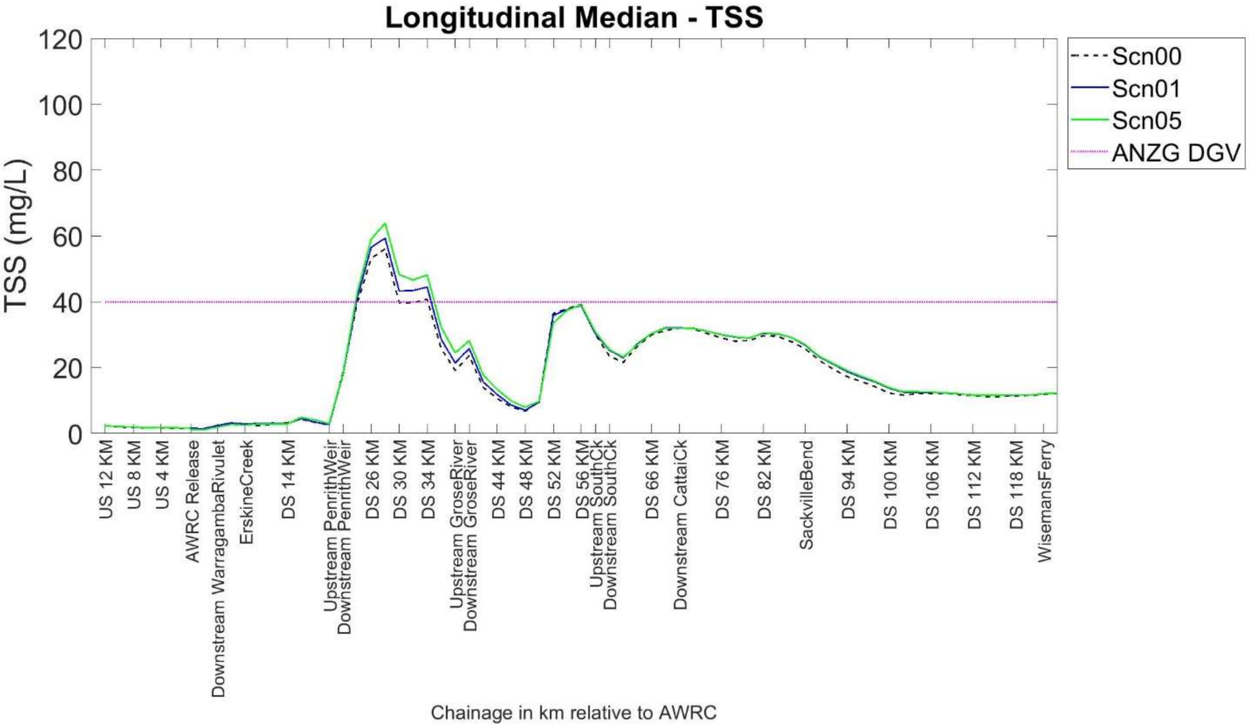
Scenario 05 - wet year

--> Longitudinal plots

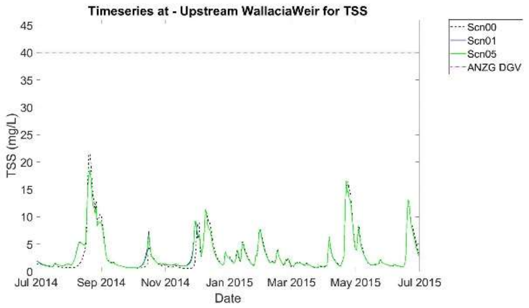
--> Timeseries plots at geographic markers and gauge locations

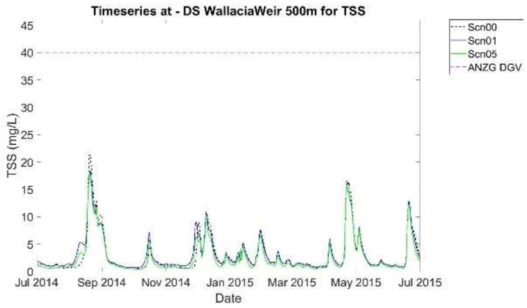
--> Box plots at geographic markers and gauge locations

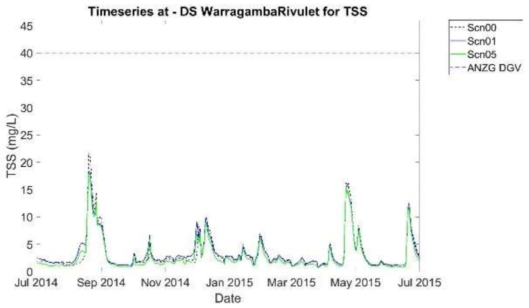
Longitudinal plot

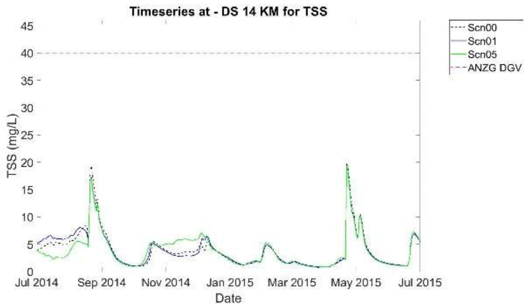


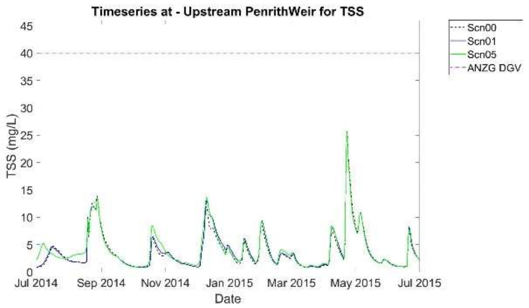
Timeseries plots

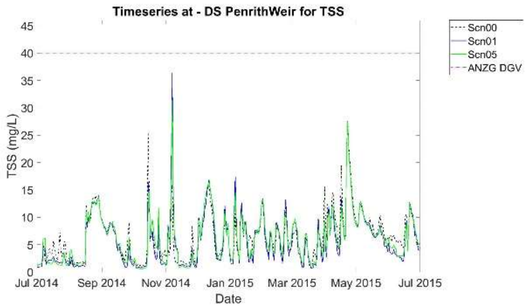


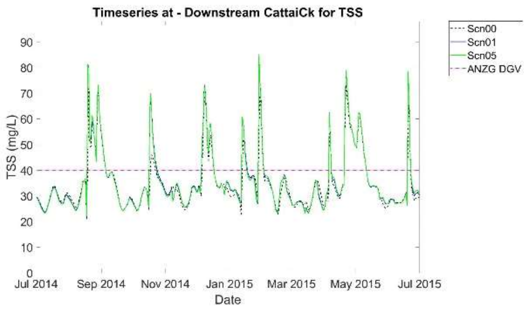


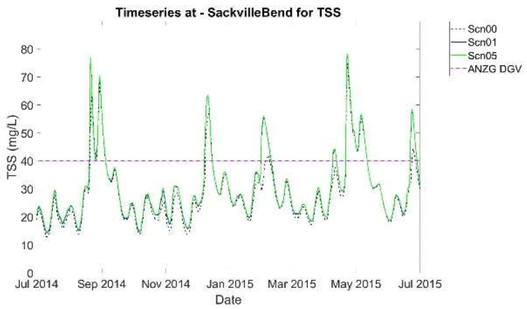




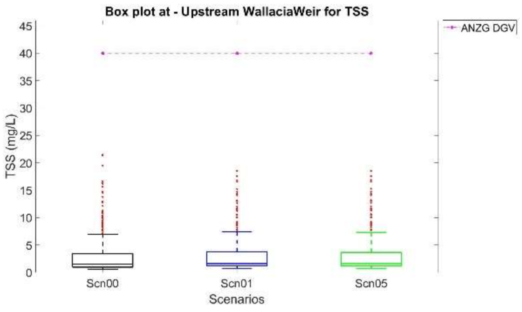


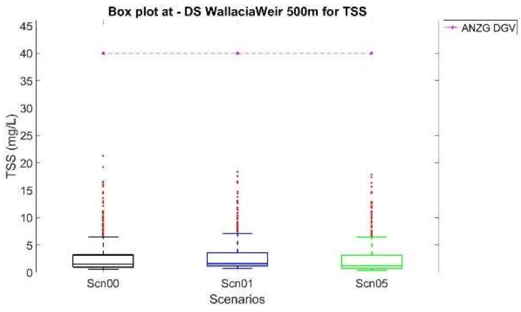


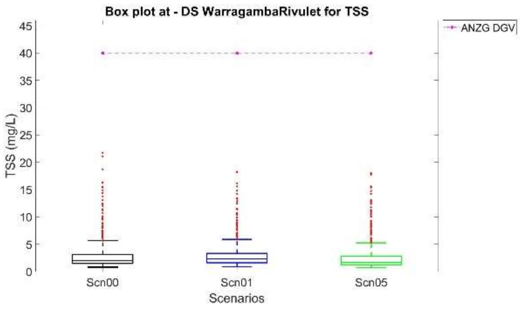


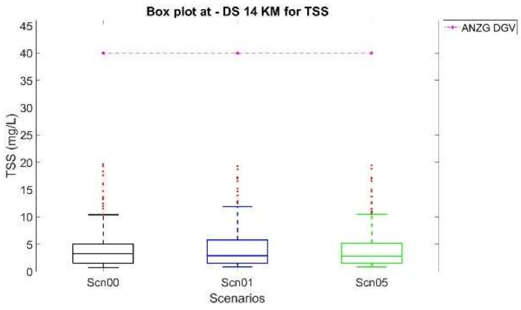


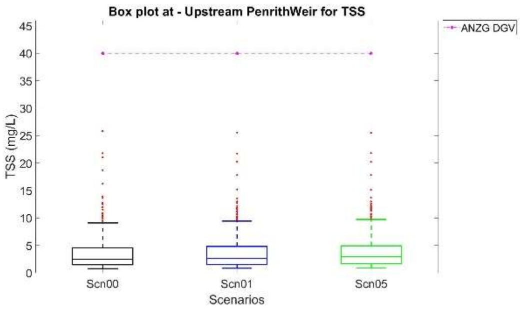
Box plots

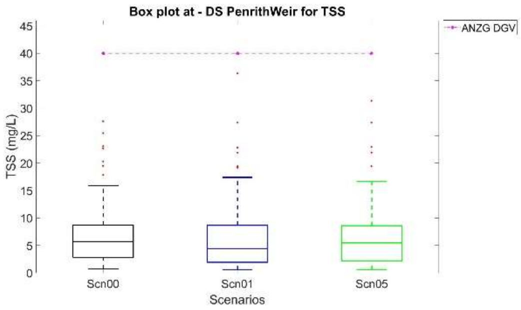

Box plot at - Upstream WallaciaWeir for TSS
TSS (mg/L)
ANZG DGV
Scn00
Scn01
Scn05
Scenarios

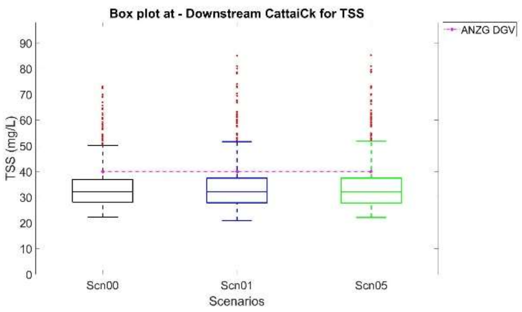

Box plot at - DS WallaciaWeir 500m for TSS
TSS (mg/L)
ANZG DGV
Scn00
Scn01
Scn05
Scenarios

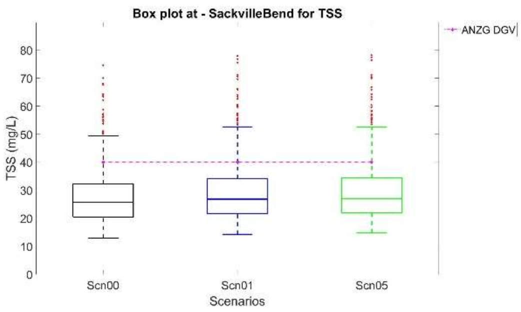

Box plot at - DS WarragambaRivulet for TSS
TSS (mg/L)
ANZG DGV
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for TSS
TSS (mg/L)
ANZG DGV
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for TSS
TSS (mg/L)
ANZG DGV
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for TSS
TSS (mg/L)
ANZG DGV
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for TSS
TSS (mg/L)
ANZG DGV
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for TSS
TSS (mg/L)
ANZG DGV
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Dissolved Oxygen (mg/L)

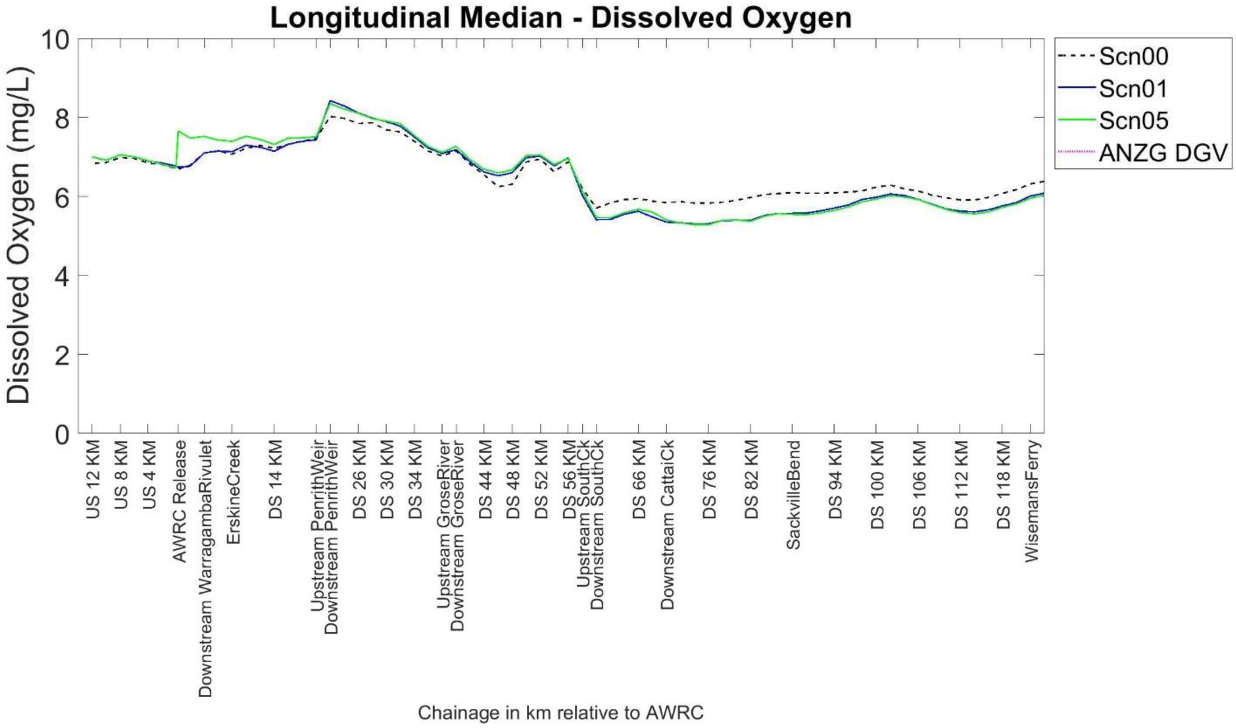
Scenario 05 - wet year

--> Longitudinal plots

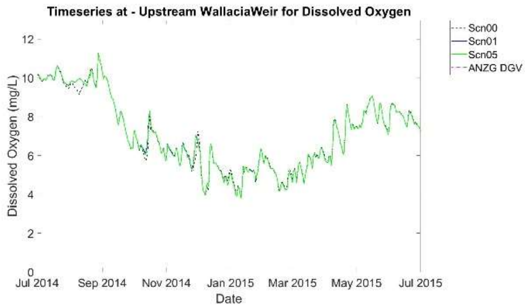
--> Timeseries plots at geographic markers and gauge locations

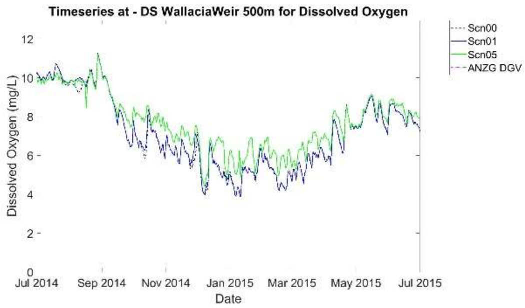
--> Box plots at geographic markers and gauge locations

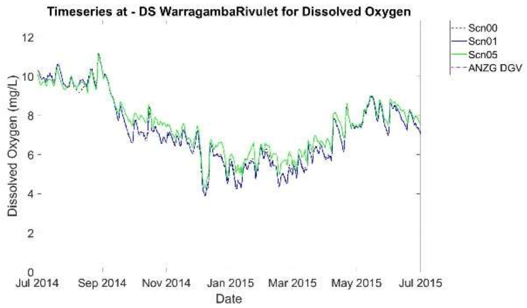
Longitudinal plot

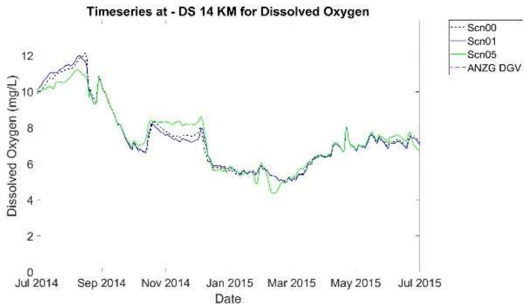


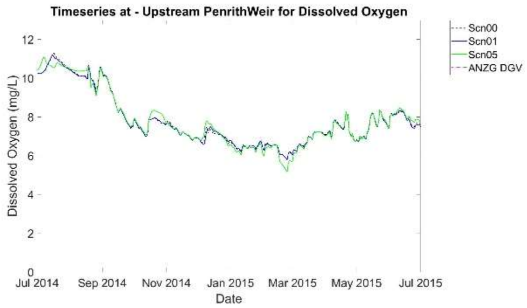
Timeseries plots

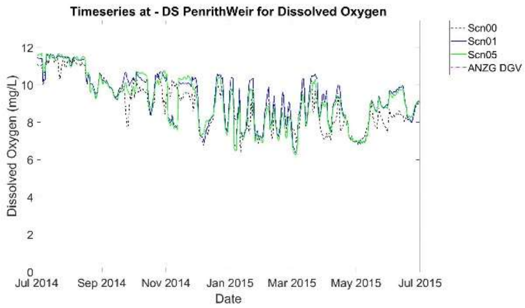


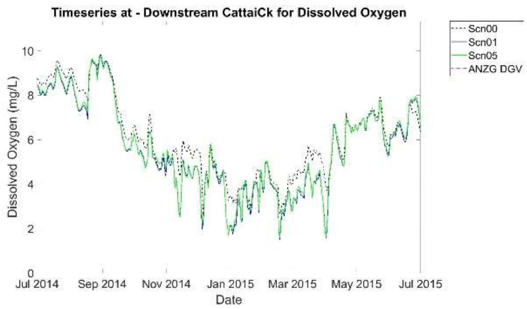


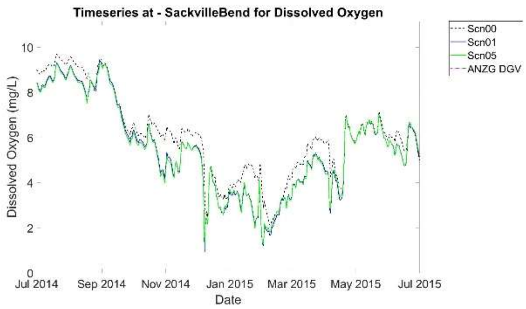




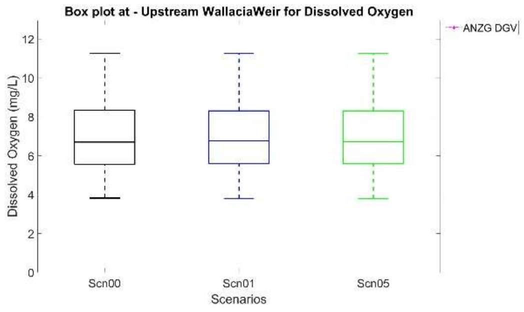




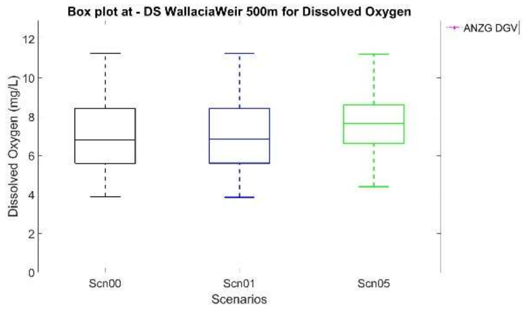




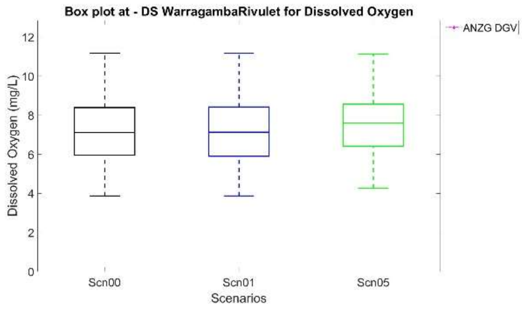
Box plots



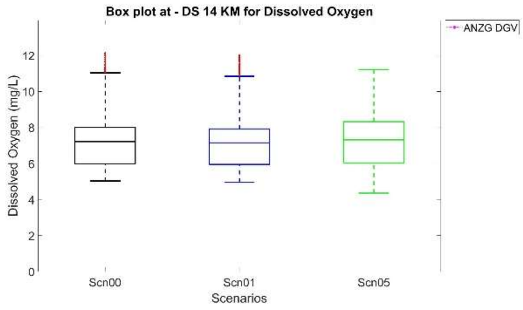
Box plot at - Upstream WallaciaWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn05
Scenarios



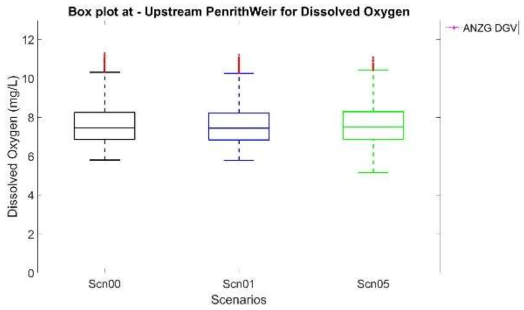
Box plot at - DS WallaciaWeir 500m for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn05
Scenarios



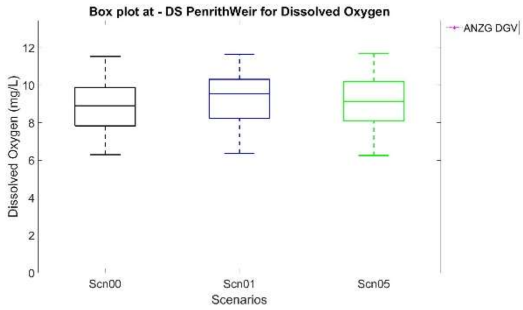
Box plot at - DS WarragambaRivulet for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn05
Scenarios



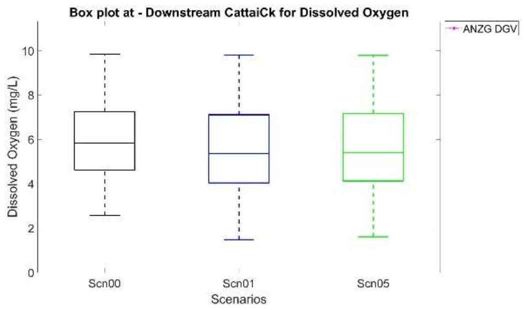
Box plot at - DS 14 KM for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn05
Scenarios



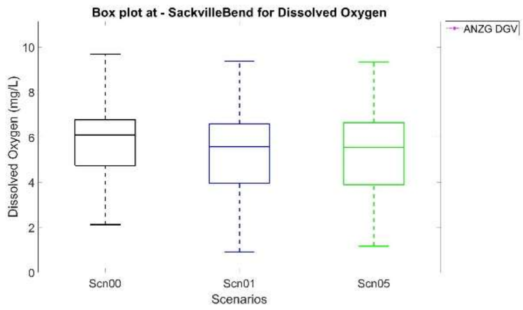
Box plot at - Upstream PenrithWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - DS PenrithWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - Downstream CattaiCk for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn05
Scenarios



Box plot at - SackvilleBend for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Dissolved Oxygen Saturation (%)

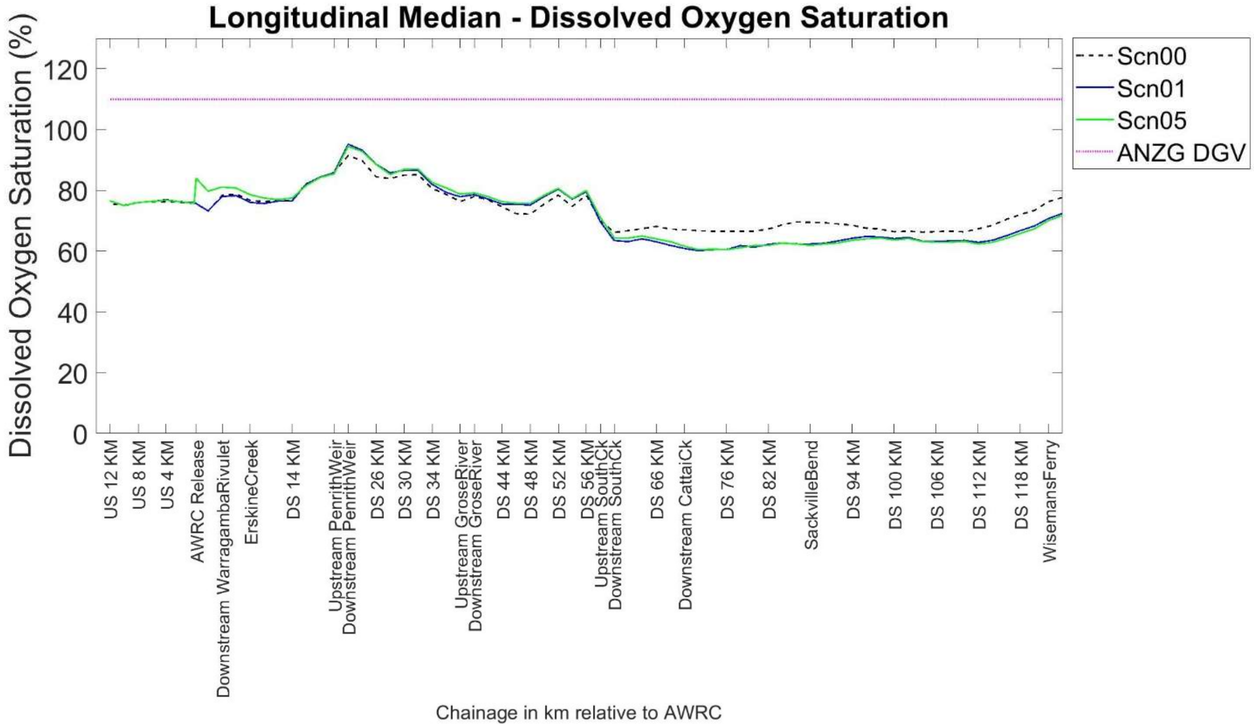
Scenario 05 - wet year

--> Longitudinal plots

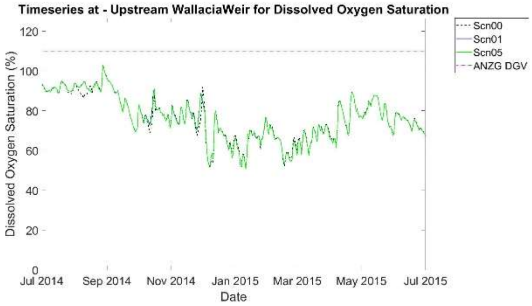
--> Timeseries plots at geographic markers and gauge locations

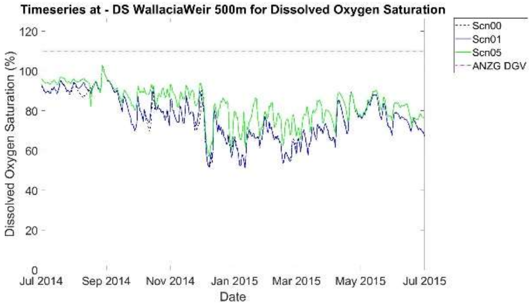
--> Box plots at geographic markers and gauge locations

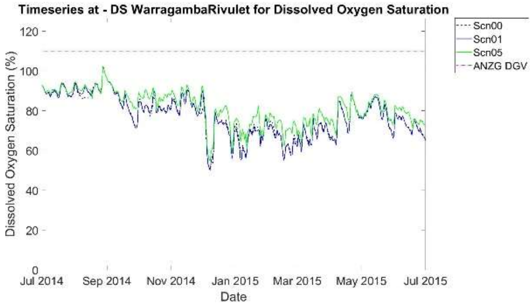
Longitudinal plot

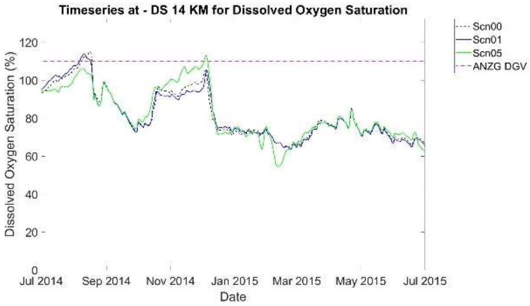


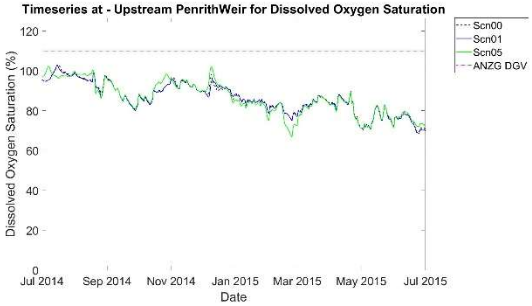
Timeseries plots

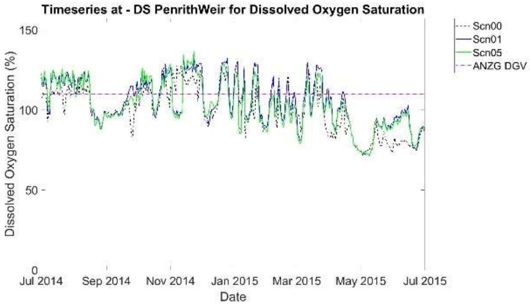


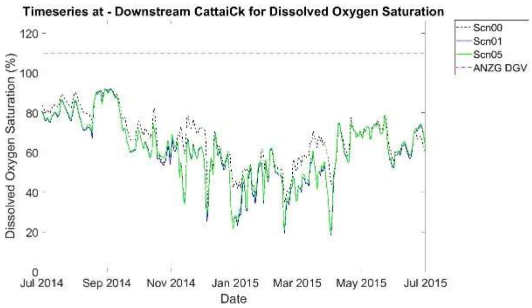


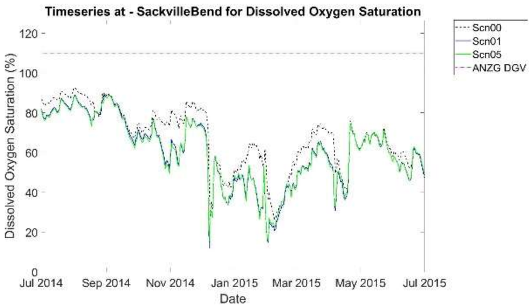




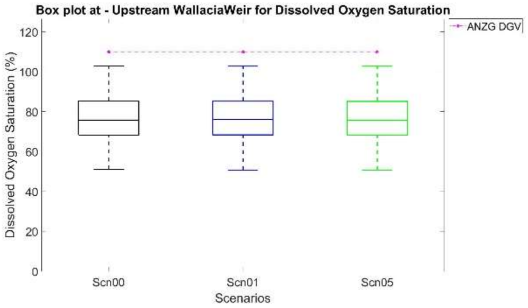


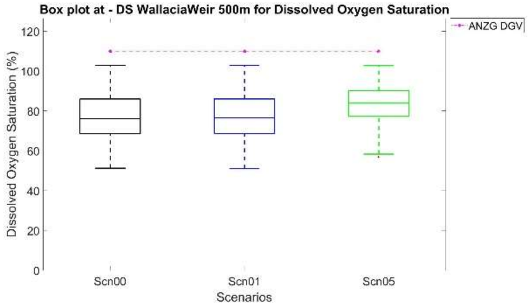


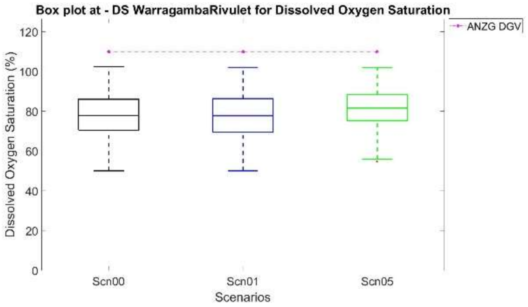


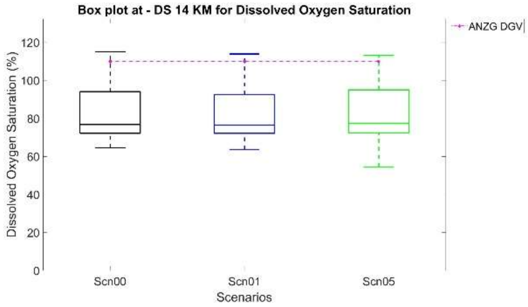


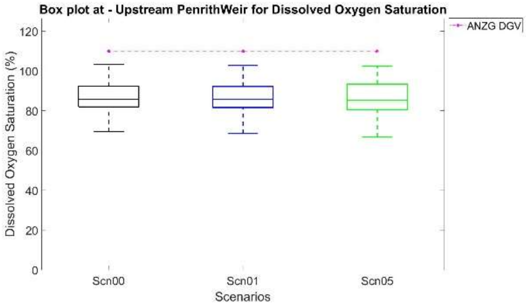
Box plots

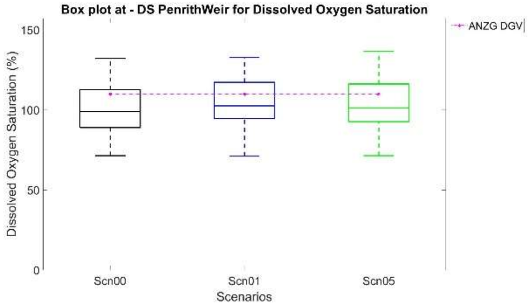

Box plot at - Upstream WallaciaWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios

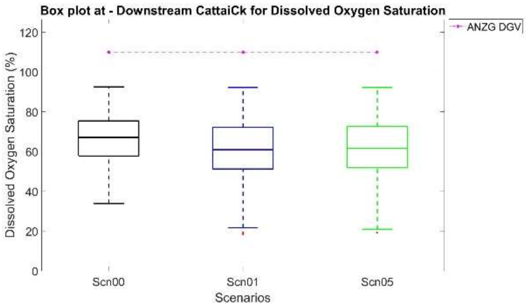

Box plot at - DS WallaciaWeir 500m for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios

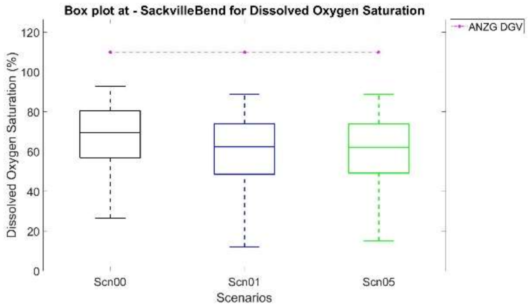

Box plot at - DS WarragambaRivulet for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Ecoli (cfu/100mL)

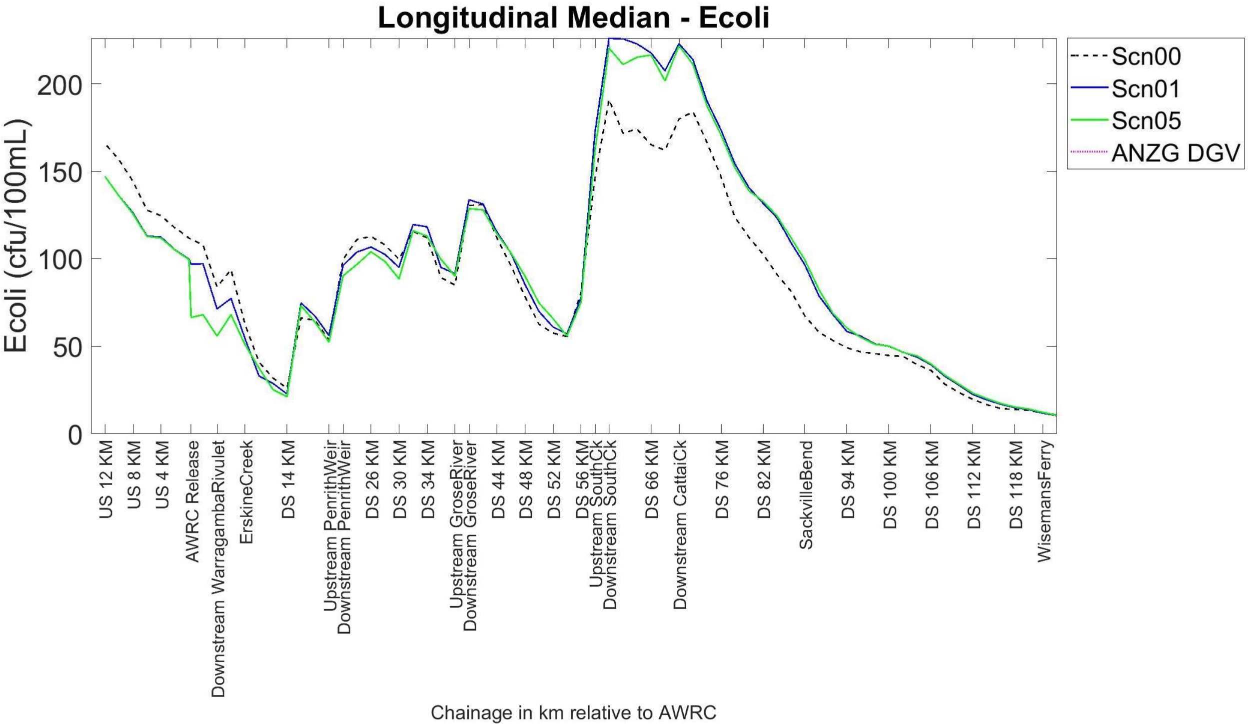
Scenario 05 - wet year

--> Longitudinal plots

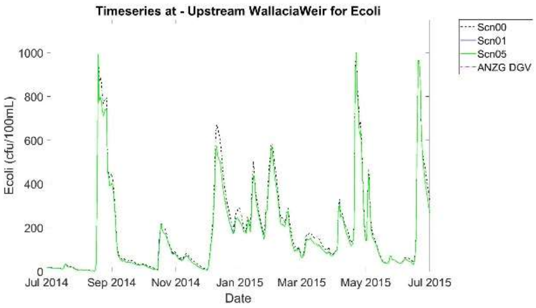
--> Timeseries plots at geographic markers and gauge locations

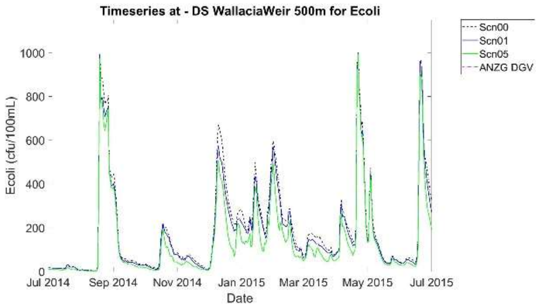
--> Box plots at geographic markers and gauge locations

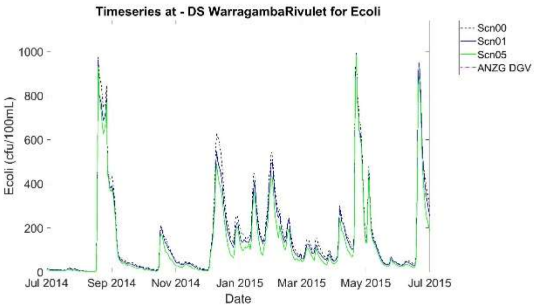
Longitudinal plot

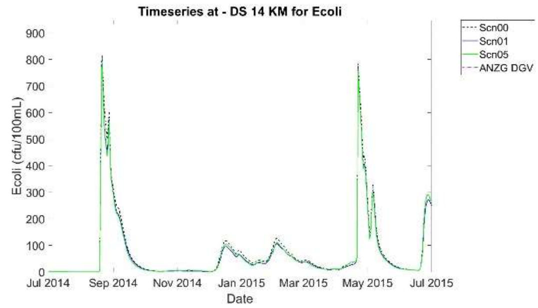


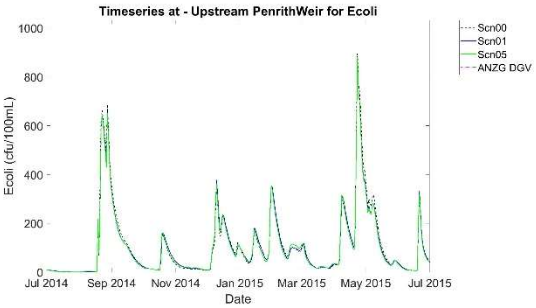
Timeseries plots

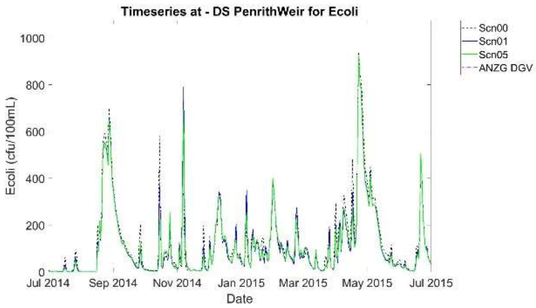


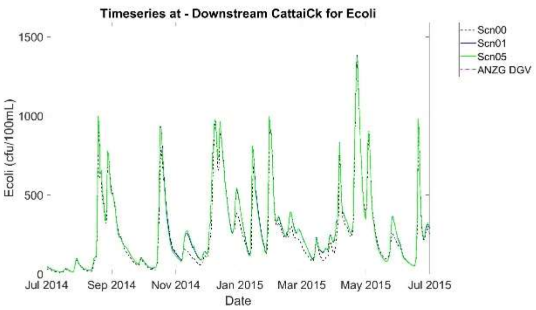


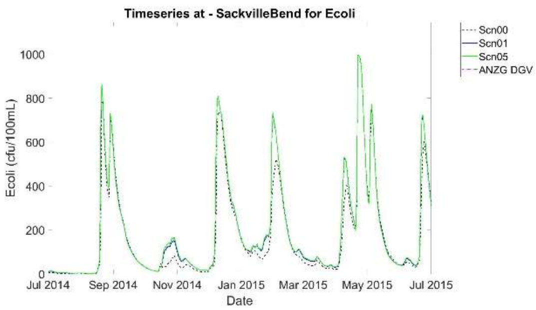




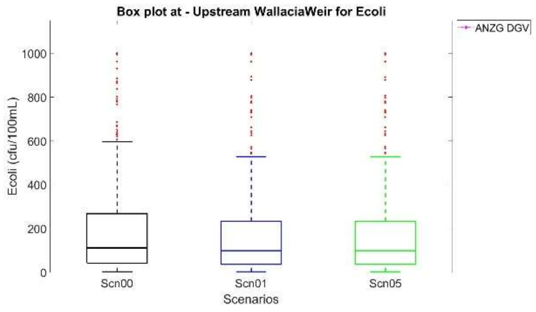


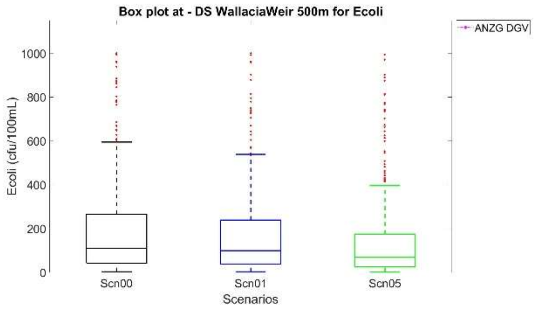


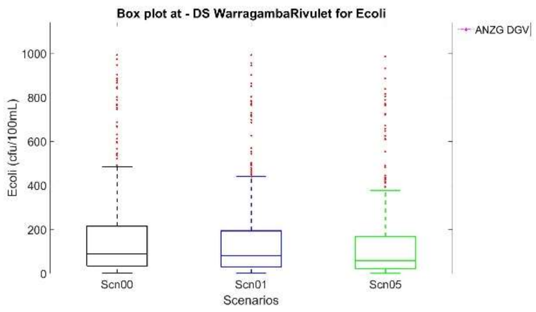


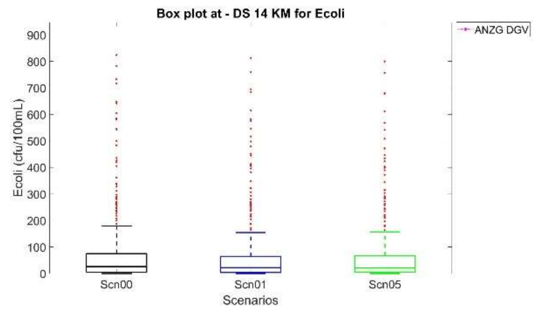


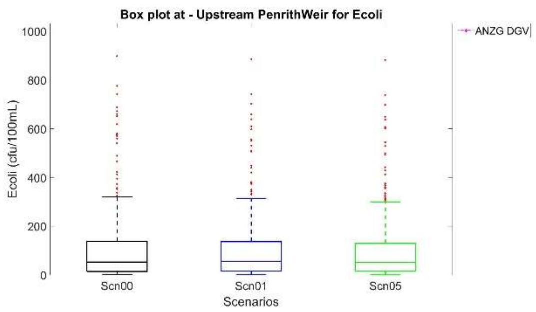
Box plots

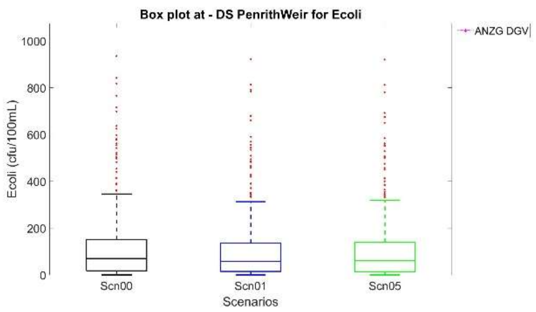

Box plot at - Upstream WallaciaWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

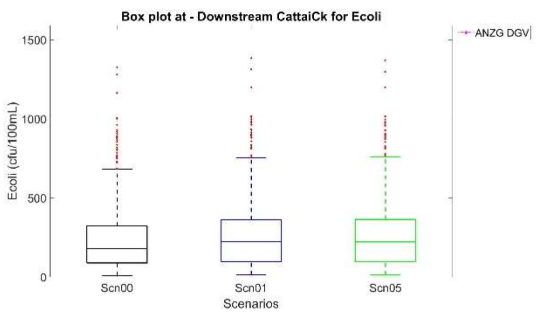

Box plot at - DS WallaciaWeir 500m for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

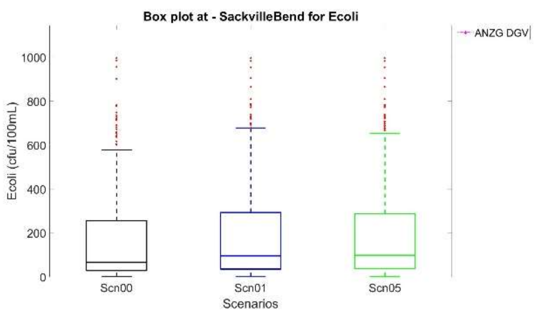

Box plot at - DS WarragambaRivulet for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

Hawkesbury-Nepean WQRM

Enterococci (cfu/100mL)

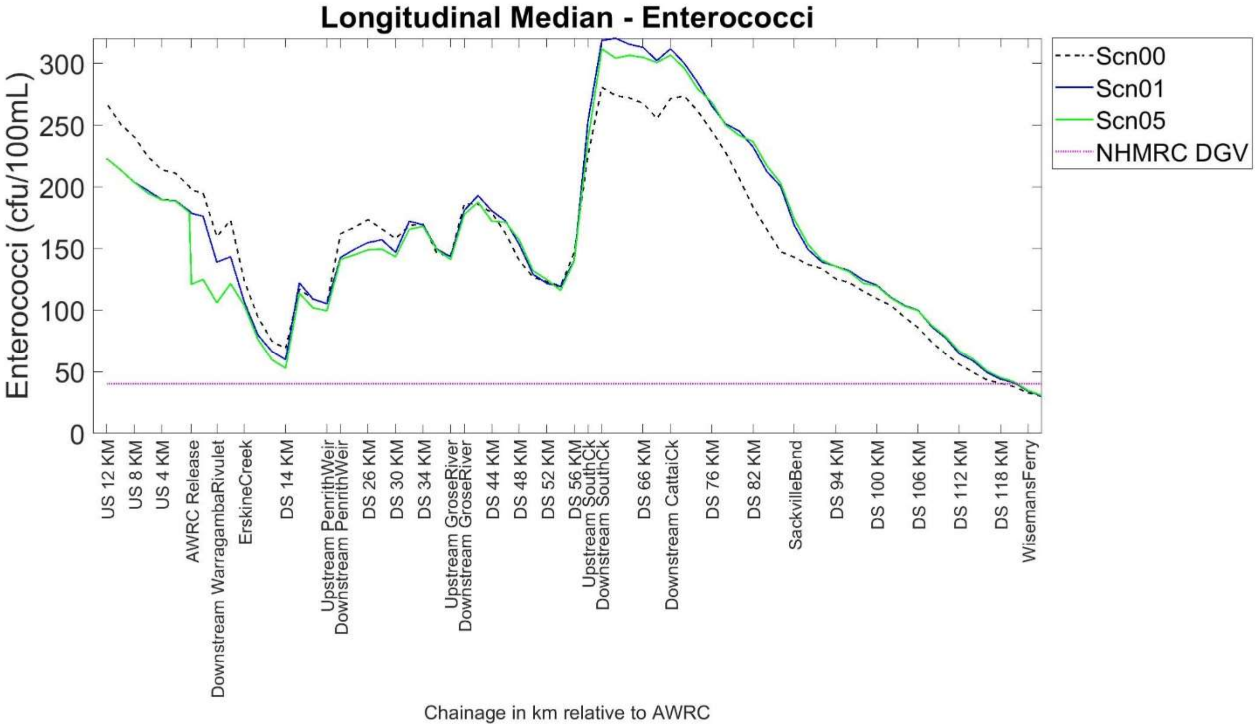
Scenario 05 - wet year

--> Longitudinal plots

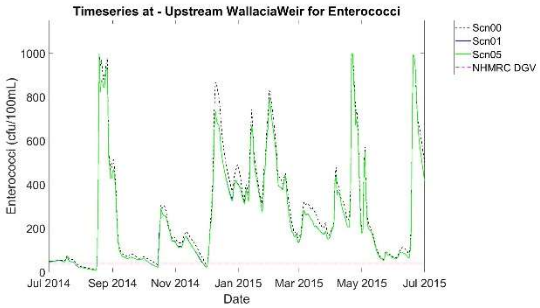
--> Timeseries plots at geographic markers and gauge locations

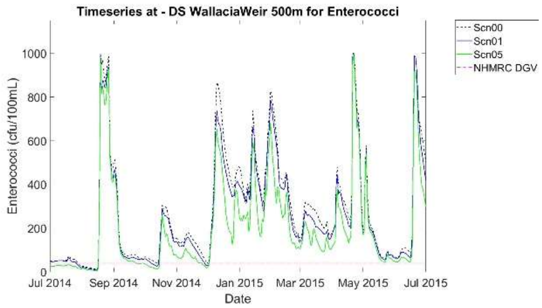
--> Box plots at geographic markers and gauge locations

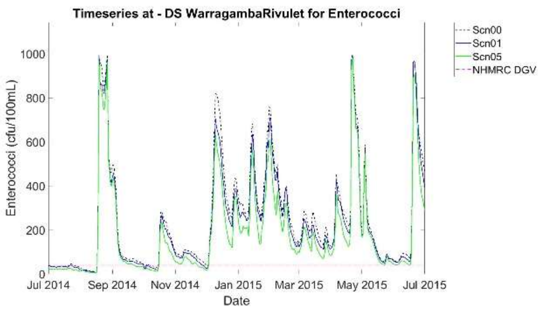
Longitudinal plot

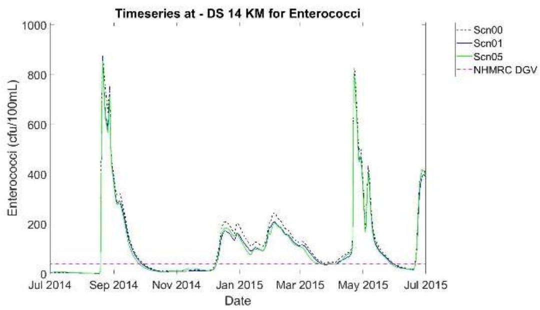


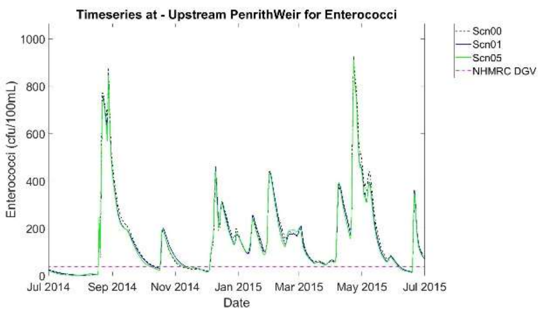
Timeseries plots

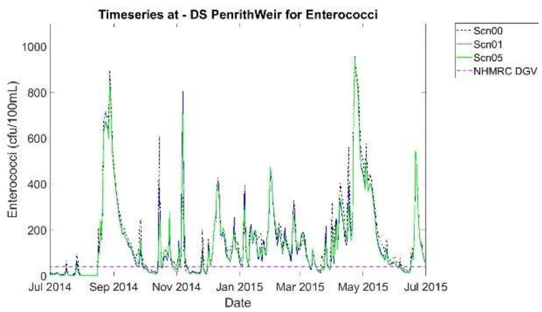


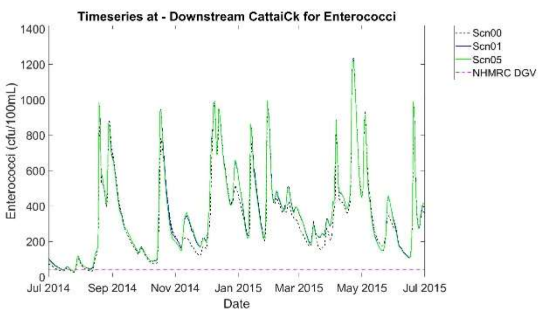


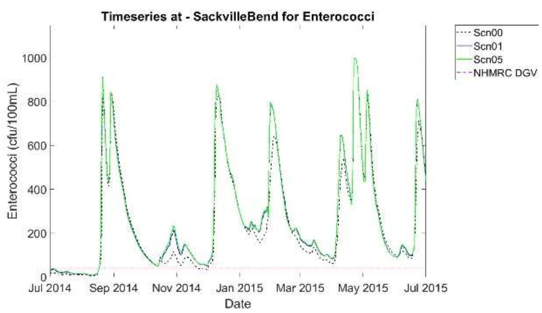




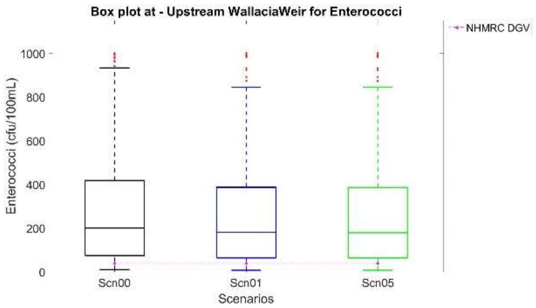


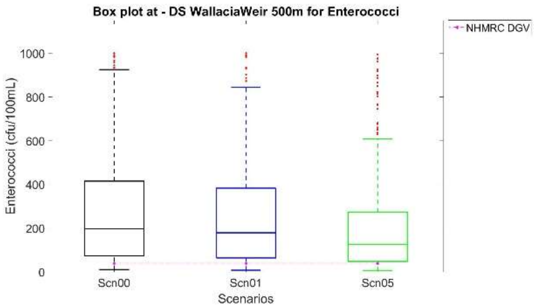


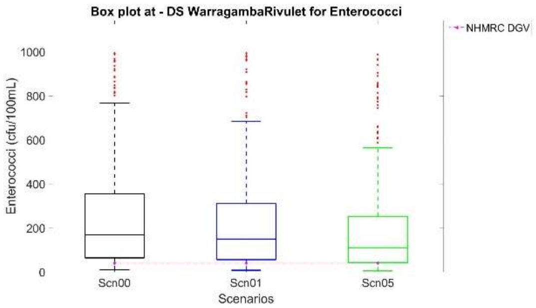


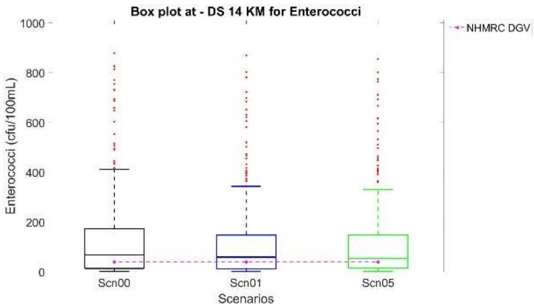


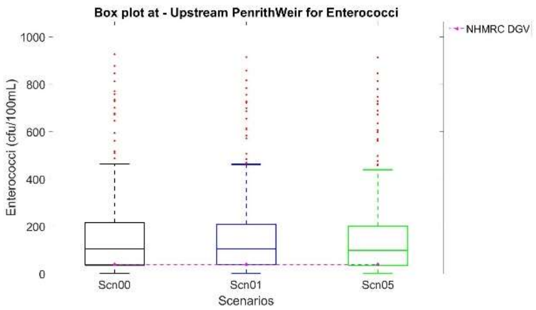
Box plots

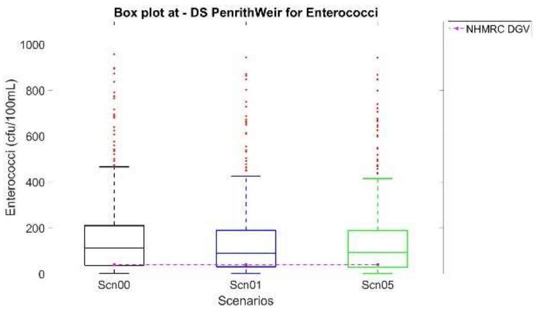

Box plot at - Upstream WallaciaWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

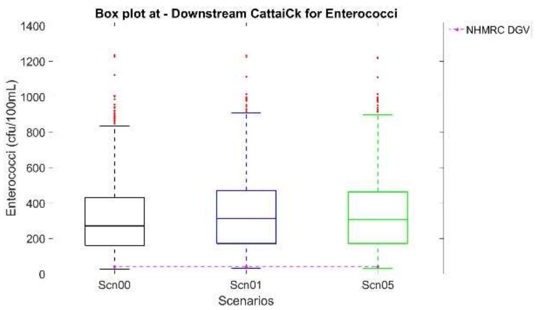

Box plot at - DS WallaciaWeir 500m for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

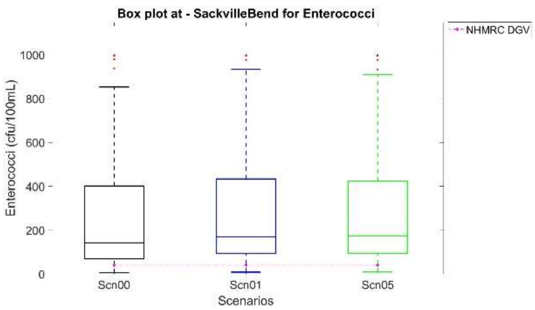

Box plot at - DS WarragambaRivulet for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS 14 KM for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Upstream PenrithWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - DS PenrithWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - Downstream CattaiCk for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios


Box plot at - SackvilleBend for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn05
Scenarios

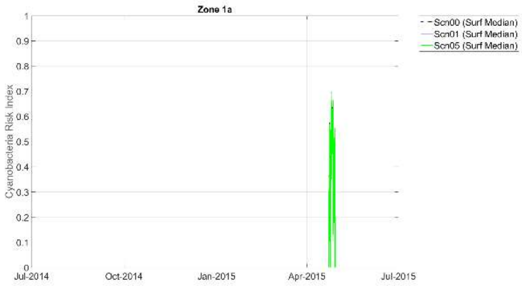
Hawkesbury-Nepean WQRM

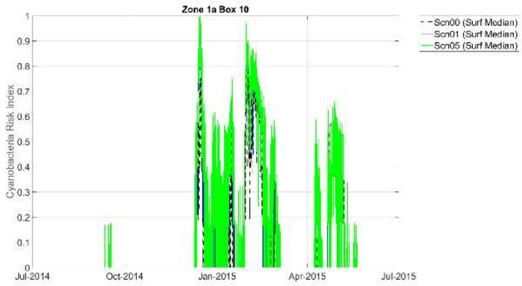
Cyano ()

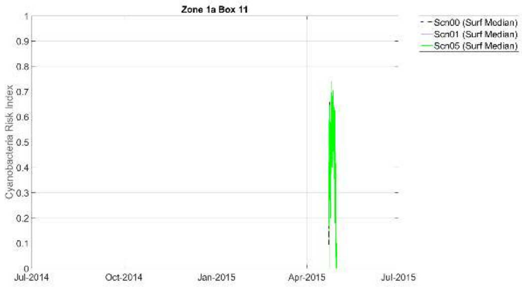
Scenario 05 - wet year

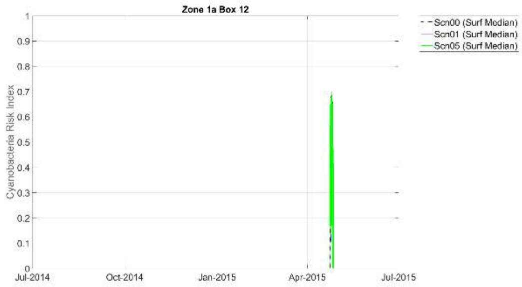
--> Timeseries plots for reaches

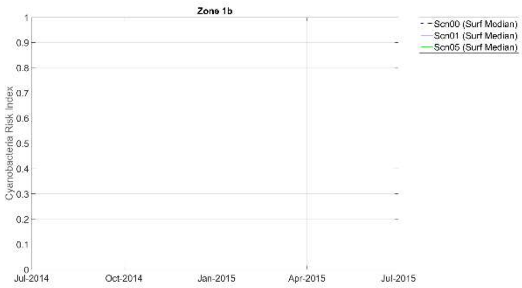
Timeseries plots

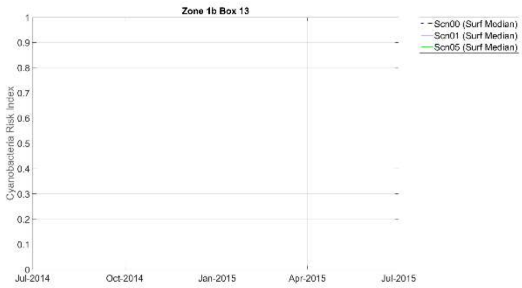


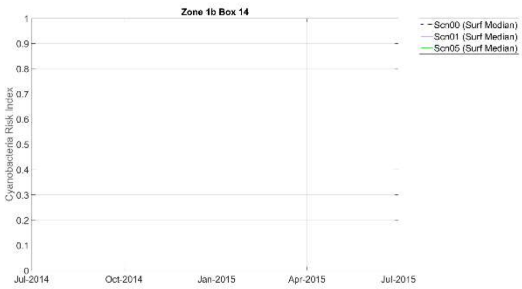


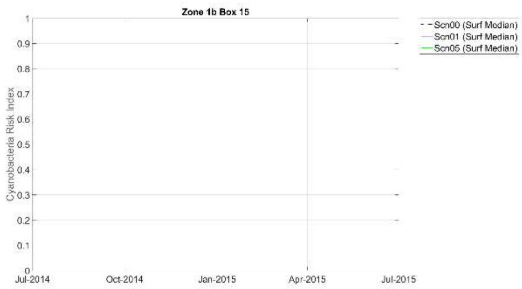




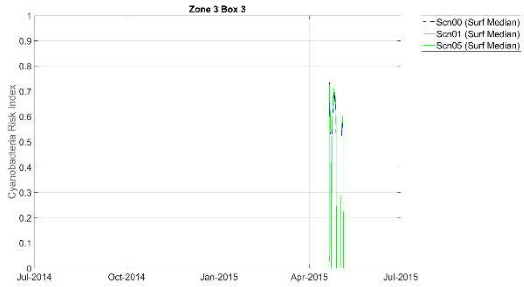


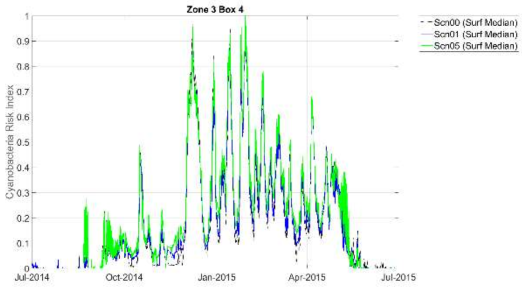


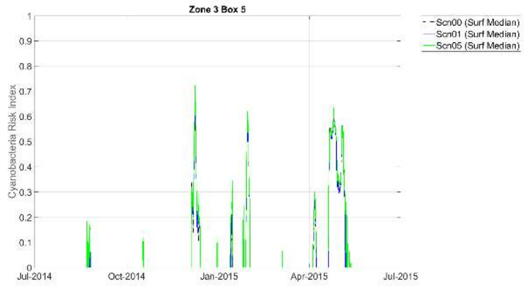


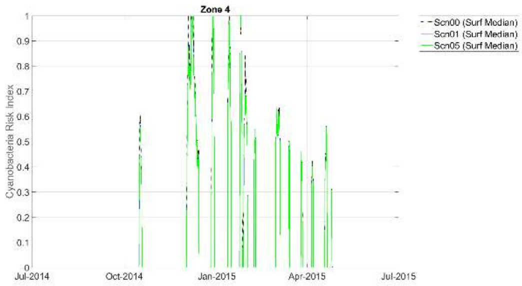



Zone 1c
Zone 2a
Zone 2a Box 6
Zone 2b
Zone 2b Box 7
Zone 2b Box 8
Zone 2b Box 9
Zone 3
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Cyanobacteria Risk Index
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 3 Box 3
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Cyanobacteria Risk Index
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 3 Box 4
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Cyanobacteria Risk Index
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 3 Box 5
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Cyanobacteria Risk Index
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 4
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Cyanobacteria Risk Index
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 4 Box 2
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Cyanobacteria Risk Index
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone SC
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn05 (Surf Median)
Cyanobacteria Risk Index
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015

Appendix C3 Nepean River and Warragamba River releases

Hawkesbury-Nepean WQRM

Total Nitrogen (mg/L)

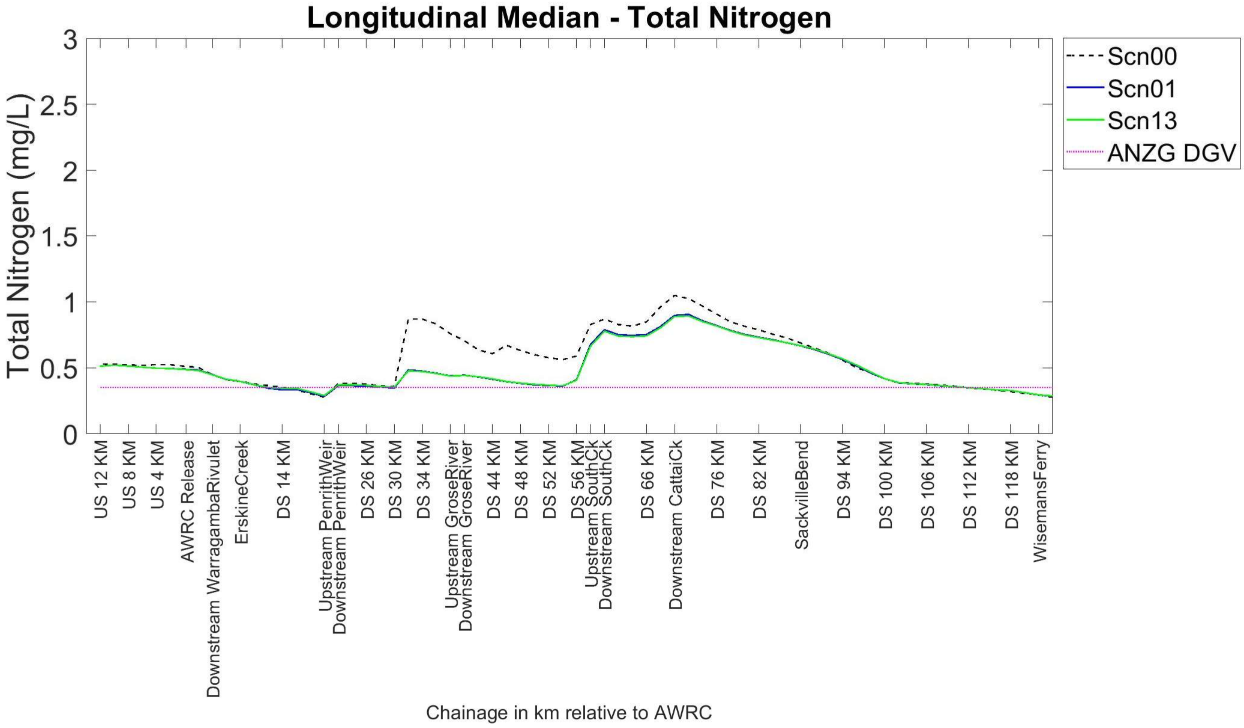
Scenario 13 - dry year

--> Longitudinal plots

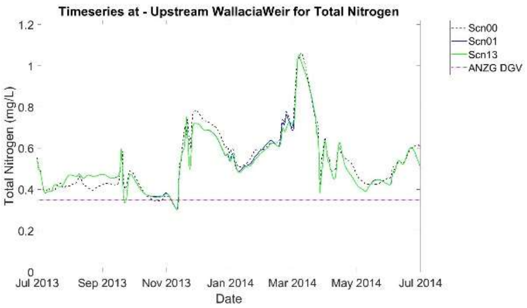
--> Timeseries plots at geographic markers and gauge locations

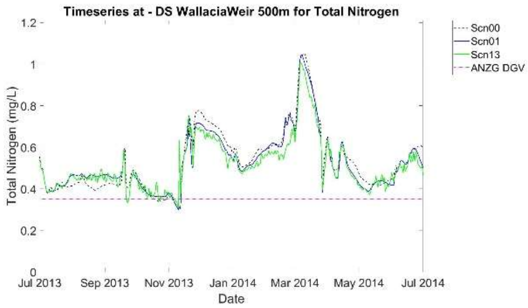
--> Box plots at geographic markers and gauge locations

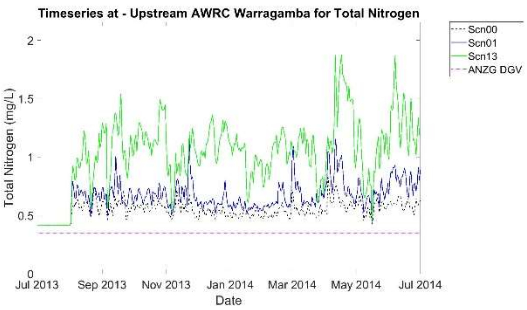
Longitudinal plot

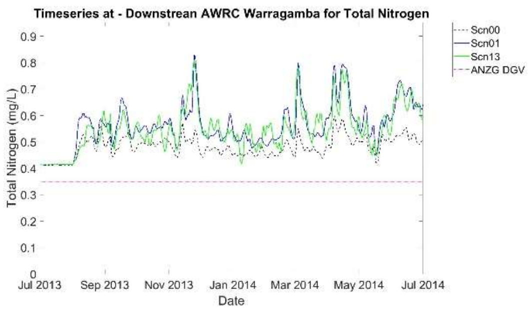


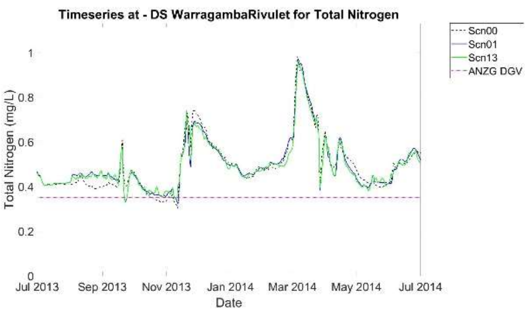
Timeseries plots

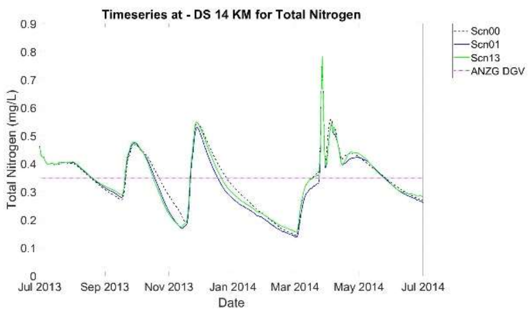


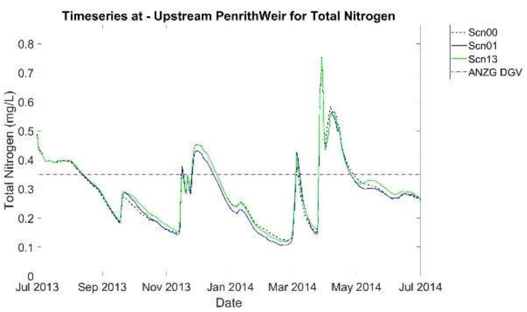


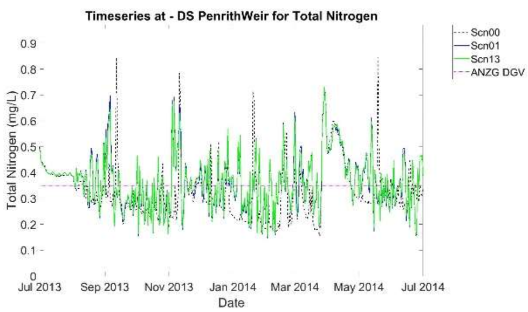


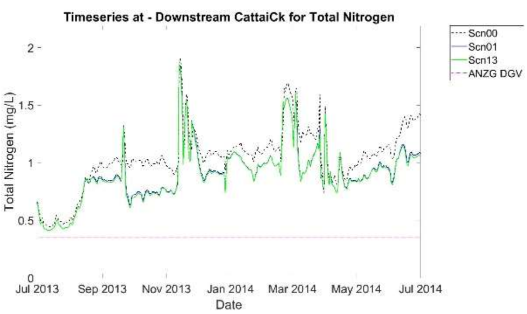


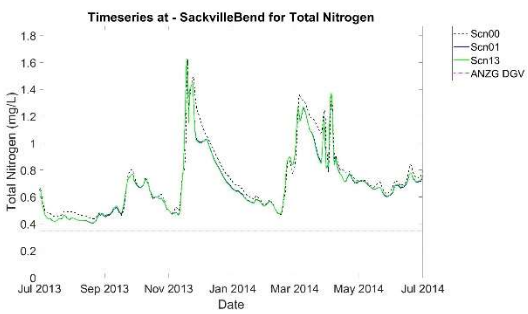




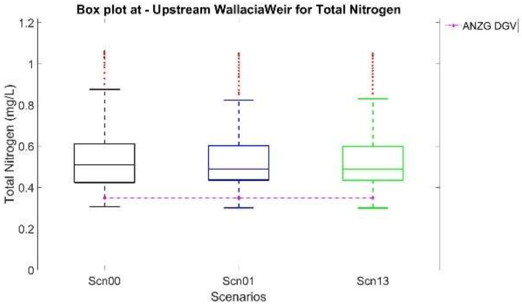


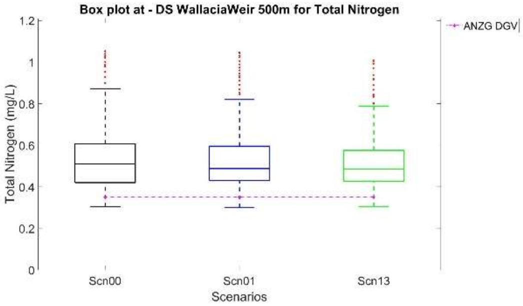


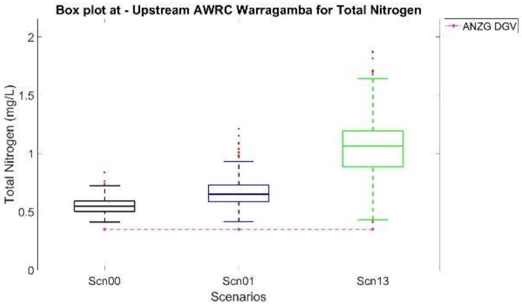


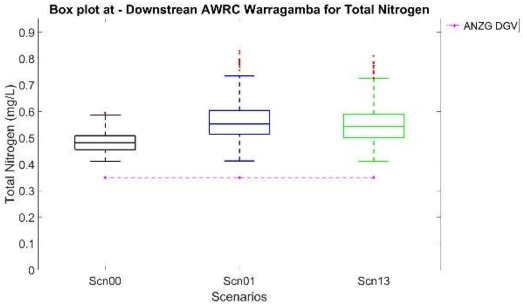


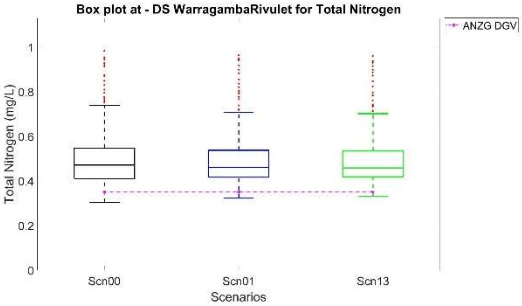
Box plots

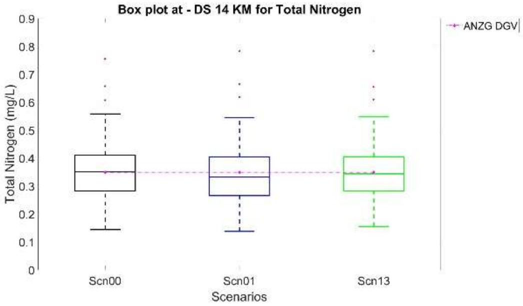

Box plot at - Upstream WallaciaWeir for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

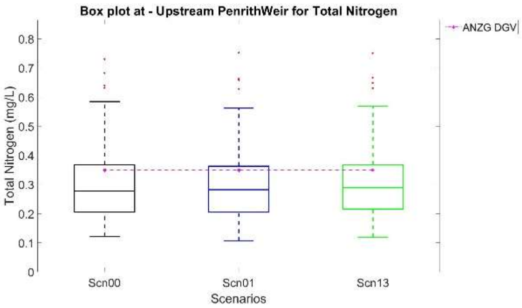

Box plot at - DS WallaciaWeir 500m for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

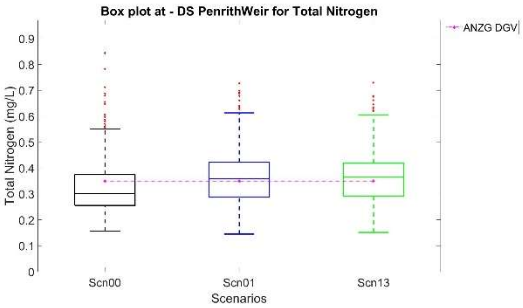

Box plot at - Upstream AWRC Warragamba for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

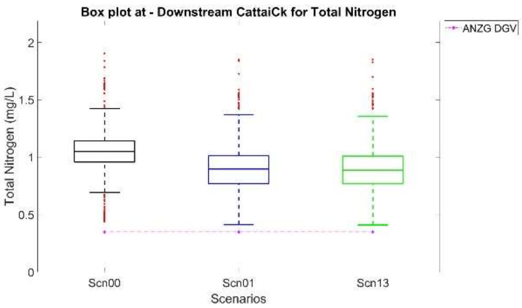

Box plot at - Downstrean AWRC Warragamba for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

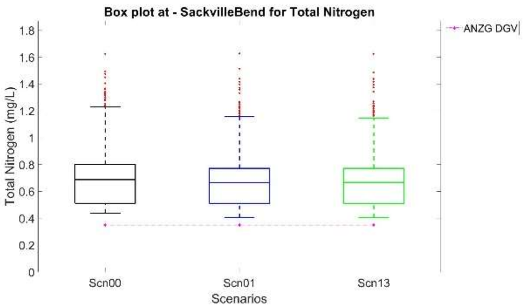

Box plot at - DS WarragambaRivulet for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS 14 KM for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Upstream PenrithWeir for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS PenrithWeir for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Downstream CattaiCk for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - SackvilleBend for Total Nitrogen
Total Nitrogen (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

Ammonia (mg/L)

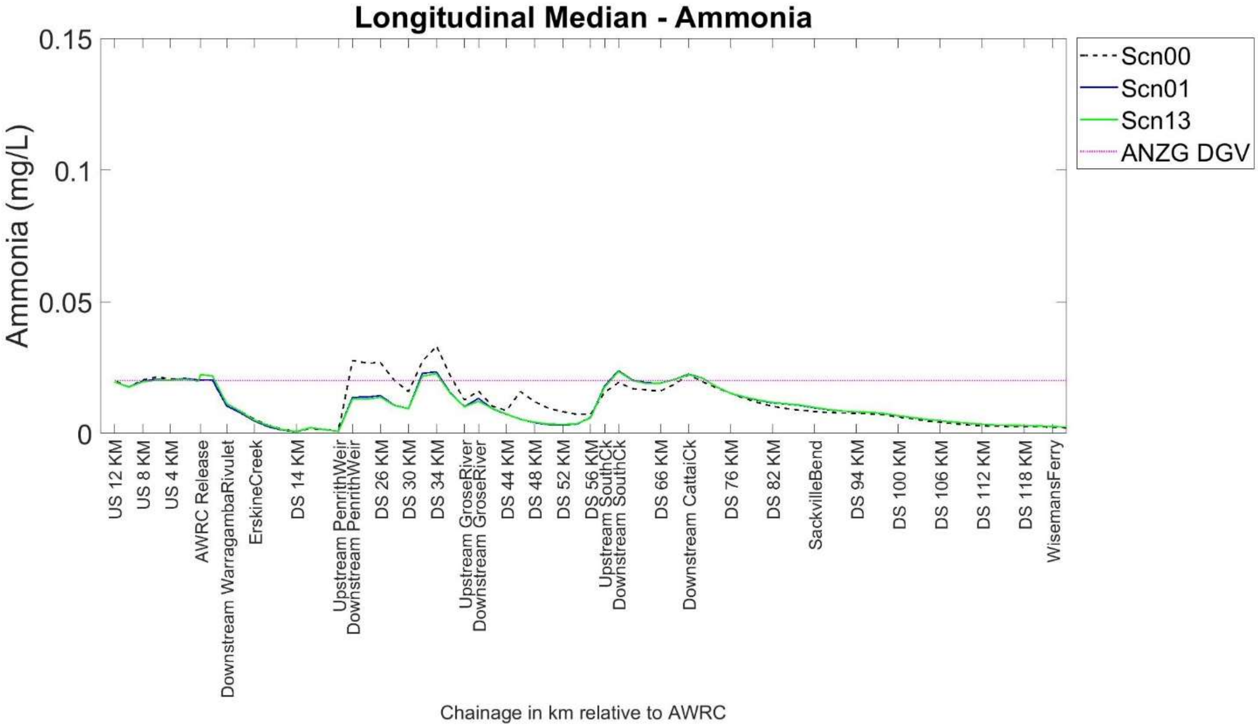
Scenario 13 - dry year

--> Longitudinal plots

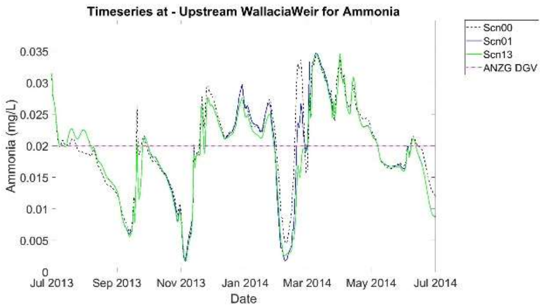
--> Timeseries plots at geographic markers and gauge locations

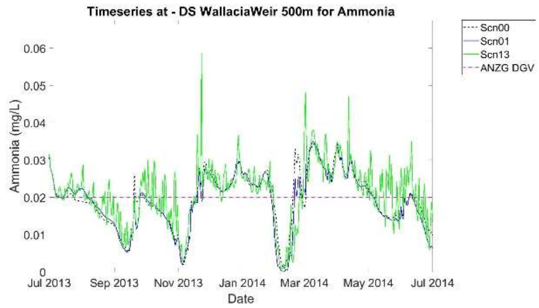
--> Box plots at geographic markers and gauge locations

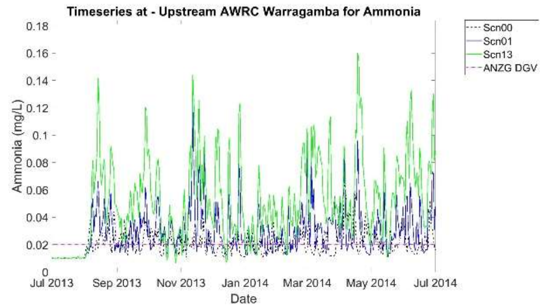
Longitudinal plot

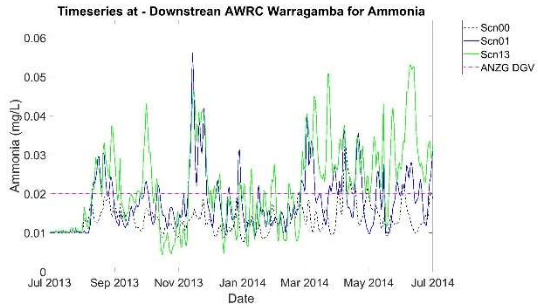


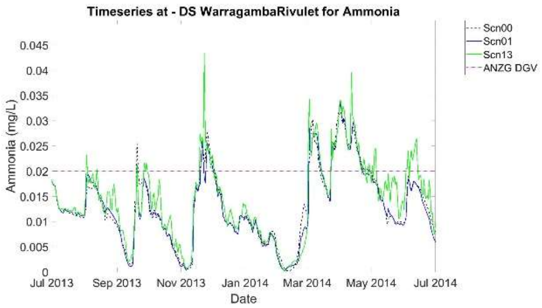
Timeseries plots

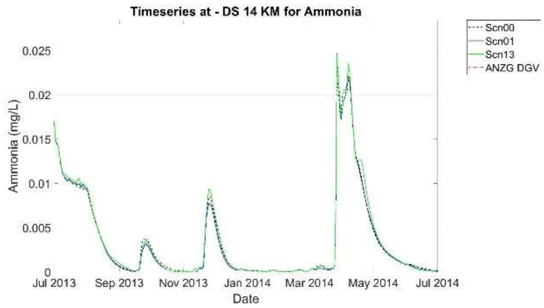


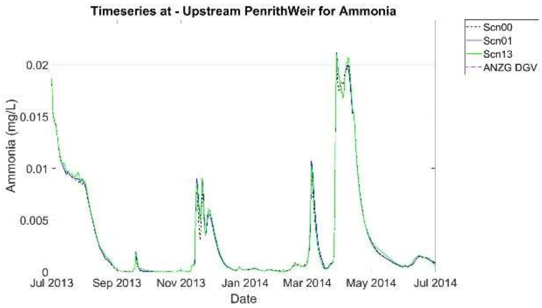


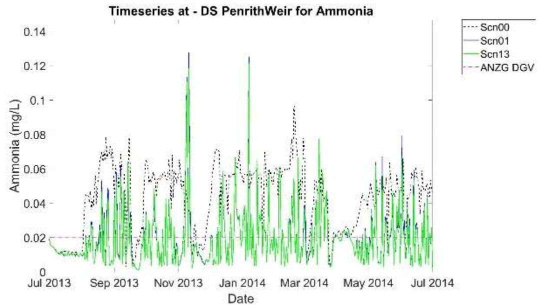


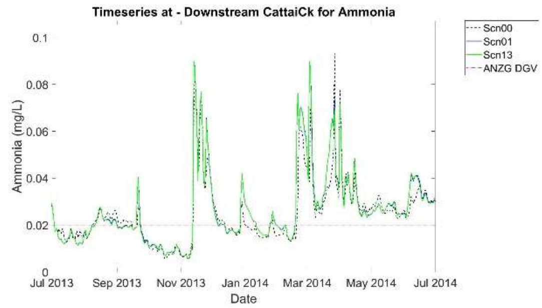


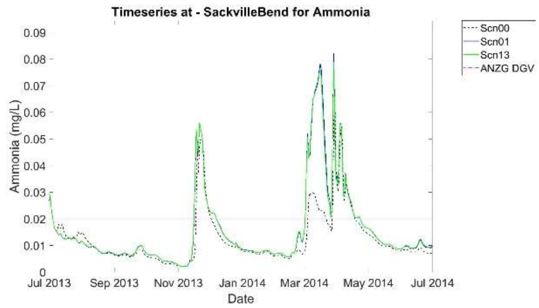




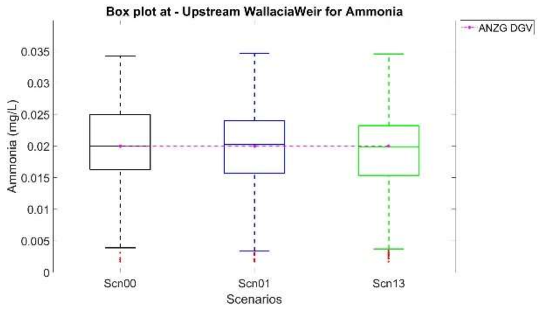


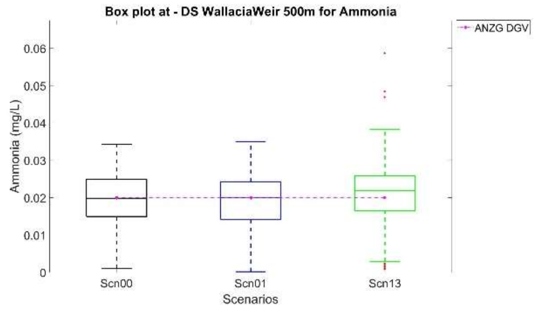


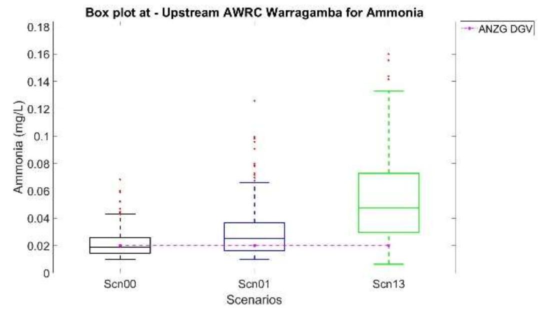


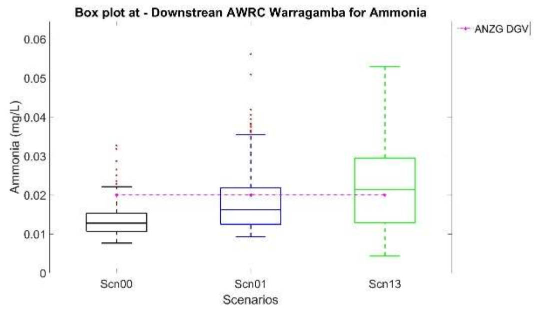


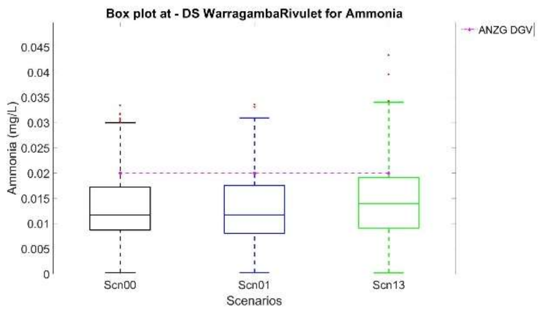
Box plots

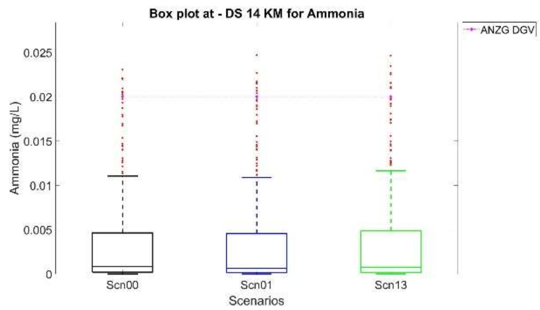

Box plot at - Upstream WallaciaWeir for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

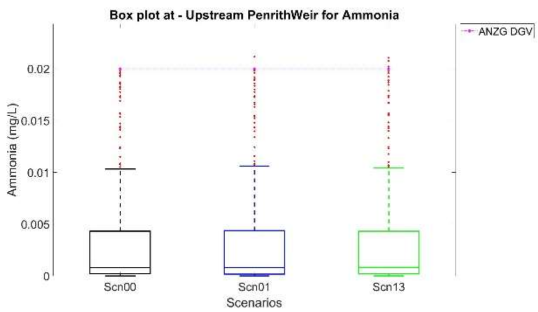

Box plot at - DS WallaciaWeir 500m for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

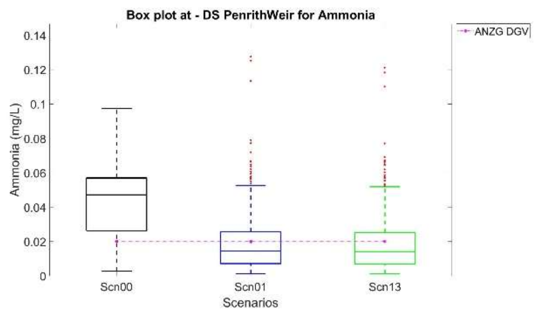

Box plot at - Upstream AWRC Warragamba for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

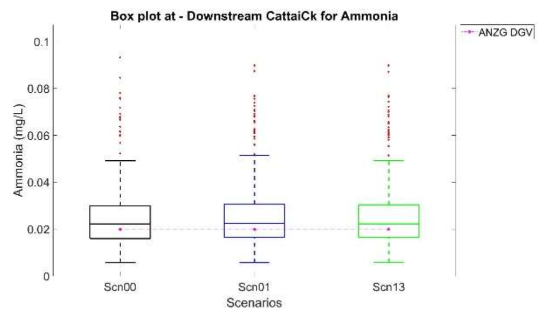

Box plot at - Downstrean AWRC Warragamba for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

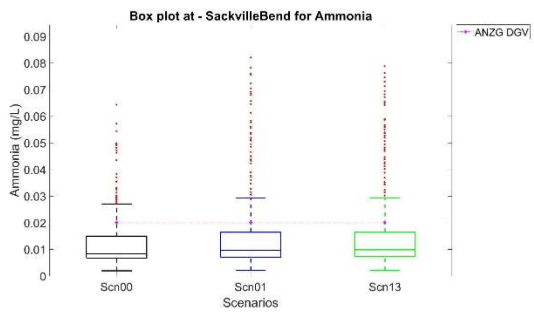

Box plot at - DS WarragambaRivulet for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS 14 KM for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Upstream PenrithWeir for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS PenrithWeir for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Downstream CattaiCk for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - SackvilleBend for Ammonia
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

NOx (mg/L)

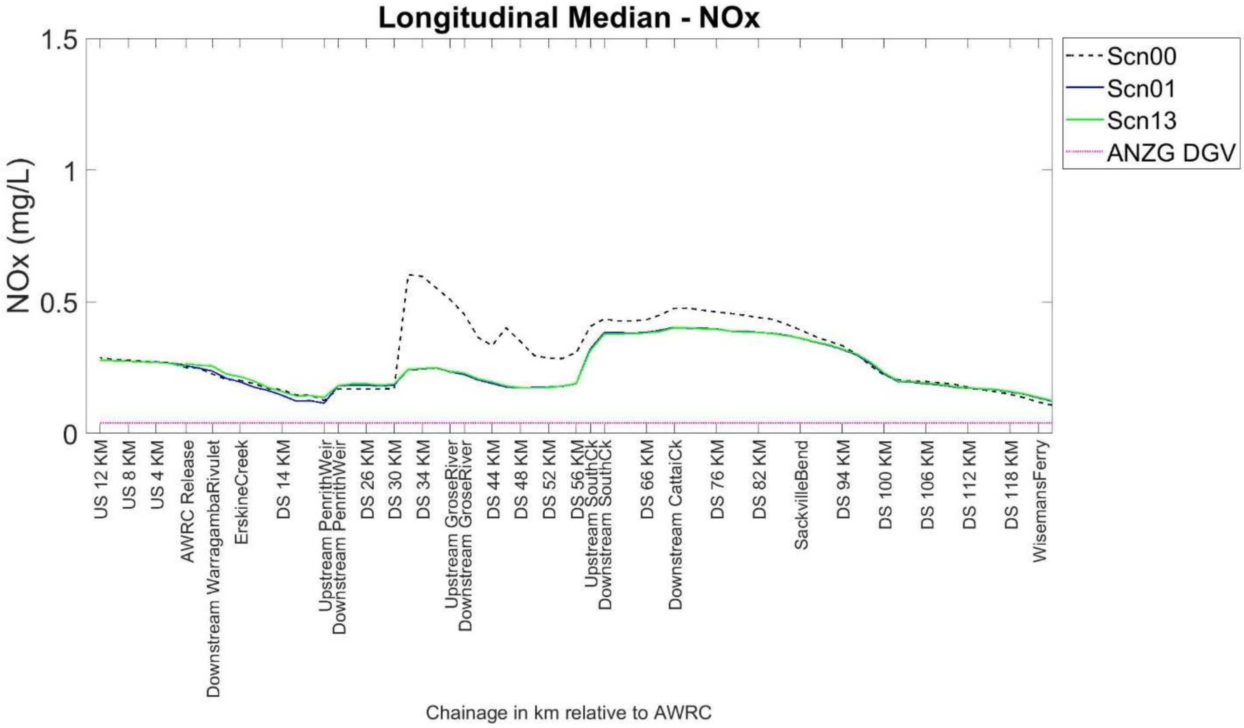
Scenario 13 - dry year

--> Longitudinal plots

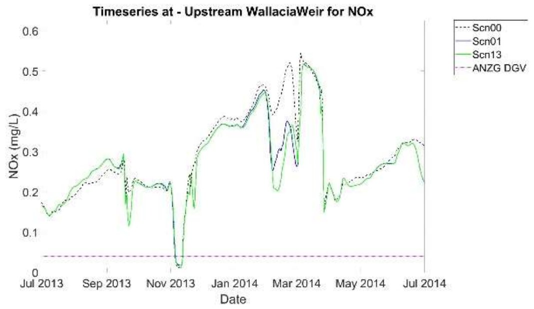
--> Timeseries plots at geographic markers and gauge locations

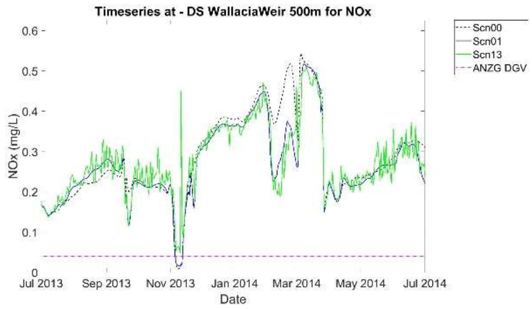
--> Box plots at geographic markers and gauge locations

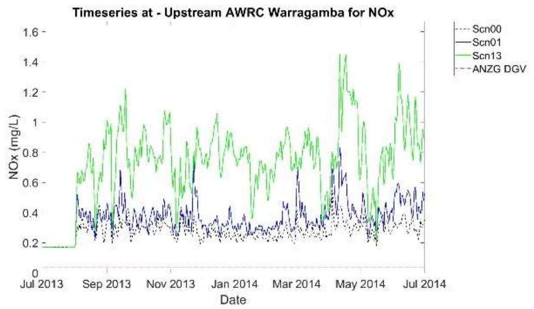
Longitudinal plot

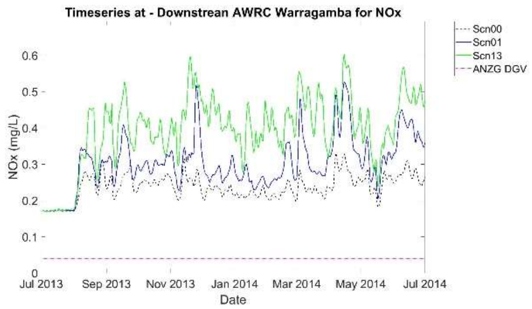


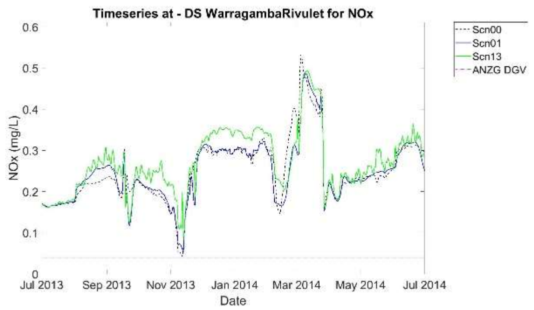
Timeseries plots

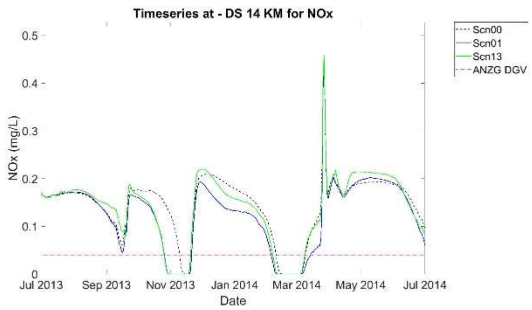


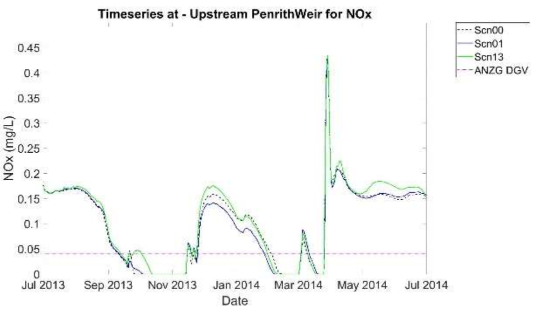


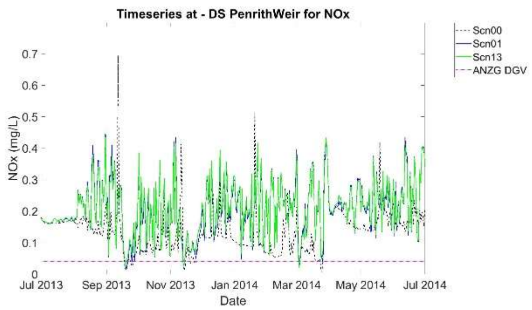


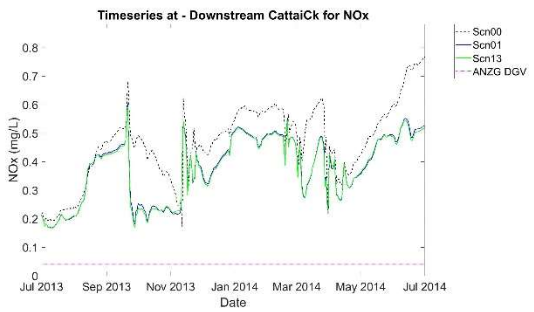


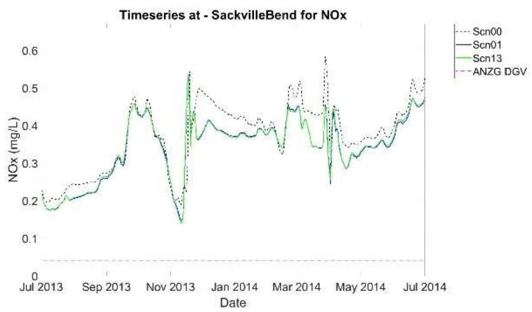




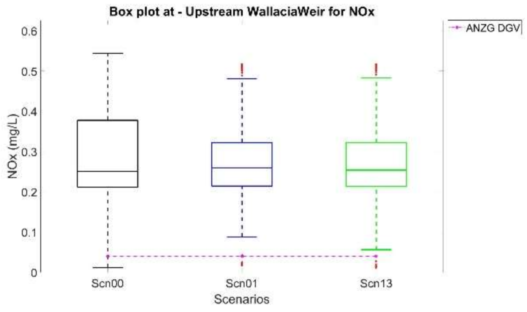


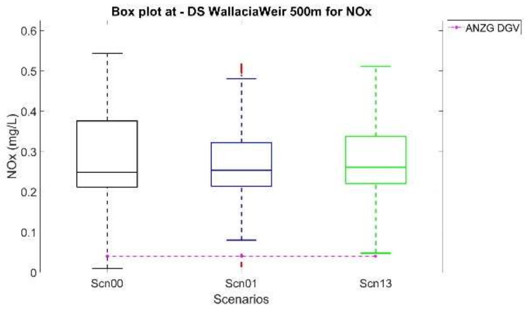


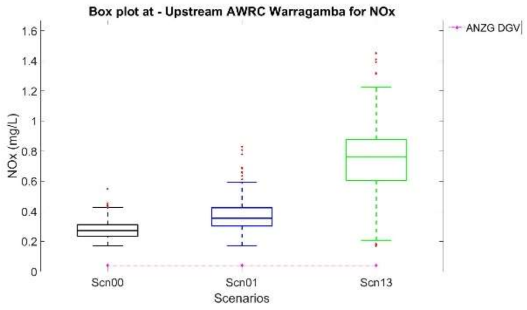


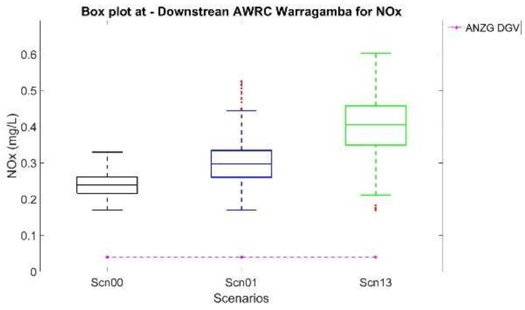


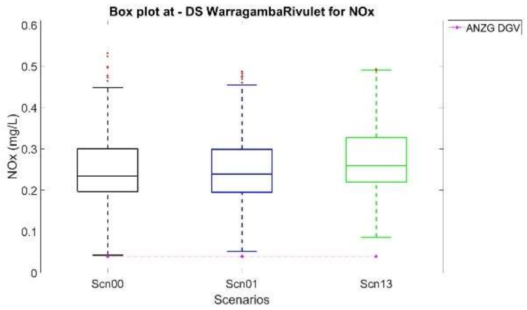
Box plots

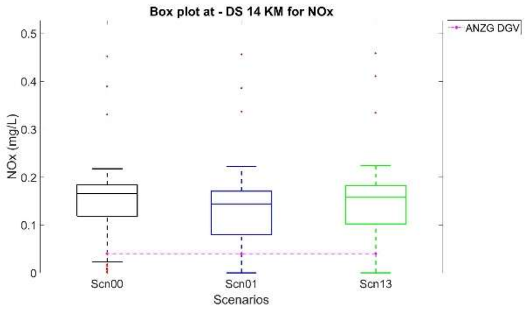

Box plot at - Upstream WallaciaWeir for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

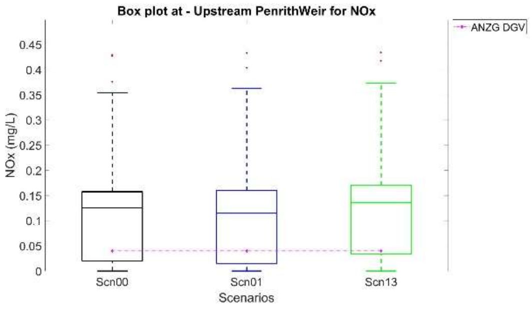

Box plot at - DS WallaciaWeir 500m for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

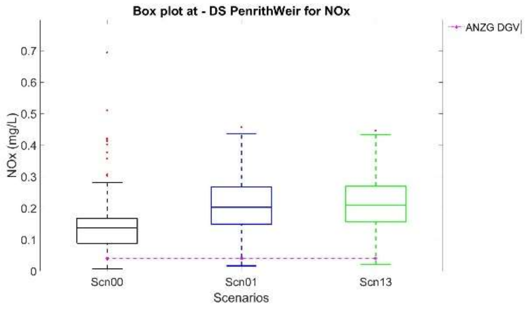

Box plot at - Upstream AWRC Warragamba for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

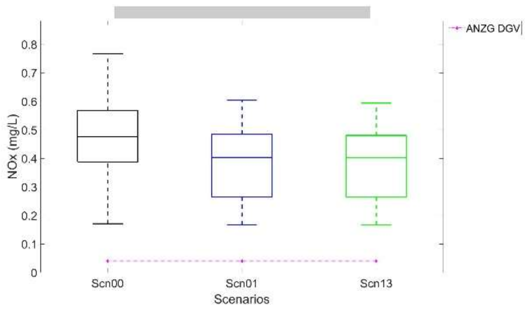

Box plot at - Downstrean AWRC Warragamba for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

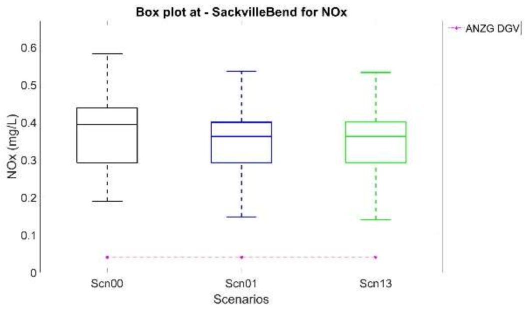

Box plot at - DS WarragambaRivulet for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Total Phosphorus (mg/L)

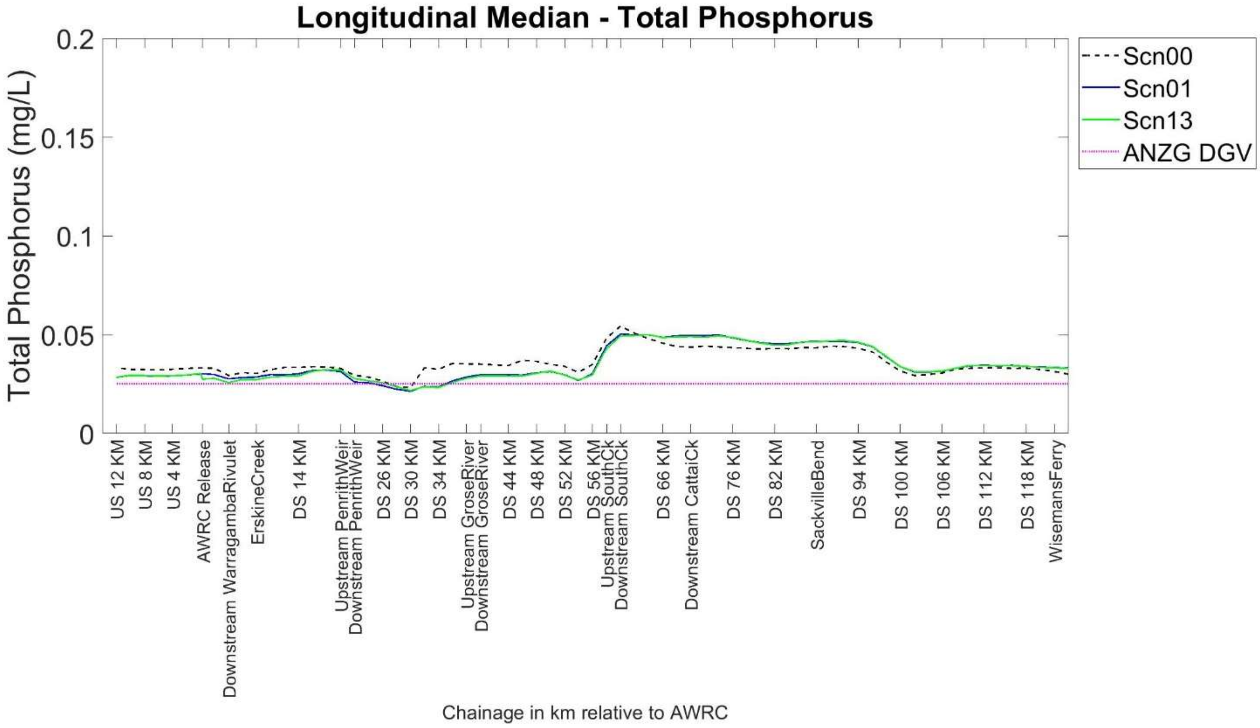
Scenario 13 - dry year

--> Longitudinal plots

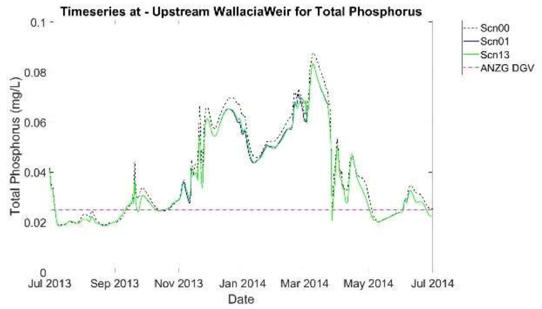
--> Timeseries plots at geographic markers and gauge locations

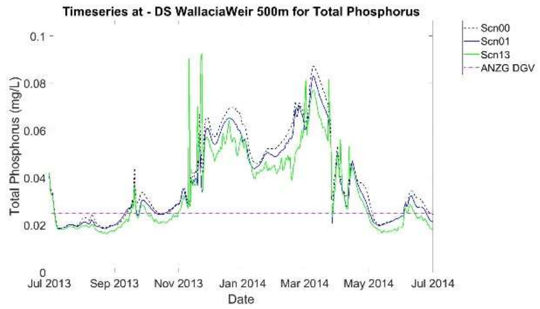
--> Box plots at geographic markers and gauge locations

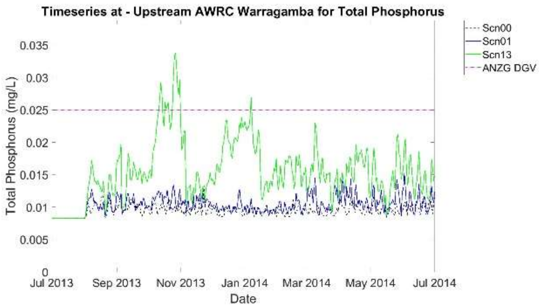
Longitudinal plot

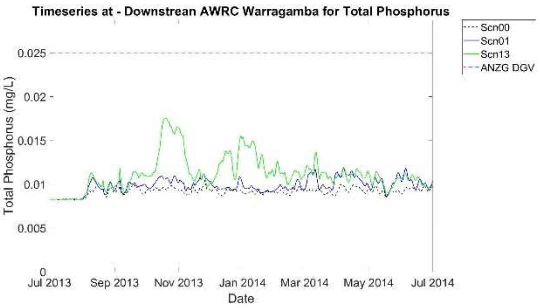


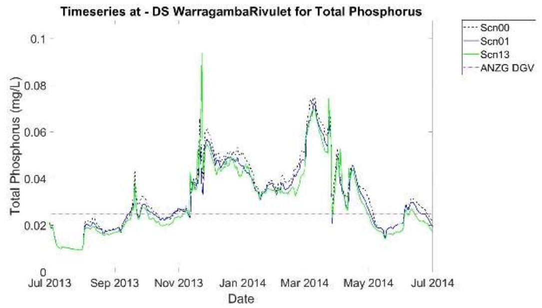
Timeseries plots

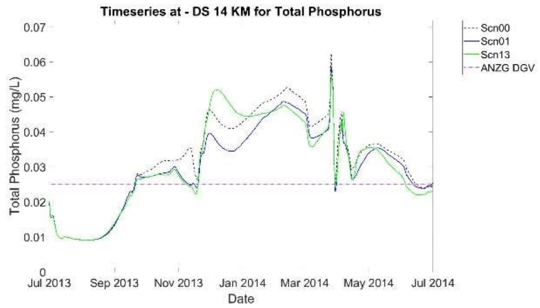


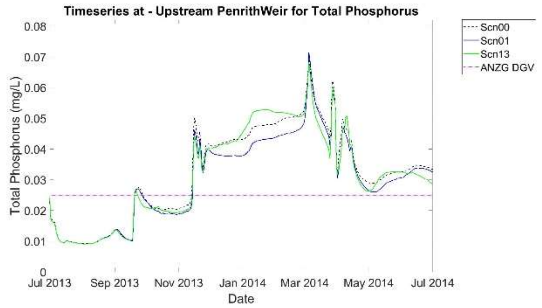


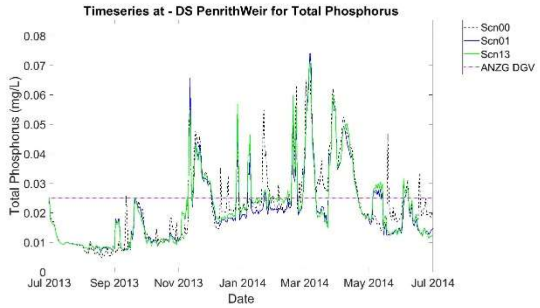


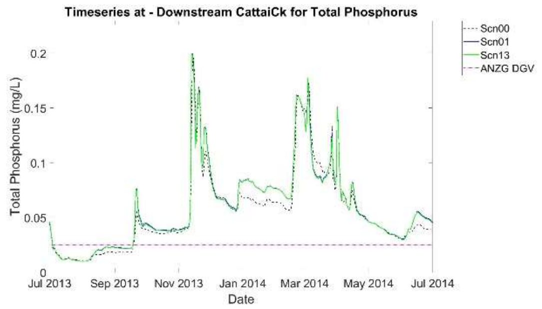


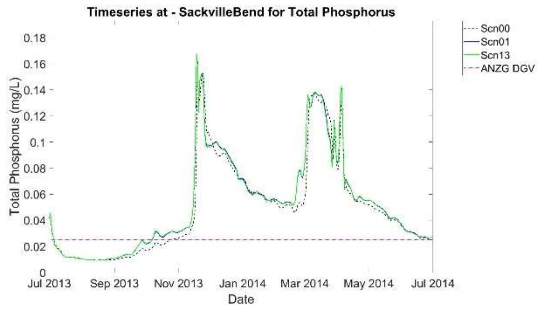




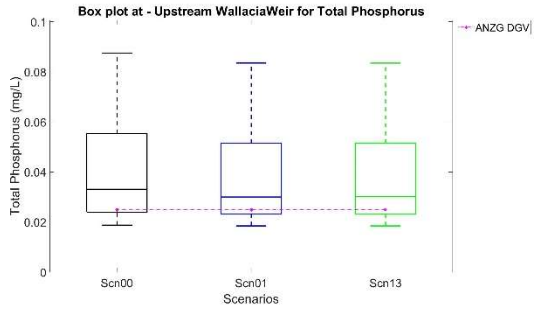


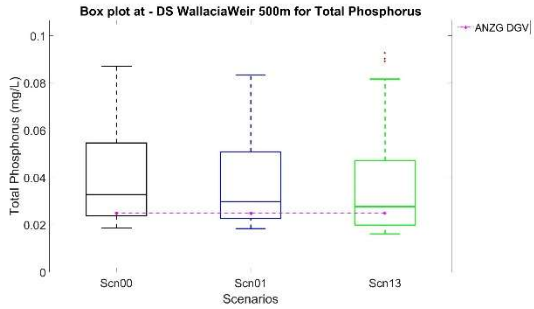


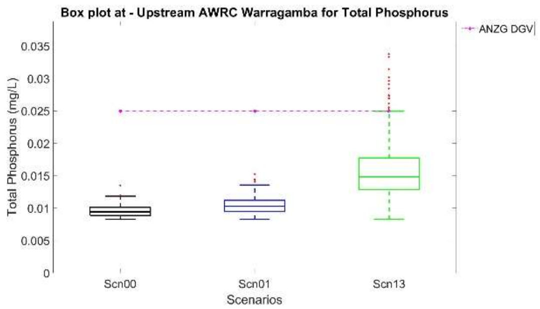


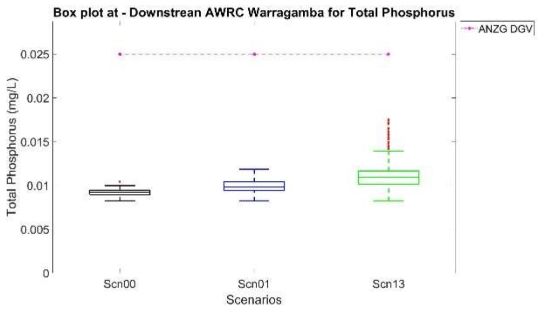


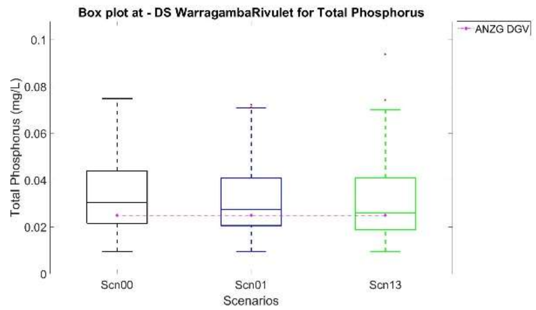
Box plots

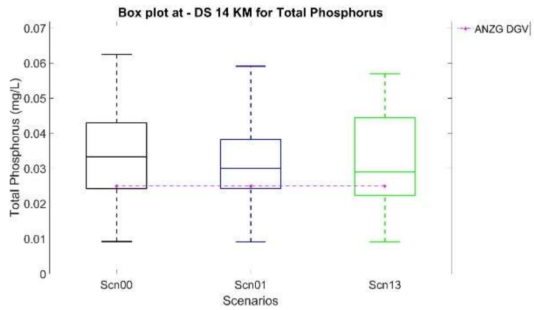

Box plot at - Upstream WallaciaWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.1
0.08
0.06
0.04
0.02
0
Scn00
Scn01
Scn13
Scenarios

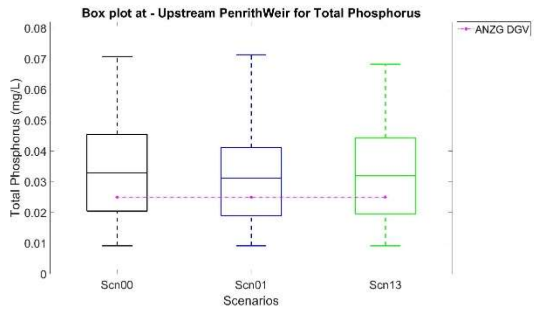

Box plot at - DS WallaciaWeir 500m for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.1
0.08
0.06
0.04
0.02
0
Scn00
Scn01
Scn13
Scenarios

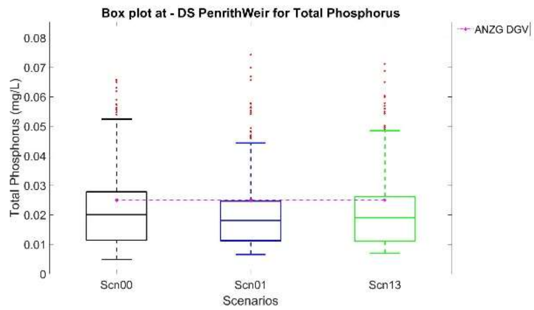

Box plot at - Upstream AWRC Warragamba for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
Scn00
Scn01
Scn13
Scenarios

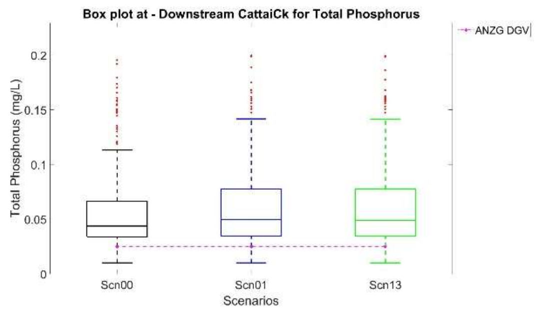

Box plot at - Downstrean AWRC Warragamba for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.025
0.02
0.015
0.01
0.005
0
Scn00
Scn01
Scn13
Scenarios

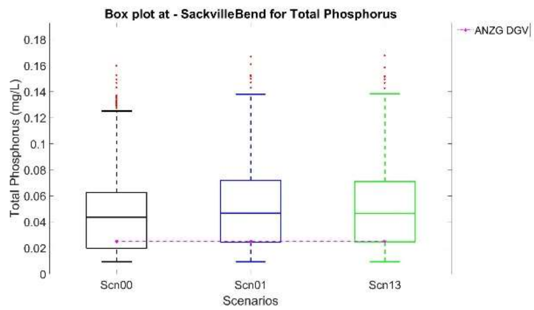

Box plot at - DS WarragambaRivulet for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.1
0.08
0.06
0.04
0.02
0
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.2
0.15
0.1
0.05
0
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Total Phosphorus
ANZG DGV
Total Phosphorus (mg/L)
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

FRP (mg/L)

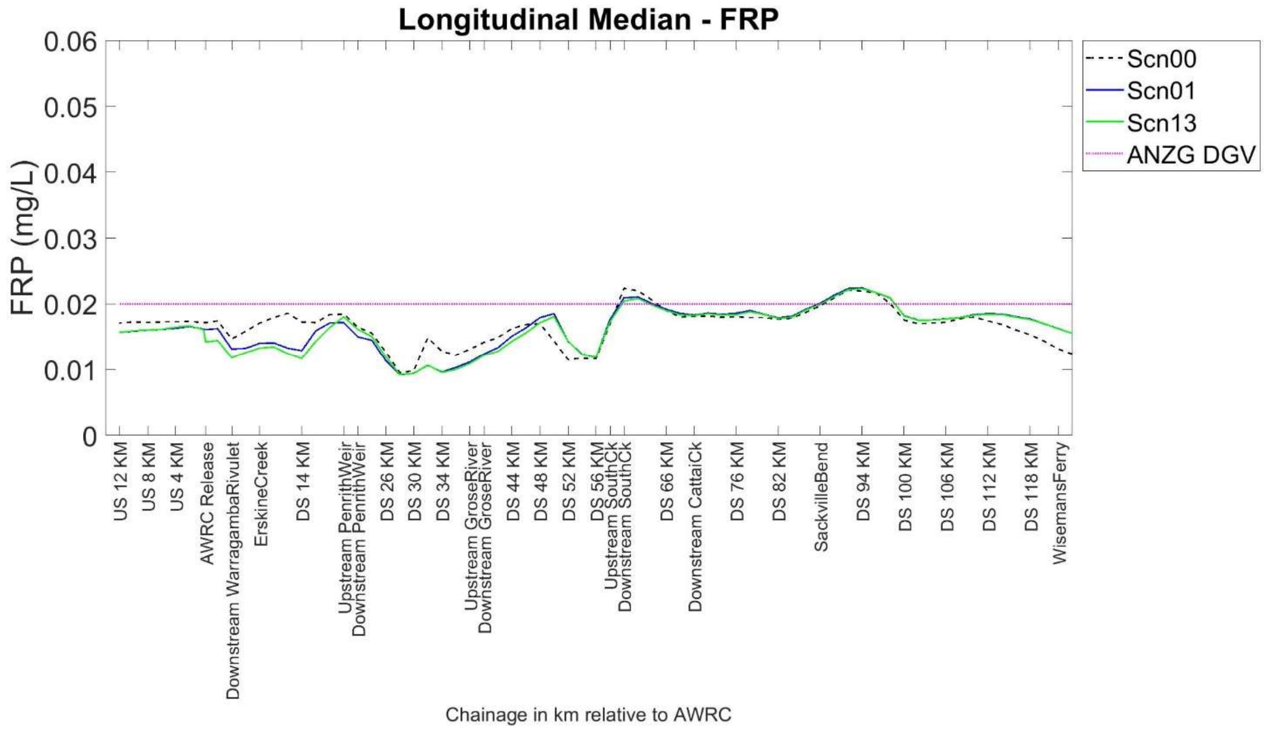
Scenario 13 - dry year

--> Longitudinal plots

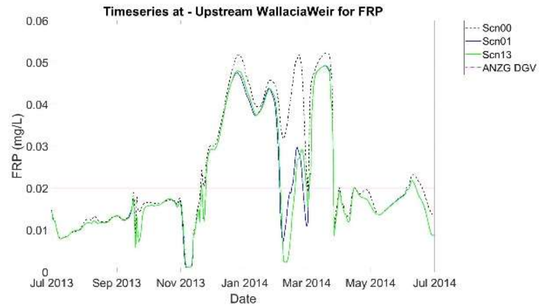
--> Timeseries plots at geographic markers and gauge locations

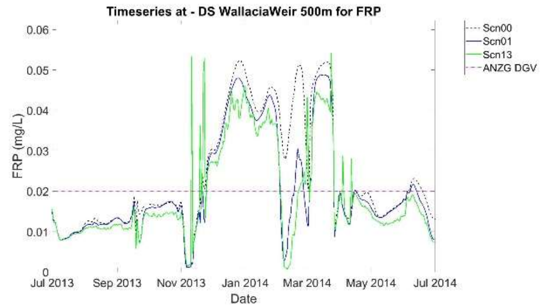
--> Box plots at geographic markers and gauge locations

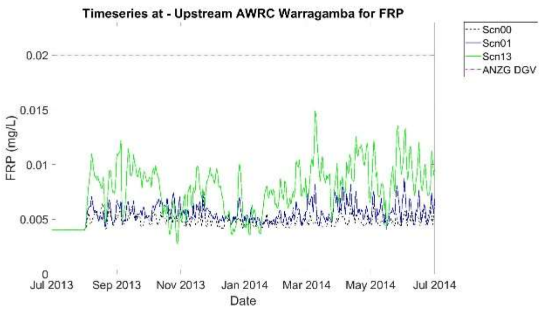
Longitudinal plot

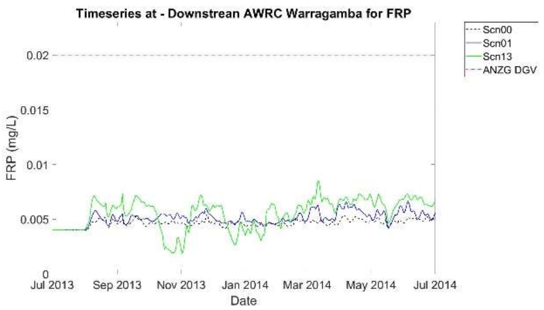


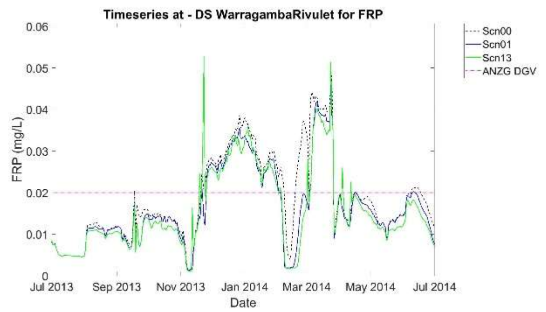
Timeseries plots

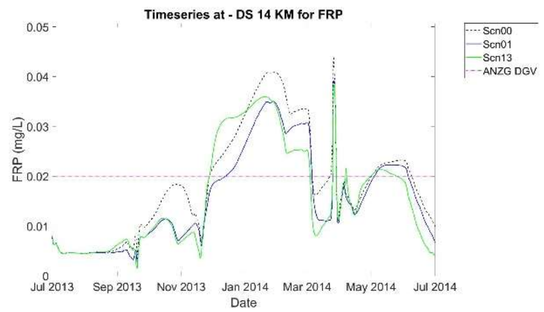


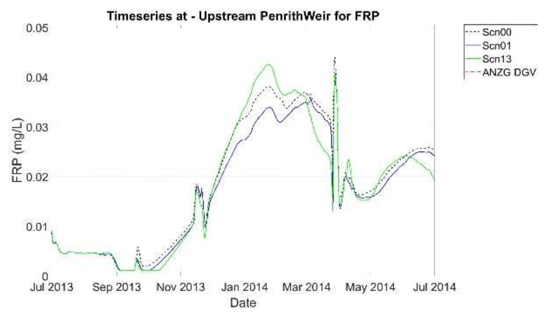


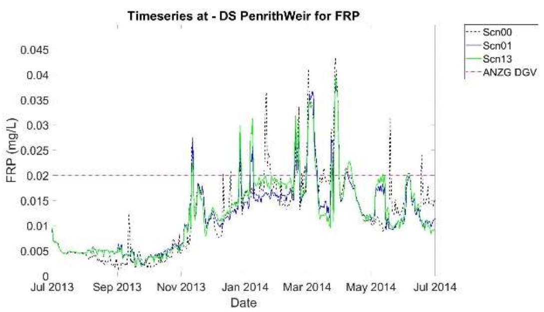


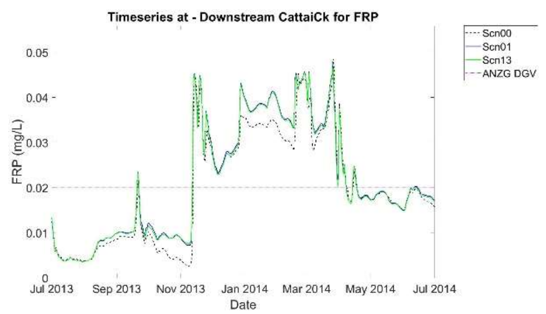


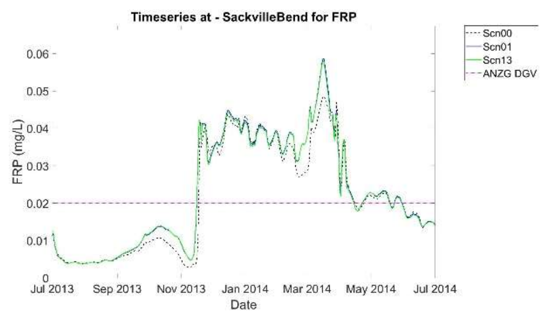




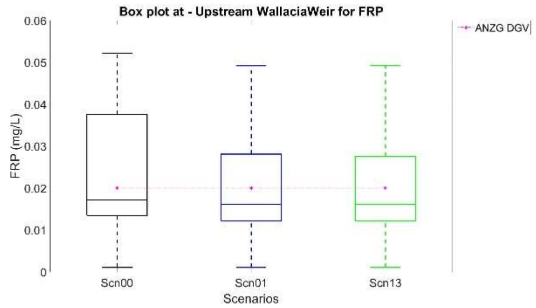


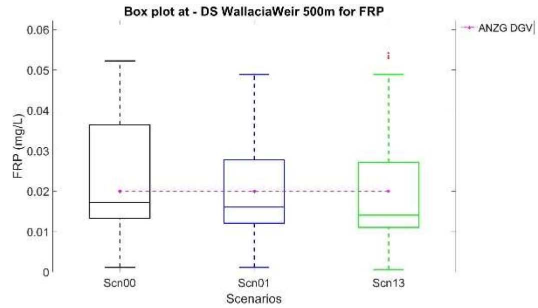


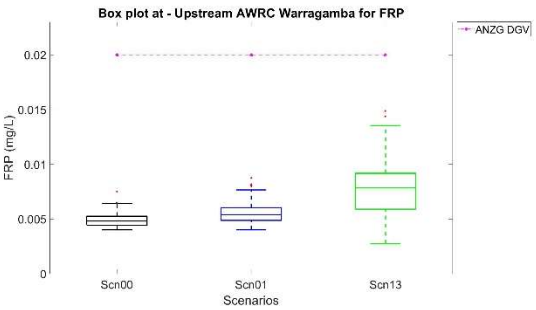


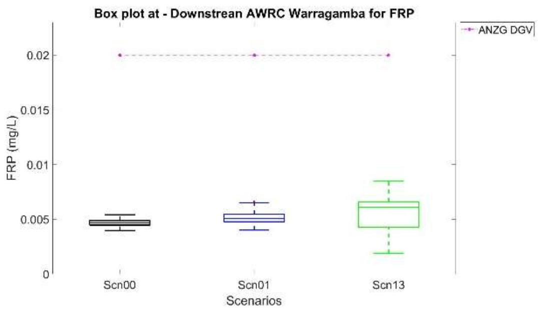


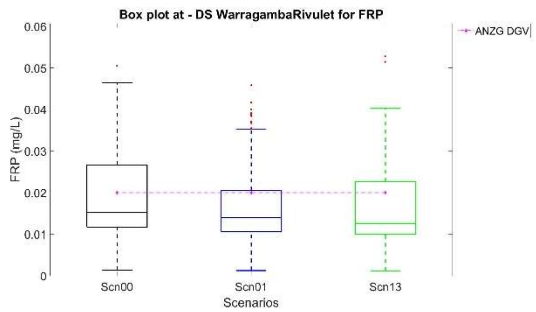
Box plots

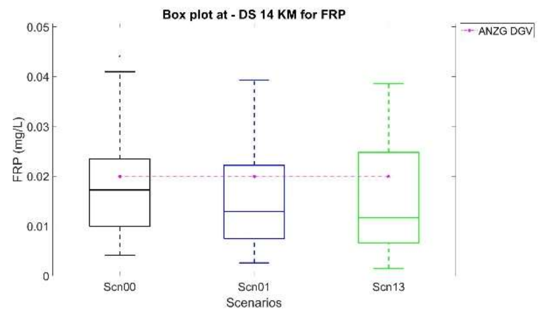

Box plot at - Upstream WallaciaWeir for FRP
ANZG DGV
FRP (mg/L)
0 0.01 0.02 0.03 0.04 0.05 0.06
Scn00 Scn01 Scn13
Scenarios

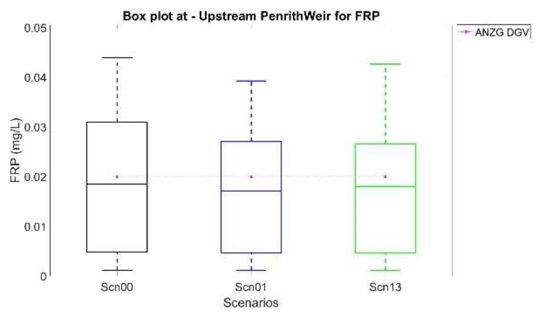

Box plot at - DS WallaciaWeir 500m for FRP
ANZG DGV
FRP (mg/L)
0 0.01 0.02 0.03 0.04 0.05 0.06
Scn00 Scn01 Scn13
Scenarios

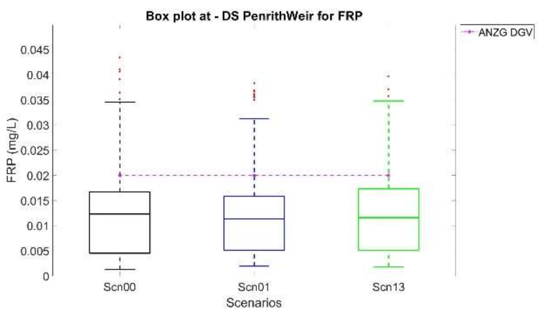

Box plot at - Upstream AWRC Warragamba for FRP
ANZG DGV
FRP (mg/L)
0 0.005 0.01 0.015 0.02
Scn00 Scn01 Scn13
Scenarios

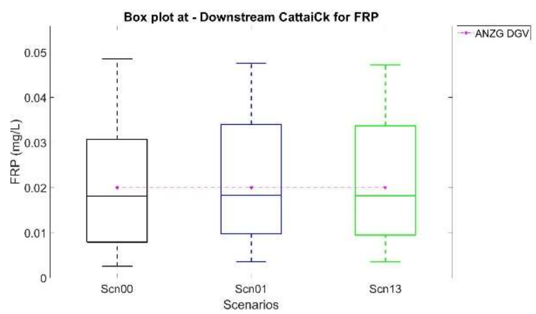

Box plot at - Downstrean AWRC Warragamba for FRP
ANZG DGV
FRP (mg/L)
0 0.005 0.01 0.015 0.02
Scn00 Scn01 Scn13
Scenarios

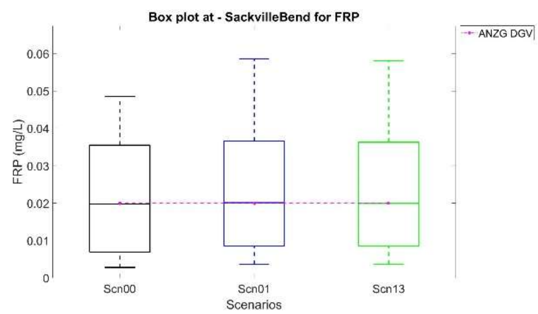

Box plot at - DS WarragambaRivulet for FRP
ANZG DGV
FRP (mg/L)
0 0.01 0.02 0.03 0.04 0.05 0.06
Scn00 Scn01 Scn13
Scenarios


Box plot at - DS 14 KM for FRP
ANZG DGV
FRP (mg/L)
0 0.01 0.02 0.03 0.04 0.05
Scn00 Scn01 Scn13
Scenarios


Box plot at - Upstream PenrithWeir for FRP
ANZG DGV
FRP (mg/L)
0 0.01 0.02 0.03 0.04 0.05
Scn00 Scn01 Scn13
Scenarios


Box plot at - DS PenrithWeir for FRP
ANZG DGV
FRP (mg/L)
0 0.005 0.01 0.015 0.02 0.025 0.03 0.035 0.04 0.045
Scn00 Scn01 Scn13
Scenarios


Box plot at - Downstream CattaiCk for FRP
ANZG DGV
FRP (mg/L)
0 0.01 0.02 0.03 0.04 0.05
Scn00 Scn01 Scn13
Scenarios


Box plot at - SackvilleBend for FRP
ANZG DGV
FRP (mg/L)
0 0.01 0.02 0.03 0.04 0.05 0.06
Scn00 Scn01 Scn13
Scenarios

Hawkesbury-Nepean WQRM

Total Chlorophyll-a (µg/L)

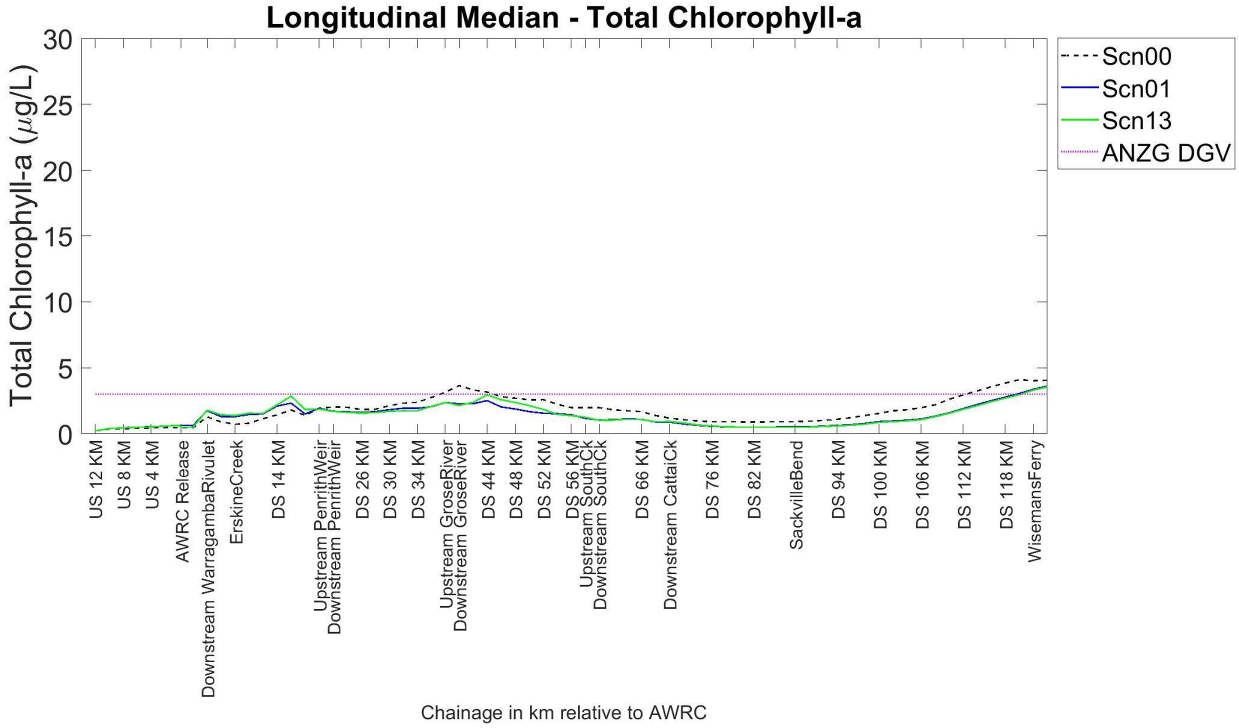
Scenario 13 - dry year

--> Longitudinal plots

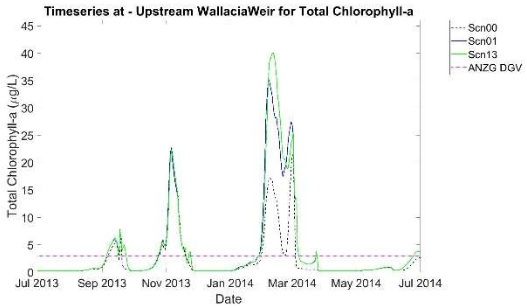
--> Timeseries plots at geographic markers and gauge locations

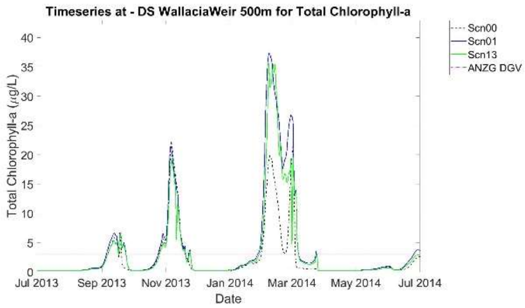
--> Box plots at geographic markers and gauge locations

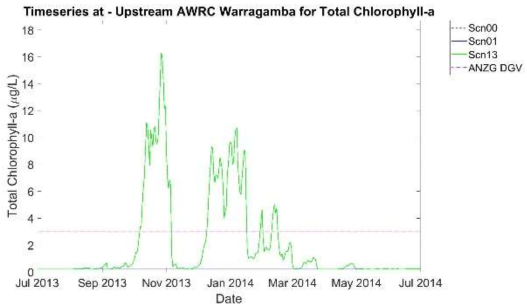
Longitudinal plot

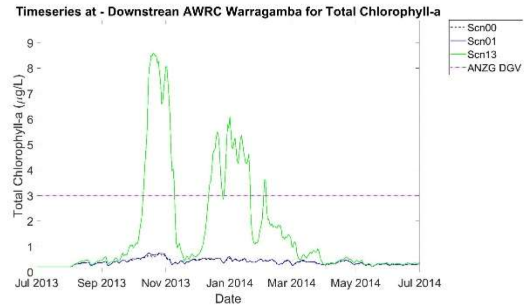


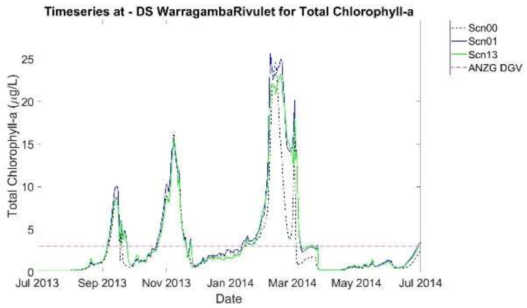
Timeseries plots

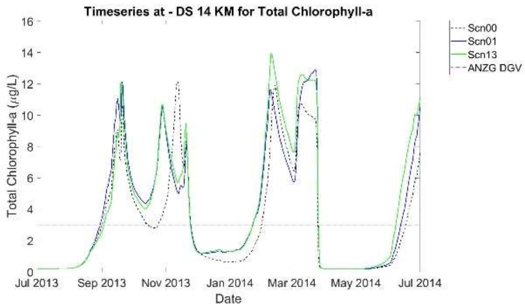


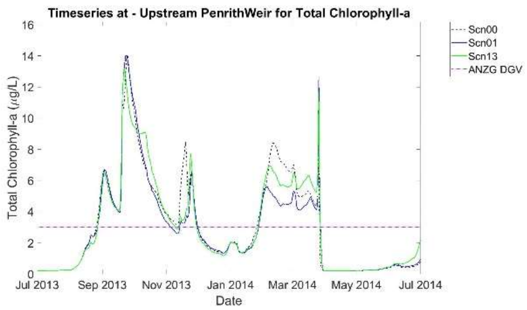


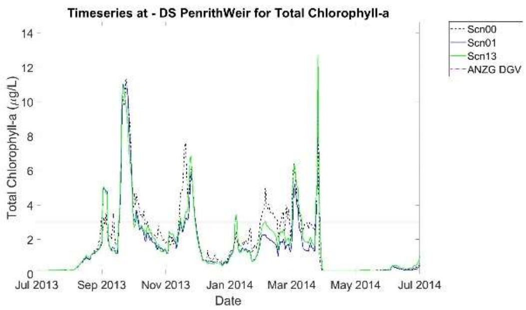


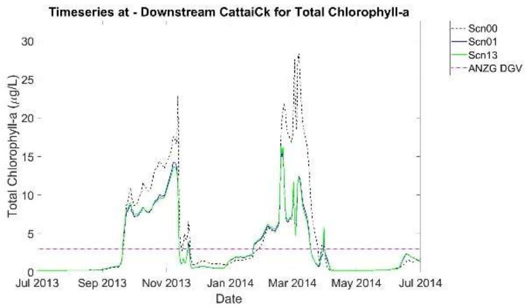


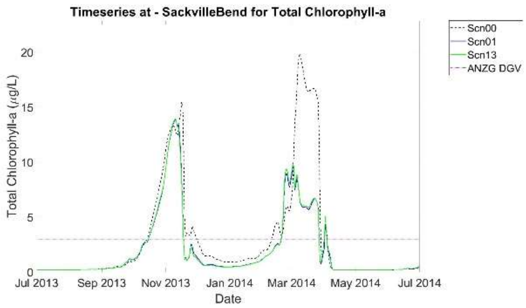




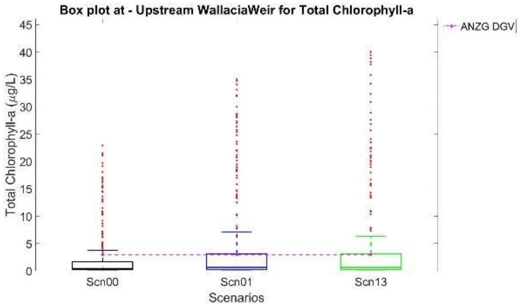


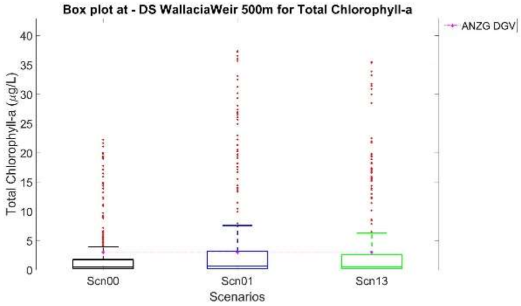


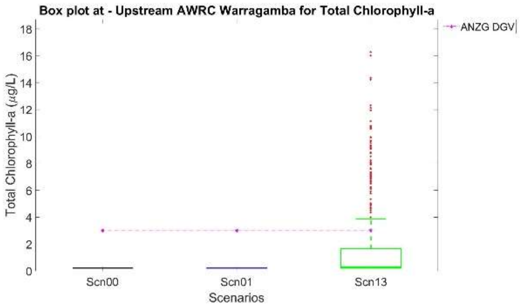


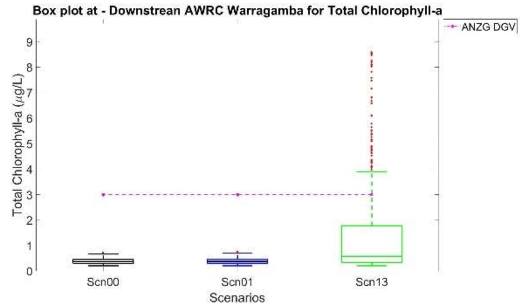


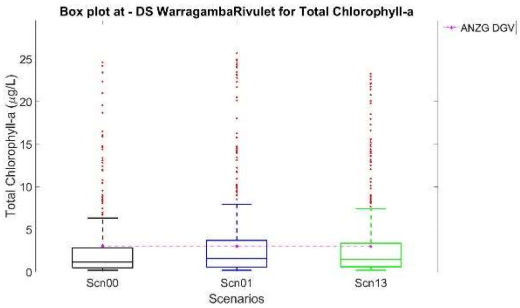
Box plots

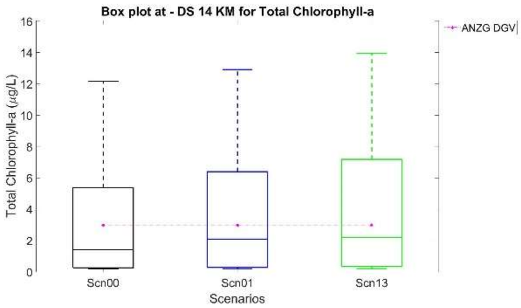

Box plot at - Upstream WallaciaWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios

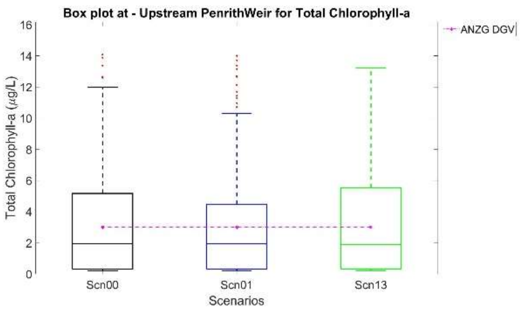

Box plot at - DS WallaciaWeir 500m for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios

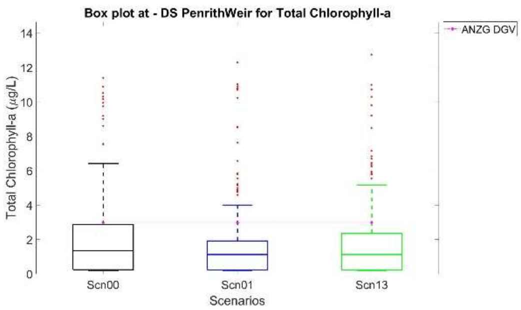

Box plot at - Upstream AWRC Warragamba for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios

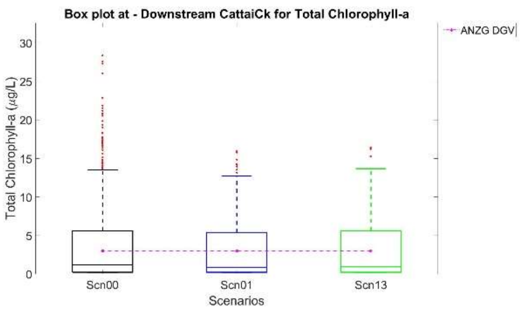

Box plot at - Downstrean AWRC Warragamba for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios

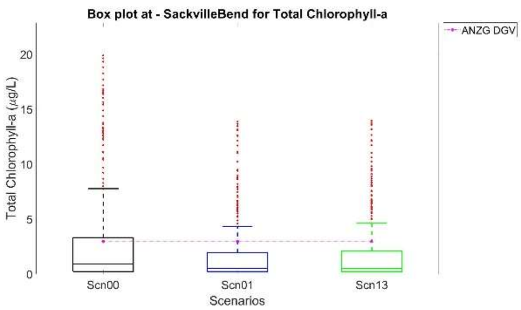

Box plot at - DS WarragambaRivulet for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (µg/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Salinity (g/L)

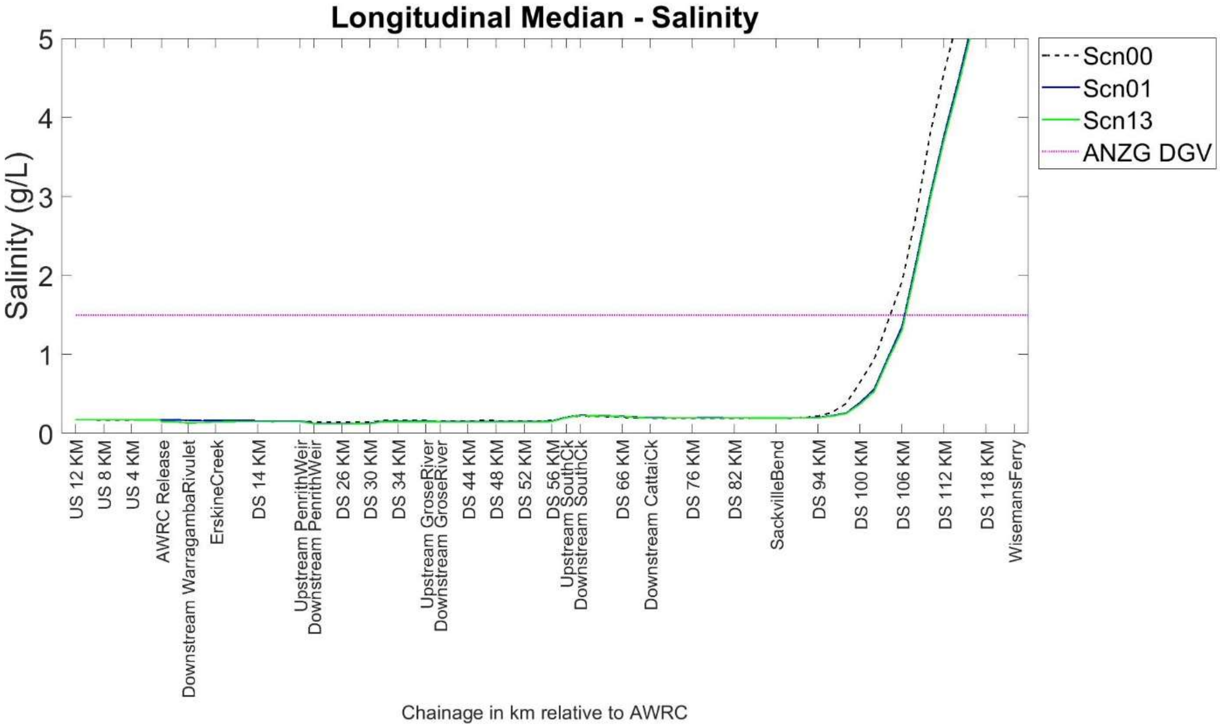
Scenario 13 - dry year

--> Longitudinal plots

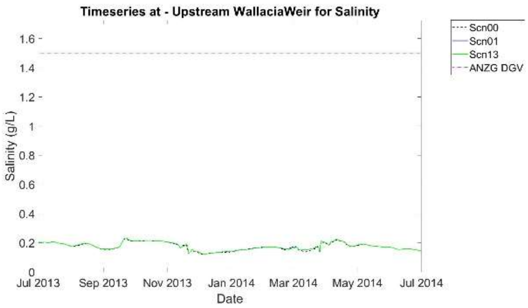
--> Timeseries plots at geographic markers and gauge locations

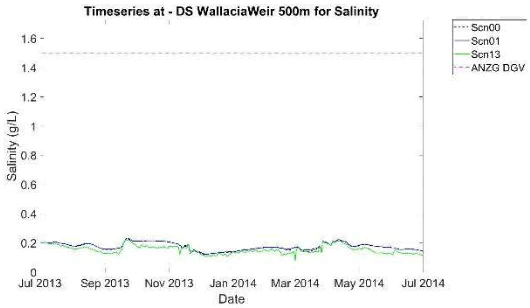
--> Box plots at geographic markers and gauge locations

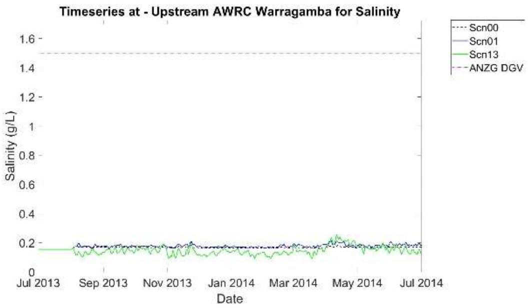
Longitudinal plot

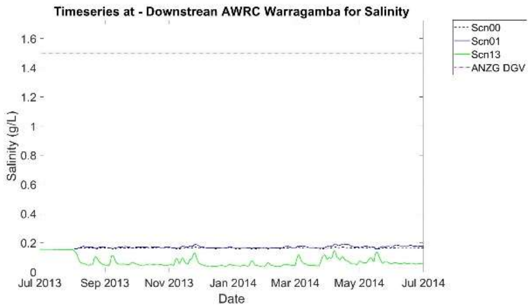


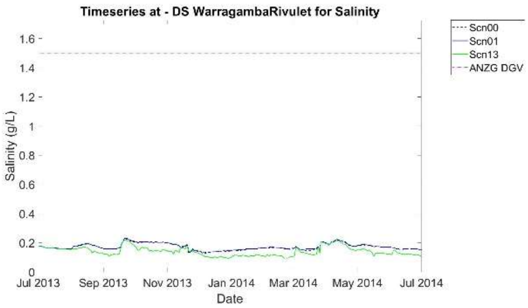
Timeseries plots

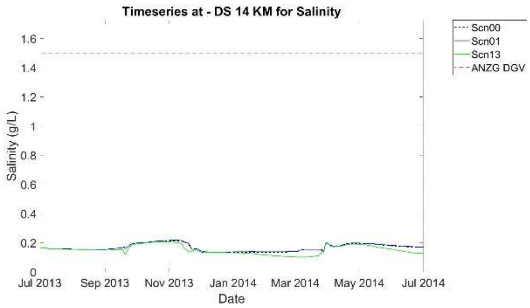


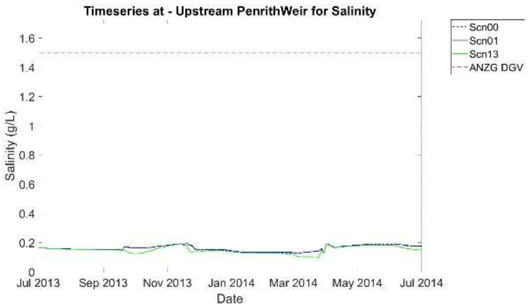


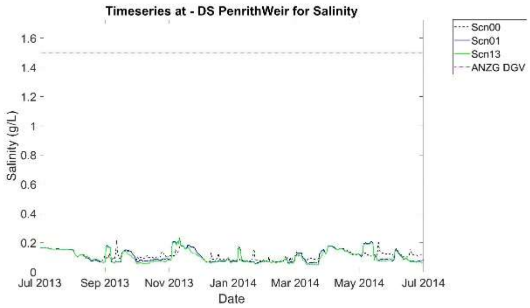


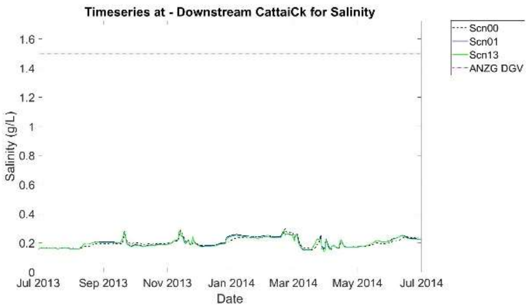


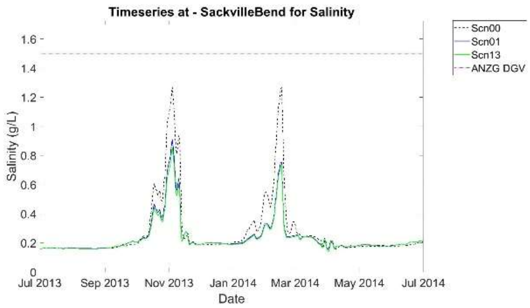




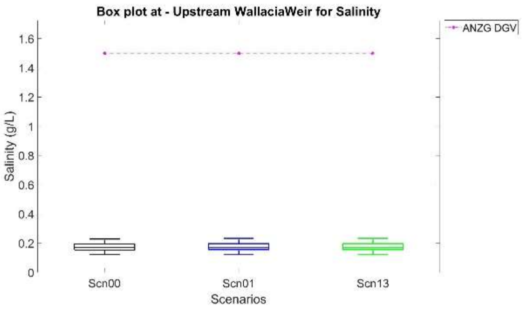


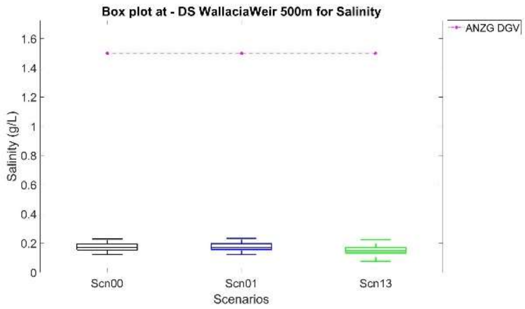


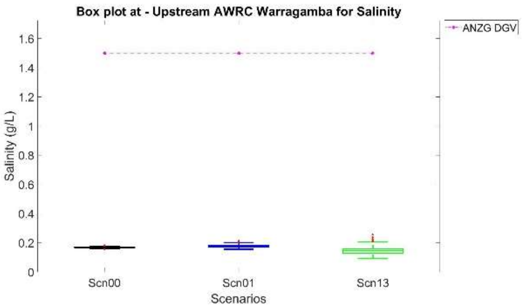


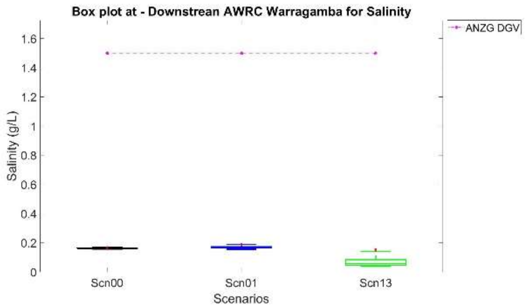


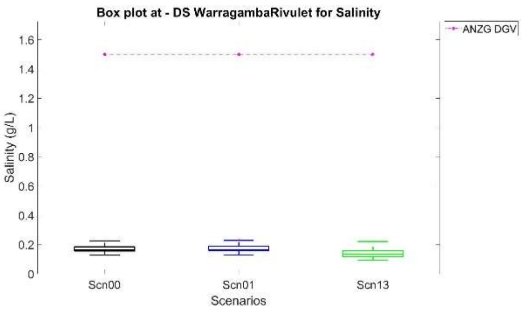
Box plots

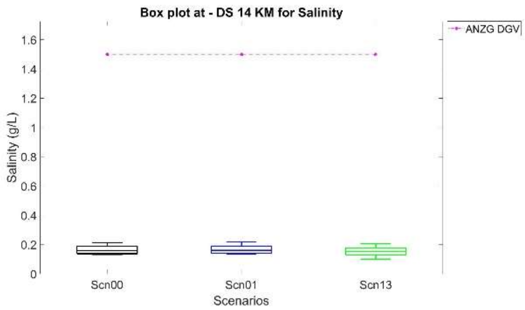

Box plot at - Upstream WallaciaWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

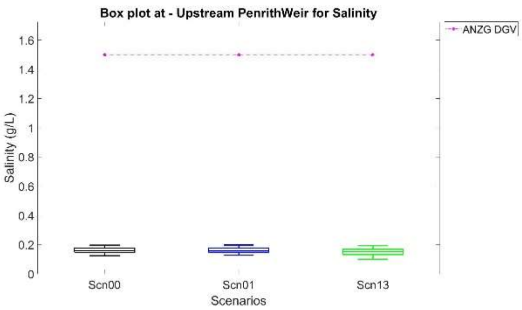

Box plot at - DS WallaciaWeir 500m for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

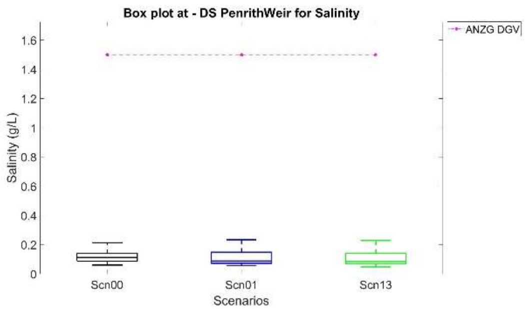

Box plot at - Upstream AWRC Warragamba for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

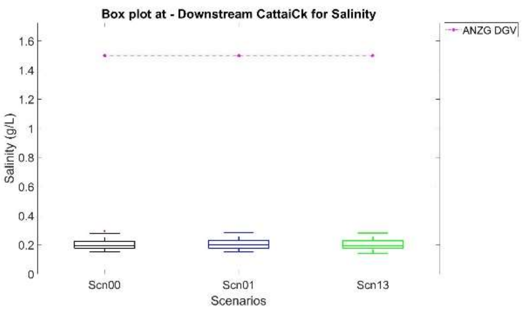

Box plot at - Downstrean AWRC Warragamba for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

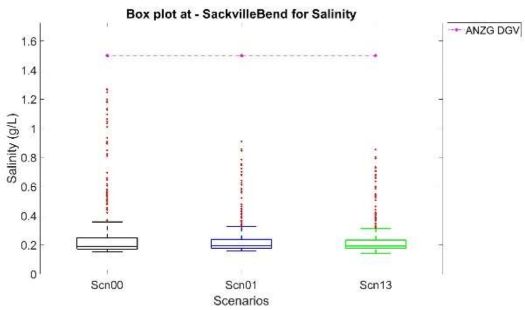

Box plot at - DS WarragambaRivulet for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

TSS (mg/L)

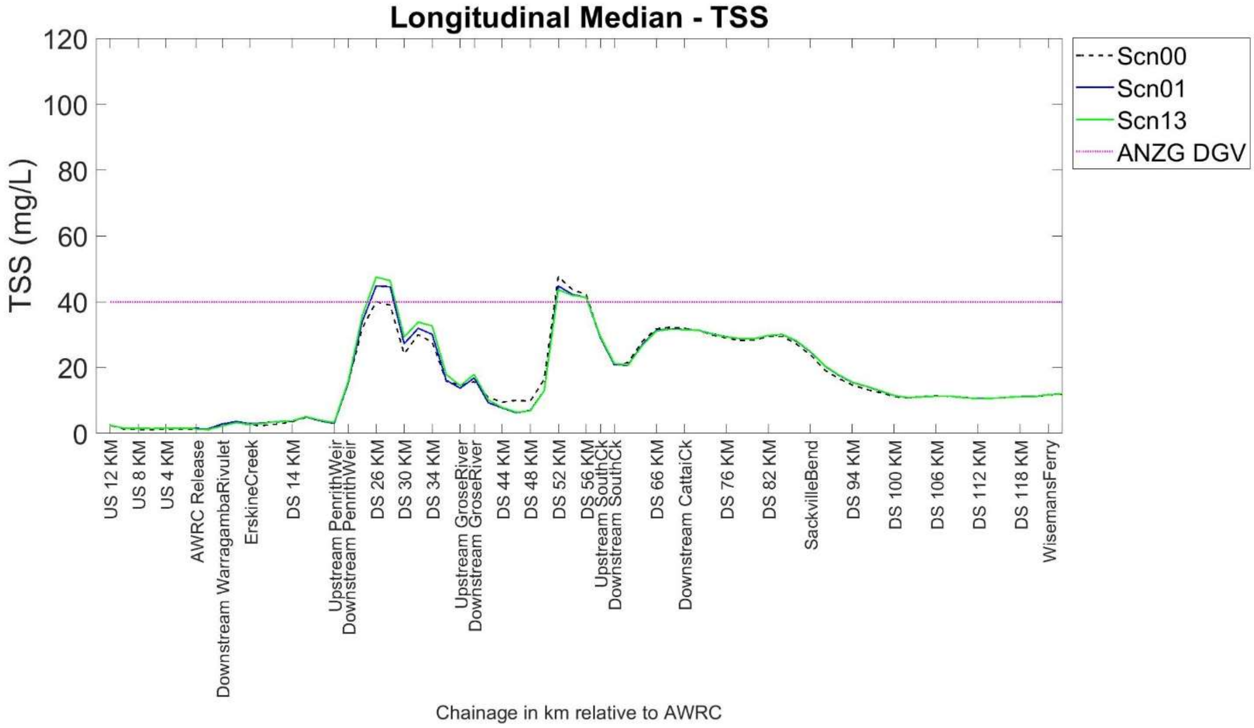
Scenario 13 - dry year

--> Longitudinal plots

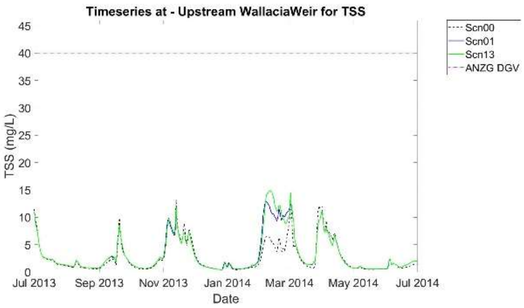
--> Timeseries plots at geographic markers and gauge locations

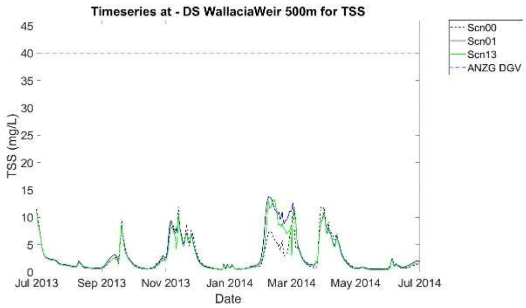
--> Box plots at geographic markers and gauge locations

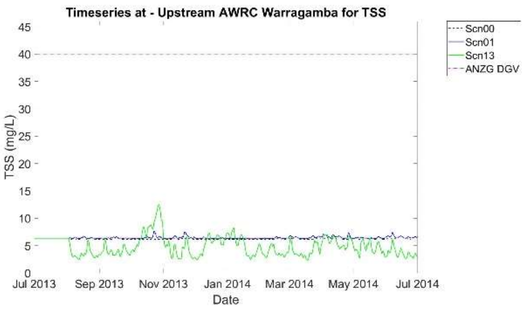
Longitudinal plot

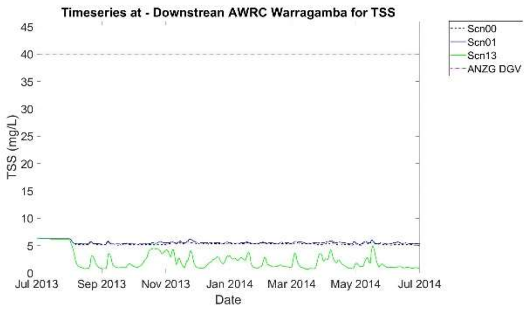


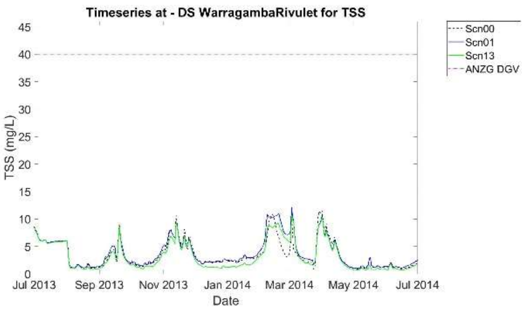
Timeseries plots

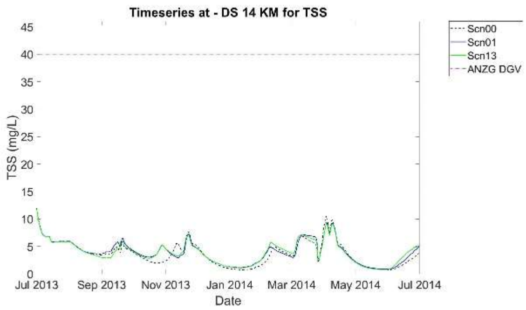


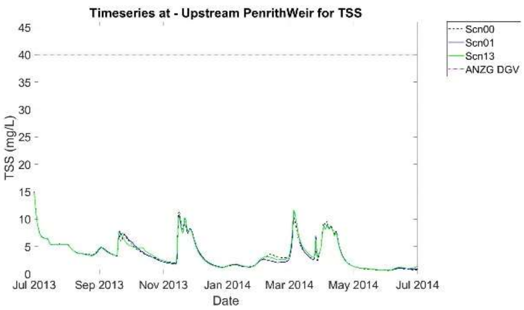


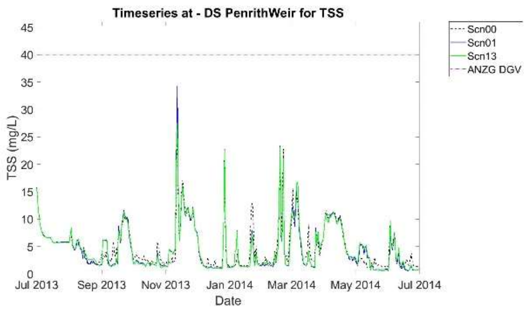


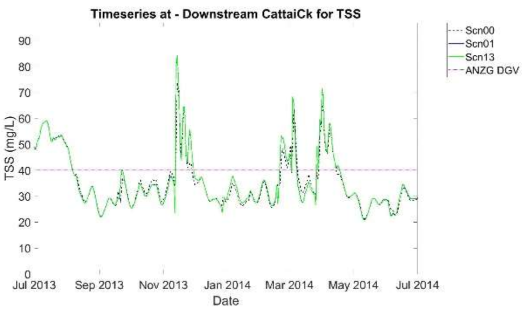


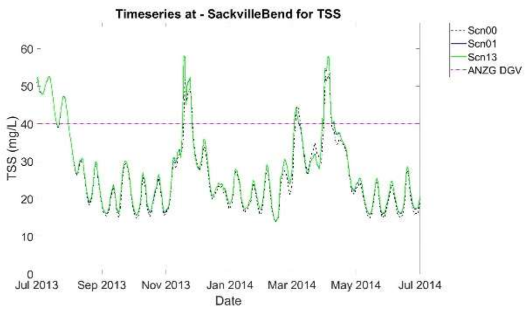




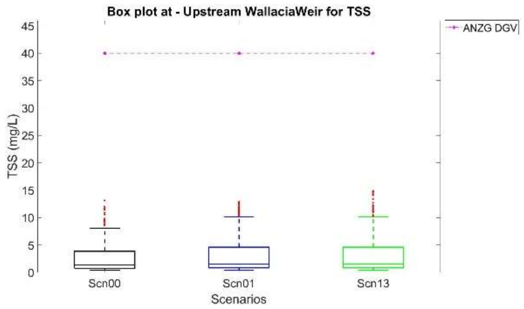


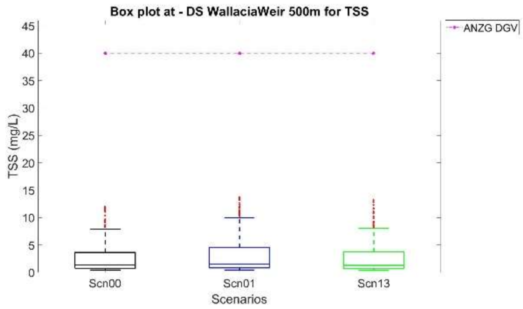


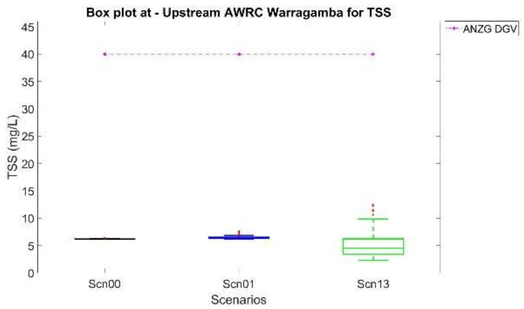


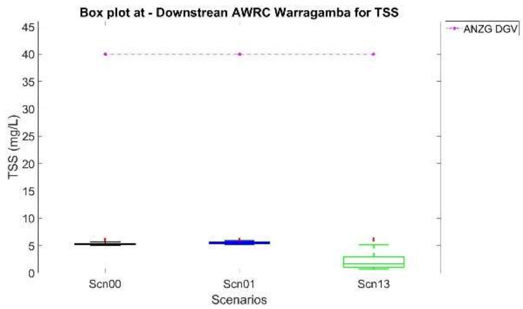


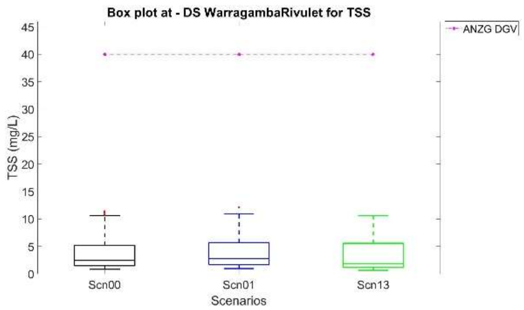
Box plots

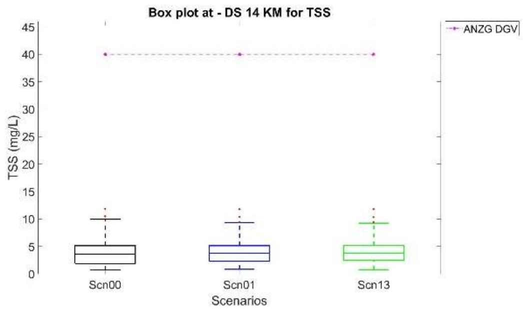

Box plot at - Upstream WallaciaWeir for TSS
ANZG DGV
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00
Scn01
Scn13
Scenarios

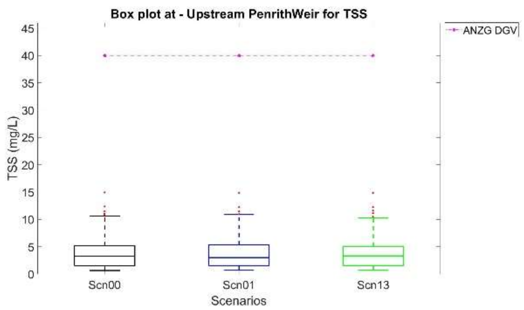

Box plot at - DS WallaciaWeir 500m for TSS
ANZG DGV
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00
Scn01
Scn13
Scenarios

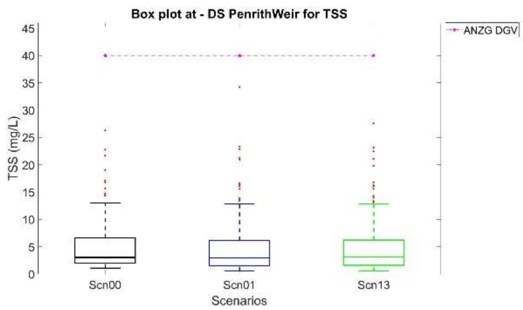

Box plot at - Upstream AWRC Warragamba for TSS
ANZG DGV
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00
Scn01
Scn13
Scenarios

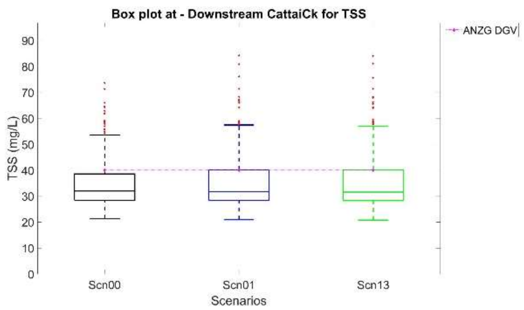

Box plot at - Downstrean AWRC Warragamba for TSS
ANZG DGV
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00
Scn01
Scn13
Scenarios

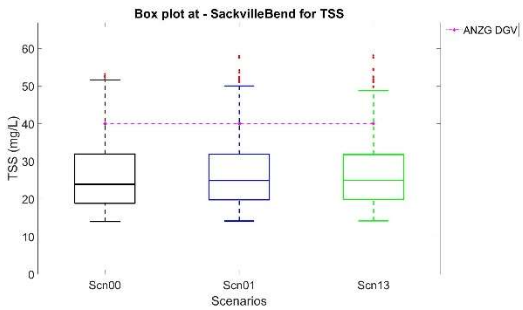

Box plot at - DS WarragambaRivulet for TSS
ANZG DGV
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for TSS
ANZG DGV
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for TSS
ANZG DGV
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for TSS
ANZG DGV
TSS (mg/L)
0 5 10 15 20 25 30 35 40 45
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for TSS
ANZG DGV
TSS (mg/L)
0 10 20 30 40 50 60 70 80 90
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for TSS
ANZG DGV
TSS (mg/L)
0 10 20 30 40 50 60
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Dissolved Oxygen (mg/L)

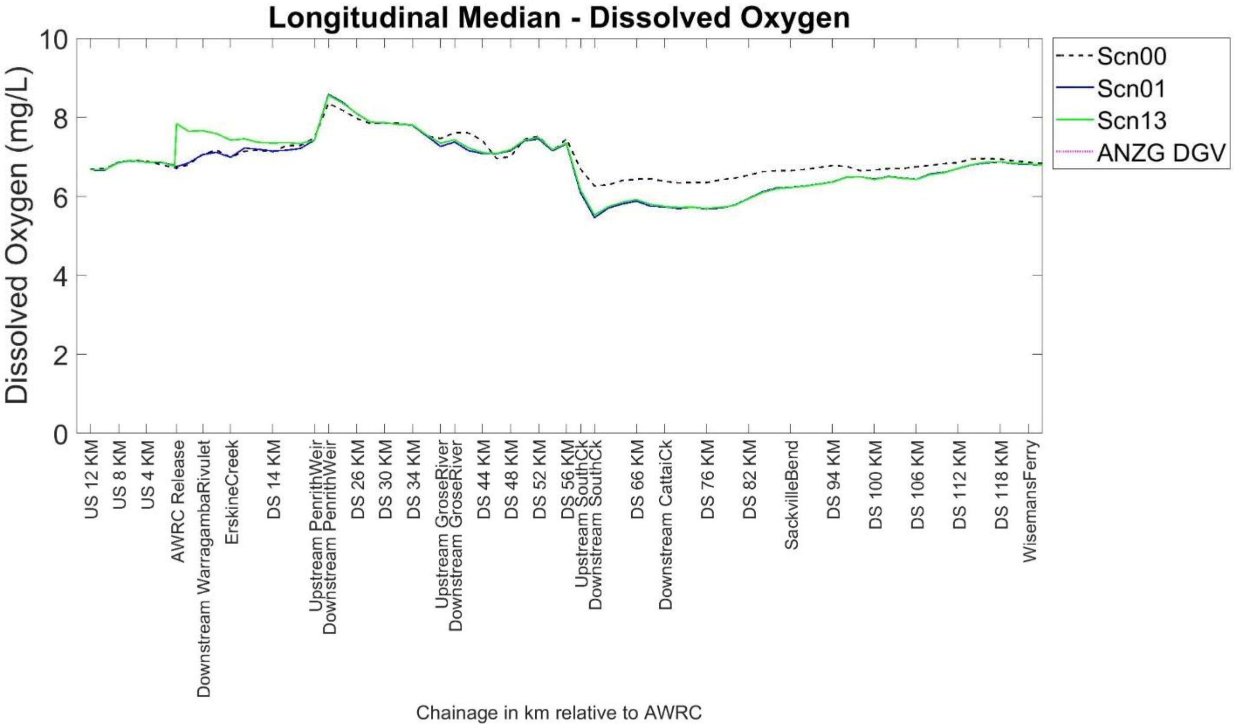
Scenario 13 - dry year

--> Longitudinal plots

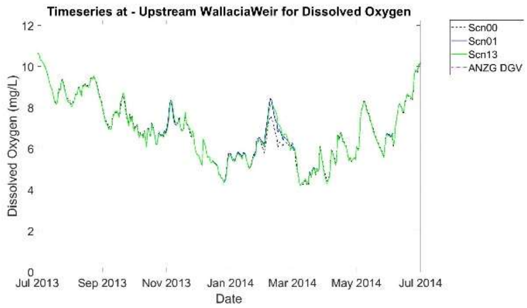
--> Timeseries plots at geographic markers and gauge locations

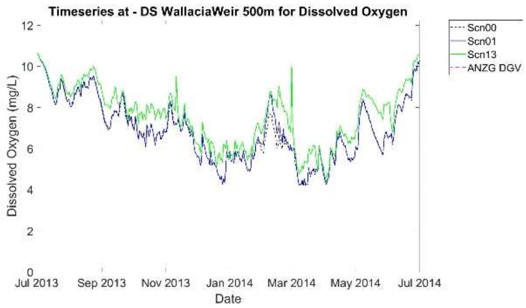
--> Box plots at geographic markers and gauge locations

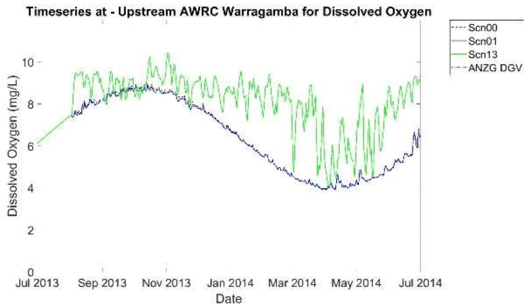
Longitudinal plot

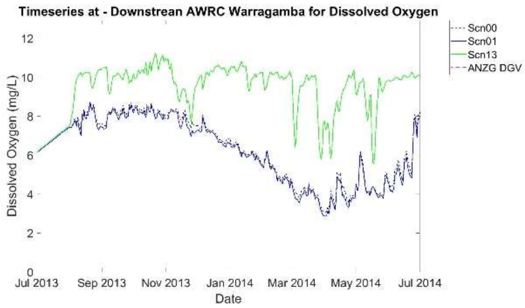


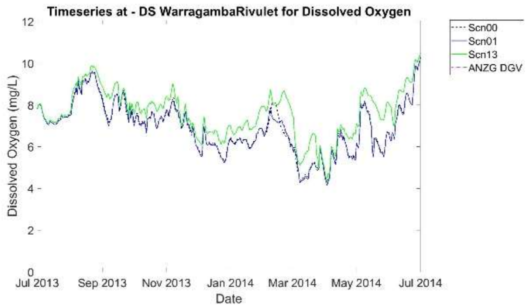
Timeseries plots

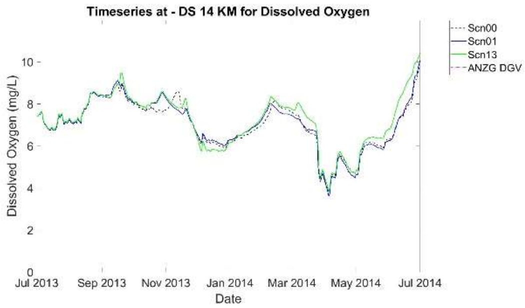


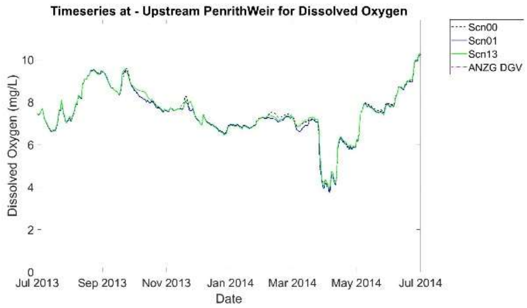


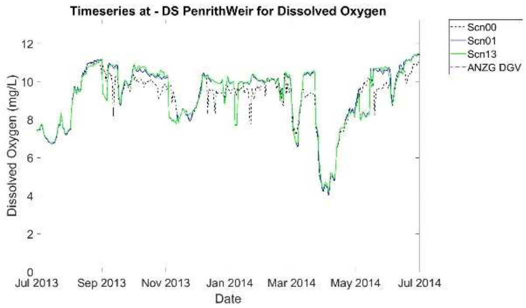


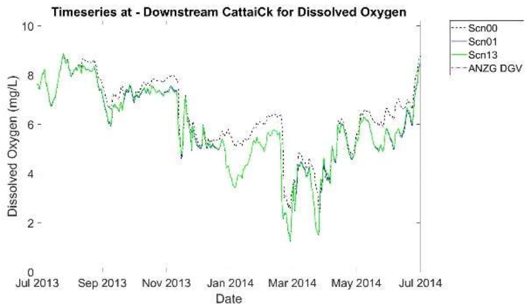


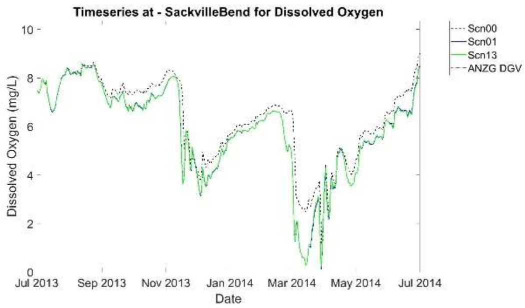




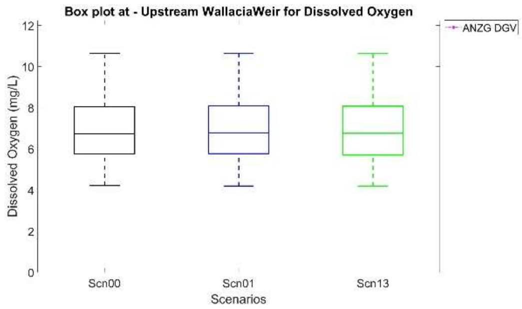


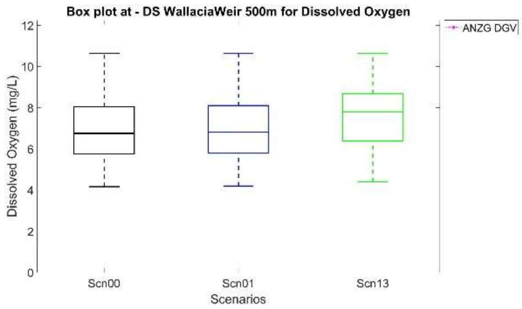


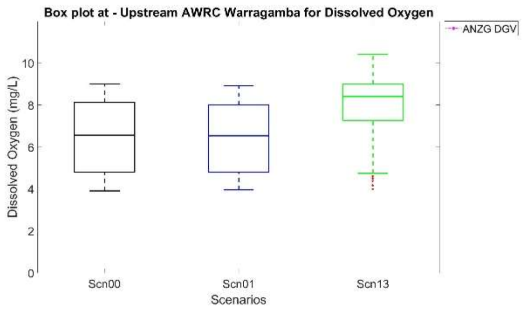


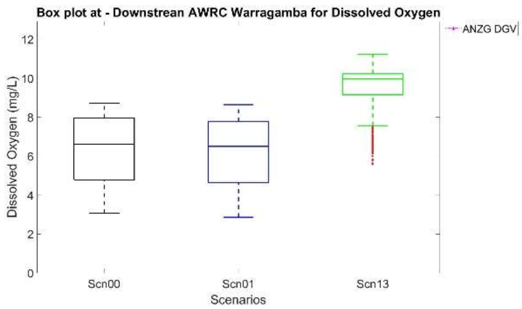


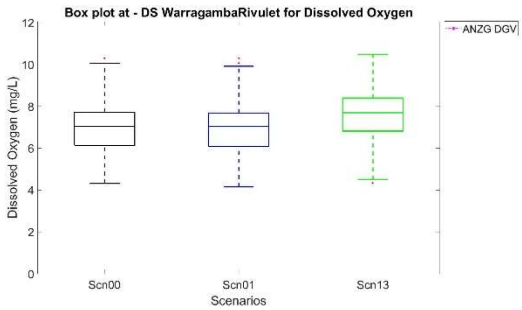
Box plots

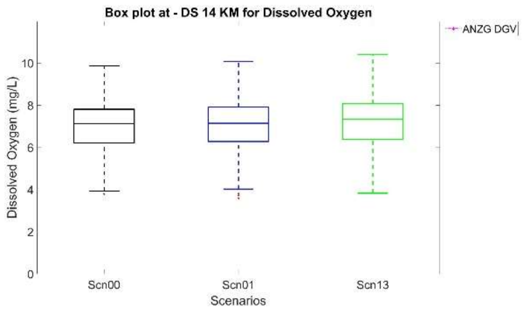

Box plot at - Upstream WallaciaWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

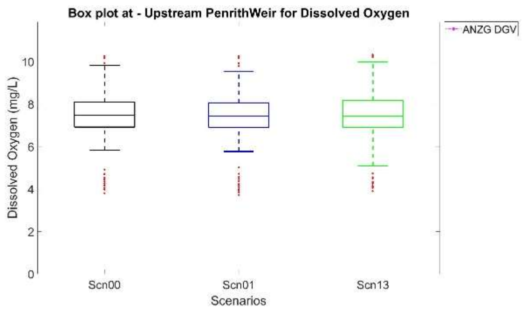

Box plot at - DS WallaciaWeir 500m for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

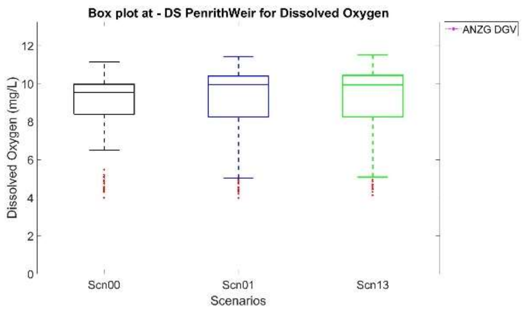

Box plot at - Upstream AWRC Warragamba for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

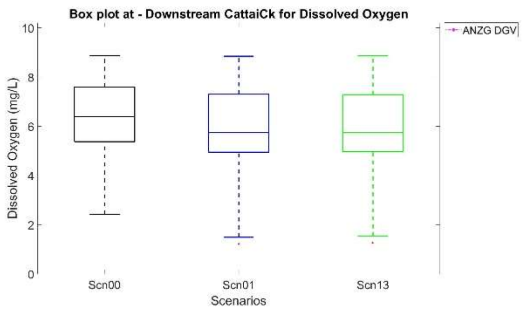

Box plot at - Downstrean AWRC Warragamba for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

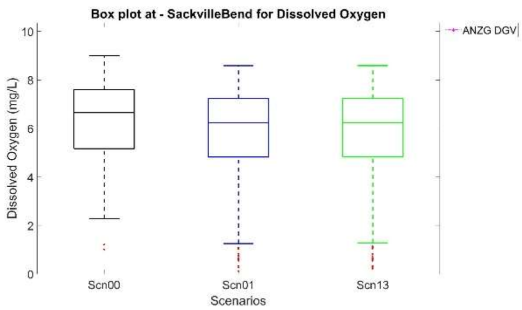

Box plot at - DS WarragambaRivulet for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Dissolved Oxygen Saturation (%)

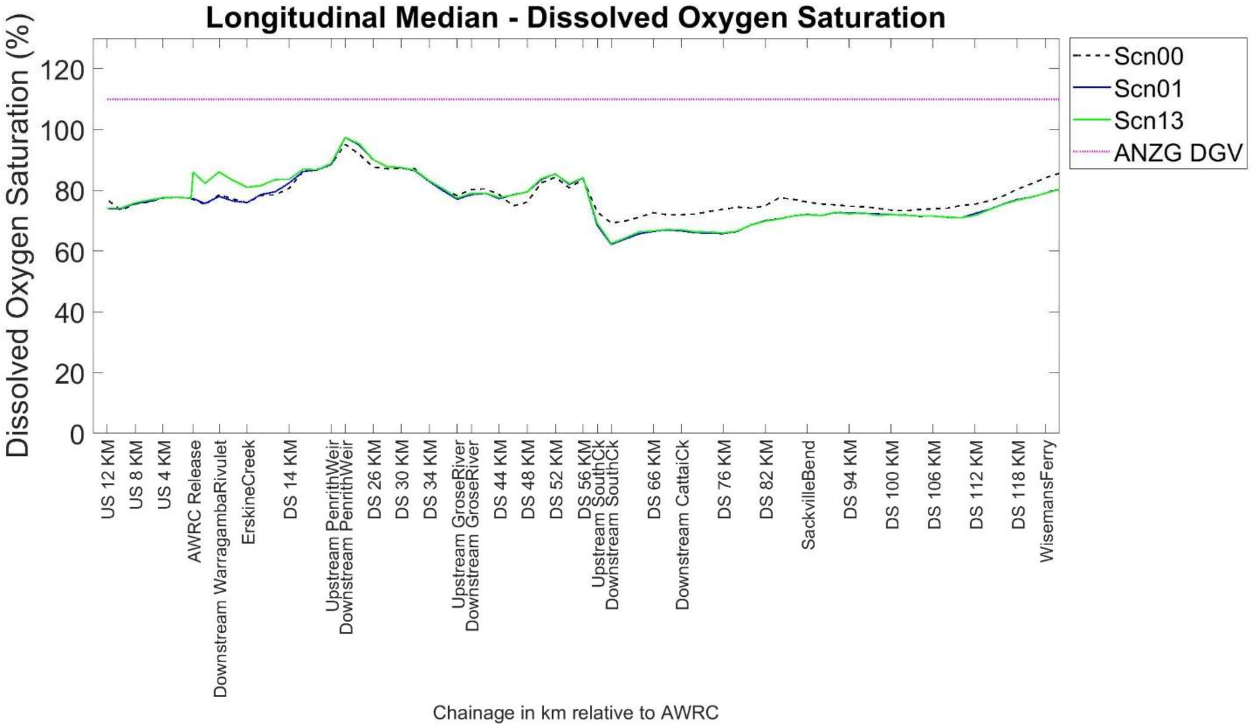
Scenario 13 - dry year

--> Longitudinal plots

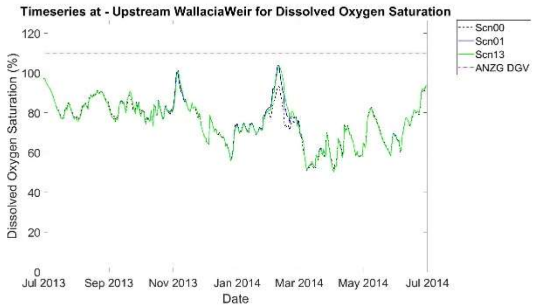
--> Timeseries plots at geographic markers and gauge locations

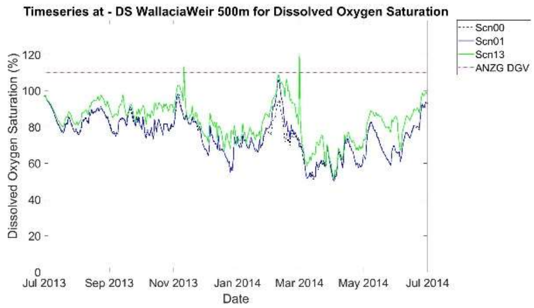
--> Box plots at geographic markers and gauge locations

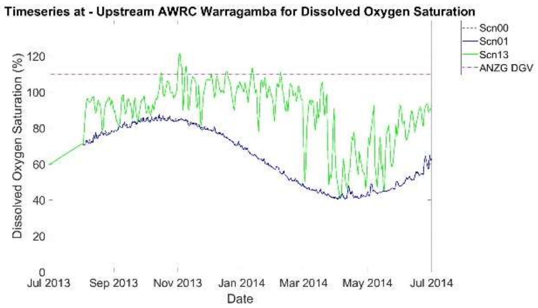
Longitudinal plot

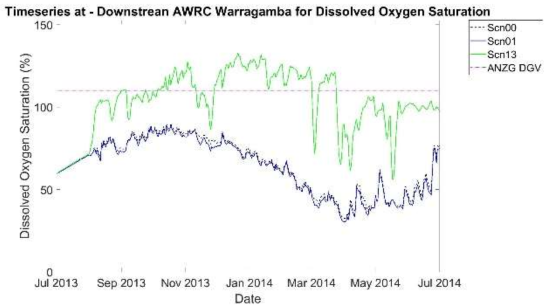


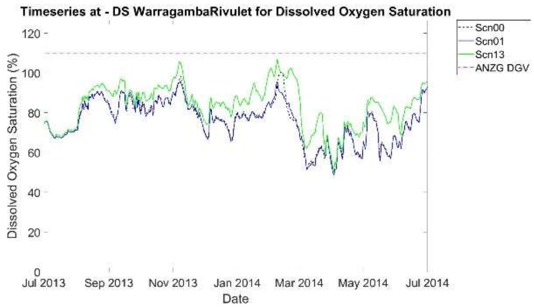
Timeseries plots

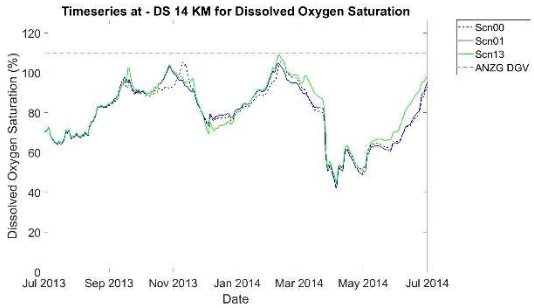


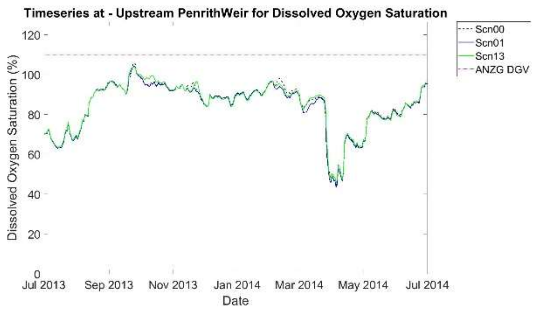


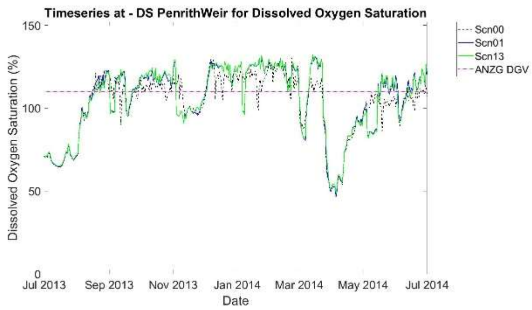


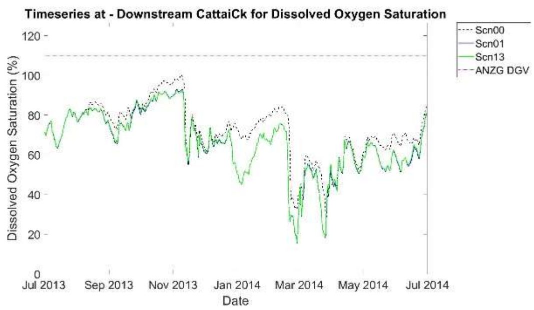


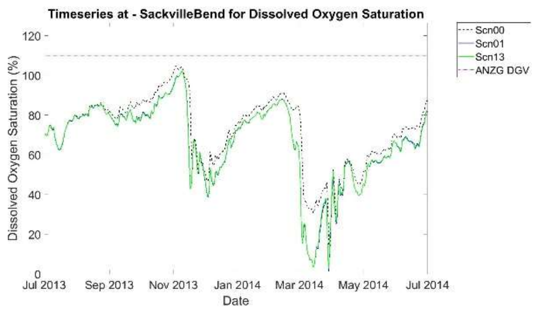




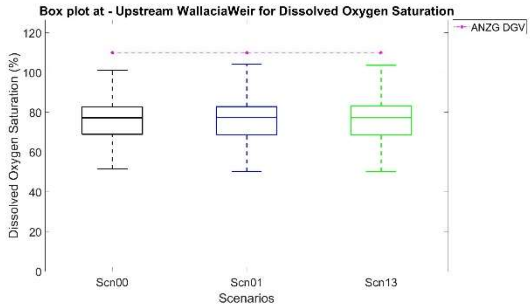


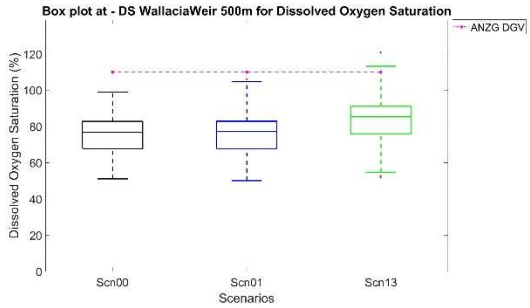


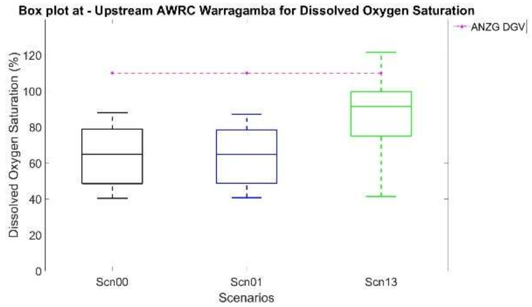


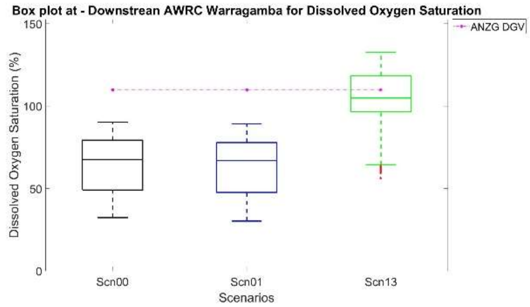


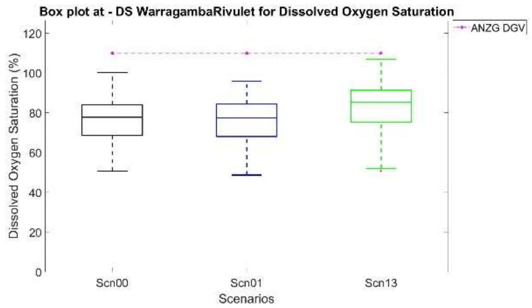
Box plots

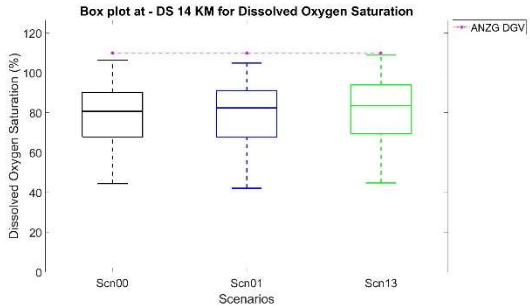

Box plot at - Upstream WallaciaWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios

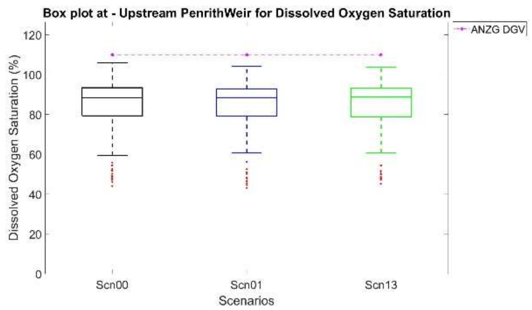

Box plot at - DS WallaciaWeir 500m for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios

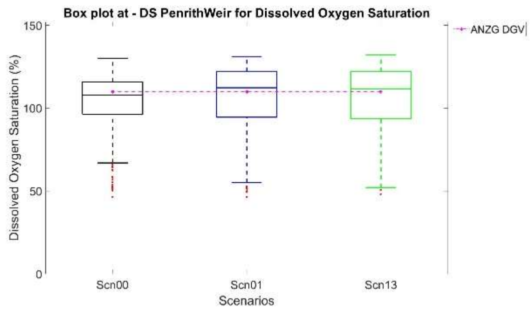

Box plot at - Upstream AWRC Warragamba for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios

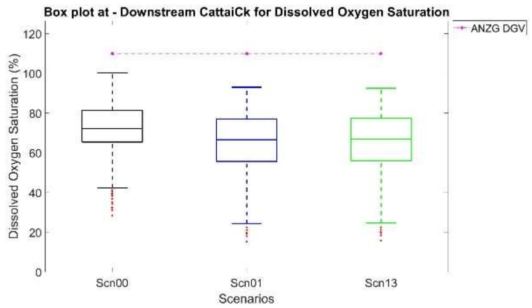

Box plot at - Downstrean AWRC Warragamba for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios

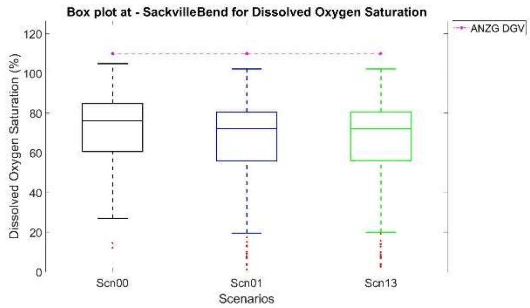

Box plot at - DS WarragambaRivulet for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Ecoli (cfu/100mL)

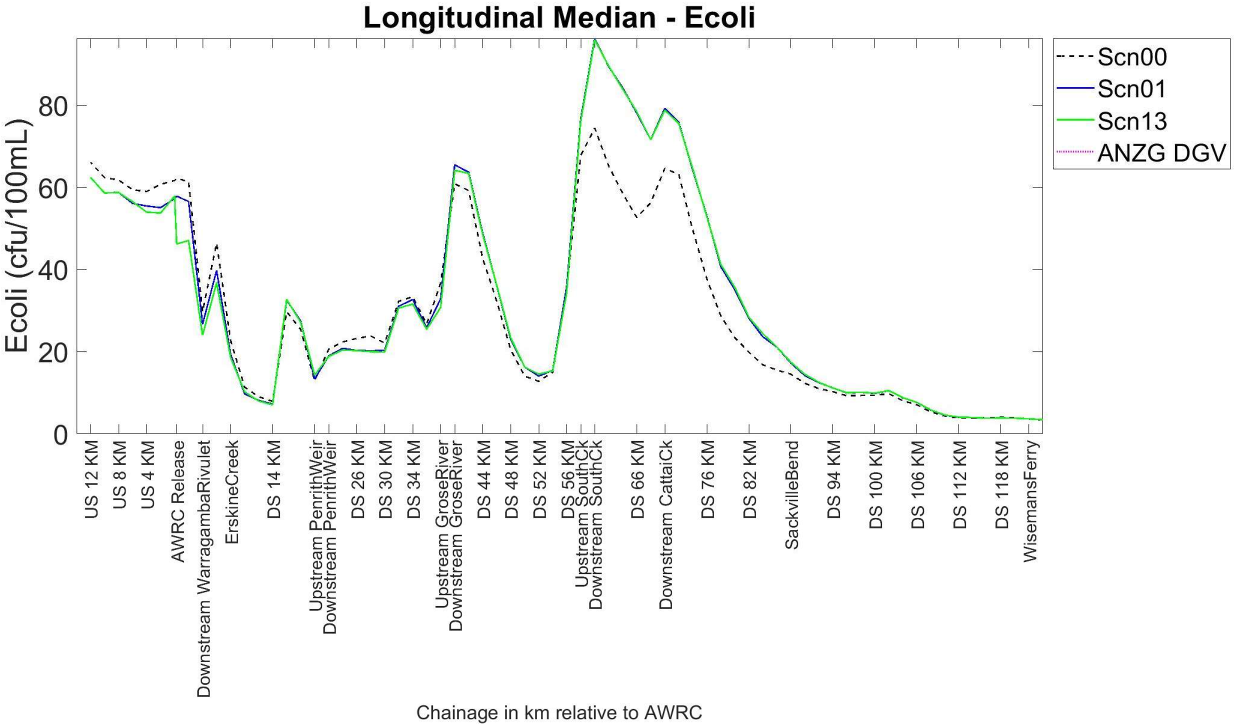
Scenario 13 - dry year

--> Longitudinal plots

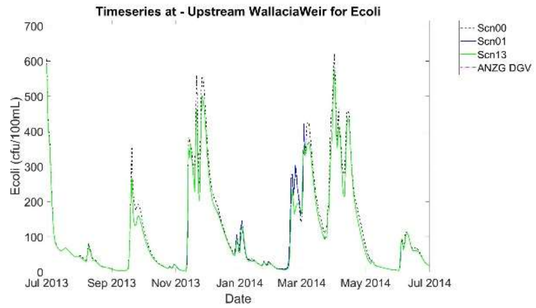
--> Timeseries plots at geographic markers and gauge locations

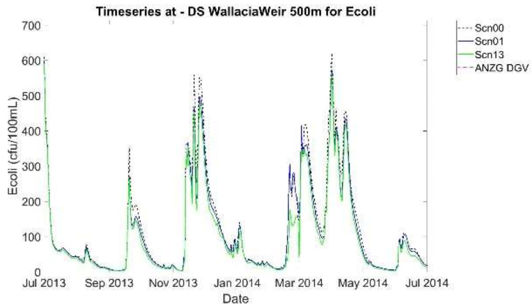
--> Box plots at geographic markers and gauge locations

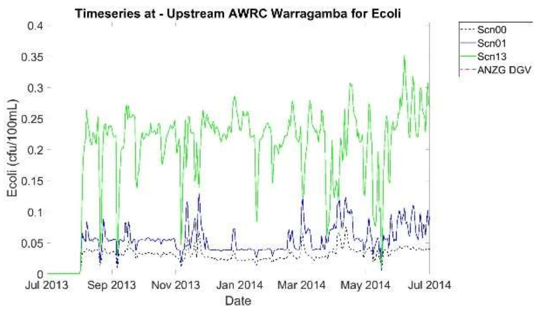
Longitudinal plot

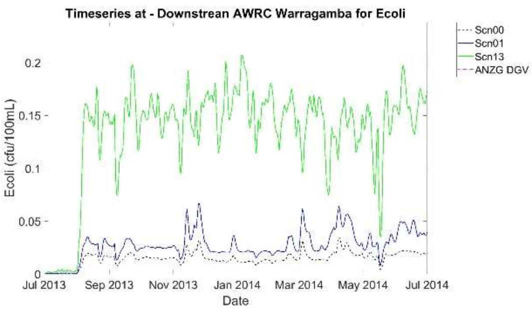


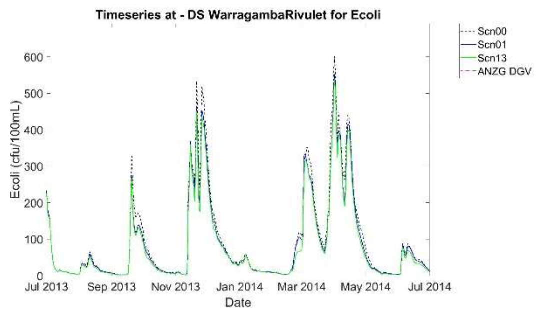
Timeseries plots

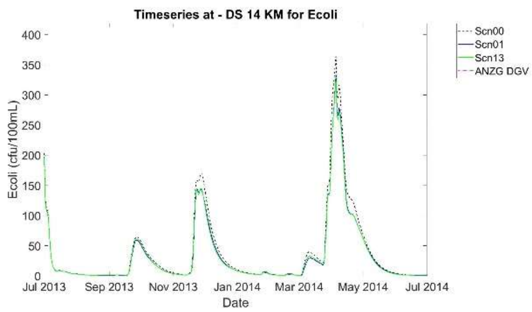


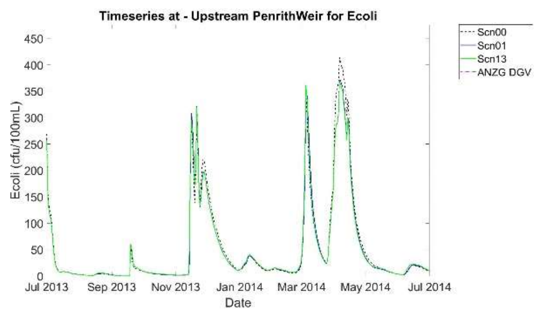


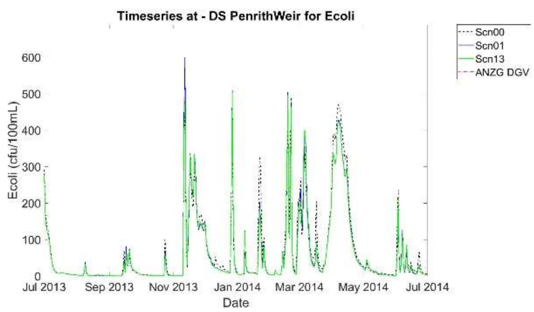


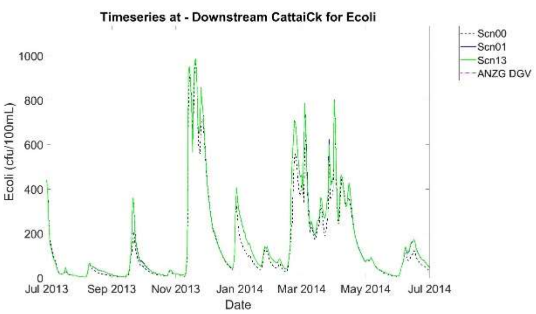


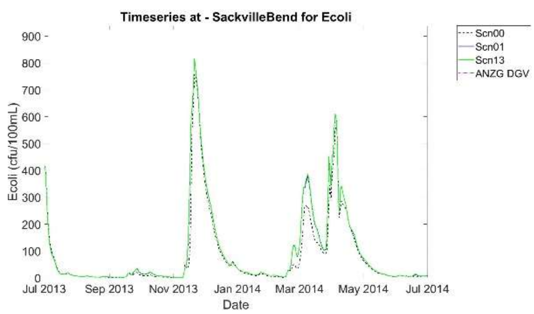




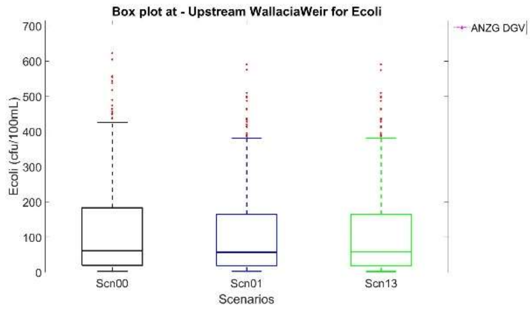


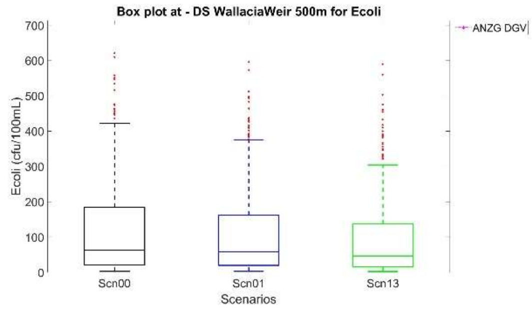


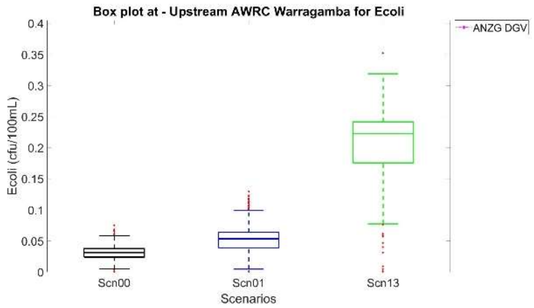


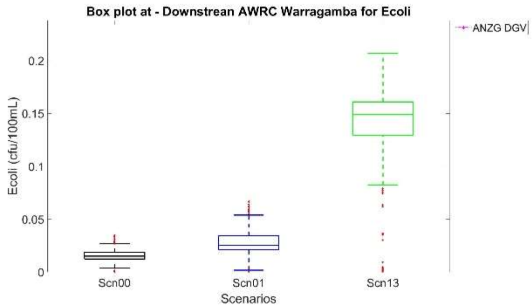


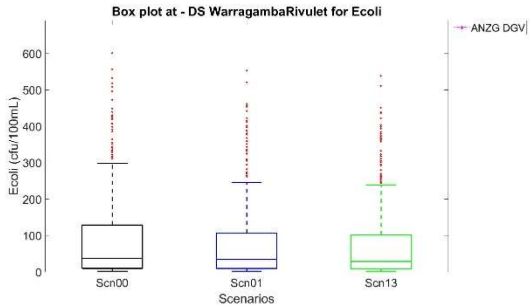
Box plots

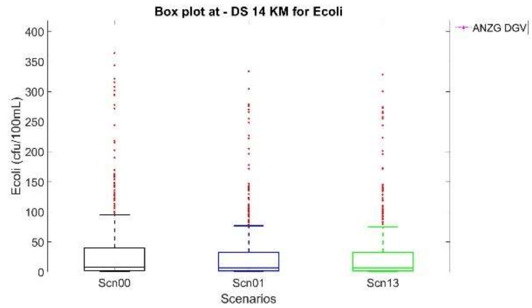

Box plot at - Upstream WallaciaWeir for Ecoli
Ecoli (cfu/100mL)
700
600
500
400
300
200
100
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

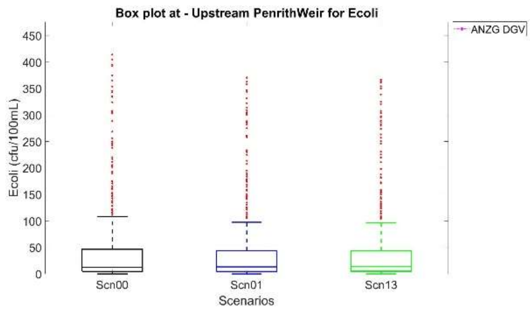

Box plot at - DS WallaciaWeir 500m for Ecoli
Ecoli (cfu/100mL)
700
600
500
400
300
200
100
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

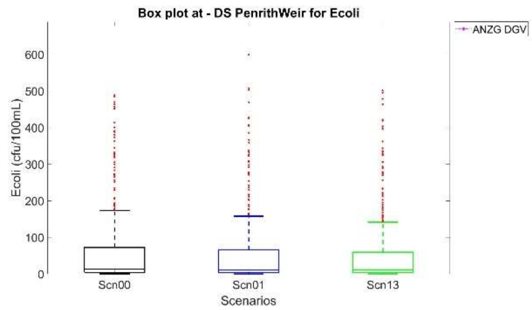

Box plot at - Upstream AWRC Warragamba for Ecoli
Ecoli (cfu/100mL)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

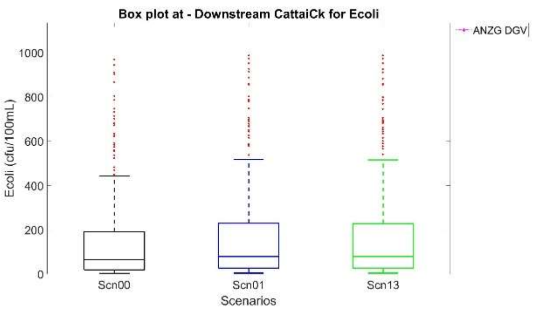

Box plot at - Downstrean AWRC Warragamba for Ecoli
Ecoli (cfu/100mL)
0.2
0.15
0.1
0.05
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

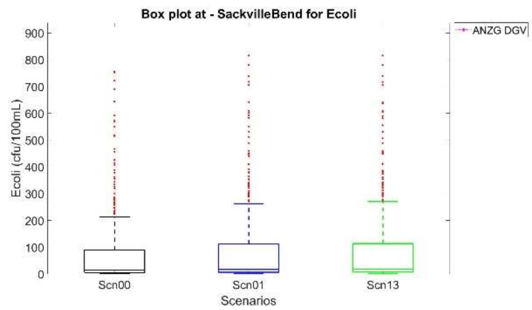

Box plot at - DS WarragambaRivulet for Ecoli
Ecoli (cfu/100mL)
600
500
400
300
200
100
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS 14 KM for Ecoli
Ecoli (cfu/100mL)
400
350
300
250
200
150
100
50
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Upstream PenrithWeir for Ecoli
Ecoli (cfu/100mL)
450
400
350
300
250
200
150
100
50
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS PenrithWeir for Ecoli
Ecoli (cfu/100mL)
600
500
400
300
200
100
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Downstream CattaiCk for Ecoli
Ecoli (cfu/100mL)
1000
800
600
400
200
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - SackvilleBend for Ecoli
Ecoli (cfu/100mL)
900
800
700
600
500
400
300
200
100
0
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

Enterococci (cfu/100mL)

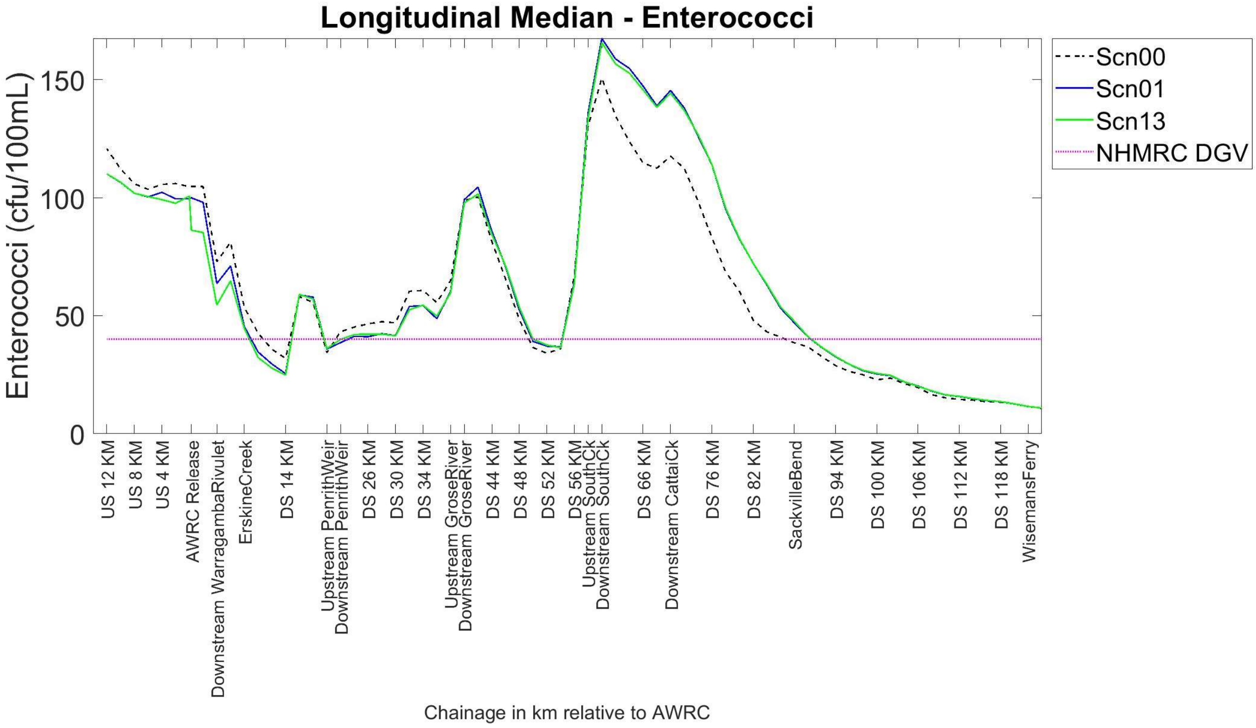
Scenario 13 - dry year

--> Longitudinal plots

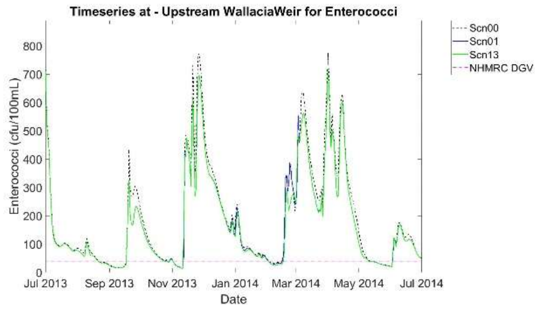
--> Timeseries plots at geographic markers and gauge locations

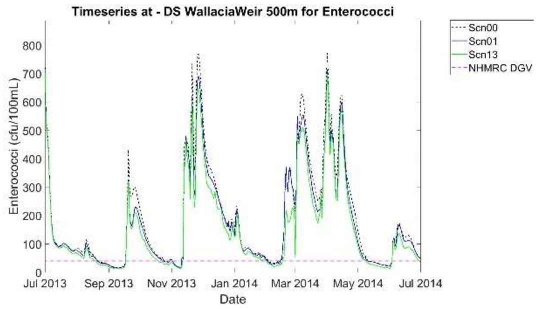
--> Box plots at geographic markers and gauge locations

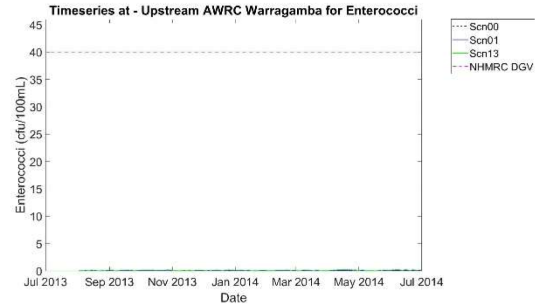
Longitudinal plot

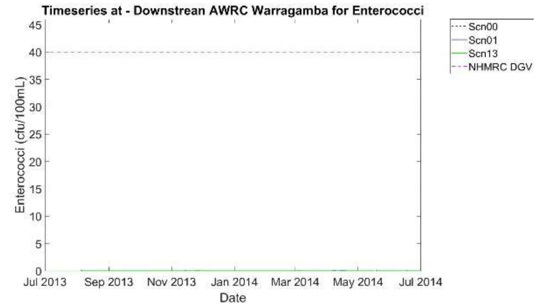


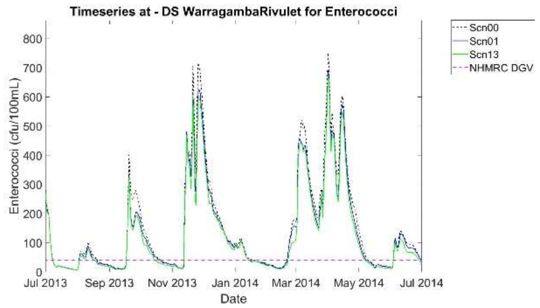
Timeseries plots

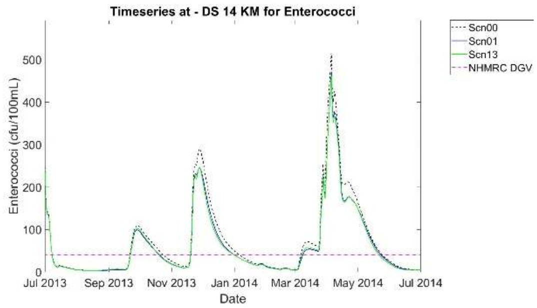


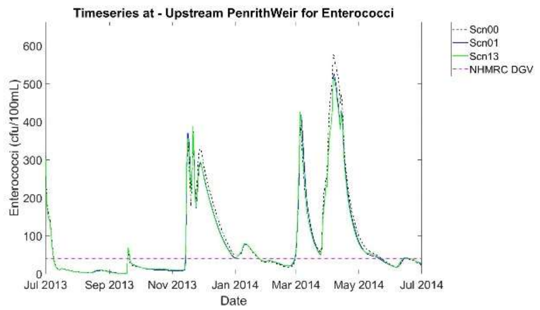


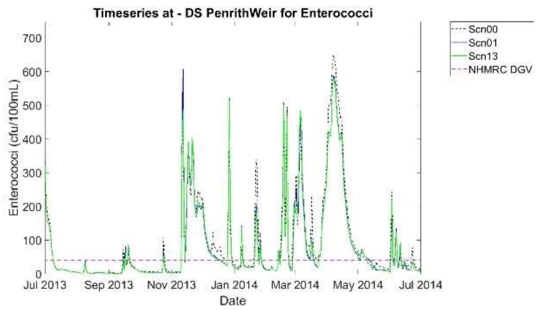


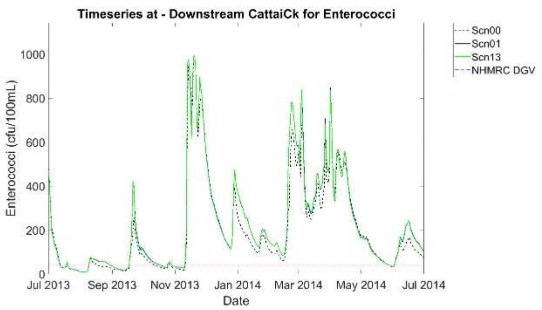


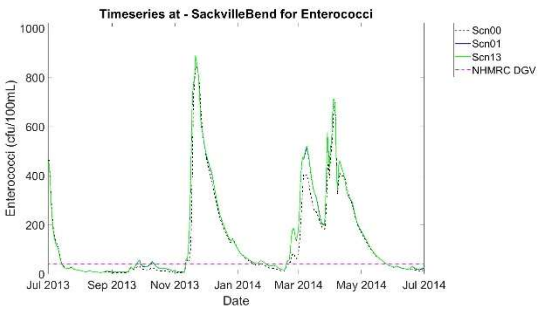




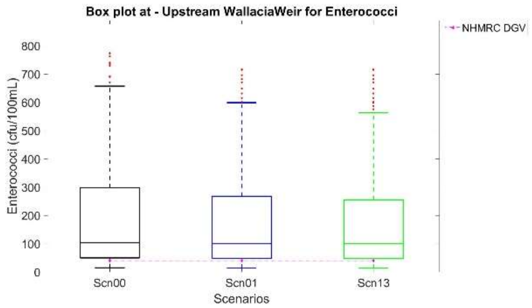


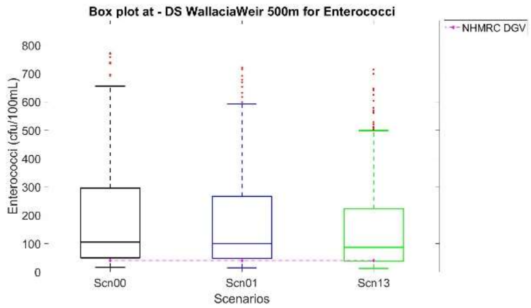


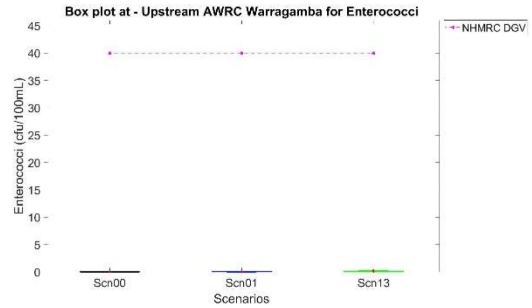


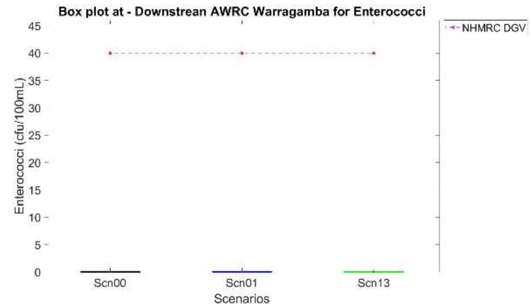


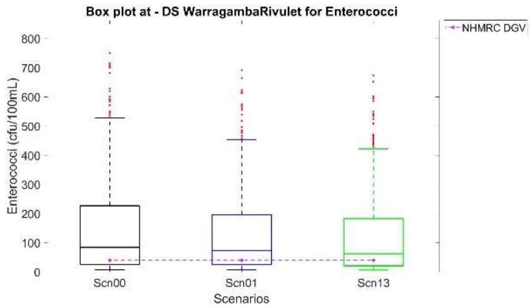
Box plots

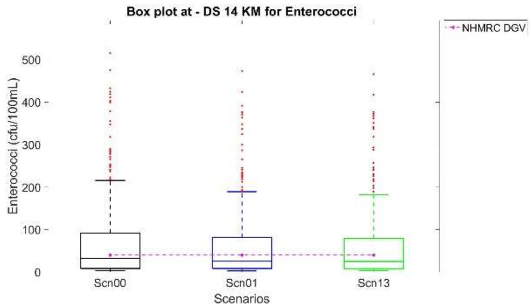

Box plot at - Upstream WallaciaWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

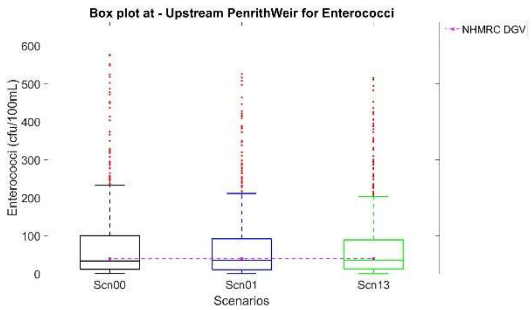

Box plot at - DS WallaciaWeir 500m for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

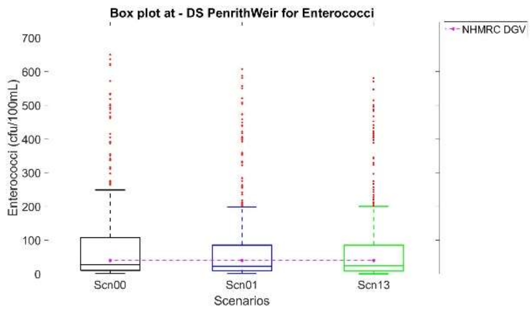

Box plot at - Upstream AWRC Warragamba for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

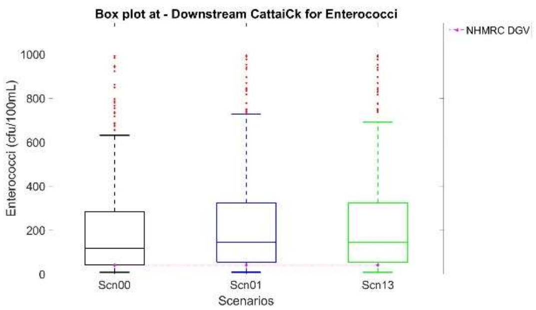

Box plot at - Downstrean AWRC Warragamba for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

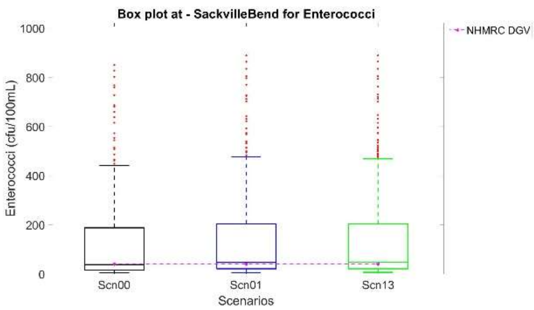

Box plot at - DS WarragambaRivulet for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

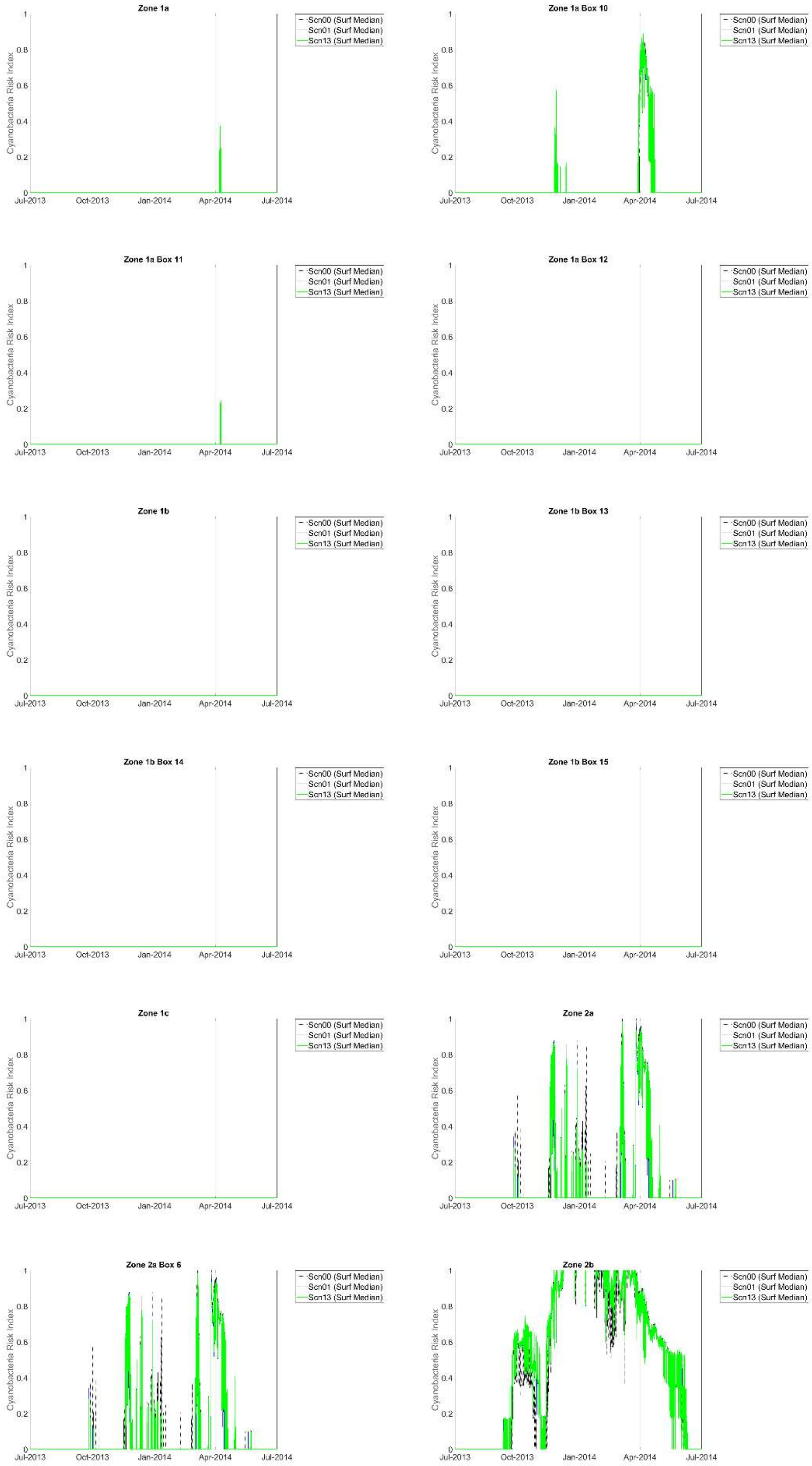
Hawkesbury-Nepean WQRM

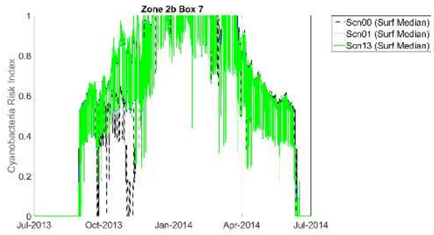
Cyano ()

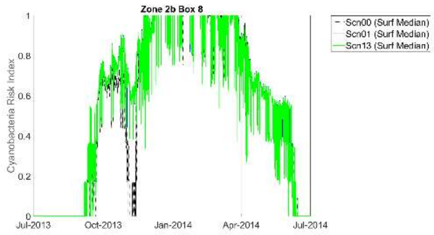
Scenario 13 - dry year

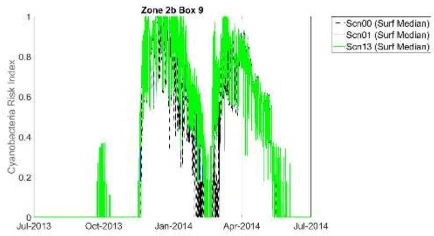
--> Timeseries plots for reaches

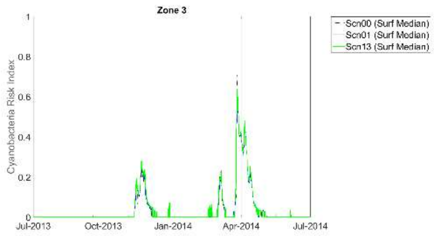
Timeseries plots

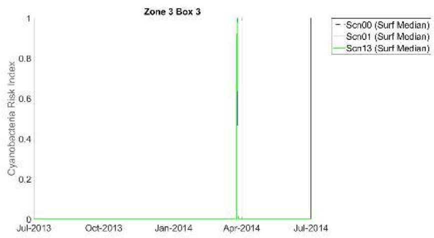


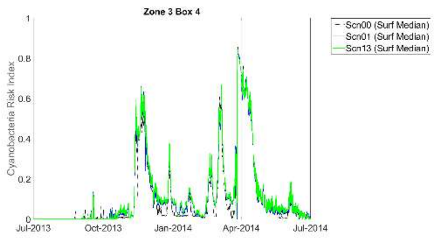

Zone 2b Box 7
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)

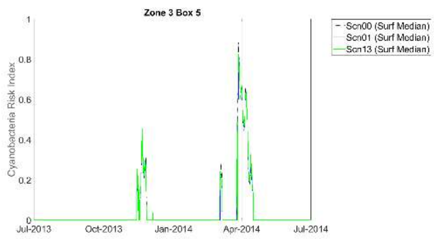

Zone 2b Box 8
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)

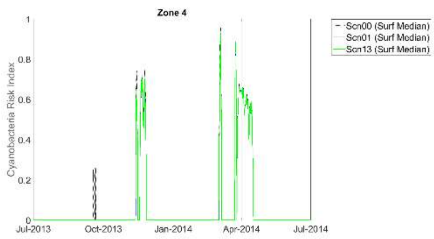

Zone 2b Box 9
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)

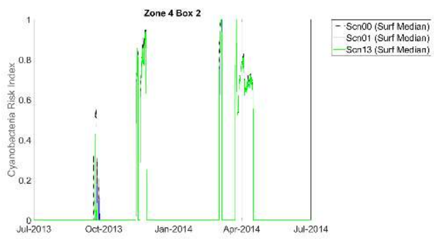

Zone 3
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)

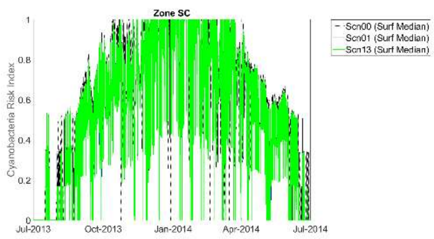

Zone 3 Box 3
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)


Zone 3 Box 4
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)


Zone 3 Box 5
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)


Zone 4
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)


Zone 4 Box 2
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)


Zone SC
Cyanobacteria Risk Index
Jul-2013
Oct-2013
Jan-2014
Apr-2014
Jul-2014
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)

Hawkesbury-Nepean WQRM

Total Nitrogen (mg/L)

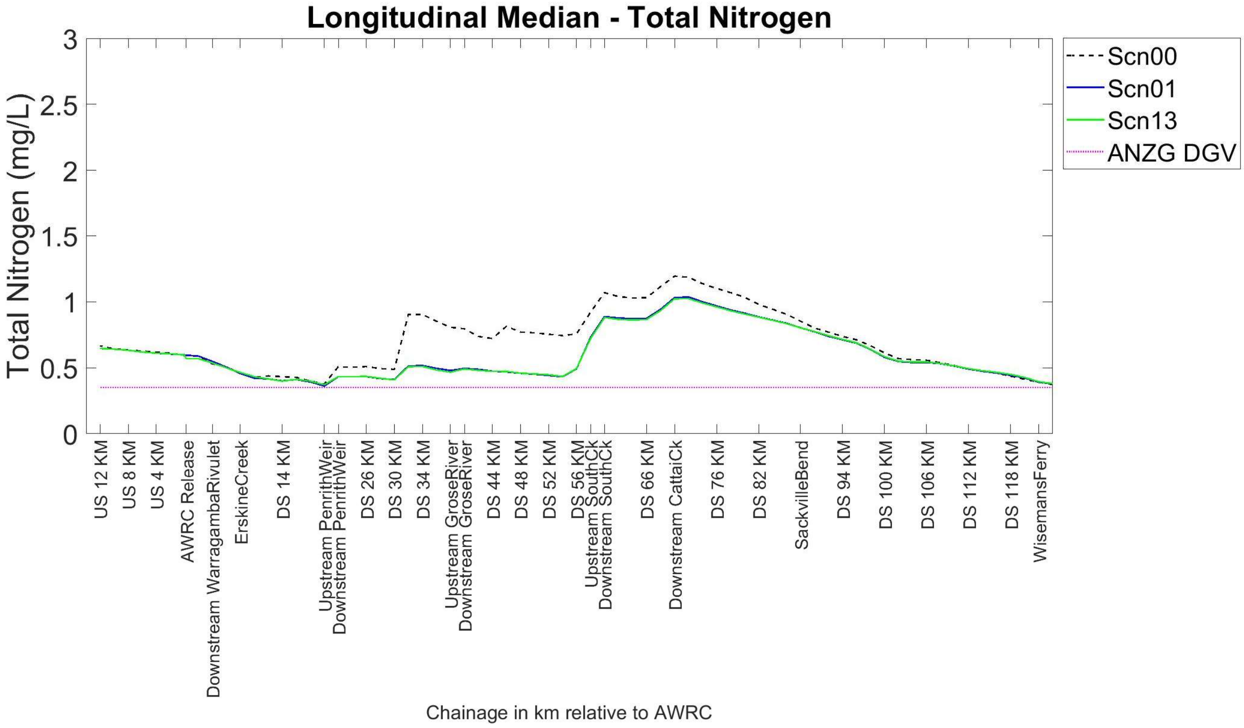
Scenario 13 - wet year

--> Longitudinal plots

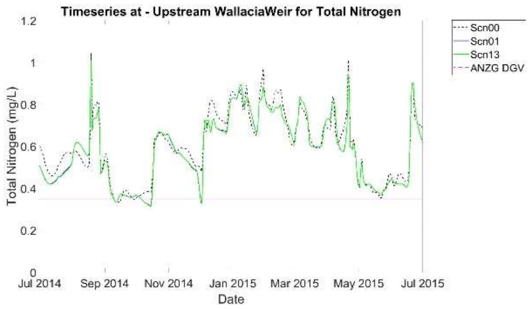
--> Timeseries plots at geographic markers and gauge locations

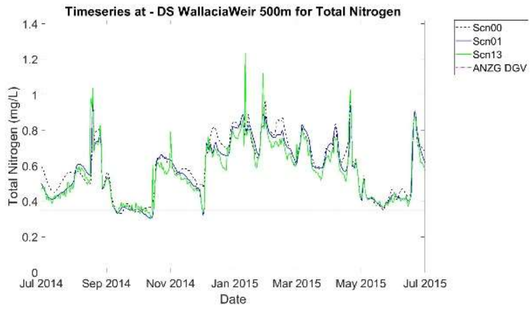
--> Box plots at geographic markers and gauge locations

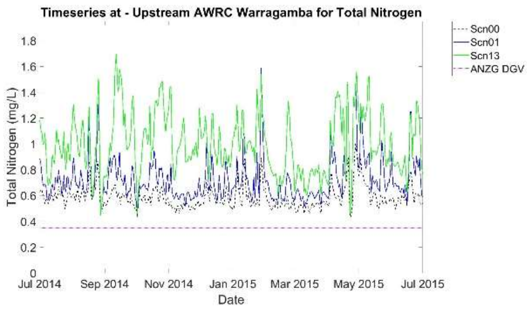
Longitudinal plot

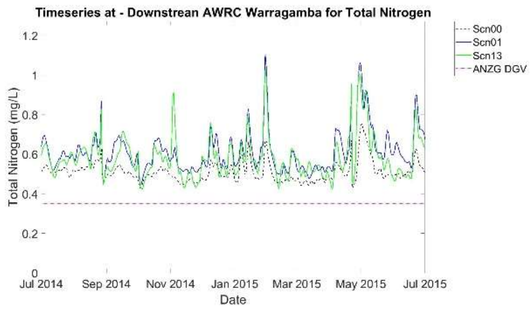


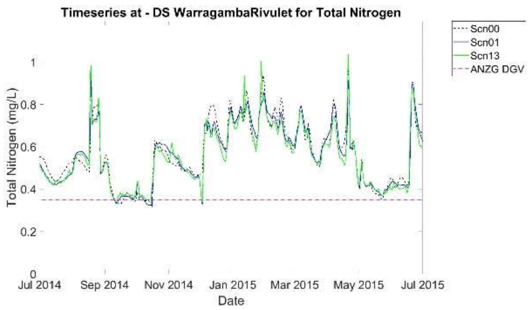
Timeseries plots

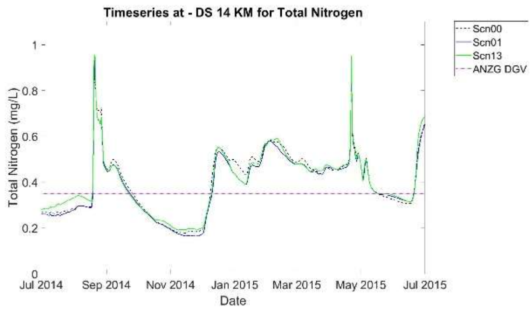


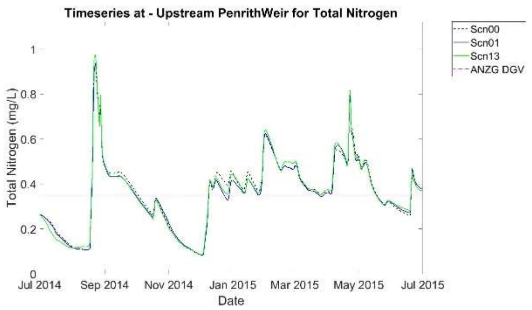


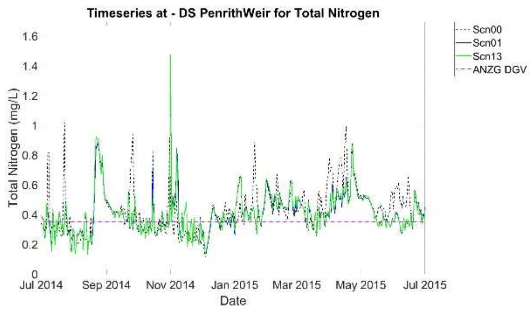


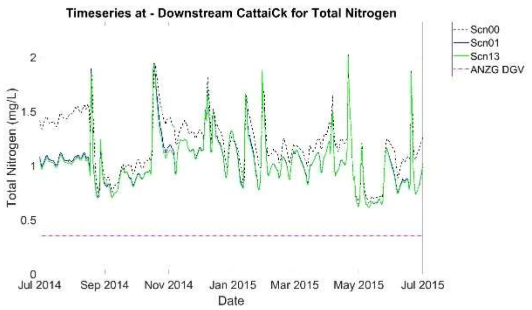


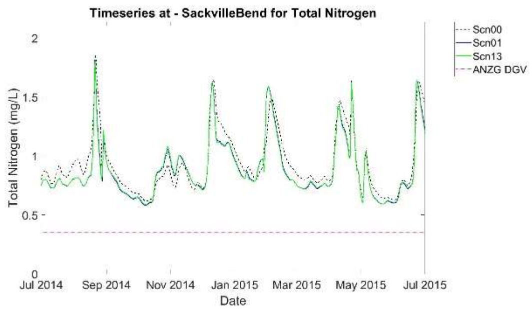




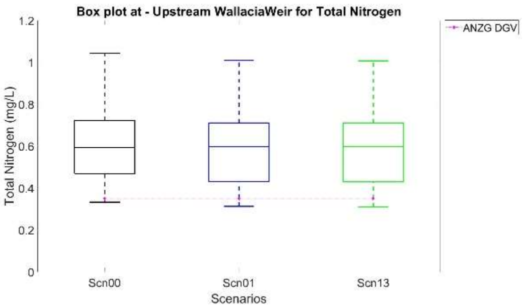


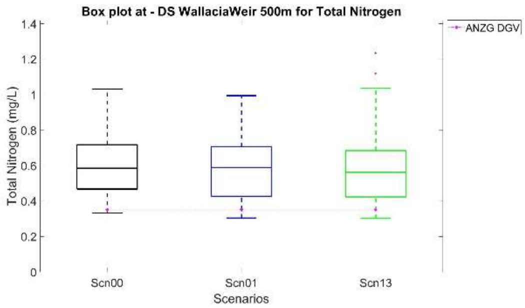


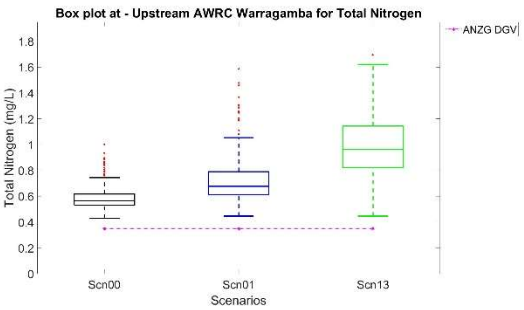


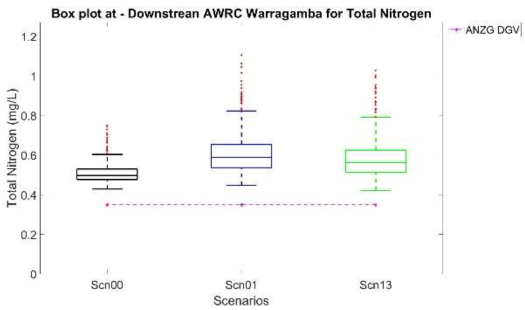


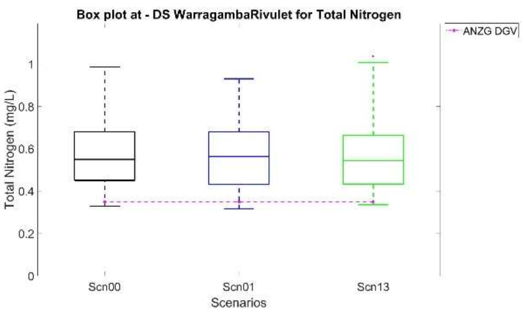
Box plots

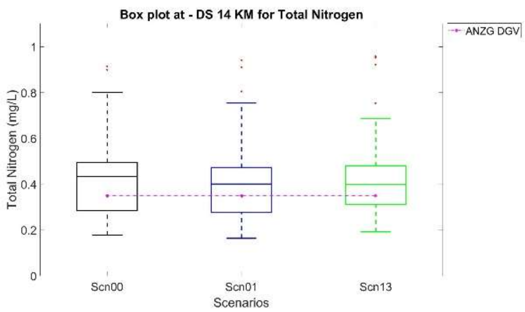

Box plot at - Upstream WallaciaWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.2 0.4 0.6 0.8 1 1.2
Scn00 Scn01 Scn13
Scenarios

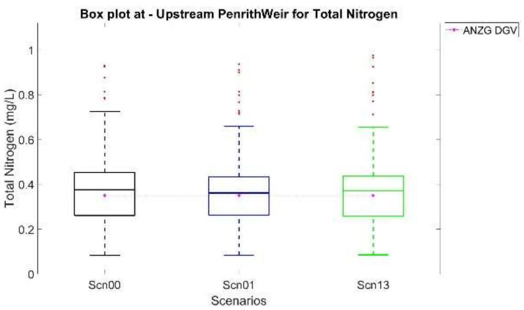

Box plot at - DS WallaciaWeir 500m for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.2 0.4 0.6 0.8 1 1.2 1.4
Scn00 Scn01 Scn13
Scenarios

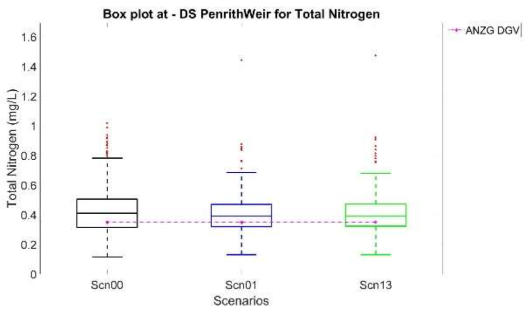

Box plot at - Upstream AWRC Warragamba for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8
Scn00 Scn01 Scn13
Scenarios

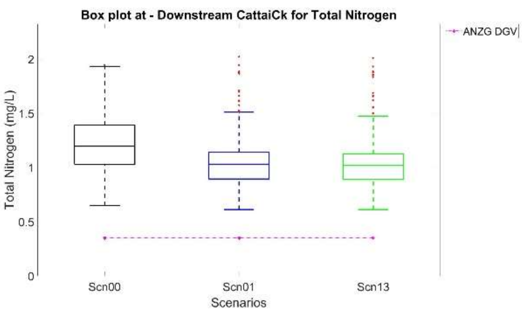

Box plot at - Downstrean AWRC Warragamba for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.2 0.4 0.6 0.8 1 1.2
Scn00 Scn01 Scn13
Scenarios

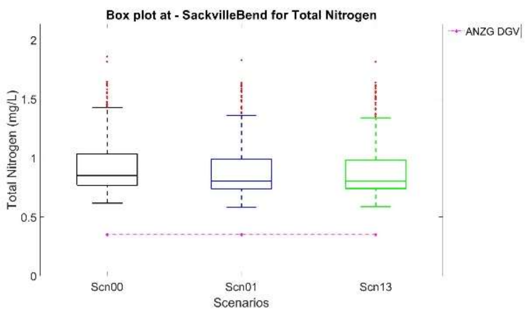

Box plot at - DS WarragambaRivulet for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.2 0.4 0.6 0.8 1
Scn00 Scn01 Scn13
Scenarios


Box plot at - DS 14 KM for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.2 0.4 0.6 0.8 1
Scn00 Scn01 Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.2 0.4 0.6 0.8 1
Scn00 Scn01 Scn13
Scenarios


Box plot at - DS PenrithWeir for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6
Scn00 Scn01 Scn13
Scenarios


Box plot at - Downstream CattaiCk for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.5 1 1.5 2
Scn00 Scn01 Scn13
Scenarios


Box plot at - SackvilleBend for Total Nitrogen
ANZG DGV
Total Nitrogen (mg/L)
0 0.5 1 1.5 2
Scn00 Scn01 Scn13
Scenarios

Hawkesbury-Nepean WQRM

Ammonia (mg/L)

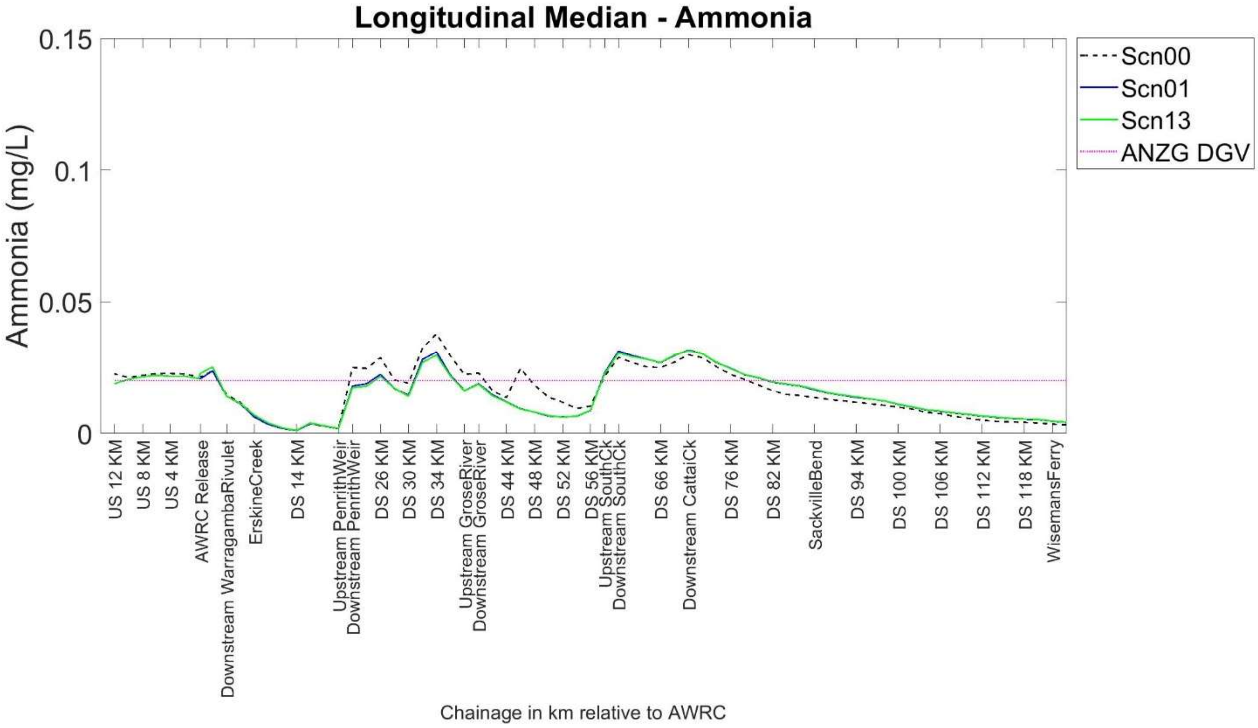
Scenario 13 - wet year

--> Longitudinal plots

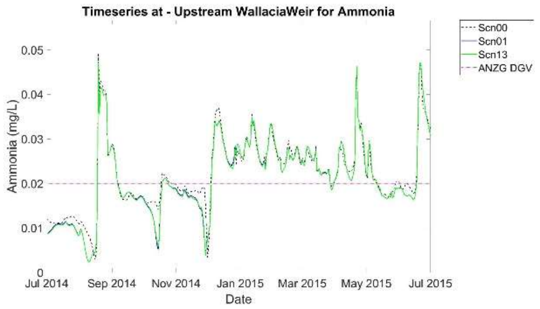
--> Timeseries plots at geographic markers and gauge locations

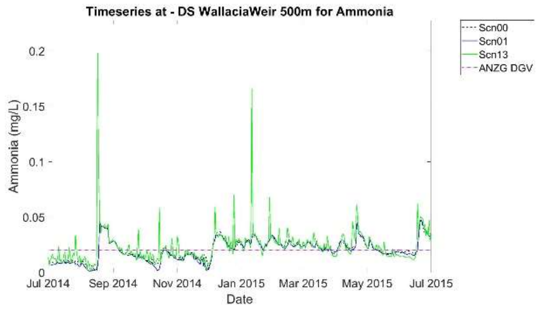
--> Box plots at geographic markers and gauge locations

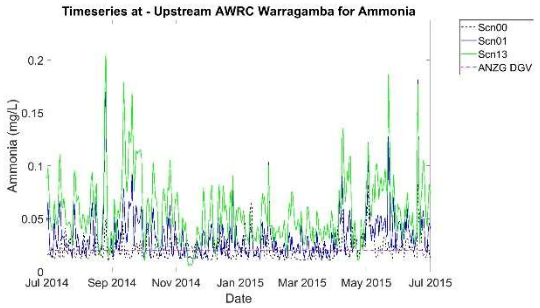
Longitudinal plot

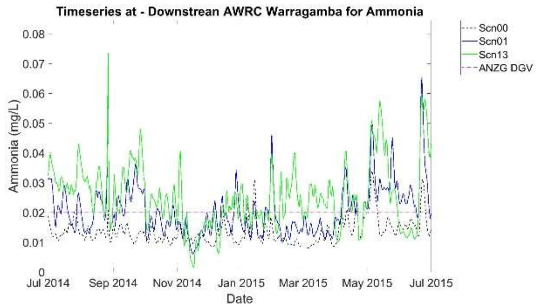


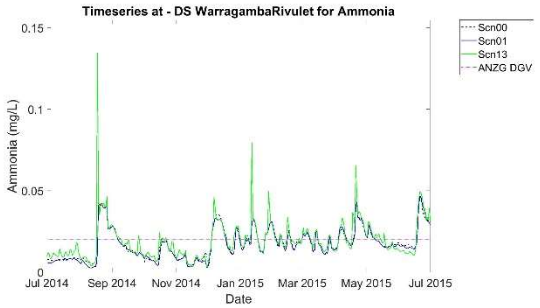
Timeseries plots

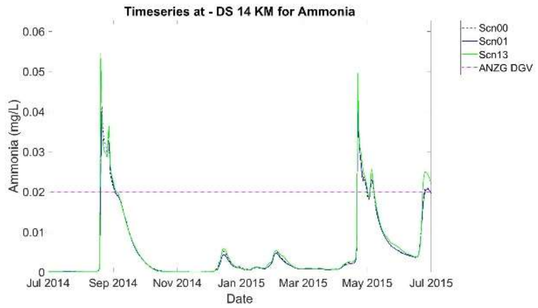


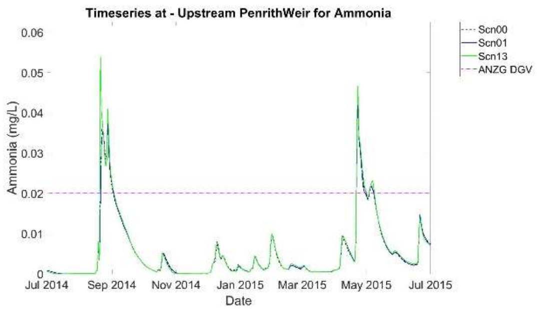


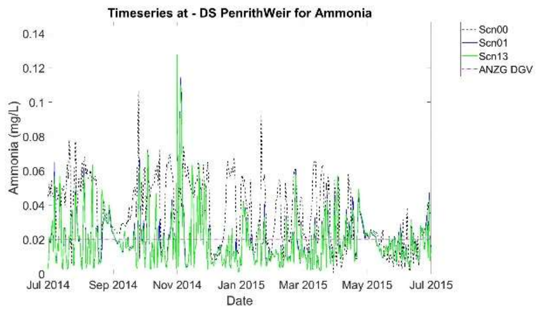


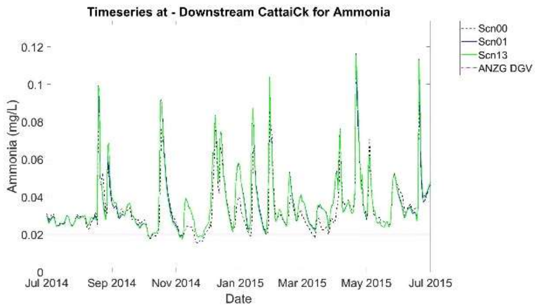


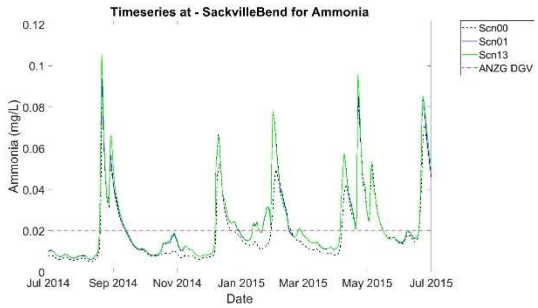




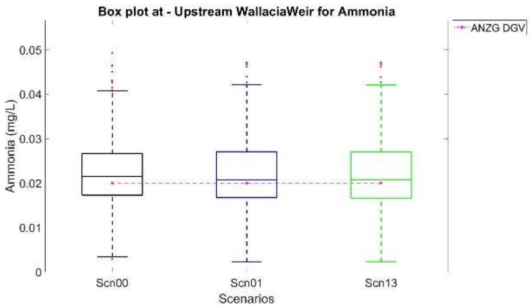


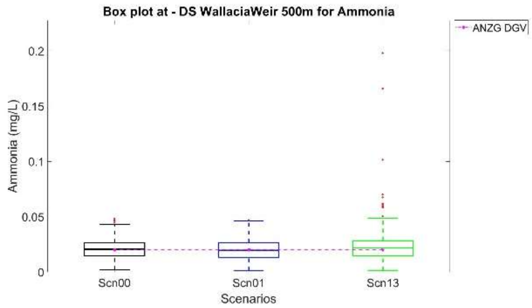


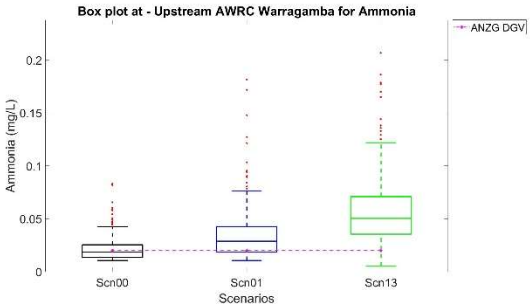


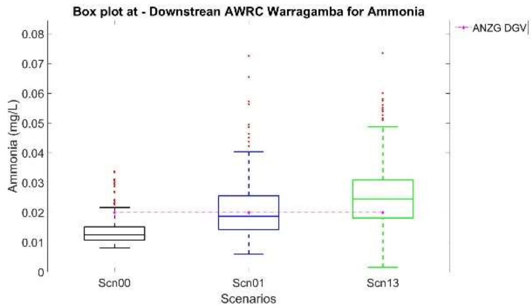


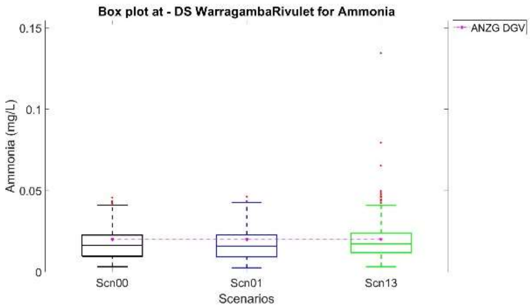
Box plots

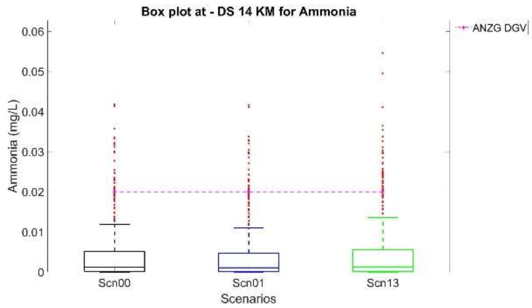

Box plot at - Upstream WallaciaWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios

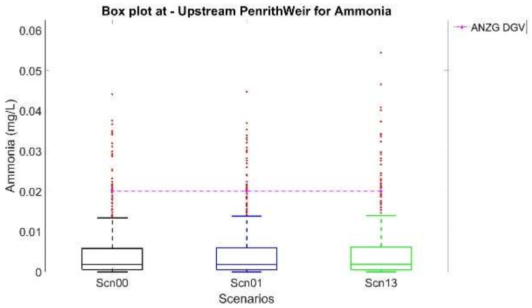

Box plot at - DS WallaciaWeir 500m for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios

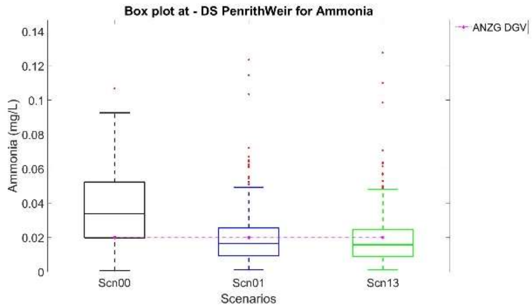

Box plot at - Upstream AWRC Warragamba for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios

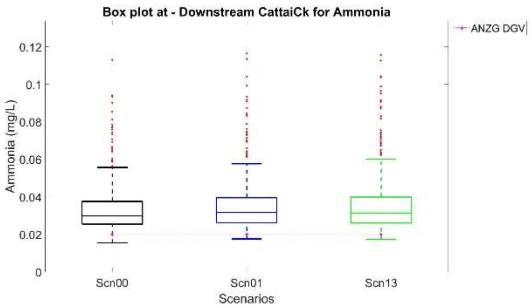

Box plot at - Downstrean AWRC Warragamba for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios

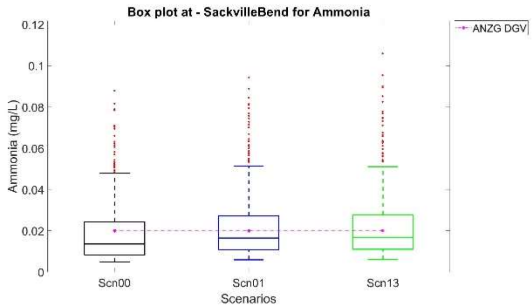

Box plot at - DS WarragambaRivulet for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Ammonia
ANZG DGV
Ammonia (mg/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

NOx (mg/L)

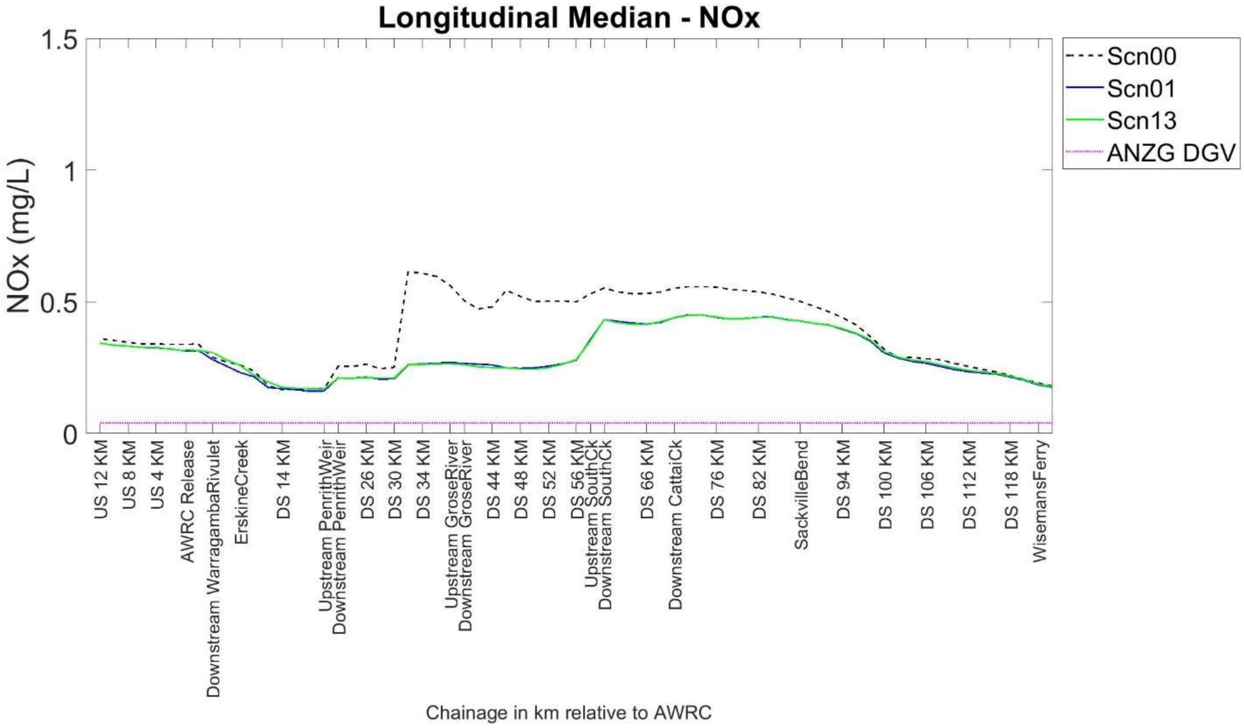
Scenario 13 - wet year

--> Longitudinal plots

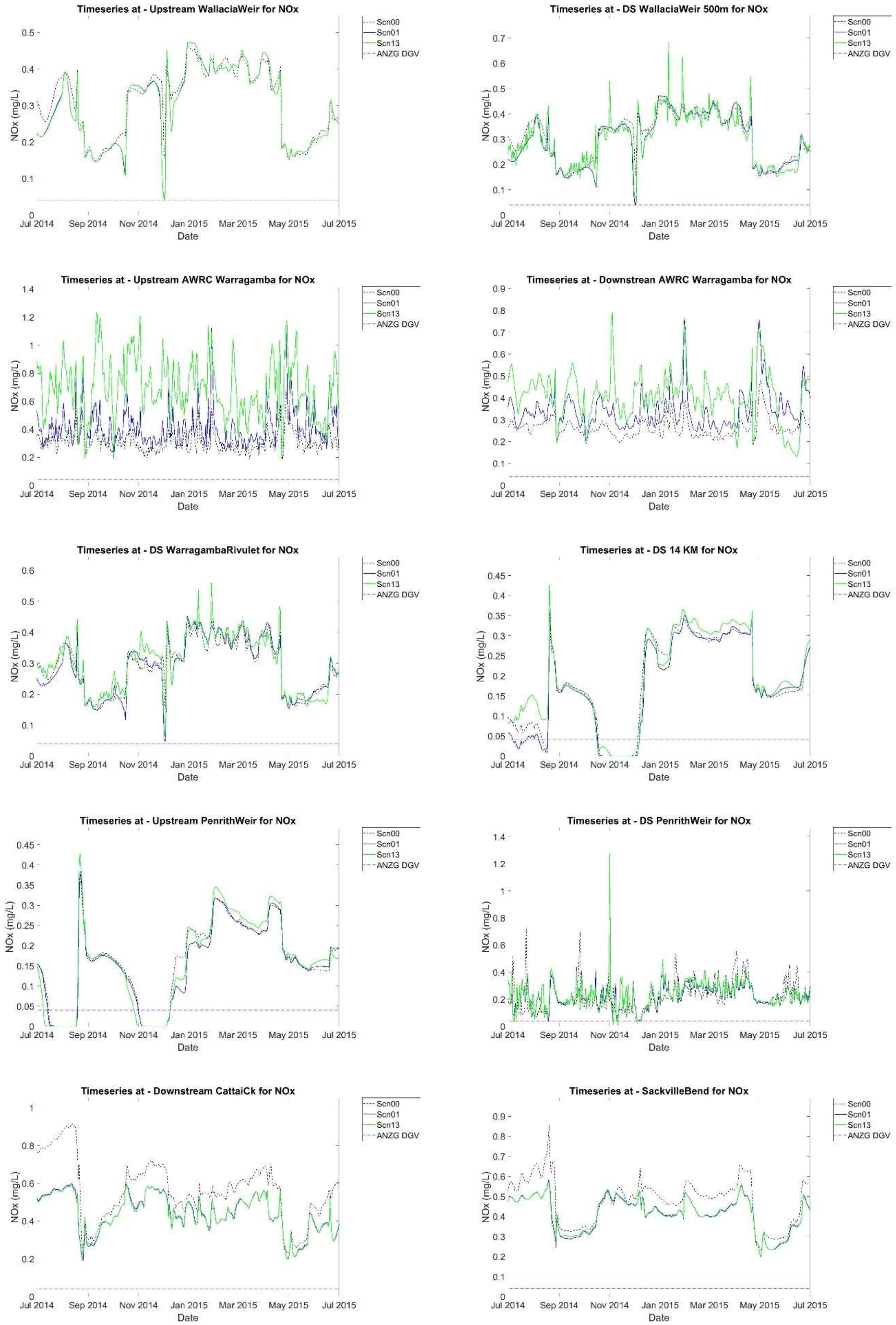
--> Timeseries plots at geographic markers and gauge locations

--> Box plots at geographic markers and gauge locations

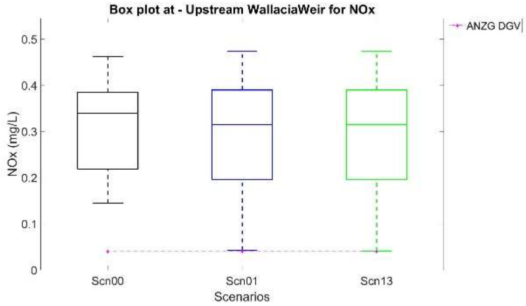
Longitudinal plot

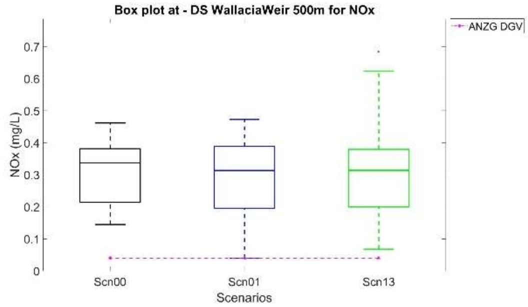


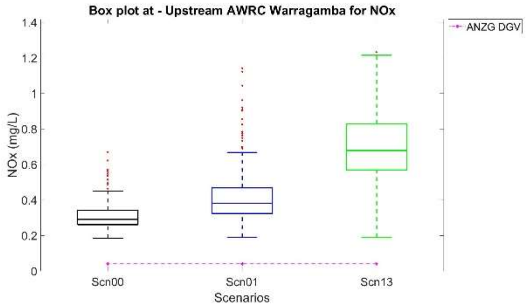
Timeseries plots

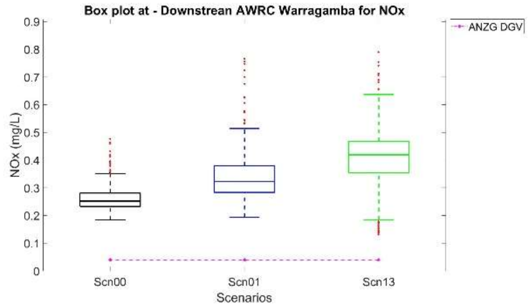


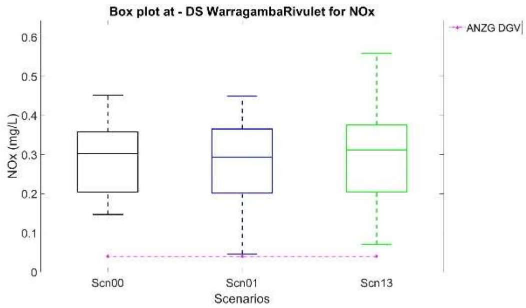
Box plots

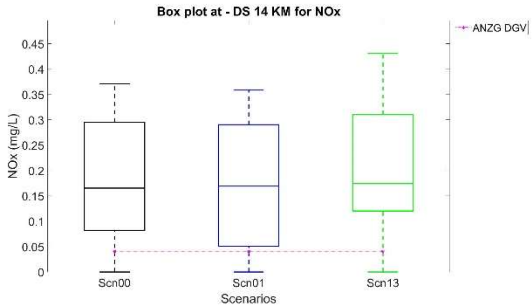

Box plot at - Upstream WallaciaWeir for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

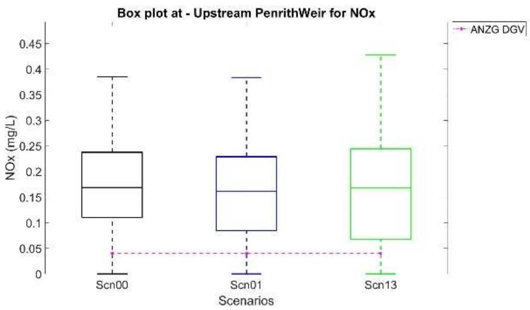

Box plot at - DS WallaciaWeir 500m for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

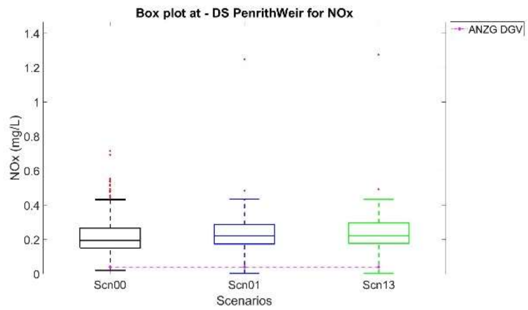

Box plot at - Upstream AWRC Warragamba for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

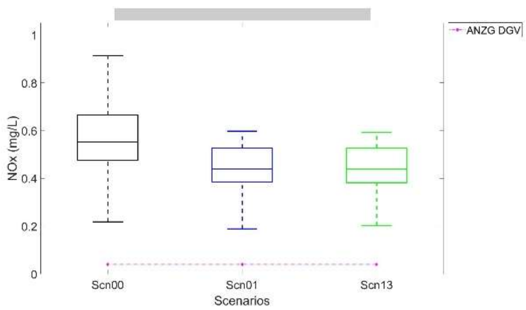

Box plot at - Downstrean AWRC Warragamba for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

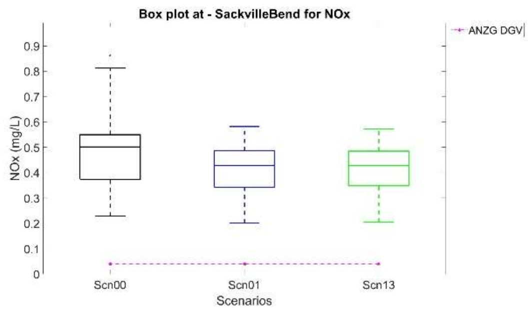

Box plot at - DS WarragambaRivulet for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for NOx
ANZG DGV
NOx (mg/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Total Phosphorus (mg/L)

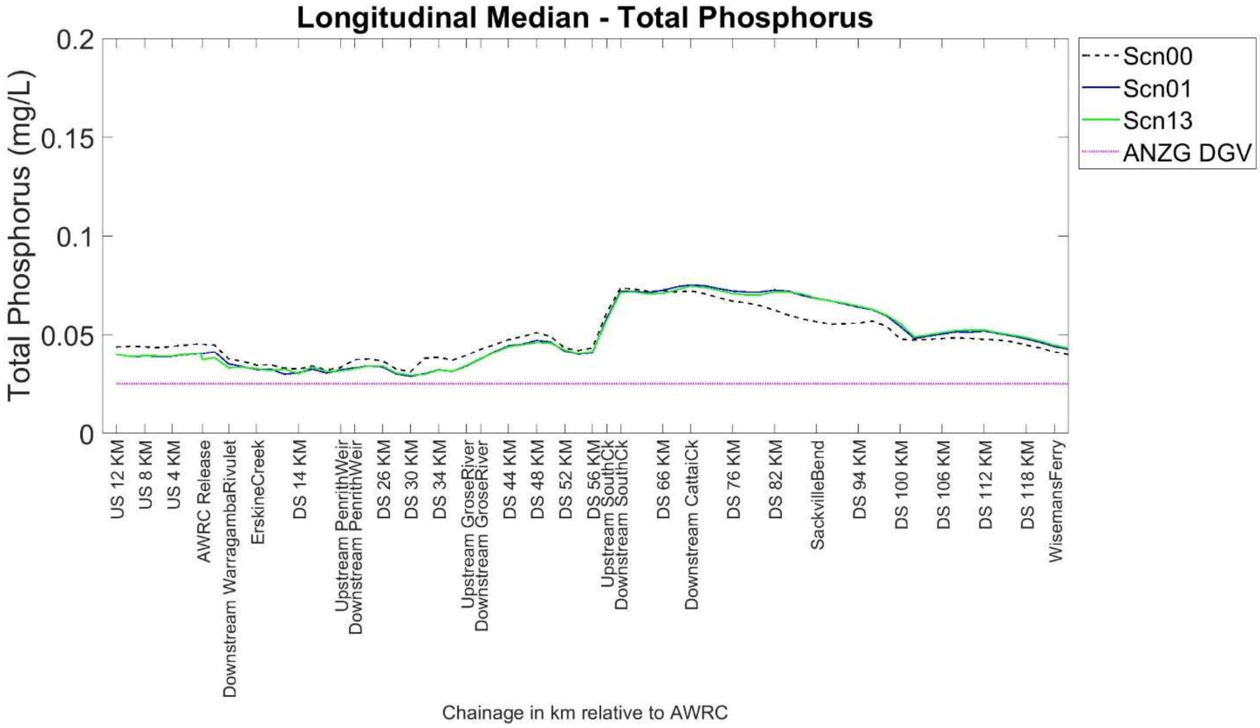
Scenario 13 - wet year

--> Longitudinal plots

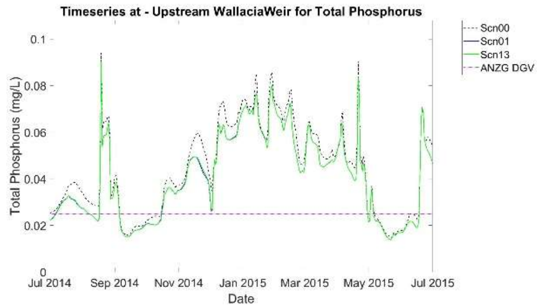
--> Timeseries plots at geographic markers and gauge locations

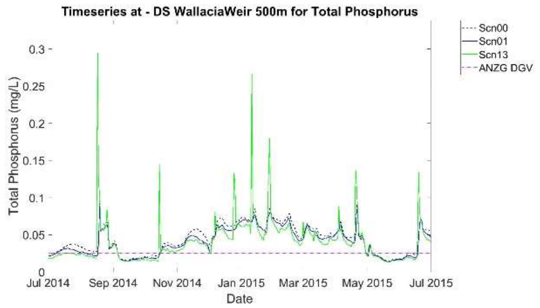
--> Box plots at geographic markers and gauge locations

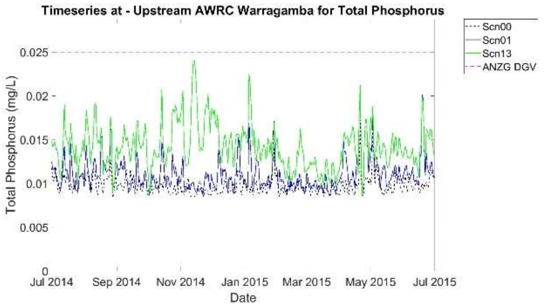
Longitudinal plot

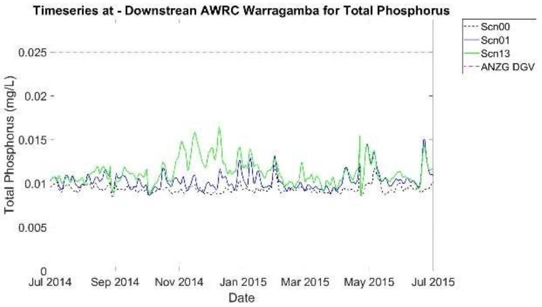


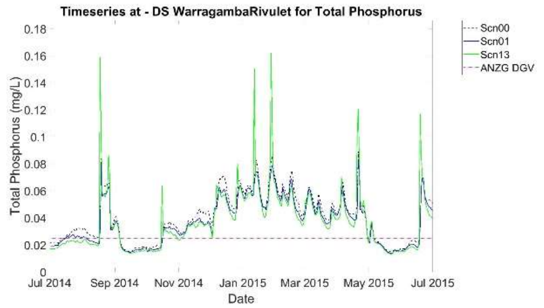
Timeseries plots

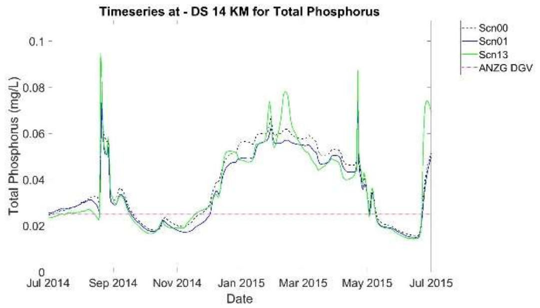


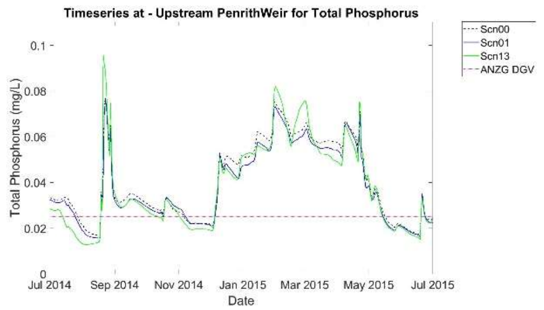


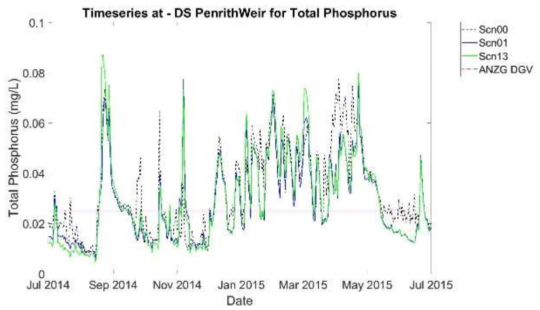


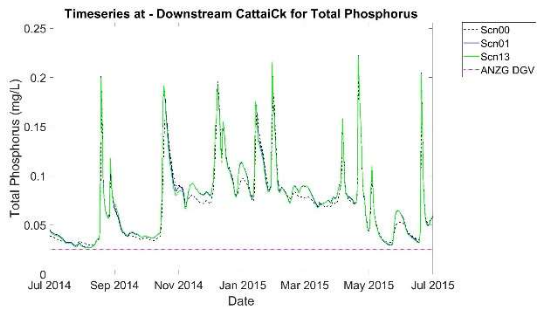


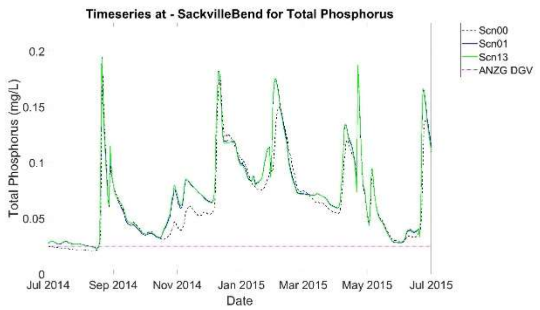




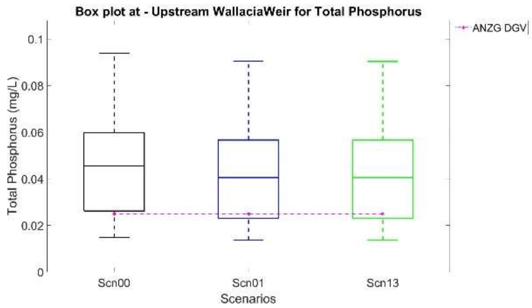


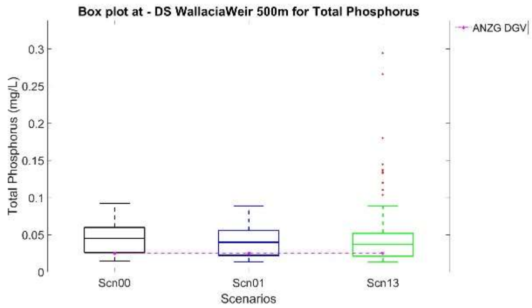


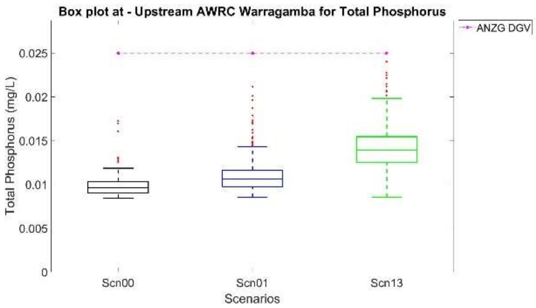


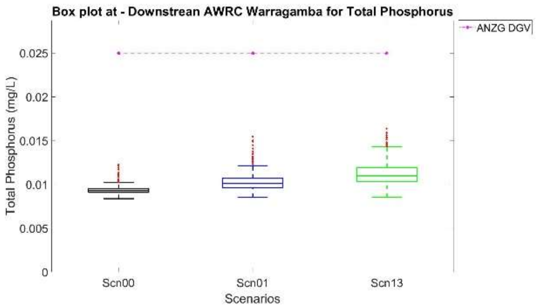


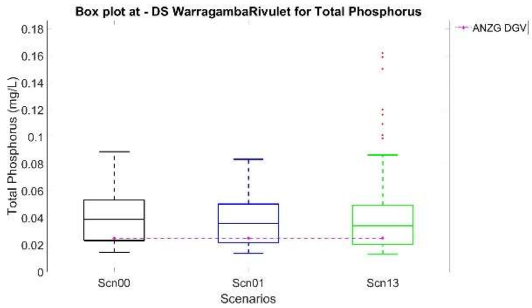
Box plots

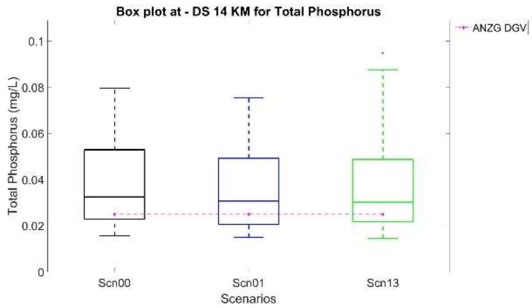

Box plot at - Upstream WallaciaWeir for Total Phosphorus
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

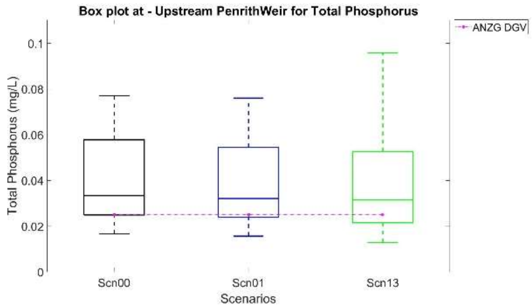

Box plot at - DS WallaciaWeir 500m for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
0.3
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

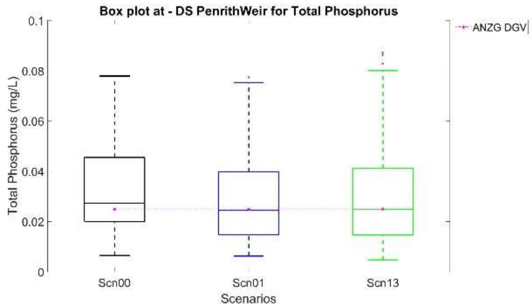

Box plot at - Upstream AWRC Warragamba for Total Phosphorus
Total Phosphorus (mg/L)
0
0.005
0.01
0.015
0.02
0.025
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

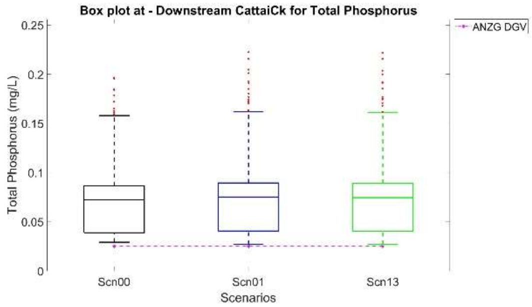

Box plot at - Downstrean AWRC Warragamba for Total Phosphorus
Total Phosphorus (mg/L)
0
0.005
0.01
0.015
0.02
0.025
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

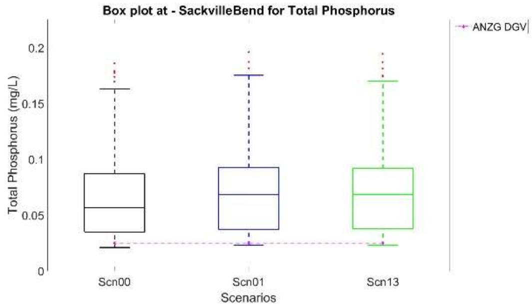

Box plot at - DS WarragambaRivulet for Total Phosphorus
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS 14 KM for Total Phosphorus
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Upstream PenrithWeir for Total Phosphorus
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS PenrithWeir for Total Phosphorus
Total Phosphorus (mg/L)
0
0.02
0.04
0.06
0.08
0.1
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Downstream CattaiCk for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
0.25
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - SackvilleBend for Total Phosphorus
Total Phosphorus (mg/L)
0
0.05
0.1
0.15
0.2
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

FRP (mg/L)

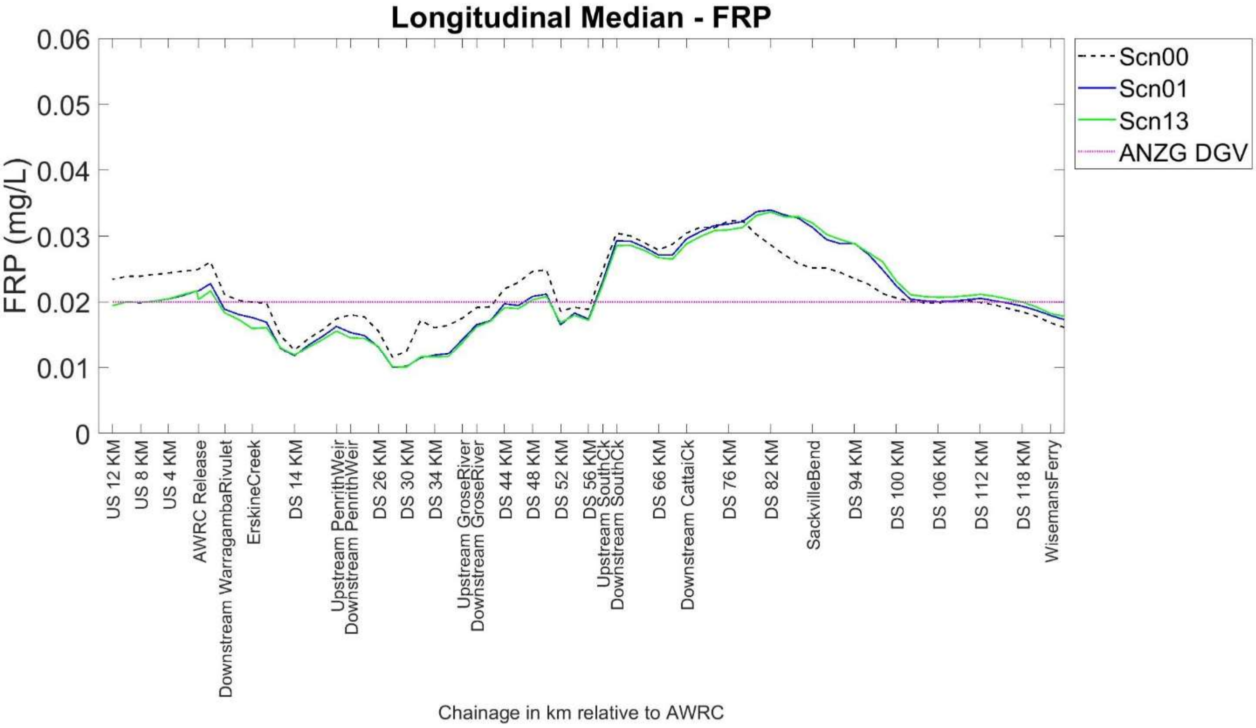
Scenario 13 - wet year

--> Longitudinal plots

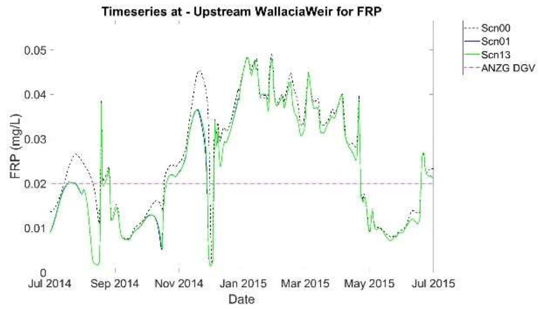
--> Timeseries plots at geographic markers and gauge locations

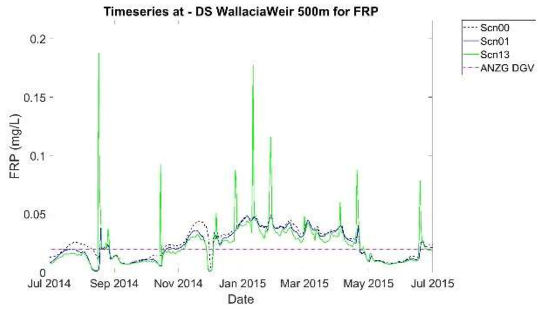
--> Box plots at geographic markers and gauge locations

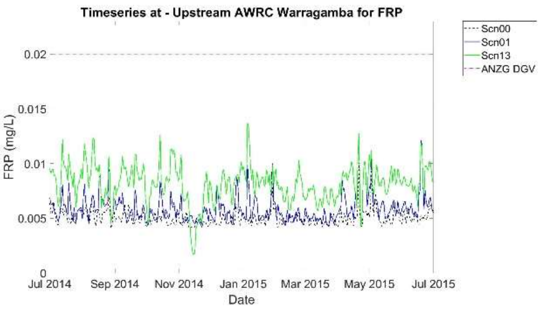
Longitudinal plot

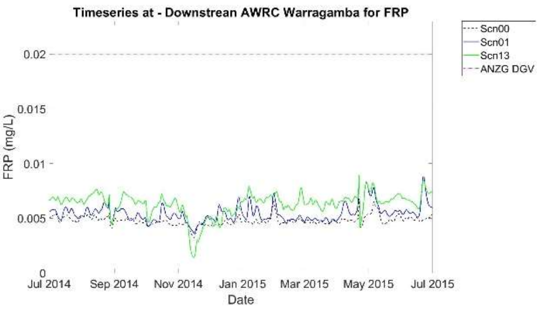


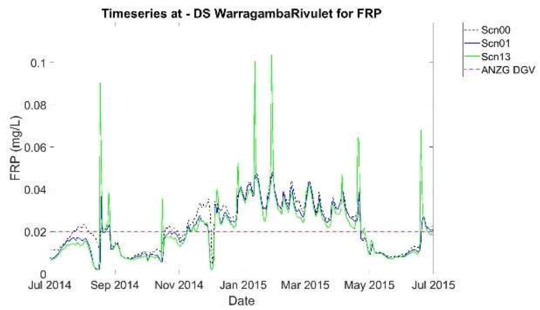
Timeseries plots

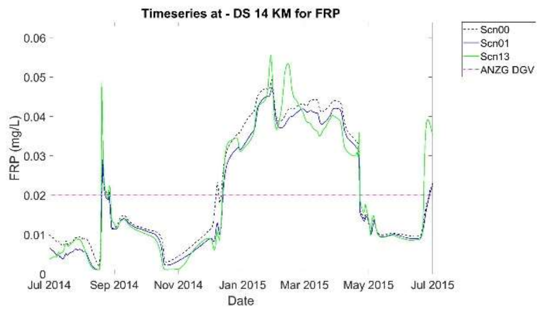


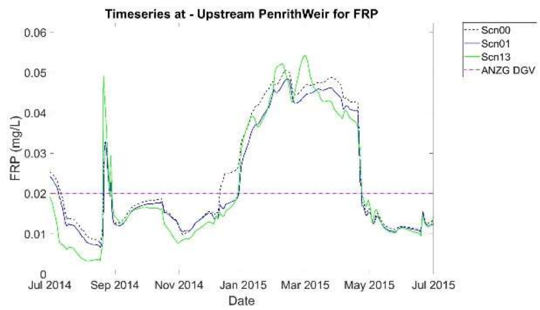


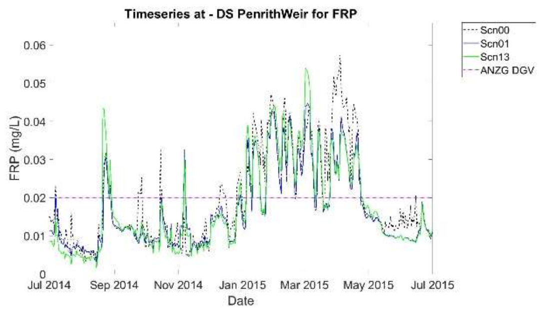


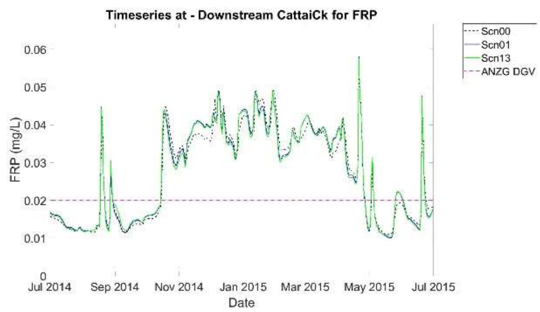


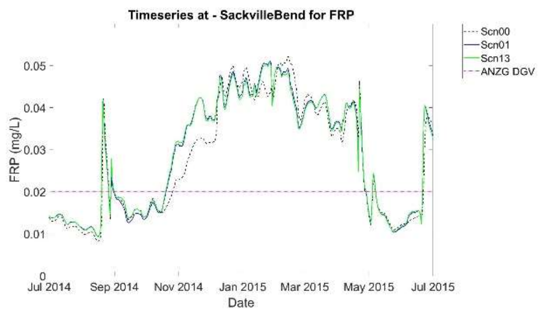




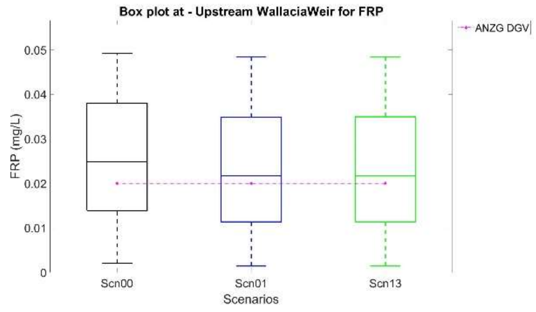


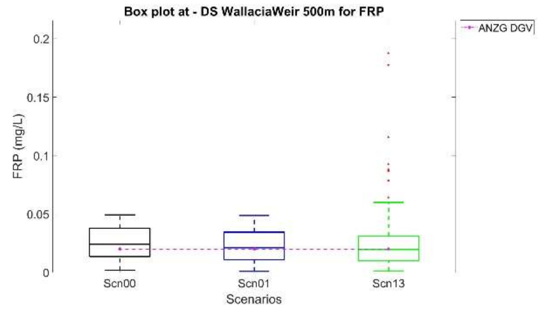


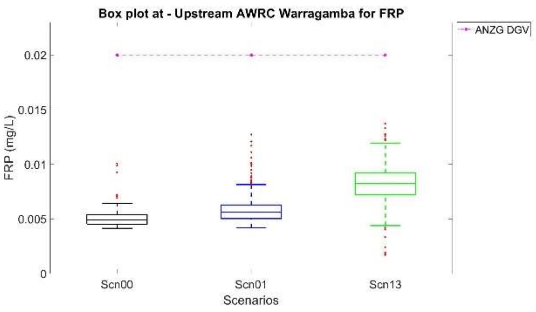


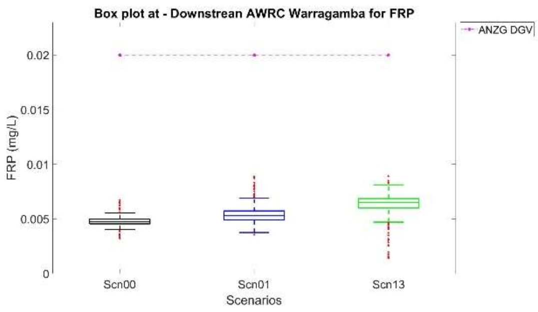


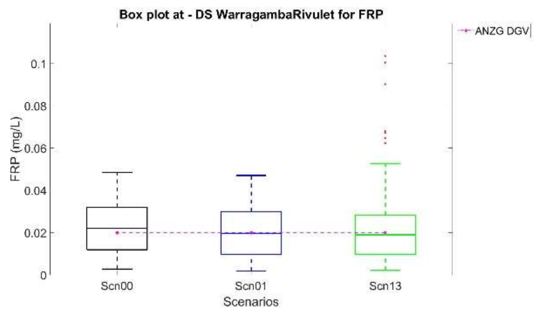
Box plots

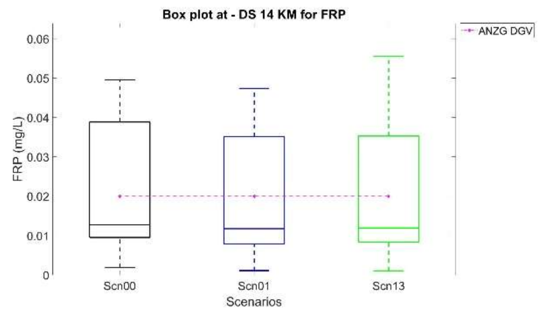

Box plot at - Upstream WallaciaWeir for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

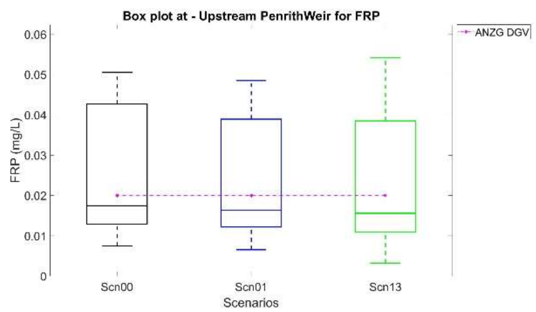

Box plot at - DS WallaciaWeir 500m for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

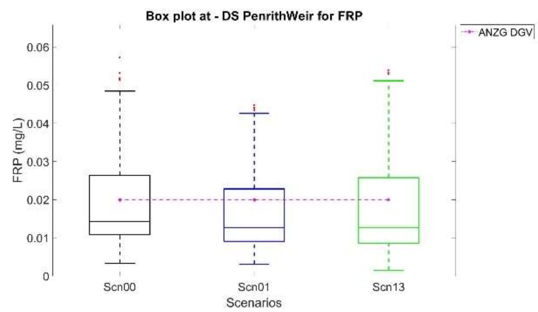

Box plot at - Upstream AWRC Warragamba for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

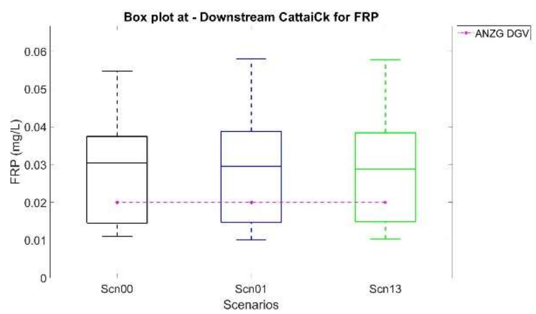

Box plot at - Downstrean AWRC Warragamba for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

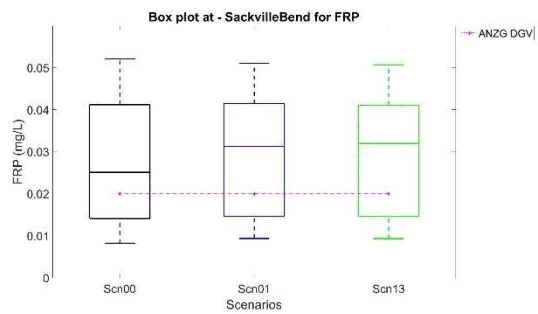

Box plot at - DS WarragambaRivulet for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS 14 KM for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Upstream PenrithWeir for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - DS PenrithWeir for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - Downstream CattaiCk for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV


Box plot at - SackvilleBend for FRP
FRP (mg/L)
Scn00
Scn01
Scn13
Scenarios
ANZG DGV

Hawkesbury-Nepean WQRM

Total Chlorophyll-a (µg/L)

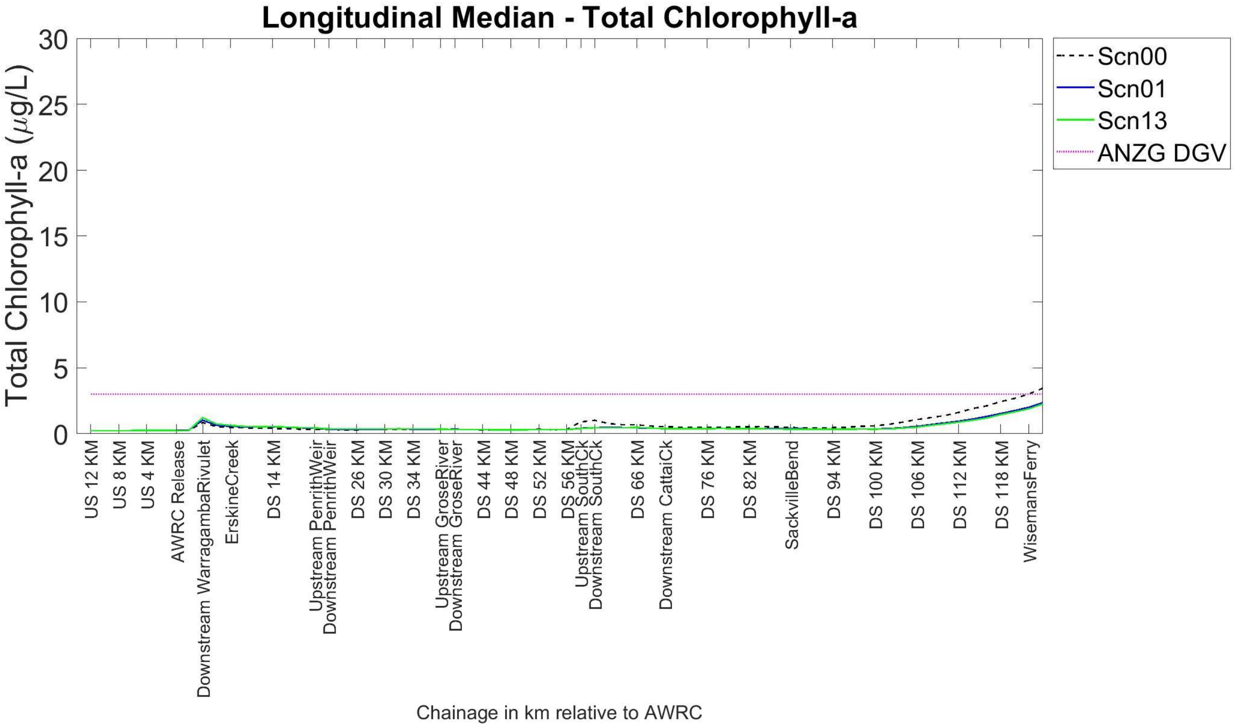
Scenario 13 - wet year

--> Longitudinal plots

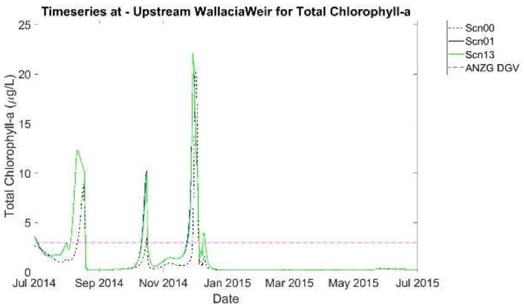
--> Timeseries plots at geographic markers and gauge locations

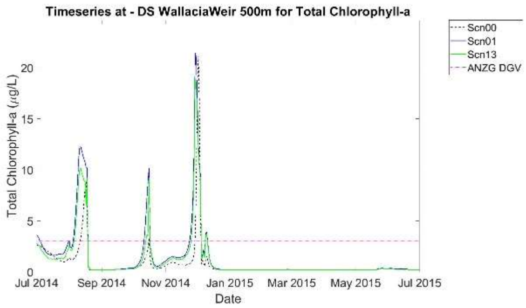
--> Box plots at geographic markers and gauge locations

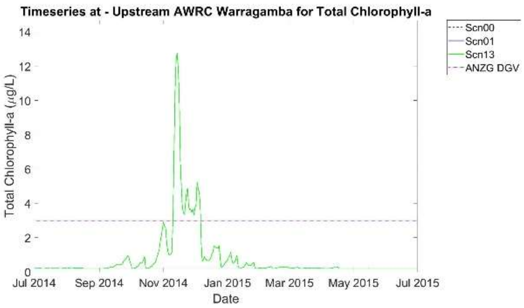
Longitudinal plot

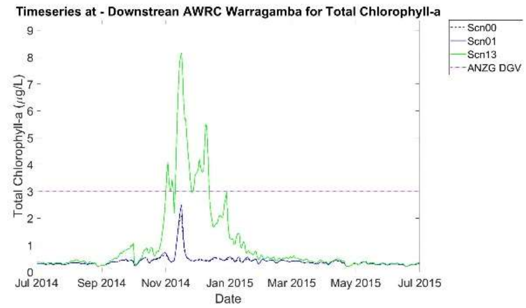


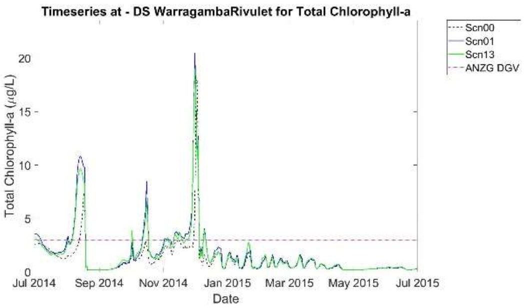
Timeseries plots

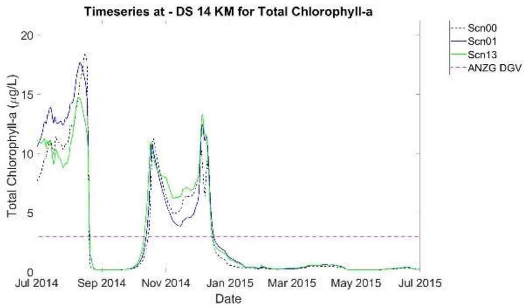


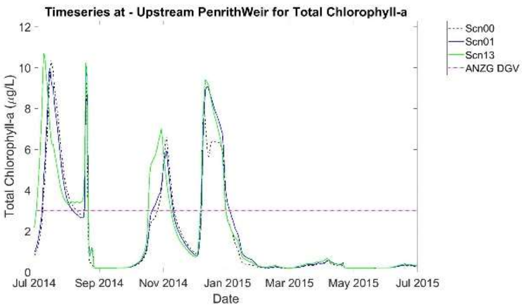


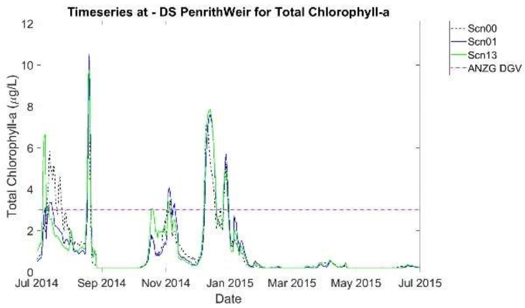


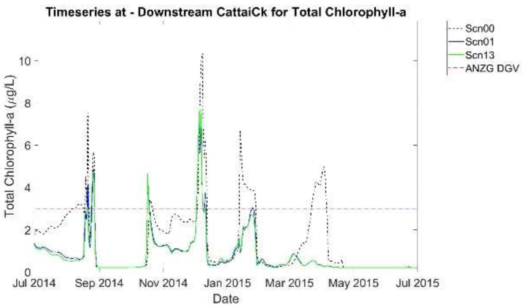


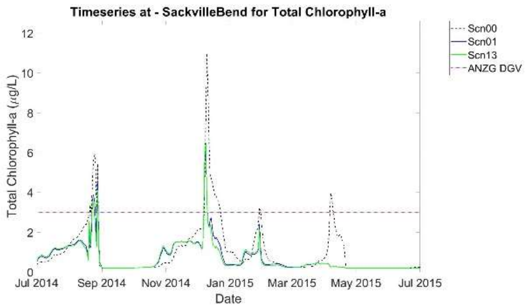




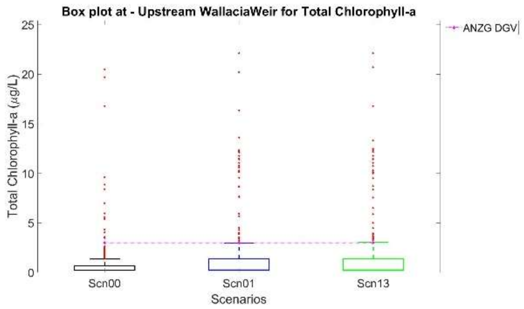


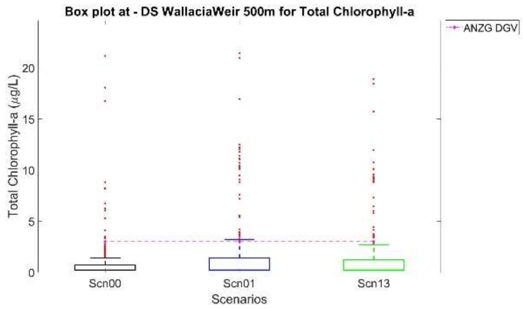


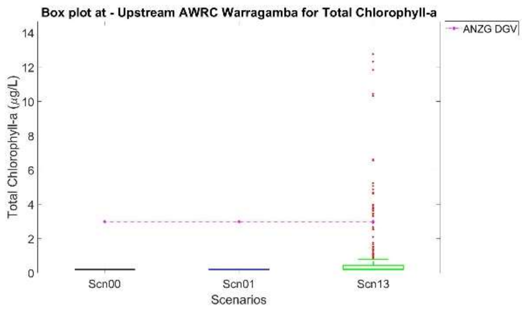


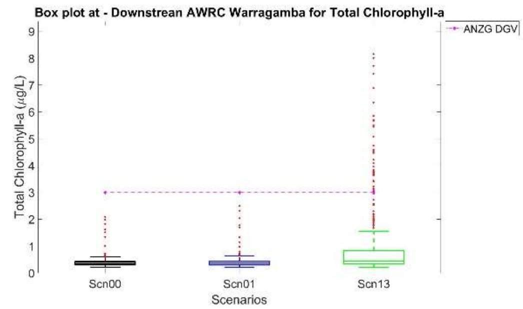


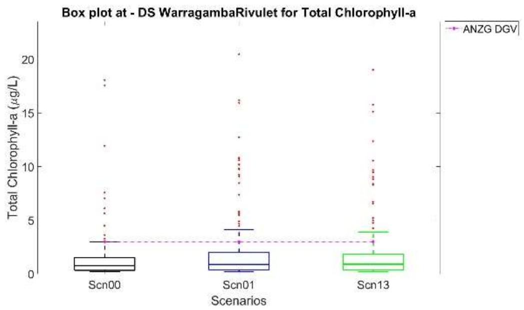
Box plots

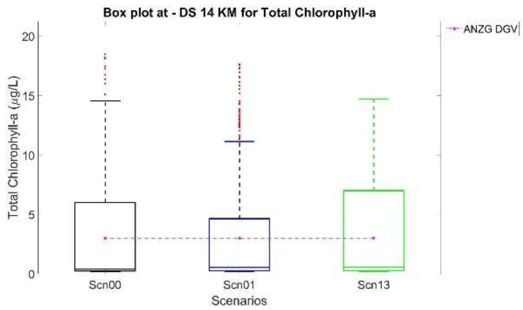

Box plot at - Upstream WallaciaWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios

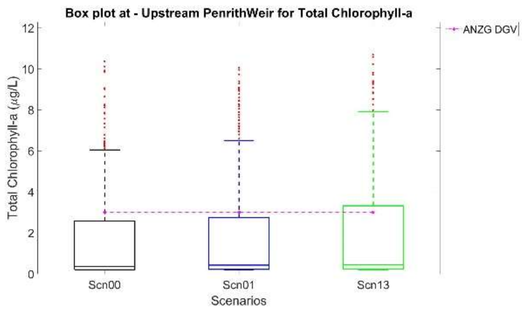

Box plot at - DS WallaciaWeir 500m for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios

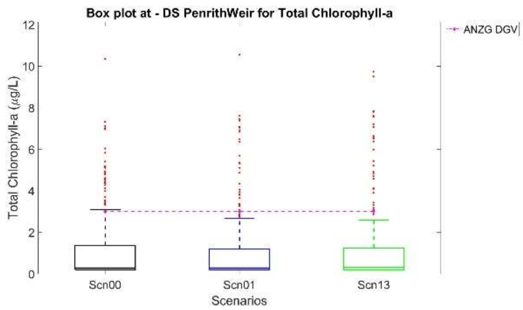

Box plot at - Upstream AWRC Warragamba for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios

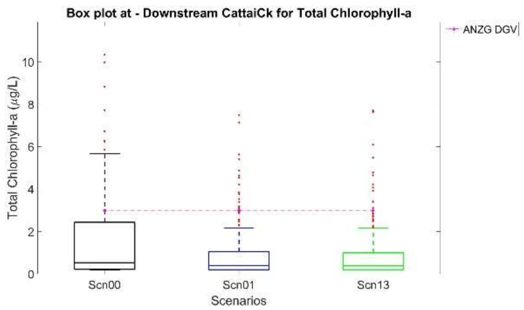

Box plot at - Downstrean AWRC Warragamba for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios

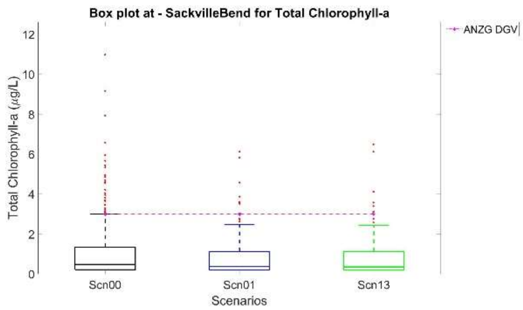

Box plot at - DS WarragambaRivulet for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Total Chlorophyll-a
ANZG DGV
Total Chlorophyll-a (μg/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Salinity (g/L)

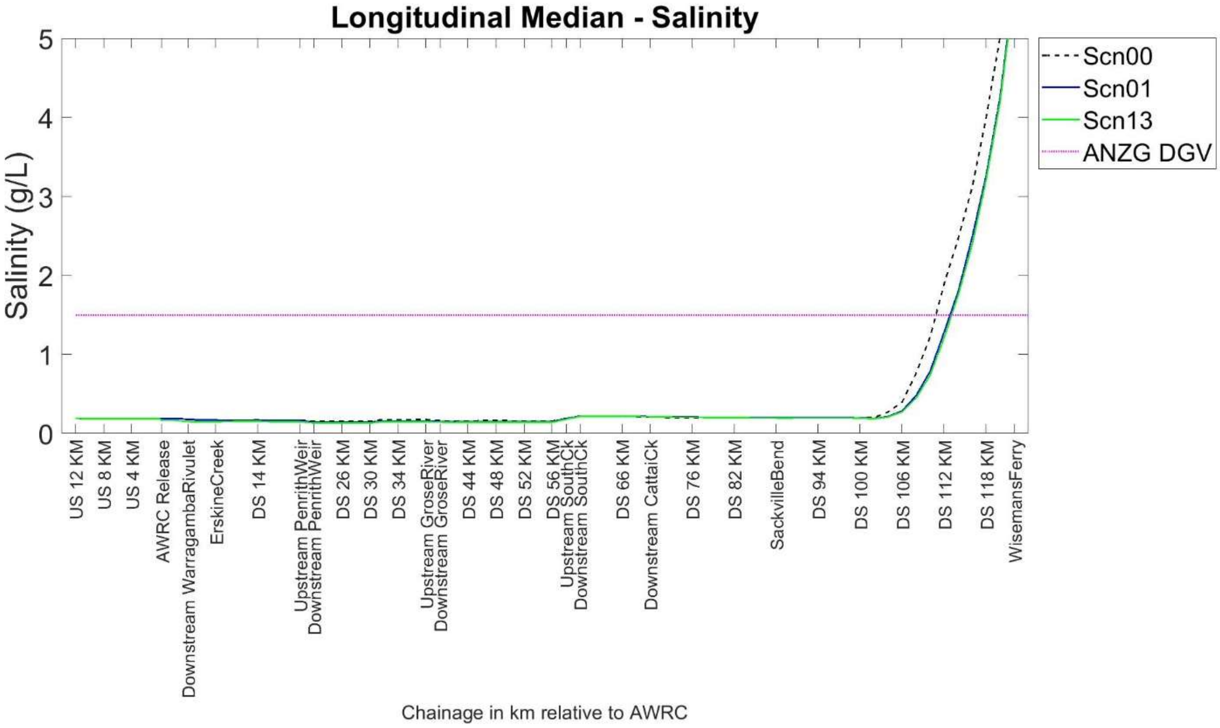
Scenario 13 - wet year

--> Longitudinal plots

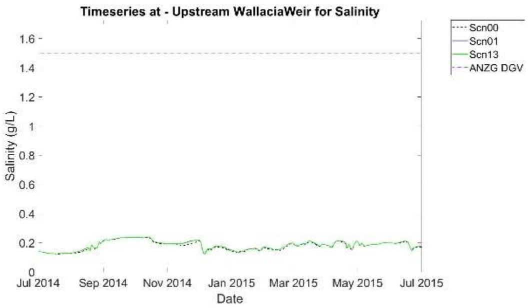
--> Timeseries plots at geographic markers and gauge locations

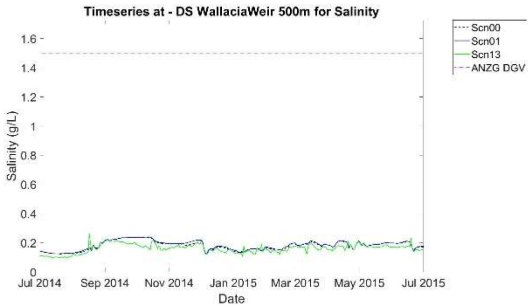
--> Box plots at geographic markers and gauge locations

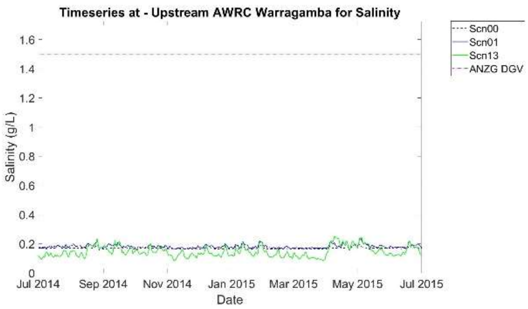
Longitudinal plot

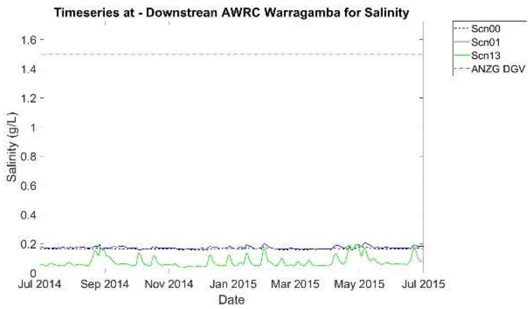


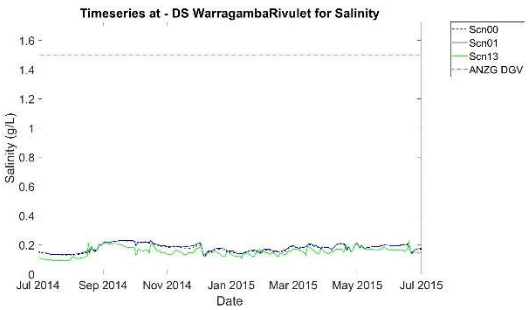
Timeseries plots

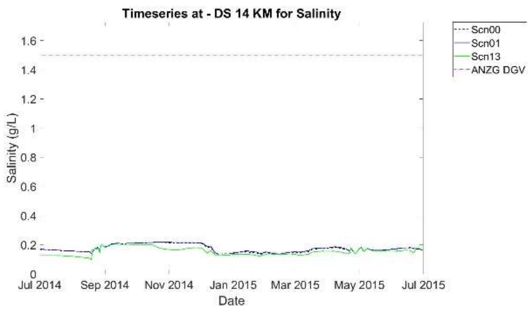


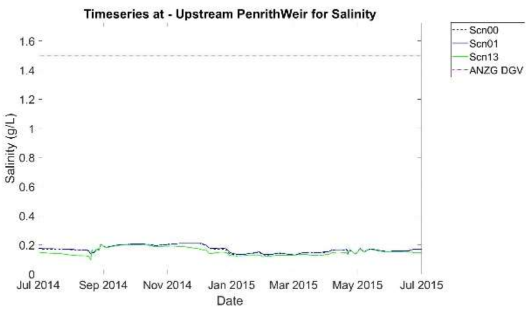


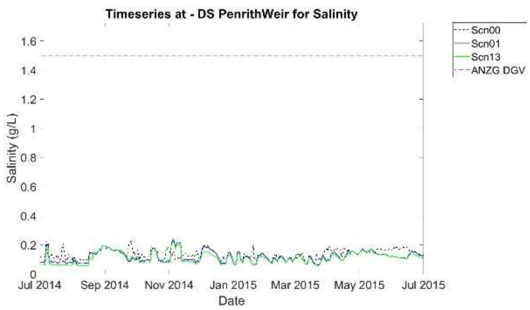


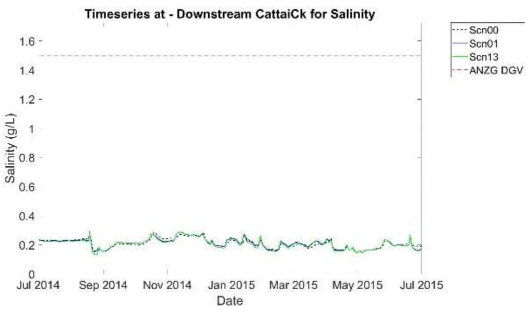


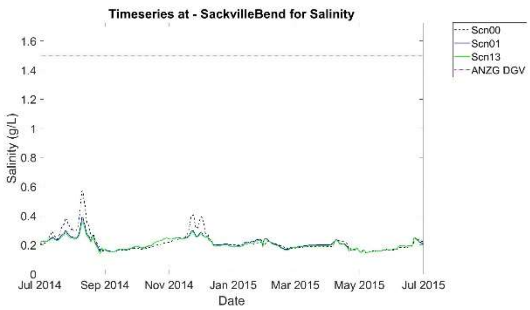




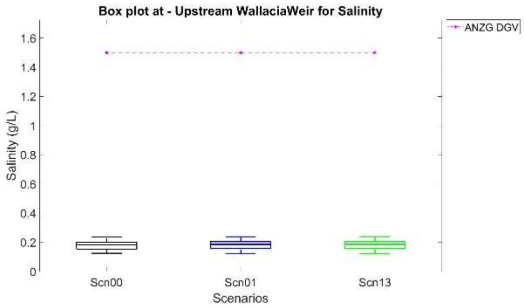


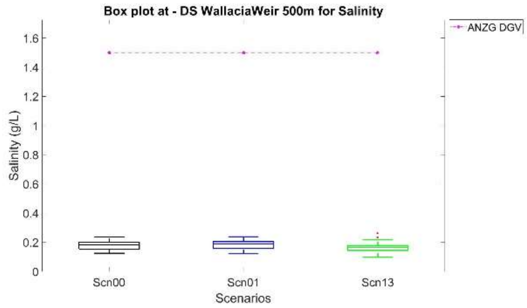


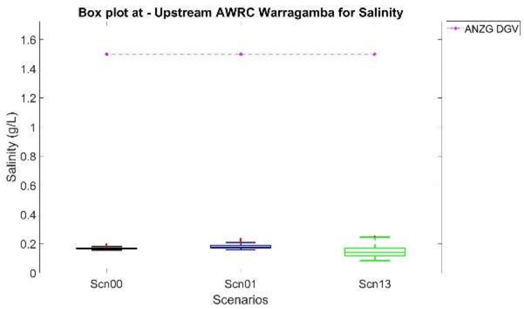


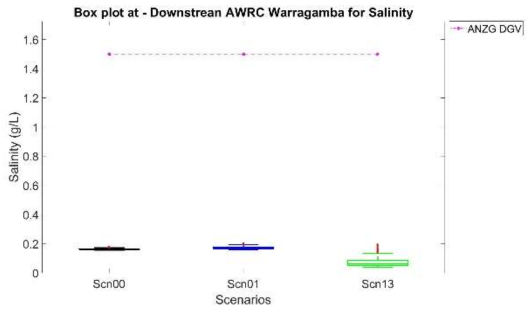


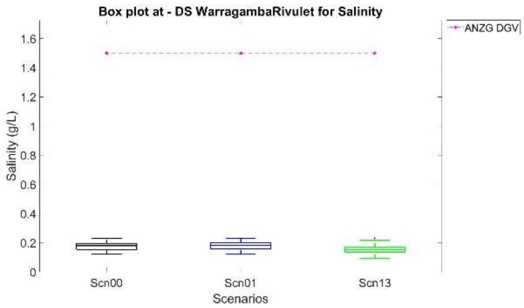
Box plots

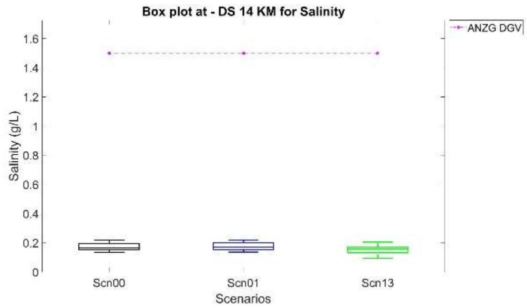

Box plot at - Upstream WallaciaWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

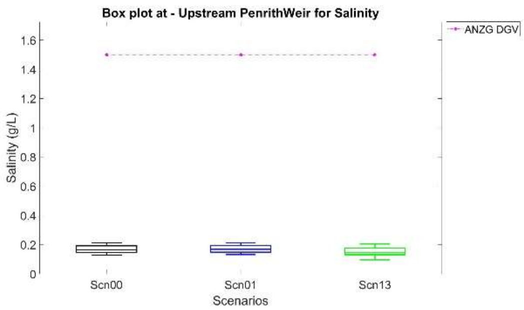

Box plot at - DS WallaciaWeir 500m for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

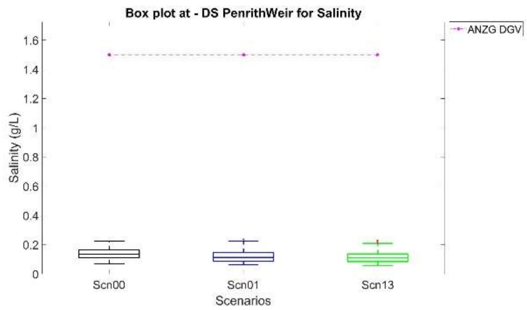

Box plot at - Upstream AWRC Warragamba for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

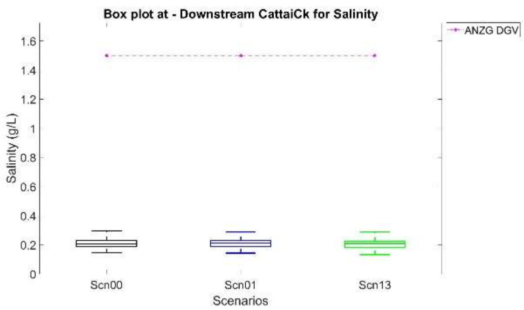

Box plot at - Downstrean AWRC Warragamba for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

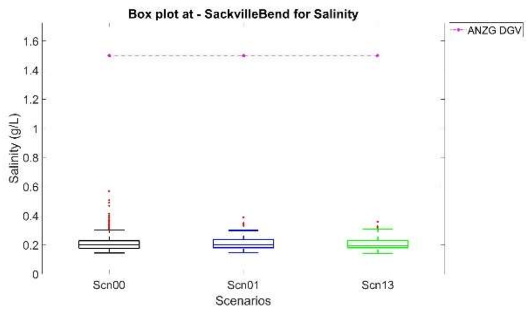

Box plot at - DS WarragambaRivulet for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Salinity
ANZG DGV
Salinity (g/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

TSS (mg/L)

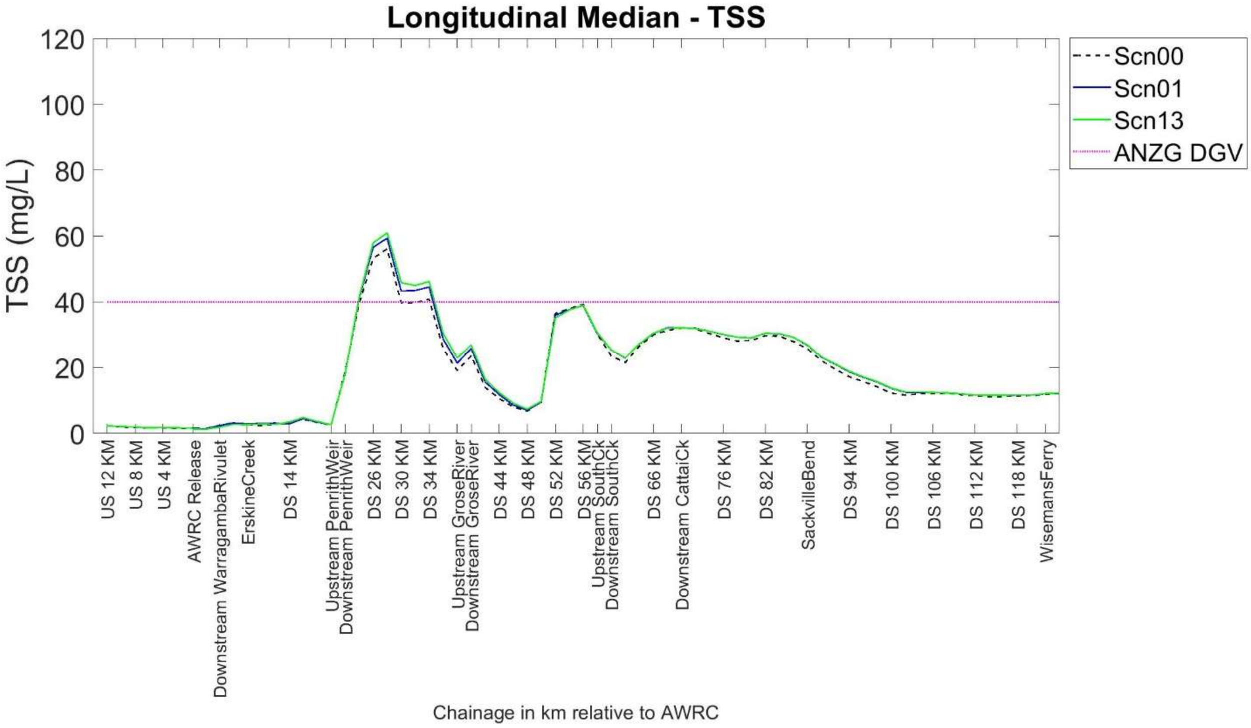
Scenario 13 - wet year

--> Longitudinal plots

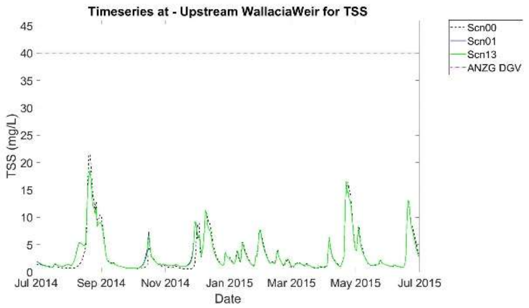
--> Timeseries plots at geographic markers and gauge locations

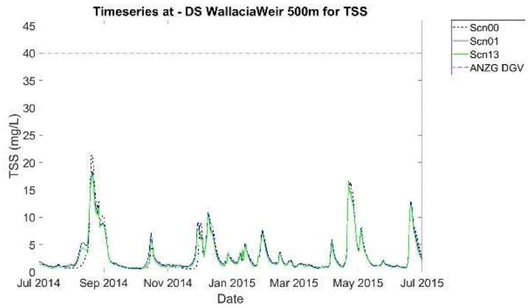
--> Box plots at geographic markers and gauge locations

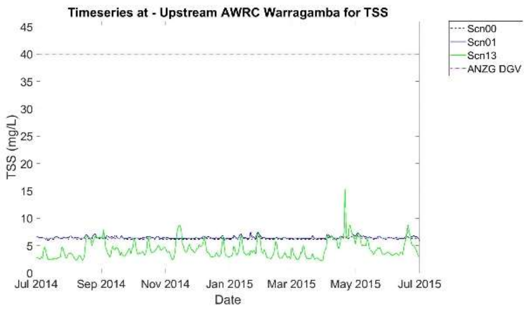
Longitudinal plot

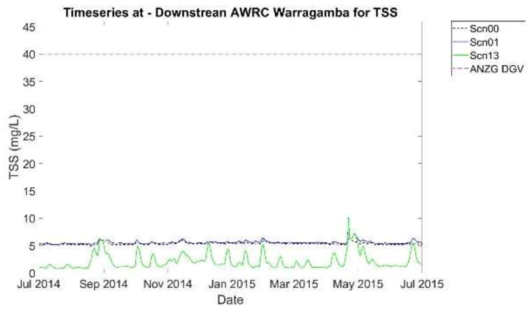


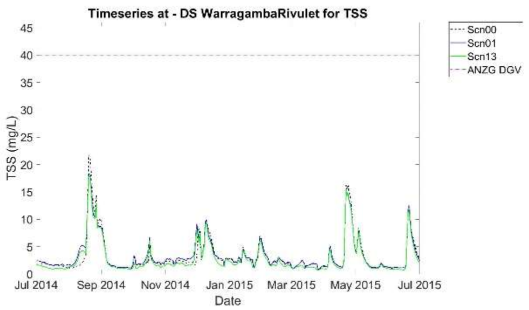
Timeseries plots

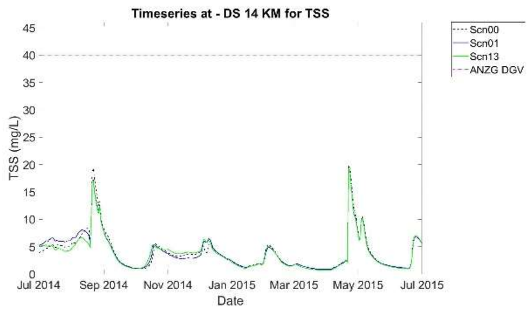


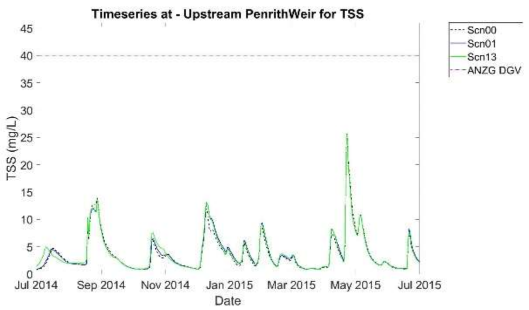


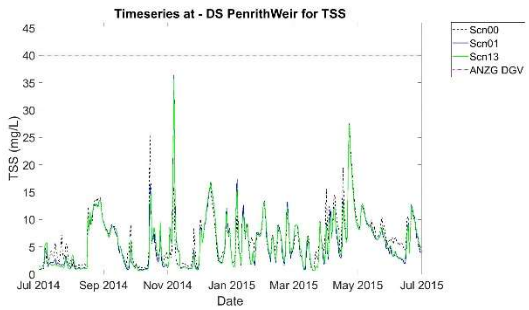


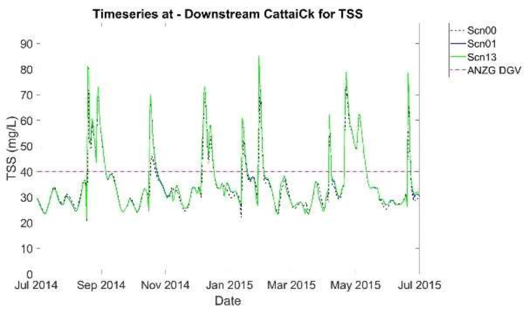


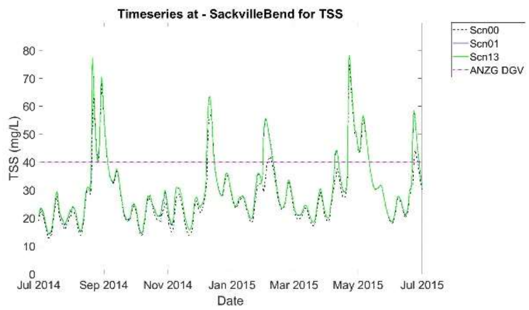




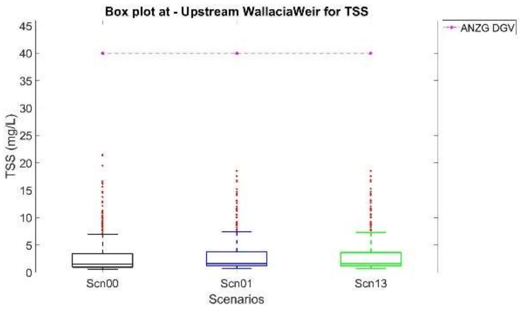


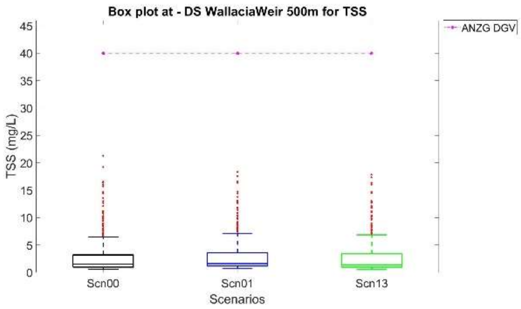


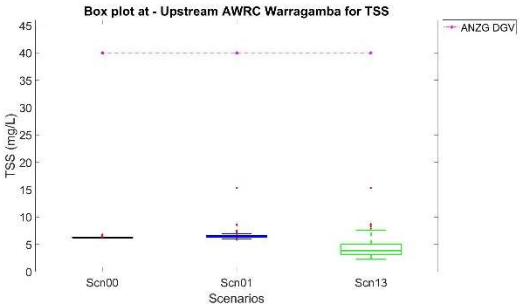


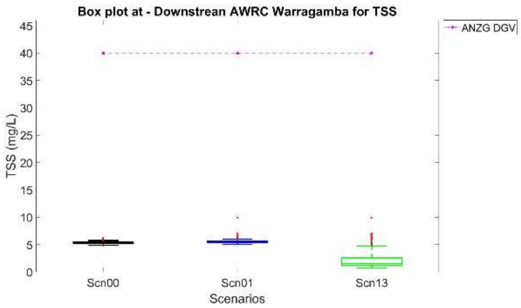


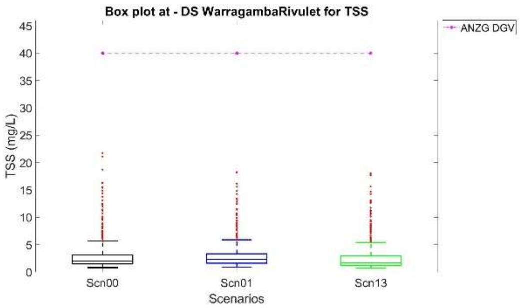
Box plots

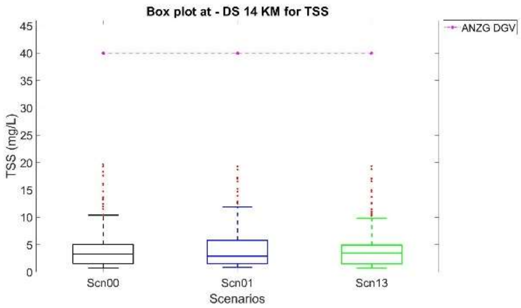

Box plot at - Upstream WallaciaWeir for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios

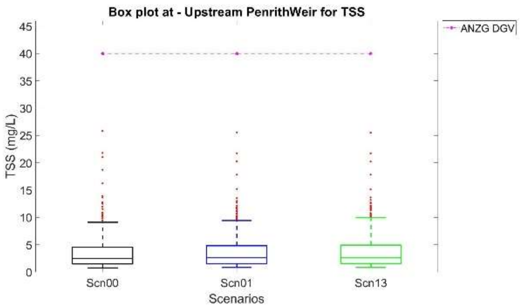

Box plot at - DS WallaciaWeir 500m for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios

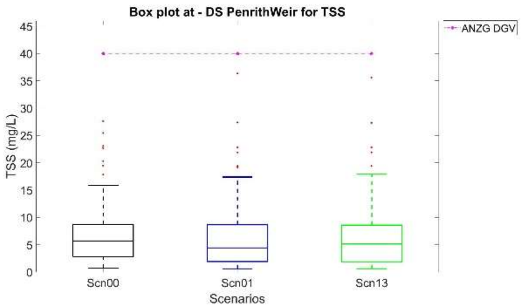

Box plot at - Upstream AWRC Warragamba for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios

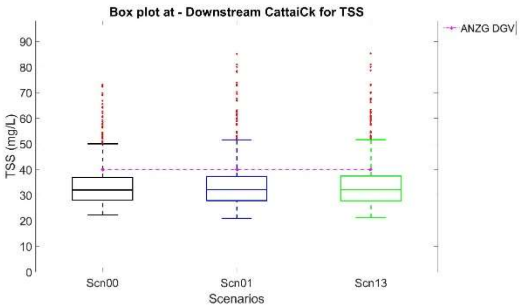

Box plot at - Downstrean AWRC Warragamba for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios

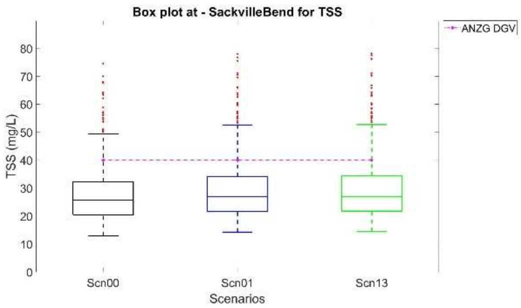

Box plot at - DS WarragambaRivulet for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for TSS
ANZG DGV
TSS (mg/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Dissolved Oxygen (mg/L)

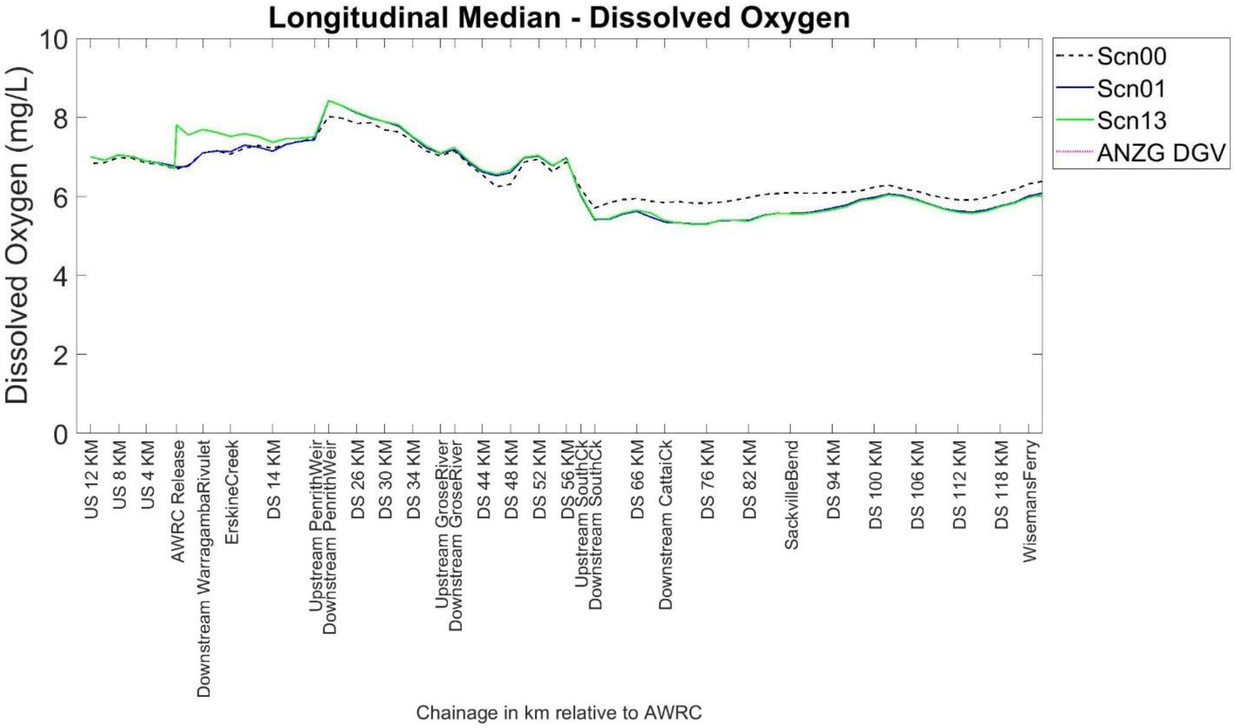
Scenario 13 - wet year

--> Longitudinal plots

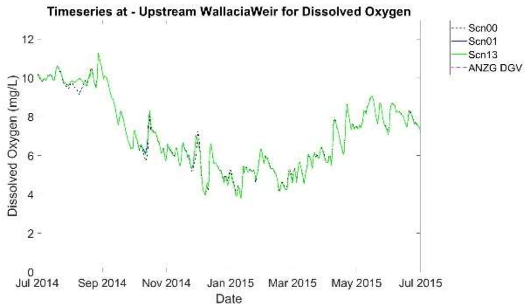
--> Timeseries plots at geographic markers and gauge locations

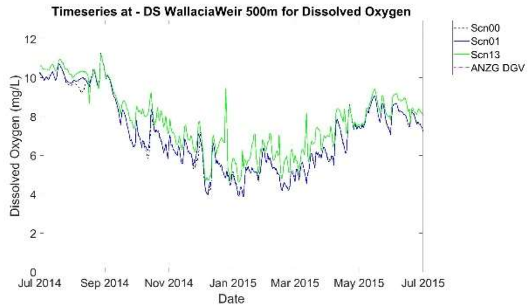
--> Box plots at geographic markers and gauge locations

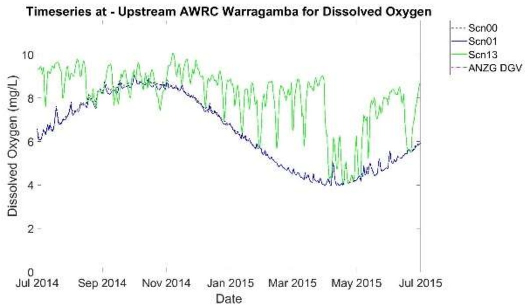
Longitudinal plot

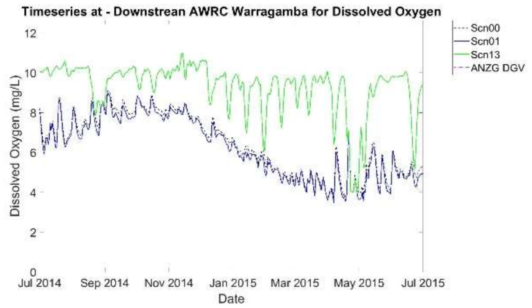


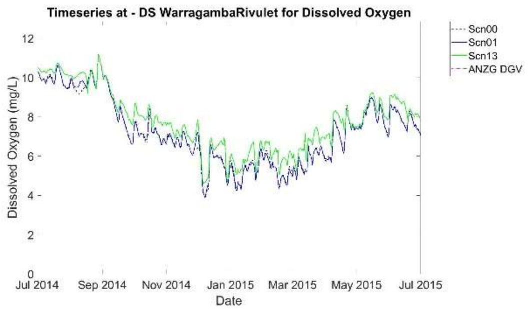
Timeseries plots

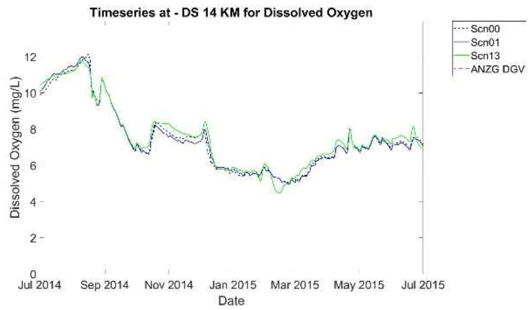


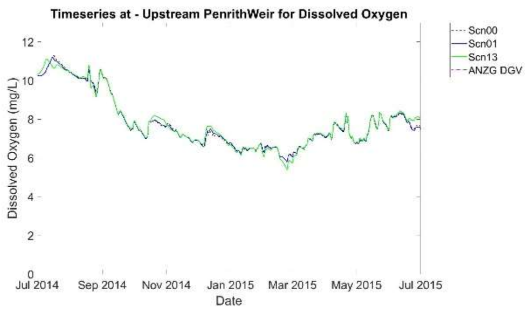


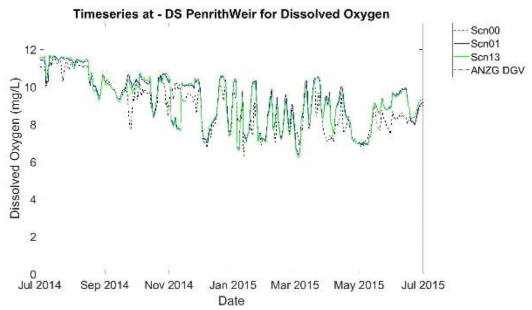


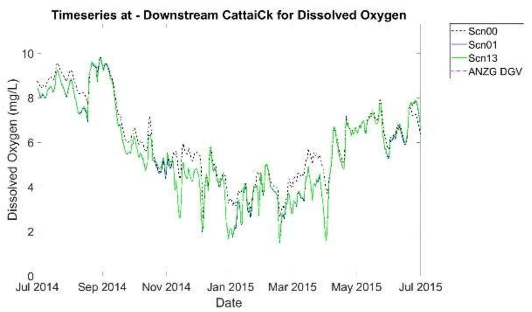


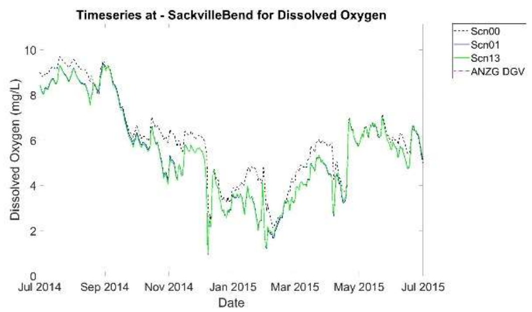




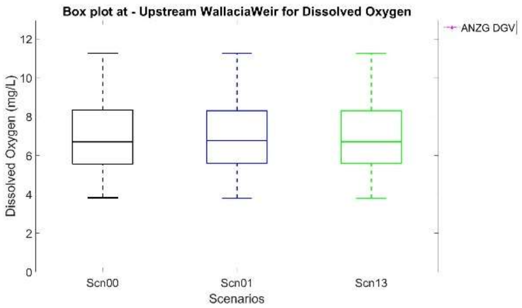


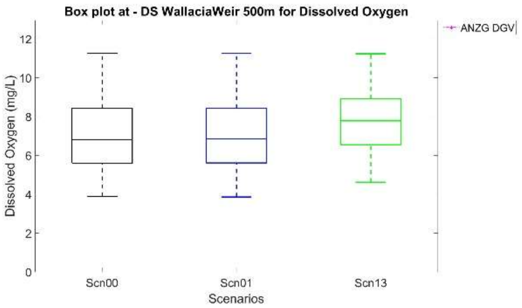


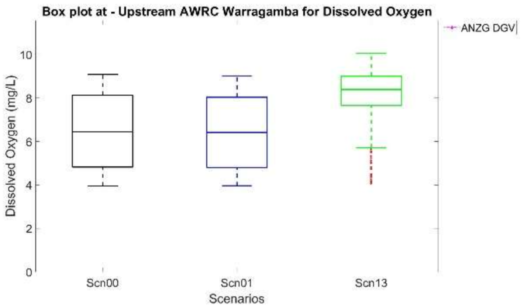


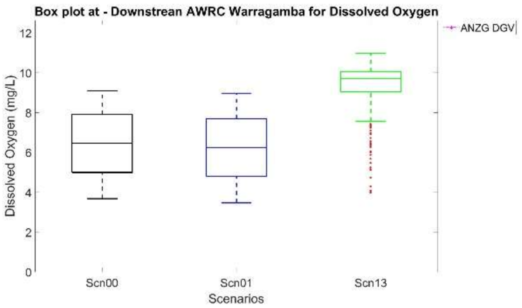


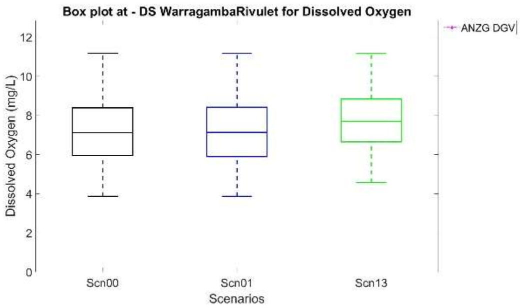
Box plots

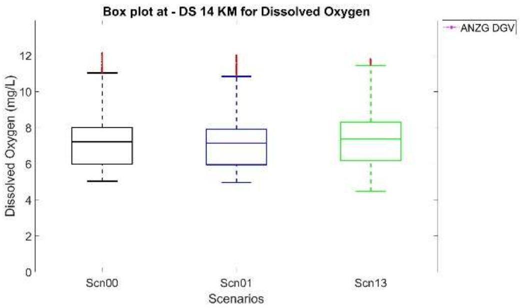

Box plot at - Upstream WallaciaWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

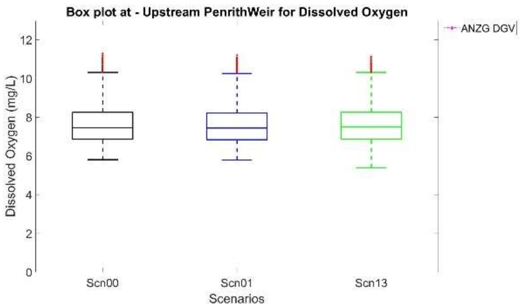

Box plot at - DS WallaciaWeir 500m for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

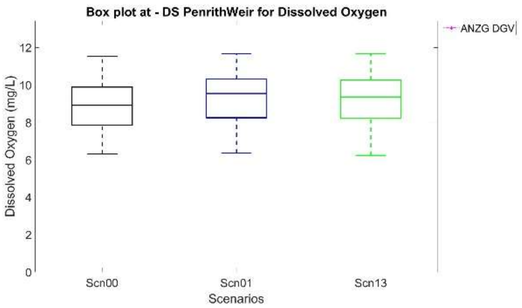

Box plot at - Upstream AWRC Warragamba for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

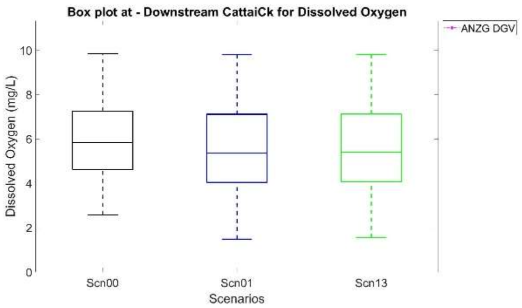

Box plot at - Downstrean AWRC Warragamba for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

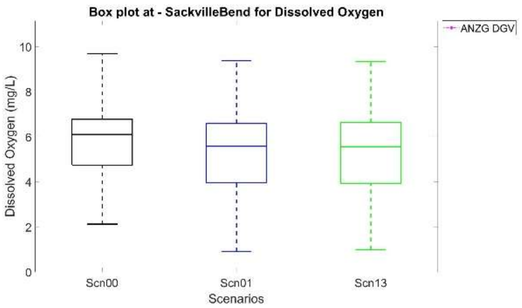

Box plot at - DS WarragambaRivulet for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Dissolved Oxygen
ANZG DGV
Dissolved Oxygen (mg/L)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Dissolved Oxygen Saturation (%)

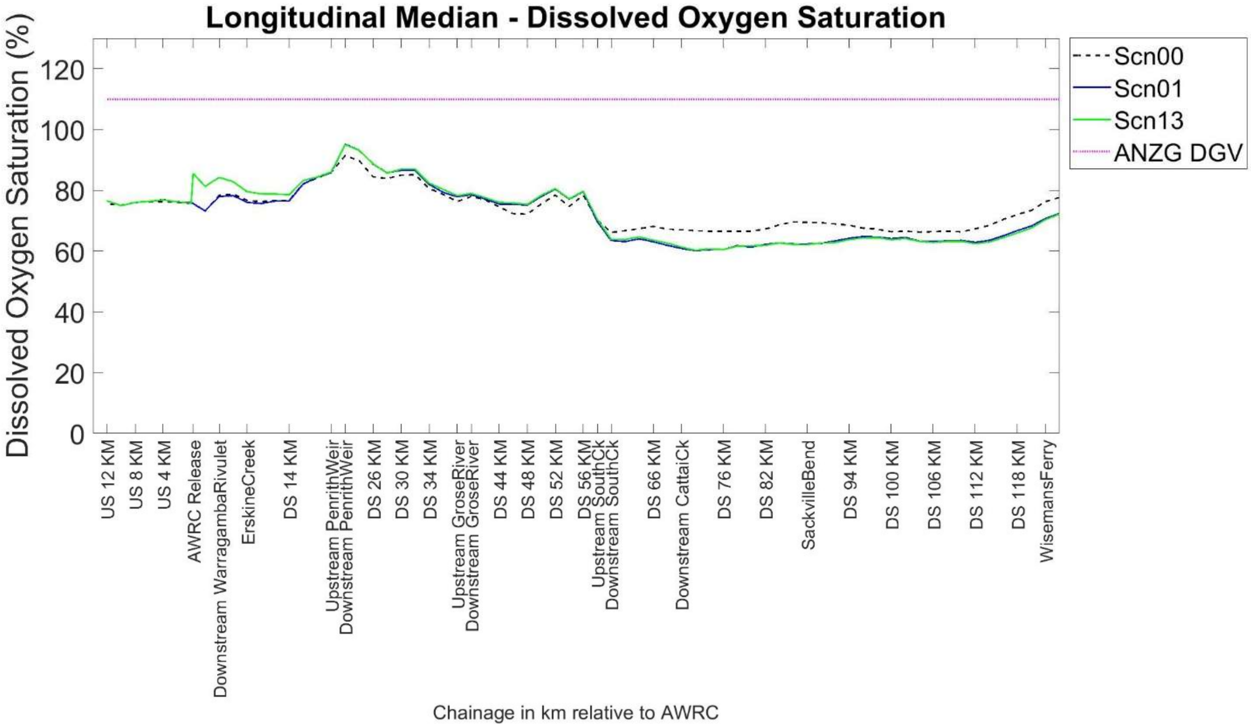
Scenario 13 - wet year

--> Longitudinal plots

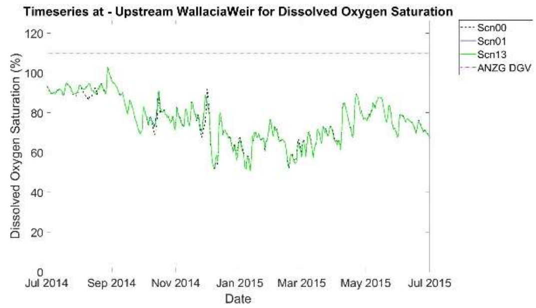
--> Timeseries plots at geographic markers and gauge locations

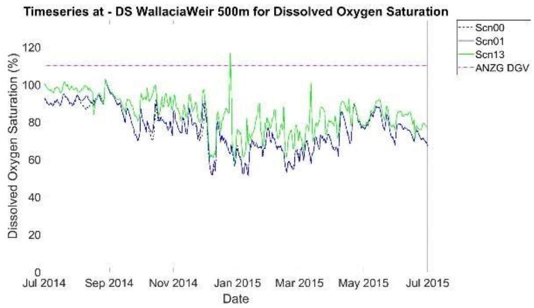
--> Box plots at geographic markers and gauge locations

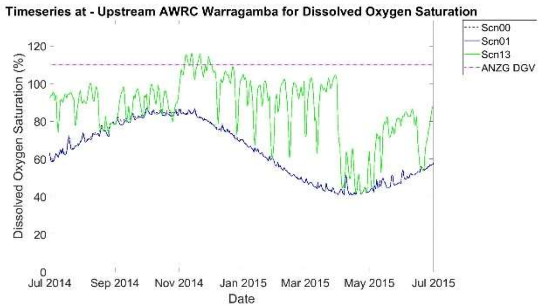
Longitudinal plot

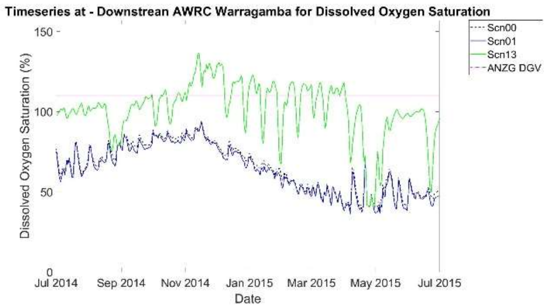


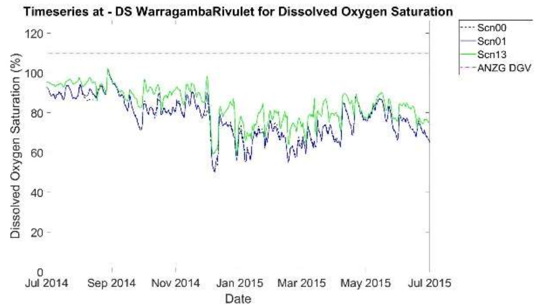
Timeseries plots

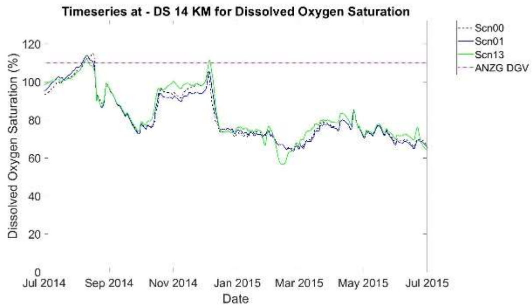


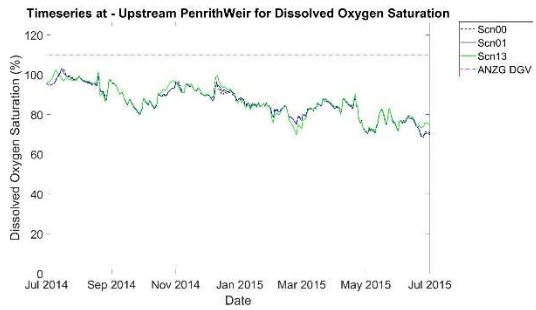


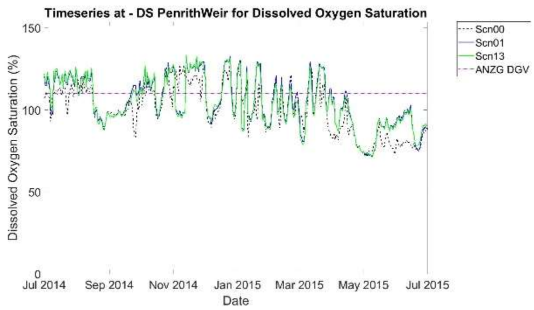


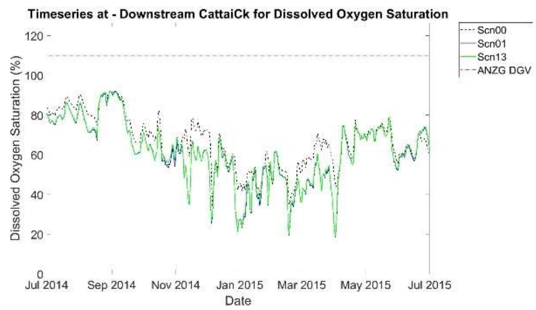


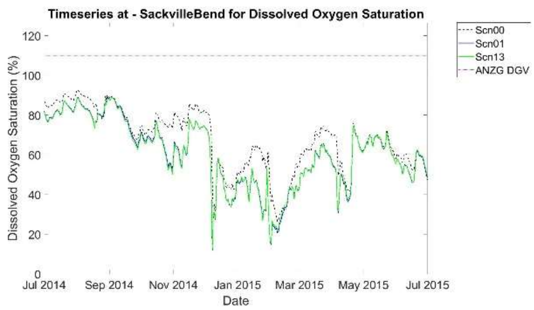




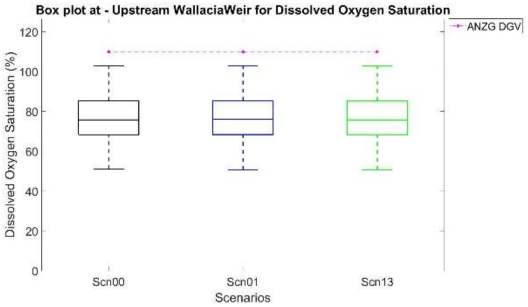


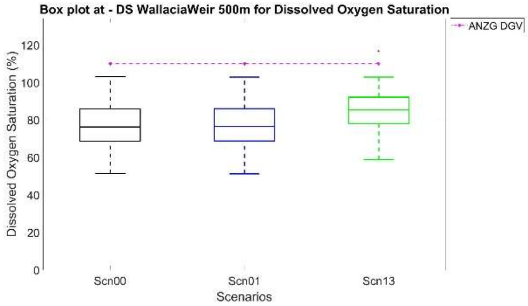


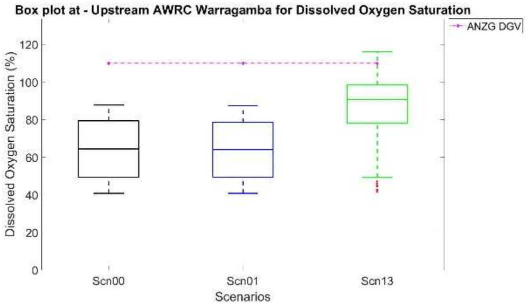


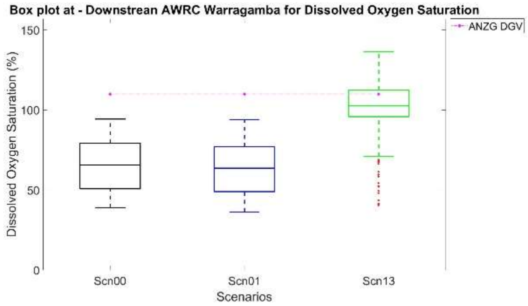


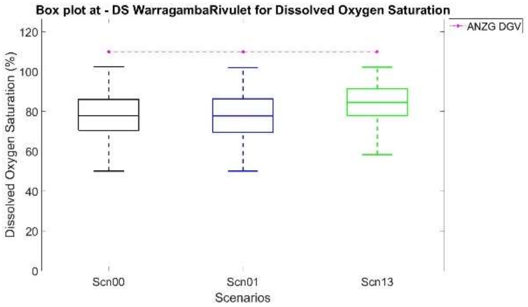
Box plots

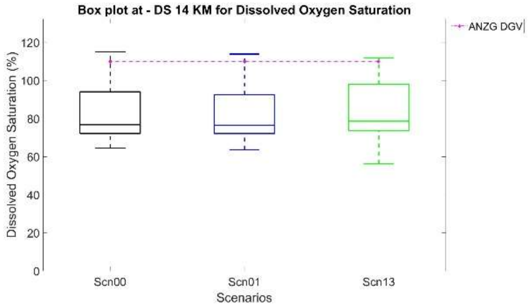

Box plot at - Upstream WallaciaWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
20
40
60
80
100
120
Scn00
Scn01
Scn13
Scenarios

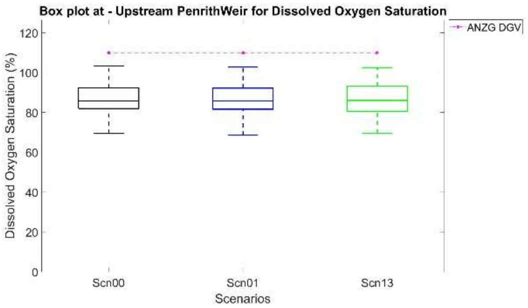

Box plot at - DS WallaciaWeir 500m for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
20
40
60
80
100
120
Scn00
Scn01
Scn13
Scenarios

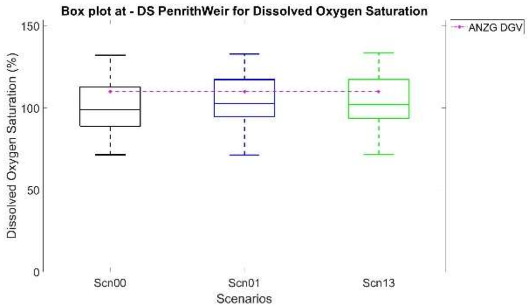

Box plot at - Upstream AWRC Warragamba for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
20
40
60
80
100
120
Scn00
Scn01
Scn13
Scenarios

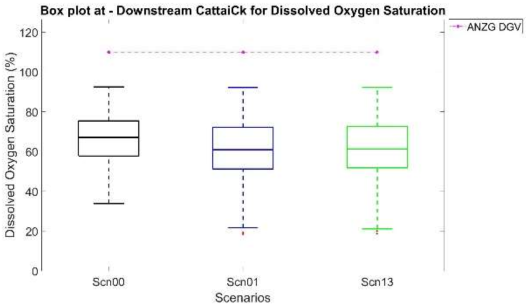

Box plot at - Downstrean AWRC Warragamba for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
50
100
150
Scn00
Scn01
Scn13
Scenarios

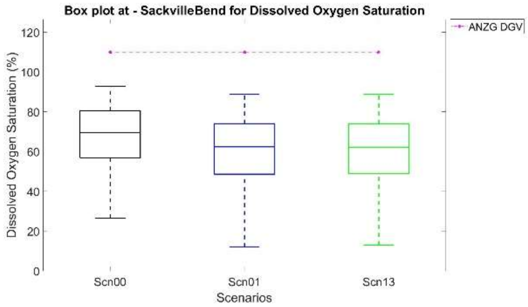

Box plot at - DS WarragambaRivulet for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
20
40
60
80
100
120
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
20
40
60
80
100
120
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
20
40
60
80
100
120
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
50
100
150
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
20
40
60
80
100
120
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Dissolved Oxygen Saturation
ANZG DGV
Dissolved Oxygen Saturation (%)
0
20
40
60
80
100
120
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Ecoli (cfu/100mL)

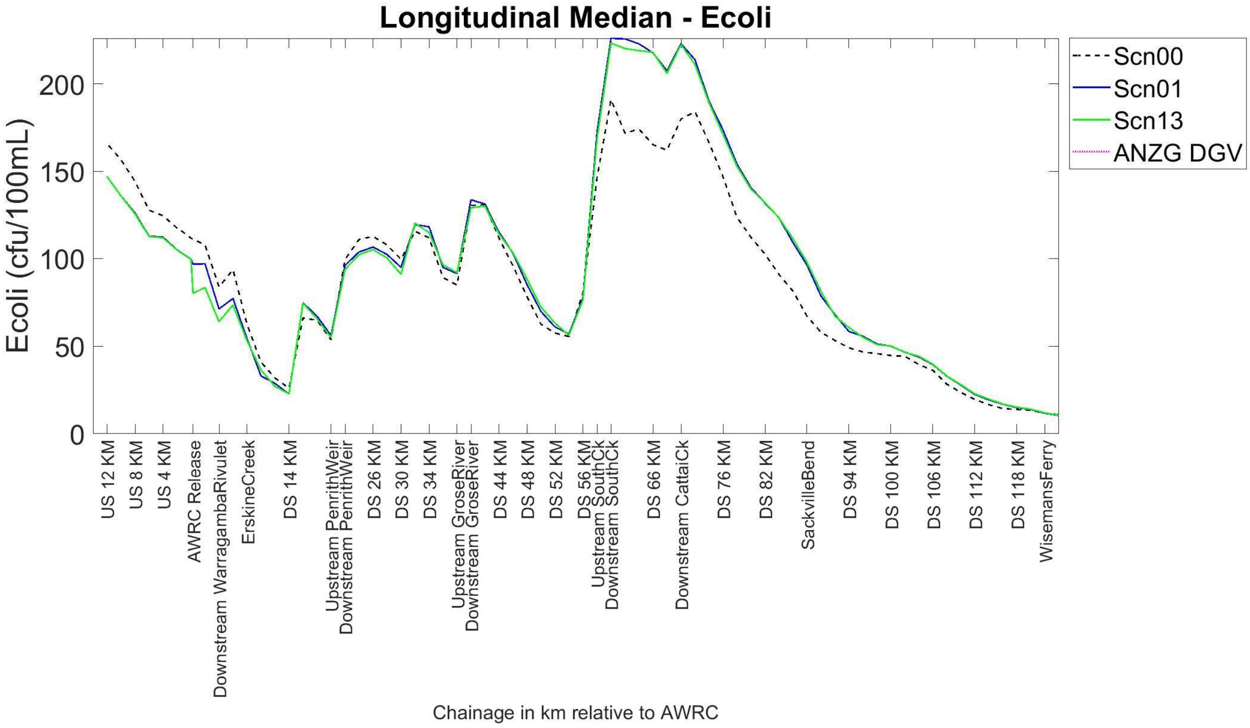
Scenario 13 - wet year

--> Longitudinal plots

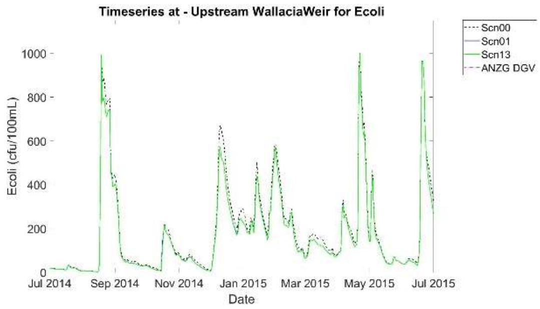
--> Timeseries plots at geographic markers and gauge locations

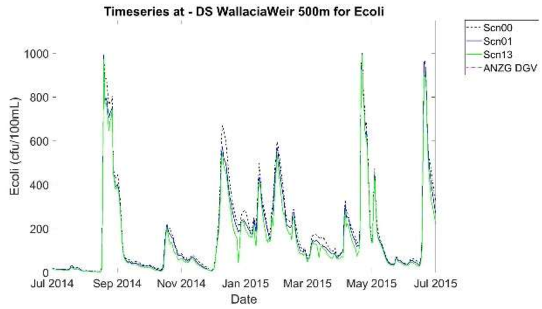
--> Box plots at geographic markers and gauge locations

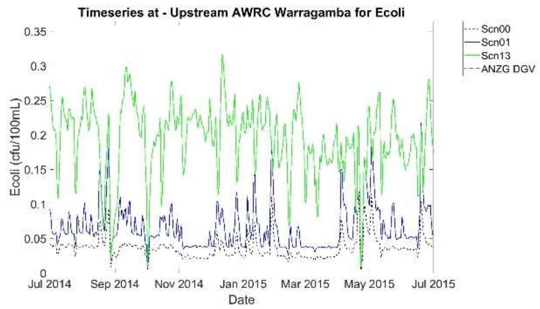
Longitudinal plot

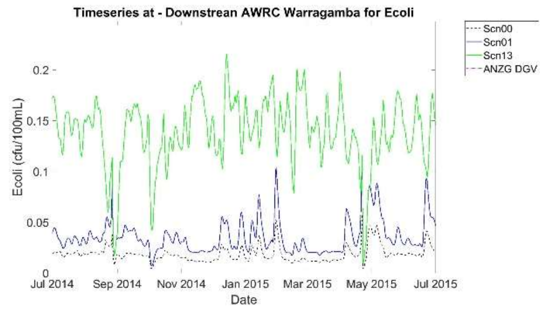


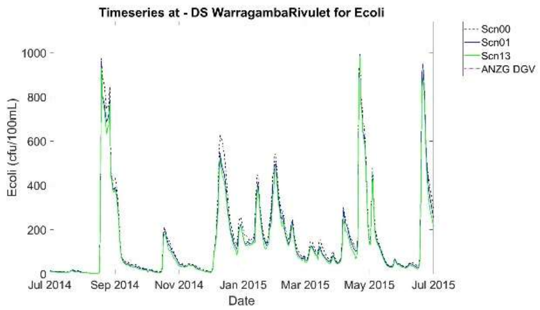
Timeseries plots

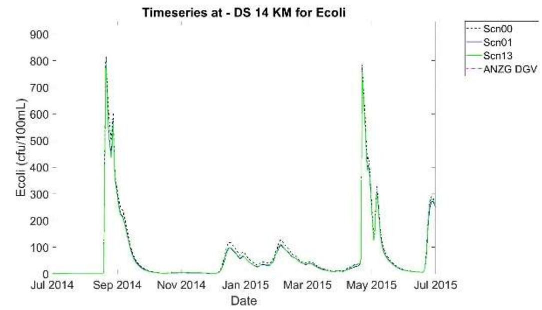


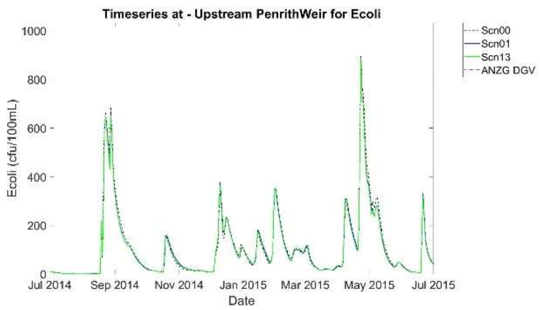


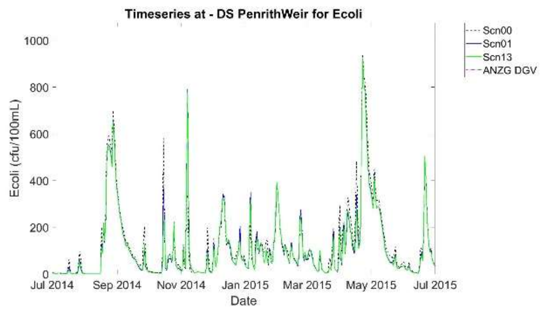


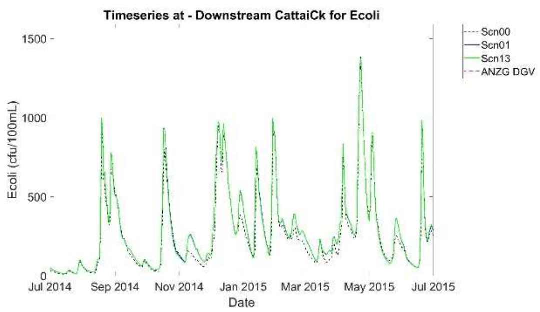


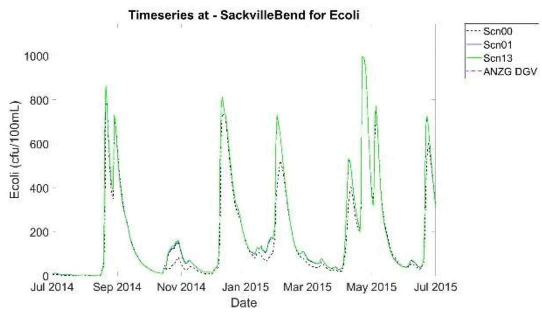




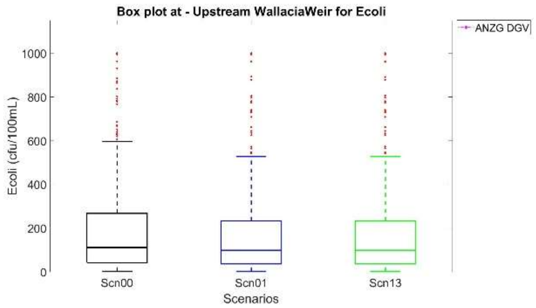


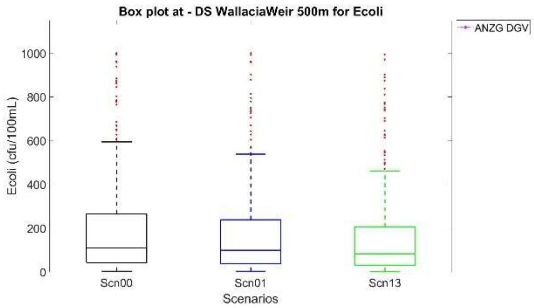


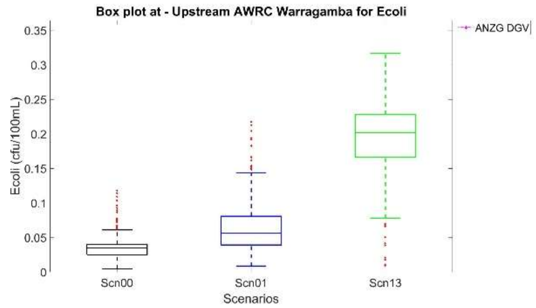


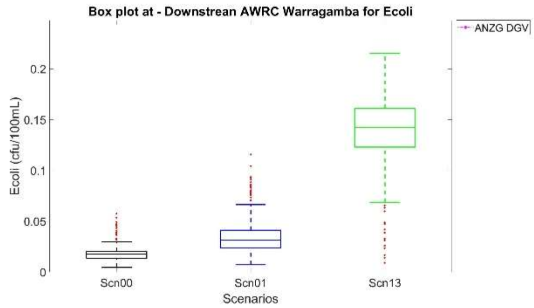


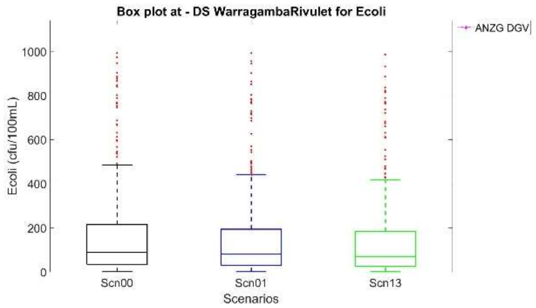
Box plots

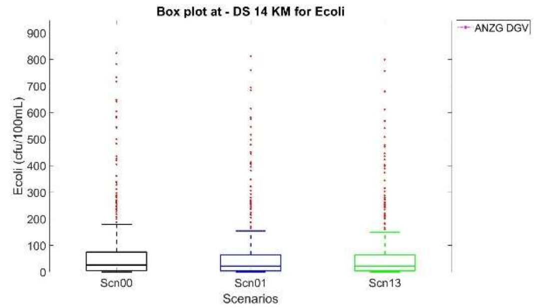

Box plot at - Upstream WallaciaWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

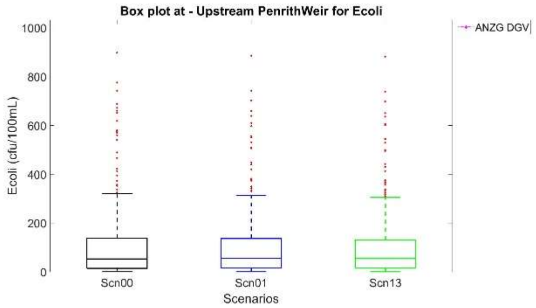

Box plot at - DS WallaciaWeir 500m for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

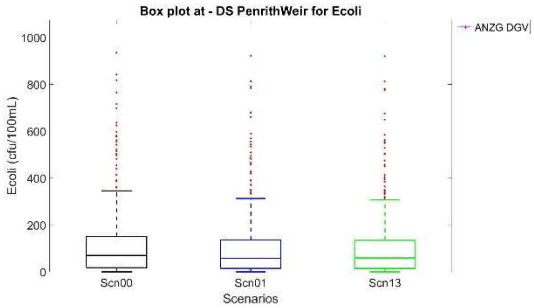

Box plot at - Upstream AWRC Warragamba for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

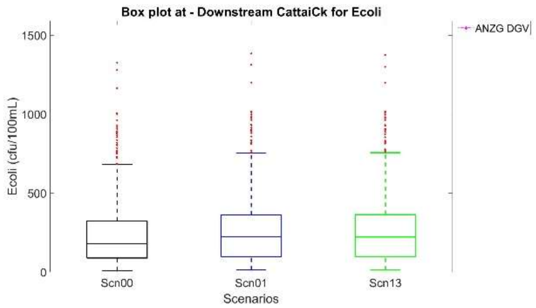

Box plot at - Downstrean AWRC Warragamba for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

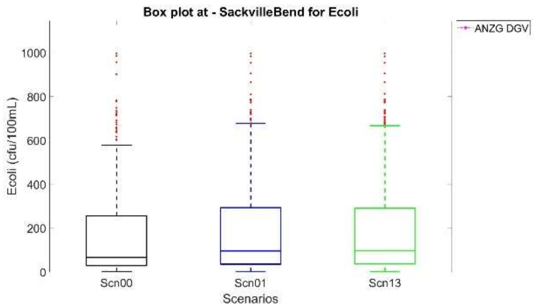

Box plot at - DS WarragambaRivulet for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Ecoli
ANZG DGV
Ecoli (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

Hawkesbury-Nepean WQRM

Enterococci (cfu/100mL)

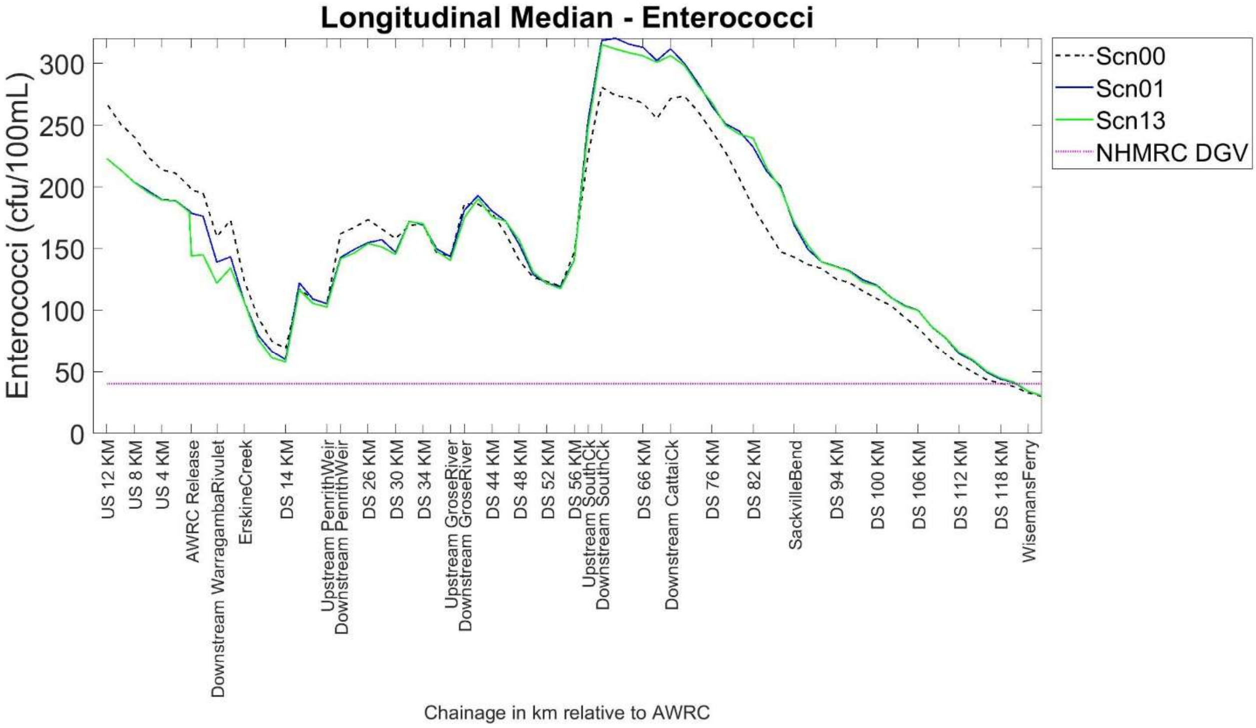
Scenario 13 - wet year

--> Longitudinal plots

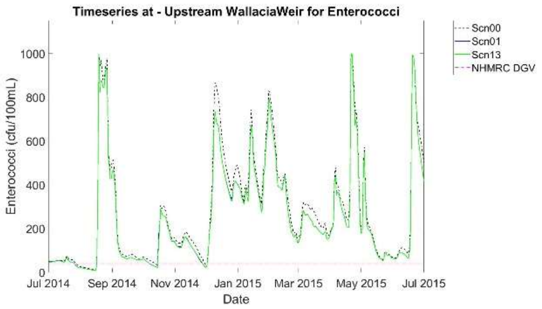
--> Timeseries plots at geographic markers and gauge locations

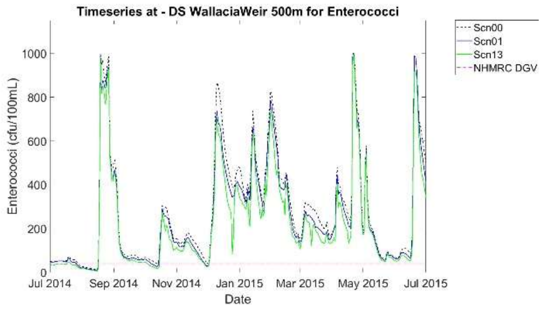
--> Box plots at geographic markers and gauge locations

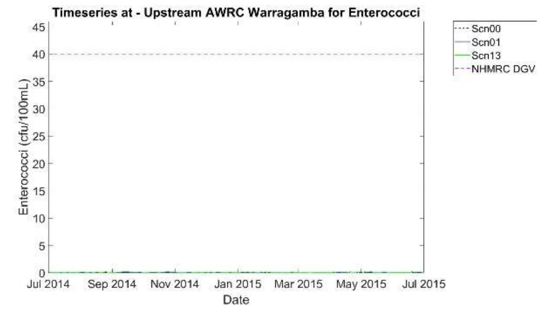
Longitudinal plot

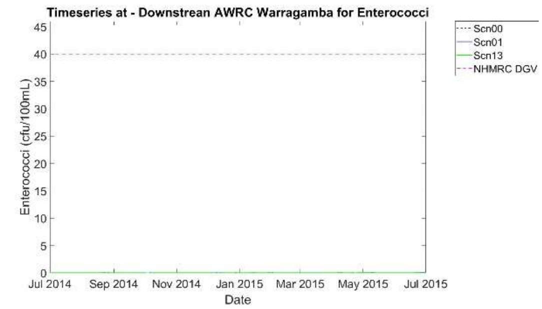


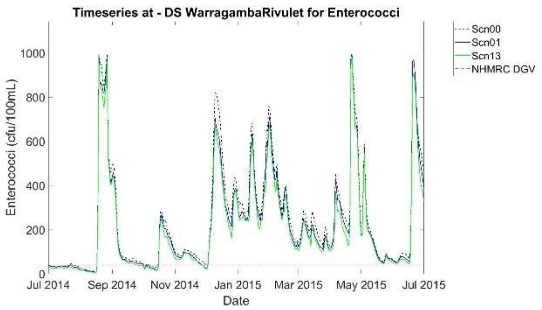
Timeseries plots

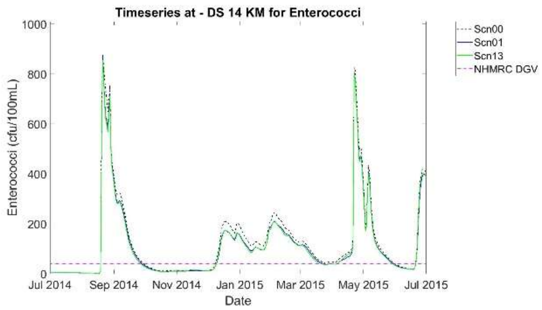


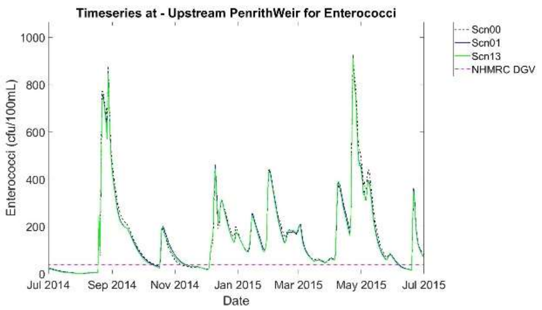


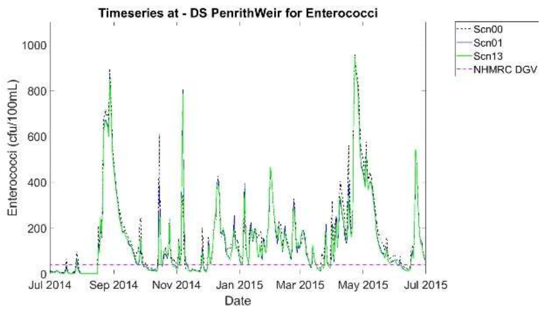


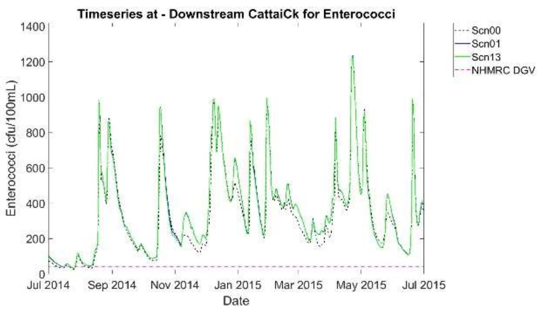


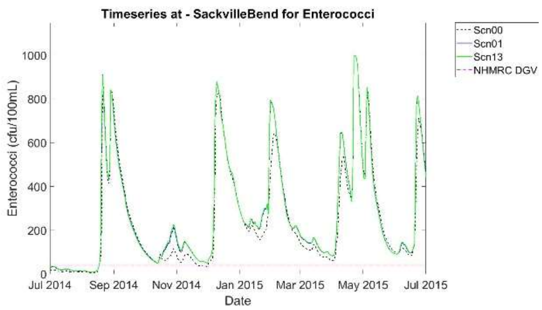




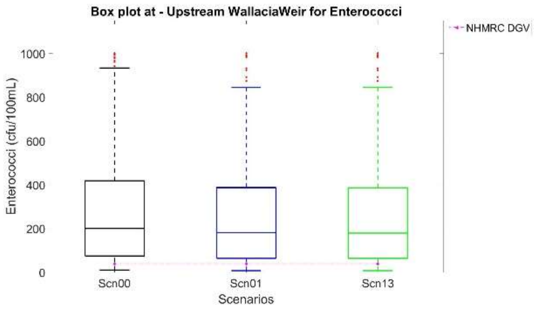


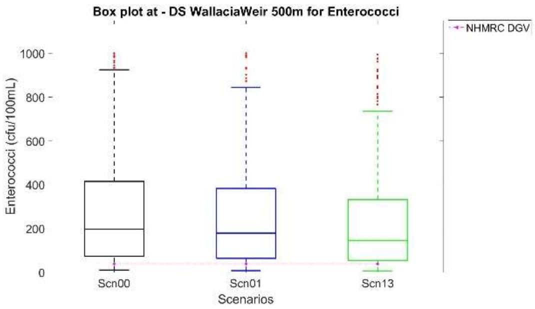


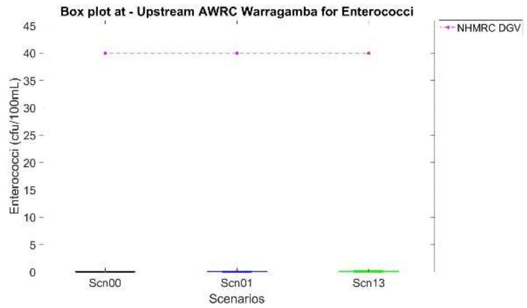


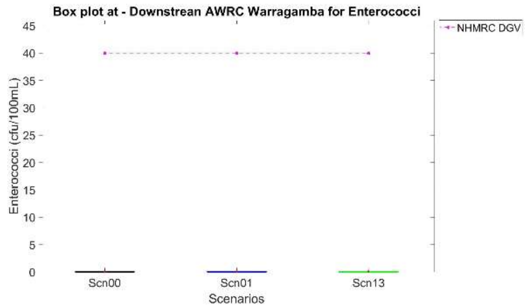


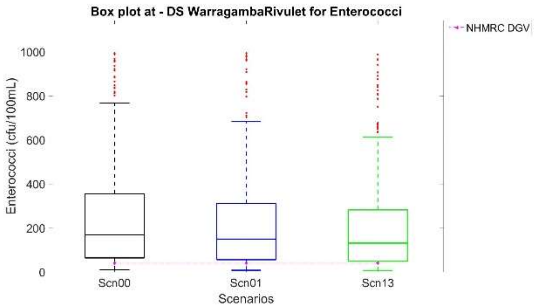
Box plots

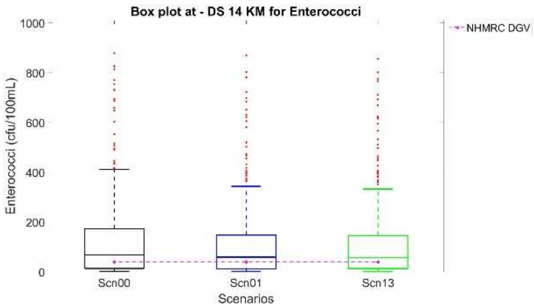

Box plot at - Upstream WallaciaWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

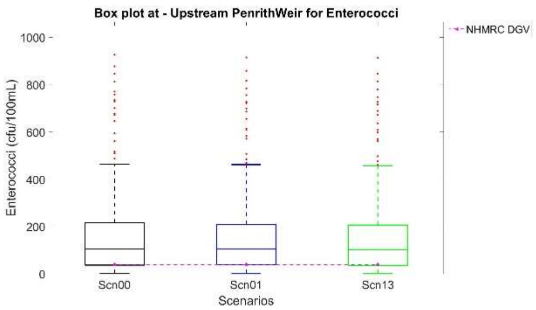

Box plot at - DS WallaciaWeir 500m for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

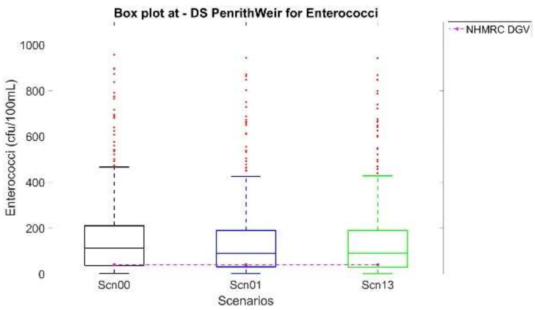

Box plot at - Upstream AWRC Warragamba for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

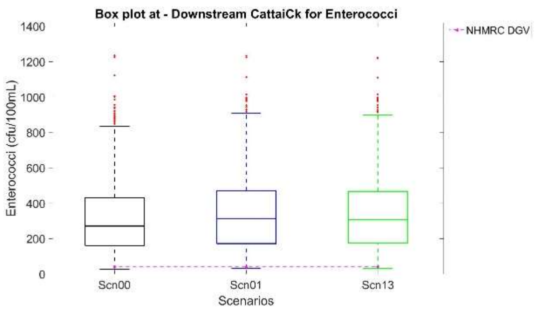

Box plot at - Downstrean AWRC Warragamba for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

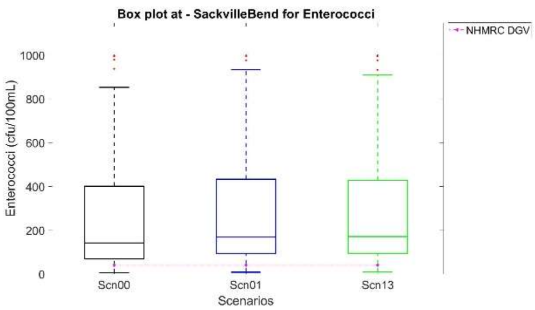

Box plot at - DS WarragambaRivulet for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS 14 KM for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Upstream PenrithWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - DS PenrithWeir for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - Downstream CattaiCk for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios


Box plot at - SackvilleBend for Enterococci
NHMRC DGV
Enterococci (cfu/100mL)
Scn00
Scn01
Scn13
Scenarios

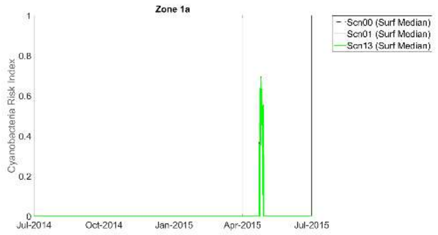
Hawkesbury-Nepean WQRM

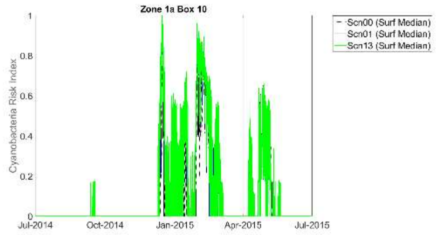
Cyano ()

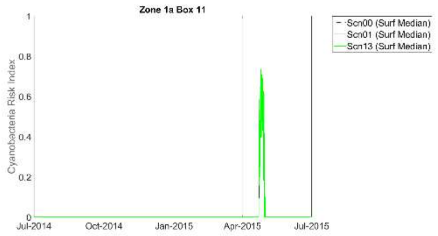
Scenario 13 - wet year

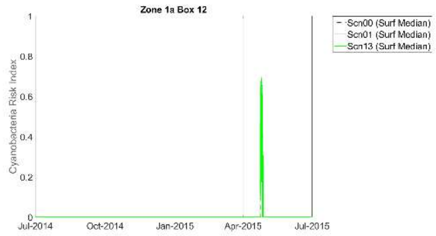
--> Timeseries plots for reaches

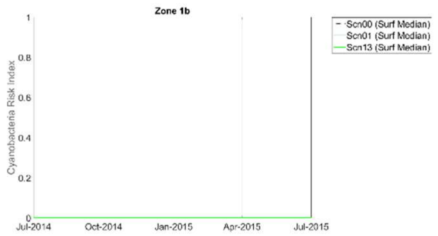
Timeseries plots

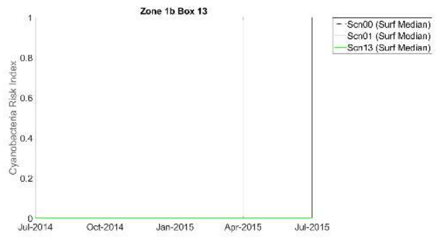


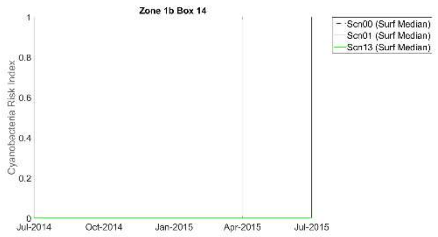


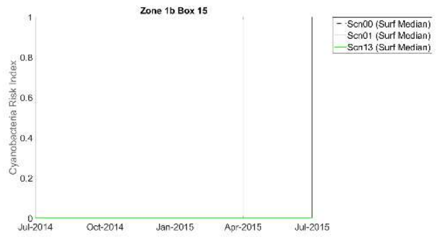


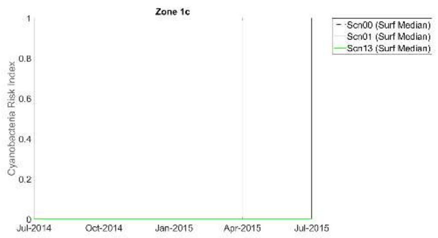


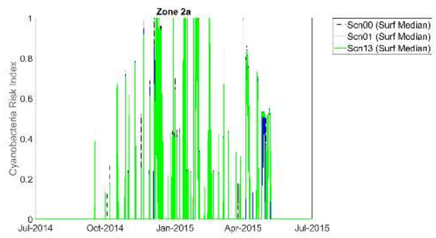


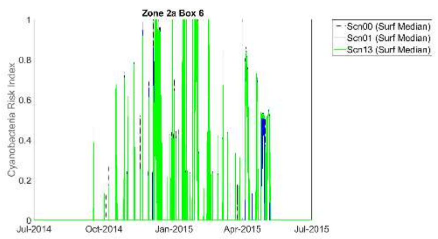


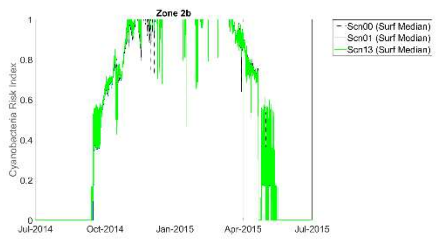


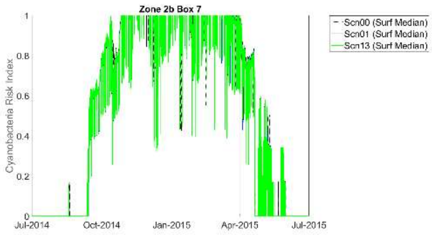


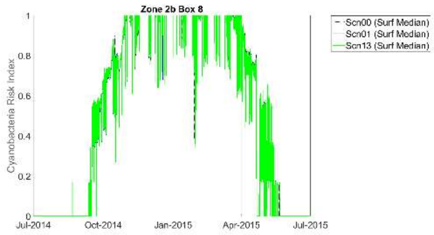


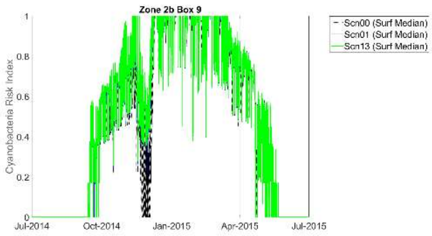


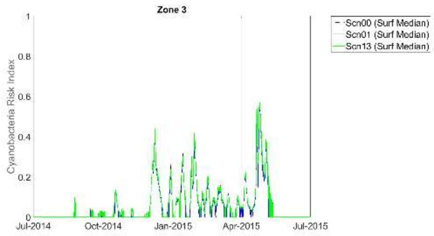


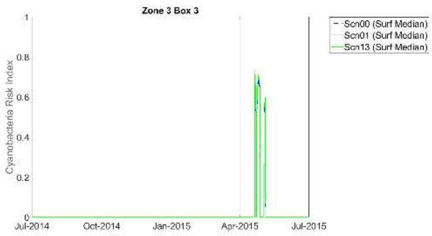


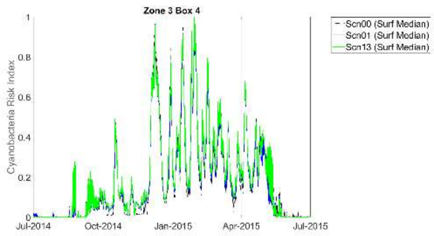

Zone 2b Box 7
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015

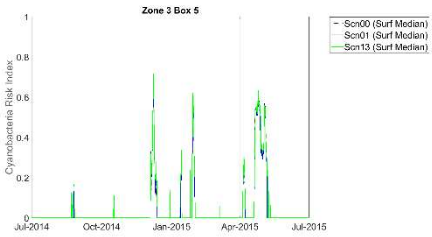

Zone 2b Box 8
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015

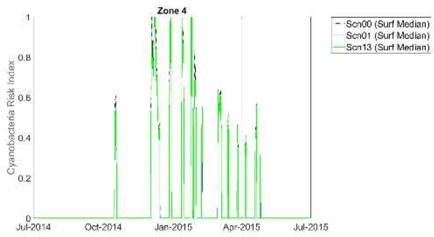

Zone 2b Box 9
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015

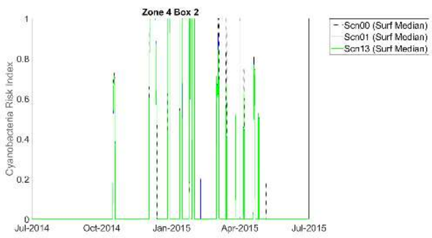

Zone 3
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015

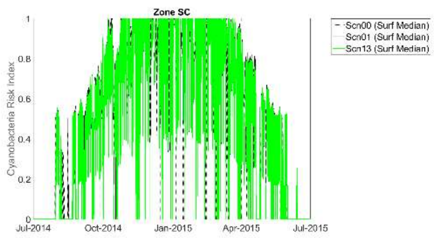

Zone 3 Box 3
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 3 Box 4
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 3 Box 5
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 4
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone 4 Box 2
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015


Zone SC
Cyanobacteria Risk Index
Scn00 (Surf Median)
Scn01 (Surf Median)
Scn13 (Surf Median)
Jul-2014
Oct-2014
Jan-2015
Apr-2015
Jul-2015