memo

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To : NGMS custodians, users, consultants
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Subject : Test scripts for testing new model
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Action: for your information

Test procedures for new model

NGMS already contains an extensive list of modflow models, but still new models are going to be added to the system. In order to maintain or improve the quality of configuration associated with the new models introduced to the NGMS system, Deltares wanted to standardise the test procedures. This document is a first step in this standardisation process. In the mean time we are still amending and adding new documentation to the NGMS public wiki page.

The following tests should be performed before handing over the new NGMS model configuration to Deltares or to the Environment Agency. Each of these tests are described in more detail in this document.

Tests to be performed:
1. Check the main explorer window
2. Run the import workflow
3. Run the default_scenarios workflow
4. Run a modified scenario with changed abstractions (original abstractions * 1) using the ScenarioEditor
5. Run a modified scenario with one changed abstraction using a year profile in the ScenarioEditor
6. Run a modified scenario with one changed abstraction using an historical profile in the ScenarioEditor
7. Run a modified scenario with one changed abstraction using a typical profile in the ScenarioEditor
8. Run a modified scenario with new abstractions using a year profile in the ScenarioEditor
9. Go through tests 4 to 8 for all available scenarios in the ScenarioEditor

1. Check main Explorer window

The goal of this test is to check whether all required map layers are available, whether the filters are configured correctly and whether all (types of) locations are present.

Main map display
□ Check if the region boundary is available on the main map display
□ Check if the model boundary is available on the main map display
□ Check if the general UK layers present (by opening the map layer icon)
□ Check if the geology layers are present
□ Check if the model boundaries of all other models (added to NGMS) are visible and verify that the tool tip is visible
□ Check if the tooltip (i-button) for the model boundary is showing the correct information

Filters
□ Check if the all the required (levels of) filters are available:
 • Observation boreholes
 • Abstraction wells
 • Gauging stations

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- Surface water laterals
❏ Check if all expected locations are part of the above mentioned filters
❏ Check if all expected parameters are available through the filters

Zoom Extents
❏ Check if the regional zoom extent is zooming to the proper extent
❏ Check if the model specific zoom extent is zooming to the proper extent

2. Run import workflow

The goal of this test is to check whether the import workflow is running without errors and to see whether all the data is imported correctly.

Before running the import workflow you need to make sure that the data to be imported is copied to the 'Import\<Model abbreviation>_Observed' directory. After importing this data the file is automatically removed so it is wise to keep a copy in the Import_bck directory.

Steps required for this test:
1. Start the Manual Forecast display using the execute option in the *Tools* menu
2. Select the import workflow
3. Press the *Run* button

❏ Check if the import workflow runs without errors
❏ Check if the filters show the imported data correctly (e.g. H.obs, Q.obs, QDIS.obs or QLAT.obs)
❏ Check if all the locations in the filter show observed data and if not is that according to expectations?

3. Run the default_scenarios workflow

The goal of this test is to check whether the default_scenarios workflow is running without errors and to see whether the filters, the predefined displays and the spatial plots are showing all the results correctly. When the default scenarios workflow is ready, it should be opened or approved to be able to see the results.

Steps required for this test:
1. Start the Manual Forecast display using the execute option in the *Tools* menu
2. Select the default_scenarios workflow and chose the 'InitialCold' cold state and the proper cold state start time.
3. If you want the statistics to be calculated for a different (shorter) period then you could change the T0 to a different start date.
4. Press the *Run* button

❏ Check if the default_scenarios workflow runs without errors
❏ After opening the data set: Check if all the available filters show the simulated data correctly for all default scenarios
❏ Check if all the locations in the filters show the simulated data and if not is that according to expectations?
❏ Check the predefined displays and see whether all the simulated data is shown correctly
❏ Check the spatial plots and see whether all the simulated data is shown correctly

4. Run modified scenario with changed abstractions

The goal of this test is to check whether this modified scenario is running without errors and to see whether the filters, the predefined displays and the spatial plots are showing all the results of this

scenario correctly. When the modified scenario is ready, it should be opened to be able to see the results of that scenario. The results are displayed using the what-if parameters in the filters or using special folders in the predefined displays and spatial plots.

Steps required for this test:
1. Start the Scenario Editor using the *Scenarios* button in the button bar or through the *Tools* menu
2. Create a new empty scenario using one of the scenario templates (e.g. Recent Actual or Fully Licenced) and click on the *new empty scenario* button in the *Specified Scenarios* box (give it a proper description)
3. Chose the *modified abstraction rates* intervention type, chose a location or locationSet (in drop down box on the right) and click on the calculator to specify a transformation to the existing series
4. Press the *Save* or *Save All* button
5. Press the *Run* button
6. Chose a cold state and give this task a proper description
7. Press the *Run* button

□ Check if the modified scenario runs without errors
□ Check if all the available filters show the simulated data correctly for this modified scenario
□ Check for the locations holding the abstractions if the changes as submitted for this scenario are being displayed as expected (are the values correct).
□ Check if all the locations in the filters show the simulated data and if not is that according to expectations?
□ Check the predefined displays and see whether all the simulated data is shown correctly
□ Check the spatial plots and see whether all the simulated data is shown correctly

5. Run modified scenario with changed abstraction using year profile

The goal of this test is to check whether this modified scenario is running without errors and to see whether the filters, the predefined displays and the spatial plots are showing all the results of this scenario correctly. When the modified scenario is ready, it should be opened to be able to see the results of that scenario. The results are displayed using the what-if parameters in the filters or using special folders in the predefined displays and spatial plots.

Steps required for this test:
1. Start the Scenario Editor using the *Scenarios* button in the button bar or through the *Tools* menu
2. Create a new empty scenario using one of the scenario templates (e.g. Recent Actual or Fully Licenced) and click on the *new empty scenario* button in the *Specified Scenarios* box (give it a proper description)
3. Chose the *modified abstraction rates* intervention type, chose one location (in drop down box on the right) and click on the '*Table*' button to specify a profile for this location
4. Chose the **year profile** from the drop down box
5. Specify the yearly profile by adding the numbers to the table or by drawing a profile using the *chart editing* functionality
6. Press the *Save* button to save this profile (a location with a transformation will be added to the list of *existing transformations*)
7. Press the *Save* or *Save All* button
8. Press the *Run* button
9. Choose a cold state and give this task a proper description
10. Press the *Run* button

The **year profile** will create a new time series with a repeating pattern based on the profile you have specified. This should be clearly visible in the resulting time series for the locations you have changed.

□ Check if the modified scenario runs without errors

    ❑   Check if all the available filters show the simulated data correctly for this modified scenario

    ❑   Check for the locations holding the abstractions if the changes as submitted for this scenario are being displayed as expected (is the year profile recognisable in the time series).

    ❑   Check if all the locations in the filters show the simulated data and if not is that according to expectations?

    ❑   Check the predefined displays and see whether all the simulated data is shown correctly

    ❑   Check the spatial plots and see whether all the simulated data is shown correctly

6.   Run modified scenario with changed abstraction using historical profile

The goal of this test is to check whether this modified scenario is running without errors and to see whether the filters, the predefined displays and the spatial plots are showing all the results of this scenario correctly. When the modified scenario is ready, it should be opened to be able to see the results of that scenario. The results are displayed using the what-if parameters in the filters or using special folders in the predefined displays and spatial plots.

Steps required for this test:

1. Start the Scenario Editor using the *Scenarios* button in the button bar or through the *Tools* menu
2. Create a new empty scenario using one of the scenario templates (e.g. Recent Actual or Fully Licenced) and click on the *new empty scenario* button in the *Specified Scenarios* box (give it a proper description)
3. Change the display time in the bottom of the Scenario Editor window, by double clicking on *Display Time* and change it to the start of the period that you want to change.
4. Chose the *modified abstraction rates* intervention type, chose one location (in drop down box on the right) and click on the '*Table'* button to specify a profile for this location
5. Chose the **historical profile** from the drop down box
6. Specify the historical profile by adding the numbers to the table or by drawing a profile using the *chart editing* functionality
7. Press the *Save* button to save this profile (a location with a transformation will be added to the list of *existing transformations*)
8. Press the *Save* or *Save All* button
9. Press the *Run* button
10. Choose a cold state and give this task a proper description
11. Press the *Run* button

The **historical profile** will create a new time series using the values for the exact dates for which you have specified them. This should be clearly visible in the resulting time series for the locations you have changed.

    ❑   Check if the modified scenario runs without errors

    ❑   Check if all the available filters show the simulated data correctly for this modified scenario

    ❑   Check for the locations holding the abstractions if the changes as submitted for this scenario are being displayed as expected (is the historical profile recognisable in the time series).

    ❑   Check if all the locations in the filters show the simulated data and if not is that according to expectations?

    ❑   Check the predefined displays and see whether all the simulated data is shown correctly

    ❑   Check the spatial plots and see whether all the simulated data is shown correctly

7.   Run modified scenario with changed abstraction using typical profile

The goal of this test is to check whether this modified scenario is running without errors and to see whether the filters, the predefined displays and the spatial plots are showing all the results of this scenario correctly. When the modified scenario is ready, it should be opened to be able to see the results of that scenario. The results are displayed using the what-if parameters in the filters or using special folders in the predefined displays and spatial plots.

Steps required for this test:
1. Start the Scenario Editor using the *Scenarios* button in the button bar or through the *Tools* menu
2. Create a new empty scenario using one of the scenario templates (e.g. Recent Actual or Fully Licenced) and click on the *new empty scenario* button in the *Specified Scenarios* box (give it a proper description)
3. Chose the *modified abstraction rates* intervention type, chose one location (in drop down box on the right) and click on the '*Table*' button to specify a profile for this location
4. Chose the **typical profile** from the drop down box
5. Specify the typical profile by adding the numbers to the table or by drawing a profile using the *chart editing* functionality
6. Press the *Save* button to save this profile (a location with a transformation will be added to the list of *existing transformations*)
7. Press the *Save* or *Save All* button
8. Press the *Run* button
9. Chose a cold state and give this task a proper description
10. Press the *Run* button

The **typical profile** will create a new time series with the values you have specified relative to the start of the simulation. This should be clearly visible in the resulting time series for the locations you have changed.

❑ Check if the modified scenario runs without errors
❑ Check if all the available filters show the simulated data correctly for this modified scenario
❑ Check for the locations holding the abstractions if the changes as submitted for this scenario are being displayed as expected (is the typical profile recognisable in the time series).
❑ Check if all the locations in the filters show the simulated data and if not is that according to expectations?
❑ Check the predefined displays and see whether all the simulated data is shown correctly
❑ Check the spatial plots and see whether all the simulated data is shown correctly

8. Run modified scenario with new abstractions using year profile

The goal of this test is to check whether this modified scenario is running without errors and to see whether the filters, the predefined displays and the spatial plots are showing all the results of this scenario correctly. When the modified scenario is ready, it should be opened to be able to see the results of that scenario. The results are displayed using the what-if parameters in the filters or using special folders in the predefined displays and spatial plots.

Steps required for this test:
1. Start the Scenario Editor using the *Scenarios* button in the button bar or through the *Tools* menu
2. Create a new empty scenario using one of the scenario templates (e.g. Recent Actual or Fully Licenced) and click on the *new empty scenario* button in the *Specified Scenarios* box (give it a proper description)
3. Chose the *specify and add new abstraction* intervention type
4. Create a new location by specifying a new site name, license specification, easting and northing and layer number. Click on the *Globe* to chose the exact grid cell to be used for this abstraction.
5. Click on the '*Table*' button to specify a profile for this location
6. Chose the **year profile** from the drop down box
7. Specify the yearly profile by adding the numbers to the table or by drawing a profile using the *chart editing* functionality
8. Press the *Save* button to save this profile (a location with a transformation will be added to the list of *existing transformations*)
9. Click on the green button to add this new location to the list of *new locations specified*
10. Press the *Save* or *Save All* button
11. Press the *Run* button
12. Chose a cold state and give this task a proper description

13. Press the *Run* button

The **year profile** will create a new time series with a repeating pattern based on the profile you have specified. This should be clearly visible in the resulting time series for the locations you have created.

❑   Check if the modified scenario runs without errors
❑   Check if all the available filters show the simulated data correctly for this modified scenario
❑   Check for the locations holding the abstractions if the changes as submitted for this scenario are being displayed as expected.
❑   Check if all the locations in the filters show the simulated data and if not is that according to expectations?
❑   Check the predefined displays and see whether all the simulated data is shown correctly
❑   Check the spatial plots and see whether all the simulated data is shown correctly