OHD-CORE 19.1.1 Release Notes

Build and Package Date: 11/03/2020. Tested against: FEWS: 2019.02 build 98259, patched from 98251.
Part of CHPS Build: 20.1.1 Release Date: December, 2020

Overview

This release contains 4 Bug fixes & Enhancements which are new since the release of OHD-CORE-18.1.1

Known Issues and Limitations

None at this time.

Scripts / Documentation

Scripts

Documentation

The following pieces of documentation have been modified since the last release and can be found in the directory at the root of the package. All the CHPS documentation may be found online at https://vlab.ncep.noaa.gov/group/chps/wiki/-/wiki/OWP+Documentation/FrontPage

- *Modified:*

  MEFP Users Manual - Section 5.4.3
  MEFP Configuration Guide Forecast

- *New:* None

- *Removed:* None

Fixes

Redmine ID	Reported By	Title
72689	OWP	HEFS/MEFP add quantile-based sampling to alleviate extreme members.
80048	NCRFC	Drainage Areas getting reversed in CHPS warning message.
80272	OWP	As a user, if I configure the MEFP to run with a number of forecast days for a source that exceeds the number of forecast days for which it has parameters, I expect it to fail

Enhancements

Redmine ID	Requested By	Title
73142	OWP	Replace Deprecated Java Classes in OHD-Core.

Detailed Description of Software Changes and Enhancements

Fixes:

Redmine	72689 – HEFS/MEFP add quantile-based sampling to alleviate extreme members
Description	Add quantile-based sampling (with Weibull plotting positions) to the MEFP. The existing `eptUseStratifiedRandomSampling` (for precipitation) and `useStratifiedRandomSampling` (for temperature) options are removed and replaced by `samplingTechnique`. The options for `samplingTechnique` are `RANDOM`, `STRATIFIED_RANDOM`, and `QUANTILE`. A setting of `eptUseStratifiedRandomSampling` or `useStratifiedRandomSampling` to `true` is equivalent to setting `samplingTechnique` to `STRATIFIED_RANDOM`, whereas `false` is equivalent to `RANDOM`. If set to `QUANTILE`, then a Weibull plotting position (i/N+1) is used to identify points to sample along the distribution. The default value for samplingTechnique is `RANDOM`.

	Notice that with this change all HEFS/MEFP configurations that use the property `eptUseStratifiedRandomSampling` or `useStratifiedRandomSampling` will yield an error when executed. To avoid that error, any existing Workflows will need to be updated to make use of the new property `samplingTechnique`.
Cause	A code change in the HEFS/MEFP was required to add the new quantile-base sampling.

Fix	For HEFS/MEFP configuration We will need to identify if the property `eptUseStratifiedRandomSampling` or `useStratifiedRandomSampling` exist in the current Workflows configuration. To do that, execute the following command in yours CHPS SA/OC/MC
	`cd Config`
	Identify the files that contain the property `eptUseStratifiedRandomSampling` or `useStratifiedRandomSampling` by using the command `grep`:
	`grep -r eptUseStratifiedRandomSampling`
	`grep -r useStratifiedRandomSampling`
	If the grep command return files containing that property we need to replace each match of the following lines with with their new values:
	For line:
	`<string key="eptUseStratifiedSampling" value="true"/>`
	Replace it with:
	`<string key="samplingTechnique" value="STRATIFIED_RANDOM"/>`
	For line:
	`<string key="eptUseStratifiedSampling" value="false"/>`
	Replace it with:
	`<string key="samplingTechnique" value="RANDOM"/>`
	For line:
	`<string key="useStratifiedSampling" value="true"/>`
	Replace it with:
	`<string key="samplingTechnique" value="STRATIFIED_RANDOM"/>`
	For line:
	`<string key="useStratifiedSampling" value="false"/>`
	Replace it with:
	`<string key="samplingTechnique" value="RANDOM"/>`
	We can use the following command (optional) to update the files:
	For line:

	`<string key="eptUseStratifiedSampling" value="true"/>`
	use command
	`sed -i 's@<string key="eptUseStratifiedSampling" value="true"/>@<string key="samplingTechnique" value="STRATIFIED_RANDOM"/>@g' <file names>`
	For line:
	`<string key="eptUseStratifiedSampling" value="false"/>`
	use command
	`sed -i 's@<string key="eptUseStratifiedSampling" value="false"/>@<string key="samplingTechnique" value="RANDOM"/>@g' <file names>`
	For line:
	`<string key="useStratifiedSampling" value="true"/>`
	use command
	`sed -i 's@<string key="useStratifiedSampling" value="true"/>@<string key="samplingTechnique" value="STRATIFIED_RANDOM"/>@g' <file names>`
	For line:
	`<string key="useStratifiedSampling" value="false"/>`
	Replace it with:
	`sed -i 's@<string key="useStratifiedSampling" value="false"/>@<string key="samplingTechnique" value="RANDOM"/>@g' <file names>`
	For instance the command:
	`grep -r useStratifiedRandomSampling`
	produces the following output:
	`ModuleConfigFiles/hefs/Templates/ENSPOST_Forecast_FGroup_Template.xml: <string key="useStratifiedRandomSampling" value="true"/>`
	the sed command will looks like:
	`sed -i 's@<string key="useStratifiedRandomSampling" value="true"/>@<string key="samplingTechnique" value="STRATIFIED RANDOM"/>@g' ModuleConfigFiles/hefs/Templates/ENSPOST_Forecast_FGroup_Template.xml`

Notes	When we edit files that contain the properties `eptUseStratifiedRandomSampling` or `useStratifiedRandomSampling`, we need to double check that this property is for HEFS/MEFP only. We can confirm it by checking that we are editing workflows files related to HEFS/MEFP by looking in the files that

	are editing contain the following in the `<executeActivity> section: ohd.hseb.hefs.mefp.adapter.MEFPEnsembleGeneratorModelAdapter` it must be present in each of the files that we edit.

Redmine	80272 – As a user, if I configure the MEFP to run with a number of forecast days for a source that exceeds the number of forecast days for which it has parameters, I expect it to fail.
Description	**I've written this ticket to track work on a bug I plan to resolve in the MEFP for CHPS 19.1.1. If this ticket belongs in another project, please let me know.** The if clause described in the subject reflects a configuration error on the part of the user, and, therefore, should lead to a run failure. Currently, the MEFP merely ignores the source and issues a warning: `<line level="2" description="Source GEFS Forecasts will be ignored: For source GEFS Forecasts, the desired number of days, 17, exceeds the number of days for which parameters were estimated, 15.."/>`
Cause	Currently, the MEFP merely ignores the source and issues a warning.
Fix	A change in code to implement the change.
Notes	N/A

Redmine	80048 – Drainage Areas getting reversed in CHPS warning message
Description	When we (NCRFC) receive warning messages in CHPS related to the UHG Model we get the following type of log message: "In adapter model: UHGMODEL LocationID(LEMI2): Area represented by the unit hydrograph(153.59 square kilometers) differs from the user specified area(182.76 square kilometers) by more than one percent" We get this message with many different locationID's. The problem is that the values are reversed. The user specified area is actually 153.59 square kilometers while the area represented by the unit hydrograph is 182.76 square kilometers.

Cause	The WARNING message for each location was created with the values reversed. The user specified area and area represented by the unit hydrograph have the correct values but at the moment of creating the WARNING message the values were placed in the wrong place.
Fix	A change in the CHPS code to correct the warning message was required to solve the wrong order of values in the message.
Notes	N/A

Enhancements:

Redmine	73142 – Replace Deprecated Java Classes in OHD-CORE.
Description	While working on OHD-Core-18 for CHPS-19 using Java 11 we noticed that some Java Classes that we are using are deprecated. This Redmine Issue is being created to address those deprecated Java classes.
Cause	Java updates.
Fix	Updated the OHD-CORE code with a new version that removes the deprecated Java classes.