Appendix: TSTool Release Notes

Version 11.11.00, 2016-05-09

This appendix provides information about changes that have occurred in TSTool for the current major version (first number in version). Release notes for older versions also are available in the next appendix.

1. TSTool Version History

The following table summarizes the TSTool release history. See the following sections for more detailed information about each version. Only recent versions are documented in detail. Comments for minor versions may be listed under a version that is publicly released. Recent release note items are categorized as follows:

Bug Fix – A bug has been fixed. Users should evaluate whether their work is impacted.

Known Limitation – A known limitation has been documented and may impact the user. The limitation will be addressed in a future release.

Change – An existing feature has been changed or enhanced. Backward compatibility is usually retained.

Remove – A feature has been removed.

New Feature – A new feature has been added, such as a new command.

TSTool Version History Summary (most current at top)

TSTool Version	Summary of Major Changes in Version	Release Date
11.11.00		2016-05-09
11.09.00 – 11.10.01	TSTool configuration files have been added to the user's home folder in addition to the installation files. Windows are positioned on TSTool screen, handling multiple monitors. Begin prototyping HTML command documentation. Initial version of plug-in datastore and command features.	2016-05-02
11.08.00 – 11.08.01	Enhancements to write tables and time series to additional spatial formats. Add support for Delft FEWS Pi XML format, which is used by the National Weather Service. Update additional commands to recognize properties as input.	2016-02-14
11.07.00 – 11.07.06	Add support for Reclamation Pisces datastore. Add support for writing HydroJSON format. Add preliminary support for writing WaterML. Add support for reading JSON into table.	2015-12-09
11.06.00 – 11.06.01	Add `ReadExcelWorkbook()` command and enhance `CloseExcelWorkbook()` to allow existing workbooks to be read and updated. Other maintenance.	2015-07-29
11.05.00	Add date/time for appropriate statistics in `CalculateTimeSeriesStatistic()`.	2015-07-17
11.04.00 – 11.04.03	Add support for `${Property}` in additional commands. Improve error handling when `RunCommands()` is used with `For()`. List all output files in TSTool interface when using `For()`.	2015-07-15
11.03.00 – 11.03.10	Add support for `${Property}` in some command parameters for over 50 commands. Enable nested `For()` loops. Add support for Excel formatting condition and style tables. Multiple incremental updates during beta testing.	2015-06-29

TSTool Version	Summary of Major Changes in Version	Release Date
11.02.00 – 11.02.03	Improved Excel integration and automation control for table and properties, add properties and data flag descriptions to DateValue files, add flags and descriptions to more fill/set commands.	2015-05-27
11.01.00	ReclamationHDB datastore support enhancements.	2015-03-23
11.00.00	Update from Java 6 to 7. Enhancements for Excel integration. Add PostgreSQL support.	2015-03-16
10.31.00	Add preliminary `For()` command.	2014-08-05
10.30.00 – 10.30.02	Add `InsertTableColumn()`, other enhancements to facilitate calculating statistics and saving output to tables.	2014-06-22
10.29.00	Additional Excel integration and table processing features.	2014-05-19
10.28.02	Enable table view for irregular interval time series. Enhance ReclamationHDB query features.	2014-04-19
10.27.00	Significant Excel integration improvements, add some utility commands.	2014-03-21
10.26.00	Improve NRCS AWDB web service support. Add `If()` and `Endif()` and other enhancements to help automate computation of NRCS Surface Water Supply Index.	2013-12-24
10.25.00	Additional enhancements for ReclamationHDB datastore.	2013-10-15
10.24.01	Change ensemble trace identifiers to string to allow more flexibility. Update ReclamationHDB commands to handle ensembles.	2013-09-30
10.23.00	Initial work to add features to create time series event table to annotate products. Fix `FillRegression()` and `FillMixedStation()` issues introduced in previous release.	2013-09-12
10.22.00	Add raster graph and move data visualization commands to new menu, improve generic database datastore read/write functionality.	2013-08-30
10.21.00	Add initial network processing command, add additional functionality for processing tables, and a number of maintenance updates.	2013-07-14
10.20.00	Enhancements to ReclamationHDB read/write commands. Enable filtering HydroBase diversion coding structures by structure type and WDID.	2013-04-21
10.19.00	Enhancements to ReclamationHDB write features.	2013-03-16
10.18.00	Add commands to read a table from Excel and write to a datastore.	2013-03-03
10.17.00	Add `ProfileCommands()` command and other features to help with performance on large command files.	2013-02-18
10.16.00	Minor update to improve processing of well level data and templates.	2013-02-13
10.15.00	Minor update in response to feedback on previous release, split documentation into multiple volumes.	2013-01-14
10.14.00	Minor update in response to feedback on previous release.	2012-12-18
10.13.00	Many enhancements to improve USGS processing, add NRCS AWDB support, add `TableToTimeSeries()` command.	2012-12-04
10.12.00	Many enhancements to improve HydroBase, USGS, and general datastore processing.	2012-10-01
10.11.00	Update to support RCC ACIS version 2.	2012-07-03
10.10.00	Add exceedance probability and related statistics to `RunningStatisticTimeSeries()` command.	2012-06-12
10.00.00 – 10.09.00	Migrate all `TS Alias = Command()` syntax to `Command(Alias="…")`. Other user interface cleanup, maintenance, and many enhancements.	2012-05-15
9.10.00 – 9.10.03	Add support for Reclamation HDB database, Regional Climate Center RCC ACIS (preliminary), and USGS NWIS (preliminary) as data stores. Add area graphs.	2011-02-18
9.09.00 – 9.09.01	Add additional commands for table processing. Improve template integration with processor properties and tables.	2010-10-18
9.08.00 – 9.08.01	Support connecting to more than one RiversideDB and introduce the concept of named data stores as an alternative to input type/name. Add `TableMath()` and `TableTimeSeriesMath()` commands.	2010-09-15

TSTool Version	Summary of Major Changes in Version	Release Date
9.07.00 – 9.07.02	Add HTML summary, improve data flag handling, improve Python integration, initial support for ColoradoWaterHBGuest web service, include training materials, other maintenance.	2010-08-20
9.06.00 – 9.06.04	Initial support for ColoradoWaterSMS web service, enhance RiversideDB support, various improvements.	2010-05-25
9.05.00 – 9.05.03	Enhancements to support additional time series and ensemble processing, in particular to compute statistics for drought studies.	2009-11-17
9.04.00 – 9.04.02	The following features are now at production level: `ReadTableFromDelimitedFile()`, `WriteTableToDelimitedFile()`, `ResequenceTimeSeriesData()`. The `CalculateTimeSeriesStatistic()` command and additional table processing features have been added.	2009-07-28
9.01.00 – 9.03.06	Add `VariableLagK()` and `RunDSSUTL()` commands, fix several bugs, and enhance several commands. Add preliminary `CheckTimeSeries()`, `WriteCheckFile()` commands. Enhance the `ChangeInterval()` command and documentation.	2009-04-29
9.00.00 – 9.00.05	Update from Java 1.4.2 to Java 1.6, various bug fixes.	2009-02-05
8.18.00 – 8.18.02	Initial HEC-DSS support. Improved RiversideDB support.	2008-11-24
8.17.01 – 8.17.02	Bug fixes for 8.17.00. See below. New features include ***File…New*** to open a new command file and add support for new StateMod 12.29 binary file format.	2008-10-29
8.17.00	All commands are updated to the new error handling and named parameter notation. Many other minor changes have been made for consistency. Many minor user-requested enhancements have been implemented. Several minor bugs reported by users have been fixed. The StateCUB (StateCU binary output file) has been enabled.	2008-10-06
8.16.00 – 8.16.02	Migrate additional commands to new error-handling and named parameter notation. Add `RunPython()` and `FTPGet()` commands.	2008-07-22
8.15.01 – 8.15.03	Fix a number of problems where migration of commands from fixed parameter to named parameter syntax resulted in some old command files not being handled. The command file is also now marked as modified if any commands are automatically updated. Added more error checks, such as in DateValue file reading to help provide better feedback to users.	2008-06-11
8.13.00 – 8.14.02	Add commands to set properties, for use by other commands (e.g., to configure file names). Continue updating commands to utilize the new error handling.	2008-02-20
8.03.00 – 8.12.06	Update many commands to utilize new error handling and consistently handle the TSList parameter. Add ensemble processing to many commands. Enable ability for read commands to run in discovery mode to let other commands know time series identifiers. Add more commands to compute statistics time series.	2008-01-14
8.00.00 – 8.02.00	Update main interface to use new error-handling visualization features. Add several commands to allow TSTool to perform regression tests on itself.	2007-12-03
7.04.00	Various updates for HydroBase including adding support for administrative flow station. Allow reading StateMod rights files and handle new StateCU file formats.	2007-06-22
7.01.00	Support new SFUT(G) coding for HydroBase diversion classes, and allow CIU when filling diversion data. Fix a number of bugs in the `analyzePattern()`, `fillInterpolate()`, and `cumulate()` commands	2007-03-02
7.00.00	Begin distributing software using a new installer. Add CASS livestock data and human population data.	2006-10-31
6.19.00	Update to extend period when filling with diversion comments.	2006-05-19
6.18.00	Add the `runCommands()` command to facilitate data processing.	2006-05-02

TSTool Version	Summary of Major Changes in Version	Release Date
6.17.00	Add the `compareFiles()` command to facilitate testing.	2006-04-17
6.16.02	Begin adding commands to test data, for alarms.	2006-04-17
6.16.01	Time series to map link is enabled. Improve UNC support. Improve startup performance in batch mode.	2006-02-16
6.16.00	Begin adding support for NDFD (National Digitial Forecast Database) input type, and maintenance.	2006-01-31
6.15.00	Begin adding time series to map link.	2006-01-16
6.14.00	Update some commands to named parameter notation, and maintenance.	2005-12-14
6.13.00	Internal release.	2005-11-13
6.12.00	Improve error handling when running in batch mode with graphs.	2005-10-05
6.11.00	Enable the ColoradoSMS input type for hydrograph annotations and update batch mode features to better utilize the CDSS configuration file.	2005-10-05
6.10.09	Maintenance release – convert some commands to use named parameters.	2005-09-28
6.10.08	Maintenance release – convert some commands to use named parameters. Add the `newStatisticYearTS()` command.	2005-09-22
6.10.07	Maintenance release – convert some commands to use named parameters.	2005-08-24
6.10.06	Release corresponding to the CDSS CD release.	2005-08-04
6.10.05	Respond to CDSS testing feedback.	2005-08-01
6.10.04	Respond to CDSS testing feedback. Add additional query filters for HydroBase stations and structures.	2005-07-20
6.10.03 BETA	Begin phasing in saving time series products to HydroBase and RiversideDB.	2005-07-08
6.10.02 BETA	Update the `openHydroBase()` command to use free-format parameters.	2005-06-28
6.10.01 BETA	Begin enabling data flags for time series to support enhancements to fill commands.	2005-06-03
6.10.00 BETA	Initial release supporting HydroBase stored procedures with initial prototypes of Mixed Station Analysis and related features. Implement new message log viewer and commands to simplify comparison of time series.	2005-06-01
6.09.03	Maintenance release.	2004-12-21
6.09.02	Maintenance release.	2004-10-05
6.09.01	Add NWSRFS FS5Files input type.	2004-09-01
6.09.00	Add `readHydroBase()` commands.	2004-08-27
6.08.02	Documentation made current to include all version 6 changes.	2004-07-27
6.08.01	Allow HydroBase connection to be made at startup.	2004-07-20
6.08.00	Allow wildcards in commands that read from StateCU and StateModB input types.	2004-07-11
	Initial Java version.	1997-10-23

Known Limitations

- Known Limitation TSTool uses a "discovery mode" to partially execute commands when editing the commands. This is used to determine lists of time series identifiers, table identifiers, and properties for editor choices. However, some workflow logic is so complex that commands cannot fully execute in discovery mode. Consequently, warnings may result when loading a command file or some editor choices may be incomplete. When this is known to be an issue, the command editors provide a text field rather than a choice. These complexities will be improved over time as additional resources are devoted to solving design limitations.
- Known Limitation When saving time series product (*.*tsp*) files, the absolute path is saved with each file. This is not as portable as saving a path relative to the command file. It may be necessary to

edit the product file manually to change file paths from absolute to relative – the relative path will then be converted to absolute when processed and time series files will be found, assuming that the locations are consistent.

- Known Limitation The `ReadStateCUB()` command, unlike other read commands, does not provide a discovery mode. Consequently, other commands will not be provided with a list of time series identifiers for the binary file. The reason for this is that StateMod and StateCU binary files can contain a huge number of time series and providing a list could be overwhelming and slow. Alternatives are being evaluated. Currently, commands that reference time series in the binary files must use more generic selection methods such as `TSLIST=AllMatchingTSID` and `TSID` with wildcards.
- Known Limitation Plotting features do not know understand the concept of instantaneous, mean, and accumulated time series (referred to as the time scale). All values are plotted at data value date/time. In the future, features may be implemented to automatically determine from the data type and time scale whether to adjust the visual representation based on the time scale, for example to use a "carry forward" line instead of connecting points.
- Known Limitation Using the `SetWorkingDir()` command may result in warnings after commands are edited. This is due to the initial checks on filenames not fully recognizing the impacts of previous `SetWorkingDir()` commands. It is recommended that the `SetWorkingDir()` command be avoided and that paths be specified relative to the command file.

Changes in Version 11.11.00

- Change [11.11.00] The `SplitTableRow()` command now supports splitting transposing "tuples" of values into a vertical column, for example to convert horizontal time series into vertical time series.
- Change [11.11.00] The following commands have been enhanced to work with the `For()` command and recognize `${Property}` notation (where appropriate): `SplitTableRow()`

Changes in Versions 11.09.00 – 11.10.01

- Bug Fix [11.10.00] NRCS AWDB hourly time series would sometimes only return values on the hour (hour=0) due to how the web service `beginHour` and `endHour` were specified. These values are now set to `0` and `23`, respectively, to return all possible values and are then transferred to the output time series for the requested period. A bug was also fixed that prevented multiple time series to be read, for example when reading stations for a county.
- Bug Fix [11.10.00] TSTool's handling of time zone has been made more robust. Internal date/time objects are initialized with the local time zone ID (previously used a display string that may not have allowed lookup of the underlying system time zone). Greater care is taken to handle daylight savings time.
- Bug Fix [11.09.00] Fix bug command status messages where the most severe warning was used for details – now warnings are labelled as such even when failure messages are also present.
- Bug Fix [11.10.00] Fix bug in `ReadHecDss()` command where specifying input period was not working (resulted in input period request with year of 0000).
- Bug Fix [11.10.00] Fix bug in `WriteHecDss()` command where errors were caught but themselves generated an exception when printing. Errors about > 80 character paths and unsupported interval are now printed without exceptions.

- New Feature [11.09.00] TSTool user configuration files are now enabled under the user's home folder in a *.tstool* folder, in order to override the settings in the software installation configuration files. Datastore types can be enabled/disabled in the *.tstool/system/TSTool.cfg* file and datastore configuration files can be added under the *.tstool/datastore* folder. The startup log file is now created in *.tstool/log*. These changes allow TSTool settings to be persisted across software updates and allow different users to have different TSTool settings when using a shared TSTool installation in a network environment.
- New Feature [11.10.00] Preliminary support has been added for plugin commands, which allows third-party software developers to add custom commands. Documentation will be provided in a later release.
- New Feature [11.10.00] Commands can now be edited as text, as an option to the editor dialog.
- New Feature [11.10.00] The ***Tools / Date/time Tools*** provides useful tools for converting between time zones and other date/time representations.
- New Feature [11.09.00] The popup menu on duration graphs now provides an ***Analysis Details*** menu to view the table of data values used in the graph.
- New Feature [11.10.00] Add preliminary new `ChangeInterval()` commands to provide more direct functionality rather than existing command that does a lot but can be confusing.
- New Feature [11.10.00] Add preliminary new `SendEmailMessage()` command to facilitate notification when running TSTool in batch mode as a scheduled process. Functionality is limited.
- New Feature [11.09.00] Add `SetEnsembleProperty()` command.
- New Feature [11.10.00] Implement prototype HTML documentation for commands. HTML documentation will be phased in and evaluated. See the Help button in the `SortTimeSeries()` command for an example.
- Change [11.10.00] Dates in time series were internally defaulting to the local computer time zone using Java display. This might result in "MDT" for example when the time zone is actually "MST7MDT". The time zone is now defaulted to the time zone ID, for example America/Denver. This can impact cases were the TSTool date/time is converted to UNIX time (seconds since Jan 1, 1970 00:00:00). The new functionality is a more accurate representation of the actual time zone.
- Change [11.10.01] Date/time strings parsing now handles longer time zones better. For example, date/time strings that are saved to DateValue files now can have longer time zones such as America/Denver.
- Change [11.09.01] Dialogs and other windows now open in the same screen as the main TSTool window. Multiple monitors are properly handled.
- Change [11.09.00] The `ARMA()` command has been updated to include properties `OutputMinimum`, `OutputMaximum`, `InputPreviousValues`, `OutputPreviousValues`, `RequireCoefficienctsSumTo1`. The command has also been updated to optionally create new output time series. The `OutputStart` and `OutputEnd` parameters have been enabled (previously the time series period was always used).
- Change [11.10.00] The `CompareTimeSeries()` command now allows two time series or two ensembles to be specified for comparison.
- Change [11.10.00] The `CreateDataStoreDataDictionary()` command now handles periods and $ characters in the `ExcludeTables` command.

- Change [11.10.00] The `For()` command now handles allows other processor properties to be set for other column values.
- Change [11.09.00] The `NewStatisticYearTS()` command now will process multiple time series and optionally create an ensemble as output.
- Change [11.09.00] Update the `ReadDelftFewsPiXml()` command to have `TimeZone` and `Read24HourAsDayCutoff` parameters to provide additional control of output time series.
- Change [11.09.00] Update the `ReadNrcsAwdb()` command to have `TimeZoneMap` parameter to provide control of time zone used for output time series, and default the time zone for date/times to `stationDataTimeZone` from data. Time zone is typically only shown in displays for hourly or smaller data interval.
- Change [11.09.00] The `RunProgram()` command has been significantly enhanced to provide options for checking the program output for errors.
- Change [11.09.00] The `WebGet()` command has been updated to have the `OutputProperty` parameter to set the retrieved content in a property.
- Change [11.09.00] The `WriteHecDss()` command has been updated to handle minute data.
- Change [11.09.00 – 11.10.00] The following commands have been enhanced to work with the `For()` command and recognize `${Property}` notation (where appropriate): `CompareFiles()`, `CompareTimeSeries()`, `CopyFiles()`, `CreateRegressionTestCommandFile()`, `Cumulate()`, `ProfileCommands()`, `RunProgram()`, `NewEnsemble()`, `ReadNrcsAwdb()`, `ReadTableFromDBF()`, `SetDebugLevel()`, `SetTableValues()`, `SortTimeSeries()`, `StartLog()`, `WriteCheckFile`.

Changes in Versions 11.08.00 – 11.08.01

- Bug Fix [11.08.01] Fix bug in `ReadReclamationHDB()` command query filter – where choices were causing an error.
- Bug Fix [11.08.00] Fix the `NewTreeView()` command to output (was not working) and add ability to include time series products in the tree rather than simply relying on basic default graph.
- Bug Fix [11.08.00] Fix bug when ***Clear Commands*** was selected and a new command file was opened, the previously opened command file contents were cleared. Now the previous contents will remain because there is little reason to blank out the file. Another bug fixed was that a non-zero length file was auto-saving when a new file was opened. These bugs were introduced in version 11.07.05.
- New Feature [11.08.01] Add ***Run / Cancel Command Processing (interrupt processing)*** menu to perform an interrupt on processing – can be used when a long process needs to be killed.
- New Feature [11.08.01] Add new experimental run mode `-batchServer` that will run TSTool continuously in headless mode in order to run command files placed into a hot folder.
- New Feature [11.08.01] Add new experimental run mode `-httpServer` that will run TSTool as an HTTP server to listen for processing requests.
- New Feature [11.08.00] Add `ReadDelftFewsPiXML()` and `WriteDelftFewsPiXml()` commands to handle DEFT FEWS PI XML files (software is used by the National Weather Service).

- New Feature [11.08.00] Add `WriteTableToGeoJSON()` and `WriteTableToShapefile()` commands to generate basic point and polygon spatial output products.
- New Feature [11.08.01] Add `WriteTimeSeriesToGeoJSON()` command to generate basic point and polygon spatial output products.
- Change [11.08.01] The ReclamationHDB query filters now include model run date, as a string.
- Change [11.08.00] The `For()` command now supports integer or floating point number sequences.
- Change [11.08.00] The `FormatTableDateTime()` command now handles converting from a starting date/time and column of incremental offsets from the start.
- Change [11.08.00] The `ManipulateTableString(operator=Replace)` command is updated to specify start and end of string and handle space characters.
- Change [11.08.00] The `ReadDateValue()` and `UnzipFile()` commands now handle gzip (*.gz) files.
- Change [11.08.00] The `TableToTimeSeries()` command has been updated to have `SequenceIDColumn` and `SequenceID` parameters to read time series for ensemble traces. The `IrregularIntervalPrecision` parameter has also been added to control the precision of date/times in time series, in particular when parsing tables from database queries.
- Change [11.08.00] The `WriteTableToExcel()` command has been updated to support strings in conditional formatting and integers are handled explicitly (not as floating point).
- Change [11.08.00-11.08.01] The following commands have been enhanced to work with the `For()` command and recognize `${Property}` notation: `ConvertDataUnits()`, `ManipulateTableString()`, `ReadHecDss()`, `ReadRiverWare()`, `ReadTableFromDBF()`, `ReadTimeSeriesFromDataStore()`, `SetExceWorksheetViewProperties()`, `VariableLagK()`, `WriteHecDss()`, `WriteRiverWare()`, `WriteTimeSeriesToDataStore()`, `WriteTimeSeriesToKml()`.

Changes in Versions 11.07.00 – 11.07.06

- Bug Fix [11.07.00] Fix bug when reading dates from databases – precision was not being set and output defaulted to minute formatting. Now precision is set to the finest level of data from the date with second as smallest interval.
- Bug Fix [11.07.03] Fix the `TableToTimeSeries()` command to handle numeric values in text column, discard periods in data fields when forming TSIDs.
- Bug Fix [11.07.03] Fix the `WriteTimeSeriesToExcel()` command – there was a bug writing to a range that did not start with cell A1.
- Bug Fix [11.07.06] Improve batch mode execution start-up – fix timeout exception for 0 seconds.
- Change [11.07.00] Change missing value for database values from `-999` to `NaN` and smallest available integer. This ensures that no valid data are misinterpreted as missing.
- Change [11.07.00] Enhance the `CheckTimeSeries()` command to have `TableValuePrecision` parameter to control precision of value column in check output.
- Change [11.07.03] Enhance the `CreateDataStoreDataDictionary()` command to have `Newline`, `SurroundWithPre`, and `EncodeHtmlChars` parameters to control formatting.

- Change [11.07.01] Enhance the `FormatTableDateTime()` command to support `%s` format (seconds since Jan 1, 1970), useful for time comparisons.
- Change [11.07.03] Enhance the `ReadDateValue()` command to handle a zipped input file.
- Change [11.07.03] Enhance the `ReadTableFromDataStore()` command to recognize `${Property}` for the table identifier.
- Change [11.07.01] Enhance the `ReadTableFromDelimitedFile()` command to have the `DateTimeColumns`, `TextColumns`, and `Top` parameters.
- Change [11.07.03] Enhance the `ReadTimeSeries()` command to recognize `${Property}`.
- Change [11.07.02] Allow `SetInputPeriod()` to have start, end or both date/times when reading time series using TSID. Previously both were required. This will be phased into each input type.
- Change [11.07.01] Enhance the `TableMath()` command to allow math operations on 2 integers, 2 double precision values, or a combination. Add support for `${Property}` for `TableID`.
- Change [11.07.00] Enhance the `TableToTimeSeries()` command to provide minute and second in time format, also allow `DataType` to be specified with `${Property}`.
- Change [11.07.05] Enhance the `WebGet()` command to display more error information.
- Change [11.07.00] Enhance the `WriteDateValue()` command to support wildcards in the `IncludeProperties` parameter.
- Change [11.07.00] Enhance the `WriteTimeSeriesToDataStream()` command to support `${Property}` in parameters, add parameters to read header and footer from files and specify different format for last data line.
- Change [11.07.03] Enhance the `WriteTableToExcel()` and `WriteTimeSeriesToExcelBlock()` commands to allow for a display string for the legend.
- Change [11.07.03] Enhance the `WriteWaterML()` command to support writing WaterML 1.1 as JSON and WaterMl 2.0 as XML. Functionality is preliminary pending further review.
- Change [11.07.03] The `FilledDataSymbolStyle` in graphs will have the same value as `SymbolStyle` by default so that a symbol is shown at all non-missing points.
- Change [11.07.05] Change SQL Server to not use a port when an instance of the database has been specified (port is redundant in this case). Update the HydroBase database configuration to specify the instance in all cases. Remove old SQL Server port numbers that are no longer used for HydroBase.
- New Feature [11.07.00] Initial support for Reclamation Pisces database has been added as datastore with TSID command support.
- New Feature [11.07.03] Added `ReadReclamationPisces()` command.
- New Feature [11.07.05] Added `ReadTableFromJSON()` command.
- New Feature [11.07.03] Added `UnzipFile()` command.
- New Feature [11.07.03] Added initial `WriteTimeSeriesToHydroJSON()` command.

Changes in Versions 11.06.00 – 11.06.01

- Remove [11.06.00] The MexicoCSMN input type has been removed because the data format is obsolete.

- Change [11.06.00,11.06.01] Enhance the `CloseExcelWorkbook()` command to have more control of writing the output file, to better handle reading and writing from Excel.
- Change [11.06.00] Update the `ChangePeriod()` command to support `${Property}` in parameters.
- New Feature [11.06.00] The `ReadExcelWorkbook()` command has been added to allow reading and Excel workbooks so that they can be modified with commands that write to Excel.

Changes in Version 11.05.00

- Bug Fix [11.05.00] Fix bug in `CalculateTimeSeriesStatistic()` command where the table ID was not visible to following command editors when using `${Property}` for the table ID.
- Change [11.05.00] Add date/time to the output for `CalculateTimeSeriesStatistic()` command for appropriate statistics like `Max` and `Min`.

Changes in Versions 11.04.00 – 11.04.03

- Bug Fix [11.04.00] Fix bug in `ReadTableFromExcel()` command where the table ID was not visible to following command editors when using `${Property}` for the table ID.
- Change [11.04.03] The TSTool main interface now lists all output files. Previously commands run in a `For()` loop would only list the files from the last iteration. Command messages for commands run with `RunCommands()` are also now listed in the main interface to facilitate troubleshooting.
- Change [11.04.00] The following commands now accept `${Property}` notation for at least some parameters (those that likely need to be set dynamically and provide an editor text field for the parameter): `AppendTable()`, `ChangeInterval()`, `Subtract()`.
- Change [11.04.00] The `TableToTimeSeries()` command has been updated to remove hard-coded internal parameter values for block format data. Year rows and month columns can now be read for single or multiple time series.
- Change [11.04.00] The `WriteTimeSeriesToExcel()` command has been updated to provide parameters for style formatting of column heading cells. Parameters are also available for comment width and height and logic for comment size has been improved.
- Change [11.04.03] The `WriteTableToExcel()`, `WriteTimeSeriesToExcel()` and `WriteTimeSeriesToExcelBlock()` commands now have `LegendWorksheet` and `LegendAddress` commands to include a legend for style formatting (preliminary functionality).

Changes in Versions 11.03.00 – 11.03.10

- Bug Fix [11.03.05] The `Exit()` command can now be included in `If()` blocks – previously `Exit()` would always execute.
- Bug Fix [11.03.06] The `SetTimeSeriesValuesFromLookupTable()` command now ignores rows from the lookup table that have missing values in the input or output columns. Previously output would sometimes have missing values where estimates could be determined.
- Change [11.03.00] Enhanced the **Introduction** chapter to explain and contrast templates compared to built-in TSTool logic control commands.

- Change [11.03.00] The following commands now accept `${Property}` notation for at least some parameters (those that likely need to be set dynamically and provide an editor text field for the parameter): `Add()`, `AddConstant()`, `CalculateTimeSeriesStatistic()`, `CheckTimeSeries()`, `Copy()`, `CopyTable()`, `CopyTimeSeriesPropertiesToTable()`, `ExpandTemplateFile()`, `FillConstant()`, `FillRegression()`, `FormatTableDateTime()`, `FormatTableString()`, `InsertTableColumn()`, `NewPatternTimeSeries()`, `NewStatisticYearTS()`, `NewTimeSeries()`, `ProcessTSProduct()`, `ReadTableFromDelimitedFile()`, `ReadTimeSeriesList()`, `RemoveFile()`, `Scale()`, `SelectTimeSeries()`, `SetConstant()`, `SetFromTS()`, `SetTimeSeriesProperty()`, `ShiftTimeByInterval()`, `SortTable()`, `TableToTimeSeries()`, `TimeSeriesToTable()`, `WriteDelimitedFile()`, `WriteTableToDelimitedFile()`.
- Change [11.03.01] More of the above: `NewEndOfMonthTSFromDayTS()`, `ReplaceValue`.
- Change [11.03.02] More of the above: `AppendFile()`, `NewExcelWorkbook()`, `ReadTableFromExcel()`, `RunningStatisticTimeSeries()`, `WriteTableToHTML()`, `WriteTableToExcel()`.
- Change [11.03.03] More of the above: `CloseExcelWorkbook()`, `NewTable()`, `ReadDelimitedFile()`, `WriteDateValue()`.
- Change [11.03.04] More of the above: `SetTimeSeriesValuesFromTable()`, `SetTimeSeriesValuesFromLookupTable()`.
- Change [11.03.07] More of the above: `FillHistMonthAverage()`, `FillInterpolate()`. Also add the fill flag description to the `FillInterpolate()` command.
- Change [11.03.09] More of the above: `AdjustExtremes()`. Also add set flag and description.
- Change [11.03.10] More of the above: `FillPattern()`, `FillFromTS()`.
- Change [11.03.06] The `CalculateTimeSeriesStatistic()` command `Last` statistic functionality has been changed to `LastNonmissing` and the `Last` statistic returns the last missing or non-missing value. The analysis window is now also recognized by these statistics. This addresses an ambiguity in the meaning of "last".
- Change [11.03.08] The `CheckTimeSeries()` command now will optionally output properties with the count of issues and create a table listing issues. An analysis window can also now be specified.
- Change [11.03.01] The `CopyTimeSeriesPropertiesToTable()` command `PropertyNames` parameter has been changed to `IncludeProperties`, backward compatible.
- Change [11.03.01] The `For()` command can now be nested. Command status messages are accumulated on each command regardless of how many loops for commands updated to handle properties above.
- Change [11.03.06] The `ReadTableFromExcel()` command now provides the `RowCountProperty` parameter to set the rows read, useful for error handling.
- Change [11.03.02] The `ReadTimeSeriesList()` command has been updated to have `TimeSeriesDefaultCountProperty` and `TimeSeriesReadCountProperty` parameters to help with error handling.

- Change [11.03.02] The `ReplaceValue()` command now provides the `SetFlagDesc` parameter.
- Change [11.03.05] The `SetFromTS()` command now handles setting data when the time series have different intervals.
- Change [11.03.07] The `WriteTableToExcel()` and `WriteTimeSeriesToExcel()` commands include functionality for formatting cells using a condition/style table approach, similar to Excel conditional formatting.
- New Feature [11.03.01] The empty line command has been added so that blank lines in command files are handled gracefully and not treated as unknown commands. See under comment commands.
- New Feature [11.03.00] The `#@template` comment is now supported to indicate a template file, with special handling when saving files.
- New Feature [11.03.09] The `WriteTimeSeriesToExcelBlock()` command has been added. This replaces the `WriteTimeSeriesToExcelFormatted()` command.

Changes in Versions 11.02.00 – 11.02.02

- Bug Fix [11.02.00] The path used to remember the command file history was hard-coded for Windows. It is now fixed to work on Linux.
- Bug Fix [11.02.00] Fix bug in `NewTimeSeries()` command editor where `InitialValue` was reset to blank.
- Bug Fix [11.02.01] Fix bug in `ReadNrcsAwdb()` command where forecast table dates were saved as strings even though table column was configured as a date/time – now use date/times for all.
- Bug Fix [11.02.00] Remove limitation that the `ReadTableCellsFromExcel()` command would not handle Excel date cells.
- Change [11.02.00] The `AppendFile()` command now provides the `Newline` parameter to specify the newline for output files, necessary to ensure that automated tests work on different platforms.
- Change [11.02.00] The `CalculateTimeSerieStatistic()` command now allows setting a time series property with the statistic value. Table output is also handled better.
- Change [11.02.00] The `FormatTableDateTime()` command now handles an input column that contains a string version of the date/time.
- Change [11.02.00] The `If()` command now allows comparing floating point numbers, Booleans, and integers and the comparison can be forced to do a string comparison.
- Change [11.02.00] The `ManipulateTableString()` command now provides parameters to filter the rows to process.
- Change [11.02.00] The `NewEndOfMonthTSFromDayTS()` command now accepts `${Property}` for the daily time series identifier parameter.
- Change [11.02.00] The `ReadDateValue()` command now allows processor properties for the input period. The `WriteDateValue()` command now allows processor properties for the output period. Both commands support the DateValue file 1.6 format, which adds support for time series properties and data flag descriptions.

- Change [11.02.02] The `ReadTableFromDataStore()` command now provides the `RowCountProperty` parameter to set a property for the row count.
- Change [11.02.00] The `ReadTableFromExcel()` command now provides the `ColumnIncludeFilters` parameter to filter which rows are read, and `ExcelDateTimeColumns` and `ExcelTextColumns` to specify how to handle data types.
- Change [11.02.00] The `SetFromTS()` command now allows a set flag to be specified and the set period can be specified using `${Property}` notation.
- Change [11.02.00] The `SetInputPeriod()` command now supports `${Property}` notation.
- Change [11.02.00] The `SetOutputPeriod()` command now supports `${Property}` notation.
- Change [11.02.00] The `SetProperty()` command now allows Boolean values.
- Change [11.02.00] The `WritePropertiesToFile()` command now allows wildcards to match property names.
- Change [11.02.03] The `WritePropertiesToFile()` command `IncludeProperty` has been changed to `IncludeProperties`.
- New Feature [11.02.00] The `ProgramVersionString` and `ProgramVersionNumber` processor properties are now set. These can be used to handle logic in command files when multiple versions of TSTool may be used. Use the `If()` command to check the property.
- New Feature [11.02.00] The `ReadPropertiesFromExcel()` command has been added.
- New Feature [11.02.02] The `SetTimeSeriesValuesFromTable()` command has been added.
- New Feature [11.02.00] The `WriteTimeSeriesPropertiesToFile()` command has been added.

Changes in Version 11.01.00

- Change [11.01.00] The `InsertTableColumn()` command now provides the `InitialValue` parameter to set the initial value in the column.
- Change [11.01.00] The ReclamationHDB datastore configuration file now supports the `ResultSetFetchSize` and `WriteToHDBInsertStateMentMax` parameter to optimize performance. The default value for `ReadNHourEndDateTime` is now `StartDateTimePlusInterval`, which is appropriate for the current HDB.
- Change [11.01.00] The `WritePropertiesToFile()` command now provides the `SortOrder` parameter to sort properties for output. Build-in and user properties are fully supported.
- New Feature [11.01.00] The ReclamationHDB datastore `SystemLogin` and `SystemPassword` properties can now be set to `Prompt` to cause a dialog to be shown when TSTool starts. The login can also be changed using the ***File / Open / ReclamationHDB*** menu. Database connections that timeout due to non-use now are reconnected automatically.
- New Feature [11.01.00] Added the `ReadPropertiesFromExcel()` command.

Changes in Version 11.00.00

- Bug Fix [11.00.00] Fix bug where `Cummulate(…,ResetValue=DataValue,…)` parameter was not being handled and the first value in each output year was set to zero.
- Bug Fix [11.00.00] Fixed bug in HydroBase daily diversion read code. Years after a full blank year also were skipped and the carry forward processing during the year did not occur.
- Bug Fix [11.00.00] The `FillRepeat()` command editor was not saving the `TSList` parameter in the command string.
- Bug Fix [11.00.00] The `FillUsingDiversionComments()` command used with HydroBase was filling missing data in the whole period with zeros when CIU was `H`, `I`, or `N`. Handling of flags has been improved. Filling was ignoring `DivClass` and `RelClass` time series. The command editor has been restructured to be more clear.
- Bug Fix [11.00.00] The `FormatTableString()` command now supports formatting syntax like `%05.1f` to pad floating point number output with leading zeros. This is a global change for all features that perform similar formatting.
- Bug Fix [11.00.00] Fix bug in HEC-DSS code where new location type part of TSID was not handled. The location type is now equivalent to the A part in the HEC-DSS path.
- Bug Fix [11.00.00] Fix bug where time series for HydroBase structures were listed in the main TSTool interface using longitude for latitude.
- Change [11.00.00] Upgrade from Java 6 to Java 7. Java 6 is no longer being supported by Oracle and Java 7 provides performance increases and many enhancements.
- Change [11.00.00] Upgrade Freemarker templating library from version 2.3.15 to version 2.3.21. There are many enhancements and in particular error messages are more user-friendly.
- Change [11.00.00] The `For()` command now allows iterating over a list of specified values and error handling has been improved.
- Change [11.00.00] The `FormatTableString()` command now has `InsertBeforeColumn` parameter to control the position of the new column.
- Change [11.00.00] The HydroBaseDataStore now allows the `OdbcName` property to be set to an ODBC DSN for the SQL Server database connection. This may be useful for troubleshooting or in cases where authentication is different than the default for HydroBase.
- Change [11.00.00] The `JoinTables()` command now has the `HandleMultipleJoinMatchesHow` parameter to specify how multiple matches are handled in the joined table.
- Change [11.00.00] The NrcsAwdbDataStore now recognizes the `ConnectTimeout` and `ReadTimeout` properties to be set. These properties are useful to prevent TSTool from hanging when the NRCS web services are unavailable.
- Change [11.00.00] The `SortTable()` command now supports sorting by multiple columns, each with sort order.
- Change [11.00.00] The `WriteTableToExcel()` command now allows columns and rows to be excluded from writing. Output column widths can also now be set globally for empty columns.
- Change [11.00.00] Table commands have been moved to a ***Commands/Table*** menu to provide more room to grow.
- Change [11.00.00] The ***View / Datastores*** display now includes datastore properties for enabled, status, status message, and ODBC DSN.

- New Feature [11.00.00] Allow users to select recent files when opening command files.
- New Feature [11.00.00] Add command line argument `-batchTimeout Seconds`, which is useful when TSTool hangs accessing a datastore.
- New Feature [11.00.00] Add `CloseDataStore()` command.
- New Feature [11.00.00] Add `CloseExcelWorkbook()` command.
- New Feature [11.00.00] Enable the `DiffProgram` TSTool configuration file property. If set to the path for a program such as KDiff3, the program can be called from some user interface features to compare files, such as the `CompareFiles()` editor.
- New Feature [11.00.00] Add `FormatStringProperty()` command.
- New Feature [11.00.00] Add `SetExcelCell()` command.
- New Feature [11.00.00] Add `SetExcelWorksheetViewProperties()` command.
- New Feature [11.00.00] Add `SetPropertyFromTable()` command.
- New Feature [11.00.00] Add `SplitTableColumn()` command.
- New Feature [11.00.00] Add `SplitTableRow()` command.
- New Feature [11.00.00] Add `Wait()` command.
- New Feature [11.00.00] Add functional `WriteTimeSeriesToExcel()` and experimental `WriteTimeSeriesToExcelFormatted()` command.

Changes in Version 10.31.00

- Bug Fix [10.31.00] Fix bug where `WriteTableToExcel()` command generated errors when columns containing other than strings were specified.
- Bug Fix [10.31.00] Fix bug where `SetFromTS()` command was not handling cases where input and output time series used different missing values.
- Bug Fix [10.31.00] Fix bug where time series identifier/alias choices included commands, which could then cause command editor dialogs to be very wide. The bug was due to adding support for TSIDs containing parentheses in version 10.30.02.
- Change [10.31.00] The `AnalyzeNetworkPointFlow` command has been updated to allow time series identifiers for input time series to be specified by a column in the input table.
- Change [10.31.00] Added the `HandleDuplicatesHow` parameter to the `TableToTimeSeries()` command.
- Change [10.31.00] Add the `MonthTestValues` parameter to the `NewStatisticTimeSeries()` command.
- Change [10.31.00] Changed the `SetTimeSeriesPropertiesFromTable()` command to set the original object types (integer, floating point number, string, etc.). Previously all table values were converted to string time series properties.
- New Feature [10.31.00] Preliminary `For()` and `EndFor()` commands have been added to support basic looping.

Changes in Versions 10.30.00 – 10.30.02

- Bug Fix [10.30.01] Fix bug where NRCS web service returning null start date for time series was not handled.
- Change [10.30.02] Allow any part of a time series identifier (TSID) to include parentheses.
- Change [10.30.01] Add support for port number in Reclamation HDB datastore connection.
- Change [10.30.00] Added the `TimeSeriesIndex1Property` parameter to the `ReadTimeSeriesList()` command to allow additional control over processing.
- Change [10.30.00] Added the `CopyProperties` parameter to the `RunningStatisticTimeSeries()` command to copy properties from the parent time series.
- Change [10.30.00] The `CalculateTimeSeriesStatistic()` command has been updated to allow time series properties in command parameters for the output table column names.
- New Feature [10.30.00] The `InsertTableColumn()` command has been added.

Changes in Version 10.29.00

- Bug Fix [10.29.00] TSID commands for ColoradoWaterSMS web services were not working reliably – a fix to how the period was specified was implemented.
- Change [10.29.00] The `CopyTable()` command has been updated to provide the `ExcludeColumnFilters` parameter to limit rows that are copied.
- Change [10.29.00] The `FormatTableDateTime()` command has been updated to provide the `InsertBeforeColumn` parameter to control insertion of the new output column.
- Change [10.29.00] The `ReadTimeSeriesList()` command editor has been updated to a tabbed interface and new parameters `ColumnProperties`, and `TimeSeriesCountProperty` have been added to set properties for use in later commands.
- Change [10.29.00] The `WriteTableToExcel()` command editor has been updated to a tabbed interface and new parameters `ColumnCellTypes`, `ColumnWidths`, and `ColumnDecimalPlaces` have been added to more precisely control output.

Changes in Versions 10.28.00 – 10.28.02

- New Feature [10.28.00] The `ReadTableFromFixedFormatFile()` command has been added.
- New Feature [10.28.00] A preliminary version of the `NewStatisticMonthTimeSeries()` command has been added, which supports daily time series input.
- New Feature [10.28.00] Update the table view to display irregular time series.
- Change [10.28.02] Changes to Reclamation HDB features: ensemble name is now a query filter and listed in time series metadata, agency is specified when requesting trace model run identifiers, NWS ensemble files have a property `index1` to facilitate HDB/RiverWare integration.
- Change [10.28.01] Update the `AppendFile()` command to have an `ExcludeText` parameter.
- Change [10.28.00] Features to browse the Reclamation HDB database have been updated based on user feedback. The `Properties` parameter has been added to the `ReadReclamationHDB()` command and can be used to set the `TableViewHeaderFormat` to control table header display

and the `tsp:LegendFormat` to control the legend in time series graphs. These properties default to appropriate values for model and ensemble traces.

- Change [10.28.00] The `LegendFormat` property in time series product files now allows `${ts:Property}` notation to be used to format time series properties in the legend.

Changes in Versions 10.27.00

- Bug Fix [10.27.00] The editors for the `CheckTimeSeries()` and `CheckTimeSeriesStatistic()` commands were removing the = from >= and <= constraints – this has been fixed.
- Change [10.27.00] TSTool documentation is now being created using a tool that allows control over merging – the old table of contents is no longer included in documents and the PDF bookmarks are more straightforward.
- Change [10.27.00] Removed a constraint from the `ReadNwsAwdb()` command that was limiting reading data – an issue with the NRCS web services still exists but a work-around is in place.
- Change [10.27.00] The `RunningStatisticTimeSeries()` command now provides `AnalysisStart`, `AnalysisEnd` , `NormalStart`, `NormalEnd`, `OutputStart`, and `OutputEnd` parameters to more explicitly handle periods for the analysis and output.
- Change [10.27.00] The `TableToTimeSeries()` command has been updated to handle appending to tables and output window has been added to transfer a window in each year.
- Change [10.27.00] The `WriteTableToExcel()` command features have been improved.
- Change [10.27.00] The `WriteTableToKml()` and `WriteTimeSeriesToKml()` commands have been made functional for point and polygon shapes.
- Change [10.27.00] The `ReadTableFromDataStore()` and `RunSql()` commands will now remove comments from SQL when used with a Microsoft Access datastore because Access does not support comments.
- New Feature [10.27.00] The `CopyFile()` command has been added.
- New Feature [10.27.00] The `CreateDataStoreDataDictionary()` command has been added.
- New Feature [10.27.00] The `InsertTableRow()` command has been added.
- New Feature [10.27.00] The `ListFiles()` command has been added.
- New Feature [10.27.00] The `NewExcelWorkbook()` command has been added.
- New Feature [10.27.00] The `ReadTableCellsFromExcel()` command has been added.
- New Feature [10.27.00] The `SetTimeSeriesValuesFromLookupTable()` command has been added to set data in a time series using a lookup table.
- New Feature [10.27.00] The `WriteTableCellsToExcel()` command has been added.

Changes in Versions 10.26.00

- Change [10.26.00] The `CopyTable()` command behavior has been changed. Multiple columns can now be specified for `DistinctColumns` and `IncludeColumns` is always checked to determine output (`DistinctColumns` no longer overrides this parameter). To reproduce previous

behavior with `DistinctColumns`, specify `IncludeColumns` to match `DistinctColumns`. The `RowCountProperty` has been added to allow the row count to be set as a processor property, which is useful for checking for errors with `If()` and `Message()` commands.

- Change [10.26.00] The `ExpandTemplateFile()` command now allows a text string to be specified, as an alternative to specifying an input file.
- Change [10.26.00] The `ReadNrcsAwdb()` command has been updated to use the web service API as of 2013-11-05. Support for hourly data and forecasts as output table have been added.
- Change [10.26.00] The `ReadStateMod()` command now reads the **.xop* file for monthly time series.
- Change [10.26.00] The `ReadTimeSeriesList()` command has been updated to include the `Properties` parameter to set time series properties.
- Change [10.26.00] The `RunningStatisticTimeSeries()` command has been updated to specify a distribution for use with the `PlottingPosition` statistic and the `Rank` statistic has been added.
- Change [10.26.00] The `SelectTimeSeries()` command has been updated to include the `IfNotFound` parameter to allow control how errors are handled and the `SelectCountProperty` parameter to set a processor property with results.
- Change [10.26.00] The `SetConstant()` command now allows monthly values to be specified as `*` to keep the original value and blank or `NaN` to set to missing.
- Change [10.26.00] The `SetFromTS()` command now provides parameters to define a window to set data only within part of the year.
- Change [10.26.00] The `TableToTimeSeries()` command now supports appending to an existing table for multiple-column output.
- Change [10.26.00] The release notes have been split into two files, for current major version and older versions. This shortens the information that most users need to review.
- New Feature [10.26.00] The TSTool configuration file now includes the `UILookAndFeel` property, in particular to allow users to configure the user interface look and feel on Linux.
- New Feature [10.26.00] The `FormatTableDateTime()` command has been added.
- New Feature [10.26.00] The `If()` and `EndIf()` commands have been added to provide additional control of the workflow.
- New Feature [10.26.00] The `Message()` command has been added.
- New Feature [10.26.00] The `WriteTableToKml()` command has been added.

Changes in Versions 10.25.00

- Bug Fix [10.25.00] Support for Oracle databases used with `GenericDatabaseDataStore` has been enabled.
- Change [10.25.00] The `ReadNwsrfsEspTraceEnsemble()` command now allows 24Hour time series to be converted to Day interval during reading.
- Change [10.25.00] The `WriteTimeSeriesToDataStream()` command now provides the `NonMissingOutputCount` parameter, useful for outputting the most recent values.

- Change [10.25.00] The `ReadReclamationHDB ()` and `WriteReclamationHDB()` commands now adjust NHour input period and output period, respectively, to align with the time series, to ensure that iteration over data results in times that align with data.
- Change [10.25.00] The Oracle database drive has been updated to support Oracle version 12g. This and other changes resolve issues writing time series with many values.

Changes in Versions 10.24.00 – 10.24.01

- Change [10.24.00] Time series ensembles traces now are identified with a string sequence identifier, rather than the integer sequence number in previous versions. This provides more flexibility.
- Change [10.24.00] The `WriteDateValue()` command now provides the `Version` parameter, in particular to provide an option to writing older ensemble version 1.4 `SequenceNumber`.
- Change [10.24.00] The `RunningStatisticTimeSeries()` command has been updated to support `AllYears` sample method and the `MinimumSampleSize` parameter has been added.
- Change [10.24.00] The `CompareFiles()` command now provides the `MatchCase` parameter.
- Change [10.24.00] The `ReadRiverWare ()` command now reads RiverWare RDF files.
- Change [10.24.01] The `ReadReclamationHDB ()` and `WriteReclamationHDB()` commands have been updated to be functional for processing model time series and ensembles. Time series identifiers have been changed to ensure unique identification of time series.
- New Feature [10.24.00] The `SortTable()` command has been added.

Changes in Version 10.23.00

- Bug Fix [10.23.00] The `${TS:property}` syntax used to specify time series properties was not being expanded for some commands. This has been fixed.
- Bug Fix [10.23.00] Reading USGS NWIS instantaneous data should only be used with 15Min requests and this constraint is now hard-coded. The requested period date/times are also now rounded to the nearest 15Min interval.
- Bug Fix [10.23.00] The `SetTableValues()` command was not working. It is fixed.
- Bug Fix [10.23.00] The `TableMath()` command was not working. It is fixed.
- Bug Fix [10.23.00] The `FillRegression()` and `FillMixedStation()` commands were not working in the previous. They are fixed. Also update to allow zero values to be set to missing.
- Change [10.23.00] The `RemoveDataStoreTableRows()` command has been renamed to `DeleteDataStoreTableRows()`, and added the `RemoveAllRows=Truncate` parameter.
- Change [10.23.00] The `ReadTimeSeriesList()` command now supports location type and alias. The location type, data source, and data type can be read from input table columns.
- Change [10.23.00] The `SetTimeSeriesPropertiesFromTable()` command has been updated to improve how time series property names are mapped to input table columns.
- Change [10.23.00] The ***Data Visualization*** commands menu has been changed to ***Visualization Processing***. The ***Datastore Processing*** menu has been added and relevant datastore commands have been added to this menu. Some commands are listed in multiple menus for usability.

- New Feature [10.23.00] The `CreateTimeSeriesEventTable()` command has been added in order to provide data for annotating graphs.
- New Feature [10.23.00] The `WriteTimeSeriesToDataStream()` command has been added to improve integration with real-time data management systems.

Changes in Version 10.22.00 – 10.22.01

- Change [10.22.00] The `CopyTimeSeriesPropertiesToTable()` command has been updated to have the `AllowDuplicates` property.
- Change [10.22.00] The `ReadTableFromExcel()` command now provides the `ColumnExcludeFilters` parameter to exclude rows from the table.
- Change [10.22.00] The `NewTimeSeriesCommand()` command now provides the `InitialFlag` parameter to set the initial data flag for the time series.
- Change [10.22.00] The `RemoveTableRowsFromDataStore()` command has been renamed to `RemoveDataStoreTableRows()`.
- Change [10.22.00] Editors for the following commands now use tabs to help ensure that editor windows are not too large for typical screens: `FillRegression()`, `FillMisedStation()`, `AnalyzeNetworkPointFlow()`, `ReadDelimitedFile()`.
- Change [10.22.00] The `ReadTableFromDBF()` command now provides the `Top` parameter to limit the number of rows returned.
- New Feature [10.22.00] The `ProcessRasterGraph()` command has been added to automate creation of raster graphs. Visualization commands are now grouped under a ***Data Visualization*** commands menu.
- New Feature [10.22.00] The `JoinTables()` command is now functional.
- New Feature [10.22.00] The `RunSql()` command has been added to automate database tasks.
- New Feature [10.22.00] The `SetTableValues()` command has been added.
- New Feature [10.22.00] The appendix **Running TSTool in Various Modes** has been added to centralize information about running TSTool, in particular in integrated environments.

Changes in Version 10.21.00

- Bug Fix [10.21.00] The `FillRegression()` command in the previous version was not properly handling confidence interval and zero intercept, resulting in filling not occurring. This has been fixed. A work-around was to specify a non-blank confidence interval.
- Bug Fix [10.21.00] The `WriteTableToDelimitedFile()` command was not listing available tables to write. This has been fixed.
- Bug Fix [10.21.00] Time series that used `NaN` for missing were also treating -999 as missing. Only `NaN` is now treated as missing for such time series.
- Bug Fix [10.21.00] The `ReadTableFromExcel()` command that used `ExcelIntegerColumns` always returned 1. The actual numeric value is now returned. The command also has been enhanced to read additional rows to determine column data types when the first row contained blanks.

- Bug Fix [10.21.00] TSTool would allow a command file to be opened while the current commands are running, leading to the interface being unresponsive. A dialog now warns the user, allowing them to return to the current commands or let the existing commands run in the background.
- Change [10.21.00] The `FillRegression()` command now outputs all relevant statistics to the output statistics table, and functionality is complete as per the documentation. Many of the new enhancements were implemented to allow consistency with the `FillMixedStation()` command.
- Change [10.21.00] The `CopyTable()` command now provides the `DistinctColumns` parameter to allow copying distinct values from one table to another. The `ColumnFilters` parameter allows rows to be copied only when column values match a pattern.
- Change [10.21.00] The `NewTimeSeries()` command now allows initializing the time series with random values, useful for testing or prototyping.
- Change [10.21.00] The `ManipulateTableString()` command now provides the `Replace` parameter to replace a substring in a table column.
- Change [10.21.00] The `ExpandTemplateFile()` command now provides the `OutputProperty` parameter to set the result to a processor property.
- Change [10.21.00] The `ReadTableFromDataStore()` command now allows `${Property}` to be used in the SQL, to utilize processor properties.
- Change [10.21.00] The `TableToTimeSeries()` command now allows reading time series metadata from additional columns in the table. A bug was fixed that prevented handling dates as integer years.
- New Feature [10.21.00] Time series identifiers (TSIDs) now support the optional `LocationType:` syntax at the beginning of the identifier. This is useful when location identifiers are not unique across location types or the location type helps to interpret the TSID. Location types in TSIDs will be utilized for some datastores where such data are available (e.g., station type for RCC ACIS).
- New Feature [10.21.00] The `FormatTableString()` command has been added to provide flexibility in formatting strings in table columns.
- New Feature [10.21.00] The `AnalyzeNetworkPointFlow()` command has been added to perform a "point flow" analysis on a network of nodes and links.
- New Feature [10.21.00] The `AppendTable()` command has been added.
- New Feature [10.21.00] The `ReadTimeSeriesList()` command has been added to read multiple time series using a table of metadata as input.
- New Feature [10.21.00] The `WriteTimeSeriesToDataStore()` command has been added to write time series to a database datastore (under development).
- New Feature [10.21.00] The `WriteTimeSeriesToJson()` command has been added to write time series to JSON.
- New Feature [10.21.00] A basic version of the `WriteTimeSeriesToKml()` command has been added to write time series to KML.
- New Feature [10.21.00] The Properties tab has been added to the TSTool results area, to show time series processor properties after the run.

Changes in Version 10.20.00

- Change [10.20.00] The `StartRegressionTestResultsReport()` and `RunCommands()` commands have been updated to improve the regression test output, including adding run time, whether a test is disabled, and notes explaining the report.
- Change [10.20.00] HydroBase version 20130404 provides access to WDID and structure type in structure-related views, and TSTool has been updated to allow filtering on these values for diversion coding time series.
- Change [10.20.00] The `ReadTableFromDataStore()` command editor has been reconfigured to used a tabbed interface. The `Top` parameter is now available to limit rows returned. Database procedures that do not have parameters can be run.
- Change [10.20.00] The `WriteReclamationHDB()` command now supports writing ensembles.
- Change [10.20.00] The `WriteTableToDelimitedFile()` command now provides the `NewlineReplacement` parameter to replace newlines in output strings, to avoid unexpected line breaks in the delimited output file.
- Change [10.20.00] The `ReadNwsrfsEspTraceEnsemble()` command now saves time series properties from the input, to allow use in later commands.
- Change [10.20.00] The main TSTool interface now displays datastores and input types in a tabbed panel in order to clearly differentiate the access to data inputs. A message is now displayed when TSTool starts to indicate that data connections are initializing. Previously this was not evident and a user could try using data connections before they were initialized, resulting in errors.
- Change [10.20.00] The `WriteReclamationHDB()` command now handles NHour time series by specifying the start and end date/time for the data values.

Changes in Version 10.19.00

- Change [10.19.00] Add `ColumnMap` parameter to `CopyTable()` command to allow copy to have different column names.
- Change [10.19.00] The `WriteReclamationHDB()` command now allows the agency, overwrite flag, and time zone to be specified.
- Change [10.19.00] Show table count and number of rows and columns in table results.
- New Feature [10.19.00] Preliminary work on the `JoinTables()` command.

Changes in Version 10.18.00

- Bug Fix [10.18.00] Fix bug where `NewStatisticTimeSeriesFromEnsemble()` command was using the period from the first time series for the analysis period if no analysis period was specified. The command now uses the maximum period from all ensemble traces by default.
- Change [10.18.00] The `CalculateTimeSeriesStatistic()` and `NewStatisticTimeSeriesFromEnsemble()` commands now provide the `Total` statistic.
- New Feature [10.18.00] Add the `ReadTableFromExcel()` command to read cell ranges into a TSTool table.
- New Feature [10.18.00] Add the `RemoveTableRowsFromDataStore()` command to delete rows in a datastore table, useful prior to (re)loading database tables.

- New Feature [10.18.00] Add the `WriteTableToDataStore()` command to write TSTool table rows into a datastore table, useful for (re)loading database tables.

Changes in Version 10.17.00

- Bug Fix [10.17.00] Fix bug where `Free()` command failed without any parameters.
- Change [10.17.00] The `ExpandTemplateFile()` command now has a `UseTables` parameter to disable passing tables to the template expander (improves performance when tables are not needed in template).
- New Feature [10.17.00] Updated the **Getting Started** chapter of the documentation to have a section on running TSTool in batch mode.
- New Feature [10.17.00] The `ProfileCommands()` command has been added to help understand command performance so that software and command files can be enhanced.
- New Feature [10.17.00] The `FreeTable()` command has been added to free table resources.
- New Feature [10.17.00] Command files can now be loaded without running discovery, by using the `-nodiscovery` command like parameter (for batch runs) and the ***File…Open...Command File (no discovery)*** menu (for interactive runs). This results in much faster loads when command files are not expected to be edited (such as when running a large command file produced from a template).

Changes in Version 10.16.00

- Bug Fix [10.16.00] Fix bug where `FormatDateTimeProperty()` command editor had error.
- Change [10.16.00] The `CalculateTimeSeriesStatistic()` command now allows computing the `TrendOLS` statistic, with output being the intercept, slope, and R^2. This is useful for trend analysis for annual data or other time series that exhibit a trend. The `GECount`, `GTCount`, `LECount`, and `LTCount` statistics also are now available. The `AnalysisWindowStart` and `AnalysisWindowEnd` parameters have been added to filter data values to a window within the year and are available for some statistics.
- Change [10.16.00] The `LeftYAxisDirection` graph property has been added and can be used to reverse the axis direction, for example to graph positive water level depths going down from zero. The property is not recognized in all graph types and additional updates will be made as needed.

Changes in Versions 10.15.00

- Bug Fix [10.15.00] NRCS AWDB web service for daily values always returns a null value for February 29. A work-around has been implemented so that this value is ignored and does not cause the time series timestep to advance for the extra data value when reading the data.
- Bug Fix [10.15.00] The `ReadHydroBase()` command was always using the legacy HydroBase input type, instead of the specified datastore. This has been fixed.
- Change [10.15.00] The `DeselectTimeSeries()` and `SelectTimeSeries()` commands have been moved from the ***Commands / Output Time Series*** menu to a new ***Commands / Select Time Series*** menu because the results of the commands impact many other commands.

- Change [10.15.00] `DivClass` and `RelClass` time series read from HydroBase now result in time series properties being set for the individual parts of the `SFUTG2` coding. This allows, for example, the group identifier to be extracted based on time series queries.
- Change [10.15.00] The documentation has been split into multiple volumes to facilitate use, available from the ***Help*** menu. A **User Manual** chapter has been added for **Excel Integration**.

Changes in Versions 10.14.00

- Change [10.14.00] The `CreateEnsembleFromOneTimeSeries()` command now has the `OutputYearType` parameter to offset the sequence number (historical year). This allows, for example, SNOTEL snow water equivalent graphs to be created.
- Change [10.14.00] The `ReadHydroBase()` command well level time series can now be filtered by data source.
- Change [10.14.00] The HydroBase datastore documentation has been updated to explain how to connect to the HBGuest account in HydroBase, which provides access to additional data tables.

Changes in Versions 10.13.00

- Bug Fix [10.13.00] Fix bug in WaterML parser so that missing value is recognized as indicated string (e.g., `-999999.0`) and integer equivalent (e.g., `-999999`) since both show up as data values.
- Change [10.13.00] The `OpenHydroBase()` command has been moved to a the new ***Commands / Deprecated*** menu, which is a holding area for commands slated to be phased out.
- Change [10.13.00] The `WriteTableToDelimitedFile()` command now allows comments to be omitted from output, which facilitates use of files with software such as Esri's ArcMap. The `AlwaysQuoteStrings` parameter has also been added.
- Change [10.13.00] The `ChangeInterval()` command now has a `RecalcLimits` parameter to recalculate period of record statistics, to allow such information to be used in fill commands.
- Change [10.13.00] The `TimeSeriesToTable()` command now allows missing values to be omitted when creating a single-column output table, which is useful for exporting lists of sparse time series. The `DataColumn` parameter has been renamed `ValueColumn` to be consistent with other commands. The `FlagColumn` parameter has been added to allow flags to be saved in the output table.
- Change [10.13.00] The following datastores now set metadata as time series properties when time series are read: ColoradoWaterSMS, ColoradoWaterHBGuest, RCC ACIS. The information is useful for filtering time series, creating tables of information, etc.
- Change [10.13.00] Some HydroBase well locations do not have identifiers. In these cases, an identifier `LL:LatLong` is now created, similar to the USGS site identifiers. These identifiers allow time series well level data to be queried and indicate that a location identifier needs to be assigned.
- New Feature [10.13.00] The `TableToTimeSeries()` command has been added to create time series from a table.
- New Feature [10.13.00] Support has been added for the USGS NWIS instantaneous values web service via the USGS NWIS Instantaneous datastore and `ReadUsgsNwisInstantaneous()` command.

- New Feature [10.13.00] Support has been added for the USGS NWIS groundwater web service via the USGS NWIS Groundwater datastore and `ReadUsgsNwisGroundwater()` command.
- New Feature [10.13.00] Support has been added for the NRCS AWDB web service a datastore and `ReadNrcsAwdb()` command.
- New Feature [10.13.00] The ***Commands / Deprecated*** menu has been added as a holding area for commands slated to be phased out. Commands will be supported here for a period of time but eventually will be removed from the software.
- New Feature [10.13.00] The ***Commands / Spatial Processing*** menu has been added. Spatial commands are envisioned and will be added as resources allow.
- New Feature [10.13.00] The **TSTool Syntax Guide** appendix has been added to summarize the various notations used in TSTool.

Changes in Versions 10.12.00

- Bug Fix [10.12.00] Fix bug in `ReadFromDelimitedFile()` when using filler characters in the date/time format string. Also add `%b` date/time format specifier, to parse month abbreviations.
- Change [10.12.00] The `CopyTimeSeriesPropertiesToTable()` command now will automatically create the output table if it does not exist, and insert columns if necessary.
- Change [10.12.00] The `ReadHydroBase()` command has been updated to provide choices for selecting data type and interval, and input filters are provided, similar to the main TSTool window. HydroBase datastores are now supported and location properties are set on the time series when read from the database.
- Change [10.12.00] The `ReadTableFromDataStore()` command now allows a free-format SQL string and the SQL also can be specified by an input file.
- Change [10.12.00] Update many commands to indicate progress within the command, which results in the TSTool interface indicating the progress in the command progress bar. For example, if multiple time series are being processed, the command progress bar will indicate how many time series have been processed.
- Change [10.12.00] Update the `NewStatisticYearTS()` command to have the `DayOfCentroid` and `MonthOfCentroid` statistics, for example to evaluate change in streamflow patterns over time.
- Change [10.12.00] Update the `ReadUsgsNwisDaily()` command editor to provide more choices to users for counties, parameters, and statistics.
- Change [10.12.00] Update the `NewStatisticTimeSeriesFromEnsemble()` command to have the `MissingCount`, `MissingPercent`, `NonmissingCount`, and `NonmissingPercent` statistics.
- Change [10.12.00] Update the `RunningStatisticTimeSeries()` command to have the `ProbabilityUnits` parameter to control whether output statistic value is fraction (0-1) or percent (0-100).
- Change [10.12.00] Update the `Scale()` command editor to provide the `MonthValues` parameter for monthly scaling.
- Change [10.12.00] Update the `Cumulate()` command to expand the `Reset` parameter functionality, in particular by adding other parameters to more specifically control the behavior.

- Change [10.12.00] Update the `TimeSeriesToTable()` command to allow writing multiple time series to single column.
- New Feature [10.12.00] HydroBase database connections can now be configured using a datastore configuration file (see the **HydroBase Datastore** appendix).
- New Feature [10.12.00] Add the `WritePropertiesToFile()` command, which is more flexible and will replace the `WriteProperty()` command.
- New Feature [10.12.00] Add the `ReadPropertiesFromFile()` command.
- New Feature [10.12.00] Add the `AppendFile()` command.
- New Feature [10.12.00] Add the `NewStatisticEnsemble()` command to compute an ensemble of statistics (such as percent of stations reporting above threshold values).

Changes in Versions 10.11.00

- Change [10.11.00] Update to support RCC ACIS version 2 web service API. The version 1 service is still supported. Command files created for version 1 will need to be updated for use with version 2. Refer to the **RCC ACIS Data Store** appendix.
- Change [10.11.00] Update the ColoradoWaterHBGuest data store to use the latest web service API. All HBGuest data types that are supported in TSTool were compared with HydroBase results to confirm consistent results and handling of missing data (previously was an issue).
- Change [10.11.00] Update the HydroBase input type to provide `WellLevelDepth` and `WellLevelElev` data types. The legacy `WellLevel` data type is still supported but will be phased out in favor of `WellLevelElev`. The new data types are consistent with those used in the ColoradoWaterHBGuest data store.
- Change [10.11.00] Update the following commands to calculate the GeometricMean statistic: `NewStatisticTimeSeries()`, `NewStatisticTimeSeriesFromEnsemble()`, `RunningStatisticTimeSeries()`.
- Remove [10.01.00] The Colorado BNDSS data store has been removed because the initial implementation used a direct database connection and data now can be accessed via web services. Use the `WebGet()` command and commands that read delimited files.

Changes in Versions 10.10.00

- Bug Fix [10.10.00] Fix bug in `ReadFromDelimitedFile()` command that resulted in warning in discovery mode (after opening command file). Also improve handling of input files that have all blanks in last column.
- Change [10.10.00] Enhance the `RunningStatisticTimeSeries()` command to have `ExceedanceProbability`, `NonexceedanceProbability`, `PercentOfMax`, `PercentOfMean`, `PercentOfMedian`, and `PercentOfMin` statistics. Also add the `AllowMissingCount` parameter.
- Change [10.10.00] Add the `Alias` parameter to set the alias for each trace time series created by the `CreateEnsembleFromOneTimeSeries()` command.

- New Feature [10.10.00] Add the new GenericDatabaseDataStore data store type to connect to any database via ODBC or JDBC. This allows the `ReadTableFromDataStore()` command to read any table or view.

Changes in Versions 10.09.00

- Change [10.09.00] The TSTool main window time series lists for HydroBase and related web services now show the longitude, latitude, and UTM coordinates.
- Change [10.09.00] The ColoradoWaterHBGuest web service has been enhanced to enable station historical time series. Also fix problem where caches of time series lists were not initializing in all cases – opening command files showed errors about time series not being found. Implementation of irrigated lands time series is incomplete.
- Change [10.09.00] The ColoradoWaterSMS data type choices now include "*", which allows listing all available data types for all locations.

Changes in Versions 10.08.00

- Change [10.08.00] The ColoradoWaterSMS (Colorado real-time streamflow) web service has been converted to a data store and is no longer listed as an "input type". A configuration file is distributed with the software installer and the data store is enabled by default.
- Change [10.08.00] The ColoradoWaterHBGuest (Colorado HydroBase database) web service has been converted to a data store and is no longer listed as an "input type". A configuration file is distributed with the software installer and the data store is enabled by default for CDSS use. Additional diversion, reservoir, and well data types have been implemented.
- Change [10.08.00] The `ReadDelimitedFile()` command now allows reading files with flags by using the `FlagColumn` parameter.
- Change [10.08.00] The `ReadRccAcis()` command now allows specifying a single site ID, which is consistent with the ACIS REST API StnData web service call. Multiple time series also can be processed.
- Change [10.08.00] Time series tables now allow formatting data values with a superscript for the data flag.

Changes in Versions 10.07.00

- Change [10.07.00] The `NewTimeSeries()` command now has a `InitialFunction` parameter, which can be used to initialize the time series to a function. This feature is being used to test software and will be enhanced with more functions in the future.
- Change [10.07.00] The `SetTimeSeriesPropertiesFromTable()` command now has a `TSPropertyNames` parameter to set the name of properties if different from the table, and the time series description can be set from a table.

Changes in Versions 10.06.00 – 10.06.01

- Bug Fix [10.06.00] Data stores that are opened at start-up now are only opened if the data store type is enabled in the main TSTool configuration file. This improves performance.

- Bug Fix [10.06.00] Irregular time series were not properly being treated as having data flags, resulting in no flags in output. Because of the software design, irregular time series always have data flags (even if most are blank) and output will now reflect this (e.g., data flags will be output to DateValue files).
- Change [10.06.00] The `ReadDelimitedFile()` command has been updated to support functional `DateTimeFormat`, `InputStart`, and `InputEnd` parameters.
- Change [10.06.00] The `WriteDateValue()` command has been updated to support writing more than one irregular time series. Non-overlapping points are represented as blanks in the DateValue file.
- Change [10.06.00] The `MissingValue` parameter has been added to the `NewTimeSeries()`, `NewPatternTimeSeries()`, and `ReadRiversideDB()` commands to allow setting the missing value. Historical defaults of -999 are being transitioned to `NaN` and the parameters allow flexibility.
- Change [10.06.00] The `ReplaceValue()` command now has a `MatchFlag` parameter to allow data flags to be matched to find values to replace.
- Change [10.06.00] The ReclamationHDB features now support instantaneous time series as irregular interval data with minute precision for date/times.
- Change [10.06.00] The `CreateEnsembleFromOneTimeSeries()` command `ReferenceDate` parameter now can have special values like `CurrentToDay`.
- New Feature [10.06.01] The time series table view now allows data flags to be shown if available, in which case the table column is treated as strings rather than numbers.
- New Feature [10.06.00] Add `WriteRiversideDB()` command.

Changes in Versions 10.05.00

- Bug Fix [10.05.00] Fixed issue where the `ReadDelimitedFile()` generated an error reading a file with a single line of data.
- Change [10.05.00] The `ReadUsgsNwis()` command has been renamed `ReadUsgsNwisRdb()` and the USGSNWIS input type has been changed to UsgsNwisRdb to allow more specific handling of USGS NWIS data offerings. Old commands are automatically updated.
- New Feature [10.05.00] Add `ReadUsgsNwisDaily()` command to read time series from USGS NWIS Daily Value web service.
- New Feature [10.05.00] Add `ReadWaterML()` command to read time series from a WaterML file.
- New Feature [10.05.00] Add preliminary `WriteWaterML()` command to write time series to a WaterML file.
- New Feature [10.05.00] Add `LookupTimeSeriesFromTable()` command to create a new time series from an input time series and lookup table.
- New Feature [10.05.00] Add `ReadTableFromDataStore()` command to create a new table from a database table or view.

Changes in Versions 10.04.00

- Change [10.04.00] The `TableTimeSeriesMath()` command now supports assignment of a table value to time series.

Changes in Versions 10.03.00

- Change [10.03.00] The `CompareTables()` command now has `Tolerance` and `Precision` parameters to control floating point value comparisons. The `AllowedDiff` command has been added to allow a certain number of values to be different and not trigger a warning (useful for testing the command).
- Change [10.03.00] The `FillFromTS()` command now has `FillFlag` and `FillFlagDesc` parameters.
- Change [10.03.00] The `CheckTimeSeries()` command now allows the threshold of repeated values to be specified for the `Repeat` statistic.

Changes in Versions 10.02.00

- New Feature [10.02.00] Add `ReadRiversideDB()` command.

Changes in Versions 10.01.00 – 10.01.01

- Bug Fix [10.01.01] Fixed issue where the `Copy()` command failed on minute data that had data flags.
- Bug Fix [10.01.01] All command editors that allow an alias to be specified with the `%` specifiers, and similar commands that specify TSID formatting for table columns did not update the parameter when using the drop-down choices – all have been fixed.
- Bug Fix [10.01.00] Fix `RunPython()` to allow parameters (such as filenames) with spaces.
- Change [10.01.00] The `TimeSeriesToTable()` command now supports an output window so that months or seasons can be transferred from time series to the table.
- Change [10.01.00] The `SetProperty()` command now allows date/time properties to be defined dynamically using `CurrentToDay` and similar syntax.
- Change [10.01.00] The `NewStatisticTimeSeriesFromEnsemble()` command now supports calculating exceedance probabilities.
- Change [10.01.00] The following commands now recognize `${Property}` syntax in appropriate parameters: `SetProperty()`, `FTPGet()`, `WebGet()`.
- New Feature [10.01.00] Add the ***View / Close All View Windows*** menu item – this will close all open graph, graph property, summary, and table windows.
- New Feature [10.01.00] Add `FormatDateTimeProperty()` command to facilitate formatting date/time strings, for example to use in dynamically configured filenames.
- New Feature [10.01.00] Add MG to ACFT and MGD to AF/D conversions to units file.

Changes in Versions 10.00.00 – 10.00.05

- Bug Fix [10.00.04] Command parameters that had parenthesis in the values were causing an error initializing the command – parameters can now contain parentheses.

- Bug Fix [10.00.03] Fix bug where ColoradoWaterSMS irregular (real-time) data values had the wrong date/time for hour 12 transitioning between AM and PM.
- Bug Fix [10.00.03] Fix bug where some RCC-ACIS flagged values were not being handled – all values should now be handled, based on available documentation.
- Bug Fix [10.00.01] The ***Commands / Convert TS Identifier to Read Command*** menu items were not functional. The menu items have now been moved to the ***Edit*** menu (and popup command list menu) and consist of two choices: converting a TSID to a `ReadTimeSeries()` command or to a more specific read command, which will depend on whether a matching read command is available for the TSID (additional support will be enabled over time). One advantage of using a read command is that an alias can be assigned, which allows the processing logic to be more clearly defined.
- Bug Fix [10.00.00] Fix bug where `SetFromTS()` and `FillFromTS()` command editor was listing extra duplicate blank and `*` choices.
- Bug Fix [10.00.00] The `NewTimeSeries()` and `NewPatternTimeSeries()` command editors generated a warning if `SetStart` and `SetEnd` were not specified as parameters – the command now recognizes the results of `SetOutputPeriod()` commands during editing.
- Bug Fix [10.00.00] Some network environments block HTTP traffic on default ports due to firewall settings, which prevents web services from working properly. The Java command line parameter has been added to fix this issue: `-Djava.net.useSystemProxies=true`
- Change [10.00.05] The ReclamationHDB queries are now case-insensitive for string filters. Also set the time zone for hourly and instantaneous time series, using the global HDB time zone.
- Change [10.00.04] The `ReadDelimiteFile()` command now handles data that are listed from latest to oldest, and the `DateColumn` and `TimeColumn` parameters have been enabled.
- Change [10.00.01] The ***Convert TSID to…*** menus have been compressed into ***Convert TSID to general ReadTimeSeries() Command…*** and ***Convert TSID to specific Read…() Command…*** menus, which are available as a popup and the ***Edit*** menu but no longer in the ***Commands*** menu. These features will be more fully enabled over time.
- Change [10.00.01] The `CreateFromList()` command editor menu has been moved to the read commands.
- Change [10.00.01] The `ReplaceValue()` command now has a `SetFlag` parameter to flag data values that have been changed.
- Change [10.00.01] The `SetFromTS()` command now has a `SetDataFlags` parameter to control whether data flags from the independent time series are copied, and `HandleMissingHow=SetOnlyMissingValues` parameter will cause only the missing values to be transferred.
- Change [10.00.01] The `NewStatisticYearTS()` command now supports `NonmissingCount` and `NonmissingPercent` statistics and also supports the `YearMayToApr` output year type.
- Change [10.00.00] All commands that used `TS Alias = Command(…)` syntax have been migrated to `Command(Alias="…",…)` syntax. Older command files can be read by the current version of TSTool. However, once saved in the new format, older versions of TSTool will not recognize the new command syntax for the impacted commands. If necessary, use the ***File / Save Commands As (Version 9 Syntax)*** menu to save the commands in the older format. The `Alias` parameter also has been updated to support formatting specifiers like `%L` (for location) to allow

dynamic definition of the alias based on time series properties. See additional notes in this section for specific changes to some commands. Some commands require the `Alias` parameter in order to be consistent with previous functionality. However, over time, the parameter may be made optional. These changes have allowed documentation to be condensed and menus to be reorganized to improve consistency. However, the examples in the command reference will be updated over time to use the new syntax.

- Change [10.00.00] The `TS Alias = ReadDateValue(…)` command has been merged with the `ReadDateValue(Alias=…)` syntax, with the new command reading DateValue files with one or more time series.
- Change [10.00.00] The `TS Alias = ReadHydroBase(…)` command has been merged with the `ReadHydroBase(Alias=…)` syntax, with the new command reading one or more time series from HydroBase.
- Change [10.00.00] The `TS Alias = ReadMODSIM(…)` command has been merged with the `ReadMODSIM(Alias=…)` syntax, with the new command reading one or more time series from a MODSIM files.
- Change [10.00.00] The `TS Alias = ReadNwsCard(…)` command has been merged with the `ReadNwsCard(Alias=…)` syntax, with the new command reading a single or ensemble format NWS CARD file.
- Change [10.00.00] The `ChangeInterval(…)` command now allows multiple time series to be processed and also can process an ensemble and generate a new ensemble. The `AllowMissingConsecutive` parameter has been added to further constrain how data can be converted. The output year type `YearMayToApr` has been enabled when converting to year interval.
- Change [10.00.00] Files listed in the results now are displayed using the computer's configured applications (e.g., Acrobat Reader for *.pdf), or a default text file viewer as a last resort.
- Remove [10.00.01] The ***Edit / Command File*** menu has been removed – users edit command files externally using their preferred editors and don't want to confuse the software which might load a command file into the current TSTool session.
- New Feature [10.00.05] Add the prototype `WriteReclamationHDB()` command, which is envisioned to write time series to a Reclamation HDB database. Functionality is limited to and is intended for discussion – full implementation will be completed in a future release.
- New Feature [10.00.04] Add the `ReadRccAcis()` command, which allows bulk reads of RCC ACIS web service time series. Also enable the Global Historical Climate Network (GHCN) and Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) station types in displays and time series identifiers. Enable FIPS county and state data, and NOAA climate division in the query filters.
- New Feature [10.00.03] Add the `PrintTextFile()` command, which automates formatting and printing text files. Printing the commands from the main TSTool window now numbers the lines to facilitate comparison with the on-screen commands.
- New Feature [10.00.02] The ***Tools / Options*** dialog now allows input types in the TSTool configuration file to be enabled/disabled.
- New Feature [10.00.01] Add the `CheckTimeSeriesStatistic()` command, which has features of the `CalculateTimeSeriesStatistic()` and `CheckTimeSeries()` commands

and is intended to help quality control entire time series. Move these commands to the ***Commands / Check Time Series*** menu to recognize as a production-level feature.

- New Feature [10.00.01] Add the `CopyTimeSeriesPropertiesToTable()` command, which is essentially the inverse of `SetTimeSeriesPropertiesFromTable()`.
- New Feature [10.00.01] Progress within each command is now shown in a second progress bar if the command implements the progress reporting feature.
- New Feature [10.00.00] Training materials now are listed by the ***Help / View Training Materials*** menu.