

Metadata Statement

Metadata Statement to supplement an Asset

This Metadata Statement questionnaire describes files and metadata associated with an asset. As per the [NSW Government Open Data Policy 2016](#), Metadata is to be published with all datasets and will define or describe content, quality, format or structure of a dataset, the system, location and context in which the dataset was produced, collected, processed or stored.

- Enter information about the resource you are attaching to your asset record -

Info Asset Details

Asset Name:	IMEF Hypothesis 4 Metadata Statement - Murrumbidgee
Attached file name(s):	<ol style="list-style-type: none">1. Murrumbidgee Hypothesis 4 site information 1999_2001.xlsx2. Murrumbidgee Hypothesis 4 sampling occasions 1999_2001.docx3. Murrumbidgee Hypothesis 4 ChIA_Organic matter 1999_2001.xlsx4. Murrumbidgee Hypothesis 4 Periphyton 1999_2001.xlsx5. Murrumbidgee Hypothesis 4 Water Quality 1999_2001.xlsx6. Murrumbidgee Hypothesis 4 Periphyton taxa information 1999_2001.xlsx7. Murrumbidgee Hypothesis 4 Invertebrates with Flow metrics 1999_2001.xlsx8. Murrumbidgee Hypothesis 4 Flow Metrics 1999_2001.xlsx

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Enter information about the files, outputs and interpretation:

1. Murrumbidgee Hypothesis 4 site information 1999_2001

Murrumbidgee Hypothesis 4 Project 1999_2001 has the geographic coordinate borders of

North	South	East	West
-34.958448	-35.369113	148.667943	148.264338

Table 1. Sampling site details

River	Riffle	Hydra Station No.	Station Name	Acronym	LIC Map	Zone 55 Easting	Northing	Latitude	Longitude
2	2	41010173	GOOBARRAGANDRA RIVER @ FLAT ROCK RESERVE	MURR57	8527-2S	629880	6081350	35° 24' 10"	148° 25' 49"
2	1	410057	GOOBARRAGANDRA RIVER @ LACMALAC	GOOLAC	8527-2N	622500	6089400	35° 19' 52"	148° 20' 52"
2	2	41010312	GOOBARRAGANDRA RIVER @ LACMALAC D/S OF STATION	GOOLA1	8527-2N	622200	6089200	35° 19' 58"	148° 20' 40"
3	1	41010166	GOODRADIGBEE RIVER @ SWINGING BRIDGE RESERVE	MURR50	8627-4S	653550	6107390	35° 9' 53"	148° 41' 10"
3	2	41010351	GOODRADIGBEE RIVER D/S SWINGING BRIDGE RESERVE	GOODSB	8627-4S	654650	6107500	35° 9' 48"	148° 41' 53"
1	1	41010313	MURRUMBIDGEE RIVER @ RIVERVIEW D/S NANANGROE STATION	MURNA1	8628-S	638250	6136250	34° 54' 24"	148° 30' 48"
1	2	41010314	MURRUMBIDGEE RIVER @ RIVERVIEW D/S NANANGROE STATION (ILLAWONG)	MURNA2	8628-S	638600	6136260	34° 54' 23"	148° 31' 2"
4	2	41010988	TUMUT RIVER @ GREEN HILLS FORESTRY NURSERY	TUMAS2	8527-2N	614850	6085150	35° 22' 13"	148° 15' 51"
4	1	41010311	TUMUT RIVER @ JONES BRIDGE RESERVE	TUMAS1	8527-2S	614200	6084500	35° 22' 34"	148° 15' 26"

2. Murrumbidgee Hypothesis 4 sampling occasions 1999_2001

Table 2. Sampling locations and dates with parameters collected. An additional site per reach was included from September 2000 onwards. No P:R or isotope work for Tumut River in Sept 2000 due to high flows.

Time	Parameter	Reach & sites							
		Murrumbidgee		Goobarragandra		Goodradigbee		Tumut	
		Murna1	Murna2	Goola1	Murr57	Murr50/1	Murr50/2	Tumas1	Tumas2
July 1999 Time1	inverts	* ✓□ Murna3	✓□	✓□	* ✓□ Goola2	✓□	✓□	✓□	✓□
Oct 1999 Time2	Biomass	✓□	✓□	✓□	✓□	✓□	✓□	✓□	✓□
	Taxa	✓□	✓□	✓□	✓□	✓□	✓□	✓□	✓□
	Chl a	✓□	✓□	✓□	✓□	✓□	✓□	✓□	✓□
	inverts	✓□	✓□	✓□	✓□	✓□	✓□	✓□	✓□
Feb 2000 Time 3	biomass		✓□	✓□		✓□			
	taxa		✓□	✓□		✓□			
	chl a		✓□	✓□		✓□			
	inverts		✓□	✓□		✓□			
	isotopes		✓□	✓□		✓□			
	P:R		✓□	✓□		✓□			
May 2000	biomass		✓□	✓□		✓□			✓□

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Time 4	taxa		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	chl a		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	inverts		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	isotopes		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	P-R		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
August 2000 Time 5	Biomass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
	Taxa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
	Chl a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
	inverts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Sept 2000 Time 6	biomass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	taxa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	chl a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	inverts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	isotopes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	P-R	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Oct 2000 Time 7	biomass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	taxa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	chl a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	inverts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	isotopes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	P-R	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Feb 2001 Time 8	biomass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	taxa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	chl a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	inverts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	isotopes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	P-R	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
May 2001 Time 9	biomass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	taxa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	chl a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	inverts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	isotopes	lost	lost	Lost	Lost	lost	lost	lost	lost
	P-R	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Aug 2001 Time 10	inverts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	biomass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	taxa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	chl a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	isotopes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Nov 2001 Time 11	biomass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	taxa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	chl a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

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	<i>inverts</i>	✓□	✓□	✓□	✓□	✓□	✓□		
	<i>isotopes</i>	✓□	✓□	✓□	✓□	✓□	✓□		
	<i>P:R</i>	✓□	✓□	✓□	✓□	✓□	✓□		

Sampling events

- | | |
|----------------------------|--------------------|
| 1 - July 1999 | 8 - Feb 2001 |
| 2 - October 1999 | 9 - May 2001 |
| 3 - February 2000 | 10 - August 2001 |
| 4 - May 2000 | 11 - November 2001 |
| 5 - August 15 Murrumbidgee | |
| 6 - Sept 2000 | |
| 7 - Oct 2000 | |

3. Murrumbidgee Hypothesis 4 Chlorophyll A and Organic Matter 1999-2001

Heading	Details
Sample code	Sample code linking all samples for project, sampling event(j)site(j)rifle(j)replicate
date	Date of sampling
Category	Category of sample b(biofilm/periphyton), l (invertebrates)
chlmg/m ²	chlorophyllA, mg/m ² (measured from rock surface area)
organic mg/m ²	organic matter mg/m ²
inorganic mg/m ²	inorganic matter mg/m ²

4. Murrumbidgee Hypothesis 4 Periphyton 1999-2001

This spreadsheet attributes provides stacked data attributes used for analysis of periphyton genera data. The rest of the columns to the right, from column I to BJ contain genera names and numerical data. The names here are genus names in full.

Column	Heading	Details
Column A	Sample code	Individual code including Sampling event(j)site(j)rifle(j)sample no
Column B	Date	Date of sampling
Column C	Category	B - Biofilm
Column D-BD	Periphyton short names	Periphyton short name codes, explained in worksheet 2 with taxa information

5. Murrumbidgee Hypothesis 4 Water Quality 1999-2001

Water Quality stacked dataset. Data collected using standard QA procedures, analysed in a NATA registered NSW Office of Water laboratory.

Column	Heading	Details
Column A	Sample code	Individual code including Sampling event(j)site(j)riffle(j)sample no
Column B	Acronym	Acronym for Site Name - Tumas 1&2 (Tumut River, riffles 1&2), Goola 1&2 - (Goobarragandra River riffles 1&2), (Murna 1&2(Murrumbidgee River riffles 1&2), Goodsb (Goodradigbee River riffle 1), Murr 57 - (Goodradigbee River riffle 2)
Column C	Date	Date of sampling
Column D	Category	W – Water Quality
Column E	EC	Electrical conductivity (microsiemens/cm)
Column F	DOMGL	Dissolved Oxygen (% saturation)
Column G	DOPERSAT	Dissolved Oxygen (mg/L)
Column H	TEMP	Temperature (degC)
Column I	TURB	Turbidity (NTU)
Column J	PT	Total Phosphorus (mg/l)
Column K	MEANOX	Mean Nitrogen oxides (APHA (1998) methods 4500-NO3 F (automated cadmium reduction))
Column L	MEANNH3	Mean Nitrogen Ammonia (APHA (1998) 4500-NH3 H (automated phenate))
Column M	pH	pH
Column N	TSS	Total Suspended Solids (mg/L)
Column O	PRD	Filterable Reactive Phosphorus (mg/L) (APHA) (1998) (4500-P F (automated ascorbic acid reduction))
Column P	ALKCA	Alkalinity (as Carbonate, mg/L)
Column Q	ALKBIC	Alkalinity (as Bicarbonate, mg/L)
Column R	NKJELD	Total Kjeldahl Nitrogen (mg/L)

6. Murrumbidgee Hypothesis 4 Periphyton Taxa information

An information sheet explaining requirements for periphyton found in the study.

Column	Heading	Details
Column A	Common grouping	Common algal grouping as per Entwisle, et al. Freshwater Algae in Australia
Column B	Genus	Genus
Column C	Family	Family
Column D	Acronym	Acronym code
Column E	Australian distribution exc. (NZ)	Australian distribution if known, excluding NZ
Column F	habitat	Preferred habitat if known
Column G	NZ extra info	Information known from New Zealand

7. Murrumbidgee Hypothesis 4 Invertebrates

The invertebrate data sheets include flow metrics aligned to the generic sample codes. Invertebrates were identified to genus level or above.

Column	Heading	Details
Column A	Sample code	Individual code including Sampling event(j)site(j)riffle(j)sample no
Columns B-GX	Invertebrate taxa	Invertebrates were identified by an expert laboratory to the highest practicable level, with the best discrimination to genus level

8. Murrumbidgee Hypothesis 4 Flow Metrics

Flow metrics for analysis between biological variables. These were derived from real time flow data, process with the River Analysis Package now toolkit (<https://ewater.org.au/>)

Column	Heading	Details
Column A	Sample code	Sampling event, site, riffle, sample no. Individual code
Column B	date	Sampling date
Column C	Category	Category of sample - B=Biofilm, I=invertebrates, W=Water quality
Column D	ant mean 10	Antecedant mean flow 10 days
Column E	ant mean 20	Antecedant mean flow 20 days
Column F	ant mean 30	Antecedant mean flow 30 days
Column G	ant 60 day	Antecedant mean flow 60 days
Column H	ant 90 day	Antecedant mean flow 90 days
Column I	5 day median	5 day antecedant median flow
Column J	10 day median	10 day antecedant median flow
Column K	30 day median	30 day antecedant median flow
Column L	60 day median	60 day antecedant median flow
Column M	max flow 30 days	Maximum antecedent 30 day flow
Column N	max flow 60 days	Maximum antecedent 60 day flow
Column O	max flow 90 days	Maximum antecedent 90 day flow
Column P	fall change 30	Maximum antecedent 30 fall in flow
Column Q	fall change 60	Maximum antecedent 60 fall in flow
Column R	fall change 90	Maximum antecedent 90 fall in flow
Column S	Max change 30	Maximum antecedent 30 change in flow
Column T	max change 60	Maximum antecedent 60 change in flow
Column U	max change 90	Maximum antecedent 90 change in flow
Column V	Froude No. $Fr = V/\sqrt{gXD}$	Froude No

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Accuracy and Error

Enter information about accuracy and any known error:	All data is accurate, periphyton identification have been performed by registered Australian National laboratories. Water quality, chlorophyllA and organic matter data has been processed by a registered water quality laboratory. Flow metrics were derived from NSW Government database (now Hydstra), with high accuracy and little error). Derived data, including rock surface area was performed using the foil wrapping technique (Lower, RL, Guckert, JB, Belanger, SE, Davidson, DH, Johnson, DW, 1996, An evaluation of periphyton community structure and function on tile and cobble substrata in experimental stream mesocosms, Hydrobiologia, vol.328, pp.135–146.)
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Additional Comments

Enter any additional comments pertaining to the Asset or files within:	
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Contact

For further information on this dataset contact:

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- Email: water.dataproducts@dpie.nsw.gov.au

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