Water Monitoring Information Portal Web Services

Contents

The Qld Water Monitoring Information Portal

The Qld Water Monitoring Information Portal (WMIP) publishes web services which allow clients to retrieve data on an adhoc or automatic basis in volumes for which the standard user interface is not designed. The Webservice URLs can be directly supplied to the browser (for testing and development) or used programmatically in an acquisition platform. Client code should be scripted to get data and run on a cycle that is designed around the telemetry update frequency to avoid loading the WMIP server excessively.

Webservices are monitored for abuse, excessive or continued malformed calls may result in the client IP address being blocked. A test facility is also available for development and can be accessed via application to wmis@rdmw.qld.gov.au.

Disclaimer

The materials available on or through this website are distributed by the Queensland Government as an information source only.

To the maximum extent permitted by law, the State of Queensland makes no statement, representation, or warranty about the quality, accuracy, context, completeness, availability or suitability for any purpose of, and you should not rely on, any materials available on or through this website.

Despite our best efforts, the State of Queensland makes no warranties that the materials available on or through this website are free of infection by computer viruses or other contamination, to the maximum extent permitted by law.

The Queensland Government disclaims, to the maximum extent permitted by law, all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you or any other person might incur for any reason including as a result of the materials available on or through this website being in any way inaccurate, out of context, incomplete, unavailable, not up to date or unsuitable for any purpose.

A user of this website who uses the links provided to another Queensland Government agency's website and material available on or through that other website acknowledges that the disclaimer and any terms of use, including licence terms, set out on the other agency's website govern the use which may be made of that material.

1. Using WMIP Web Services

The formats used by web services are standard JSON and for a limited selection of calls, CSV.

WMIP web service calls commonly request data from either the Time Series or Database domain.

Below is a brief summary of web service calls available through the WMIP, for detail on other capabilities, some more Web service info is published by the vendor: http://kisters.com.au/webservices.html

1.1.   Time Series requests

Time series calls retrieve a series of values for a specific variable measured repeatedly over time.

It should be feasible to execute time series web service calls every hour at hh:30 to get the latest values. RDMW water monitoring data is logged and transmitted hourly.

1.1.1. Constructing a Time Series JSON call

To retrieve values for specific variables a JSON call must include the Function to be performed and the list of time series Parameters being requested.

Table 1 lists commonly used JSON Functions for Time Series web service calls.

Table 1 JSON Functions for Time Series

Function	Description	Format returned
get_site_list	return a list of sites	Standard JSON
get_ts_traces	Retrieves one or more time series traces	Standard JSON & CSV
get_latest_ts_values	return last time-series values	Standard JSON & CSV
get_ts_blockinfo	returns info about time series blocks	Standard JSON
get_site_geojson	returns GeoJSON and other field data from the site table for the provided site list	Standard JSON

For each Function a selection of Parameters are available that specify the time series values being requested. Table 2 lists and describes the Parameters used by the time series Functions in Table, 1 in both standard JSON and CSV reporting formats.

Queensland Government

Table 2 Parameters used by the time series Functions

Parameters	Description	Example	"get_site_list" Standard JSON	"get_ts_traces" Standard JSON	"get_ts_traces" CSV format	"get_latest_ts_values" Standard JSON	"get_latest_ts_values" CSV format	"get_ts_blockinfo" Standard JSON	"get_site_geojson" Standard JSON
version	version of the JSON call	1, 2, 3	"version":"1"	"version":"2"		"version":"2"		"version":"2"	"version":"2"
params	wrapper for specifying named items		"params"	"params"		"params"		"params"	"params"
site_list	Hydstra site list expression Network documents containing a list of network sites including the **Stream Gauging Station Network** can be downloaded from the **WMIP** under Reports.	Call Site lists as Groups: "GROUP(OPEN_STATIONS)" "GROUP(GW_STATIONS)" "GROUP(PLUVIO_STATIONS)" "GROUP(CLOSED_STATIONS)" Call Site lists as Groups by Basin: "GROUP(OPEN_STATIONS,BRISBANE)" See Table 8 for a full list of Basin values or Call specific Sites, e.g. "111007A,143001C"	"site_list"	"site_list"	site_list=	"site_list"	site_list=	"site_list"	"site_list"
datasource	Hydstra datasource code	Arhive=A, Archive & Telemetry=AT, Archive & telemetry discharge data=ATQ, Telemetry=TE		"datasource"	datasource=	"datasource"	datasource=	"datasource"	
variables	an array of one or more variable codes	See Table 3 Time Series Variables						"variables"	
var_list	A list of source variables. Only available in version 2.	100.00,10.00		"var_list"	var_list=				
trace_list	A list of parameters defining the latest value required, used together with varfrom, varto, lookback					"trace_list"			
varfrom	Source Variable	See Table 3 Time Series Variables		"varfrom"	varfrom=	"varfrom"	varfrom=		
varto	Destination Variable (if Rating to be applied; varto is same as varfrom)	See Table 3 Time Series Variables		"varto"	varto=	"varto"	varto=		
lookback	How far back to probe the record for a value before returning an error result, in minutes	lookback=60						lookback=	
start_time	a datetime, combined with starttime - YYYYMMDDHHMMSS	20150101000000 or 0 for the period of record		"start_time"	start_time=			"start_time"	

Queensland
Government

Parameters	Description	Example	"get_site_list" Standard JSON	"get_ts_traces" Standard JSON	"get_ts_traces" CSV format	"get_latest_ts_values" Standard JSON	"get_latest_ts_values" CSV format	"get_ts_blockinfo" Standard JSON	"get_site_geojson" Standard JSON
end_time	a datetime, combined with endtime - YYYYMMDDHHMMSS	20500101000000 or 0 for the period of record		"end_time"	end_time=			"end_time"	
data_type	data extraction type	mean, max, min, start, end, tot, point		"data_type"	data_type=				
interval	data interpolation interval	year, month, day, hour, minute, second, period		"interval"	interval=				
report_time	Specifying the report_time as "end" will cause the time output with aggregated values for mean, total, and partial total data types to be the end of the period instead of the start.	start, end			report_time=				
multiplier	interval multiplier	1		"multiplier"	multiplier=1				
auditinfo	returns of audit information	1=returns info, 0=no info returned						"auditinfo"	
get_elev	Returns elevation latitude and longitude	152.405221,-26.98946							"get_elev"
fields	Any field that is part of the site table	zone','region'							"fields"
format					format=csv		format=csv		

Queensland
Government

The times series values returned by a Function are called by the Variable numbers selected. Table 3 includes the list a Variables for which time series values can be requested.

Table 3 Commonly used Time Series Variables and Conversions

Name	Description	Datasource	Variable Number	Variable conversion	Units returned
			varfrom	varto	
Stage	m GHt (metres Gauge Height)	A, TE, AT	100.00	100.00	m GHt (metres Gauge Height)
Stream Discharge	Complete rating of timeseries from stage to discharge.	A, TE, AT	100.00	140.00	m3/sec (cubic metres per second, aka 'cumecs')
	Complete rating of timeseries from stage to discharge.	A, TE, AT	100.00	141.00	ML/day (Megalitres per day)
	Complete rating of timeseries from stage to volume.	A, TE, AT	100.00	151.00	Volume, ML (Megalitres)
	Stored calculated discharge in-filled with rated data	ATQ	140.00	140.00	m3/sec (cubic metres per second, aka 'cumecs')
	Stored calculated discharge in-filled with rated data	ATQ	140.00	141.00	ML (Megalitres per day)
	Stored calculated discharge in-filled with rated data	ATQ	140.00	151.00	Volume, ML (Megalitres)
Rainfall	mm (millimetres)	A, TE, AT	10.00	10.00	mm (millimetres)
Electrical Conductivity (EC)	µS/cm (micro Siemens per centimetre)	A, TE, AT	2010.00	2010.00	µS/cm (micro Siemens per centimetre)
Temperature	°C (degrees Celsius)	A, TE, AT	2080.00	2080.00	°C (degrees Celsius)
pH	pH (pH units)	A, TE, AT	2100.00	2100.00	pH (pH units)
Turbidity	NTU (Nephelometric Turbidity Units)	A, TE, AT	2030.00	2030.00	NTU (Nephelometric Turbidity Units)
Bore Water Level	m (metres)	A, TE, AT	110.00	110.00	m (metres)
Groundwater Elevation AHD	m (metres)	A, TE, AT	110.00	111.00	m (metres)
Artesian Equivalent Potentiometric Surface (EPS)	m (metres)	A, TE, AT	113.00	113.00	m (metres)
Artesian Equivalent Potentiometric Elevation AHD (EPS)	**m (metres)**	A, TE, AT	113.00	114.00	m (metres)

Table 4 lists the types of datasources from which time series values can be requested.

Table 4 Datasource descriptions

Datasource type	Description
A	Archive datasource is the agency's verified data holding
TE	Telemetry datasource
AT	Composite archive and telemetry data
ATQ	Composite archive and telemetry discharge data – retrieves stored discharge where available and in-fills any gaps with rated discharge data.

Queensland Government

Important information regarding stream discharge:

RDMW calculates discharge (applies a rating) as part of its routine data management processes and stores the calculated result in the Archive datasource as variable 140.00. Telemetry stage data must be rated from stage to compute discharge. Two composite datasources are available that can provide discharge data: AT and ATQ. To obtain discharge data from AT datasource that includes a period of telemetered data, the stage data must be rated for the entire period. ATQ is configured to return the stored discharge data and gaps in the period requested provided by rating the stage data, providing a complete record for the period requested.

WMIP Custom Outputs tab is configured to use ATQ by default.

A summary of time series variables is available for Stations in each Basin and accessible from the Basin's Data Availability tab on the WMIP.

1.2. Database requests

Database web service calls retrieve values from a database table.

1.2.1. Constructing a Database JSON call

To retrieve table's values a JSON call must include the Function to be performed and the list of Parameters being requested.

Table 5 lists commonly used JSON Functions for Database web service calls.

Table 5 JSON Functions for Database requests

Function	Description	Format returned
get_db_info	return table data with simple or complex filters or geo filters	Standard JSON & CSV
get_groups	return list of groups that site(s) are a member of	Standard JSON
get_cross_sections	return cross section details	Standard JSON

For each Function a selection of Parameters are available to specify the database values being requested. Table 6 lists and describes the Parameters used by the Database Functions in Table, 5 in both standard JSON and CSV reporting formats.

Table 6 Parameters used by the Database Functions

			get_db_info	get_groups	get_cross_sections
Parameters	**Descritpion**	**Example**	**Standard JSON**	**Standard JSON**	**Standard JSON**
version	version of the JSON call	1, 2, 3	"version":"3"	"version":"1"	"version":"1"
params	is a wrapper for specifying named items below		"params"	"params"	"params"
site_list	Hydstra site list expression Network documents containing a list of network sites including the **Stream Gauging Station Network** can be downloaded from the **WMIP** under Reports.	Call Site lists as Groups: "GROUP(OPEN_STATIONS)" "GROUP(GW_STATIONS)" "GROUP(PLUVIO_STATIONS)" "GROUP(CLOSED_STATIONS)" Call Site lists as Groups by Basin: "GROUP(OPEN_STATIONS,BRISBANE)" See Table 8 for a full list of Basin values		"site_list"	"site_list"

Parameters	Descritpion	Example	get_db_info Standard JSON	get_groups Standard JSON	get_cross_sections Standard JSON
		or Call specific Sites, e.g. "111007A,143001C"			
table_name	Hydstra database table name	"SITE", "BENCH", "PERIOD", "GAUGINGS"	"table_name"		
return_type	type of data structure returned, ARRAY returns an array of records, HASH record preceded by all key fields	hash, array	"return_type"		
sitelist_filter	filter based on the station field using a HYSTNS filter expression	"GROUP(OPEN_STATIONS)" "1051029,1120055,1160218"	"sitelist_filter"		
complex_filter	(optional) filter based on the values of fields	"fieldname":"DATEIN","operator":"GT","value":"20050101"	"complex_filter"		
field_list	(optional) an array of field names, to return a subset of columns	"STATION", "STNAME", "STNTYPE"	"field_list"		
group_list	(optional) Only return membership details for these groups	"CATCH","GW_STATIONS","OPEN_STATIONS", "PLUVIO_STATIONS"		"group_list"	
section_types	A list of section types	WR (Weir), XS (Control), BR (Bridge)			"section_types"
comments	(optional) Include any section point comments	yes/no			"comments"
gauge_datum	(optional) Subtract gauge zero (from SECTHED table) from all reduced levels?	yes/no			"gauge_datum"
start_date	(optional) Only return cross sections that were measured after this date, YYYYMMDD	20000101			"start_date"
end_date	(optional) Only return cross sections that were measured before this date, YYYYMMDD	20200101			"end_date"

Queensland Government

2. Components of a JSON call

JSON call components include;

1. WMIP URL: https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?
2. Objects including Function and Parameter pairs;
   a. Standard JSON calls start and end with curly brackets { }, with each object in double quotations then a colon ':' and separated by a comma ','.
   b. In CSV format each object is followed by an equals '=' and separated by an ampersand '&', for example:

Standard JSON	CSV format
{"function":"get_site_list",	function=get_site_list&

3. Arrays, which are an ordered list of values and for standard JSON start with a left '[' and ends with right brackets ']' and separated by a comma ','.

Table 7 Example JSON Time Series web service calls

Domain	Description	Format	Function	Example
Timeseries	Retrieves one or more time series traces	Standard JSON	get_ts_traces	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_ts_traces","version":"2","params":{"site_list":"111007A","datasource":"AT","varfrom":"100.00","varto":"151.00","start_time":"0","end_time":"0","data_type":"tot","interval":"day","multiplier":"1"}}
Timeseries	Retrieves one or more time series traces	Standard JSON	get_ts_traces	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_ts_traces","version":"2","params":{"site_list":"143001C","datasource":"ATQ","varfrom":"140.00","varto":"140.00","start_time":"0","end_time":"0","data_type":"mean","interval":"day","multiplier":"1"}}
Timeseries	Retrieves one or more time series traces	CSV	get_ts_traces	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?function=get_ts_traces&site_list=111007A&datasource=AT&varfrom=100.00&varto=151.00&start_time=0&end_time=0&data_type=tot&interval=day&report_time=end&multiplier=1&format=csv
Timeseries	Retrieves one or more time series traces	CSV	get_ts_traces	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?function=get_ts_traces&site_list=143001C&datasource=AT&var_list=100.00,10.00&start_time=20200526000000&end_time=20200528000000&data_type=point&interval=day&report_time=end&multiplier=1&format=csv
Timeseries	Returns last time series values	Standard JSON	get_latest_ts_values	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_latest_ts_values","version":"2","params":{"site_list":"130105B","datasource":"AT","trace_list":[{"varfrom":"10.00","varto":"10.00"},{"varfrom":"100.00","varto":"100.00"},{"varfrom":"100.00","varto":"140.00"},{"varfrom":"2010.00","varto":"2010.00"},{"varfrom":"2080.00","varto":"2080.00"}]}}
Timeseries	Returns last time-series values	CSV	get_latest_ts_values	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?function=get_latest_ts_values&site_list=130105B&datasource=AT&varfrom=10.00&varto=10.00&lookback=60&format=csv
Timeseries	Returns information about time series blocks	Standard JSON	get_ts_blockinfo	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_ts_blockinfo","version":2,"params":{"site_list":"MERGE(GROUP(OPEN_STATIONS,HAUGHTON),GROUP(OPEN_STATIONS,BRISBANE),GROUP(OPEN_STATIONS,BURNETT),GROUP(OPEN_STATIONS,PIONEER),GROUP(OPEN_STATIONS,BARRON),GROUP(OPEN_STATIONS,FITZROY),GROUP(OPEN_STATIONS,JOHNSTONE),GROUP(OPEN_STATIONS,BALONNE_COND))","datasources":["A"],"variables":["100.00","100.01","140.00"],"starttime":"20150101000000","endtime":"20500101000000","auditinfo":"0"}}
Timeseries	Returns GeoJSON and other field data from the site table for the provided site list	Standard JSON	get_site_geojson	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_site_geojson","version":"2","params":{"site_list":"GROUP(GW_STATIONS,BRISBANE)","get_elev":"1","fields":["ZONE","region"]}}

Queensland Government

Domain	Description	Format	Function	Example
Database	Returns a list of Gauging Stations	Standard JSON	get_site_list	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_site_list","version":"1","params":{"site_list":"GROUP(OPEN_STATIONS,BRISBANE)"}}
Database	Returns table data with simple or complex filters or geo filters	Standard JSON	get_db_info	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_db_info","version":"3","params":{"table_name":"SITE","return_type":"array","field_list":["STATION","STNAME","STNTYPE"]}}
Database	Returns table data with simple or complex filters or geo filters	Standard JSON	get_db_info	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_db_info","version":"3","params":{"table_name":"INSTHIST","return_type":"array","complex_filter":[{"fieldname":"DATEIN","operator":"GT","value":"20050101"}],"field_list":["MODEL","STATION","DATEIN"]}}
Database	Returns table data with simple or complex filters or geo filters	Standard JSON	get_db_info	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_db_info","version":"3","params":{"table_name":"PERIOD","return_type":"array","complex_filter":[{"fieldname":"VARFROM","operator":"EQ","value":"300.00"},{"combine":"AND","fieldname":"DATASOURCE","operator":"EQ","value":"TE"}],"field_list":["STATION","PEREND"]}}
Database	Returns table data with simple or complex filters or geo filters	Standard JSON	get_db_info	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_db_info","version":"3","params":{"table_name":"SITE","return_type":"array","sitelist_filter":"GROUP(OPEN_STATIONS)","field_list":["STATION","STNAME","STNTYPE","LATITUDE","LONGITUDE","LLDATUM"]}}
Database	Returns table data with simple or complex filters or geo filters	Standard JSON	get_db_info	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_db_info","version":"3","params":{"table_name":"SITE","return_type":"array","sitelist_filter":"1051029,1120055,1160218","field_list":["STATION","LATITUDE","LONGITUDE","CATEGORY5"]}}
Database	Returns table data with simple or complex filters or geo filters	Standard JSON	get_groups	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_groups","version":"1","params":{"site_list":"GROUP(PLUVIO_STATIONS)","group_list":["CATCH","PLUVIO_STATIONS"]}}
Database	Returns cross section details	Standard JSON	get_cross_sections	https://water-monitoring.information.qld.gov.au/cgi/webservice.pl?{"function":"get_cross_sections","version":"1","params":{"site_list":"143001C,143007A","section_types":["XS"],"comments":"yes","gauge_datum":"yes","start_date":"20000101","end_date":"20200101"}}

Queensland Government

Table 8 Calls for Groups by Basin

Basin	Value	Groups by Basin			
		Open Surface Water Stations	**Groundwater Stations**	**Rainfall (Pluvio) Stations**	**Closed Stations**
Archer Basin	ARCHER	"GROUP(OPEN_STATIONS,ARCHER)"	"GROUP(GW_STATIONS,ARCHER)"	"GROUP(PLUVIO_STATIONS,ARCHER)"	"GROUP(CLOSED_STATIONS,ARCHER)"
Baffle Basin	BAFFLE	"GROUP(OPEN_STATIONS,BAFFLE)"	"GROUP(GW_STATIONS,BAFFLE)"	"GROUP(PLUVIO_STATIONS,BAFFLE)"	"GROUP(CLOSED_STATIONS,BAFFLE)"
Balonne-Condamine Basin	BALONNE_COND	"GROUP(OPEN_STATIONS,BALONNE_COND)"	"GROUP(GW_STATIONS,BALONNE_COND)"	"GROUP(PLUVIO_STATIONS,BALONNE_COND)"	"GROUP(CLOSED_STATIONS,BALONNE_COND)"
Barron Basin	BARRON	"GROUP(OPEN_STATIONS,BARRON)"	"GROUP(GW_STATIONS,BARRON)"	"GROUP(PLUVIO_STATIONS,BARRON)"	"GROUP(CLOSED_STATIONS,BARRON)"
Black Basin	BLACK	"GROUP(OPEN_STATIONS,BLACK)"	"GROUP(GW_STATIONS,BLACK)"	"GROUP(PLUVIO_STATIONS,BLACK)"	"GROUP(CLOSED_STATIONS,BLACK)"
Border Rivers Basin	BORDER_RIVERS	"GROUP(OPEN_STATIONS,BORDER_RIVERS)"	"GROUP(GW_STATIONS,BORDER_RIVERS)"	"GROUP(PLUVIO_STATIONS,BORDER_RIVERS)"	"GROUP(CLOSED_STATIONS,BORDER_RIVERS)"
Boyne Basin	BOYNE	"GROUP(OPEN_STATIONS,BOYNE)"	"GROUP(GW_STATIONS,BOYNE)"	"GROUP(PLUVIO_STATIONS,BOYNE)"	"GROUP(CLOSED_STATIONS,BOYNE)"
Brisbane Basin	BRISBANE	"GROUP(OPEN_STATIONS,BRISBANE)"	"GROUP(GW_STATIONS,BRISBANE)"	"GROUP(PLUVIO_STATIONS,BRISBANE)"	"GROUP(CLOSED_STATIONS,BRISBANE)"
Bulloo Basin	BULLOO	"GROUP(OPEN_STATIONS,BULLOO)"	"GROUP(GW_STATIONS,BULLOO)"	"GROUP(PLUVIO_STATIONS,BULLOO)"	"GROUP(CLOSED_STATIONS,BULLOO)"
Burdekin Basin	BURDEKIN	"GROUP(OPEN_STATIONS,BURDEKIN)"	"GROUP(GW_STATIONS,BURDEKIN)"	"GROUP(PLUVIO_STATIONS,BURDEKIN)"	"GROUP(CLOSED_STATIONS,BURDEKIN)"
Burnett Basin	BURNETT	"GROUP(OPEN_STATIONS,BURNETT)"	"GROUP(GW_STATIONS,BURNETT)"	"GROUP(PLUVIO_STATIONS,BURNETT)"	"GROUP(CLOSED_STATIONS,BURNETT)"
Burrum Basin	BURRUM	"GROUP(OPEN_STATIONS,BURRUM)"	"GROUP(GW_STATIONS,BURRUM)"	"GROUP(PLUVIO_STATIONS,BURRUM)"	"GROUP(CLOSED_STATIONS,BURRUM)"
Calliope Basin	CALLIOPE	"GROUP(OPEN_STATIONS,CALLIOPE)"	"GROUP(GW_STATIONS,CALLIOPE)"	"GROUP(PLUVIO_STATIONS,CALLIOPE)"	"GROUP(CLOSED_STATIONS,CALLIOPE)"
Coleman Basin	COLEMAN	"GROUP(OPEN_STATIONS,COLEMAN)"	"GROUP(GW_STATIONS,COLEMAN)"	"GROUP(PLUVIO_STATIONS,COLEMAN)"	"GROUP(CLOSED_STATIONS,COLEMAN)"
Cooper Basin	COOPER_CREEK	"GROUP(OPEN_STATIONS,COOPER_CREEK)"	"GROUP(GW_STATIONS,COOPER_CREEK)"	"GROUP(PLUVIO_STATIONS,COOPER_CREEK)"	"GROUP(CLOSED_STATIONS,COOPER_CREEK)"

Queensland Government

Basin	Value	Groups by Basin			
		Open Surface Water Stations	Groundwater Stations	Rainfall (Pluvio) Stations	Closed Stations
Daintree Basin	DAINTREE	"GROUP(OPEN_STATIONS,DAINTREE)"	"GROUP(GW_STATIONS,DAINTREE)"	"GROUP(PLUVIO_STATIONS,DAINTREE)"	"GROUP(CLOSED_STATIONS,DAINTREE)"
Diamantina Basin	DIAMANTINA	"GROUP(OPEN_STATIONS,DIAMANTINA)"	"GROUP(GW_STATIONS,DIAMANTINA)"	"GROUP(PLUVIO_STATIONS,DIAMANTINA)"	"GROUP(CLOSED_STATIONS,DIAMANTINA)"
Don Basin	DON	"GROUP(OPEN_STATIONS,DON)"	"GROUP(GW_STATIONS,DON)"	"GROUP(PLUVIO_STATIONS,DON)"	"GROUP(CLOSED_STATIONS,DON)"
Ducie Basin	DUCIE	"GROUP(OPEN_STATIONS,DUCIE)"	"GROUP(GW_STATIONS,DUCIE)"	"GROUP(PLUVIO_STATIONS,DUCIE)"	"GROUP(CLOSED_STATIONS,DUCIE)"
Embley Basin	EMBLEY	"GROUP(OPEN_STATIONS,EMBLEY)"	"GROUP(GW_STATIONS,EMBLEY)"	"GROUP(PLUVIO_STATIONS,EMBLEY)"	"GROUP(CLOSED_STATIONS,EMBLEY)"
Endeavour Basin	ENDEAVOUR	"GROUP(OPEN_STATIONS,ENDEAVOUR)"	"GROUP(GW_STATIONS,ENDEAVOUR)"	"GROUP(PLUVIO_STATIONS,ENDEAVOUR)"	"GROUP(CLOSED_STATIONS,ENDEAVOUR)"
Fitzroy Basin	FITZROY	"GROUP(OPEN_STATIONS,FITZROY)"	"GROUP(GW_STATIONS,FITZROY)"	"GROUP(PLUVIO_STATIONS,FITZROY)"	"GROUP(CLOSED_STATIONS,FITZROY)"
Flinders Basin	FLINDERS	"GROUP(OPEN_STATIONS,FLINDERS)"	"GROUP(GW_STATIONS,FLINDERS)"	"GROUP(PLUVIO_STATIONS,FLINDERS)"	"GROUP(CLOSED_STATIONS,FLINDERS)"
Georgina Basin	GEORGINA	"GROUP(OPEN_STATIONS,GEORGINA)"	"GROUP(GW_STATIONS,GEORGINA)"	"GROUP(PLUVIO_STATIONS,GEORGINA)"	"GROUP(CLOSED_STATIONS,GEORGINA)"
Gilbert Basin	GILBERT	"GROUP(OPEN_STATIONS,GILBERT)"	"GROUP(GW_STATIONS,GILBERT)"	"GROUP(PLUVIO_STATIONS,GILBERT)"	"GROUP(CLOSED_STATIONS,GILBERT)"
Haughton Basin	HAUGHTON	"GROUP(OPEN_STATIONS,HAUGHTON)"	"GROUP(GW_STATIONS,HAUGHTON)"	"GROUP(PLUVIO_STATIONS,HAUGHTON)"	"GROUP(CLOSED_STATIONS,HAUGHTON)"
Herbert Basin	HERBERT	"GROUP(OPEN_STATIONS,HERBERT)"	"GROUP(GW_STATIONS,HERBERT)"	"GROUP(PLUVIO_STATIONS,HERBERT)"	"GROUP(CLOSED_STATIONS,HERBERT)"
Jardine Basin	JARDINE	"GROUP(OPEN_STATIONS,JARDINE)"	"GROUP(GW_STATIONS,JARDINE)"	"GROUP(PLUVIO_STATIONS,JARDINE)"	"GROUP(CLOSED_STATIONS,JARDINE)"
Johnstone Basin	JOHNSTONE	"GROUP(OPEN_STATIONS,JOHNSTONE)"	"GROUP(GW_STATIONS,JOHNSTONE)"	"GROUP(PLUVIO_STATIONS,JOHNSTONE)"	"GROUP(CLOSED_STATIONS,JOHNSTONE)"
Kolan Basin	KOLAN	"GROUP(OPEN_STATIONS,KOLAN)"	"GROUP(GW_STATIONS,KOLAN)"	"GROUP(PLUVIO_STATIONS,KOLAN)"	"GROUP(CLOSED_STATIONS,KOLAN)"
Leichhardt Basin	LEICHHARDT	"GROUP(OPEN_STATIONS,LEICHHARDT)"	"GROUP(GW_STATIONS,LEICHHARDT)"	"GROUP(PLUVIO_STATIONS,LEICHHARDT)"	"GROUP(CLOSED_STATIONS,LEICHHARDT)"

Queensland Government

Basin	Value	Groups by Basin			
		Open Surface Water Stations	**Groundwater Stations**	**Rainfall (Pluvio) Stations**	**Closed Stations**
Logan-Albert Basin	LOGAN_ALBERT	"GROUP(OPEN_STATIONS,LOGAN_ALBERT)"	"GROUP(GW_STATIONS,LOGAN_ALBERT)"	"GROUP(PLUVIO_STATIONS,LOGAN_ALBERT)"	"GROUP(CLOSED_STATIONS,LOGAN_ALBERT)"
Maroochy Basin	MAROOCHY	"GROUP(OPEN_STATIONS,MAROOCHY)"	"GROUP(GW_STATIONS,MAROOCHY)"	"GROUP(PLUVIO_STATIONS,MAROOCHY)"	"GROUP(CLOSED_STATIONS,MAROOCHY)"
Mary Basin	MARY	"GROUP(OPEN_STATIONS,MARY)"	"GROUP(GW_STATIONS,MARY)"	"GROUP(PLUVIO_STATIONS,MARY)"	"GROUP(CLOSED_STATIONS,MARY)"
Mitchell Basin	MITCHELL	"GROUP(OPEN_STATIONS,MITCHELL)"	"GROUP(GW_STATIONS,MITCHELL)"	"GROUP(PLUVIO_STATIONS,MITCHELL)"	"GROUP(CLOSED_STATIONS,MITCHELL)"
Moonie Basin	MOONIE	"GROUP(OPEN_STATIONS,MOONIE)"	"GROUP(GW_STATIONS,MOONIE)"	"GROUP(PLUVIO_STATIONS,MOONIE)"	"GROUP(CLOSED_STATIONS,MOONIE)"
Mossman Basin	MOSSMAN	"GROUP(OPEN_STATIONS,MOSSMAN)"	"GROUP(GW_STATIONS,MOSSMAN)"	"GROUP(PLUVIO_STATIONS,MOSSMAN)"	"GROUP(CLOSED_STATIONS,MOSSMAN)"
Mulgrave-Russell Basin	MULGRAVE_RUSSEL	"GROUP(OPEN_STATIONS,MULGRAVE_RUSSEL)"	"GROUP(GW_STATIONS,MULGRAVE_RUSSEL)"	"GROUP(PLUVIO_STATIONS,MULGRAVE_RUSSEL)"	"GROUP(CLOSED_STATIONS,MULGRAVE_RUSSEL)"
Murray Basin	MURRAY	"GROUP(OPEN_STATIONS,MURRAY)"	"GROUP(GW_STATIONS,MURRAY)"	"GROUP(PLUVIO_STATIONS,MURRAY)"	"GROUP(CLOSED_STATIONS,MURRAY)"
Nicholson Basin	NICHOLSON	"GROUP(OPEN_STATIONS,NICHOLSON)"	"GROUP(GW_STATIONS,NICHOLSON)"	"GROUP(PLUVIO_STATIONS,NICHOLSON)"	"GROUP(CLOSED_STATIONS,NICHOLSON)"
Noosa Basin	NOOSA	"GROUP(OPEN_STATIONS,NOOSA)"	"GROUP(GW_STATIONS,NOOSA)"	"GROUP(PLUVIO_STATIONS,NOOSA)"	"GROUP(CLOSED_STATIONS,NOOSA)"
Norman Basin	NORMAN	"GROUP(OPEN_STATIONS,NORMAN)"	"GROUP(GW_STATIONS,NORMAN)"	"GROUP(PLUVIO_STATIONS,NORMAN)"	"GROUP(CLOSED_STATIONS,NORMAN)"
Normanby Basin	NORMANBY	"GROUP(OPEN_STATIONS,NORMANBY)"	"GROUP(GW_STATIONS,NORMANBY)"	"GROUP(PLUVIO_STATIONS,NORMANBY)"	"GROUP(CLOSED_STATIONS,NORMANBY)"
O'Connell Basin	OCONNELL	"GROUP(OPEN_STATIONS,OCONNELL)"	"GROUP(GW_STATIONS,OCONNELL)"	"GROUP(PLUVIO_STATIONS,OCONNELL)"	"GROUP(CLOSED_STATIONS,OCONNELL)"
Olive-Pascoe Basin	OLIVE_PASCOE	"GROUP(OPEN_STATIONS,OLIVE_PASCOE)"	"GROUP(GW_STATIONS,OLIVE_PASCOE)"	"GROUP(PLUVIO_STATIONS,OLIVE_PASCOE)"	"GROUP(CLOSED_STATIONS,OLIVE_PASCOE)"
Paroo Basin	PAROO	"GROUP(OPEN_STATIONS,PAROO)"	"GROUP(GW_STATIONS,PAROO)"	"GROUP(PLUVIO_STATIONS,PAROO)"	"GROUP(CLOSED_STATIONS,PAROO)"
Pine Basin	PINE	"GROUP(OPEN_STATIONS,PINE)"	"GROUP(GW_STATIONS,PINE)"	"GROUP(PLUVIO_STATIONS,PINE)"	"GROUP(CLOSED_STATIONS,PINE)"

Queensland Government

Basin	Value	Groups by Basin			
		Open Surface Water Stations	Groundwater Stations	Rainfall (Pluvio) Stations	Closed Stations
Pioneer Basin	PIONEER	"GROUP(OPEN_STATIONS,PIONEER)"	"GROUP(GW_STATIONS,PIONEER)"	"GROUP(PLUVIO_STATIONS,PIONEER)"	"GROUP(CLOSED_STATIONS,PIONEER)"
Plane Basin	PLANE	"GROUP(OPEN_STATIONS,PLANE)"	"GROUP(GW_STATIONS,PLANE)"	"GROUP(PLUVIO_STATIONS,PLANE)"	"GROUP(CLOSED_STATIONS,PLANE)"
Proserpine Basin	PROSERPINE	"GROUP(OPEN_STATIONS,PROSERPINE)"	"GROUP(GW_STATIONS,PROSERPINE)"	"GROUP(PLUVIO_STATIONS,PROSERPINE)"	"GROUP(CLOSED_STATIONS,PROSERPINE)"
Ross Basin	ROSS	"GROUP(OPEN_STATIONS,ROSS)"	"GROUP(GW_STATIONS,ROSS)"	"GROUP(PLUVIO_STATIONS,ROSS)"	"GROUP(CLOSED_STATIONS,ROSS)"
South Coast Basin	SOUTH_COAST	"GROUP(OPEN_STATIONS,SOUTH_COAST)"	"GROUP(GW_STATIONS,SOUTH_COAST)"	"GROUP(PLUVIO_STATIONS,SOUTH_COAST)"	"GROUP(CLOSED_STATIONS,SOUTH_COAST)"
Staaten Basin	STAATEN	"GROUP(OPEN_STATIONS,STAATEN)"	"GROUP(GW_STATIONS,STAATEN)"	"GROUP(PLUVIO_STATIONS,STAATEN)"	"GROUP(CLOSED_STATIONS,STAATEN)"
Stewart Basin	STEWART	"GROUP(OPEN_STATIONS,STEWART)"	"GROUP(GW_STATIONS,STEWART)"	"GROUP(PLUVIO_STATIONS,STEWART)"	"GROUP(CLOSED_STATIONS,STEWART)"
Stradbroke Basin	STRADBROKE_IS	"GROUP(OPEN_STATIONS,STRADBROKE_IS)"	"GROUP(GW_STATIONS,STRADBROKE_IS)"	"GROUP(PLUVIO_STATIONS,STRADBROKE_IS)"	"GROUP(CLOSED_STATIONS,STRADBROKE_IS)"
Tully Basin	TULLY	"GROUP(OPEN_STATIONS,TULLY)"	"GROUP(GW_STATIONS,TULLY)"	"GROUP(PLUVIO_STATIONS,TULLY)"	"GROUP(CLOSED_STATIONS,TULLY)"
Warrego Basin	WARREGO	"GROUP(OPEN_STATIONS,WARREGO)"	"GROUP(GW_STATIONS,WARREGO)"	"GROUP(PLUVIO_STATIONS,WARREGO)"	"GROUP(CLOSED_STATIONS,WARREGO)"
Waterpark Basin	WATERPARK	"GROUP(OPEN_STATIONS,WATERPARK)"	"GROUP(GW_STATIONS,WATERPARK)"	"GROUP(PLUVIO_STATIONS,WATERPARK)"	"GROUP(CLOSED_STATIONS,WATERPARK)"
Watson Basin	WATSON	"GROUP(OPEN_STATIONS,WATSON)"	"GROUP(GW_STATIONS,WATSON)"	"GROUP(PLUVIO_STATIONS,WATSON)"	"GROUP(CLOSED_STATIONS,WATSON)"
Wenlock Basin	WENLOCK	"GROUP(OPEN_STATIONS,WENLOCK)"	"GROUP(GW_STATIONS,WENLOCK)"	"GROUP(PLUVIO_STATIONS,WENLOCK)"	"GROUP(CLOSED_STATIONS,WENLOCK)"
Whitsunday Island Basin	WHITSUNDAY_IS	"GROUP(OPEN_STATIONS,WHITSUNDAY_IS)"	"GROUP(GW_STATIONS,WHITSUNDAY_IS)"	"GROUP(PLUVIO_STATIONS,WHITSUNDAY_IS)"	"GROUP(CLOSED_STATIONS,WHITSUNDAY_IS)"

Queensland Government