

Command Reference: ReadNrCsAwdb()

Read 1+ time series from the NRCS AWDB web service

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The `ReadNrCsAwdb()` command reads one or more time series from the Natural Resources Conservation Service (NRCS) Air and Water Database (AWDB) web service (see the **NRCS AWDB Datastore Appendix**), including SNOTEL and Snow Course data and other data. Data from other sources is available within the NRCS naming convention.

The NRCS AWDB web service allows station lists to be filtered, both as a convenience and to ensure reasonable web service performance. Many of the choices that are available for limiting queries allow 0+ values to be provided. For example, specifying no requested element (data type) will return all available elements for a location. Specifying a list of elements (separated by commas) will return only stations and time series that have data for the requested elements.

The following dialog is used to edit the command and illustrates the syntax for general parameters:

- Some choices are provided as a convenience. However, full listing of choices (such as all the thousands of HUCs) are not provided due to performance issues. Additional query features such as cascading choices may be enabled as web service integration is enhanced.
- Querying many time series can be slow. It is recommended that filters be used to constrain the query, and then modify to converge on an appropriate set of filters for optimal performance.

TS Tool - "C:\Projects\CO-DWR-SWST\Prototype1\WebServiceTest\SwsNrCsAwdbWebServiceTest.TS Tool"

File Edit View Commands Run Results Tools Help

Edit ReadNrCsAwdb Command

Read one or more time series from the Natural Resources Conservation Service (NRCS) Air and Water Database (AWDB) web service.

WARNING - This command can be slow. Constrain the query to improve performance.

Common choices are provided for convenience but may not apply (additional enhancements to web services may improve intelligent choices in the future).

Refer to the NRCS AWDB datastore documentation for more information.

Constrain the query by specifying time series metadata to match. Station number, state, and network triplet is unique in NRCS AWDB system.

If not specified, the input period defaults to the input period from `SetInputPeriod()` (or read all data).

[NRCS AWDB Documentation](#) [NRCS AWDB Online](#)

Data store: Required - data store containing data.

Interval: Required - data interval for time series.

Location Constraints:

Specify one or more location constraints to filter the query. Unconstrained queries can be VERY SLOW.

Station ID(s): List of 1+ station IDs separated by commas.

State(s): List of 1+ state abbreviations separated by commas.

Network(s): => List of 1+ network codes separated by commas (default=all).

HUC(s): List of 1+ (12-digit) HUCs separated by commas.

Bounding box: Bounding box: WestLon, SouthLat, EastLon, NorthLat

FIPS counties: => List of 1+ counties separated by commas.

Element(s): => Optional - list of element codes separated by commas (default=all).

Elevation, minimum: Optional - minimum elevation, feet (default=all).

Elevation, maximum: Optional - maximum elevation, feet (default=all).

Input start: Optional - YYYY-MM-DD, override the global input start.

Input end: Optional - YYYY-MM-DD, override the global input end.

Alias to assign: => Optional - use %L for location, etc. (default=no alias).

Command: `ReadNrCsAwdb(DataStore='NrCsAwdb', Interval=Day, States='CO', Networks='SNTL', Counties='Larimer', ReadForecast=True, Elements='WTEQ', Alias='%L-%T')`

ReadNrCsAwdb

ReadNrCsAwdb() Command Editor for General Command Parameters

The following figure illustrates the **Reservoirs** tab of the dialog. No additional parameters are provided; however, the notes explain that reservoir data are available only from the BOR network and appropriate network element codes must be selected.

Location Constraints | **Reservoirs** | Forecasts

Reservoirs are associated with the "BOR" network in the location constraints.
Specify appropriate reservoir data element codes such as REST for reservoir stage and RESC for reservoir volume.
Reservoir daily data can be converted to end of month values using the NewEndOfMonthTSFromDayTS() command.
Time series identifiers with "BOR" network also will result in reservoir metadata being set as time series properties.

Element(s): -- Select Element -- => RESC Optional - list of elem

ReadNrCsAwdb_Reservoir

ReadNrCsAwdb() Command Editor for Reservoir Query Parameters

The following figure illustrates the **Forecasts** tab of the dialog. Forecasts are available for several element codes but mainly SRVO (stream volume, adjusted). Because it is possible to read normal time series and forecasts, the ReadForecast parameter is provided to specifically indicate that a forecast is being requested. The forecast is uniquely identified by the forecast period and publication date (typically the first day of a month).

Location Constraints | Reservoirs | **Forecasts**

Specify ReadForecast=True to read forecasts. The location constraints will filter the stations.
The following element types have forecasts: SRVO
Forecasts are a list of values and corresponding exceedance probabilities for the forecast period. Consequently, output is a table rather than a time series.

Read forecast?: True Optional - read fr

Forecast table ID: Optional - ID for

Forecast period: APR-SEP Required if forec

Forecast publication date start: Optional - YYYY-1

Forecast publication date end: Optional - YYYY-1

Element(s): -- Select Element -- => SRVO Optional - list o

ReadNrCsAwdb_Forecast

ReadNrCsAwdb() Command Editor for Forecast Query Parameters

The resulting forecast table, as shown in the following figure, includes all the relevant information about the forecast. Use table processing commands to filter the table for a specific station and publication date.

StationTriplet	State	StationID	Network	Element	ForecastPeriod	PublicationDate	CalculationDate	ExceedanceProbability	Value	UnitCd	PeriodAverage
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-04-01 00:00:00	2013-04-03 11:18:41	90.00	120.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-05-01 00:00:00	2013-05-05 15:14:14	10.00	440.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-05-01 00:00:00	2013-05-05 15:14:14	30.00	335.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-05-01 00:00:00	2013-05-05 15:14:14	50.00	275.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-05-01 00:00:00	2013-05-05 15:14:14	70.00	220.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-05-01 00:00:00	2013-05-05 15:14:14	90.00	149.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-06-01 00:00:00	2013-06-06 11:57:43	10.00	340.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-06-01 00:00:00	2013-06-06 11:57:43	30.00	275.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-06-01 00:00:00	2013-06-06 11:57:43	50.00	240.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-06-01 00:00:00	2013-06-06 11:57:43	70.00	205.00	kac_ft	455.00
07099400:CO:USGS	CO	07099400	USGS	SRVO	APR-SEP	2013-06-01 00:00:00	2013-06-06 11:57:43	90.00	162.00	kac_ft	455.00

Displaying 995 rows, 12 columns. Ready

ReadNrCsAwdb_ForecastTable

ReadNrCsAwdb() Command Output Forecast Table

The command syntax is as follows:

```
ReadNrCsAwdb (Parameter=Value, ...)
```

Command Parameters

Parameter	Description	Default
DataStore	The NRCS AWDB datastore to use for queries.	None – must be specified.
Interval	The data interval (“duration” in NRCS AWDB terms) to query. The Irregular interval is used for instantaneous data.	None – must be specified.
Stations	A list of station identifiers to read, separated by commas.	Do not limit the query to a station list.
States	A list of state codes (e.g., AL), separated by commas.	Do not limit the query to a state list.
Networks	A list of data network codes (e.g., SNTL), separated by commas.	Do not limit the query to a network list.
HUCs	A list of 8-digit hydrologic unit codes, separated by commas.	Do not limit the query to a HUC list.
BoundingBox	A bounding box consisting of west longitude, south latitude, east longitude, and north latitude, separated by spaces. Longitudes in the western hemisphere are negative. This feature is not finalized, pending resolution of a web service issue.	Do not limit the query to a bounding box.
Counties	A list of county names, separated by commas. The state must be specified because county names are not unique.	Do not limit the query to a county list.
ReadForecast	Indicate whether forecast table should be read.	False (read observed time series)
ForecastTableID	The identifier for the output table.	NRCS_Forecasts
ForecastPeriod	The forecast period for a forecast, which is a string like JAN-MAR. A list of choices is provided; however, only certain forecast periods will be valid for specific element codes.	Must be specified when ReadForecast=True.
Forecast PublicationDate Start	The earliest publication date for a forecast, needed to uniquely identify the time series.	All publication dates are queried.
Forecast PublicationDate End	The latest publication date for a forecast.	All publication dates are queried.
Elements	Data element codes for the stations (e.g., WTEQ for snow water equivalent), separated by commas.	All available elements are returned.
ElevationMin	Minimum station elevation, feet.	Do not limit the query based on elevation minimum.
ElevationMax	Maximum station elevation, feet.	Do not limit the query based on elevation maximum.
InputStart	The start of the period to read data – specify if the period should be different from the global	Use the global query period.

Parameter	Description	Default
	query period. Specify to the precision of the data using the format YYYY-MM-DD hh:mm.	
InputEnd	The end of the period to read data – specify if the period should be different from the global query period. Specify to the precision of the data using the format YYYY-MM-DD hh:mm.	Use the global query period.
TimeZone	Envisioned for future enhancement: <ul style="list-style-type: none"> • FromData – use the time zone from the data • None – do not assign the time zone to date/times • ABC – specify the time zone to use (useful because internal timezone is hour offset from GMT) 	Currently no time zone is assigned to hour or finer timesteps. See the time series properties or stationDataTimeZone.
Alias	The alias to assign to the time series, as a literal string or using the special formatting characters listed by the command editor. The alias is a short identifier used by other commands to locate time series for processing, as an alternative to the time series identifier (TSID).	None – must be specified.