Chyron

Weather

Product User Guide

Chyron - Since Day One!

Whether you have used Chyron products for a long time or this is your very first Chyron experience, we welcome you to the Chyron family! Communicating with the world through live production is important work, and we are proud to partner with you and help you bring rich, immersive experiences to your viewers.

Founded in 1966, Chyron pioneered broadcast titling and graphics systems. With a strong foundation built on over 50 years of innovation and efficiency, the name Chyron is synonymous with broadcast graphics. We developed the character generator and defined the category. Even today, text and graphics broadcast over live video is referred to as a “chyron,” whether it is produced by our technology or an imitator.

We continue that legacy offering production professionals the industry’s most comprehensive software portfolio for live broadcast production. Our full range of tools are in use across the globe, for news, sports, venues, eSports, corporations, houses of worship, and education.

Our innovative PRIME Live Platform offers scalable, cloud-ready, reliable, software based, HTML5 and IP ready solutions. Complimentary products include Camio (MOS/newsroom integration), VSAR (virtual set/augmented reality based on Unreal ®), Paint (illustrated replay) VP (virtual placement) and SHOUT (social media curation).

Chyron products are increasingly deployed to empower OTA & OTT workflows, bringing great content to audiences and sports fans in the arena, at home, or on the go.

Again, we welcome you to the Chyron family, and thank you!

The Chyron Community

To get the most out of your Chyron experience, we encourage you to take advantage of all that we have to offer.

- To keep in touch and gain product and industry insights, as well as event invitations, please subscribe to our mailing list.
- Chyron enjoys a wide user base in the industry. Experienced operators and designers can join Chyron's freelancer database.
- Chyron provides a full slate of services, including Creative Services, Production Services, Solutions Engineering, Commissioning and Training, and Support. Unique in the industry, Chyron Academy provides self-guided training and professional development for Chyron designers and operators, culminating in the award of a Black Belt for completion of a course.

Note that Chyron has two sister brands, Hego and Tracab. To learn more, please visit:

- chyron.com: Live Broadcast Production
- hego.tv: Live Production Services
- tracab.com: Sports Tracking and Data Visualization

Weather User Guide

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Limitation of Liability

This document describes, explains, and offers step-by-step instructions for many of the features and functionality of PRIME Switcher. As any software may contain undiscovered bugs, may be updated frequently and may function differently in different environments, this document offers no implied or explicit warranty of the performance of this or other Chyron products.

Copyright

Weather

Product User Guide

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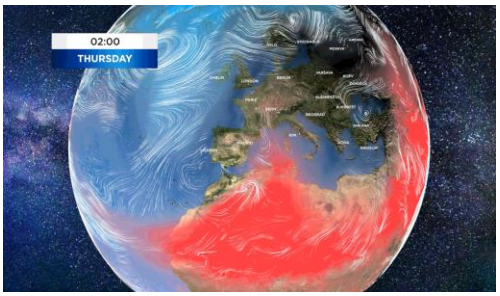
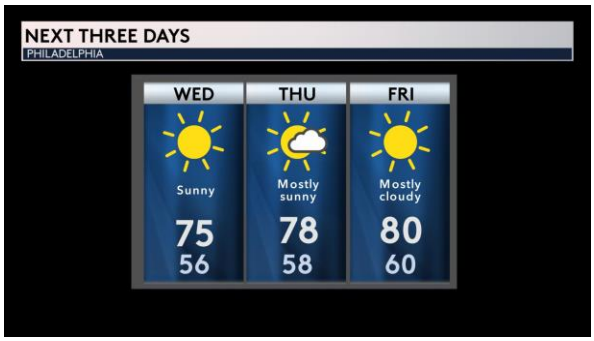
Chapter 1: Welcome!

Chyron Weather Overview

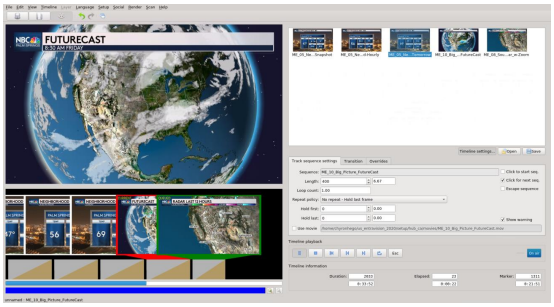


Welcome to **Chyron Weather!** From weekly forecasts to severe weather and major storm coverage, Weather delivers high-value content on demand to your viewers, for output on air, on the web, streaming or to social media. Producers and meteorologists can use radar, satellite, or numerical prediction data in Weather to show viewers real-time weather conditions at the scene of a major accident, or how the local weather forecast is developing up to and through a major sporting event.

Chyron Weather's data-agnostic approach to forecasting enables you to report on wildfire smoke, earthquakes, traffic events, air pollution, pollen levels, and even volcanic activity.



Configurable for use by single operator or distributed teams, Weather ensures that designers, presenters, and meteorologists can work with data concurrently in a multi-platform production workflow.



Built-in data management tools enable you to edit stored model data and point to data directly in the template, for last-minute changes. Weather's template-based graphics, called sequences, are customizable for your look, and are organized in layers that can pull data from a wide range of data sources and visualizations. Tell your weather story using Weather's powerful data analysis to create a compelling display using maps, animation, colorization, thresholding, layering, and much more. Drag and drop sequences to create your **Storyboard**, which you can easily play to air using a handheld remote control or directly from the **Timeline playback** controls.

Weather integrates with Chyron's CAMIO Newsroom Asset Management System, providing the ability for journalists to add Weather graphics to their stories.

About This Document

This User Guide is under continuous development. As such, a few features may not yet have been documented. As content is added, a new version of the User Guide will become available.

Additionally, legacy documentation that may be of help is available at:

http://weatherone.tv/wiki/Metacast_Users_Guide

Chapter 2: Basic Concepts

Overview

Chyron Weather provides access to numerous data sources, based on the available data sources for your area, e.g. National Weather Service (NWS METAR), NASA, METEOSAT, etc. The **Database Manager** displays the list of the data sources to which your organization has subscribed. You can apply data from these sources to display data-linked text, images, icons, and visualizations, including isobars, precipitation patterns, and satellite graphics. Data from multiple data sources can be presented simultaneously, each in its own layer.

Weather is supremely flexible, enabling you to design and configure to your creative and functional specifications. You can layer multiple graphics, text, and visualizations, e.g.:

- Text fields, e.g. High/low temperatures
- Labels, e.g., city names
- Symbols, e.g., icons, place markers
- Temperature heat maps
- Rain and snow visualization
- Wind fields
- Volumetric clouds
- Background images/videos
- Country borders
- Rivers
- Roads
- Base map

You can turn layers on and off, and each layer can be customized via a Properties panel specific to the type of layer. The ability to turn layers on and off enables a single template to be used for multiple displays, e.g., wind, weather, temperature, and precipitation visualization. Typical layer properties include line width, color, color gradient, font, font size, opacity, etc.

The Chyron Weather UI comprises three main editing modes:

- **Database Manager:** Lists the available data sources. Data can be updated, retrieved, and analyzed.
- **Sequence Editor:** Provides the ability to edit individual sequences.
- **Timeline Editor:** Provides the ability to edit the timeline.

Weather has three editing modes, each of which can be accessed by clicking their respective icon, via a keyboard shortcut, or via the **View** menu. The icons are located at the upper left of the Weather UI. The interface is specific to each mode.

Function	Icon Active	Icon Inactive	Accessible from:	Keyboard Shortcut
Database Manager			**Toolbar/View Menu**	**Ctrl+1**
Sequence Editor			**Toolbar/View Menu**	**Ctrl+2**
Timeline Editor			**Toolbar/View Menu**	**Ctrl+3**

You build the weather bulletin or report on a **timeline**. A timeline consists of a set of individual scenes, called sequences, and the transitions between these sequences. On a timeline, the sequences are ordered as they will be played in the weather report. For example, a meteorologist or presenter may present a regional storm tracker, then a five-day forecast, and then a local precipitation forecast. You can save a timeline to a timeline file **(*.*tln*)**, and can be reused as a template.

A **sequence** is a keyframe-based set of actions that comprises a Weather animation. A **keyframe** marks a specific state in the animation at a specific point in time. By default, there are two keyframes, **Start** and **End**, but you can add intermediate keyframes. A typical sequence may travel from one location to another, while zooming in or out. A sequence can be saved **(*.*seq*)**, and can be reused as a template.

The sequences are represented graphically above the timeline in a **Storyboard**. A user can drag a sequence from the collection to the **Storyboard**, and can drag and drop sequences on the timeline to change the playout order.

You can apply a transition as one sequence finishes playing and another starts playing.

Each sequence contains a set of **layers** which contains all the graphics and data bindings. Chyron Weather supports a wide variety of layers. Some contain only graphics, some contain **symbols** (icons) with data bindings, and others are used to visualize data fields.

A **collection** is a set of sequences displayed in the collection area when in **Timeline mode**. The set of sequences can be saved as a collection file (***.scl*).

The relationships between timelines, sequences, layers, symbols, and data can be summarized as follows:

- A timeline can contain one or more sequences. The same sequence can be used multiple times.
- Many timelines can share the same sequence.
- Each sequence can contain several layers. Layers can be copied and pasted between sequences, but cannot be shared.
- Symbol layers can contain symbols (icons). Symbols can be copied and pasted within a layer only.
- Symbols and field layers have data bindings, and update themselves from the database.

Process Overview

BEST PRACTICE: Close and Reopen the Weather Application

If the system has not been used for a few hours, then close and reopen the Weather application. This ensures that the data sources update. It is not necessary to shut down and restart the Weather system.

Preparing a broadcast involves the same general process:

1. Open Weather.
2. Open the **Database Manager**, confirm that the data is current. If not, then update the data sources.
3. In **Sequence Mode**, open the sequences that you would like to include in the broadcast. Thumbnails of the sequences display in the **Sequence Collection** of the **Sequence tab**.
4. Modify the sequence layers and properties as desired.
5. In **Timeline Mode**, drag the **Sequence** thumbnails into the timeline to create your storyboard.
6. Modify the segment and timeline settings.
7. Rehearse the broadcast.

For introductions to timeline and sequence (weather graphic) creation, see:

- Quick Start - Create Timeline
- Create Still Sequence
- Create Zoom to Sequence
- Create Projected Map Sequence

Chyron Weather File Formats

The following file formats are proprietary to Chyron Weather:

File Type	File Suffix	Description
Palette	***.cpl***	Weather palette definition.
Flight Path	***.flight***	Weather flight path definition, i.e., camera animation.
Layer	***.lr***	Stores the content of a single Weather sequence layer.
Resource	***.rc***	Used for Weather configuration.
Sequence Collection	***.scl***	Stores a set of Weather sequences.
Sequence	***.seq***	Stores a single Weather sequence, including layers.
Timeline	***.tln***	Stores a Weather timeline with a reference to a Sequence Collection.

Other relevant file formats:

File Type	File Suffix	Description
Geography Markup Language	***.gml***	XML grammar defined by the Open Geospatial Consortium (OGC) to express geographical features.
JavaScript Object Notation	***.json***	Open standard file and data interchange format, that uses human-readable text to store and transmit data. Objects consist of attribute–value pairs and array data types.
Keyhole Markup Language	***.kml***	An XML notation for expressing geographic annotation and visualization within 2D maps and 3D Earth browsers.
ProtocolBuffer Binary Format	***,pbf***	A more efficient alternative to XML.
Shape	***.shp***	Geospatial vector data format for geographic information system software
Extensible Markup Language	***.xml***	Rules for encoding documents in a format that is both human- and machine-readable

Input/Output Standards

Please contact Chyron for the specifications of your system.

Conventions

Working with the Chyron Weather UI is similar to working with other applications. You can navigate and access many of the functions via the keyboard or mouse/touchpad.

Mouse/touchpad instructions assume that the left button selects an item, and the right button displays the context-sensitive menu. If your mouse/touchpad is set with the buttons reversed, then adjust the instructions to correspond to your configuration.

- **>**
  In a multi-step process, this means “and then click or select.” For example, “Go to **View > Layout > Save Layout**“ instructs you to click or select the **View** menu, then select **Layout**, and then select **Save Layout**.
- **Active/Grayed Out (Inactive/Unavailable)**
  Specifies the availability of an icon, menu item, etc.
  - When active, the element is displayed in full color.
  - When grayed out and therefore inactive/unavailable, the element appears gray or dark.

- **Click**
  Left-click using a mouse/touchpad to select an item.
- **Click and drag**
  Click a control or an item, and while holding down the mouse/touchpad button, drag the control or item to a new position or location.
- **Click and hold**
  Click a control or an item, and hold down the left mouse/touchpad button. The instructions may also specify that you perform another operation while you click and hold the mouse/touchpad button.
- **Cursor to**
  Use the cursor keys to navigate to an item.
- **Double-click**
  Left-click two times quickly in succession. Typically opens an application or a file.
- **Enable (Activate)/Disable (Deactivate)**
  This control applies to a checkbox or an icon/button.
    - **Checkbox:**
        - To enable the control, click the checkbox so that a check mark displays in the checkbox ☑.
        - To disable the control, click the checkbox so that the check mark does not display in the checkbox ☐.
    - **Icon/Button:**
        - To enable/activate an icon or button, click the button, so that it displays in its activated state. Example: **Timeline Loop** icon active:

        - To disable/deactivate an icon or button, click the button, so that it displays in its deactivated state. Example: **Timeline Loop** icon inactive:

- **Enter**
  Type a value or string into the field.
- **Highlight**
  Using the mouse/touchpad or the keyboard, place the cursor on the interface element. When highlighted, it changes appearance to indicate that the element is currently selected.
- **Hover**
  Move the mouse/touchpad cursor over a specified item, to either highlight it or to cause something, for example, a tooltip to display.
- **Press**
  Refers to an action performed on a keyboard.

  Keyboard actions that contain a "**+**" indicate that you should press and hold the first key while pressing the second key. For example, **Ctrl+C** specifies that you press and hold the **Ctrl** key while you then press the **C** key.

You can select items on the menu bar using the mouse/touchpad or the keyboard. Pressing, then releasing **Alt** changes the cursor focus to the menu bar. You can use the left/right cursor keys to scroll through the menu items, and then press **Enter** to open the selected menu.

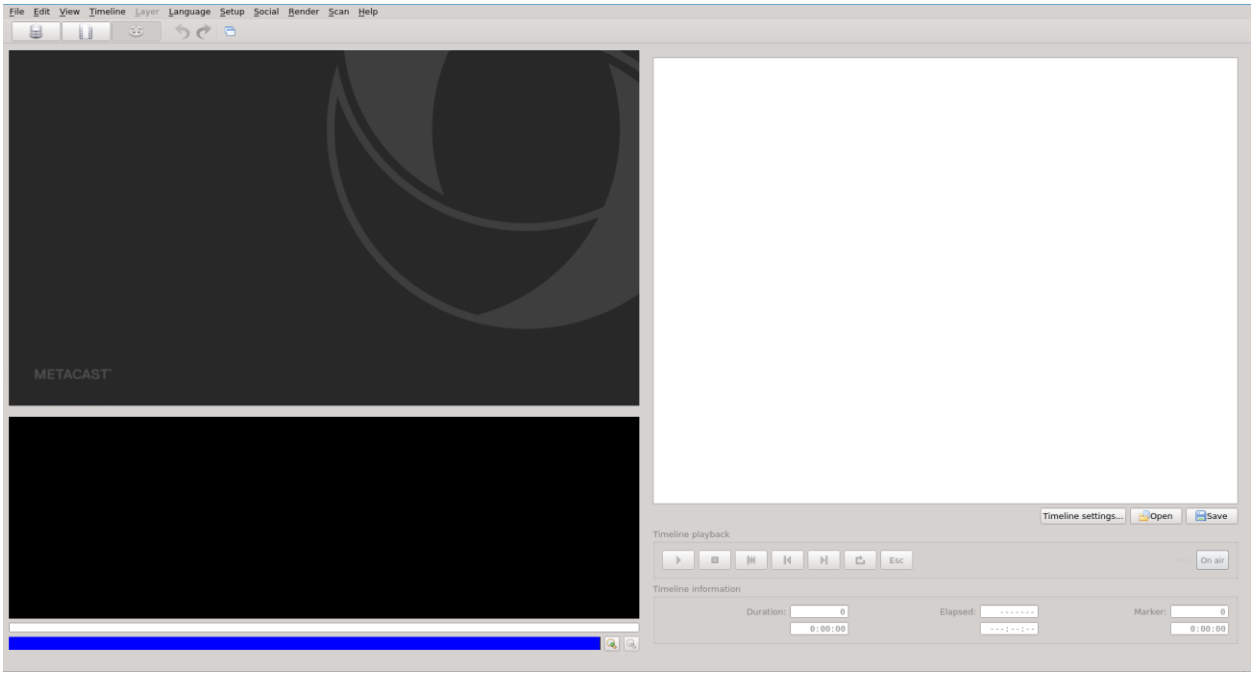
- **Right-click**
  Right-click using a mouse/touchpad. Typically displays a context menu.
- **Select**
  Left-click or use the cursor keys to select/highlight an item

Open Weather

To open the Weather application:

- Double-click the **Weather** icon, located on the desktop.

By default, the Weather application opens in **Timeline Mode**.



NOTE: If you try to open a sequence file from **Timeline Mode**, then only the timeline files (****.tln***) appear in the **Open** dialog. To display sequence files, either:

- Set **Files of type** to **All files**. Files of all formats appear in the **Open** dialog; or.
- Press **Ctrl+2**, click the **Sequence** icon  at the top left of the UI, or go to **View > Sequence Mode**, and then perform the **Open** operation.

Best Practices

Close and Reopen the Weather Application

If the system has not been used for a few hours, then close and reopen the Weather application. This ensures that the data sources update. It is not necessary to shut down and restart the Weather system.

Open Sequence, Copy

Immediately after opening a sequence for editing, copy the sequence and then edit the copy, instead of the original. This preserves the original, and enables the creation of custom versions for various purposes.

Sequence Structure

Consistency is key to ensure that users quickly understand sequence structure and use.

- Sequence file names should follow a consistent naming format.
- Sequence **Layer Collections** should follow a consistent format. If a layer or set of layers are common across multiple templates, then they should have the same names, and when possible, the same or similar position in the **Layer Collections**. For example, a banner headline that is present in all templates should have the same name in all templates, and its symbols should also have the same names.

Rehearse Your Presentation!

Prior to going on air, rehearse your presentation to ensure that all sequences display the correct graphics and most up-to-date data, timeline playback triggers work as expected, and there are no glitches.

Clip and Image Import

When importing clips and images into Chyron Weather, ensure that the specifications, including format, video encoding standards (frame rate, progressive or field/interlaced), resolution, etc., adhere to the specifications provided by Chyron. For example:

- If a clip does not have the correct frame rate, then it will run too quickly or slowly when played.
- If a clip or image has the incorrect resolution, then it may appear stretched, squashed, pixelated, and/or blurry.

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Chapter 3: Quick Start - Create Timeline

Open Weather

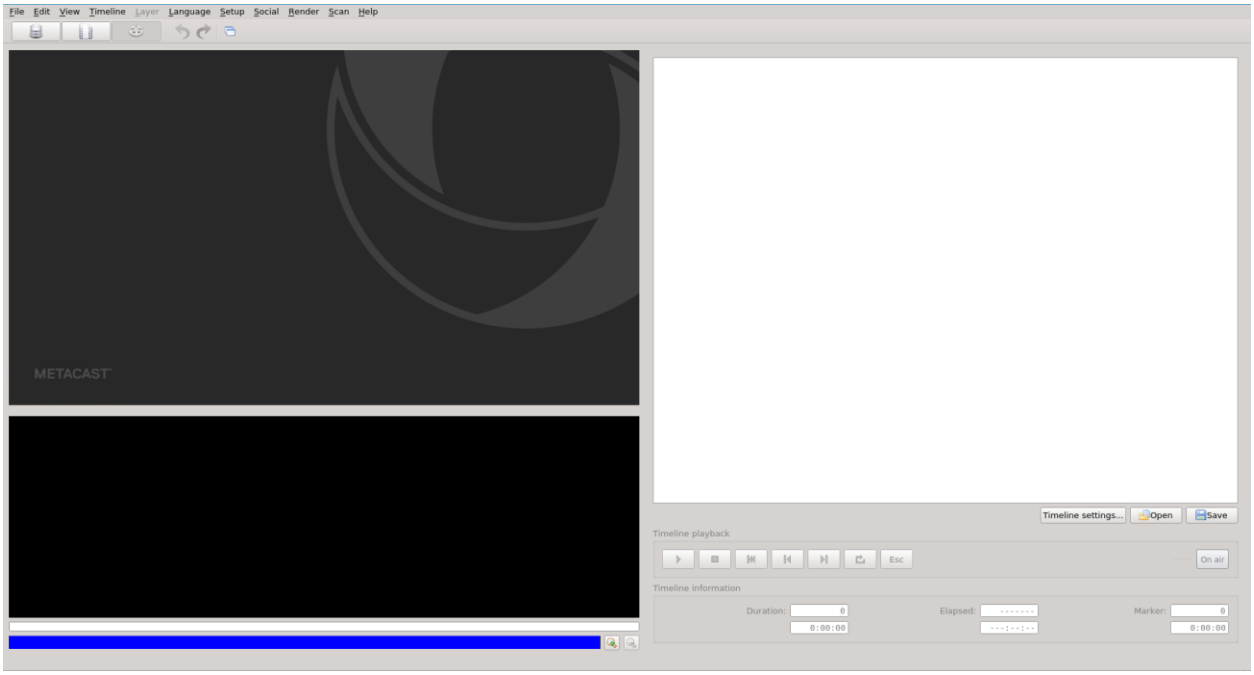
BEST PRACTICE: Close and Reopen the Weather Application

If the system has not been used for a few hours, then close and reopen the Weather application. This ensures that the data sources update. It is not necessary to shut down and restart the Weather system.

To open the Weather application:

- Double-click the **Weather** icon, located on the desktop.

By default, the Weather application opens in **Timeline Mode**.



NOTE: If you try to open a sequence file from **Timeline Mode**, then only the timeline files (***.tln***) appear in the **Open** dialog. To display sequence files, either:

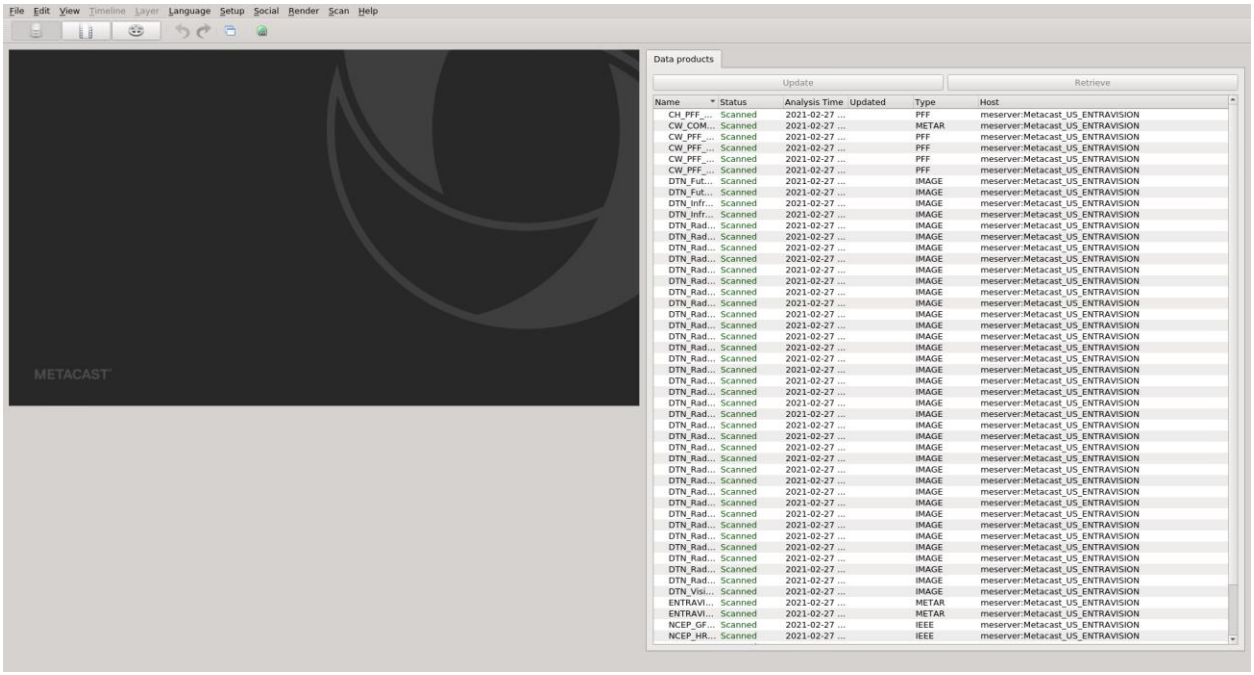
- Set **Files of type** to **All files**. Files of all formats appear in the **Open** dialog; or.
- Press **Ctrl+2**, click the **Sequence** icon  at the top left of the UI, or go to **View > Sequence Mode**, and then perform the **Open** operation.

Confirm Data is Current

To confirm that data is current:

1. Use one of the following methods to open the **Database Manager**:
    - Press **Ctrl+1**.
    - In the toolbar, click the **Database Manager** icon.

    - Go to **View** menu > **Database Mode**.



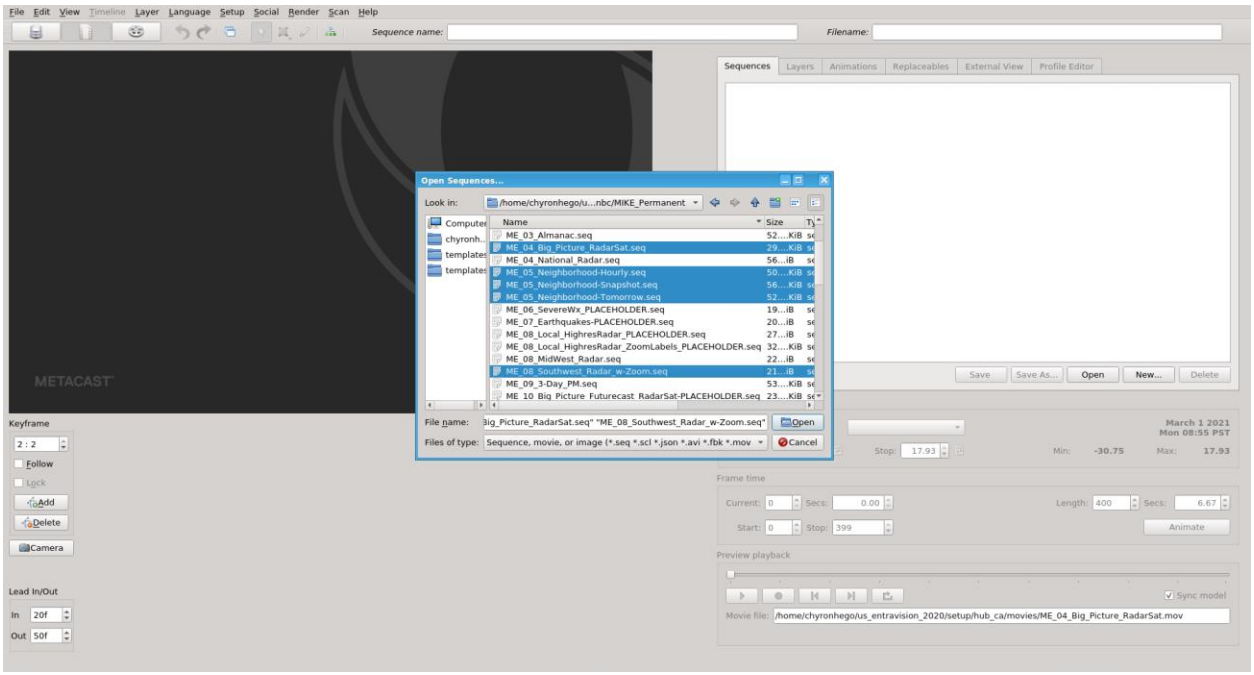
2. Review the **Analysis Time** of the Data Sources. Please note that **Analysis Time** is specified in **GMT**.
    - If the **Analysis Times** are current, then proceed to Open Sequences.
    - If the **Analysis Times** are not current, then for each data source that the sequences use, highlight the data source(s) that you would like to update, and then click **Update**.

Open Sequences

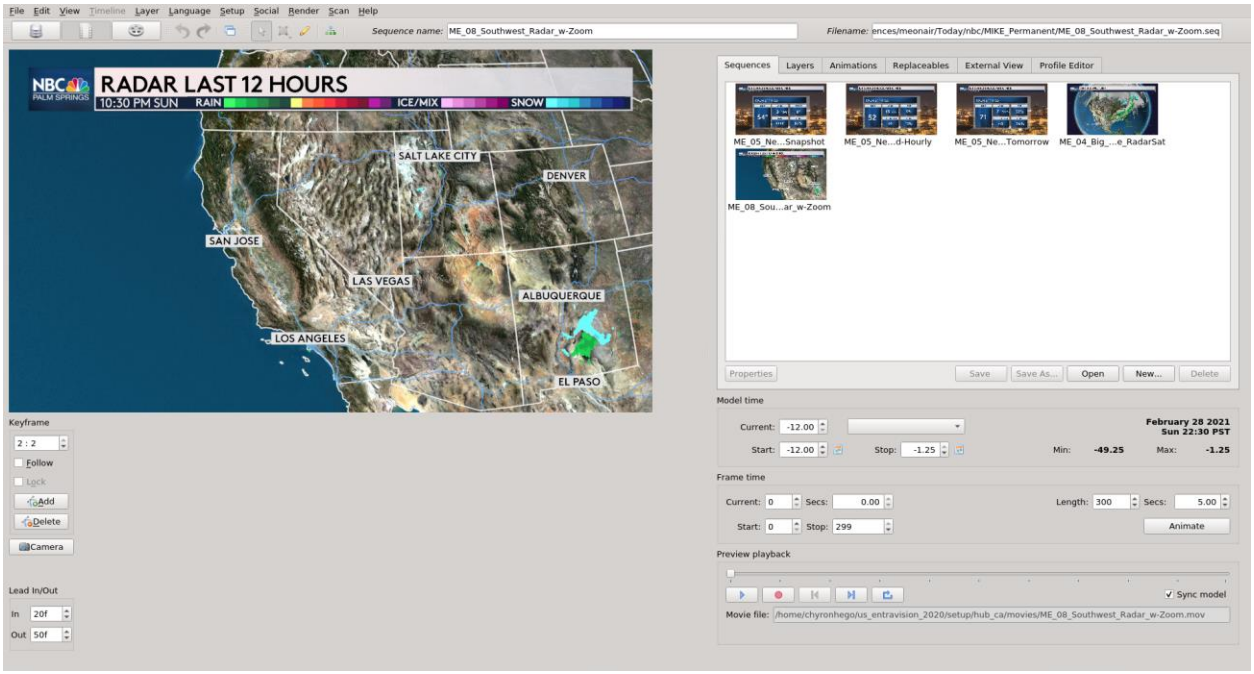
To open sequences:

1. Use one of the following methods to open the **Sequence Editor**:
    - Press **Ctrl+2**.
    - In the toolbar, click the **Sequence Editor** icon.

    - Go to **View** menu > **Sequence Mode**.
2. For each sequence that you will add to the timeline, use one of the following methods to open the browser, then select a sequence to open:
    - Press **Ctrl+O**.
    - Just below the **Sequence Collection**, click **Open**.
    - Go to **File** menu > **Open**.
3. Open the sequences that you will use for your presentation. The order in which you select the sequences is the order in which they will display in the **Sequence Collection**.



The selected sequence(s) load.



4. Once all sequences are loaded, then proceed to Create a Timeline.

Create a Timeline

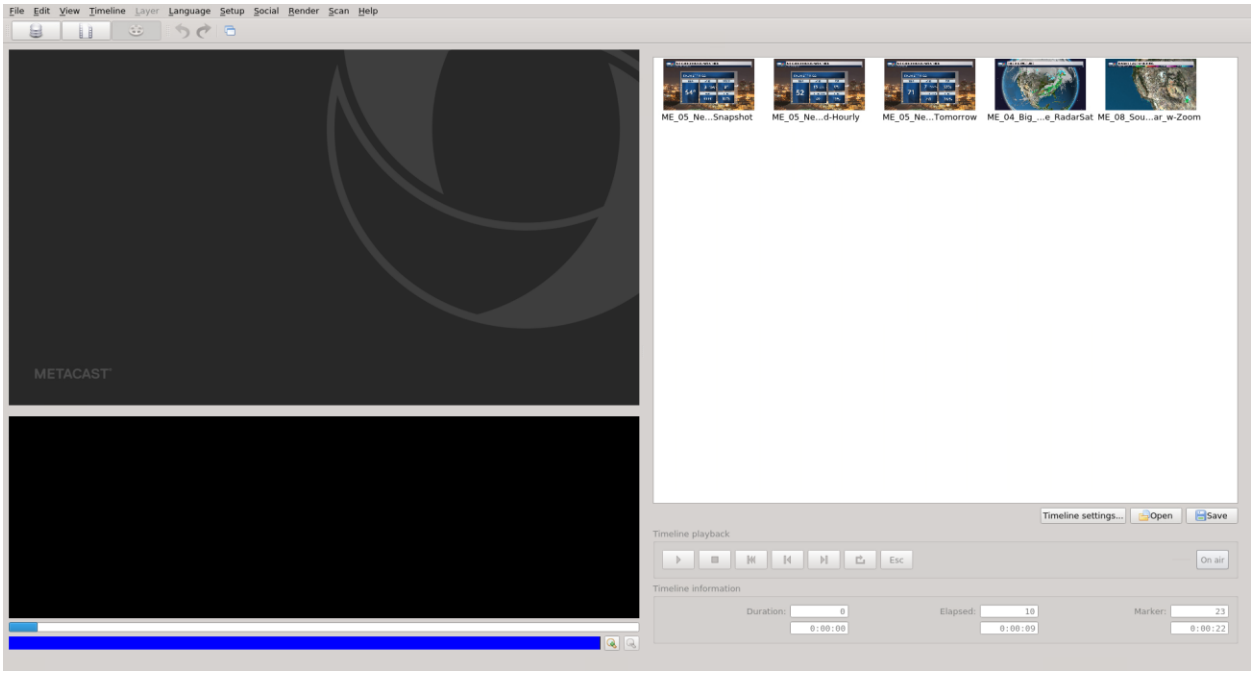
Create Basic Timeline

To create a basic timeline:

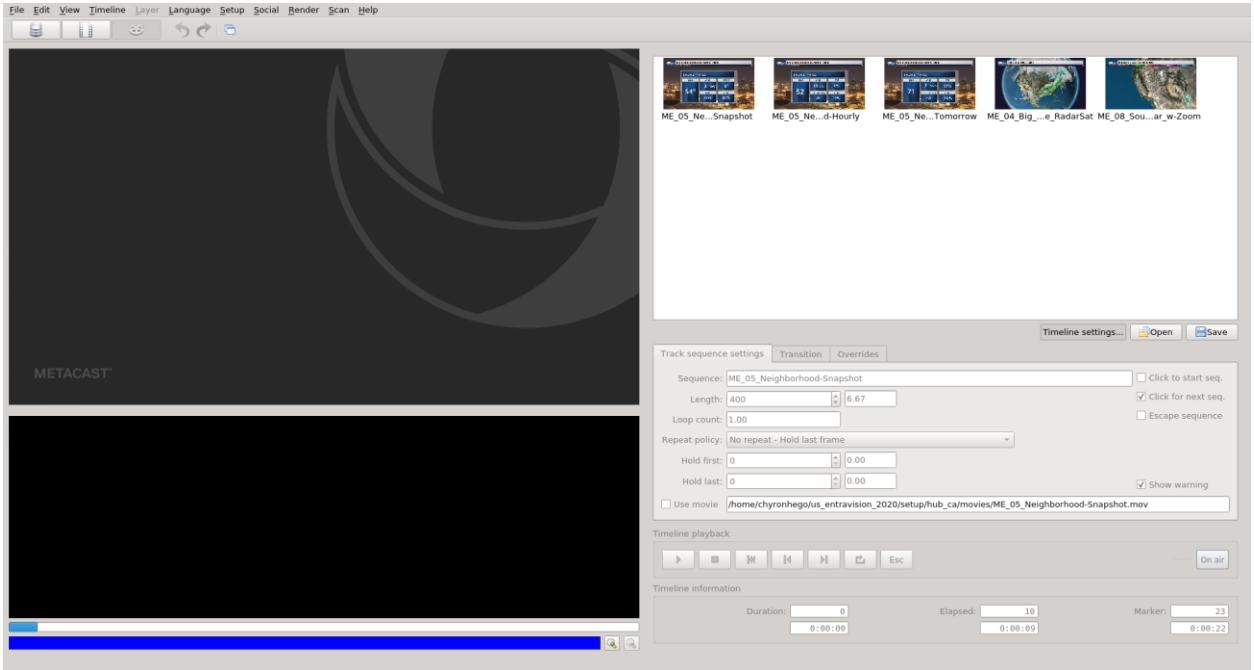
1. Use one of the following methods to open the **Timeline Editor**:
    - Press **Ctrl+3**.
    - In the toolbar, click the **Timeline Editor** icon.

    - Go to **View** menu > **Timeline Mode**.

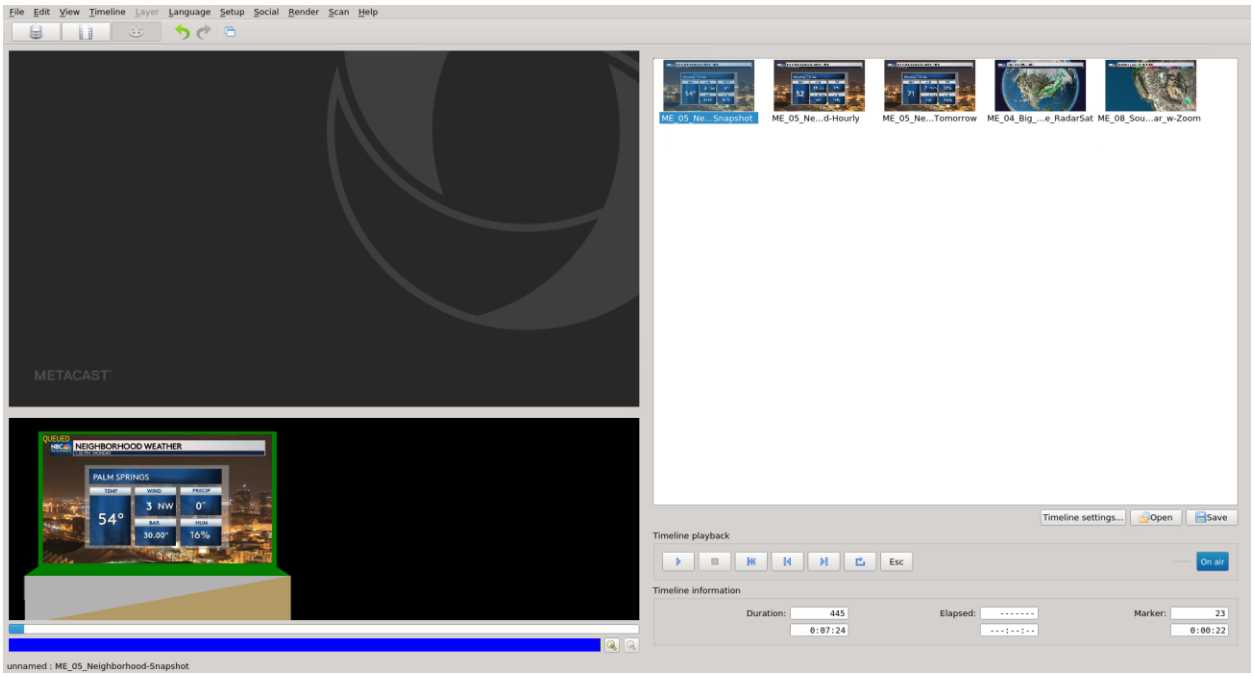
The **Sequence Collection** displays the thumbnails of the sequences that you can add to the timeline.



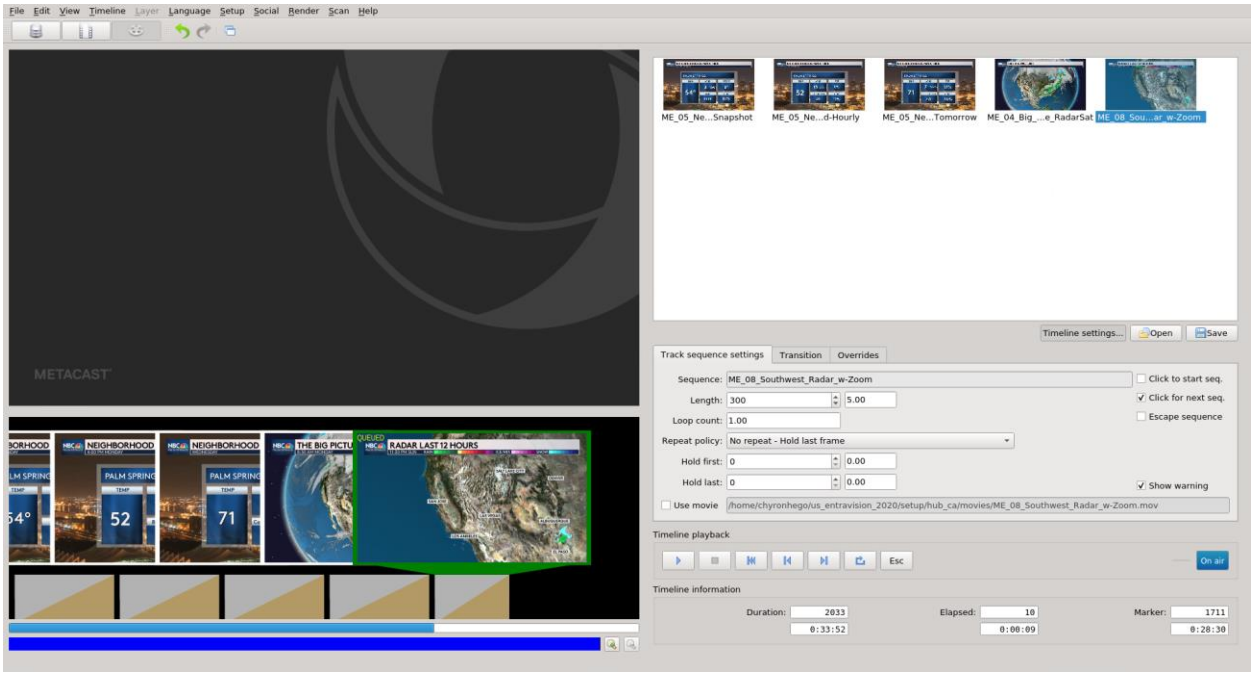
2. Click the **Timeline settings** button, located just below the **Sequence Collection**. For the purposes of the quick start instructions, you will not change settings.



3. Drag the thumbnail of a sequence that you would like to add to the timeline from the **Sequence Collection** to the **Storyboard**. As you drag a sequence into the **Storyboard**, it displays a yellow frame and a pointer showing its location on the timeline. Once placed, the newly added sequence displays a green frame, and "**QUEUED**" in the upper left corner. For sake of brevity, the terms **Storyboard** and "**timeline**" are used interchangeably.

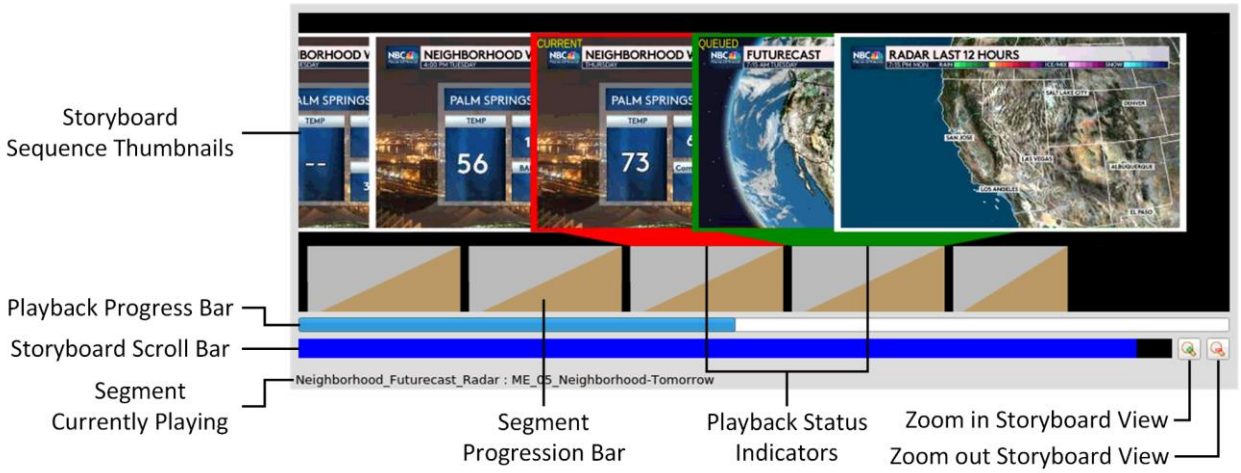


4. Continue dragging sequences into the **Storyboard**. As you drag a sequence into the timeline, if a sequence already on the timeline displays as completely yellow, the sequence that you are dragging will replace the yellow-highlighted sequence. If you would like to add the sequence to the timeline, but not replace another sequence, then drag it off of the other sequence, until the other sequence is no longer highlighted in yellow.



By default, the sequences are set for manual triggering (**Click for next seq.** enabled), as displayed in the **Track sequence settings** tab in the **Timeline settings**. Additional options are described in Timeline Editor (Ctrl+3).

Following is a detailed view of the timeline:



5. You can reposition a sequence one at a time on the timeline. If desired, simply click and drag a sequence to its new position on the timeline. The sequence thumbnail displays a yellow frame until it is in its new position, at which point, it turns green, and "**QUEUED**" displays in the upper left corner.
6. Once you have created the timeline, then proceed to Rehearse Playback.

Remove Sequence from Timeline

To remove a sequence from the timeline:

- Right-click the sequence thumbnail, and then select Remove from the dropdown menu. The sequence is removed from the timeline.

Replace Sequence on Timeline

To replace a sequence on the timeline:

1. Drag the replacement sequence that you would like to add to the timeline on top of the sequence that you would like to replace, until the sequence that you are replacing turns solid yellow.
2. Release the mouse. The new sequence now appears in the timeline.

Save Timeline

You can save a timeline for future use.

1. Use one of the following methods to save a timeline for future use:
    - Click the **Save** button, located directly under the **Sequence Collection**.
    - Press **Ctrl+S**.
    - Go to **File** menu > **Save**.
2. Browse to the desired file location, and save.

Open Timeline

To open a saved **Timeline**:.

1. Use one of the following methods to save a timeline for future use:
    - Click the **Open** button, located directly under the **Sequence Collection**.
    - Press **Ctrl+O**.
    - Go to **File** menu > **Open**.
2. Select the timeline file (****.tln***) to open. The sequences load into the timeline, and into the **Sequence Collection**.

Insert Saved Timeline into Current Timeline

You can add a saved timeline to the current timeline, either before or after the selected sequence. To insert a saved timeline into current timeline:

1. Select the sequence adjacent to the point where you would like to insert the saved timeline.
2. Right-click the sequence, and then select either **Insert Timeline before** or **Insert Timeline after**. The **Insert** timeline dialog opens.
3. Browse to the timeline file, and then click **Open**. The timeline is inserted into the current timeline. Sequences from the inserted timeline are added to the **Sequence Collection** area.

Rehearse Playback

BEST PRACTICE: Rehearse Your Presentation!

Prior to going on air, rehearse your presentation to ensure that all sequences display the correct graphics and most up-to-date data, timeline playback triggers work as expected, and there are no glitches.

WARNING: When rehearsing (previewing) playback, make sure that the timeline is not on air!

- A blue **On air** button indicates that playback is in **Preview Mode**. Playback plays to the **Timeline Preview** on the Weather interface.

- A red **On air** button indicates that playback is in **On air Mode**. Playback is output to the configured air channel and does not display on the **Timeline Preview**.

In addition, a red stripe displays at the bottom of the interface.

Timeline status is indicated by the color of the frame that surrounds a sequence thumbnail in the timeline.

- The color of the sequence frame indicates the status of the sequence:
  - **Red:** Segment currently playing. "**CURRENT**" displays in the upper left corner.

  - **Green:** Currently selected segment; segment next in line to play. "**QUEUED**" displays in the upper left corner.

- **Olive Green:** Segment that is both currently playing and is currently selected as next to play. "**CURRENT**" displays in the upper left corner.

NOTE:

- If the last (end) segment in the timeline is currently playing, and **Loop** is not enabled, then the last segment displays an olive green frame. Since there is no next segment to play, then the last segment is both playing and is selected. If the timeline has completed playback, then clicking **Jump to Next Transition Segment** plays the last sequence again.
- If the last (end) segment in the timeline is currently playing, and **Loop** is enabled, then the last segment displays a red frame. The first segment in the timeline displays a green frame, as it is next in line to play.

- **White:** Segment neither playing nor next in line to play.
- **Yellow:** Segment being moved to new position, i.e., dragged by user.

The playback instructions assume default **Click** settings for each sequence, i.e.:

- **Click to start seq.** is disabled.
- **Click for next seq.** is enabled.

If settings are different, then playback is affected as follows:

- If neither **Click to start seq.** nor **Click for next seq.** are enabled for a sequence, then the timeline plays from beginning to end without pause.
- If **Click to Start Seq.** is enabled and **Click for next seq.** is disabled for a sequence, then after the sequence plays, the first frame of the next sequence holds, and you must click **Jump to Next Transition Sequence** to start playback.
- If **Click to Start Seq.** is disabled and **Click for next seq.** is enabled for a sequence, then after the sequence plays, the last frame holds, and you must click **Jump to Next Transition Sequence** to start playback of the next sequence.
- If both **Click to start seq.** nor **Click for next seq.** are enabled for a sequence, the first frame of the sequence holds, and you must click **Jump to Next Transition Sequence** to start playback of the sequence. After the sequence plays, the last frame holds, and you must click **Jump to Next Transition Sequence** to start playback of the next sequence.

EXAMPLE:

If a sequence “A” for which **Click for next seq.** is disabled, is followed by a Sequence “B” for which **Click to start seq.** is enabled:

1. Sequence “A” plays and holds the last frame, until you click **Jump to Next Transition Sequence**, then:
2. The first frame of sequence “B” holds, until you click **Jump to Next Transition Sequence** to start playback.

To preview timeline playback:

1. The **On air** button toggles playback between **Preview Mode** 

and **On air Mode** 

.
    - When the timeline is in **Preview Mode**, then it displays in the timeline preview.
    - When the timeline is **On air Mode**, then playback does not display in the timeline preview. It displays only on the configured air channel.

2. Click the first sequence in the timeline to select the sequence. Its thumbnail displays a green frame, and "**QUEUED**" in the upper left corner..

3. To start playback of the timeline, click **Play**. The first sequence in the timeline starts to play. The sequence thumbnail's red frame indicates that it is playing, and displays "**CURRENT**" in the upper left corner. The next sequence to play is indicated by a green frame, and displays **"QUEUED"** in the upper left corner.

4. To trigger each subsequent sequence, click **Jump to Next Transition Segment**.

5. To return to the first sequence, click **Jump to First Transition Segment**.

NOTE: If **Track sequence settings** are set to other than the default, then playback triggers may change, depending upon the settings. See Timeline Playback and Track Sequence Settings for details.

NOTE: To make changes to the timeline, playback must be stopped. To stop playback:

- Click **Jump to First Transition Segment**.

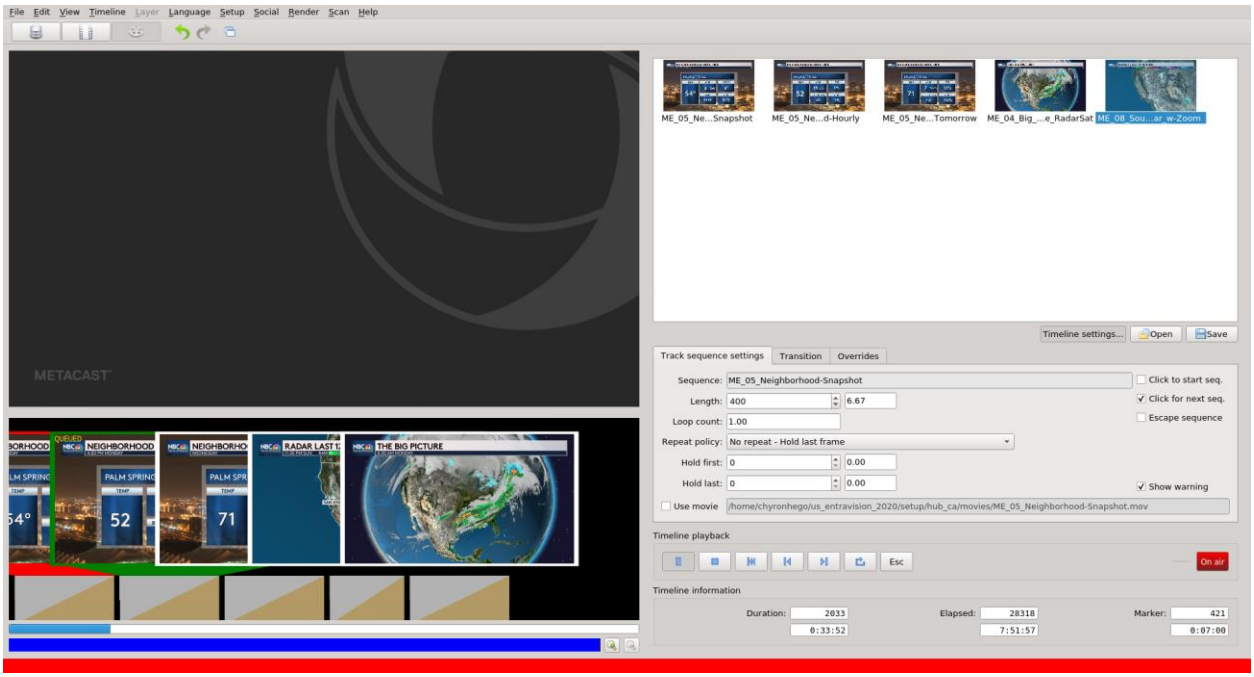
Go Live!

When it is time to go live:

1. If there is time prior to your presentation, then ensure that the **On air** button is blue, then preview the timeline playback to ensure that data is current and that none is missing.
2. Click the blue **On air** button.

The button changes to red, and a red stripe appears along the bottom of the interface.

3. Play the timeline as rehearsed. Playback is output to the configured air channel and does not display on the **Timeline Preview**.



Change Timeline Playback While on Air

Overview

You may need to suddenly shorten or lengthen your presentation while live on air, or present sequences out of order. When jumping to a sequence using the methods described in Jump to Sequence Later in the Timeline and Jump to Sequence Earlier in the Timeline:

- If **Click to Start Seq.** is disabled, then the selected sequence immediately plays.
- If **Click to Start Seq.** is enabled for the selected sequence, it will be necessary to click **Jump to Next Transition Segment** to trigger playback.

Jump to Sequence Later in the Timeline

Jump Ahead in the Timeline

To jump ahead in the timeline:

- Press "**+**" to increment through the timeline until the sequence that you would like to play displays a green frame, and "**QUEUED**" in the upper left corner.

Step Quickly through the Timeline

To step more quickly through the timeline:

1. Click **Jump to Next Transition Segment**.
2. Repeat step 1 as necessary.

Jump to Escape Sequence

If the timeline has not yet reached the sequence designated as the **Escape** sequence:

- Click **Esc**. The timeline jumps to the designated **Esc** sequence.

Jump to Sequence Earlier in the Timeline

Jump to Previous Sequence

To jump to a previous sequence in the timeline as it plays:

1. Press "-" (minus key) to decrement through the timeline until the sequence that you would like to play displays a green frame, and "**QUEUED**" in the upper left corner.
2. Click **Jump to Next Transition** segment to play the selected sequence.

Stop and Hold Playback, Jump to Beginning of Currently Playing Sequence

To jump to the beginning of the currently playing sequence:

1. Click **Stop**.
2. Click **Play** to play the sequence.

Stop and Hold Playback, Jump to Previous Sequence

To stop and hold timeline playback, and jump to a previous sequence:

1. Click **Jump to Previous Transition Segment** until the sequence that you would like to play displays a green frame. The timeline stops playing and holds the video at its current position.
2. Click **Play** to play the selected sequence.

Stop and Hold Playback, Jump to First Sequence

To stop and hold timeline playback, and jump to the first sequence in the timeline:

1. Click **Jump to First Transition Segment**.
2. Click **Play** to play the first sequence in the timeline.

Jump to Escape Sequence

If the timeline has passed the sequence designated as the **Escape** sequence:

- Click **Esc**. The timeline jumps to the first sequence in the timeline.

Loop the Timeline

You activate looping while the timeline plays:

- Click **Loop**. After the last sequence in the timeline plays, the timeline plays from the beginning.

Chapter 4: The Weather Interface

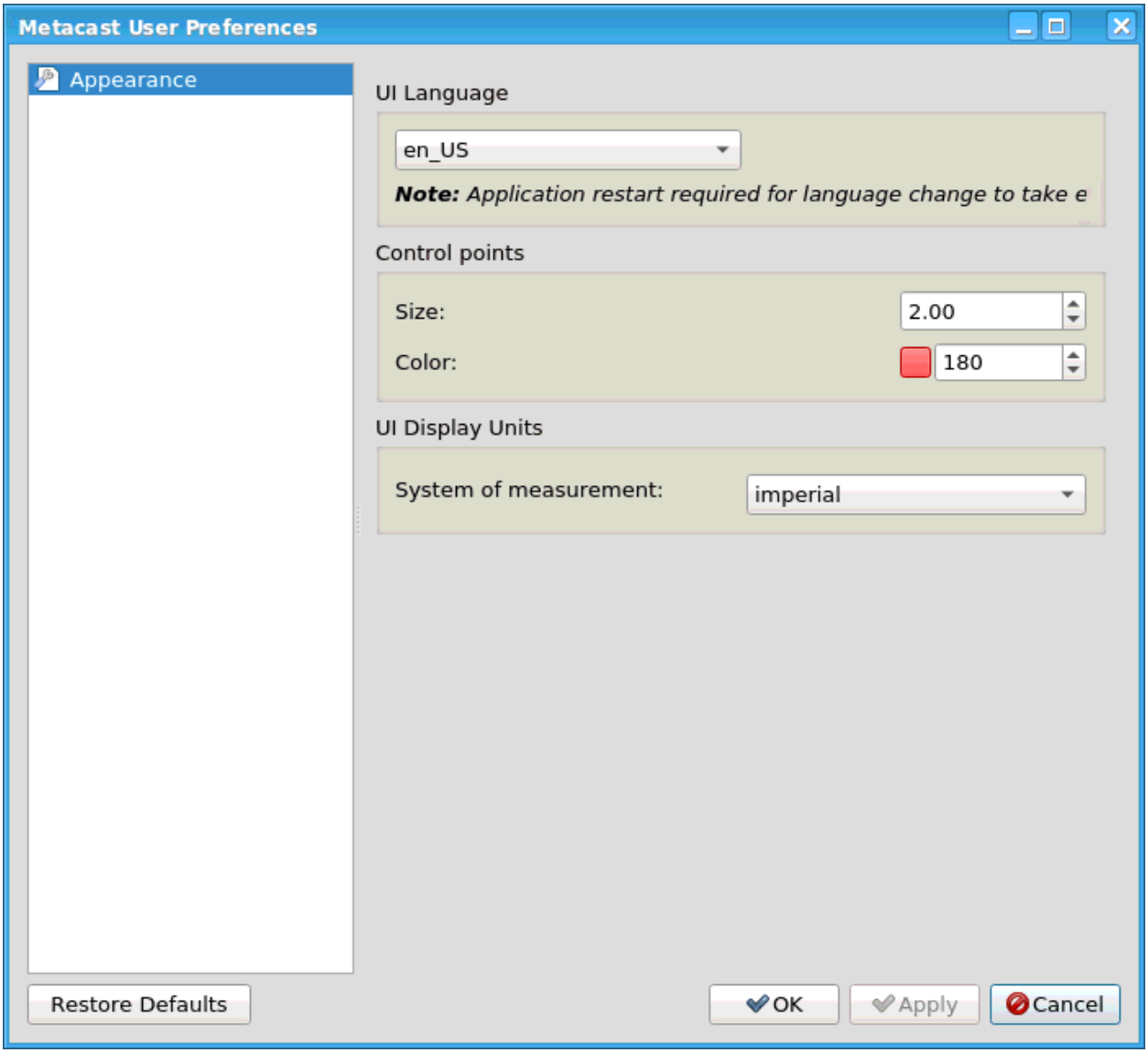
Overview

The **Database Manager**, **Sequence Editor** and **Timeline Modes** all share the same menu bar and toolbar. The availability of specific items depends upon the selected mode.

User Preferences

You can set language, the size and color of control points, and display units. To set **User preferences**:

1. Go to **Edit menu > User preferences**. The **User Preferences** dialog appears:

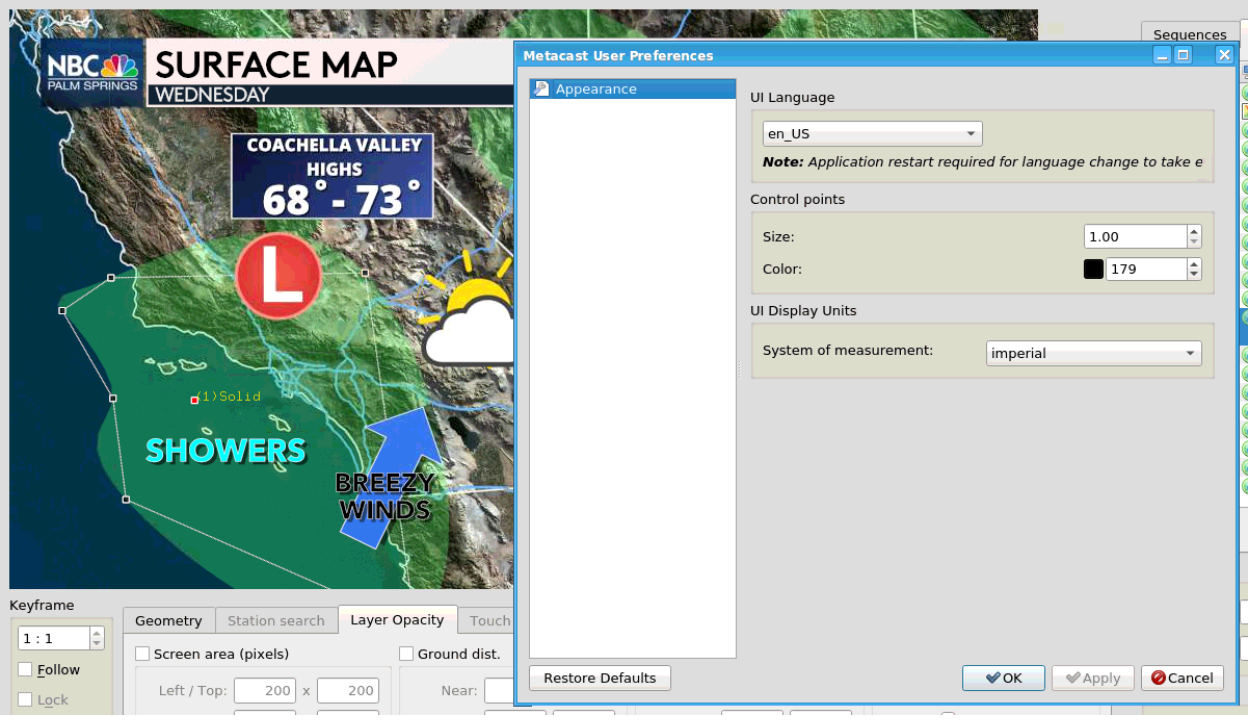


2. Set preferences.
3. Click **OK**.
    - If you did not change **UI Language**, then **Control Points** and **UI Display Unit** settings are applied.
    - If you changed **UI Language**, then **Control Points** and **UI Display Unit** settings are applied. Close and restart system to apply **UI Language**.

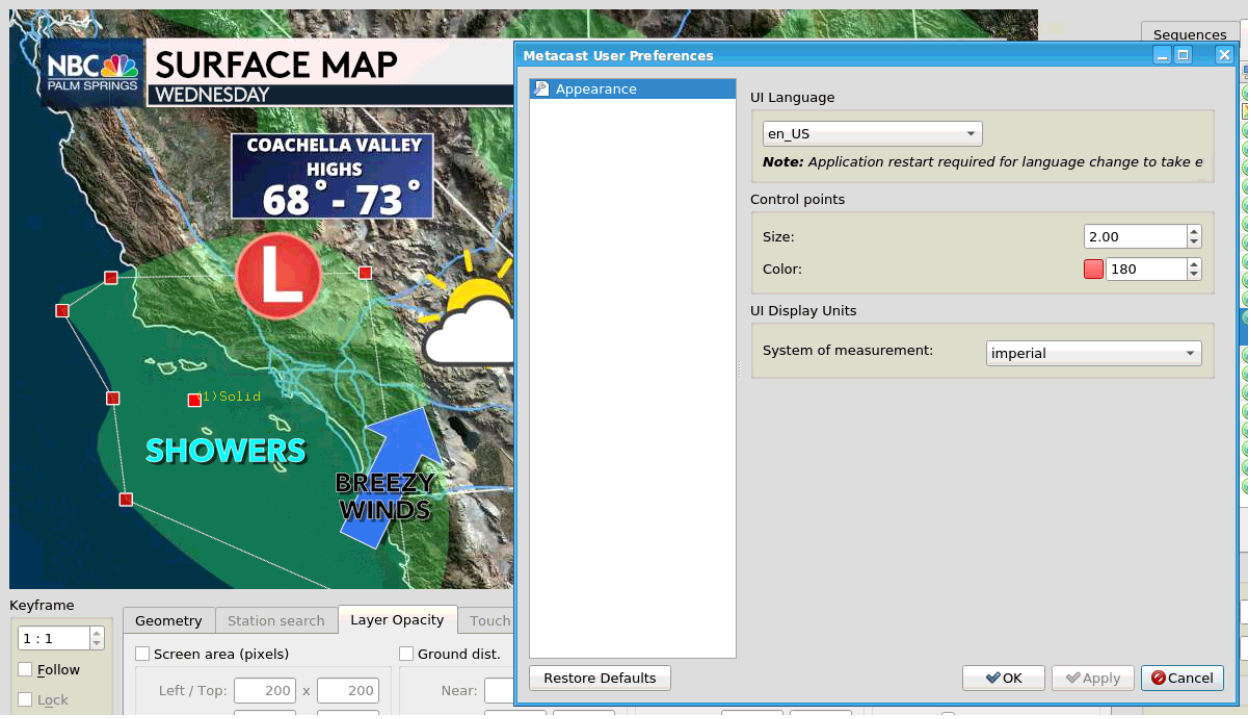
Settings are as follows:

- **UI Language:** Select language from the dropdown. You must close and restart Weather for the language change to take effect.
- **Control Points:** Control points include drag handles for paint and other objects.
    - **Size:** Sets the size of the control point.
    - **Color:** Sets the color and **Alpha channel** value of the control points. The **Alpha channel** field is unlabeled. To set:
        a. Click the **Color** color chip.
        b. In the **Select Color** dialog, select color and set **Alpha channel** value. See Select Color - Color Picker for details on setting color.
        c. Click **OK**.

The following shows **Control Points** at **Size 1**, **Color dark gray**, and **Alpha channel 179**:



The following shows **Control Points** at **Size 2** and **Color red**, and **Alpha channel 180**:



- **UI Display Units:** Select imperial or metric from dropdown.
- **Restore Defaults:** Restores the system defaults.

Menu Display

The following specifies the menus available to each of the three modes:

Menu Item	Database Manager Mode	Sequence Editor Mode	Timeline Mode
File	Available	Available	Available
Edit	Available	Available	Available
View	Available	Available	Available
Timeline	Not Available	Not Available	Available
Layer	Not Available	Available	Not Available
Language	Available	Available	Available
Setup	Available	Available	Available
Social	Available	Available	Available
Render	Available	Available	Available
Scan	Available	Available	Available
Help	Available	Available	Available

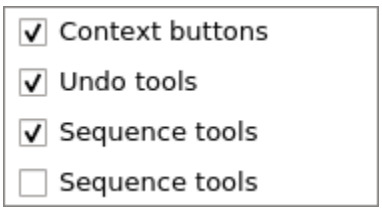
Toolbar Display

The toolbar displays items, some of which are common to all modes and others that are mode-specific. There are four toolbar groups:

- **Context buttons**
- **Undo buttons**
- **Sequence tools**
- **Sequence tools**

To set toolbar view options:

1. Right-click the toolbar, and then check/uncheck an option as desired.



2. Repeat step 1 for each additional option that you would like to set.

The toolbar displays buttons, icons and fields as follows:

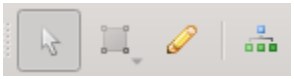
- If none of the options are enabled (checked), then no tools display.
- If **Context buttons** is enabled, then the **Data Manager**, **Sequence Editor** and **Timeline Editor** selection buttons display:

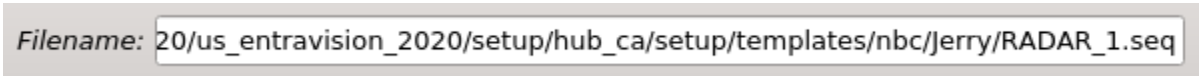
- If **Undo tools** is enabled, then the **Undo**, **Redo** and **Undock graphics window** icons display. The following figures show the Undo/Redo icons active and inactive:

- If the top **Sequence tools** is selected, then the **Data Browser** icon displays:

- If the bottom **Sequence tools** is enabled, then the **Select**, **Rectangle Select**, **Add Symbol to Layer**, **Sub Symbol Selector**, **Sequence name** field and **Filename field** display:

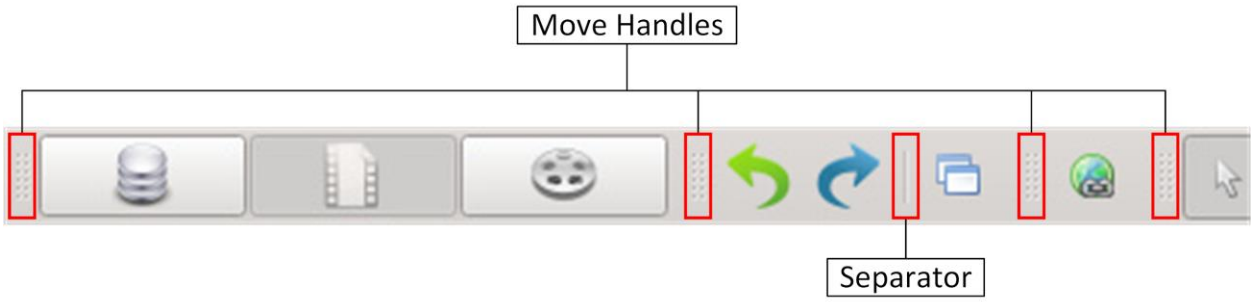
Closeups:





Move Toolbar Group

You can move a toolbar group. To the left of each toolbar group is a vertical **Move Handle** icon that, as shown in the following figure. It is a bit difficult to see, and should not be confused with the vertical separators that separate tools by function.



To move a toolbar to a new location:

1. Hover the mouse over the **Move Handle** icon for the group that you would like to move. A hand cursor appears.

2. Drag the tool group to the new location. You can move the tool group to a different location in the toolbar, or drag it out of or back into the toolbar.

Navigate the Interface

- **Select Arrow:** Select various items and objects.
- **Drag-and-Drop:** Drag sequences to and within the timeline **Storyboard**, drag objects from one location to another on the **Sequence Preview**.
- **Object Outlines on the Sequence Preview:**
    - **White outline:** Indicates that the object appearance/position is driven by the data, and has not been overridden by the user
    - **Yellow outline:** Indicates that the object data value has been overridden by the user
- **Right/left cursor arrows:** Steps through objects.
- **Up/down cursor arrows:** Increments spin box (counter) up/down. To increment quickly, press and hold the up/down cursor key within the spin box.
- **Cancel button:** Many dialogs have a **Cancel** button. Clicking the **Cancel** button cancels the current operation. As its function is the same throughout the interface, each occurrence of the **Cancel** button is not described.

Interface Element Availability

The appearance of an interface element such as a menu item, field, icon, or button indicates if it is available for use or can be edited:

- If an interface element is available or can be edited (e.g., a text field), then it is displayed in its active form.
- If an interface element is unavailable or cannot be edited, then it is displayed in its inactive form, usually grayed out.

Dock/Undock the Graphics Window

You can undock the graphics window, i.e., the window that displays the sequence, so that you can enlarge it to view in greater detail.

To undock the graphics window:

1. In the Weather toolbar, click the **Undock/Dock** icon. The graphics window detaches from the UI.

2. Move and/or resize as desired.

To redock the graphics window:

- Click the **Undock/Dock** icon. The graphics window snaps back into place in the UI.

Select an Object

Overview

You can select, and drag and drop an object on the graphic or in the timeline. The select cursor is active during most Weather operations, and is indicated in the Weather toolbar by the outlined **Select** icon. The icon is highlighted as the mouse hovers over it.

Once selected, the icon displays an outline.

NOTE: To prevent accidental alteration of a symbol, you cannot select a locked symbol directly from the graphic. To select a locked symbol, you must select the symbol from the **Layers** tab.

Select One or More Layers and/or Symbols

You can select one or more layers or individual symbols using the following methods:

- Click the **Select** icon, located in the toolbar, then select one or more symbols in the graphic preview. You can select one or more symbols that are not in locked layers.
- Click and drag a rectangular area over the symbols that you would like to select. This selects any unlocked symbols that lie within the rectangular area.
- In the **Layers** tab, select one or more symbols. You can select symbols from locked or unlocked layers using one or both of the following methods.
    - To select multiple contiguous layers and/or symbols, drag through them, or select the top or bottom layer or symbol, and then press and hold **Shift**, and use the cursor up/down keys to select.
    - To select multiple non-contiguous layers and/or symbols, press and hold **Ctrl**, and then click each layer or symbol to select.

Select Multiple Layers and Their Symbols

To select multiple layers and all of their symbols:

1. In the **Layers** tab, select the layers.
2. Right-click, then select **Select symbols** from the dropdown.

Delete a Symbol

To delete a symbol, use one of following methods:

- In the **Layers** tab, right-click the symbol, and then select **Remove**. You can use the same selection method
- On the graphic:
    a. Select one or more symbols that you would like to delete.
    b. While hovering over one of the selected symbols, right-click.
    c. Select **Delete**. This works only with unlocked symbols.

Delete All Symbols in a Layer

To delete all symbols in a layer:

- In the **Layers** tab, right-click the symbol, and then select **Remove**.

Reactivate Select

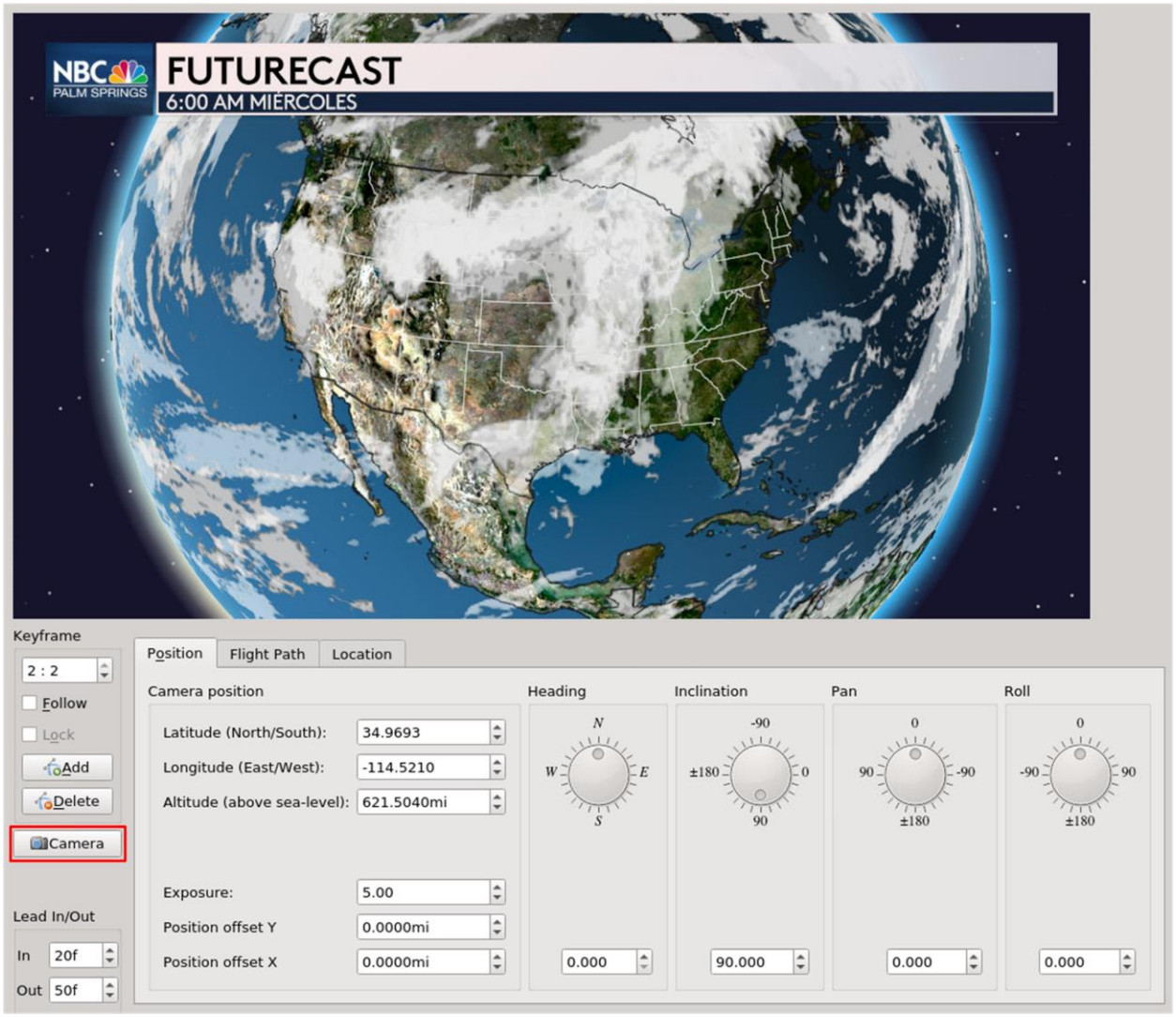
If you have finished performing an operation in which the **Select** icon is not highlighted (e.g., **Add symbol to selected layer**:

- Click the **Select** icon to return the cursor function to the selection.

Select the Map

You can use the mouse to manipulate the map:

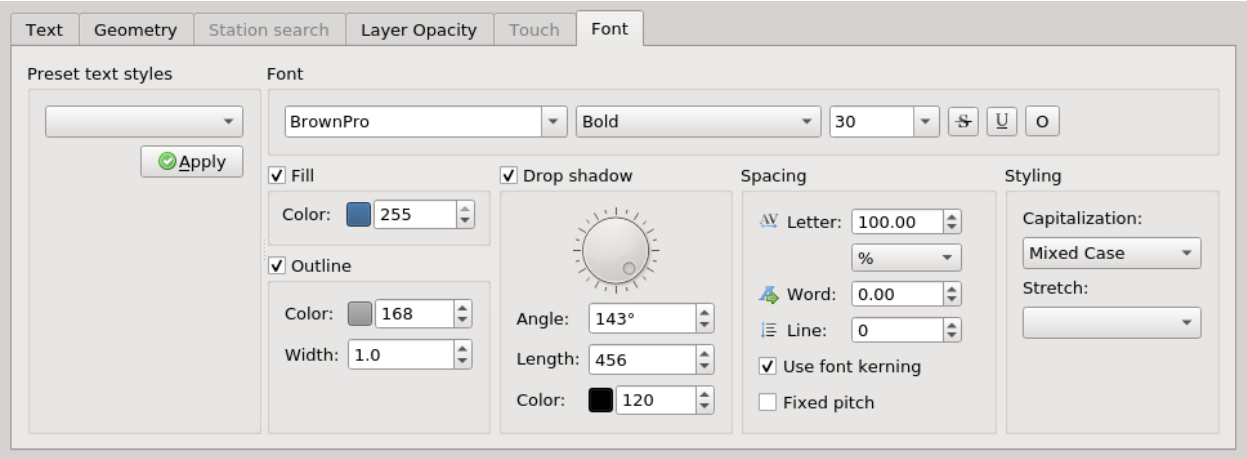
1. In the **Keyframe** area to the left of the **Properties** area, click **Camera**. It is not necessary to select the **Base Map** layer. The **Camera Properties** panel displays:



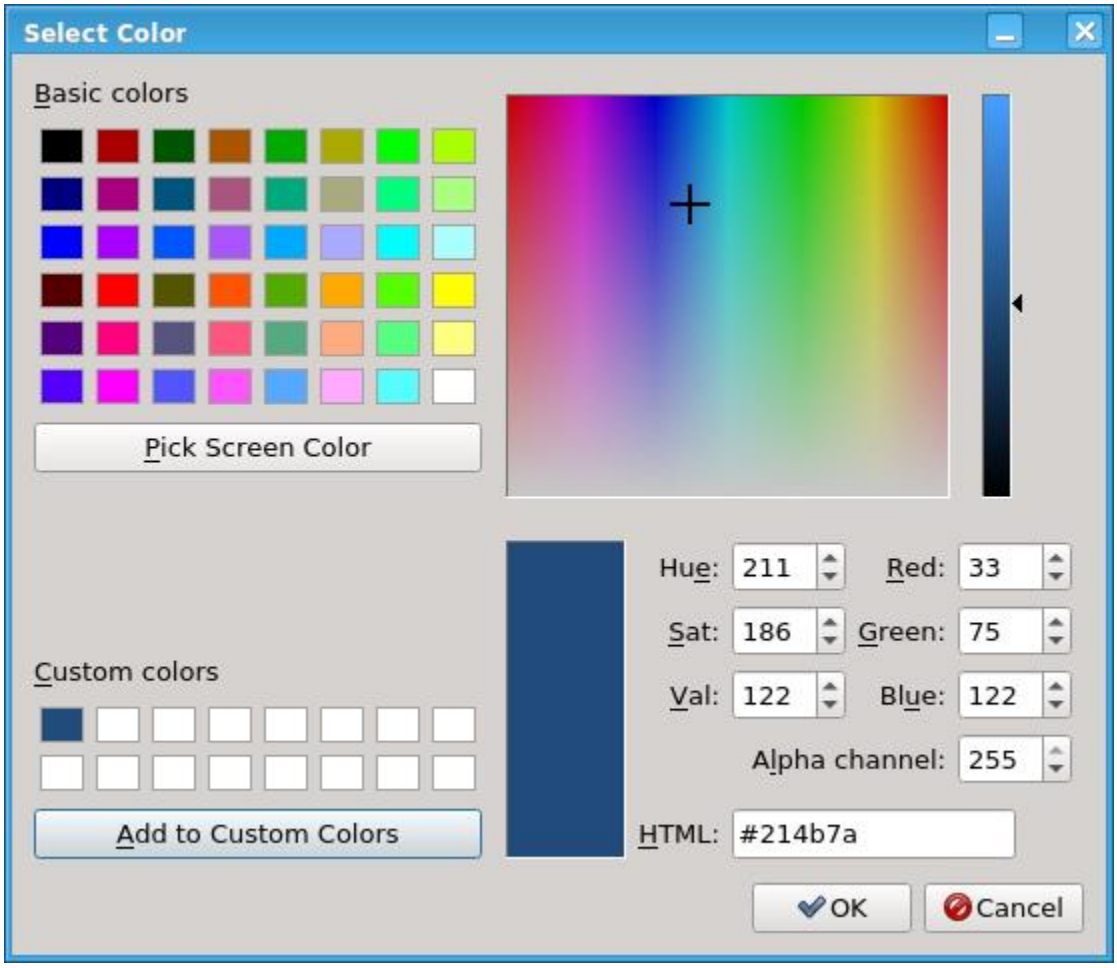
2. Click and drag the map to the desired position.

Select Color - Color Picker

Weather provides a color picker to set color for text, paint objects, and other graphics. The following shows a **Font** tab that displays color chips for **Fill**, **Outline** and **Drop shadow**.



To access the color picker, click the color chip. The **Select color** dialog appears:



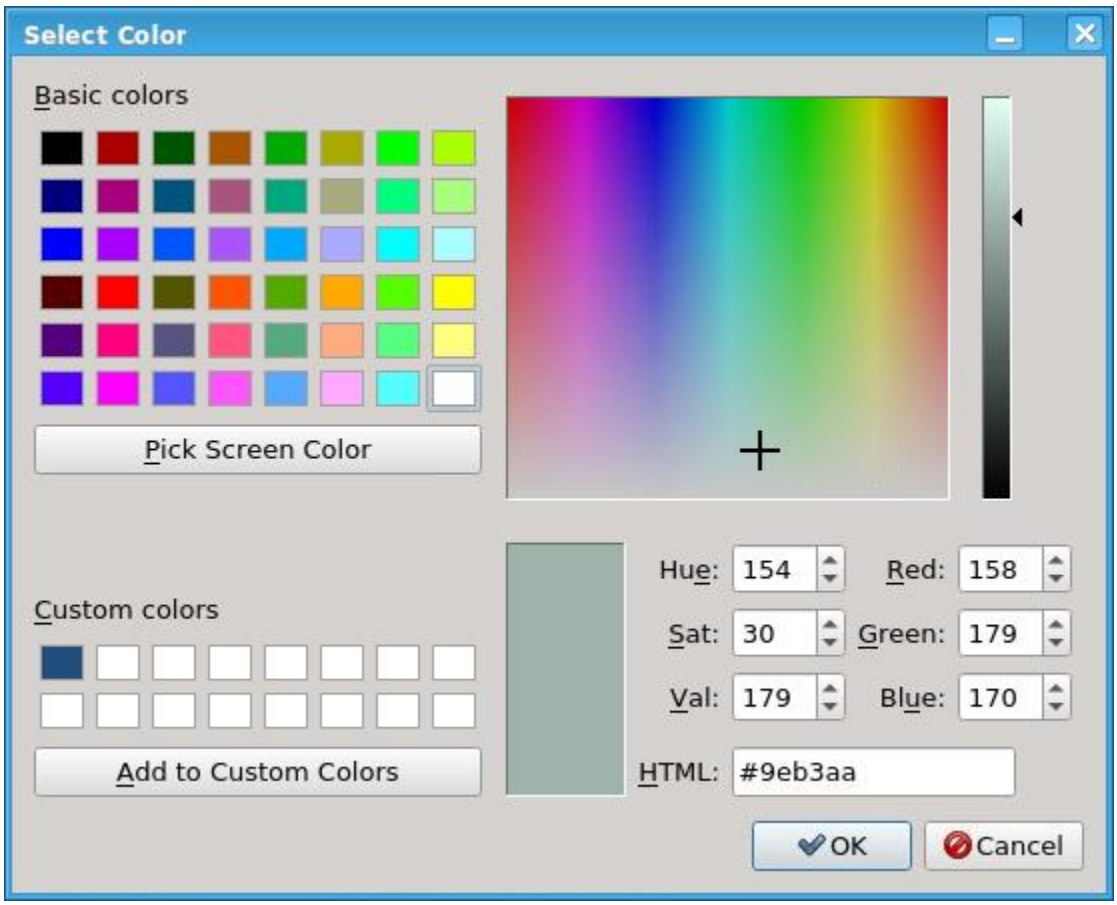
The currently selected color is displayed in the vertical window located to the right of the **Custom colors**. A color can be set using one or more of the following methods:

- **Basic colors:** Click a color chip to select the color.
- **Pick Screen Color:** This feature works the same as the familiar eyedropper found in graphics applications. To select a color from the **Sequence preview**, click the **Pick Screen Color** button, then click the point on the **Sequence preview**.
- **Color spectrum window:** Drag the cursor to select a color.
- **Light/dark slider:** Drag to adjust the lightness or darkness of a color. Note that when you drag the slider, only the **Val(ue)** changes. The **Hue** and **Sat(uration)** values remain the same.
- **Hue, Sat(uration), Val(ue):** Set color using **HSV** values.
- **Red, Green, Blue:** Set color using **RGB** values.
- **Alpha:** Set transparency value of the color.
- **HTML:** Set color using **HTML** value.
- **Custom colors:** Up to 16 custom colors can be saved to the Select color dialog for repeated use.
    - To save a custom color, select a color using one of the above methods, then click **Add to Custom Colors**.
    - To select a custom color, click a **Custom colors** color chip.

To save color selection:

- Click **OK**.

A specific color parameter may not have an **Alpha channel** (transparency) setting. If so, then the **Color Picker** appears as follows, and is set in the same manner as the **Color Picker** with the **Alpha channel** setting.



Set Calendar

Various Weather functions employ the use of a calendar to set start and end points. See Model Time for an example of calendar use.

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Chapter 5: Keyboard Shortcuts

Overview

Weather provides keyboard shortcuts to quickly perform common operations. In addition, you can quickly access menu functions via the **Alt** key. The menu items each have one letter that is underlined: **File**, **Edit**, **View**, **Timeline**, **Layer**, **Language**, **Setup**, **Social**, **Render**, **Help**.

To access a menu function:

1. Press **Alt+<the character underlined in the menu item that you would like to access>**. For example, to access the **File** menu, press **Alt+F**.
2. Find the item on the menu that you would like to select, then on the keyboard, release the **Alt** keystroke combination, then press the letter that is underlined. For example, to access **Help > Release Notes**, press **Alt+H**, then press **R**.

Metacast provides the following keystroke shortcuts, and, if available, a corresponding clickable icon. Icons displayed in menus are not included in the following tables unless they are present elsewhere in the interface as individually clickable icons.

Editing Modes

Function	Icon	Accessible from:	Keyboard Shortcut
Database Manager		**Toolbar/View Menu**	**Ctrl+1**
Sequence Editor		**Toolbar/View Menu**	**Ctrl+2**
Timeline Editor		**Toolbar/View Menu**	**Ctrl+3**

File Operations

Function	Icon	Accessible from:	Keyboard Shortcut
New	N/A	**File Menu**	**Ctrl+N**
Open	N/A	**File Menu**	**Ctrl+O**
Save	N/A	**File Menu**	**Ctrl+S**
Exit	N/A	**File Menu**	**Ctrl+Q**

Edit Operations

Function	Icon	Accessible from:	Keyboard Shortcut
Undo		Toolbar/Edit Menu	Ctrl+Z
Redo		Toolbar/Edit Menu	Ctrl+Shift+Z
Duplicate	N/A	Right-click object in the graphic preview > Copy, then Paste	Ctrl+D

View Options

Function	Icon	Accessible from:	Keyboard Shortcut
Refresh	N/A	View Menu	Alt+R
Log	N/A	View Menu	Alt+W
Database Mode		Toolbar/View Menu	Ctrl+1
Sequence Mode		Toolbar/View Menu	Ctrl+2
Timeline Mode		Toolbar/View Menu	Ctrl+3
ScriptBuilder	N/A	View Menu	Ctrl+4
Video Panel	N/A	View Menu	Alt+P

Timeline Operations (Active in Timeline Mode Only)

Function	Icon	Accessible from:	Keyboard Shortcut
Play		Timeline Playback/ Timeline Menu	Space Bar
Pause		Timeline Playback/ Timeline Menu	Space Bar
Jump to First Transition Segment		Timeline Playback/ Timeline Menu	Home
Decrement	N/A	Timeline Menu	- (minus sign)
Increment	N/A	Timeline Menu	+
Go to Sequence Editor	N/A	Timeline Menu	Ctrl+Return (Enter works if Timeline is not running.)
Last Sequence	N/A	Timeline Menu	End
Take Queued	N/A	Timeline Menu	Enter

Layer Operations (Active in Sequence Mode Only)

Function	Icon	Accessible from:	Keyboard Shortcut
Select layer above	N/A	Layer Menu	PgUp
Select layer below	N/A	Layer Menu	PgDown
Load next in Collection	N/A	Layer Menu	Ctrl+PgDown
Load previous in Collection	N/A	Layer Menu	Ctrl+PgUp
Select All Symbols	N/A	Layer Menu	Ctrl+A
Deselect All Symbols	N/A	Layer Menu	Ctrl+Shift+A
Invert Selection of Symbols	N/A	Layer Menu	Ctrl+I
Toggle Visibility On/Off		Layers Tab/ Layer Menu	Ctrl+H
Toggle Lock On/Off		Layers Tab/ Layer Menu	Ctrl+L
Move to top		To the right of the Layer Collection	Ctrl+Home
Move up		To the right of the Layer Collection	Ctrl+Up
Move down		To the right of the Layer Collection	Ctrl+Down
Move to bottom		To the right of the Layer Collection	Ctrl+End

Chapter 6: Terms and Definitions

Base Map: Map file provided with Weather, containing latitude and longitude data.

Database Manager: List of data sources configured for this Weather system.

Environment: Graphic settings, including date, time, presence of sunlight, fog/haze, sky appearance, sun position, etc.

Field Layer: Visualizations of video and images that fill the whole screen or data products, e.g., numerical data models, satellite images and radar images, that are visualized through a color pallet. There are two main groups of **Field Layers**:

- Non-data-driven field layers, such as image files (video, still images or ****.png*** sequences).
- Data-driven field layers, such as satellite and radar visualizations.

Frame: Smallest single unit of an animation. A frame can be saved as an image.

Layer: Building block of a sequence that contains one object, which can be text, a graphic, a video, a data visualization, etc. Layers are stacked one on top of the other to produce the desired result.

Map: Representation of land, water, and terrain, and may include latitude/longitude data. Maps can be used as backgrounds for weather presentations. There are three types of maps:

- **Projected (2D) map:** Flat map that is referenced to latitude and longitude coordinates. A projected map does not provide perspective views.
- **Poster maps:** Image or video file not referenced to geographic locations. As such, data displays must be anchored to specific points on a poster map.
- **3D maps:** Map that provides perspective views, and the ability to set elevation (Z-axis), create flight paths, change level of details with elevation change.

[Map]: Object tied to specific latitude/longitude coordinates on a 3D map.

Model: Time-based data visualization based on the specific data source. The model's data source provides a time range (**Min/Max** settings) from which you can select. For example, the time range may cover the next 36 hours, from which you can specify, for example, the next 12 hours.

NaturalEarth: Provides geographical overlays for the Base Map, including borders, rivers, and lakes.

Replaceable: Data-connected object or set of objects that can be replaced by changing a station location. For example, one can change the display of data, text, images and video from Palm Springs, CA to JFK Airport, NY, by simply changing the station that the data is referencing. All referenced objects (text, graphics, images) then reflect the data from the newly-selected station.

Designating manual text entry and image objects as **Replaceable** makes it easy to automatically change text and background images. In addition, it reduces the possibility of error.

[Screen]: Object tied to specific **XY** coordinates on the screen.

Segment: Portion of a **Storyboard** that contains one sequence, and the timeline settings associated with that instance of the sequence. If a sequence is present in a **Storyboard** more than once, then each instance of the sequence is in its own segment.

Sequence: Graphic that displays the weather graphics and data. The sequence can include a map that displays geographical and weather data tied to latitude/longitude coordinates, or a poster graphic, which displays manual or data-driven text and graphics - or a combination map/poster graphic.

Station: Source of weather or other data, usually identified by a city or other geographical name.

Storyboard, Timeline: Set of sequences as ordered on the timeline. Graphical representation of the temporal (time) framework upon which the storyboard is built. Playback controls are provided to play through the segments on the storyboard.

Symbol: Graphical object that can be placed and selected on a specific location within the scene. A symbol does not necessarily have an automatic link to a geographic location; however, the user can create such a link if desired.

Sublayer: A layer that is a component of a layer. Sublayers currently are used only with the Base Map layer.

Subsymbol: Collection of symbols that can be accessed from a specific symbol.

Symbol Layer: One or more symbols that form a single entity, e.g., a banner that has two graphical elements, each with a space for text.

Timeline: See **Storyboard**.

Chapter 7: Database Manager (Ctrl+1)

Overview

BEST PRACTICE: Close and Reopen the Weather Application

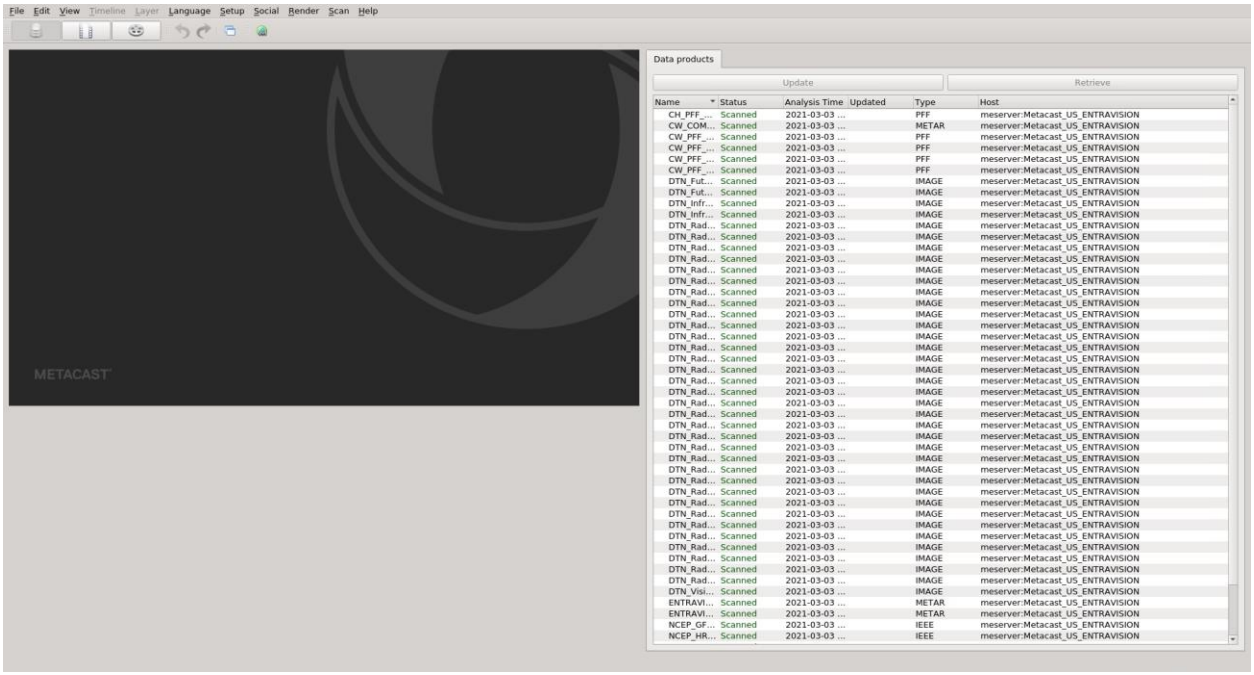
If the system has not been used for a few hours, then close and reopen the Weather application. This ensures that the data sources update. It is not necessary to shut down and restart the Weather system.

The **Database Manager** lists the available data sources, and the status for each.

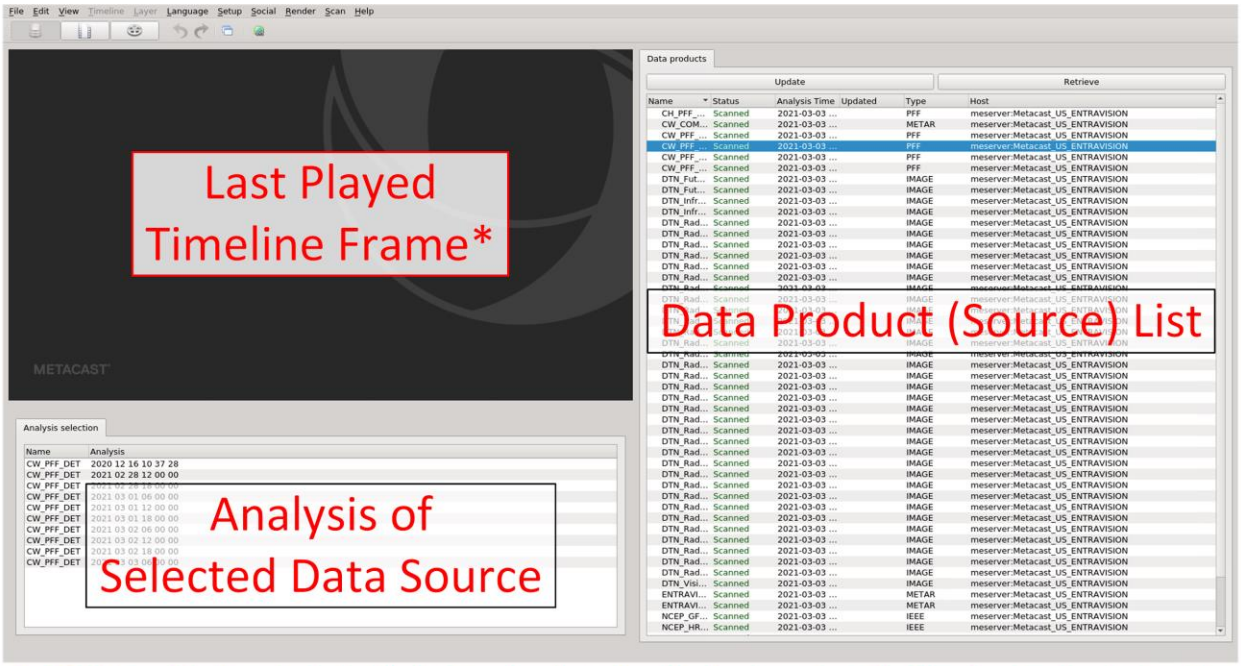
To access the Database Manager, use one of the following methods:

- Press **Ctrl+1**.
- Click the **Database Manager** icon .
- Go to **View menu > Database Mode**.

The **Database Manager** displays.



The following shows the main **Database Mode** components:



* If **Database Mode** is selected while the timeline plays, then the timeline stops. The **Timeline Preview** displays the frame that had been displayed at the point at which the timeline was stopped.

Main components:

- The upper left quadrant usually displays a blank screen, except switched from **Timeline Mode** to **Database Mode** while a timeline is playing. In this event, the u[er left quadrant displays the frame that had been displayed at the time that the timeline was stopped.
- The **Data products** panel displays the list of available data sources, and the **Name**, **Status**, **Analysis Time**, **Updated**, **Type**, and **Host** of each data source.

- When a data source in the **Data products** panel is double-clicked, the **Analysis section** in the lower left quadrant displays details about the selected data source.

Data Products Panel

The **Data products** panel provides information about all data sources available to your Weather system. You can add a data source as a layer, and use the data source to visualize the information via text and graphics.

The **Data products** panel provides the following information:

- **Name:** Name of the data product, also referred to as the data source. See Acronyms for expanded versions of abbreviations.
- **Status:** Status of the data source as follows:
    - **Scanned:** Data product has been looked up in the database and identified, but not loaded or used yet in any content/templates, and hence, not loaded into memory.
    - **Loaded:** Data product is looked up in the database, and information from the product is used in an active sequence, and hence, data is loaded into memory.
    - **Unavailable:** Data source is unavailable.
- **Analysis time:** The GMT timestamps of the analyses, formatted as follows:

  YYYY MM DD HH MM SS
- **Updated:** Not in use.
- **Type:** Specifies the type of data source. The following is a list of typical data types, but may differ for your organization:
    - **EVENT: Event**, such as earthquake
    - **IEEE:** Institute of **E**lectrical and **E**lectronics **E**ngineers
    - **IMAGE:** Picture, e.g., satellite view
    - **METAR: Met**eorological **A**erodrome **R**eport
    - **PFF: P**oint **F**orecast **F**ile
    - **WATWARN: Warn**ings/**Wat**ches

Update Data

To update the data sources:

- Click **Update**. Depending upon the data source, data update duration can differ. Update requests Weather to re-access/re-index the content in the database. Whatever is present in the database is scanned. Analysis of the data happens by the user, basically the operation the user undertakes to find the best display method, colorization, thresholding etc., to do the compelling storytelling for the data. This is not a function of the system, but is facilitated by the system through the data.

Retrieve Data - Standalone (Non-Client-Server) Systems Only

Most Weather systems have a separate client and server. **Retrieve** applies only to non-client-server topologies, and runs the active data retrieve process(es) to acquire the data and ingest into the database, and then ultimately, update via the **Update** operation.

If your system is standalone, i.e., both a Weather server and client, then to update data:

- Click **Retrieve**, and then **Update** to update data.

Rename Data Source

Only a system admin can rename a data source. For end-users, this function is grayed out.

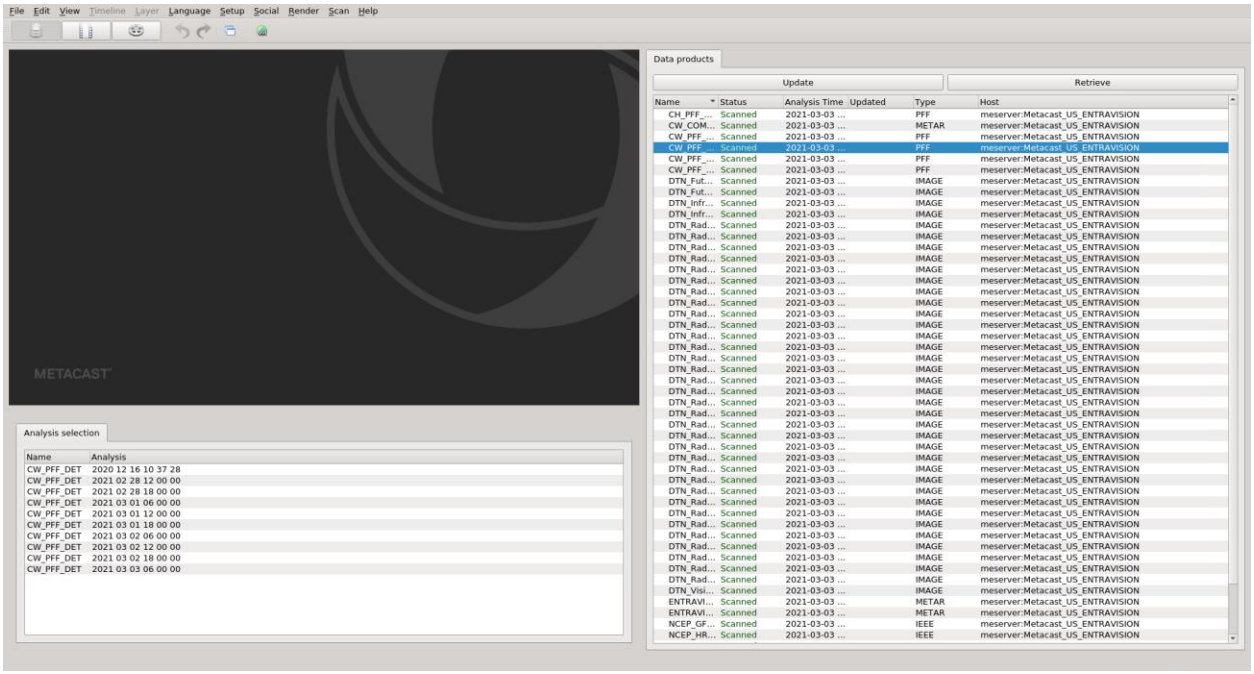
Remove Data Source

Only a system admin can remove a data source. For end-users, this function is grayed out.

Data Analysis

To display the data analysis for a specific data source:

- In the **Data products** panel, double-click the data source name. The data analysis displays the history of the **Analysis Times** for the selected data source.

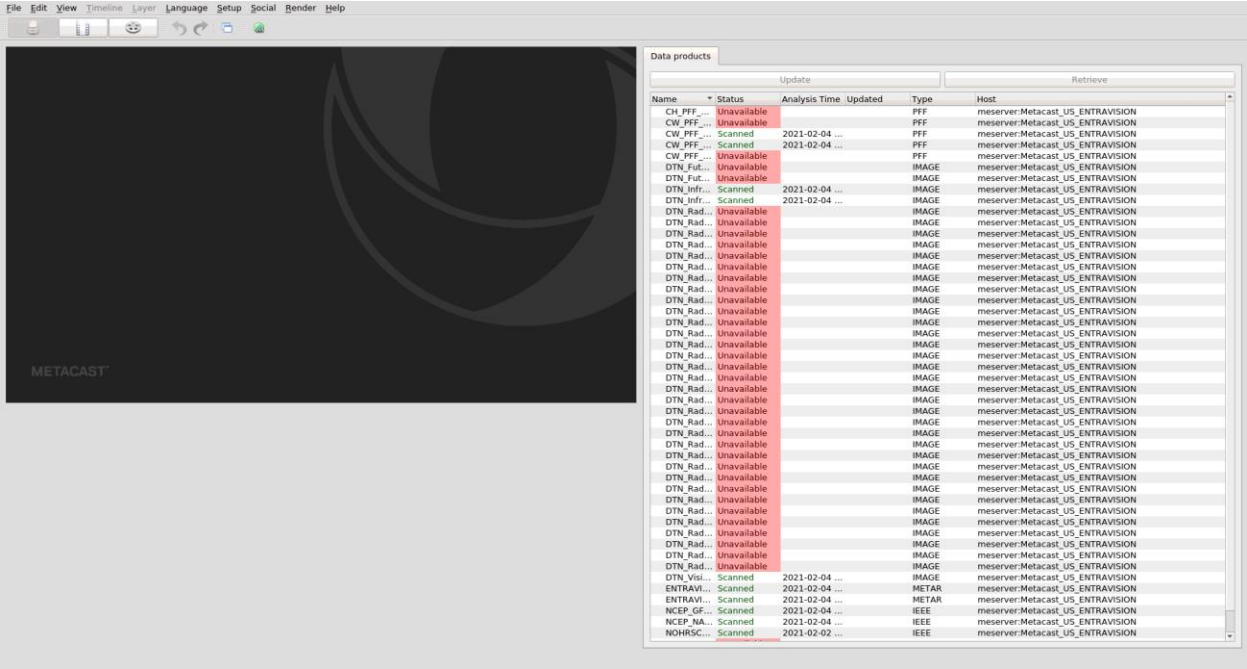


The **Analysis selection** panel displays two columns:

- **Name:** Name of the selected data source.
- **Analysis time:** The GMT timestamps of the analyses, formatted as follows:

  YYYY MM DD HH MM SS

The following shows that several data sources are unavailable. If this occurs, then click **Update**.



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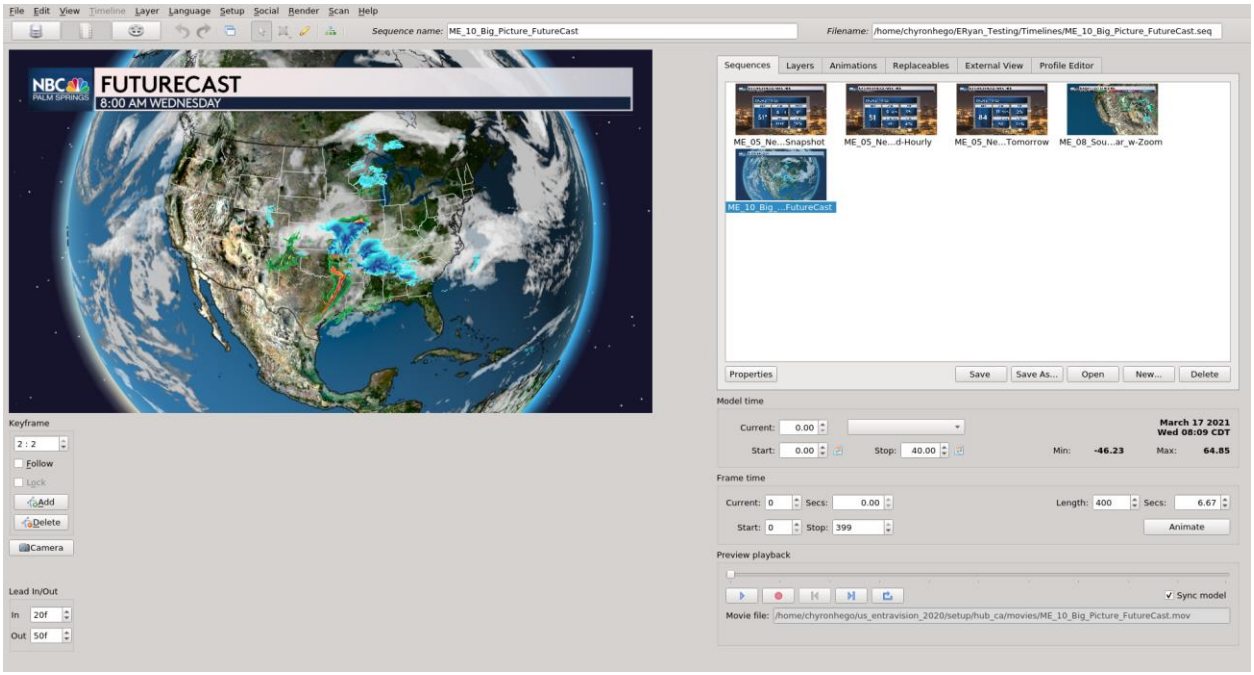
Chapter 8: Sequence Editor (Ctrl+2)

Overview

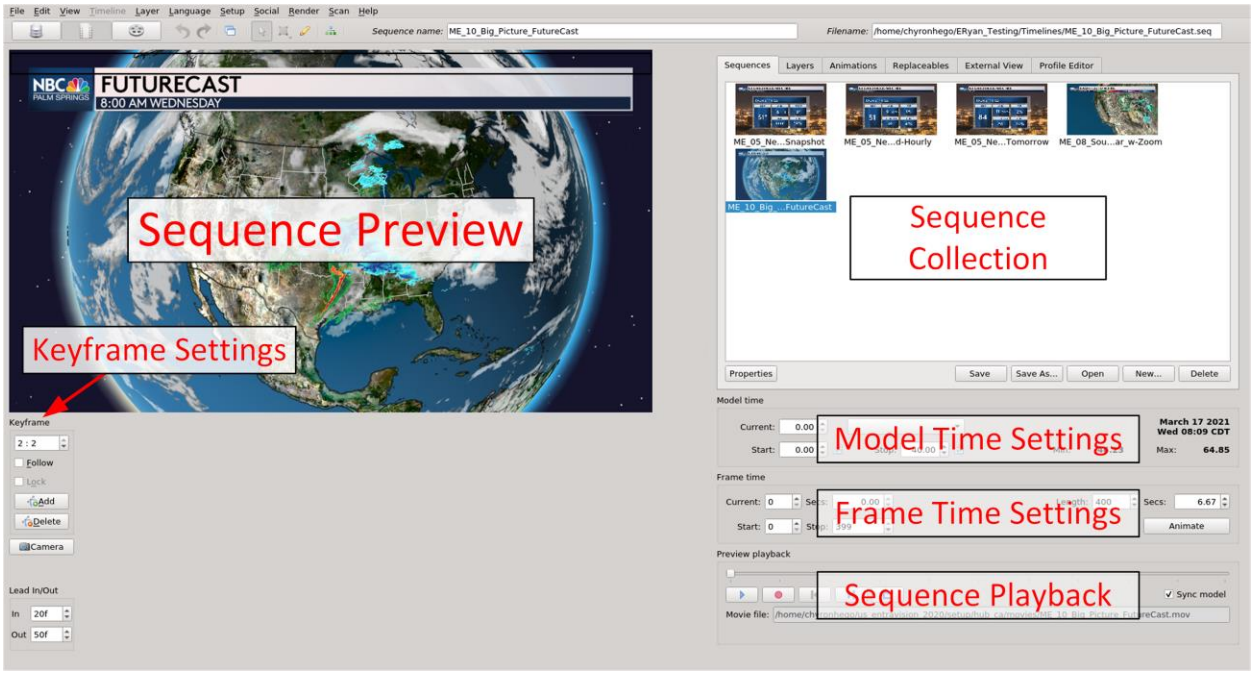
The **Sequence Editor**, also called **Sequence Mode**, provides the ability to create, edit, save, save as, open and delete sequences. As sequences encompass numerous types of elements, the **Sequence Editor** is divided into tabs, in which you can customize each of the element types:

- **Sequences**
- **Layers**
- **Animations**
- **Replaceables**
- **External View**
- **Profile Editor**

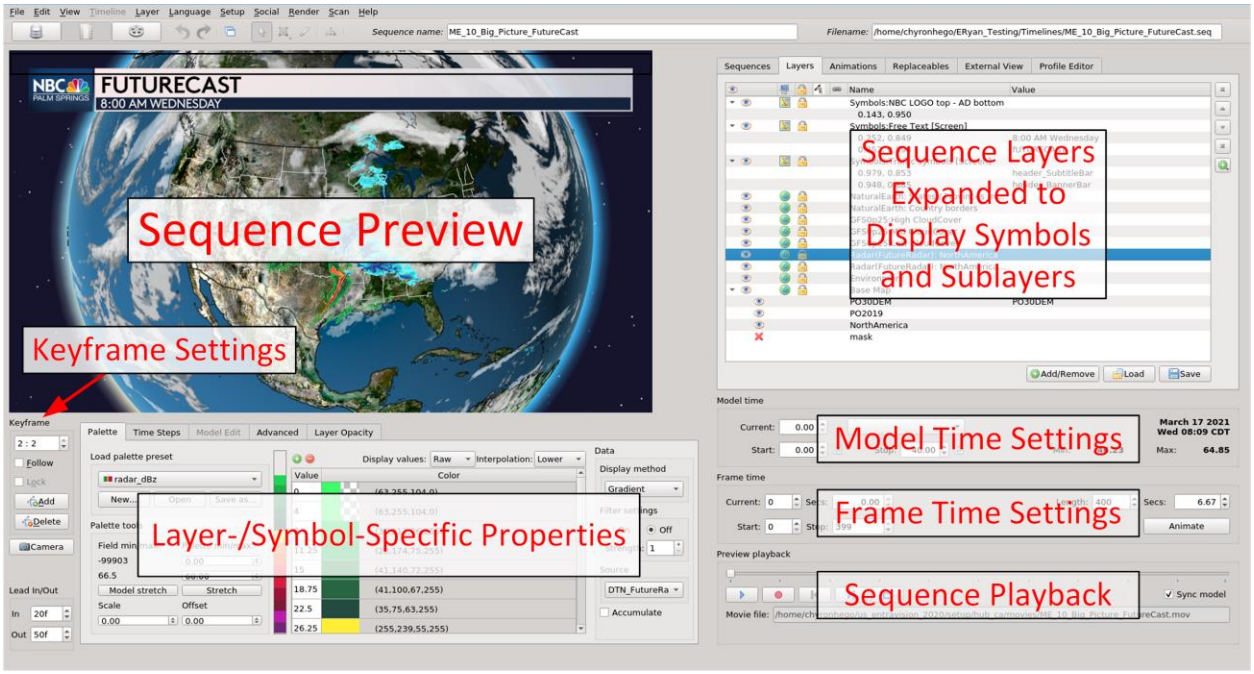
The following shows the **Sequence Editor** when first opened. The **Sequence Collection** displays in the upper right quadrant.



The following shows the same interface with the various areas identified.



The following shows the layers contained in the sequence. Layers are expanded to display symbols and sublayers (Base Map only).



Main components:

- The upper left quadrant displays a preview of the weather graphics.
- The lower left quadrant displays the properties of the selected object, which can be a layer, symbol, or sublayer (**Base Map** only).
- The upper right quadrant displays the sequence list and sequence-specific components: **Sequences**, **Layers**, **Animations**, **Replaceables**, **External View**, **Profile Editor**. The set of sequences is called a collection.
- The lower right quadrant displays the sequence **Preview playback** and its properties.

NOTE: Sequence content is under development.

Open a Sequence

Open Sequence

Chyron Weather provides a set of templates as part of the system commissioning. Prior to creating a weather graphic, it is advantageous to work with an existing template.

Note that the browser function buttons are located directly beneath the sequence collection area.

To open a template:

1. Click **Open**. The browser displays the available ****.seq*** files.
2. Select a file, and then click **Open**. The selected sequence opens, and the sequence thumbnail displays in the Sequence Collection.

At this point you copy this file to prevent altering the original. To do so:

1. In the Sequence Collection, right-click the sequence's thumbnail, and then select Copy from the context menu. A new thumbnail appears in the sequence collection, with "**copy_x**" appended to the original filename, where "**x**" is the number of the copy. For example, if you make two copies of Local_Weather_Current.seq, then the names of the copies are:

   Local_Weather_Current_Copy_1.seq and Local_Weather_Current_Copy_2.seq
2. If desired, then in the **Sequence name** field in the toolbar, edit the name.

BEST PRACTICE: Edit a Copy. Not an Original!

Immediately after opening a sequence for editing, copy the sequence and edit the copy, instead of the original. This preserves the original, and enables the creation of custom versions for various purposes.

If Data-Connected Text or Other Objects Are Missing

If a sequence displays dashes, instead of data, or is missing other updateable objects:

- Go to the **Database Manager**, select the out-of-date data source for the object, and then click **Update**.

It is also possible that the specific station is not providing data, or that point data is not available for that location. If an unanchored point on the map is accidentally moved, it may also lose connection to geo-based data.

Layer Properties

NOTE: Content for this section is under development. Layer-specific information is provided throughout this document.

Each object, e.g., text, graphics, satellite images, base map, etc., occupies its own layer, providing extreme flexibility when building your sequences.

Each type of layer symbol has a specific set of properties as follows:

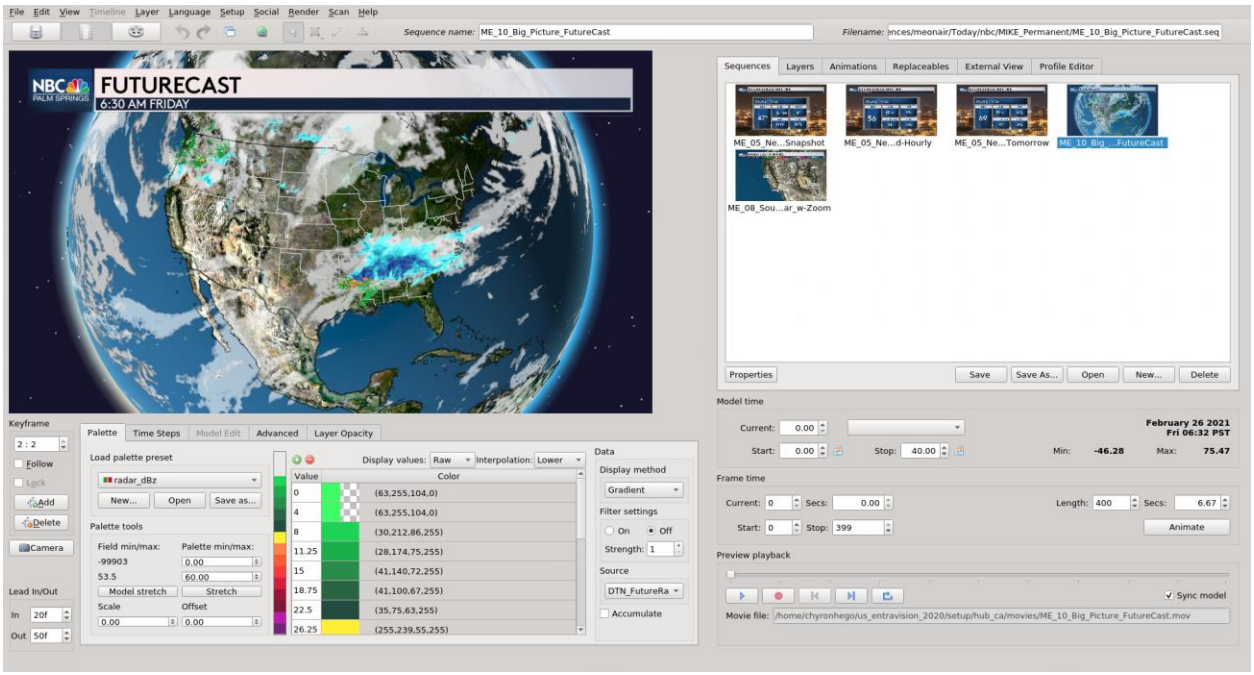
- **Text:**
  - **Text**
  - **Geometry**
  - **Station Search**
  - **Layer Opacity**
  - **Touch:** Currently not implemented.
  - **Font**
- **Graphics:**
  - **Geometry**
  - **Station Search**
  - **Layer Opacity**
  - **Touch:** Currently not implemented.
  - **Paint Page**
  - **Texture Settings**
- **Safe Area Overlay:**
  - **Image**
  - **Layer Opacity**
- **Satellite Images:**
  - **Properties**
  - **Geometry**
  - **Station Search**
  - **Layer Opacity**
  - **Touch:** Currently not implemented.
  - **Font**
- **Radar:**
  - **Palette**
  - **Time Steps**
  - **Model Edit**
  - **Advanced**
    - **Gradient settings**
    - **General**
  - **Layer Opacity**

- **Image Layer:**
  - **Image**
  - **Layer Opacity**
- **TigerCensus:**
  - **Dataset config**
  - **Data item config**
- **Natural Earth:**
  - **Dataset config**
  - **Data item config**
- **Environment:**
  - **Sun Position**
  - **Classic sky effect**
  - **Realistic sky effect**
- **Base Map (3D):**
  - **Terrain Properties**
  - **Water Properties**
- **PO30DEM (Sublayer of Base Map):**
  - **Elevation layer settings**
- **PO2019 (Sublayer of Base Map):**
  - **Image layer visibility**
  - **Image layer settings**
- **NorthAmerica (Sublayer of Base Map):**
  - **Image layer visibility**
  - **Image layer settings**
- **Mask (Sublayer of Base Map):**
  - **Image layer visibility**
  - **Image layer settings**
- **Map:**
  - **Zoom**
  - **Map selection**
  - **Animator keyframes**
  - **Display settings**

Sequences Tab

Overview

The **Sequences** tab displays a list of available sequences called a **Sequence Collection**. From this tab, you can create, edit, add, and delete sequences.

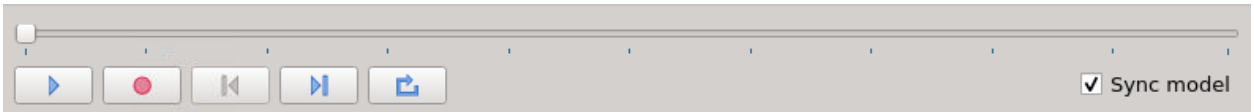


- Weather displays a preview of the graphic at the upper left.
- The far lower left displays keyframe, camera, and Lead In/Out information.
- The empty area displays object properties when an object is selected.
- The upper right displays the **Sequence Collection**, represented by the thumbnail images of the sequences.
- The lower right displays the **Model time** and **Frame time** settings for the selected sequence, as well as the **Preview playback** controls.

Preview playback

Preview playback can play the sequence in real time, and can jump from keyframe to keyframe, through the sequence, either forward or backward.

- **Preview playback** controls are as follows:
  - **Play/Pause:** Plays the sequence from the current position/pauses the sequence.
  - **Record:** Records the sequence for use as a pre-recorded movie in the timeline. To record a sequence
    - Click **Record**. The sequence records to the default configured location.
  - **Jump to previous keyframe:** Jumps to the previous keyframe in the sequence.
  - **Jump to next keyframe:** Jumps to the next keyframe in the sequence.
  - **Loop:** Loops the sequence until another playback action is activated.
  - **Scrub:** You can drag the slider to scrub, i.e., play forward or in reverse through a sequence at your own speed, and stop at any point to examine a frame.



- **Sync model:** Specifies if **Model time** is synchronized to the **Frame time** of the selected sequence.
  - If enabled, then the **Model time** progresses in step with the **Frame time**.
  - If disabled, then the state of the model at the selected Model time is displayed throughout the sequence animation. This is useful if you would like to display, for example, a specific time point of a radar model, while displaying a map zoom. The model remains static at the selected **Current** time, as the **Frame** animation runs.
- **Movie file:** The Movie File field displays the location where the movie file would be saved when/if the sequence is recorded to a movie. The user cannot modify this field.

EXERCISE: Experiment with the **Preview playback** controls to become familiar with how they work. Enable and disable **Sync model** to see how it affects the sequence.

Model time

Model time is tied to actual time of day.

- **Date Display:** The model date, day, time, and time zone of the currently displayed frame.
- **Current:** The model time, in hours and fractions of an hour (decimal), of the currently displayed frame.

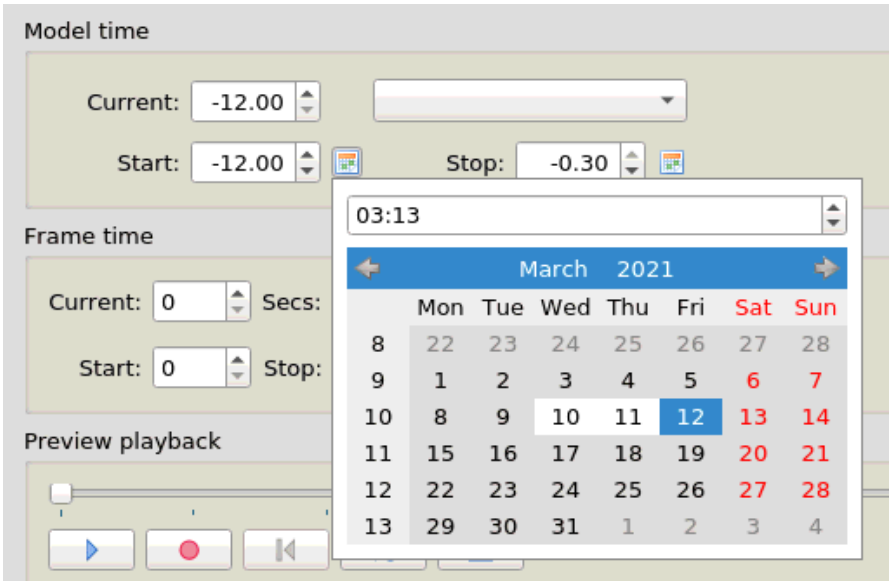
  Quick Minutes to Fraction-of-Hour (Decimal) Conversion Guide

Minutes	Decimal	Minutes	Decimal	Minutes	Decimal	Minutes	Decimal
0	0.00	15	0.25	30	0.50	45	0.75
5	0.08	20	0.33	35	0.58	50	0.83
10	0.17	25	0.42	40	0.67	55	0.92

- **Dropdown to the Right of the Current Setting:** Specifies a shortcut to specify **Model** playback:
  - **Blank:** Use current settings.
  - **Today Noon**
  - **Tomorrow Morning**
  - **Last**

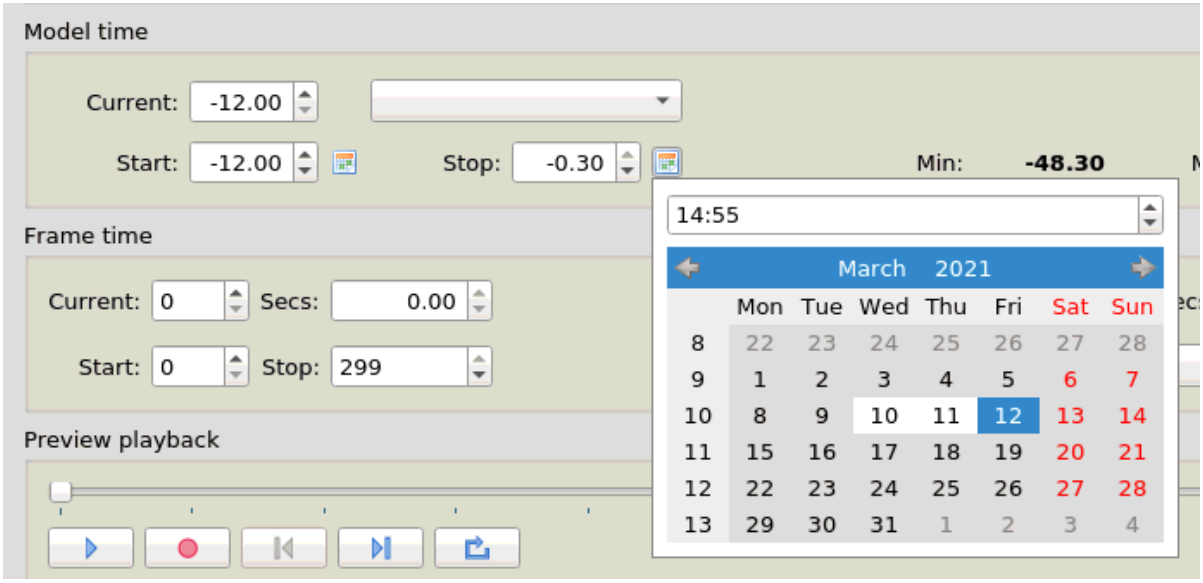
  Shortcuts are configured in system setup.

- **Start:** Specifies **Start** time of **Model** playback. To set:
  - Enter the **Start Frame time**. To select a date, click the calendar icon, located to the right of the **Start** spin box, and click the desired date.



    - The currently selected date is highlighted in blue.
    - Any other available dates are highlighted in white.

- **Stop:** Specifies **Stop** time of **Model** playback. To set:
  - Enter the **Stop Frame time**. To select a date, click the calendar icon, located to the right of the **Stop** spin box, and click the desired date.



- The currently selected date is highlighted in blue.
- Any other available dates are highlighted in white.

- **Min:** Minimum time that can be specified for the model's playback.
- **Max:** Maximum time that can be specified for the model's playback.

Frame time

Except for **Secs**, all settings units are in **Frames**.

- **Current:** Currently displayed frame.
- **Secs:** The time, in seconds of the currently displayed frame.
- **Start:** Specifies **Start** frame of sequence playback.
- **Stop:** Specifies **Stop** frame of sequence playback.
- **Length:** Specifies length of sequence in frames.
- **Secs:** Specifies length of sequence in seconds.
- **Animate:** When clicked, previews animations in the sequence.

Create New Sequence

To create a new sequence:

1. Click the **Sequences** tab.
2. Click **New**. The **Choose template** dialog displays.
3. Select **Still**, **Zoom to** or **Projected Map**.
    - **Still:** Generates a still map for the specified location from a bird's-eye perspective. The map can display labels and icons.
    - **Zoom to:** Generates a map that zooms in on the specified location. The map can display labels and icons, and the end frame can have a different perspective.
    - **Projected map:** Generates a map from a predefined projected map.
4. Set parameters.
5. Click **Finish**.

See **Create Still Sequence**, **Create Zoom to Sequence**, and **Create Projected Sequence** for details on setting parameters for each.

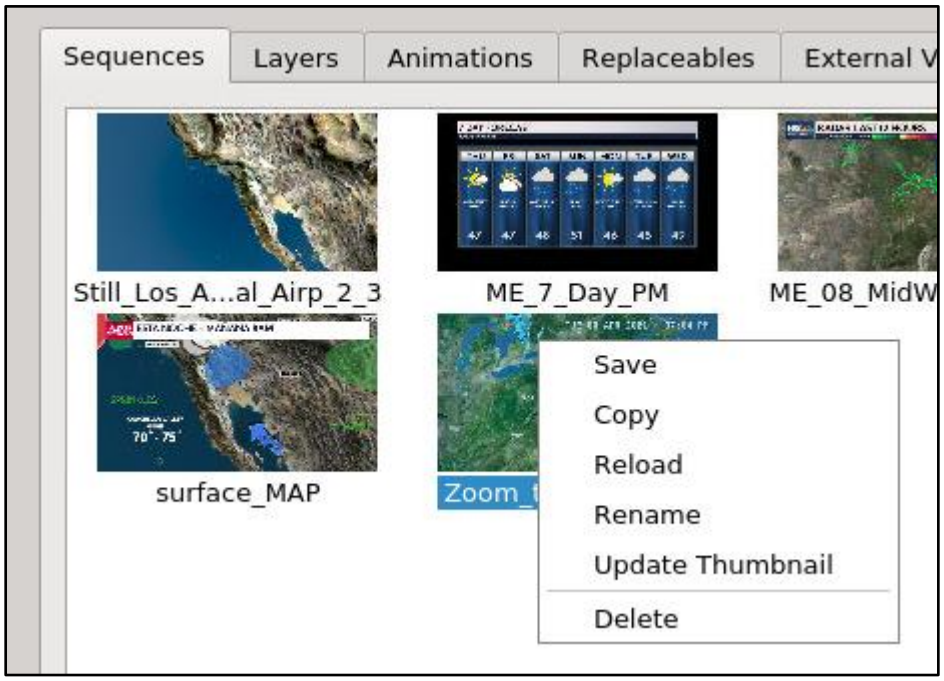
Save Sequence

To save the currently displayed sequence:

1. Click the **Sequences** tab.
2. Click **Save**, and then save to the desired location. **Files of type** should specify **Sequences (*.seq)**.

To save any sequence:

1. Click the **Sequences** tab.
2. Right-click the thumbnail of the sequence that you would like to save, select **Save**, and then save to the desired location. **Files of type** should specify **Sequences (*.seq)**.



Save Sequence Collection

To save a sequence collection:

1. Click the **Sequences** tab.
2. Select the sequences that you would like to save to a **Sequence Collection**.
3. Click **Save As**, then save as to the desired location. **Files of type** should specify **Sequence Collection (*.scl)**.

Open a Sequence Collection

To open a sequence collection:

1. Click the **Sequences** tab.
2. Select the **Sequence Collection** that you would like to open.
3. Click **Open**.
4. In **Files of type**, select **Sequence Collection (*.scl)**, then select the file to open.

Delete Sequence(s)

Deleting a sequence does not delete the sequence file. It only removes it from the current **Sequence Collection** area. To delete one or more sequences:

1. Click the **Sequences** tab.
2. Select the sequences that you would like to delete.
3. Do one of the following:
    - Click **Delete**.
    - Right-click, and then select **Delete**.

    The sequence is deleted from the **Sequence Collection**. Performing a **Delete** does not delete the sequence file from the system. The sequence file remains available for future use..

NOTE: A sequence cannot be removed from the **Sequence Collection** area if it is currently in a timeline. You must first remove the sequence from the timeline.

Copy Sequence(s)

To make a copy of one or more sequences:

1. Click the **Sequences** tab.
2. Select the thumbnail(s) of the sequence(s) that you would like to copy.
3. Right-click, and then select **Copy**.

Reload Sequence(s)

To reload one or more sequences:

1. Click the **Sequences** tab.
2. Select the thumbnail(s) of the sequence(s) that you would like to reload.
3. Right-click, and then select **Reload**.

Rename Sequence

To rename a sequence:

1. Click the **Sequences** tab.
2. Select the thumbnail of the sequence that you would like to rename.
3. Right-click, and then select **Rename**.
4. Enter the new name, and then click **OK**.

Update Thumbnail(s)

To update one or more sequence thumbnails:

1. Click the **Sequences** tab.
2. Select the thumbnail(s) of the sequence that you would like to update.
3. Right-click, and then select **Update Thumbnail**.

Chapter 9: Sequence Creation

Overview

A user can manage, design, and produce weather presentations for broadcast and digital media. Any visual design that can be realized as an image or image sequence (animation) by a third-party design tool, can easily be used as a design element in Chyron Weather.

This chapter provides an overview of how to create a weather presentation. Chyron personnel typically perform the initial implementation of the graphics, based on the designs provided by the design department.

Working with Third-Party Tools

You can use design tools such as Adobe Photoshop, After Effects or 3dsmax and then export/render the designs as images to be used as textures in a sequence. The following formats are recommended:

- **Static design elements (icons, symbol backgrounds, title backgrounds, etc.):** Individual ***.png*** files.
- **Animated design elements (animated icons, symbol backgrounds, title backgrounds etc.):** ***,png*** sequences in a flipbook (***.fbk***) format. A flipbook is a text file that lists the files that comprise the flipbook. A flip book can display texture animation, such as rain falling from a cloud, or a spinning sun.
- **Background loops or bumpers:** DNxHD encoded movie in a ***.mov*** container.

BEST PRACTICE: Ensure that Imported Clip/Image Specifications Are Correct!

When importing clips and images into Chyron Weather, ensure that the specifications, including format, video encoding standards (frame rate, progressive or field/interlaced), resolution, etc., adhere to the specifications provided by Chyron. For example:

- If a clip does not have the correct frame rate, then it will run too quickly or slowly when played.
- If a clip or image has the incorrect resolution, then it may appear stretched, squashed, pixelated, and/or blurry.

Create Still Sequence

Overview

A **Still** is a **Poster Map** for the specified location from a bird's-eye perspective. The map can display labels and icons.

By default, the **Camera** has a fixed position at the selected altitude. The map can either be rendered as an image or as a movie with label and symbol animations.

Poster Maps are usually backgrounds that are used with symbol animations or tables containing data on top of the background, often to display a summary or quick overview of data, e.g., a five-city forecast, or a three-day forecast for a specific city. You can also display non-weather data. The poster maps can be still imagery, video content or ****.png*** image sequences (flipbooks) for a dynamic effect.

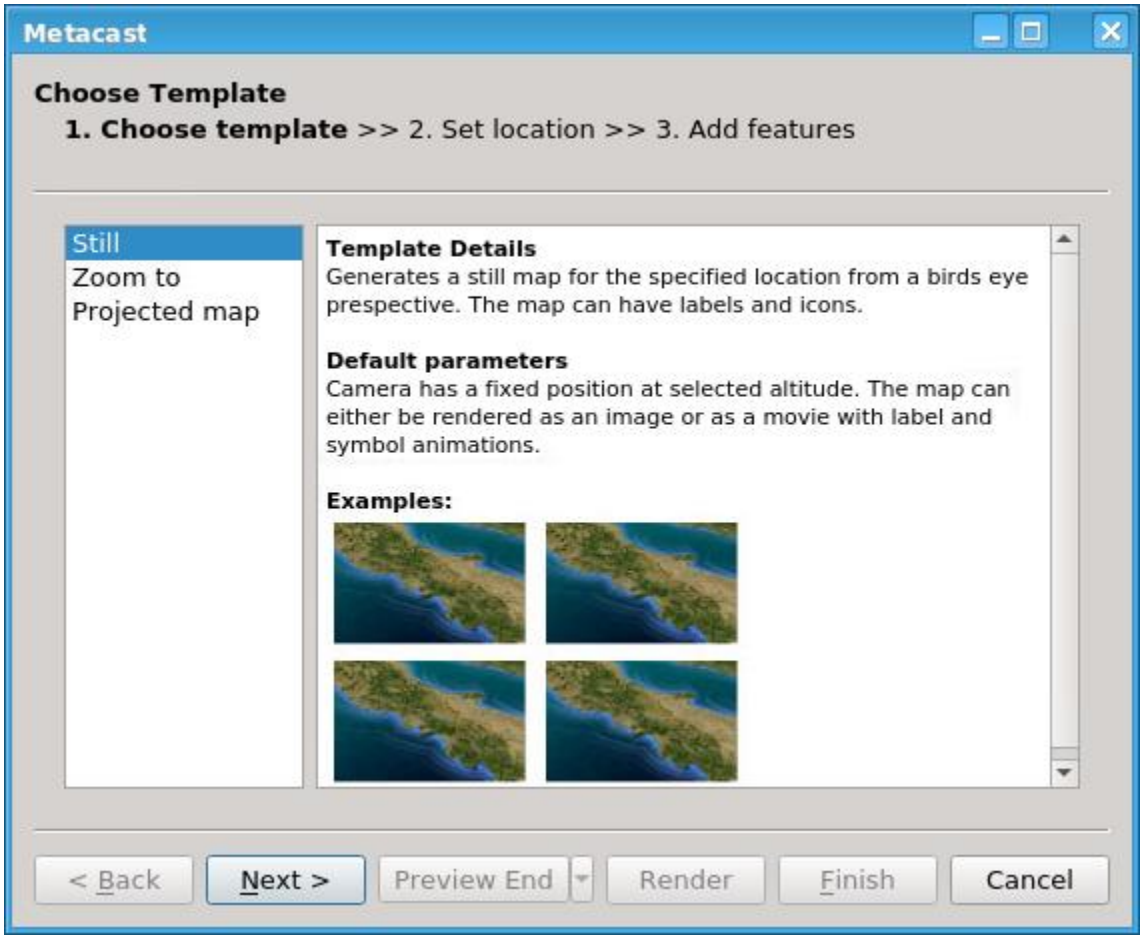
A **Poster Map** is similar to a **Projected Map**, in that its source is a raw image file (video file, ****.png*** image sequence, or a still image). The **Poster Map** view is only straight down, without the ability to adjust perspective. Unlike a **Projected Map**, a **Poster Map** does not contain references to geographic positions, but is treated as a regular image file.

A **Poster Map** can also be a non-map image or video background, such as the following. Note the display of mixed weather and non-weather surfing data in the top left image, and non-weather, ecological data in the lower left image.

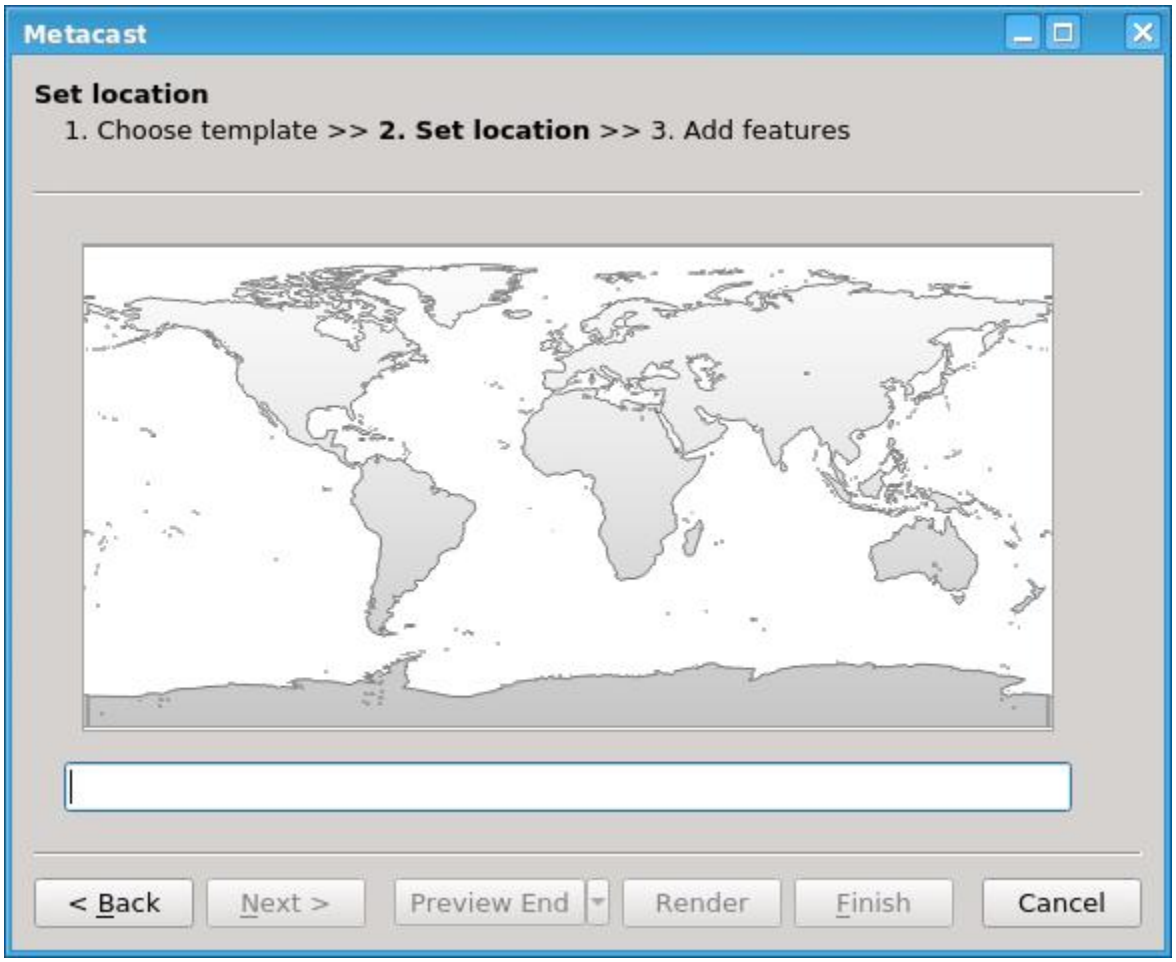
Create a Still Sequence

To create a still map:

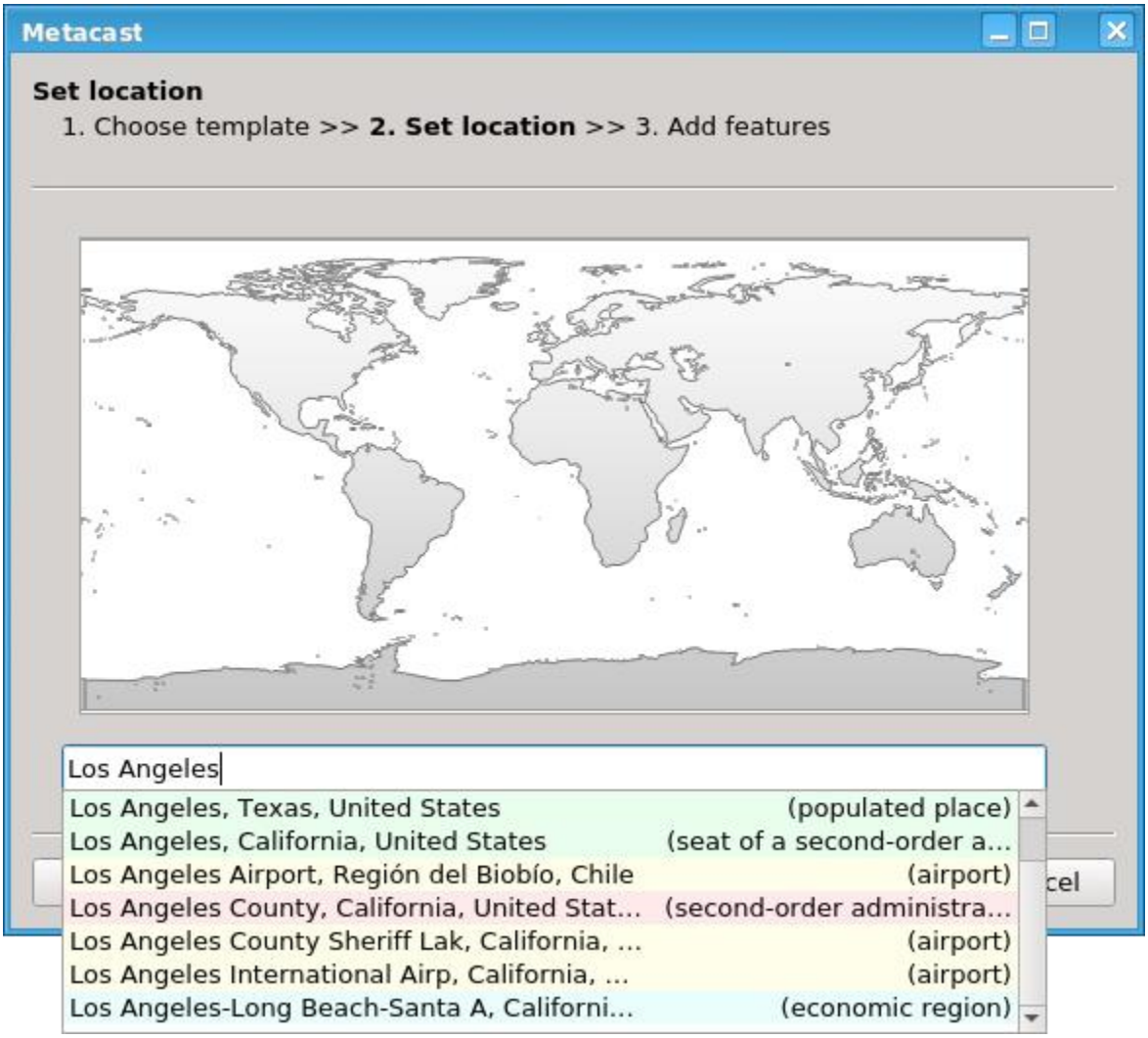
1. In **Sequence Mode**, click the **Sequences** tab.
2. Press **Ctrl+N** or click **New**. The **Choose Template** dialog displays:



3. **Still** is selected by default. Click **Next**. The **Set Location** dialog displays:



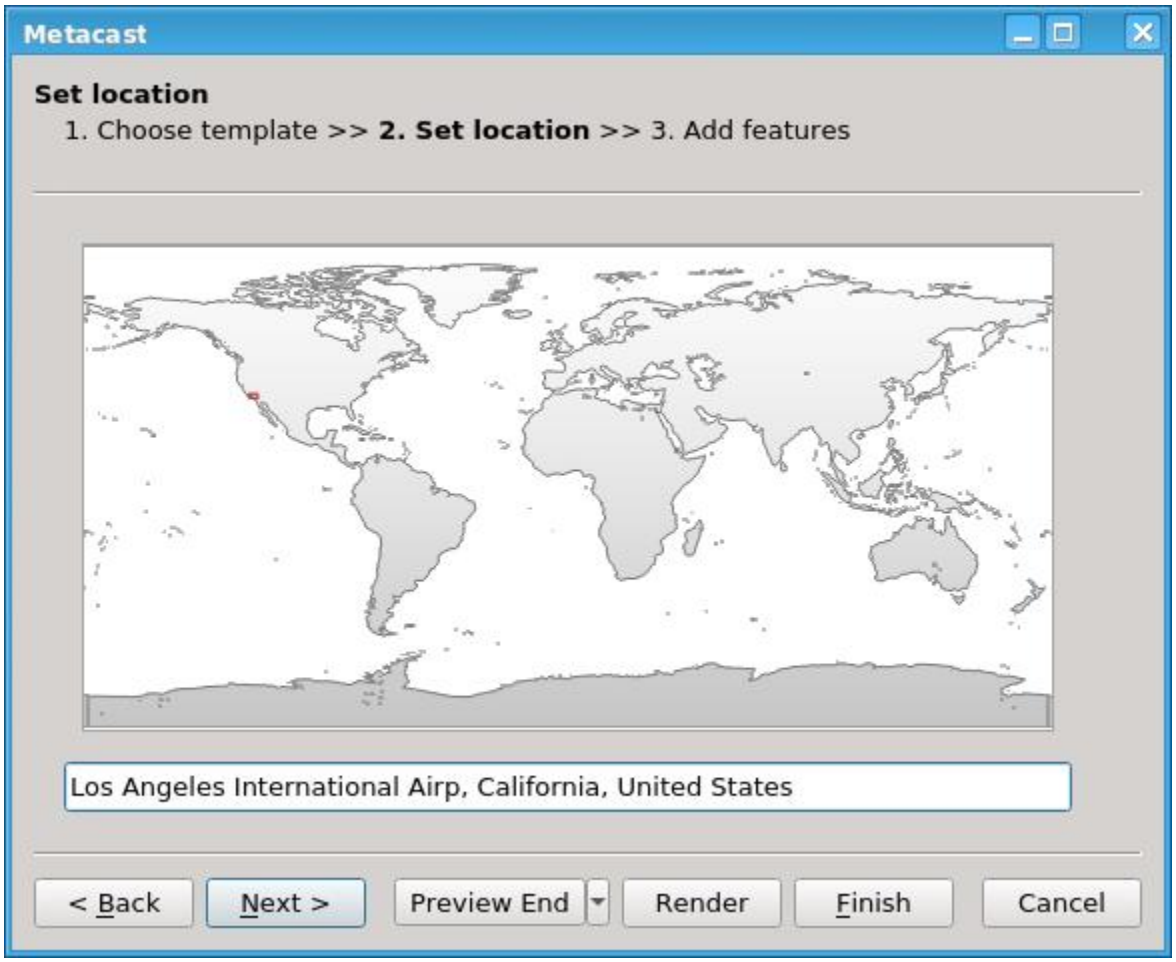
4. Enter a location. For this example, enter **Los Angeles**. As you type, a dropdown appears and displays the available locations.



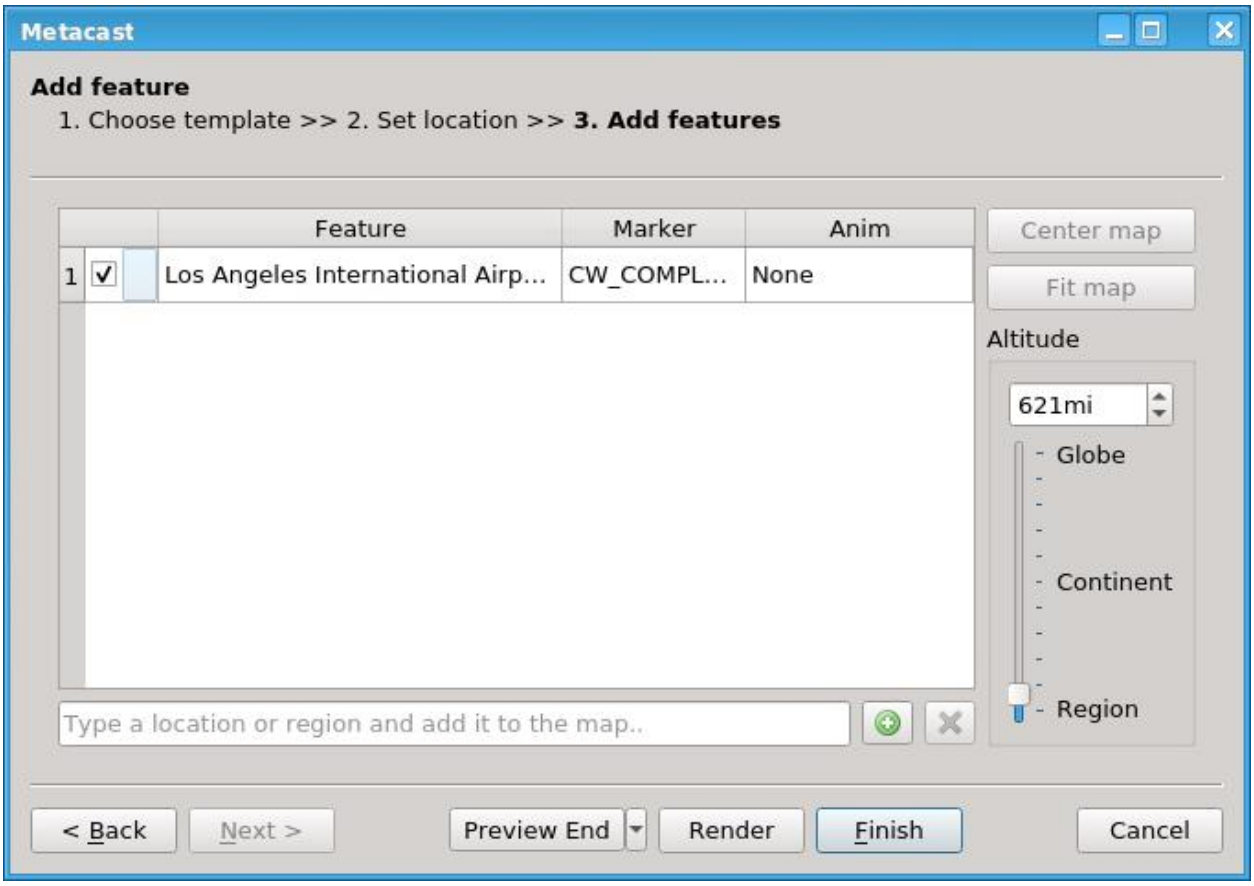
The highlight color specifies the **Location Category**:

- **Populated Place, Seat of Second-order Administrative Division**
- **Second- or third-order Administrative Division**
- **Airport**
- **Economic Region**

5. Select **Los Angeles International Airp. California**. The following displays:



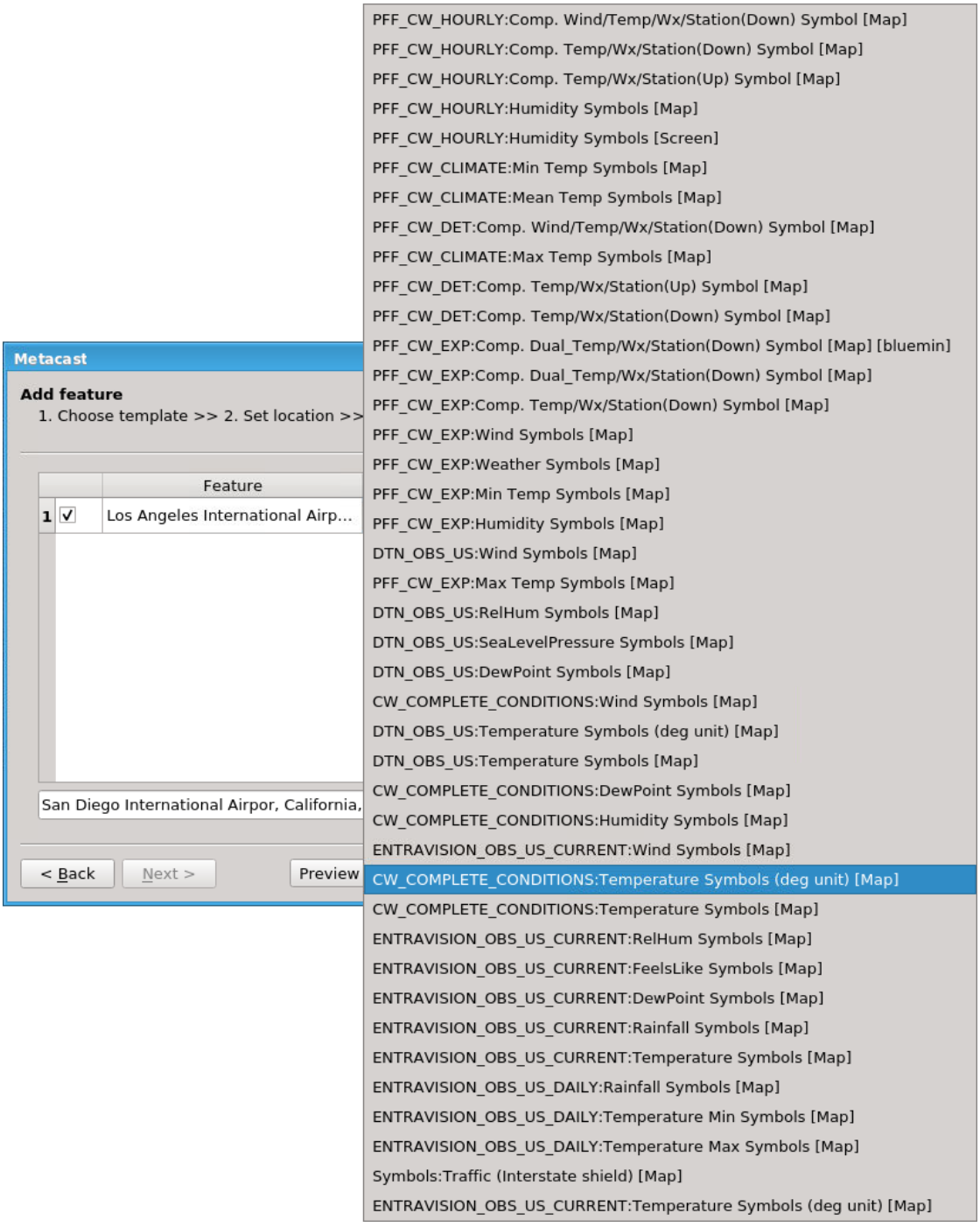
6. Click **Next**. The **Add Feature** dialog displays.



In the **Add Feature** dialog, you can select one or more additional features to display, and can apply an animation to each. You can set the following for each feature:

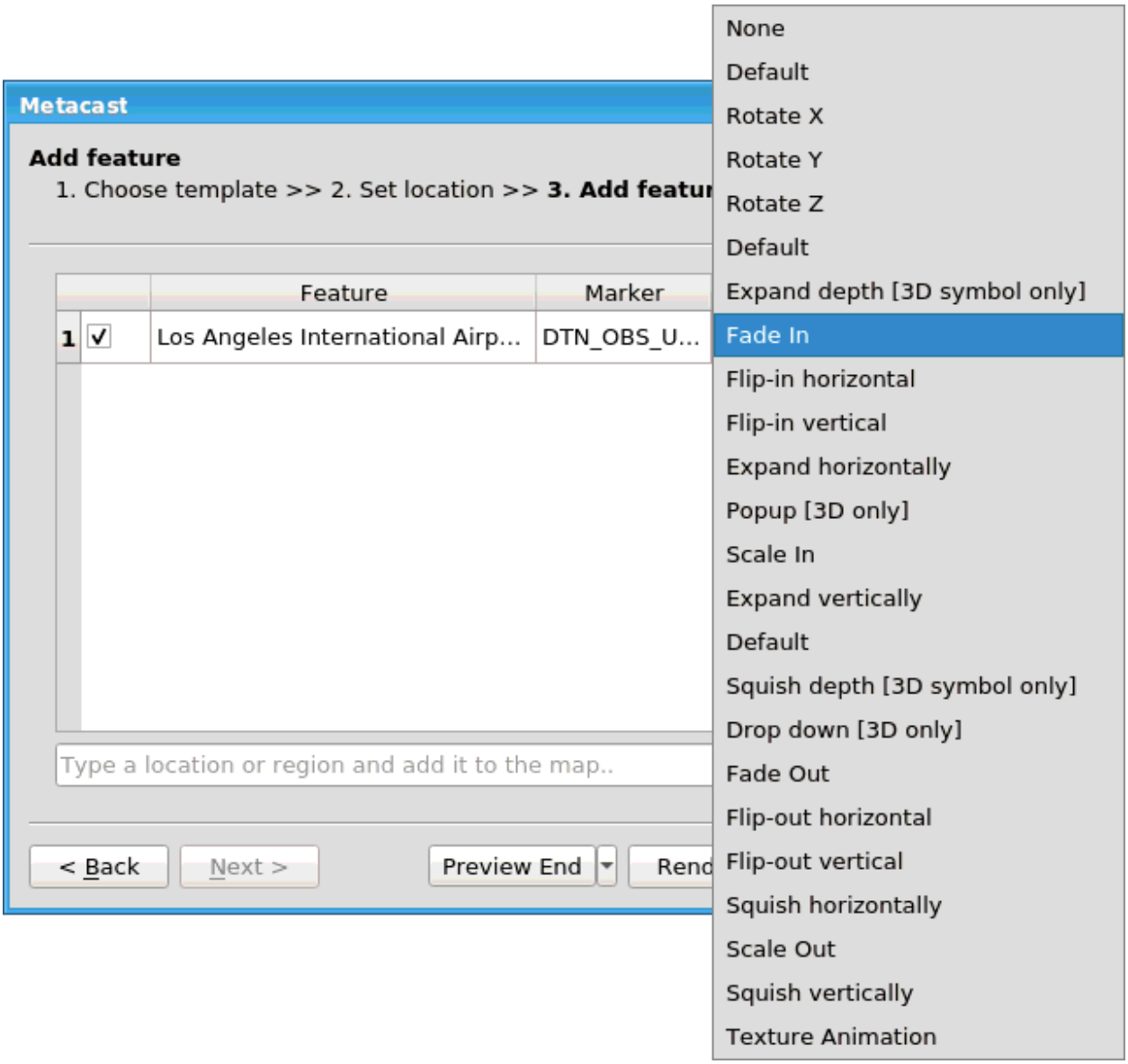
- **Display Enable/Disable:**
  - Check to enable display of a specific feature.
  - Uncheck to disable display of a specific feature.
- **Feature:** Name of the feature location.

- **Marker:** Source of the feature data point. For this exercise:
  a. Double-click the **Marker** field to display the dropdown arrow.
  b. Click the field again. The dropdown displays.
  c. Select **CW_COMPLETE_CONDITIONS:Temperature Symbols (deg unit) [Map]**.



- **Anim:** Animation to apply to the **Marker**. For this exercise:

    a. Double-click the **Anim** field to display the dropdown arrow.
    b. Click the field again. The dropdown displays.
    c. Select **Fade In**.



7. **Add Feature:** To add a feature:
    a. In the **Type a location or region and add it to the map.** field, enter a location, and select the location in the same manner as you selected the first location. For this exercise:
    b. Enter **San Diego**, and select **San Diego International Airport**. Click **Add Feature**  . The location is added as a **Feature**.
    c. Set **Marker** and **Anim**.
8. If desired, add one or more additional features, as described in step 7. If you need to delete a feature:
    a. Select the feature to be deleted.
    b. Click  .
9. Select either **Center Map** or **Fit** map.
    - **Center Map:** Centers map in the display.
    - **Fit map:** Fits map to the display.
10. If desired, drag the slider to adjust **Altitude**.
11. Click **Preview End** to view the last frame of the sequence. **Preview Start** is not available to stills.
12. Click **Finish**. The sequence displays in the **Sequence Preview**.
13. Play the sequence to test.

Create Zoom to Sequence

Overview

A **Zoom to** sequence provides the ability to create an animation using a 3D map. A 3D map differs from **Projected** and **Poster Maps**, in that you can adjust the perspective of the view. In addition to XY or Latitude/Longitude coordinates, you can adjust elevation, i.e., the Z axis coordinates.

The following images show examples of 3D maps. The top right displays temperature number symbols and weather image symbols are the same size, but due to perspective, the symbols in the back appear to be smaller than the symbols in front.

3D maps are also conceptually different from **Projected** and **Poster Maps**, as the source imagery is tied to specific levels of resolution, so that more details are revealed as the view approaches the ground. Creating a 3D map is therefore more involved, and takes time to prepare before it is ready to be used. The top left image above reveals less detail than the bottom left image, which is closer to the ground.

A 3D map provides a camera from which you can control the view and create a dynamic **Flight Path**, with changing views and altitudes.

A 3D map may contain a **Digital Elevation Model (DEM)** that displays the topography of the terrain, providing a realistic scene with a 3D look. The elevation model is tiled much the same way as the image data. The accuracy of the topography depends on the resolution of the elevation model; the lower the altitude, the higher the resolution.

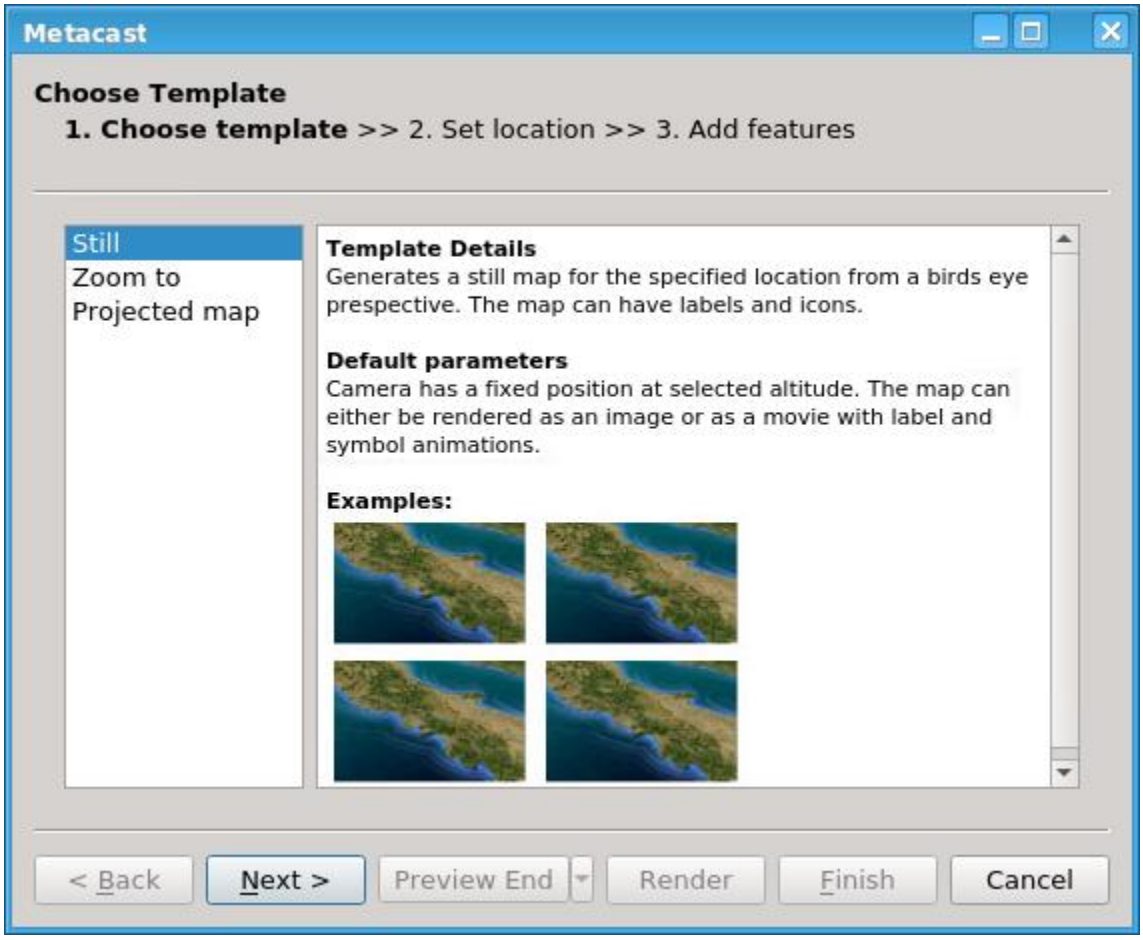
Since adjusting color and feel is more cumbersome to perform in external graphics programs, than for projected maps, you can modify colorization and light settings directly in the user interface.

The symbols are placed in the scene in the same manner for projected maps and 3D maps; but, because of the addition of perspective, as viewed from the camera, you must also take into account the altitude at which to place the symbol. This can take some practice, but is quite easy once you become familiar with how it works.

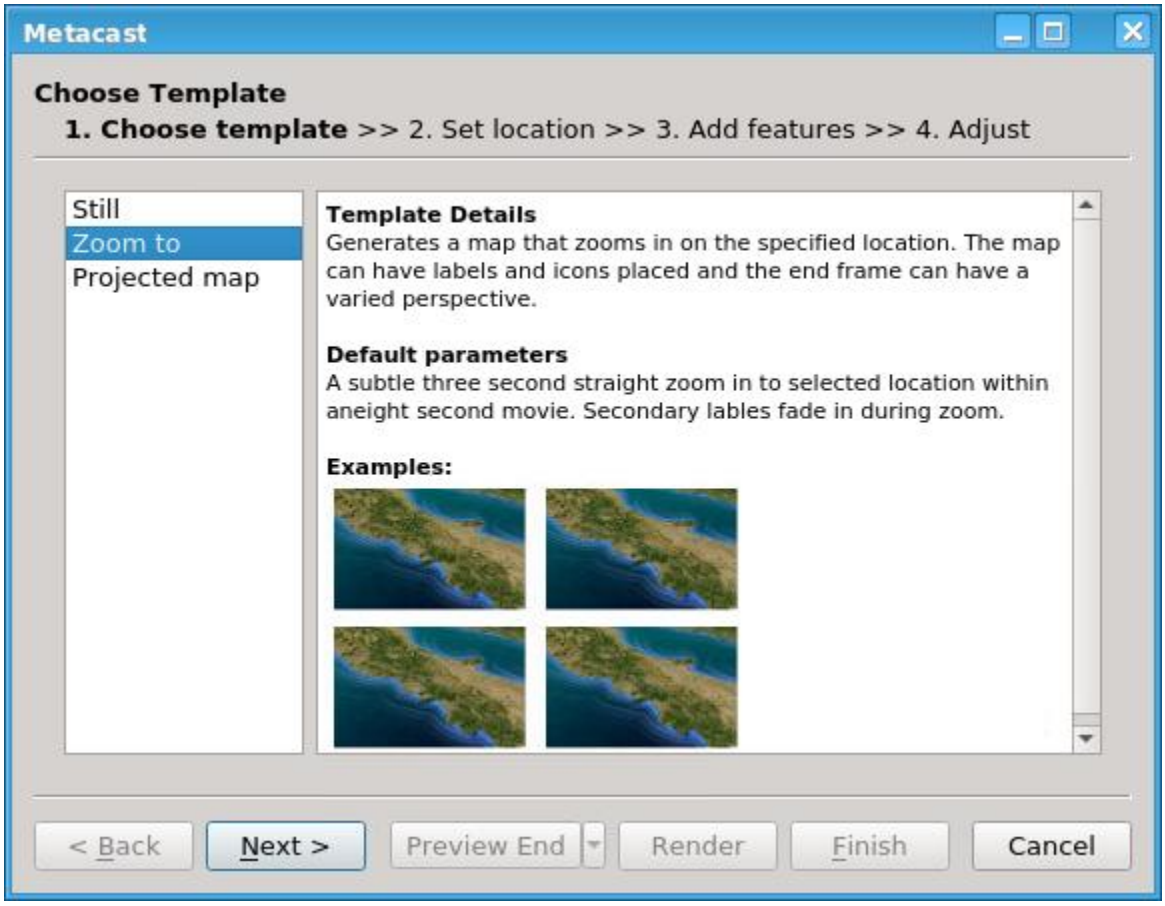
Create Zoom to Sequence

To create a **Zoom to** map:

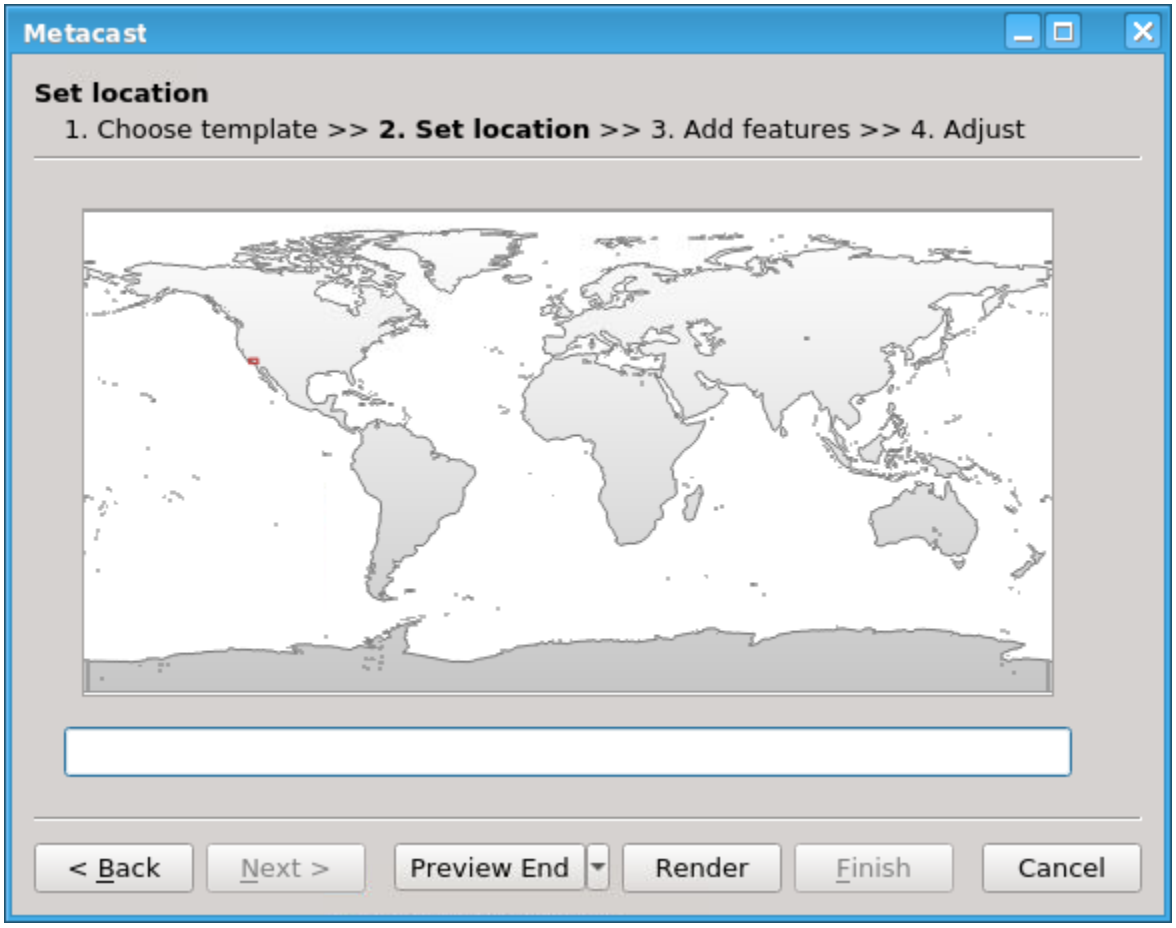
1. In **Sequence Mode**, click the **Sequences** tab.
2. Press **Ctrl+N** or click **New**. The **Choose Template** dialog displays:



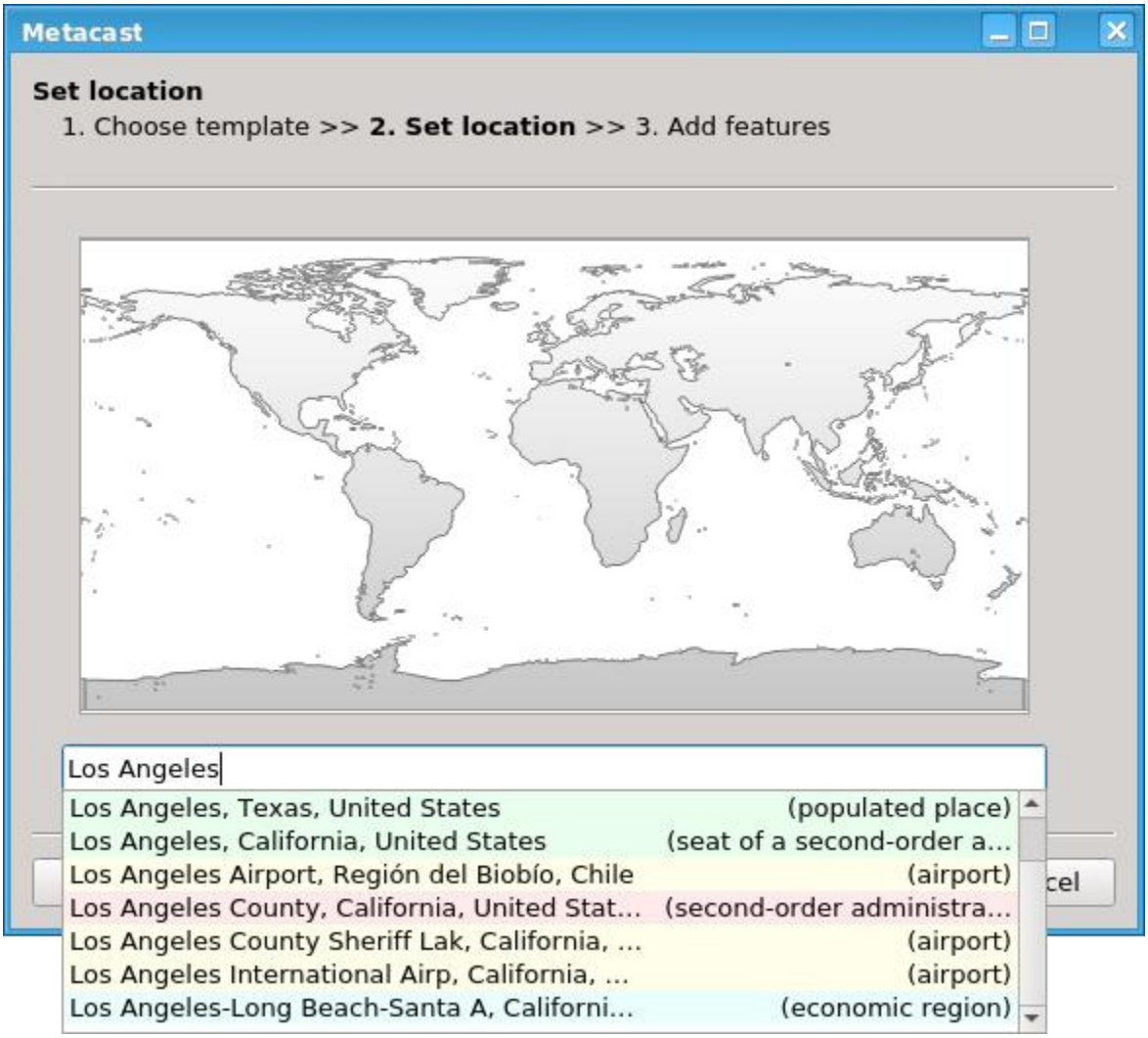
3. Click **Zoom to**, and then click **Next**.



The **Set Location** dialog displays:



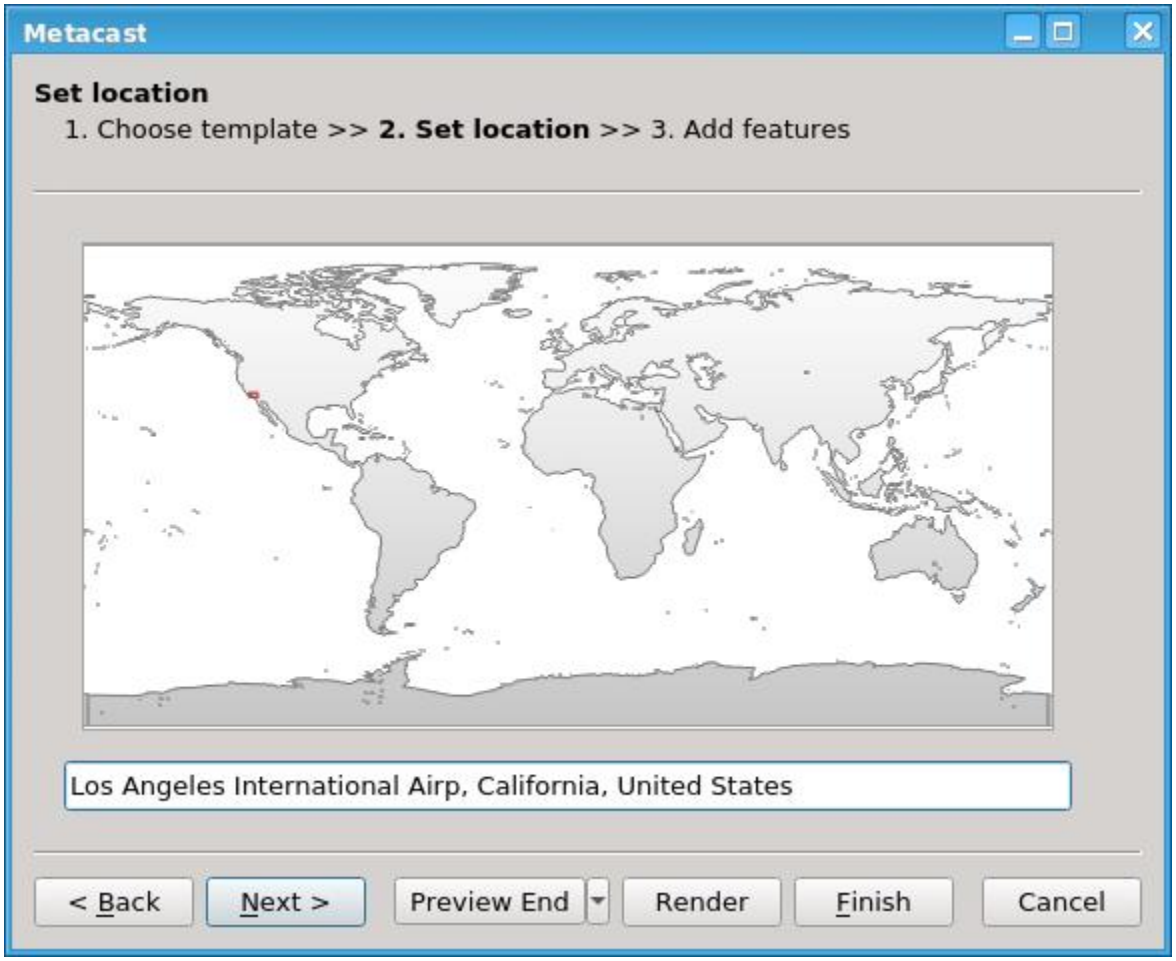
4. Enter a location. For this example, enter **Los Angeles**. As you type, a dropdown appears and displays the available locations.



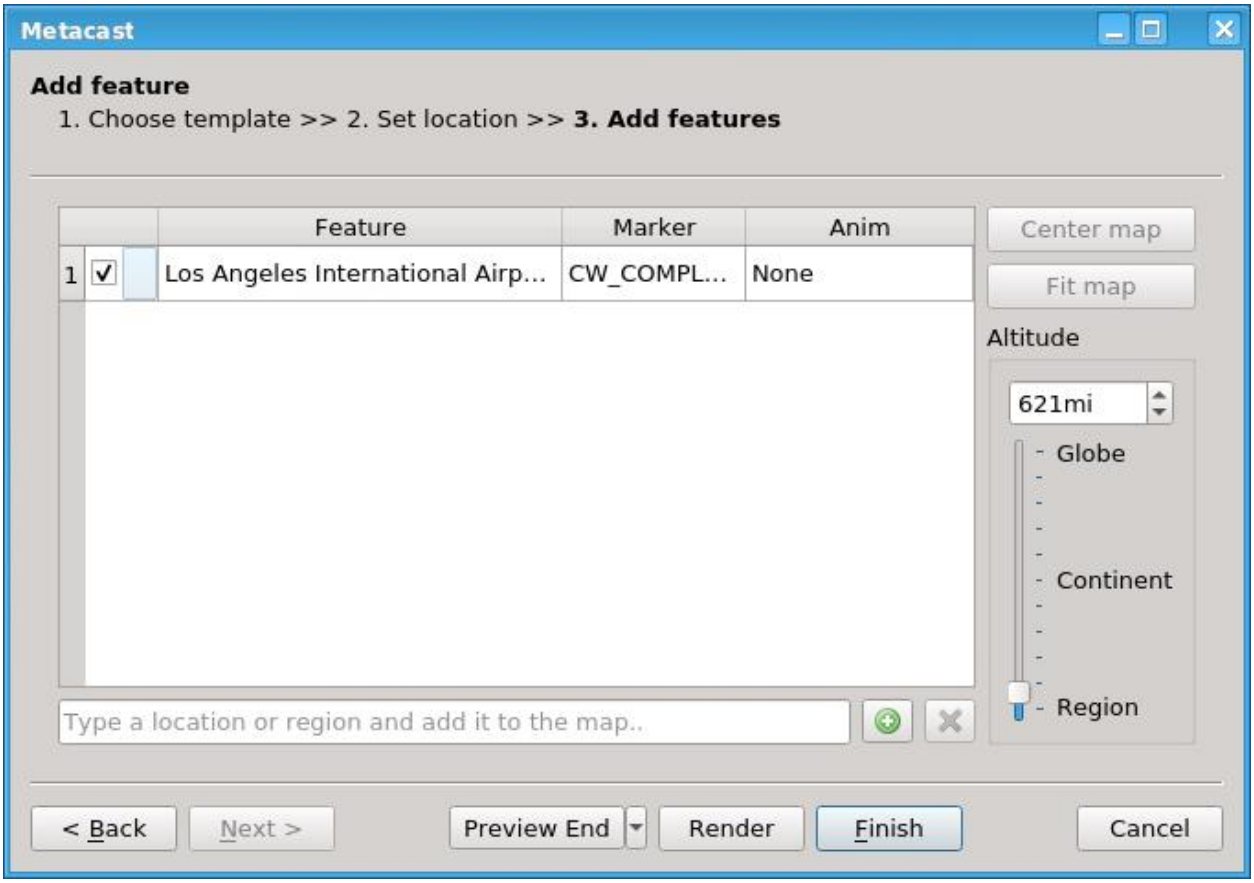
The highlight color specifies the **Location Category**:

- **Populated Place, Seat of Second-order Administrative Division**
- **Second- or third-order Administrative Division**
- **Airport**
- **Economic Region**

5. Select **Los Angeles International Airp. California**. The following displays:



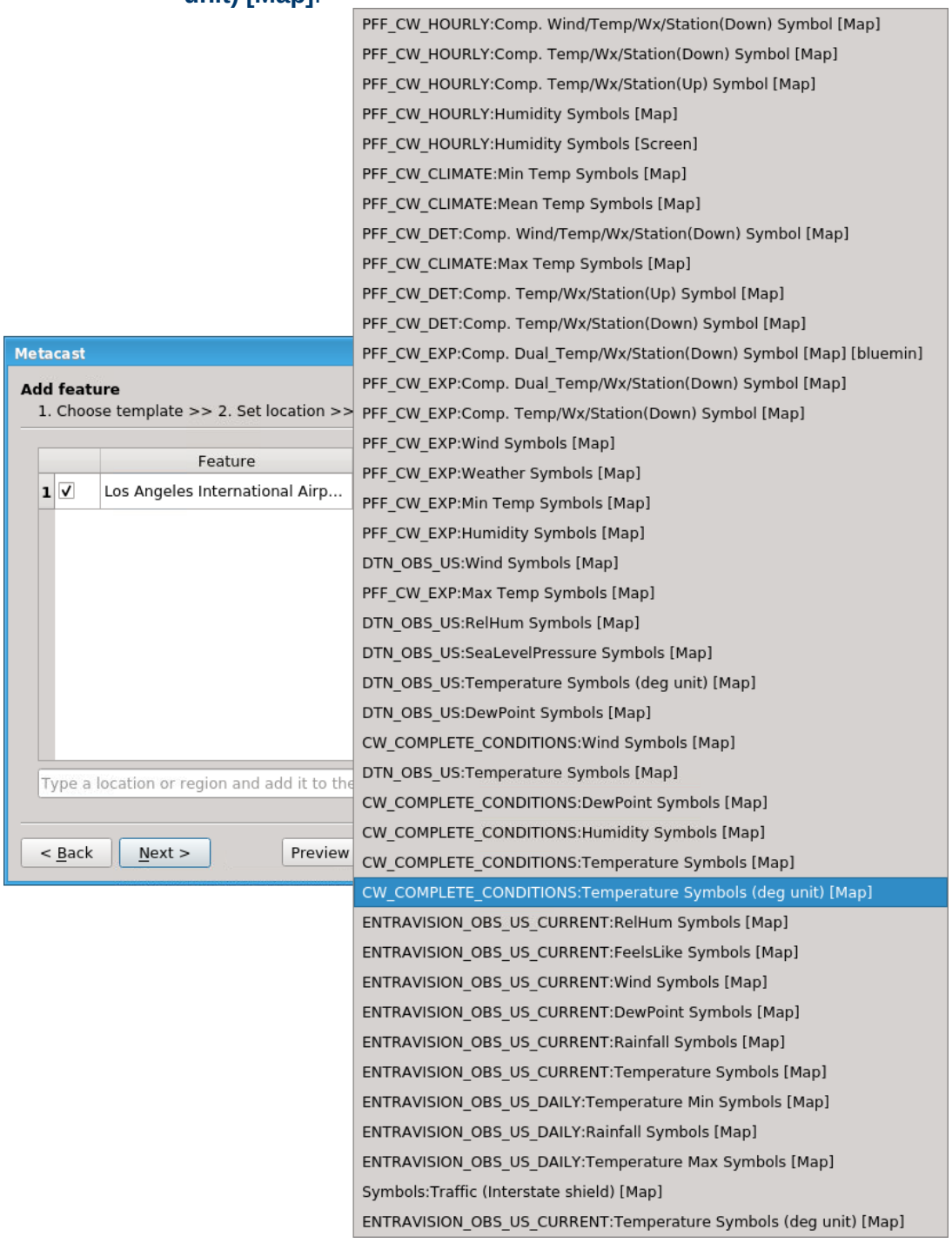
6. Click **Next**. The **Add Feature** dialog displays.



In the **Add Feature** dialog, you can select one or more additional features to display, and can apply an animation to each. You can set the following for each feature:

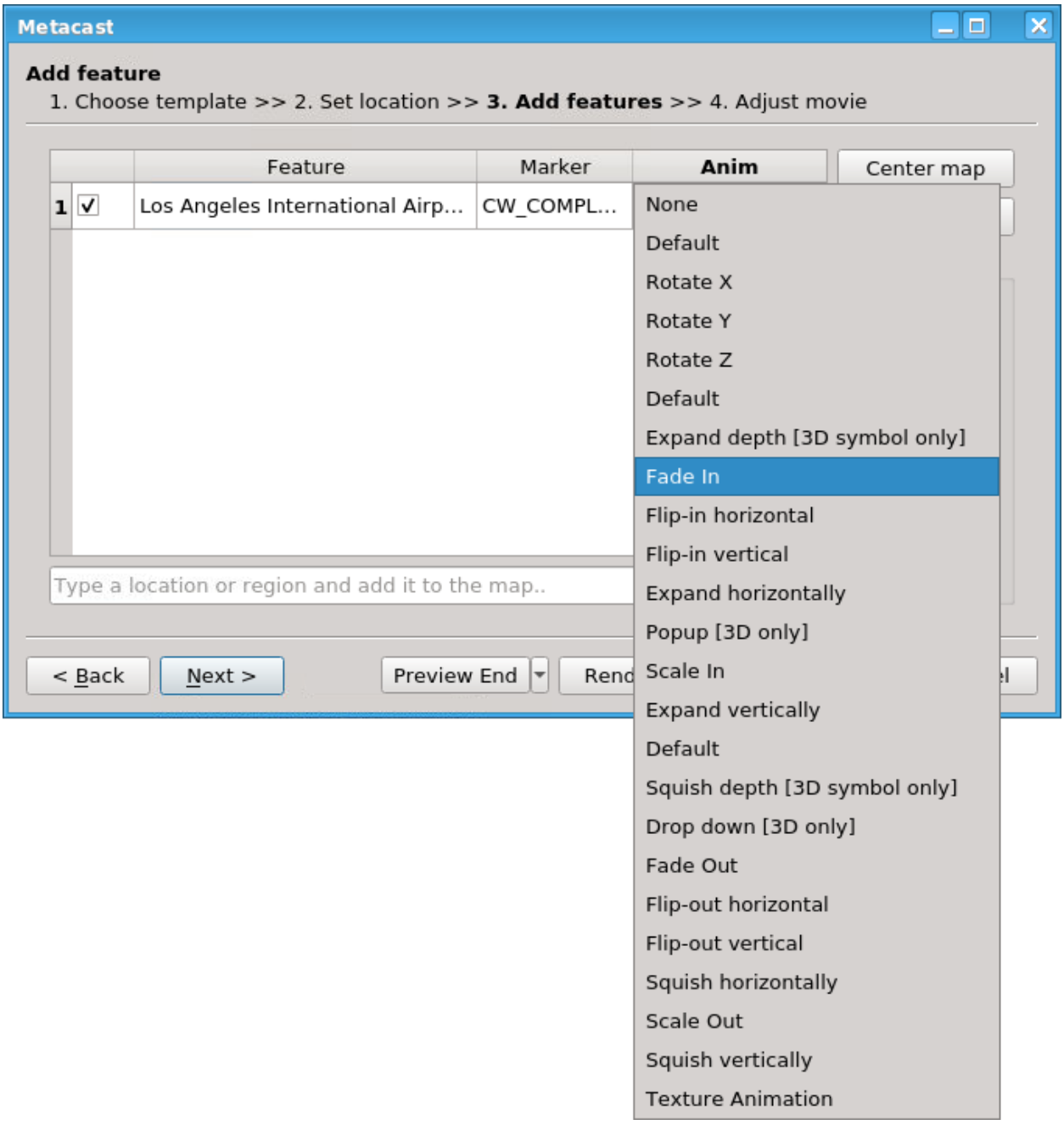
- **Display Enable/Disable:**
  - Check to enable display of a specific feature.
  - Uncheck to disable display of a specific feature.
- **Feature:** Name of the feature location.

- **Marker:** Source of the feature data point. For this exercise:
  a. Double-click the **Marker** field to display the dropdown arrow.
  b. Click the field again. The dropdown displays.
  c. Select **CW_COMPLETE_CONDITIONS:Temperature Symbols (deg unit) [Map]**.



- **Anim:** Animation to apply to the **Marker**. For this exercise:

  a. Double-click the **Anim** field to display the dropdown arrow.
  b. Click the field again. The dropdown displays.
  c. Select **Fade In**.



- **Add Feature:** To add a feature:

    a. In the **Type a location or region and add it to the map.** field, enter a location, and select the location in the same manner as you selected the first location. For this exercise:
    b. Enter **San Diego**, and select **San Diego International Airport**.
    Click **Add Feature**  . The location is added as a **Feature**.
    c. Set **Marker** and **Anim** earlier in this step.

7. If desired, add one or more additional features, as described in **Add Feature** in the previous step. If you need to delete a feature:

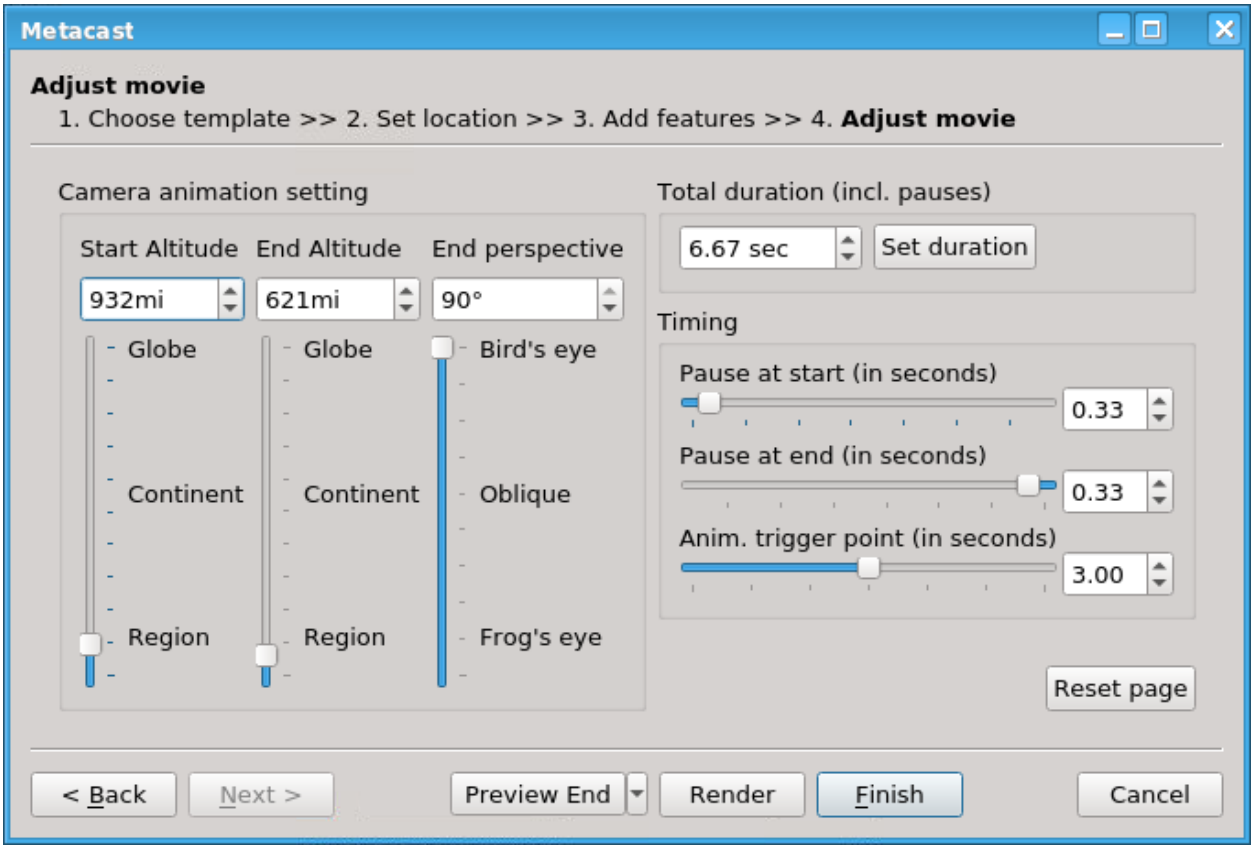
    a. Select the feature to be deleted.
    b. Click  .

8. Select either **Center Map** or **Fit** map.

    - **Center Map:** Centers map in the display.
    - **Fit map:** Fits map to the display.

9. If desired, drag the slider to adjust **Altitude**. This value becomes the **End Altitude** of the sequence.

10. Click **Next**. The **Adjust movie** dialog displays:



Use the spin boxes or sliders to set the following parameters:

Camera animation setting:

- **Start Altitude**: The altitude displayed at the beginning of the zoom. **Range: 0 - 10000 miles**.
- **End Altitude:** The altitude displayed at the end of the zoom. **Range: 0 - 10000 miles**.
- **End Perspective:** The perspective view at the end of the zoom.

Total duration (incl. pauses): Enter the total sequence duration, including the pauses, and then click **Set duration**.

Timing:

- **Pause at start (in seconds):** The length of time to pause before starting the zoom.
- **Pause at end (in seconds):** The length of time to pause after the zoom completes.
- **Anim. trigger point (in seconds)**

Reset page: Click to reset page to default settings.

11. Click **Preview End** to view the last frame of the sequence.
12. Click **Finish**. The sequence displays in the **Sequence Preview**.
13. Play the sequence to test.

Create Projected Map Sequence

Overview

Projected maps are image files of any readable format, with defined geographic coordinates such as a ***.tif*** or ***.tiff*** file, in conjunction with a World file (***.tfw***), or a **GeoTiff** file. Symbols placed on a map pull data values such as forecast temperature or symbol index from the specific location on the map.

If any 2D maps are defined in your Weather setup, then they can be found in the typical directory structure under ***gfx/maps***. As the maps are regular image files, there are no restrictions on using third-party software to edit the maps.

To create new 2D maps from elevation data, we suggest using QGis, GeographicImager for Adobe Photoshop, or any other GIS software with World file or GeoTiff export functionality. It is also possible to create a new 2D map by using any graphics software to fill in an outline provided from either Metacast or another true map data visualization system. It is in that case extremely important to not to scale, rotate, crop in the map graphics, but to use the map exactly as is. It is also equally crucial to take notes of the viewing parameters when saving the image.

In Photoshop, 2D maps can also be exported with alpha as 32-bit ***.tga*** files with the alpha channel as the mask, where white is land, and black is ocean.

Projected maps (a.k.a. 2D maps) are traditional 2D maps that are quite commonly used in many weather bulletins. Following is a typical example:

You can view the map only straight down, with no ability to change the perspective. The source of any projected map is a standard image file, which is geographically referenced by “projecting the map,” so that one pixel in the image corresponds to a real geographic position. Since Earth is a sphere, and a projected map is flat, a map projection is a flattened representation of the specified area.

When placing a symbol (e.g., temperature or a weather icon) onto the map, it references a position in the real world in **Latitude/Longitude** coordinates. When linked to data, a symbol automatically updates its data based on the **Latitude/Longitude** coordinates.

The resolution of the map specifies the level of detail and accuracy of the geographic reference pixel. The higher resolution, the more accurate the map. The trade-off is that the increased image size requires additional memory resources from the overall system.

Since the original source of the 2D map is an image file, its colors can easily be changed in common graphics programs such as Adobe Photoshop and GIMP. Saving the modified image to the same filename in the designated Chyron Weather graphics (maps) directory updates the map to the new look.

In the Chyron Weather interface, you can change the view of the map by zooming into/out of the map, panning the map, or setting a specific set of values for the map position. You can also change map position from one view to the next, by creating a keyframe animation. Keyframe animation is covered in chapters pertaining to specific layer types.

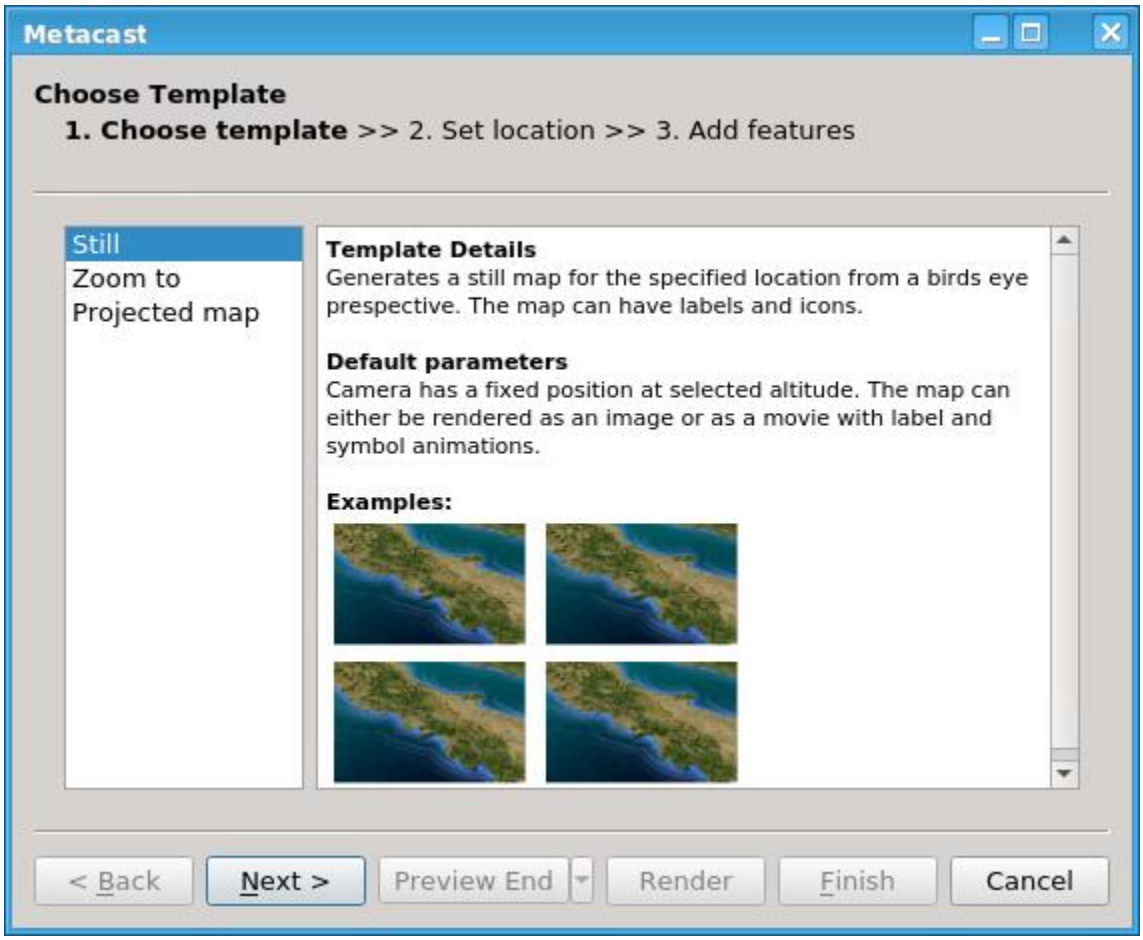
Create Projected Map Sequence

When creating a **Projected Map**, a typical selection of images to use as a background is as follows, although the templates on your system may be different.

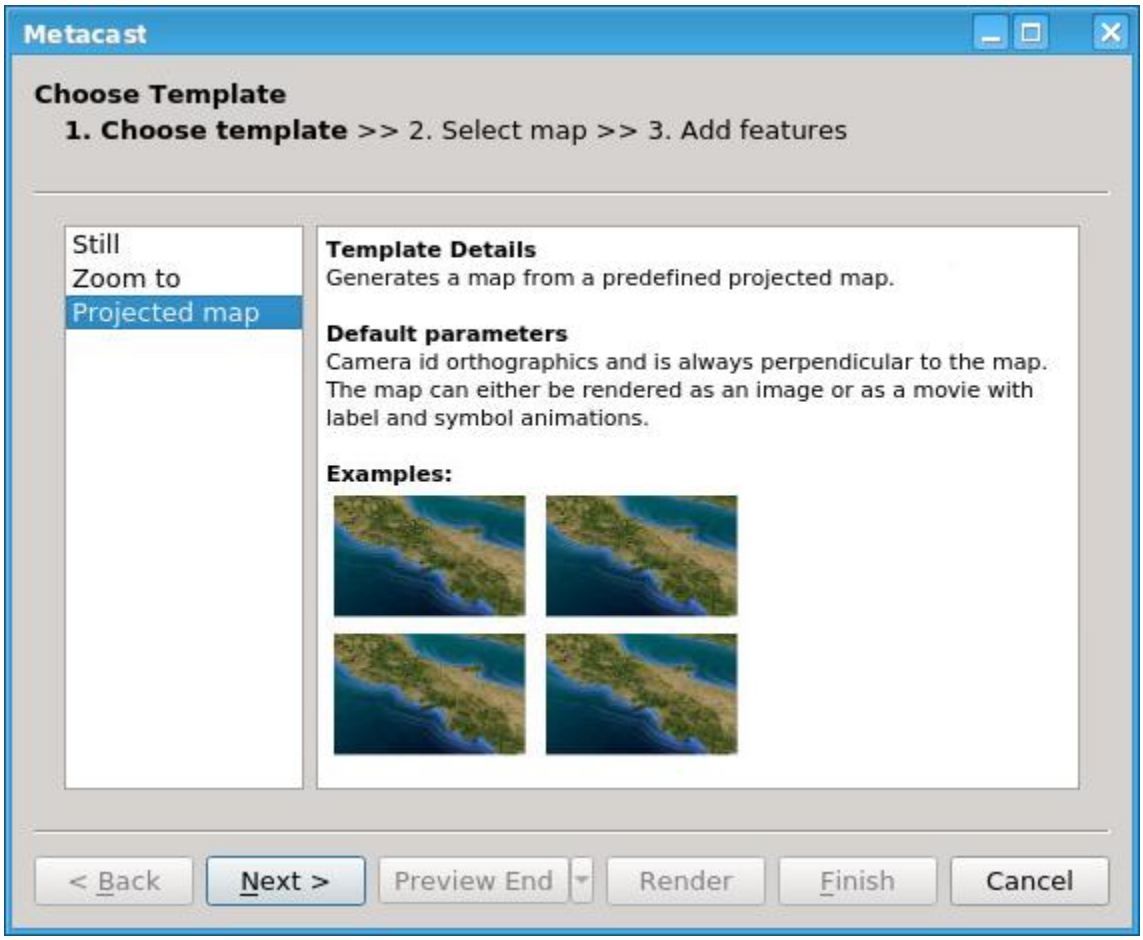
- **Posters:Black background for overlay videos/images:** Provides black background, i.e., no map, on which to overlay videos, images, and text.
- **USA (polar stereographic):** Polar stereographic map of the continental USA.
- **World:** Map of the world.
- **World (2km):** Map of the world.

To create a **Projected Map**:

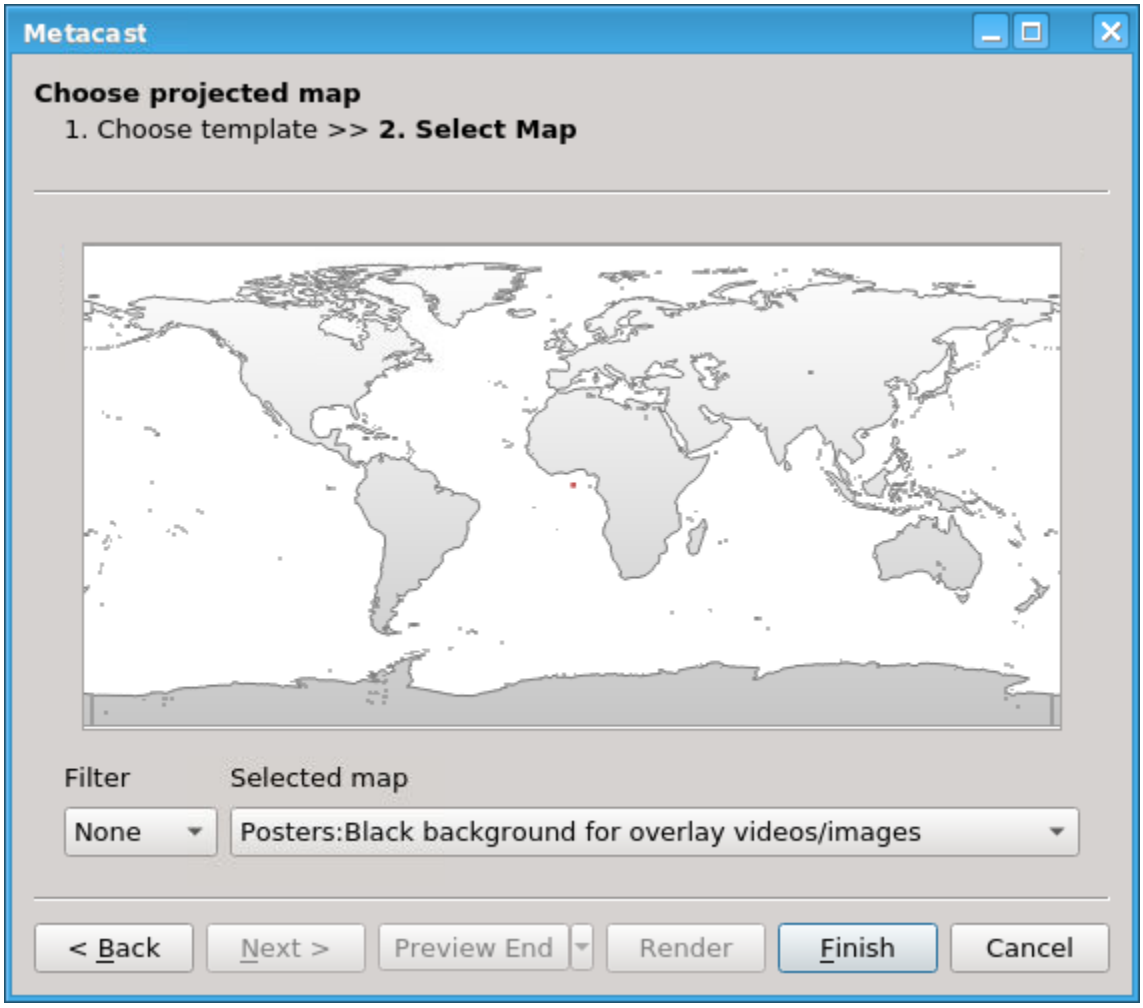
1. In **Sequence Mode**, click the **Sequences** tab.
2. Press **Ctrl+N** or click **New**. The **Choose Template** dialog displays:



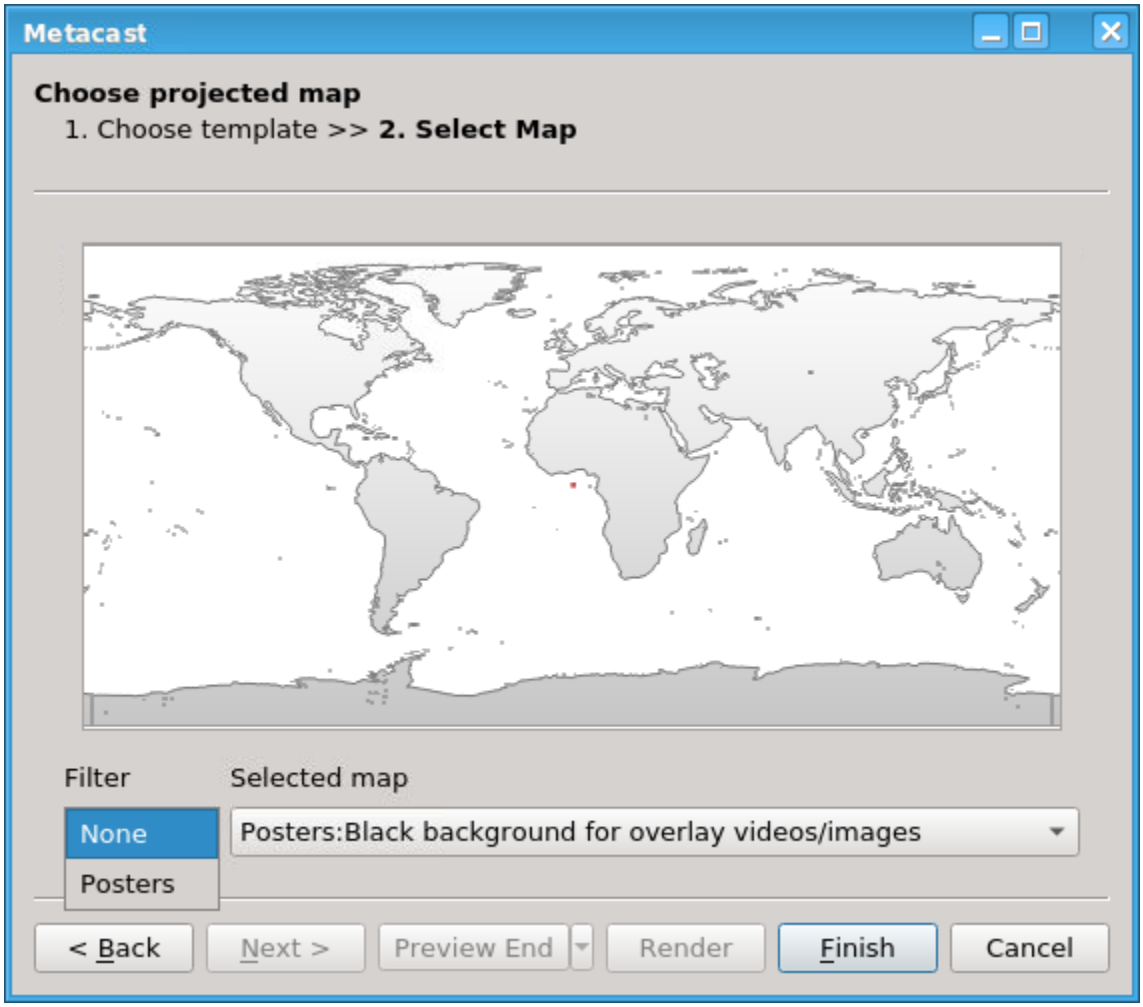
3. Click **Projected map**, and then click **Next**.



The **Choose Projected Map** dialog displays:

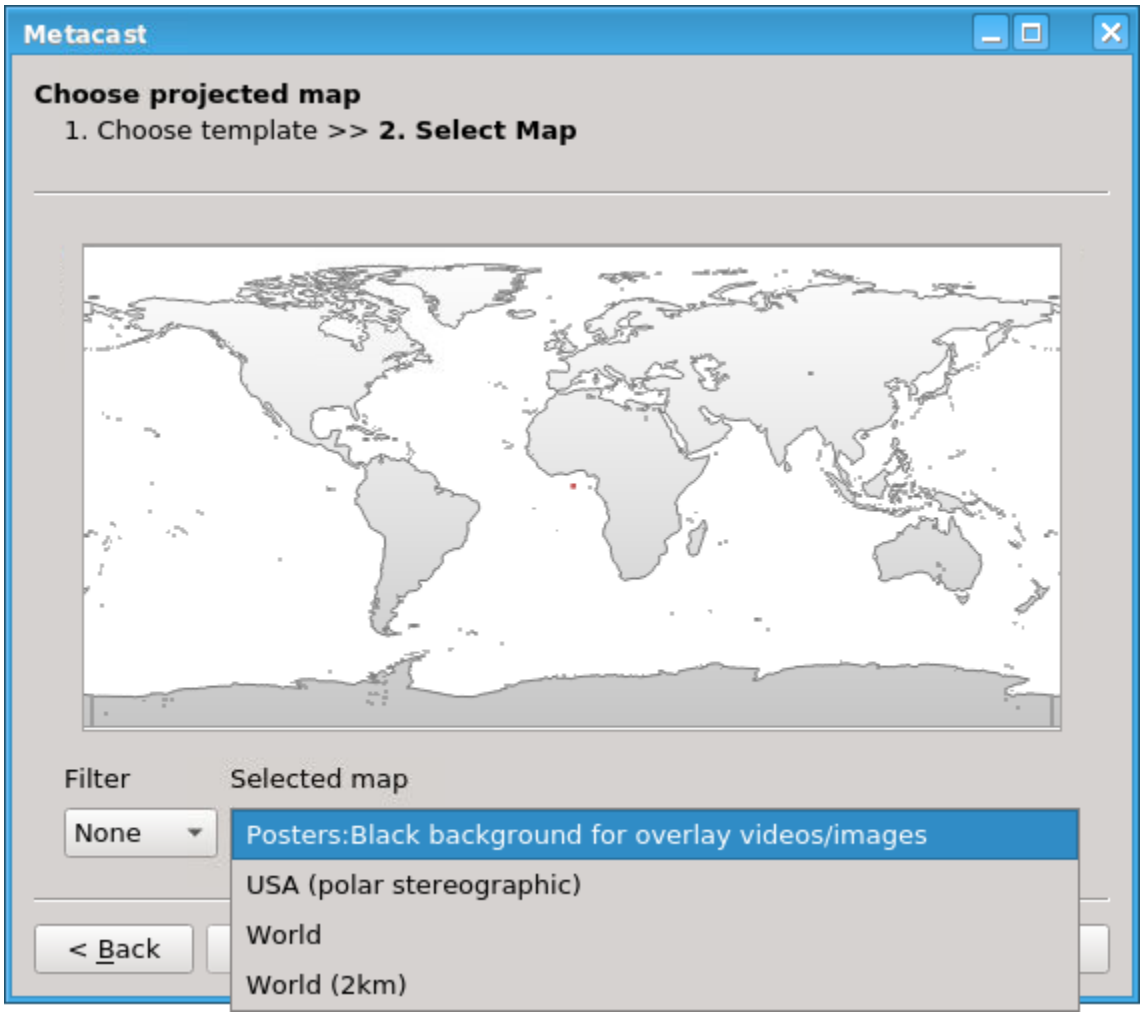


4. The **Filter** dropdown displays all available templates or only **Posters** in the **Selected map** dropdown:
    - **None:** Displays all available templates in the **Selected map** dropdown.
    - **Posters:** Displays all only **Poster** templates in the **Selected map** dropdown.



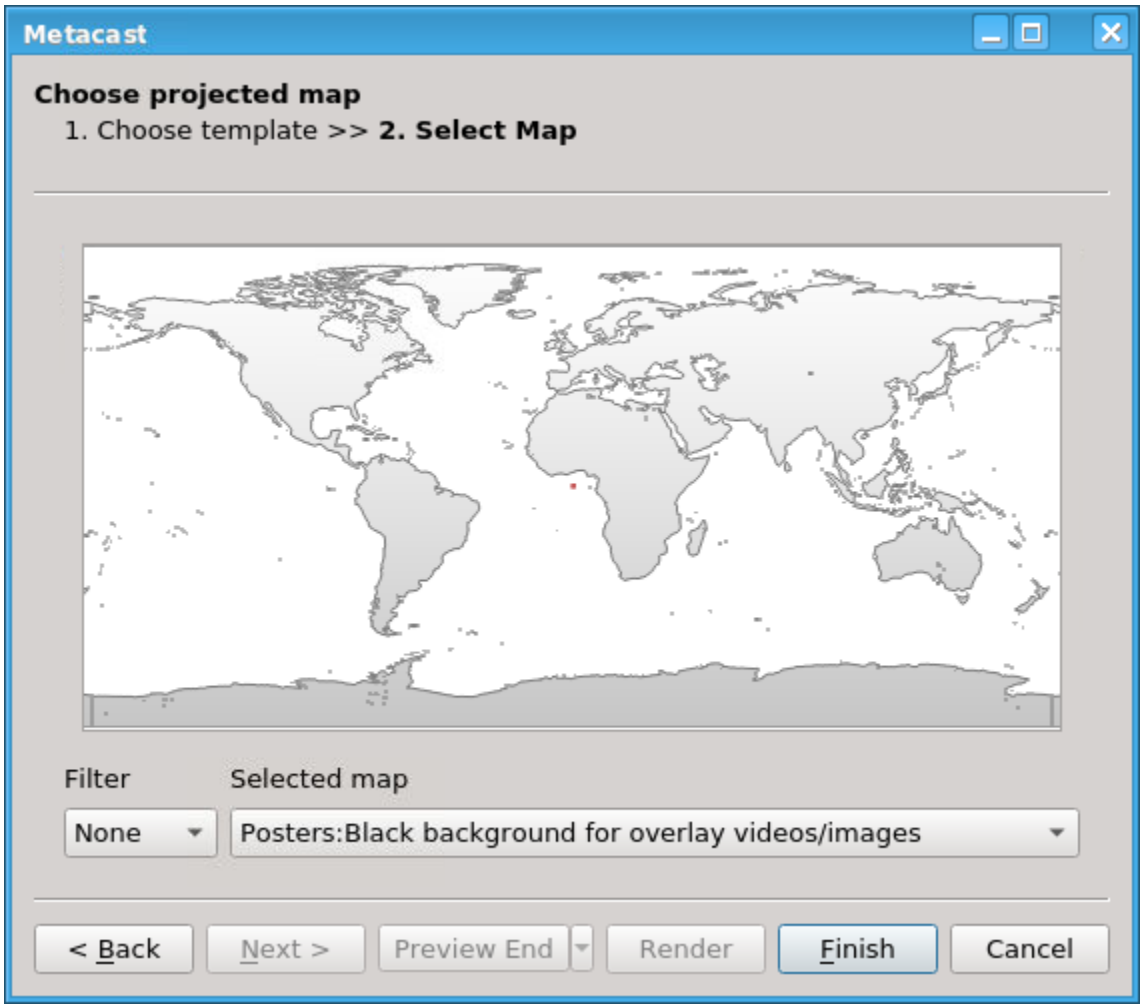
Select the desired **Filter**.

5. The **Selected map** dropdown displays all available templates, based on the **Filter** setting: The following shows no **Filter** applied, i.e., all templates are displayed. A typical selection of images to use as a background is as follows, although the templates on your system may be different.



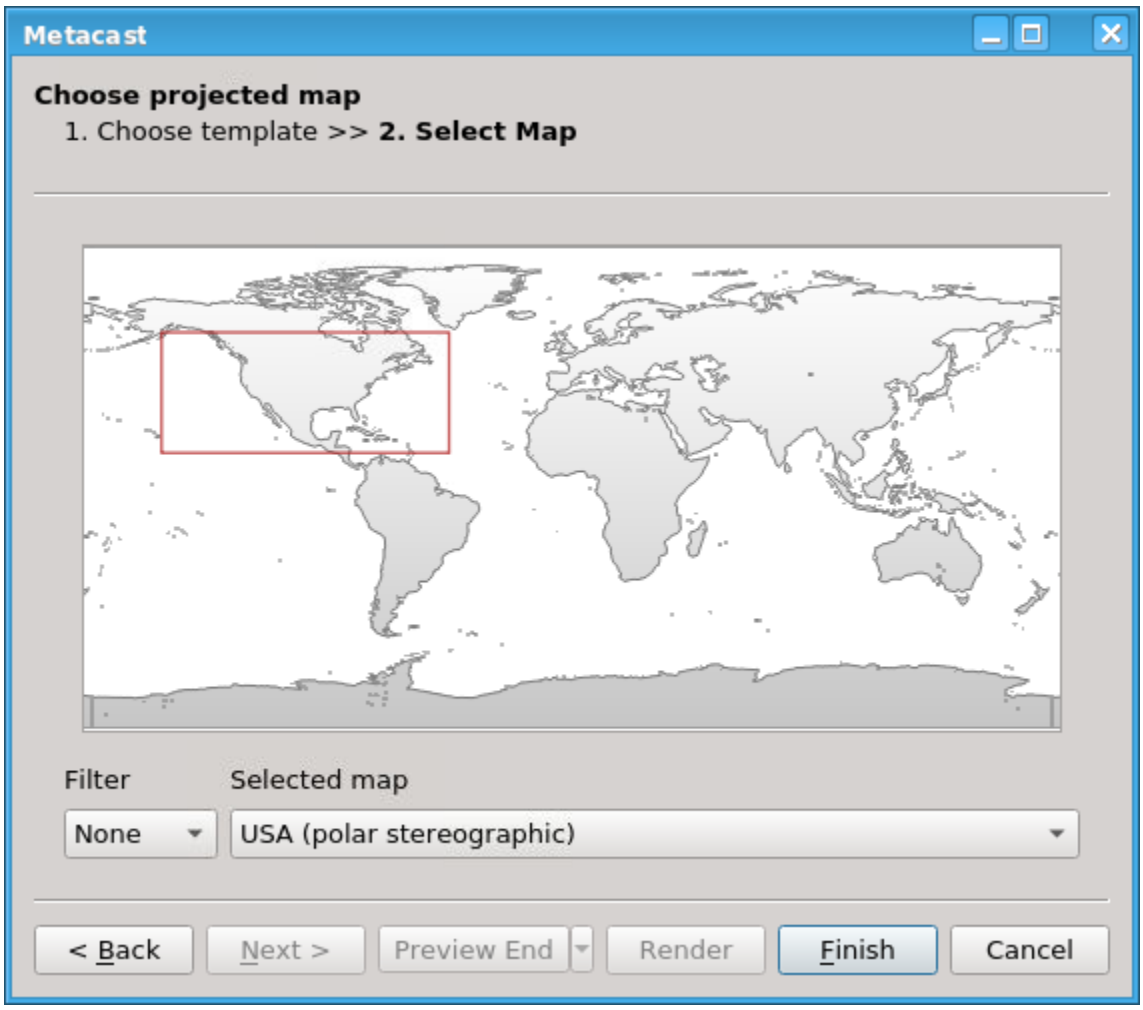
Select the desired map:

- **Posters:Black background for overlay videos/images:** Provides black background, i.e., no map, on which to overlay videos, images, and text. If this template is selected, then the following displays:



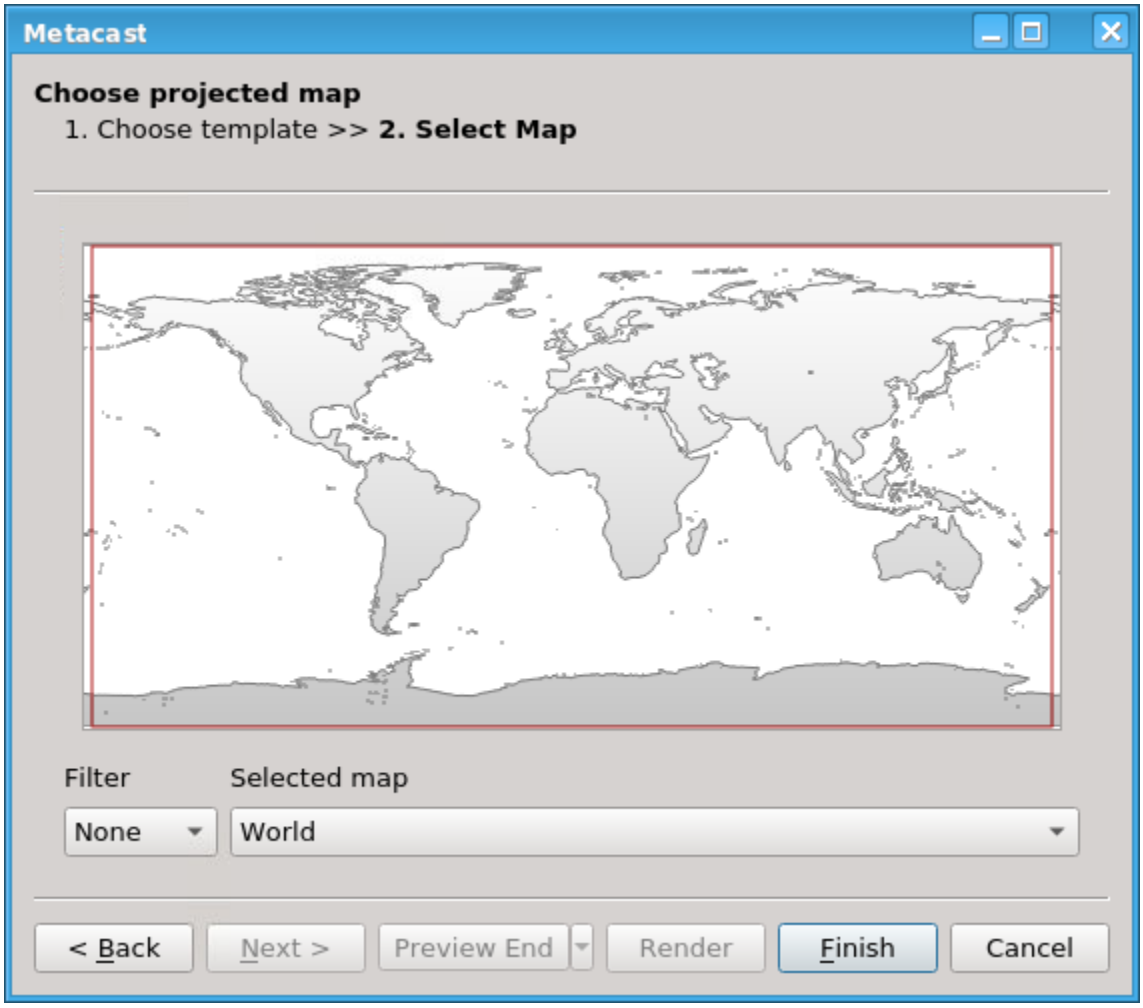
Click **Finish**. The following **Sequence Preview** displays:

- **USA (polar stereographic):** Polar stereographic map of the continental USA. A red rectangle outlines the map area. If this template is selected then the following displays:

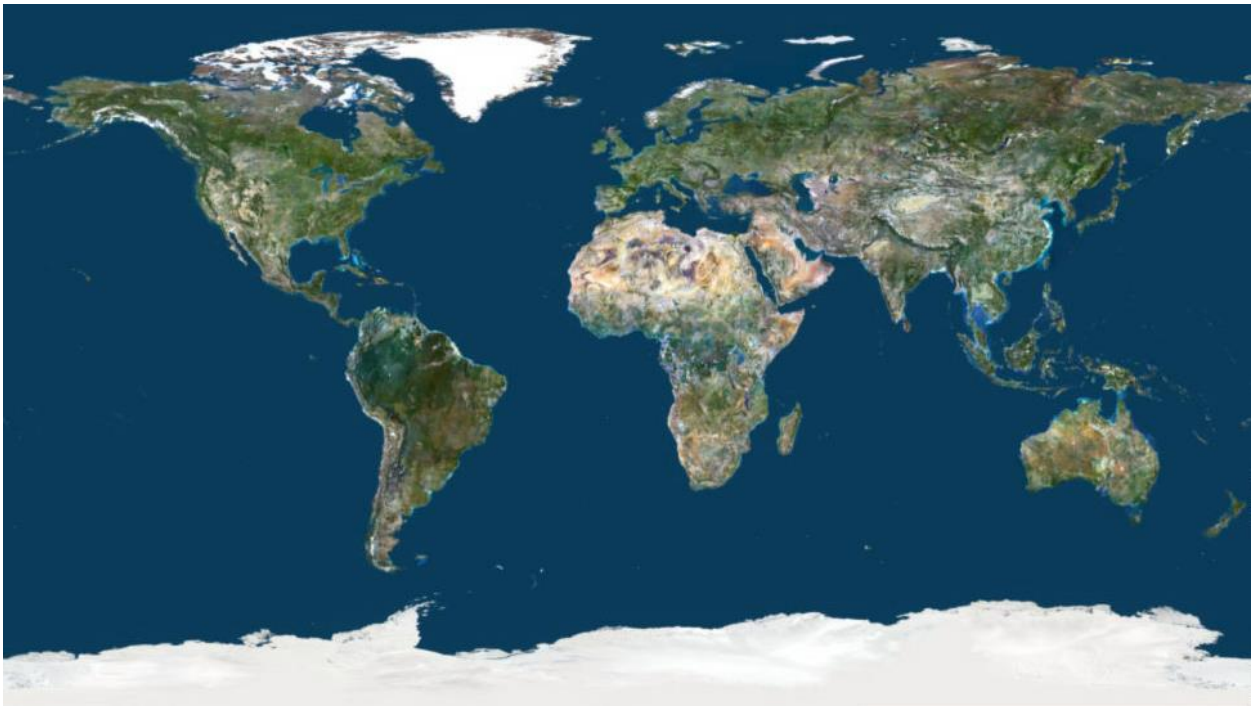


Click **Finish**. The following **Sequence Preview** displays:

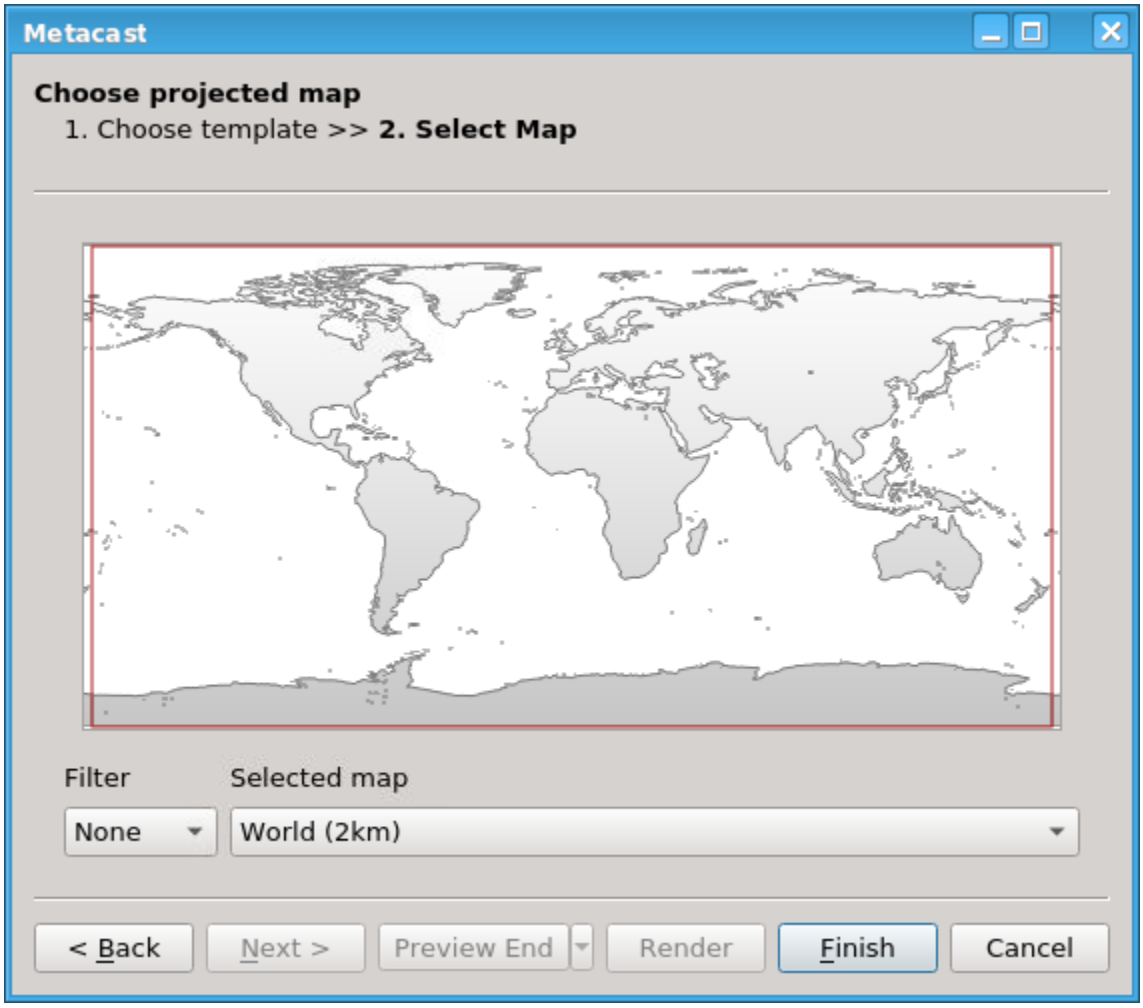
- **World:** Map of the world. A red rectangle outlines the map area. If this template is selected then the following displays:



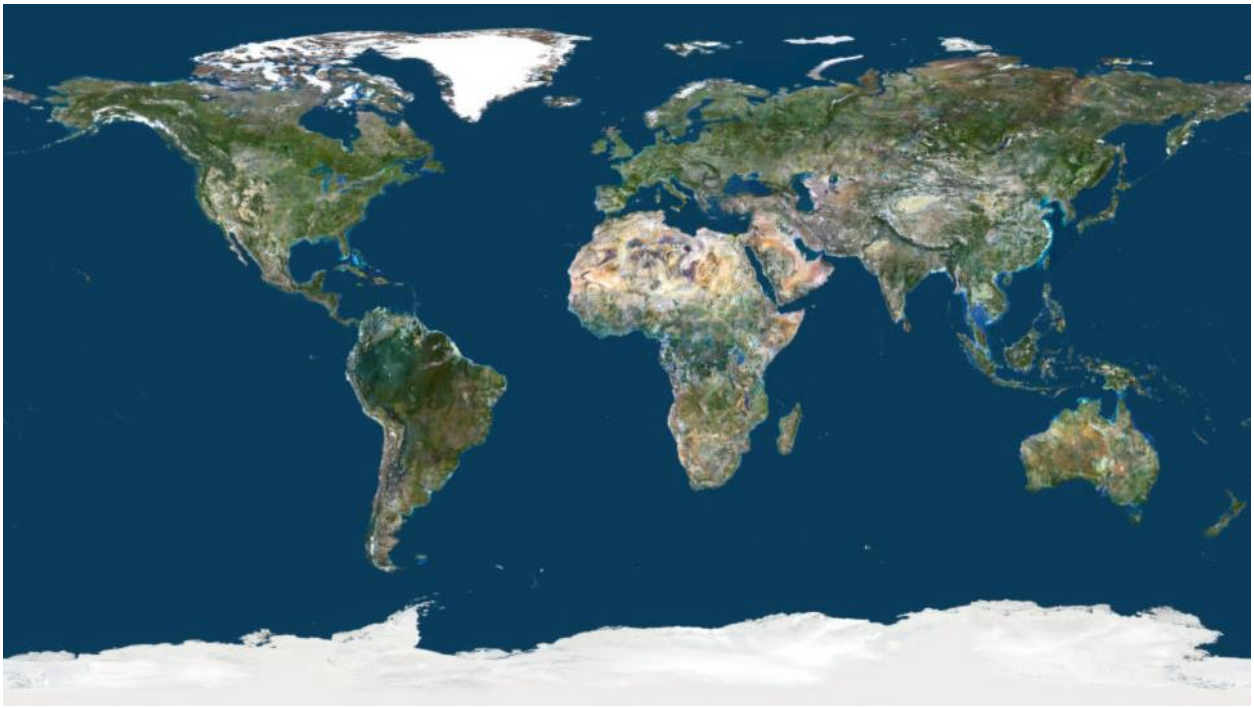
Click **Finish**. The following displays:



- **World (2km):** Map of the world. A red rectangle outlines the map area. If this template is selected then the following displays:



Click **Finish**. The following displays:



Projected Map Layer Settings

Overview

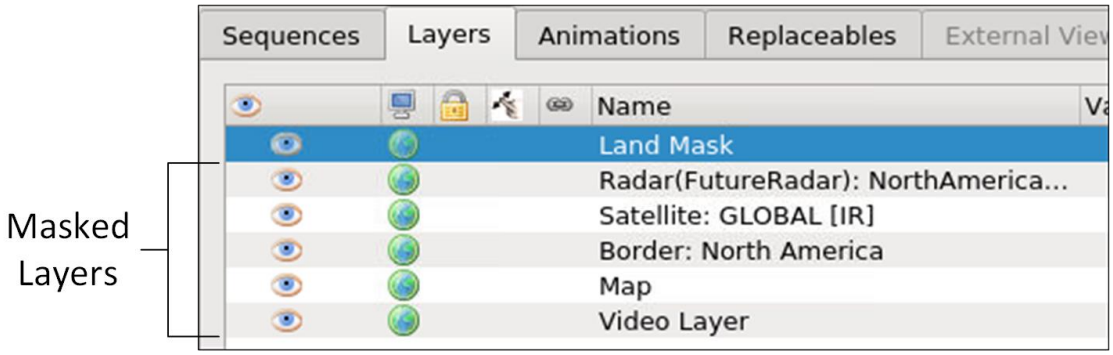
The **Projected Map** contains three layers, by default:

- **Land Mask:** The **Land Mask** provides the ability to display items, such as temperature or wind symbols, over land mass only, and not over bodies of water. The feature can also be used for a variety of other functions and layering/masking operations, but the primary use is to limit the display of a parameter field to land (temperature, risk of flooding, etc.) or ocean only (wave height, salinity in a river delta, etc.). The option is only active if the map (a projected 2D map) contains an alpha channel or other mask image.

  The following shows satellite fields with **Land Mask** visibility enabled ( ) in the in the **Layer Collection**:

The following shows satellite fields with **Land Mask** visibility disabled (❌) in the **Layer Collection**:

NOTE: To apply a mask to one or more layers, the layers must be positioned below the mask layer in the **Layer Collection**.



Layers that are positioned above the **Land Mask** in the **Layer Collection** are not affected by the **Land Mask**.

- **Map:** Includes settings pertaining to **Map selection**, **Map position**, **Display settings**, **Animator keyframes** and viewing options.
- **Video Layer:** Includes **Video** and **Layer Opacity** settings.

Zoom

Select: Enables selection of a rectangular area of the map. Note that the aspect ratio of the map is retained. To select an area:

1. Click the **Select** radio button.
2. Drag across the area that you would like to select, and then release the mouse. The selected displays full-screen in the **Sequence Preview**.

+10%: Enables you to zoom into the map in 10% increments. To zoom in:

1. Click the **+10%** radio button.
2. Click the map each time that you would like to zoom in an additional 10%. Note that the map centers on the selected (clicked) point, and that the **Latitude** and **Longitude** settings reflect the change.

-10%: Enables you to zoom out from the map in 10% increments. To zoom out:

1. Click the **-10%** radio button.
2. Click the map each time that you would like to zoom out an additional 10%. Note that the map centers on the selected (clicked) point, and that the **Latitude** and **Longitude** settings reflect the change.

Pan: Enables you to center the map on the selected point. To pan:

- Click the point at which to center the map. You can perform this operation more than once. Note the following:
    - The map can center a point only if the area around the center is available in the map. If it is not, then it will center on the point as close as allowed by the boundaries of the map.
    - As such, if the map is zoomed out to its maximum, then performing a pan has no effect.

Home: Resets the **Map position** to default settings.

Map selection

If desired, you can select a different map from the dropdown. As when creating the **Projected Map**, you can filter as follows:

- **None**
- **Poster**

Map position

About the Map Units

Map Position is expressed in map projection units. In some cases, the units would be degrees; in other cases; they could be radians. In general, the units used in a map projection are meters (ISO standard). And the measurements, for example, in a polar stereographic projection, would be meters east or west of the 0° meridian and meters south of the North Pole. The cartographic

system/projection family defines the units. Chyron Weather does not override or translate these units. They are provided as true to the math behind the projection as possible.

USA (polar stereographic)

Lat.: Latitude of selected point. **Default: 38.292**.

Lon.: Longitude of selected point. **Default: -100.000**.

Width: Range: 0.0001 - 9600.000. **Default: 9600.000**.

Height: Range: 0.0001 - 5000.000. **Default: 5000.000**.

World

Lat.: Latitude of selected point. **Default: 0.000**.

Lon.: Longitude of selected point. **Default: 0.000**.

Width: Range: 0.0001 - 360.000. **Default: 360.000**.

Height: Range: 0.0001 - 180.000. **Default: 180.000**.

World (2km)

Lat.: Latitude of selected point. **Default: 0.000**.

Lon.: Longitude of selected point. **Default: 0.000**.

Width: Range: 0.0001 - 360.000. **Default: 360.000**.

Height: Range: 0.0001 - 180.000. **Default: 180.000**.

Ortho Coordinates

USA (polar stereographic)

Current: Displays ortho coordinates of the currently selected point and the initial point on the map. **Default:** (**-4800.00**, **4800.00**, **-8500.00**, **-3500.00)**.

Initial: Displays ortho coordinates of the currently selected point and the initial point on the map. **Default:** (**-4800.00**, **4800.00**, **-8500.00**, **-3500.00)**.

World

Current: Displays ortho coordinates of the currently selected point and the initial point on the map. **Default:** (**-180.00**, **180.00**, **-90.00**, **90.00)**.

Initial: Displays ortho coordinates of the currently selected point and the initial point on the map. **Default:** (**180.00**, **180.00**, **-90.00**, **90.00)**.

World (2km)

Current: Displays ortho coordinates of the currently selected point and the initial point on the map. **Default:** (**-180.00**, **180.00**, **-90.00**, **90.00)**.

Initial: Displays ortho coordinates of the currently selected point and the initial point on the map. **Default:** (**180.00**, **180.00**, **-90.00**, **90.00)**.

Display settings

Drawing: Enables/disables display of terrain. **Default: Enabled**.

Transparency: Default: Disabled.

Texture only: Default: Disabled.

Show grid: Enables/disables display of latitude/longitude grid and specifies grid density. **Range: 0.01 - 99.99**. **Default: Disabled, 5.00**.

Animator keyframes

Keyframe Indicator: Specifies the current keyframe and the total number of keyframes in the sequence.

- The left number is the current keyframe.
- The right number is the total number of keyframes.

To select a keyframe to view:

- Use the spin box or enter the keyframe number.

Insert: Insert keyframe at the current frame.

Delete: Delete the currently selected keyframe.

Attach: Attaches an overall geometry animator to the object, enabling the insertion/addition/deletion of keyframes for that object. When attaching, the initial keyframe values (**Position**, **Scale**, **Rotation**, etc.) reflect those of the current view.

Detach: Detaches the geometry animator from the object, removing all animation keyframes and features from the object. Note that there is typically no undo for this function. If you would like to retain the animation, but disable it currently, then enable (check) the **Disable** checkbox. See Disable for additional information.

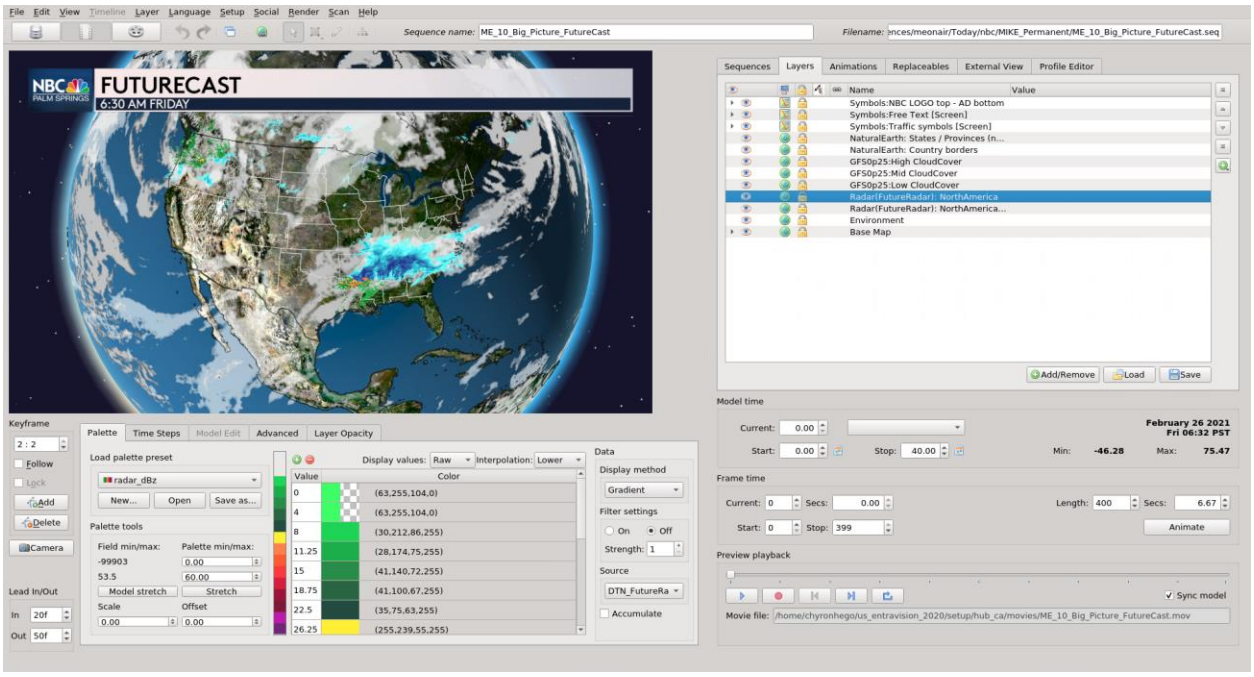
Ease in/out: Apply ease.

Disable: Disables the animation, without removing the keyframes. The viewing parameters remain at the current state, while moving through time/frames.

Chapter 10: Edit Sequence Layers

Overview

The **Layers** tab displays a list, called a **Layer Collection**, of all currently loaded layers in the selected sequence. The layer collection is unique for each sequence, so ensure that you have first selected the correct sequence when reviewing/editing the layers in the **Layer Collection**.



A sequence contains graphical layers of various types. Each layer contains one or more objects known as **symbols**. The symbols within a layer have the same characteristics, in that:

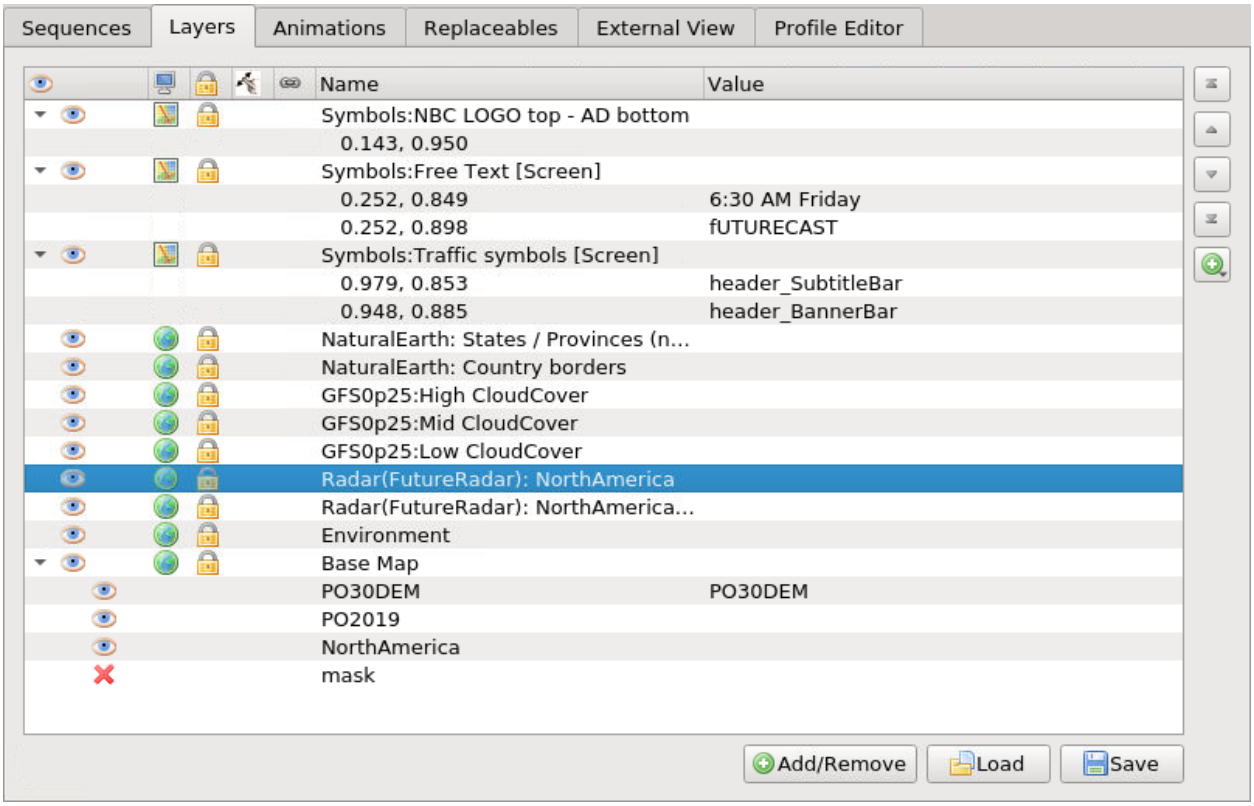
- They have the same type of properties that can be set to the objects; and,
- They also link to the same data type. For example, all weather symbols have the same properties, but if linked to different data types, they must be organized into independent layers.

There are no limitations on the number of layers that can be included or visualized in the sequence. The layers are drawn independently of one another and each behaves as an independent entity. You can:

- Add layers to or delete layers from the sequence.
- Specify a layer as a replaceable, so that it updates when the station is changed.
- Edit all symbols in a layer in one operation.
- Save a layer for later use in the current or other sequences.
- Load a saved layer into the current or a different sequence.
- Copy a layer and rename for use in the same or a different sequence.

The priority of the symbols or fields in a layer is based on the priority of the layer. The layers are listed from the topmost down, highest priority to lowest. The layer listed at the top of the list is the topmost layer in the sequence, and the last listed layer is the bottom layer in the sequence - typically a background image or video, or a **Base Map**. The symbols or sublayers (Base Map only) within a layer are listed from highest to lowest priority.

In the following sequence, the **Symbols:Free Text [Screen]** layer displays on top of the **Symbols:Traffic Symbols [Screen]** layer.



NOTE: A layer can have symbols, but not sublayers, with one exception. The **Base Map** has sublayers, each of whose visibility can be independently controlled. In this document, references to symbols refer to both symbols and sublayers, unless specifically noted.

Symbol Layers

Symbols in Chyron Weather are graphical objects that can be placed and selected on a specific location within the scene. They do not necessarily have an automatic link to a geographic location; however, the user can create such a link if desired.

Although various types of symbols may visually appear to be quite different on the output; from the operator's point of view, they are treated similarly.

Symbols are typically designed to your brand; therefore, symbols that are available in your system are not described specifically in this user guide. If you need additional guidance, then please contact Chyron Support.

You can edit symbols to create a unique visualization. A symbol may:

- Be placed in the sequence.
- Be placed in screen space and or in geographic space.
- Be linked to and driven by data.
- Be independent of data.
- Have a texture applied.
- Have a background texture.
- Be scaled.
- Fade in and out.
- Move and animate in time through keyframe animation or parametric animation.

Field Layers

Field layers are visualizations of video and images that fill the whole screen or data products, e.g., numerical data models, satellite images and radar images, that are visualized through a color palette.

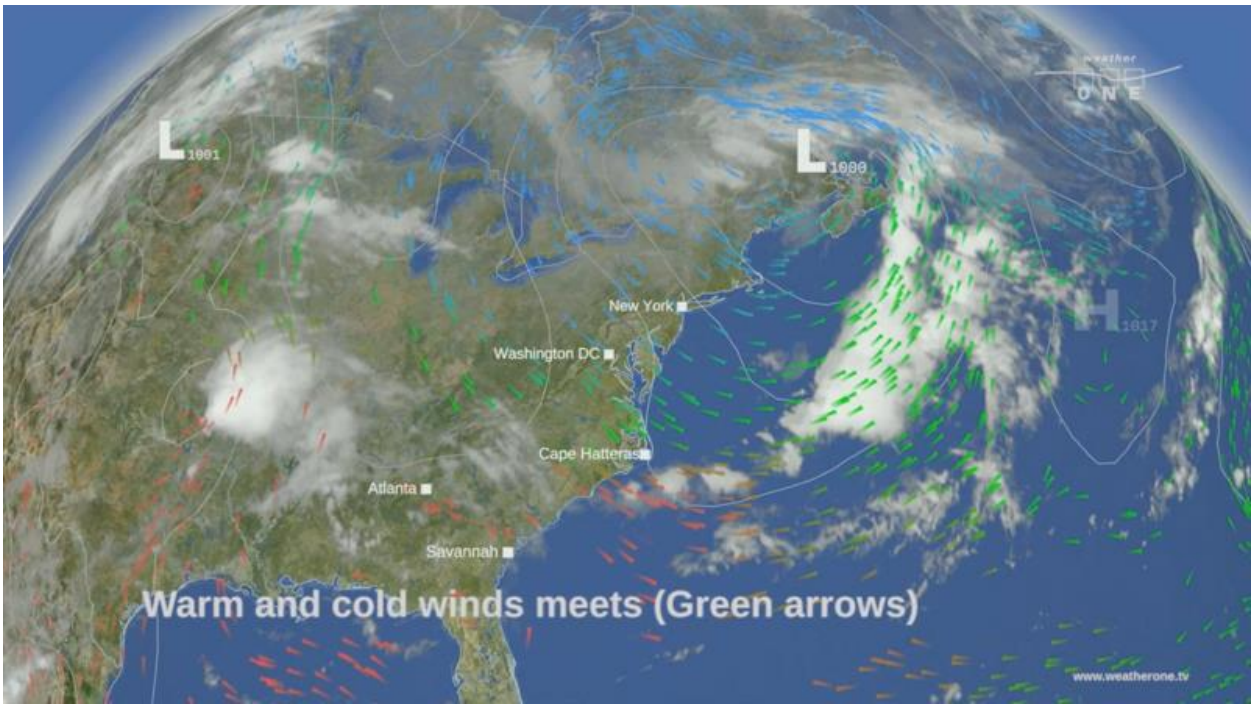
There are two main groups of Field layers:

- Non-data-driven field layers, such as image files (video, still images or ***.png*** sequences) that are available as assets. Field layer image files are:
    - Not applied as a texture on a symbol but that fills the entire screen.
    - Cannot be manipulated in the property panel. If changes are desired, they must be applied outside of Weather.
    - May contain alpha values, so that it is transparent in areas where you do not want the image to be shown.

Data-driven products that are updated on a daily or even hourly basis, and are found in the database. These layers are:

- Visualized through a color pallet.
- May have many different display methods (e.g. **Gradient**, **Streamline**, **Isoline**, etc.).

The following data-driven images show field layers, respectively, as: temperature contours on the ground; satellite imagery above Australia; and a combination of wind as **Streamline**, **Isobars** as **Isoline**, and forecasted clouds as fractal display methods.



The following shows a video with clouds (the field layer) as a background, overlaid by a table with symbols, to display a poster that provides ecological data.

Symbol Layer vs. Field Layer

Symbol and field layers differ as follows:

- A field layer is drawn on the entire screen, or its full coverage area, even if it is not visible over the full screen, whereas a symbol is discrete and present where it is placed in the scene and can be independently modified.
- Modification of a field layer affects the overall visualization of the entire field layer, as opposed to the symbol layer, where one or more individual symbols can be selected and manipulated, independent of the other symbols in the same layer.
- Symbol layers can be 2D or 3D maps. Field layers are usually 3D only.

Layer Icons and Buttons

The **Layers** tab employs the following icons. Icons that are toggles (on/off switches) are identified as such.

Icon	Description
	Indicates that the layer contains one or more symbols or sublayers (Base Map only).
	Indicates that the layer and its symbols or sublayers (Base Map only) are currently displaying.
	Specifies that the layer and its symbols or a sublayer (Base Map only) is visible and active in the sequence. Toggle.
	Specifies that the layer and its symbols or a sublayer (Base Map only) is no visible and not active in the sequence. Toggle.
	Display Mode column header.
	Display Mode: Layer is referenced to XY screen coordinates.
	Display Mode: Layer is referenced to latitude/longitude coordinates.
	Specifies that the layer and its symbols or sublayer (Base Map only) is locked from dragging or dropping on the Sequence Preview, thus preventing accidental modification. A layer's, its individual symbols', or individual sublayers' (Base Map only) properties can be edited from its Properties panel while the layer is locked. Toggle.
	Currently not implemented.
	Specifies that the layer is linked, so not loaded into the sequence template. The template loads the dynamic updated layer at the **include time**. **Include time** is the time at which the script (sequence) references the included file. Consequently, if the content on disk is changed after this sequence is loaded, then it does not affect the active sequence. However, when saved back out as a template, the file reference remains intact, so that the linked layer file can be dynamically updated by an external source. A typical example is a sequence that includes continuously updated tropical storm track information. It continues to function as a template and allows the referenced content to be updated by the external process, yet facilitating the instant access to this content by the operator or by the automation process.

Icon	Description
	Move layer to top of layer collection.
	Move layer up one position.
	Move layer down one position.
	Move layer to bottom of layer collection.
	Add/Remove Layer.
	Load Layer.
	Save Layer.
	Add symbol to selected layer.

Layer Visibility

Weather's flexibility enables the creation of templates that contain multiple layers that can easily be turned on and off. For example, the same template can be used to display pressure, wind, and precipitation visualizations.

-  : Indicates that a layer and its symbols, or a sublayer (Base Map only) are visible and active in the sequence.
-  : Indicates that a layer and its symbols, or a sublayer (Base Map only) are not visible and not active in the sequence.

Enabling or disabling the visibility of its layers applies to the layer and its symbols. Individual symbols cannot be turned on or off. In the special case of the Base Map, sublayer visibility can be individually turned on and off. To enable/disable layer or sublayer visibility:

- Click  to disable visibility, or  to enable visibility.

For ease of viewing the interface, layers, symbols, and sublayers are displayed on alternating gray and white backgrounds. The gray and white backgrounds have no bearing on layer properties or the operation of the interface.

By default, layers are displayed collapsed, i.e., their symbols or sublayers are not displayed. To access the symbols or sublayers of a layer:

- Click the right-facing arrow at the left of the layer row.

To collapse the symbols or sublayers, so that only the top-level layer appears in the layer collection:

- Click the down arrow at the left of the layer row.

Reposition Layer

A layer, symbol or sublayer can be repositioned, therefore changing its priority in the graphic display.

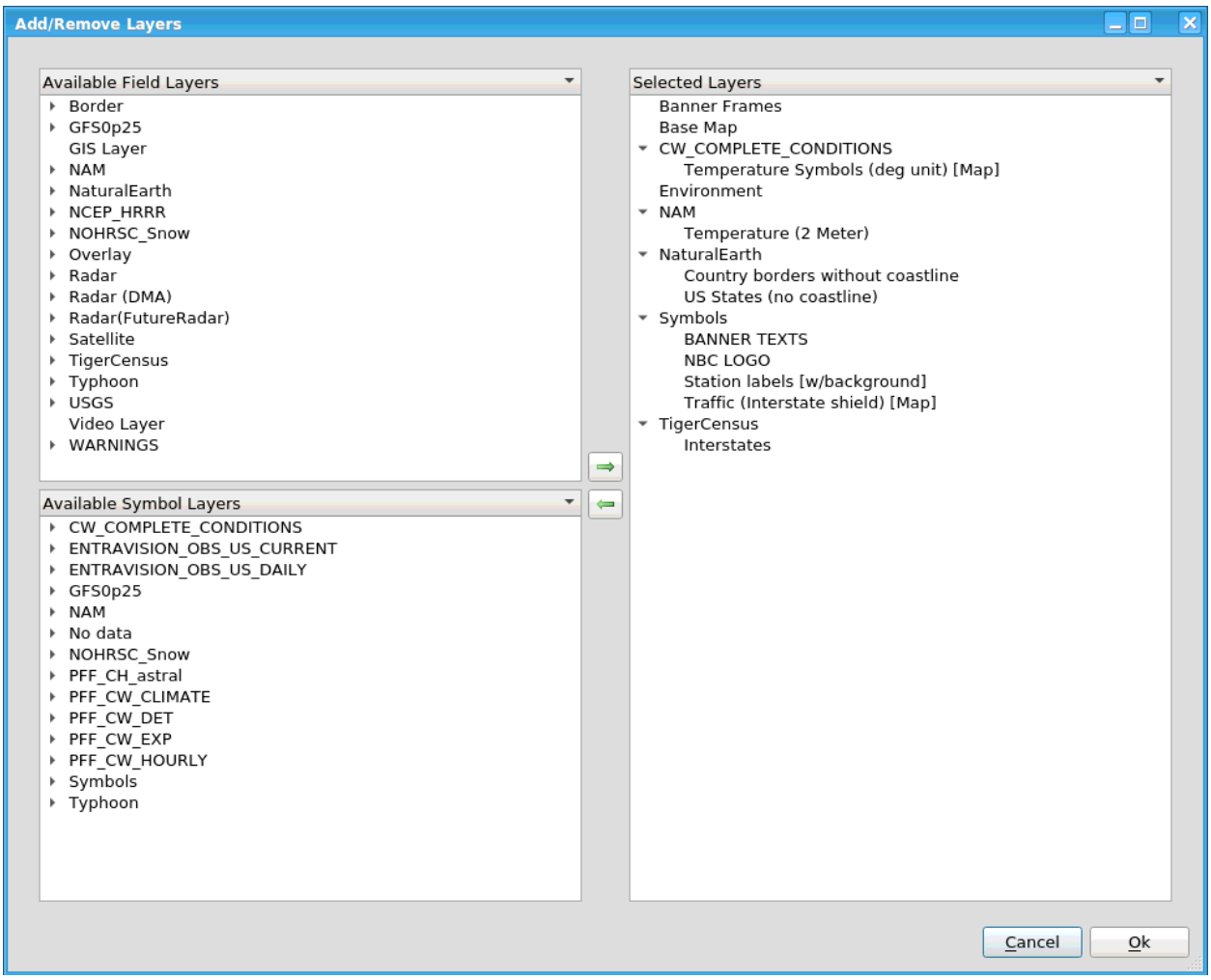
To reposition a layer, symbol, or sublayer:

- Select the layer, symbol, or sublayer to move, then perform one of the following operations:
  - Click  to move the layer, symbol, or sublayer up as follows:
    - If you select a layer, then the layer moves to the top of the layer collection.
    - If you select a symbol or sublayer, then the symbol or sublayer moves to the top position within the selected layer.
  - Click  to move the layer, symbol, or sublayer up one position.
  - Click  to move the layer, symbol, or sublayer down one position.
  - Click  to move the layer, symbol, or sublayer down as follows:
    - If you select a layer, then the layer moves to the bottom of the layer collection.
    - If you select a symbol or sublayer, then the symbol or sublayer moves to the bottom position within the selected layer.

Add/Remove Layer or Symbol to a Sequence

To add a layer(s) or symbols(s) to a sequence:

1. Click either the:
   - **Add/Remove Layer** icon  ; or,
   - **Add/Remove Layer** button  . The **Add/Remove Layers** dialog appears.



The left column lists available layers and symbols that are available to be added to the sequence, and is divided into two lists:

- **Available Field Layers**
- **Available Symbol Layers**

The **Selected Layers** column at the right lists the layers that are already in the sequence.

> **NOTE:** A layer can appear in both **Available Layers** and **Selected Layers** if its symbols are split between **Available Layers** and **Selected Layers**.

2. You can add an entire layer (including its symbols), or one or more symbols to a sequence. You can use one or more of the following procedures to add layers.

   To add a layer and its symbols to a sequence:

   a. Click the **Field** or **Symbol** layer that you would like to add to the sequence.
   b. Click the **Add to Sequence** arrow. The layer moves from the left column to the **Selected Layers** column.

   To add an individual symbol to a sequence:

   a. Click the arrow to the left of the layer to display the list of the layer's symbols.
   b. Click the **Field** or **Symbol** that you would like to add to the sequence.
   c. Click the **Add to Sequence** arrow. The symbol moves from the left column to the **Selected Layers** column.

   To add more than one symbol to a sequence:

   - If the symbols in the **Available Field** or **Symbols Layers** list are contiguous:

     a. Either drag the mouse from the top item that you would like to move to the sequence to the bottom item that you would like to add to the sequence.
     b. Click the **Add to Sequence** arrow. The selected symbols move from the **Available Field** or **Symbols Layers** list to the **Selected Layers** column.

   - If the symbols in the **Available Field** or **Symbols Layers** list are not contiguous:

     a. Press and hold the **Ctrl** key, and then click the items that you would like to add to the sequence.
     b. Release the **Ctrl** key.
     c. Click the **Add to Sequence** arrow. The selected symbols move from the left column to the **Selected Layers** column.

3. Click **Ok**. The **Add/Remove Layers** dialog closes, and the newly added layers appear in the **Layer Collection**.

4. If desired, change the order of the layers.

Remove a Layer from a Sequence

Overview

You can remove one or more layers or symbols from a sequence, either directly from the **Layer Collection**, or from the **Add/Remove Layer** dialog.

- If you remove a layer from a sequence, then all symbols in the layer are removed as well.
- If you would like to remove a layer, but retain it for future use, then make sure to save it as a layer file.

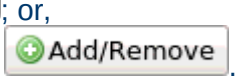
Remove a Layer Directly from the Layer Collection

To remove a layer directly from the Layer Collection:

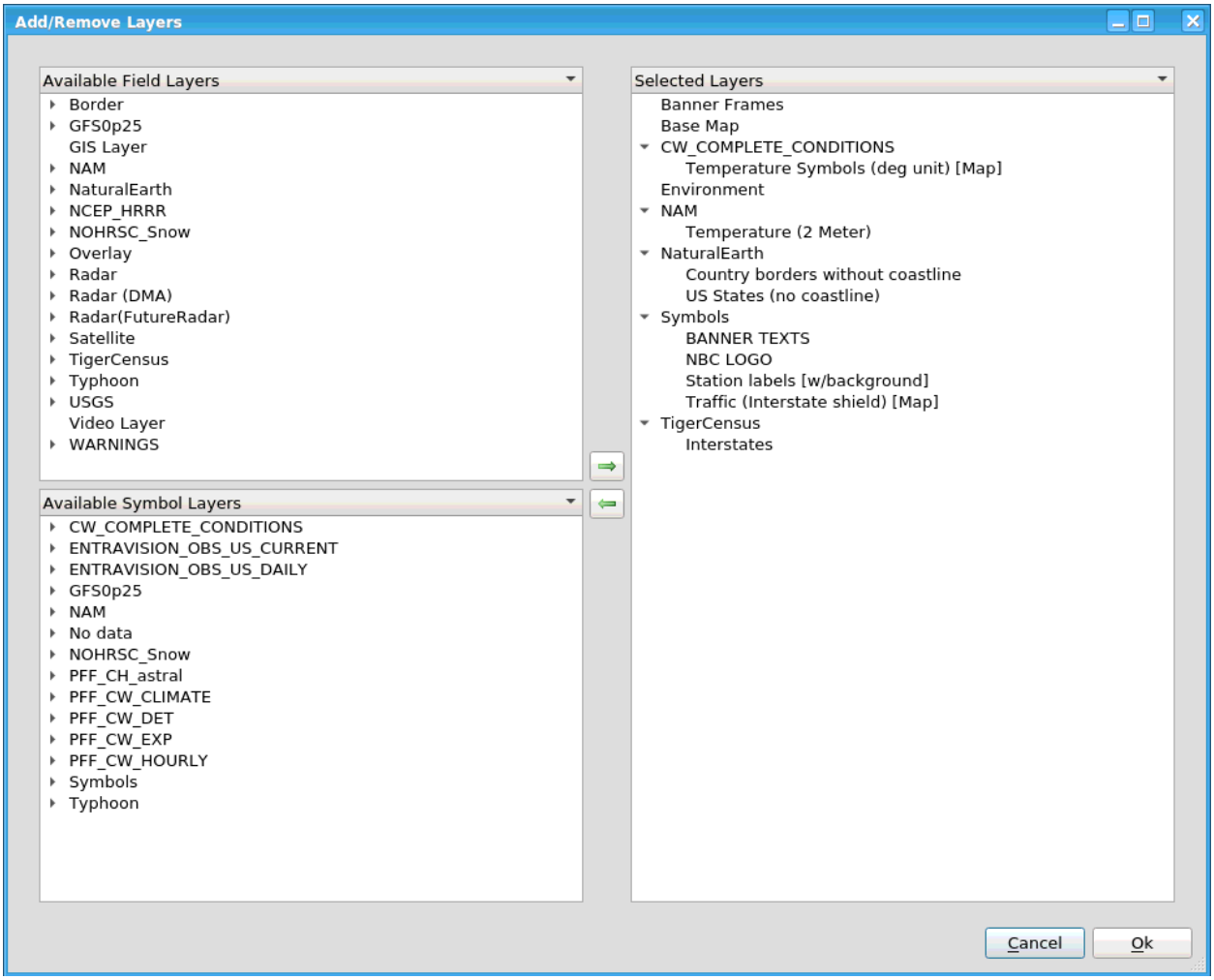
- In the **Layer Collection**, right-click the layer or symbol within the layer, then from the context menu, select **Remove**. The layer or symbol is removed from the **Layer Collection**.

Remove a Layer via the Add/Remove Layers Dialog

To remove a layer(s) or symbol from a sequence:

1. Click either the:
   - **Add/Remove Layer** icon  ; or,
   - **Add/Remove Layer** button 

. The **Add/Remove** layer dialog appears.



The left column lists available layers that are available to be added to the sequence, and is divided into two areas:

- **Available Field Layers**
- **Available Symbol Layers**

The **Selected Layers** column at the right lists the layers that are already in the sequence.

2. You can remove an entire layer (including its symbols), or one or more symbols from a sequence, using one or more of the following procedures:

   To remove a layer and its symbols from a sequence:

   a. In the **Selected Layers** column, click the layer that you would like to remove from the sequence.
   b. Click the **Remove from Sequence** arrow. The layer moves from the **Selected Layers** column to either the **Available Field Layers** list or **Available Symbol Layers** list, depending upon the type of layer.

   To remove an individual symbol from a sequence:

   a. In the **Selected Layers** column, click the arrow to the left of the layer to display the list of the layer's symbols.
   b. Click the symbol that you would like to remove from the sequence.
   c. Click the **Remove from Sequence** arrow. The layer moves from the **Selected Layers** column to either the **Available Field Layers** list or **Available Symbol Layers** list, depending upon the type of layer.

   To remove more than one symbol from a sequence:

   - If the symbols in the **Selected Layers** list are contiguous:

     a. Either drag the mouse from the top item that you would like to remove to the bottom item.
     b. Click the **Remove from Sequence** arrow. The selected symbols move from the **Selected Layers** column to either the **Available Field Layers** list or **Available Symbol Layers** list, depending upon the type of layer.

   - If the symbols in the **Selected Layers** list are not contiguous:

     a. Press and hold the **Ctrl** key, and then click the items that you would like to remove from the sequence.

     b. Release the **Ctrl** key.
     c. Click the **Remove from Sequence** arrow. The selected symbols move from the **Selected Layers** column to either the **Available Field Layers** list or **Available Symbol Layers** list, depending upon the type of layer.

3. Click **Ok**. The **Add/Remove Layers** dialog closes, and the removed layer(s) no longer appears in the **Layer Collection**.

Add Symbol to Selected Layer

In a layer collection, when a symbol layer is selected (highlighted), you can easily add additional symbols of the same type to a layer.

1. Highlight the symbol layer
2. In the Weather toolbar, click the **Add Symbol to Layer** icon.

3. On the sequence graphic [review, click each point at which you would like to add the new symbol.
4. When finished, click the **Select** icon in the toolbar, or click a different layer to deactivate the tool.

Delete Symbols

To delete all symbols from the selected layer:

- Select the layer, right-click, then select **Delete Symbols**,

Display Mode

The **Display Mode** column specifies the type of layer:

- The **XY Coordinates** icon indicates that the layer position is referenced to XY coordinates.
- The **Latitude/Longitude Coordinates** icon indicates that the layer position is referenced to latitude/longitude coordinates.

Lock/Unlock Layer

You can lock a layer, so that it cannot be accidentally altered by drag-and-drop. You can still modify a layer via the layer's Properties panel.

- A **Lock** icon in the **Lock** column of the layer specifies that the layer is locked.
- No icon in the **Lock** column of the layer specifies that the layer is unlocked.

To enable/disable a layer lock via the **Lock** icon:

- Click the empty area in the **Lock** column of the layer to lock the layer; or,
- Click the **Lock** icon in the **Lock** column of the layer to unlock the layer.

To enable/disable a layer lock using a keyboard shortcut:

- Select the layer that you would like to lock or unlock, then press **Ctrl+L**.
  - If the layer had been unlocked, then it locks.
  - If the layer had been locked, then it unlocks.

Linked Layers

A layer can be connected to a web link. The link is not loaded into the sequence template, but the template loads the dynamically updated layer at the **Include Time**. **Include Time** is the time at which the script (sequence) references the included file. Consequently, if the content on disk is changed after this sequence is loaded, then it does not affect the active sequence. However, when saved back out as a template, the file reference remains intact, so that the linked layer file can be dynamically updated by an external source.

A typical example is a sequence that includes continuously updated tropical storm track information. It continues to function as a template and allows the referenced content to be updated by the external process, yet facilitating the instant access to this content by the operator or by the automation process.

Save Layer

A layer can be saved for reuse in the same or other sequences. To save a layer:

- Click the **Save** button 

, then save to the desired location. The layer saves as a layer file (***.lr***).

Load Layer

To load an existing layer file:

- Click the **Load** button 

, then open the desired layer file.

Manipulate Layers and Symbols

Sequence Preview Symbol Context Menu

The symbol context menu provides selection, alignment, and other editing tools that you can apply to a single or multiple symbols.

NOTE: To edit a symbol(s) using the symbol context menu, the symbol(s) must be selected, i.e., outlined, as shown in the following figure. If the layer in which the symbol is contained is locked, then the symbol (s) cannot be selected directly from the **Sequence Preview**. The symbol(s) must be selected from the Layers tab as follows.

- To select a one symbol in a locked layer, use one of the following methods:
  - Double-click the symbol name.
  - Right-click the symbol name, and then select one of the selection options.
- To select multiple symbols in a locked layer, use one of the following methods:
  - Select the symbol names.
  - Right-click a symbol name and select Rectangle Select.
- To select all symbols in a locked layer, use one of the following methods:
  - In the Layers tab, double-click the name of the layer that contains the symbols that you would like to select.
  - In the Layers tab, right-click the layer name, and then select one of the selection options.

To access the symbol context menu:

- In the Sequence Preview, select and then right-click the symbol(s). The symbol context menu displays:

Bring to Front: Repositions symbol on top of all other symbols in the selected layer.

Bring to Bottom: Repositions symbol below all other symbols in the selected layer.

One Up: Repositions symbol one position up in the selected layer.

One Down: Repositions symbol one position down in the selected layer.

Select All: Selects all symbols in the selected layer.

Invert Selection: Selects all deselected symbols, and deselects all selected symbols in the selected layer.

Attach Animator: Attaches an overall geometry animator to the object, enabling the insertion/addition/deletion of keyframes for that object. When attaching, the initial keyframe values (**Position**, **Scale**, **Rotation**, etc.) reflect those of the current view.

Duplicate: Copy the selected symbol or symbols. Keyboard shortcut: **Ctrl+D**.

Align Horizontally: Aligns all selected symbols horizontally to the last selected symbol.

Aligns Horizontally Even Spacing: Aligns all selected symbols horizontally to the last selected symbol, and evenly distributes them horizontally between the leftmost and rightmost symbols.

Aligns Vertically: Aligns all selected symbols vertically to the last selected symbol.

Aligns Horizontally Even Spacing: Aligns all selected symbols vertically to the last selected symbol, and evenly distributes them vertically between the topmost and bottommost symbols.

Copy Keyframe Animators: Copies the Keyframe Animators associated with the selected symbol or symbols.

Add to Replaceable: Adds selected symbols or symbols to a replaceable.

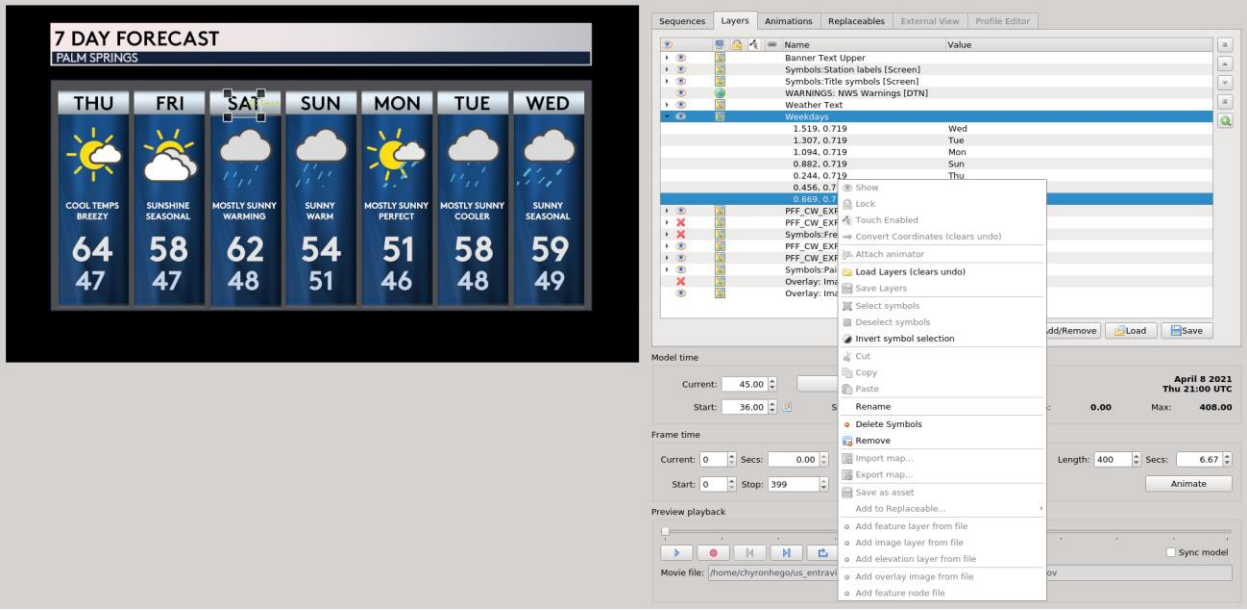
Delete: Deletes selected symbols or symbols.

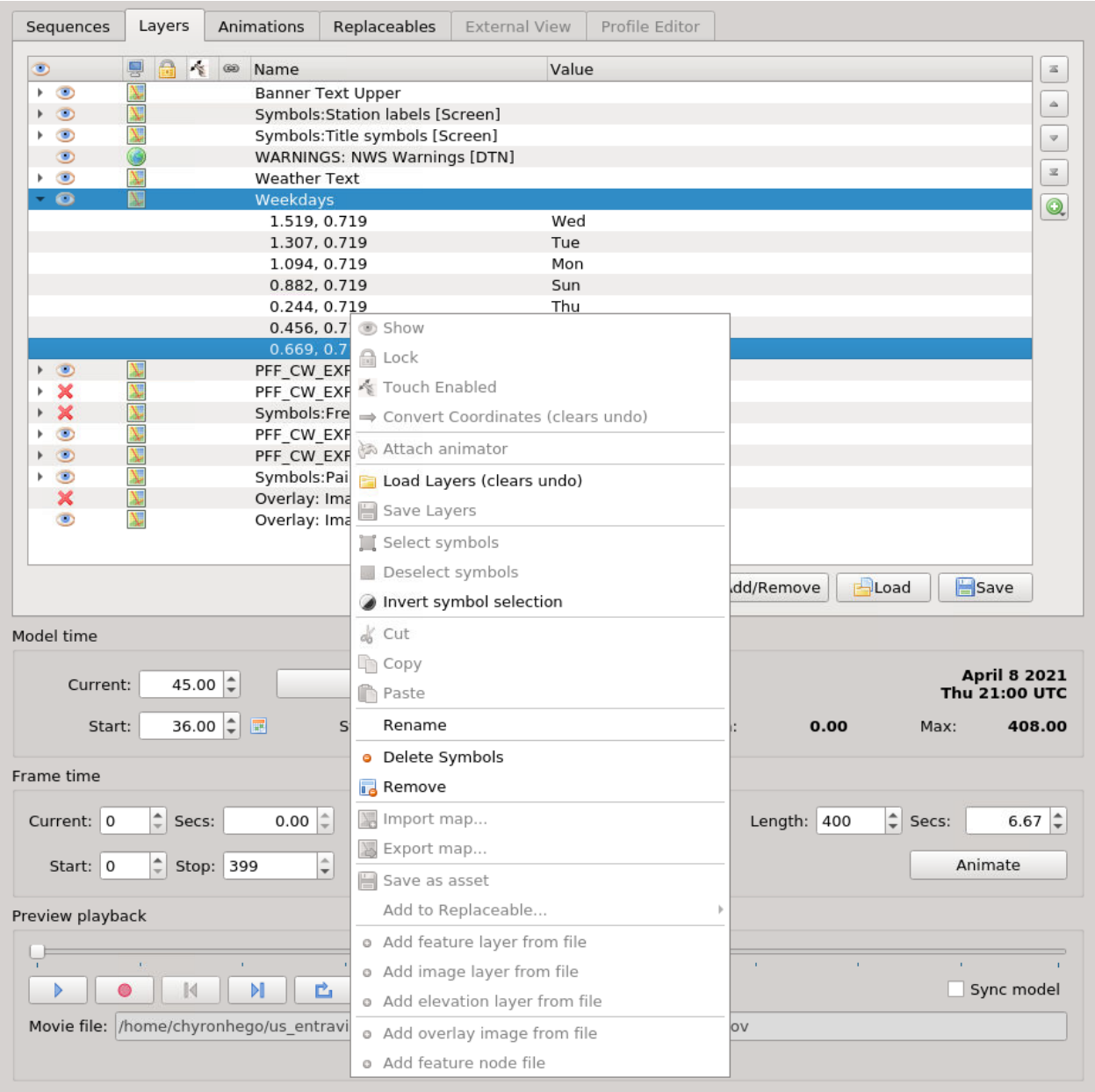
Sequence Layer Symbol Context Menu

The sequence layer symbol context menu provides selection and other editing tools that you can apply to a single or multiple symbols.

To access the sequence layer symbol context menu:

- In the Layers tab, select the symbol(s) and then right-click. The sequence layer symbol context menu displays.





Show: Enables/disables display of selected layer.

Lock: Locks selected layer(s)

Touch Enabled: Currently not implemented.

Convert Coordinates (clears undo): The layers in Chyron Weather can either be organized in a **Screen** coordinate system (essentially a pixel position or an orthographic linear scale, e.g., -1 to 1 in X and Y), or the layer can be organized in a projected/cartographic or latitude/longitude coordinate system, i.e., **Map** mode, essentially relating to a position on the globe. **Convert Coordinates** switches a layer that is in **Screen** mode to **Map** mode, or vice versa. This mode switch is so profound for the objects in that layer, that it cannot be guaranteed that you can perform an **Undo** of a previous position change or scaling of an object. It is technically possible to end up with a point that cannot be calculated back to the geode or map projection position. As such, to avoid an unexpected action, the **Undo** queue is cleared for this operation.

Attach Animator: Attaches an overall geometry animator to the object, enabling the insertion/addition/deletion of keyframes for that object. When attaching, the initial keyframe values (**Position**, **Scale**, **Rotation**, etc.) reflect those of the current view.

Load Layers (clears undo): Loads selected layers, and clears **Undo** queue.

Save Layers: Saves selected layer(s) to a layer file.

Select symbols: Enables the **Rectangular Select** tool. Reference the toolbar.

Deselect symbols: Deselects selected symbols.

Invert symbol selection: Selects all deselected symbols, and deselects all selected symbols in the selected layer.

Cut: Cuts the selected symbol(s) from the **Sequence Preview** and stores them in the **Paste** buffer.

Copy: Copies the selected symbol(s) from the **Sequence Preview** and stores them in the **Paste** buffer.

Paste: Pastes the contents of the **Paste** buffer to the **Sequence Preview**.

Rename: Enables you to rename the selected symbol.

Delete Symbols: Deletes all symbols from the layer.

Remove: Removes the selected symbol(s) from the selected layer.

Import map: Imports map (***.earth***) file. Applies to **Base Map** layer only. To import a map file:

1. Select **Import Map** from the context menu. The **Import Map file** dialog displays.
2. Browse to the desired ***.earth*** file, and then click **Open**. The selected map is imported and applied.

Export map: exports the current map (***.earth***) file. Applies to **Base Map** layer only. To import a map file:

1. Select **Import Map** from the context menu. The **Export Map file** dialog displays.
2. Browse to the desired ***.earth*** file, and then click **Save**. The map is exported to the selected location.

Save as asset: Saves map as an asset. To save:

1. Select **Save as asset** from the context menu.
2. An auto-generated unique identifier is displayed. If desired, enter a new identifier.
3. Click **OK**.

Add to replaceables: Adds selected symbols or symbols to a replaceable.

Add feature layer from file: Adds a **Geometry** feature file to the **Base Map** layer. Applies to **Base Map** layer only. To add the feature layer:

1. Select **Add feature layer from file** from the context menu. The **Open geometry file** dialog displays.
2. Browse to the desired **Geometry** file (***.shp***, ***.gml***, ***.kml*** or ***.xml***), and then click **Open**. The **Geometry** file is added to the **Base Map** as a feature layer.

Add image layer from file: Adds a **Raster** file to the **Base Map** layer. Applies to **Base Map** layer only. To add the image layer:

1. Select **Add image layer from file** from the context menu. The **Open raster file** dialog displays.
2. Browse to the desired **Raster** file (***.tif***, ***.nc***, or ***.grb***), and then click **Open**. The **Raster** file is added to the **Base Map** as an image layer.

Add elevation layer from file: Adds a **Digital Elevation Model** (**DEM**) file to the **Base Map** layer. Applies to **Base Map** layer only. To add the elevation layer:

1. Select **Add elevation layer from file** from the context menu. The **Open DEM file** dialog displays.
2. Browse to the desired **Georaster** file (***.tif***), and then click **Open**. The **DEM** file is added to the **Base Map** as an elevation layer.

Add overlay image from file: Adds an **Overlay Image** file to the **Base Map** layer. Applies to **Base Map** layer only. To add the elevation layer:

1. Select **Add overlay image from file** from the context menu. The **Open DEM file** dialog displays.
2. Browse to the desired **Image** file (***.png***, ***.jpg***, ***.tif***), and then click **Open**. The **Image** file is added to the **Base Map** as an overlay image layer.

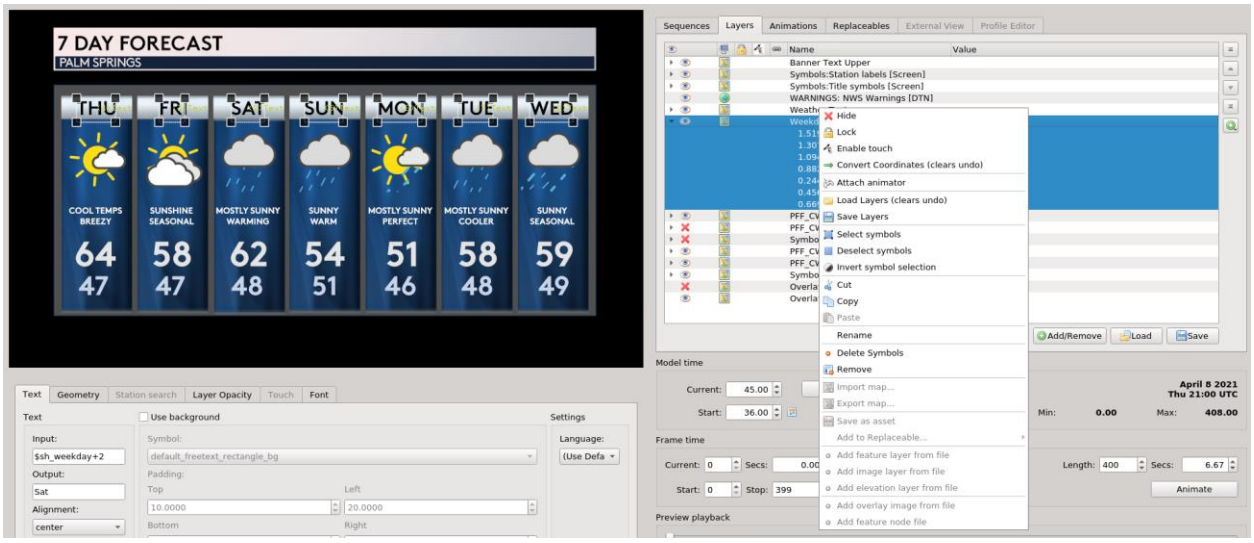
Add feature node file: A **Feature Node** file is a file that contains a (sub)tree of feature layers, onto which common operations can be carried out. **Base Map** layers can have specific feature layers assigned. For example borders or roads, polygons showing areas with high risk for flooding, volcanic ash susceptible areas etc., so essentially any map feature beyond the actual terrain and texture. Applies to **Base Map** layer only.

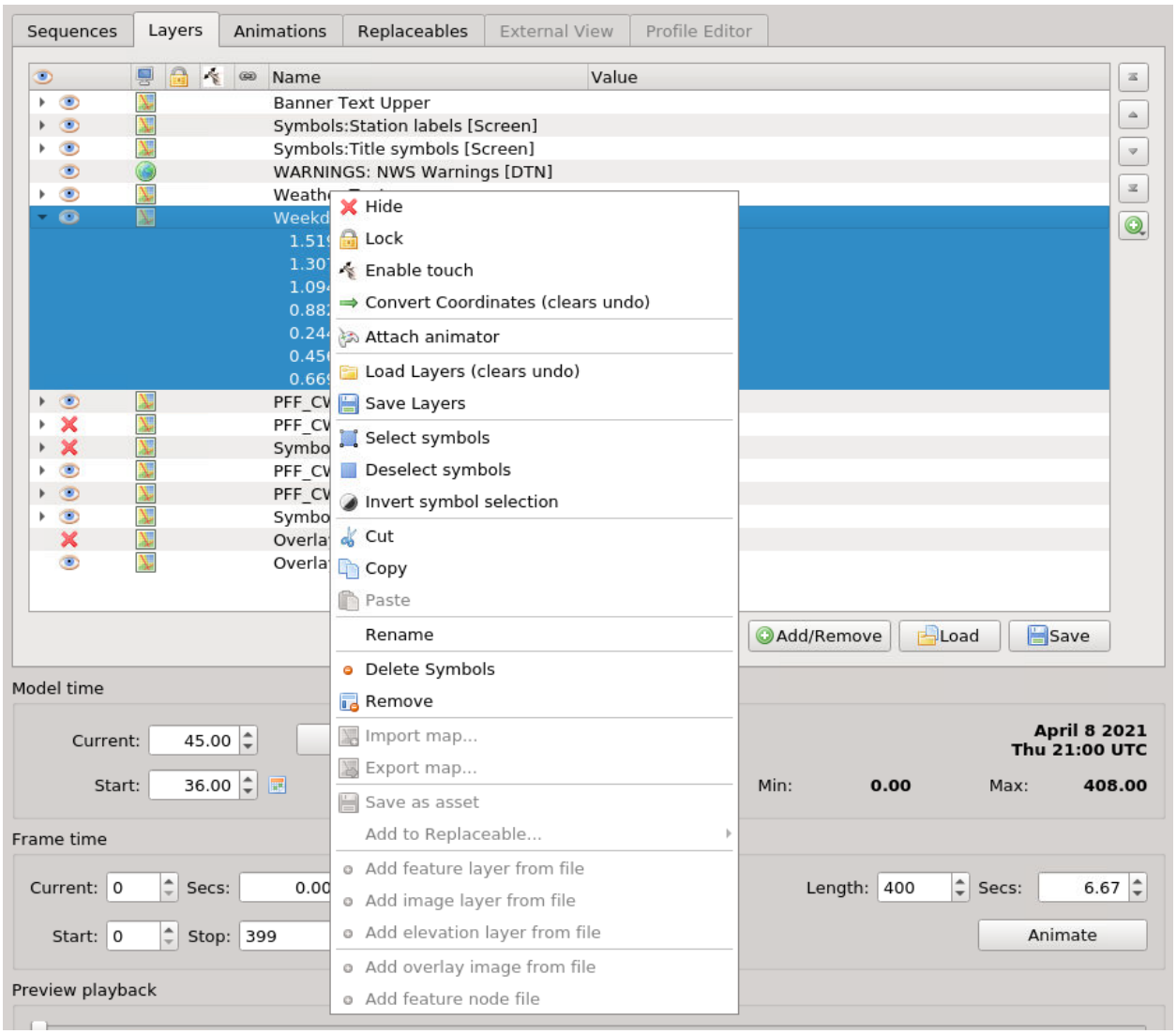
Sequence Layer Context Menu

The sequence layer context menu provides selection and other editing tools that you can apply to a single or multiple layers.

To access the sequence layer context menu:

- In the Layers tab, select the layer(s) and then right-click. The sequence layer context menu displays.





Show: Display selected layer.

Lock: Locks position of all symbols in the selected layer on the **Sequence Preview**.

Touch Enabled: Currently not implemented.

Convert Coordinates (clears undo): The layers in Chyron Weather can either be organized in a **Screen** coordinate system (essentially a pixel position or an orthographic linear scale, e.g., -1 to 1 in X and Y), or the layer can be organized in a projected/cartographic or latitude/longitude coordinate system, i.e., **Map** mode, essentially relating to a position on the globe. **Convert Coordinates** switches a layer that is in **Screen** mode to **Map** mode, or vice versa. This mode switch is so profound for the objects in that layer, that it cannot be guaranteed that you can perform an **Undo** of a previous position change or scaling of an object. It is technically possible to end up with a point that cannot be calculated back to the geode or map projection position. As such, to avoid an unexpected action, the **Undo** queue is cleared for this operation.

Attach Animator: Attaches an overall geometry animator to the object, enabling the insertion/addition/deletion of keyframes for that object. When attaching, the initial keyframe values (**Position**, **Scale**, **Rotation**, etc.) reflect those of the current view.

Load Layers (clears undo): Loads selected layers, and clears **Undo** queue.

Save Layers: Saves selected layer(s) to a layer (***.lr***) file.

Select symbols: Enables the **Rectangular Select** tool.

Deselect symbols: Deselects selected symbols.

Invert symbol selection: Selects all deselected symbols, and deselects all selected symbols in the selected layer.

Cut: Cuts the selected layer(s) from the **Sequence Preview** and stores them in the **Paste** buffer.

Copy: Copies the selected layer(s) from the **Sequence Preview** and stores them in the **Paste** buffer.

Paste: Pastes the contents of the **Paste** buffer to the **Sequence Preview**.

Rename: Enables you to rename the selected layer.

Delete Symbols: Deletes all symbols from the layer.

Remove: Removes the selected symbol(s) from the selected layer.

Import map: Imports map (***.earth***) file. Applies to **Base Map** layer only. To import a map file:

1. Select **Import Map** from the context menu. The **Import Map file** dialog displays.
2. Browse to the desired ***.earth*** file, and then click **Open**. The selected map is imported and applied.

Export map: exports the current map (***.earth***) file. Applies to **Base Map** layer only. To import a map file:

1. Select **Import Map** from the context menu. The **Export Map file** dialog displays.
2. Browse to the desired ***.earth*** file, and then click **Save**. The map is exported to the selected location.

Save as asset: Saves layer as an asset. A layer can be saved as a named asset in Chyron Weather, an asset that can be applied to a different sequence, and for use in downstream systems. For example, a saved layer can be used in VSAR applications (e.g., PRIME or FRESH). To save:

1. Select **Save as asset** from the context menu.
2. An auto-generated unique identifier is displayed. If desired, enter a new identifier.
3. Click **OK**.

Add to replaceables: Adds selected symbols or symbols to a replaceable.

Add feature layer from file: Adds a **Geometry** feature file to the **Base Map** layer. Applies to **Base Map** layer only. To add the feature layer:

1. Select **Add feature layer from file** from the context menu. The **Open geometry file** dialog displays.
2. Browse to the desired **Geometry** file (***.shp***, ***.gml***, ***.kml*** or ***.xml***), and then click **Open**. The **Geometry** file is added to the **Base Map** as a feature layer.

Add image layer from file: Adds a **Raster** file to the **Base Map** layer. Applies to **Base Map** layer only. To add the image layer:

1. Select **Add image layer from file** from the context menu. The **Open raster file** dialog displays.
2. Browse to the desired **Raster** file (***.tif***, ***.nc***, or ***.grb***), and then click **Open**. The **Raster** file is added to the **Base Map** as an image layer.

Add elevation layer from file: Adds a **Digital Elevation Model** (**DEM**) file to the **Base Map** layer. Applies to **Base Map** layer only. To add the elevation layer:

1. Select **Add elevation layer from file** from the context menu. The **Open DEM file** dialog displays.
2. Browse to the desired **Georaster** file (***.tif***), and then click **Open**. The **DEM** file is added to the **Base Map** as an elevation layer.

Add overlay image from file: Adds an **Overlay Image** file to the **Base Map** layer. Applies to **Base Map** layer only. To add the elevation layer:

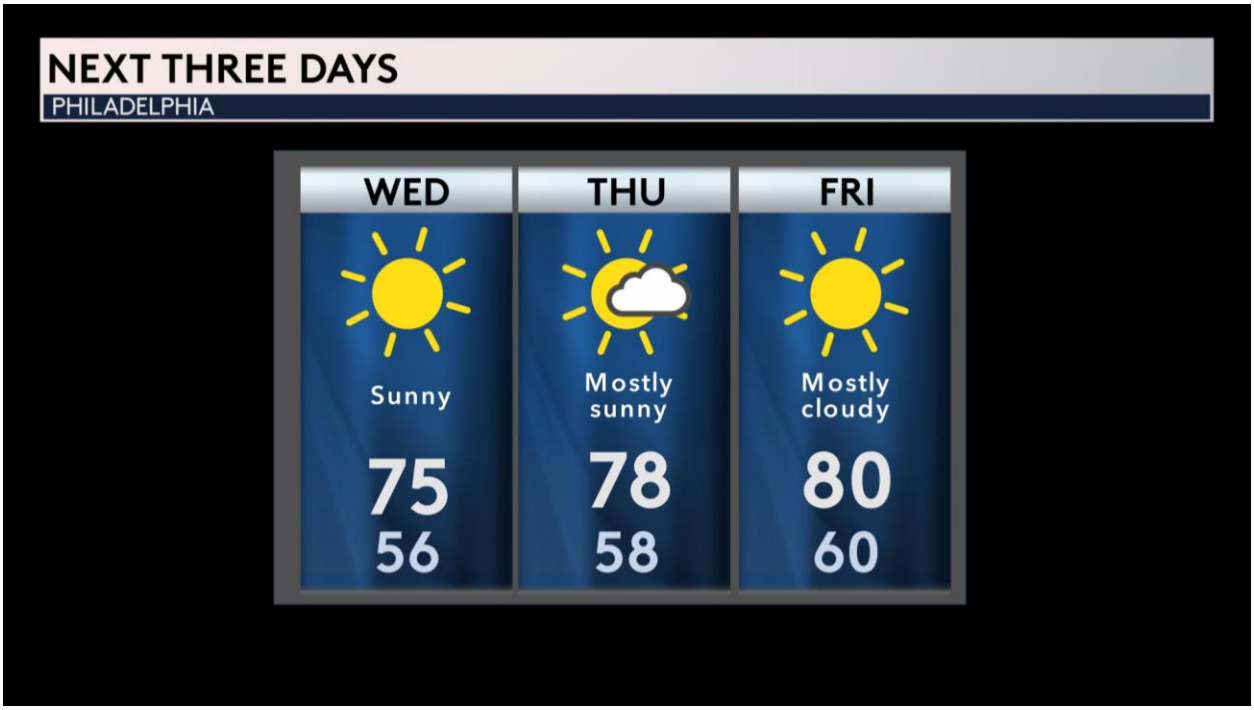
1. Select **Add overlay image from file** from the context menu. The **Open DEM file** dialog displays.
2. Browse to the desired **Image** file (***.png***, ***.jpg***, ***.tif***), and then click **Open**. The **Image** file is added to the **Base Map** as an overlay image layer.

Add feature node file: A **Feature Node** file is a file that contains a (sub)tree of feature layers, onto which common operations can be carried out. **Base Map** layers can have specific feature layers assigned. For example borders or roads, polygons showing areas with high risk for flooding, volcanic ash susceptible areas etc., so essentially any map feature beyond the actual terrain and texture. Applies to **Base Map** layer only.

Chapter 11: Replaceables

Overview

Replaceables is a powerful feature that enables you to link one or more symbols to a **Location**, **Image**, **Text**, or **View**. For example, it is easy to display a 3-day forecast for a specific location, and then update all data fields by updating only the location.



Replaceables can be updated directly from the **Replaceables Panel** or from Chyron LUCI. This requires integration with Chyron's CAMIO Newsroom system, and enables the meteorologist or presenter to access the Weather template within LUCI, and set a **Location**, **Image**, **Text**, and/or **View**. For example, a reporter can quickly create multiple graphics, each of which displays text and graphics for a different city.

There are three main steps to setting up and using a **Replaceable**.

1. Create a **Replaceable**.
2. Assign one or more symbols with a **Replaceable**.

   NOTE: A symbol can be assigned to only one **Replaceable** at any time.

3. Update the **Replaceable** to display the data in the **Weather Sequence**.

Add a Location Replaceable

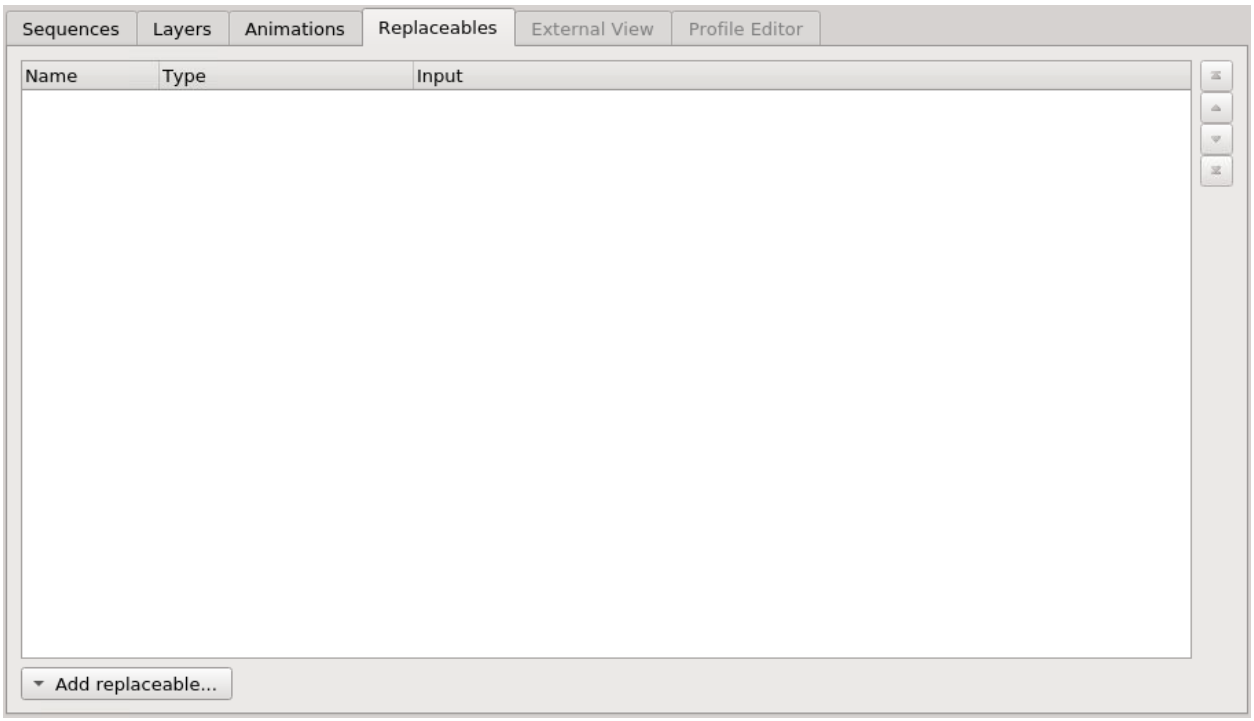
You can update one or more symbols in a Weather sequence via **Location Replaceables**.

The following instructions assume that you are working from an existing Weather sequence that contains **data-connected symbols**, which can be text, images, or animated elements, to be specified as **Location Replaceables**, such as temperature, weather icons, wind information, etc.

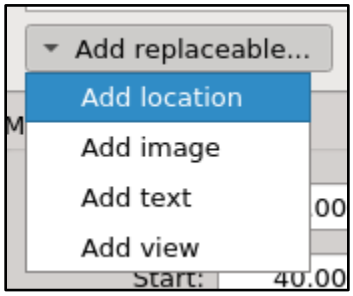
BEST PRACTICE: As you design the sequence to which you intend to add **Location Replaceables**, test that the data-connected symbols assigned to **Location Replaceables** update properly for each of the potential **Locations** prior to going on air.

To create a **Location** replaceable:

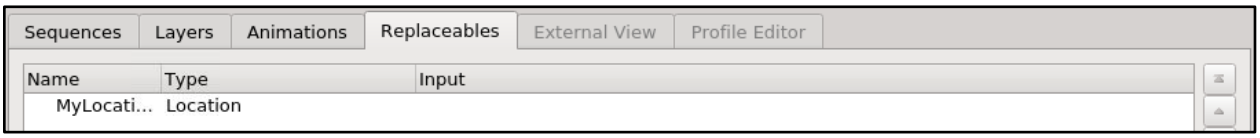
1. Click the **Replaceables** tab. The **Replaceables Panel** displays:



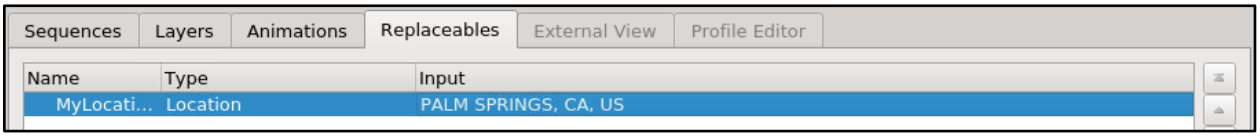
2. Click **Add Replaceable** or right-click anywhere in the **Replaceables Panel**, and then select **Add location**.



A **MyLocation** item appears in the **Replaceables** list.



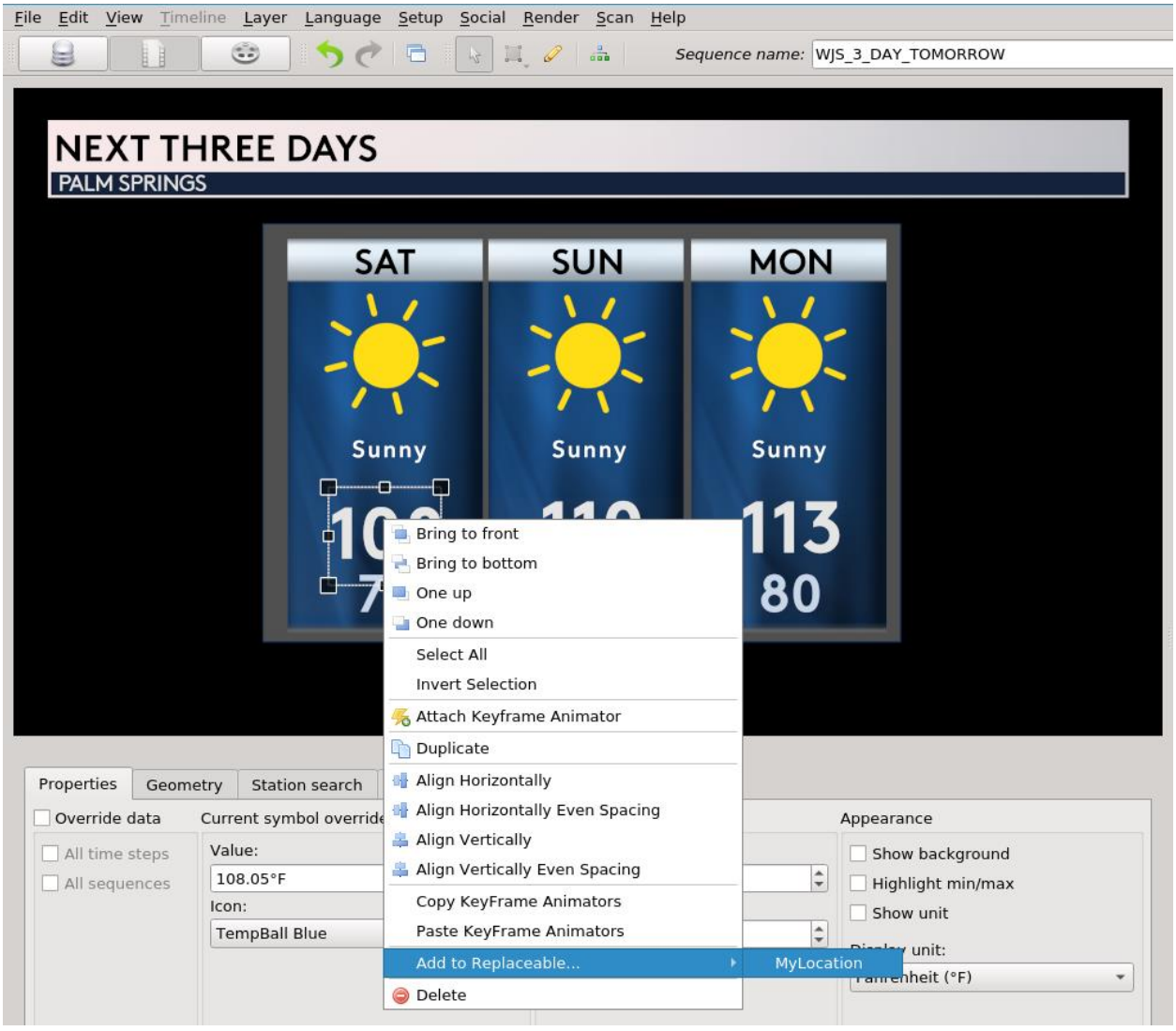
3. If desired, then you can rename the **Replaceable**. Double-click the **Name** field of the replaceable, enter a new name, and then press **Enter**.
4. Double-click the **Input** field, and then type the name of a location (station) for which you would like to display data. If one or more stations matching the typed location is available, then a dropdown appears. Select the desired location from the dropdown.



You can add multiple **Location Replaceables**, to, for example, display data for more than one city in the same Weather sequence.

To assign a symbol to a **Location Replaceable**:

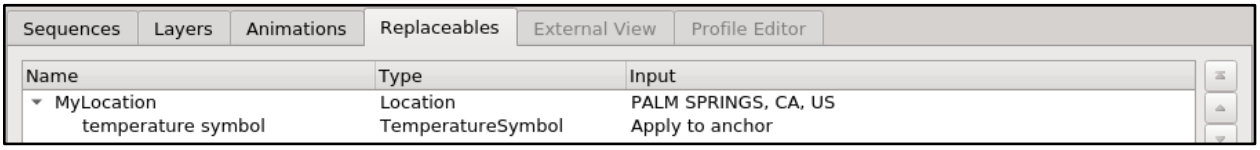
1. Click the **Layers** tab to display the **Layer Collection**.
2. In the **Layer Collection**, select the layer that contains the symbol to be assigned to a **Replaceable**.
3. If the layer is locked, then unlock the layer.
4. From the **Sequence Preview**, right-click the symbol that you would like to assign to the **Location Replaceable**, and then select **Add to Replaceable**., and select the desired Replaceable. If the following, only one choice is shown, i.e., **MyLocation**.



BEST PRACTICE: Assign symbols to a layer in a logical order that makes it easy to find in the **Replaceables** list, as they cannot be reordered within the list.

NOTE: If **Add to Replaceable** is grayed out, then either the symbol cannot be assigned as a **Replaceable** (e.g., it may be a manual element), or it has already been assigned as a **Replaceable**.

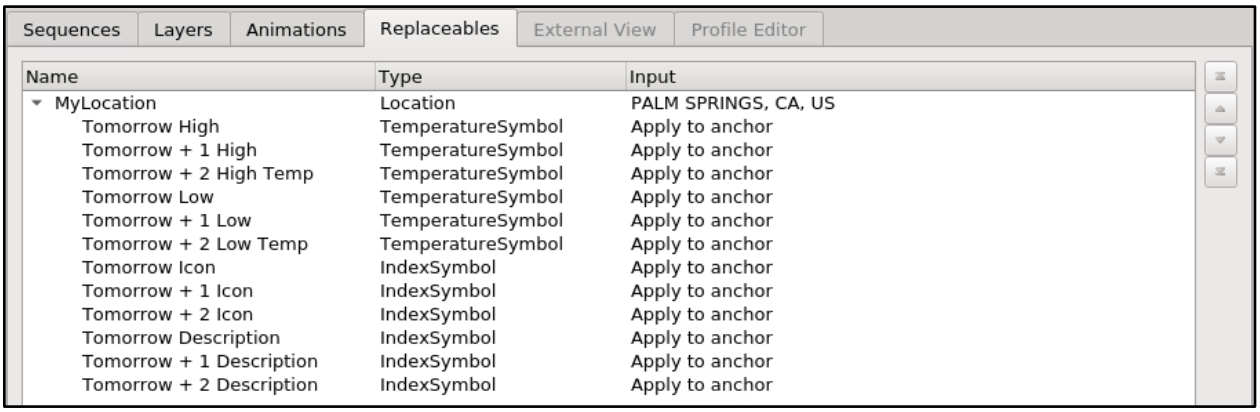
As a symbol is added to a **Replaceable**, it appears in the list of symbols associated with the **Replaceable** in the **Replaceables Panel**.



5. To assign each additional symbol to a **Replaceable**, repeat Steps 2 through 4.

You can rename a symbol assigned with the **Replaceable**. When there are multiple symbols, renaming them can make it easier to distinguish them from one another:

1. Click the **Replaceables** tab.
2. Double-click the **Name** field for the symbol, type the new name, and then press **Enter**. The following shows the symbols renamed for easier identification.



Add an Image Replaceable

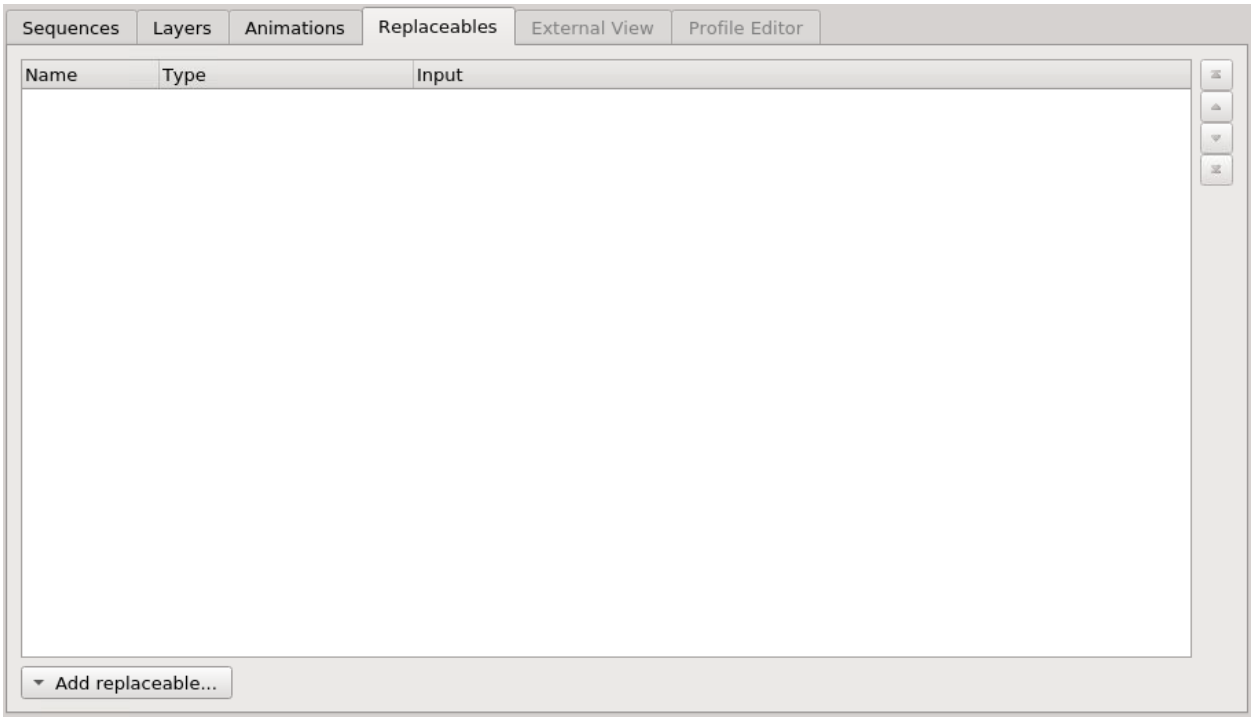
You can update one or more **Paint** symbols in a Weather sequence via **Image Replaceables**, for example, to display an accent graphic, such as a beach ball or pair of skis.

The following instructions assume that you are working from an existing Weather sequence that contains one or more **Paint** symbols to be specified as **Image Replaceables**..

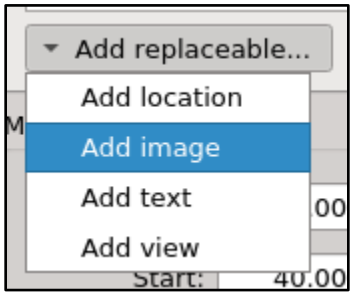
BEST PRACTICE: The **Paint** symbol in the sequence and any image that may replace it should be the same size and resolution.

To create an **Image Replaceable**:

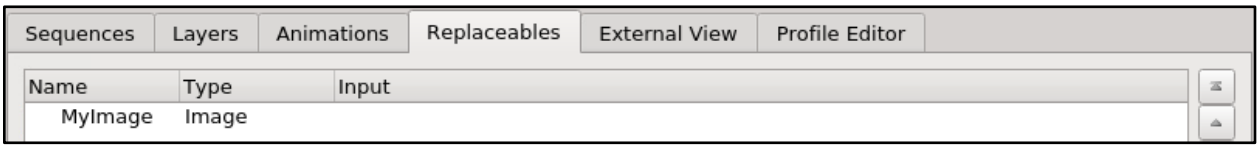
1. Click the **Replaceables** tab. The **Replaceables Panel** displays:



2. Click **Add Replaceable** or right-click anywhere in the **Replaceables Panel**, and then select **Add image**.



A **MyImage** item appears in the **Replaceables** list.

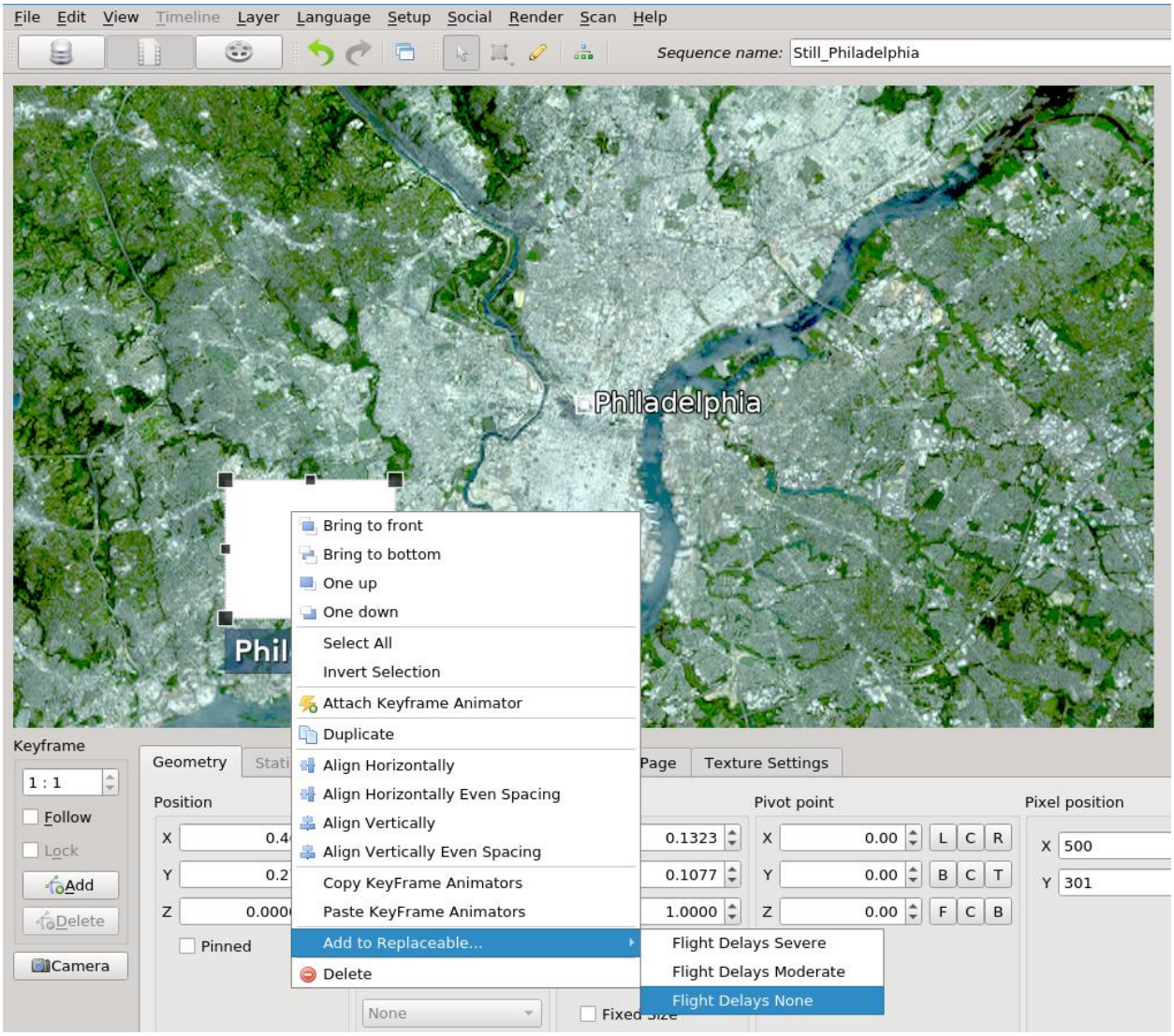


3. Double-click the **Input** field, click the folder icon at the right of the field, and then browse to and select the desired image file. After you select the image file, click outside of the field to apply.
4. If desired, then you can rename the **Replaceable**. Double-click the **Name** field of the replaceable, enter a new name, and then press **Enter**.

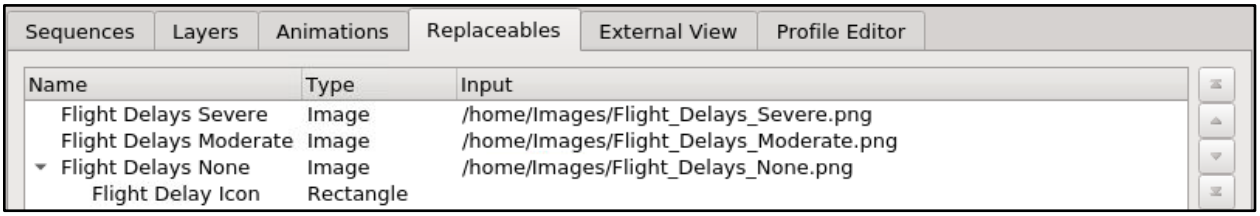
You can add multiple **Image Replaceables**, to, for example, to display multiple accent images the same Weather sequence.

To assign a **Paint** symbol to an **Image Replaceable**:

1. Click the **Layers** tab to display the **Layer Collection**.
2. In the **Layer Collection**, select the layer that contains the symbol to be assigned to a **Replaceable**.
3. If the layer is locked, then unlock the layer.
4. From the **Sequence Preview**, right-click the symbol that you would like to assign to the **Image Replaceable**, and then select **Add to Replaceable**, and then select the desired **Image Replaceable**. In the following example, there is a choice of three **Replaceables**.



As a symbol is added to a **Replaceable**, it appears in the list of symbols associated with the **Replaceable** in the **Replaceables Panel**.



> **NOTE:** If **Add to Replaceable** is grayed out, then either the symbol cannot be assigned as a **Replaceable**, or it has already been assigned as a **Replaceable**.

5. To assign each additional symbol to a **Replaceable**, repeat Steps 2 through 4. Note that each **Paint** symbol assigned to the same **Image Replaceable** displays the same image, as specified in the **Image Replaceable Input** field. To assign multiple **Paint** symbols to distinct **Replaceables**, then you must add a separate **Image Replaceable** for each.

You can rename a symbol assigned with the **Replaceable**. When there are multiple symbols, renaming them can make it easier to distinguish them from one another:

1. Click the **Replaceables** tab.
2. Double-click the **Name** field for the symbol, type the new name, and then press **Enter**.

The following shows a map of the Philadelphia, PA area, The **Flight Delay** image symbol is a **Replaceable** that can be set to **Flight Delays Severe**, **Flight Delays Moderate** or **Flight Delays None**. You can enter a description of the flight delay, e.g., number of hours.

Sequences | Layers | Animations | Replaceables | External View | Profile Editor

Name	Type	Input
Flight Delays Severe	Image	/home/Images/Flight_Delays_Severe.png
Flight Delays Moderate	Image	/home/Images/Flight_Delays_Moderate.png
Flight Delays None	Image	/home/Images/Flight_Delays_None.png
Flight Delay Icon	Rectangle	
Delay Description	Text	No Delays
Delay Description	TextSymbol	

Add a Text Replaceable

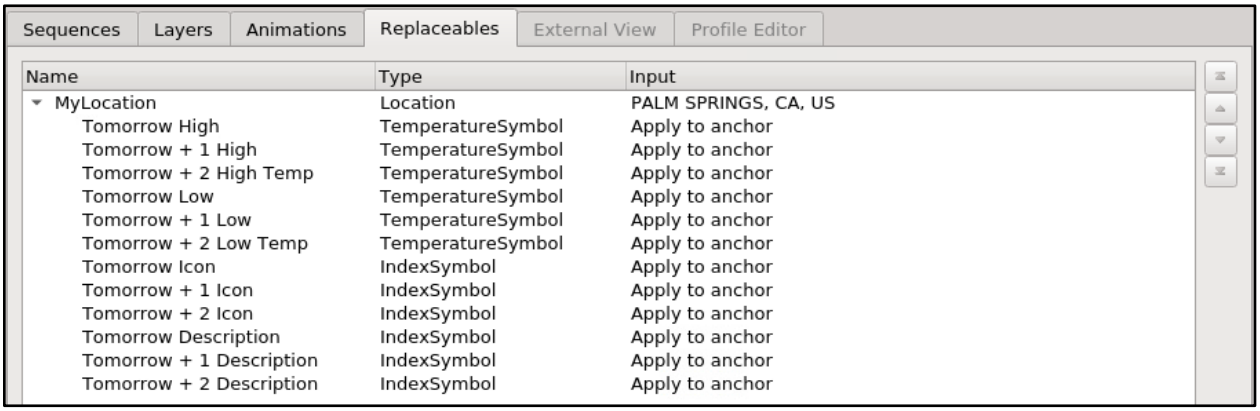
You can update one or more **Free Text** symbols in a Weather sequence via **Text Replaceables**, for example, to display a comment, such as “Great Beach Day!” or to display the name of a location that is different from the official station name.

The following instructions assume that you are working from an existing Weather sequence that contains one or more **Free Text** symbols to be specified as **Text Replaceables**.

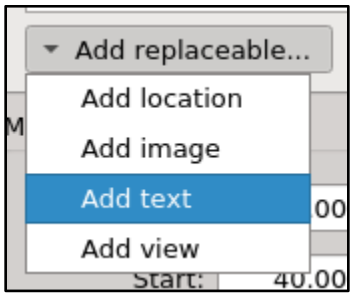
For this example, these instructions use the sequence to which **Location Replaceables** were added.

To create a **Text Replaceable**:

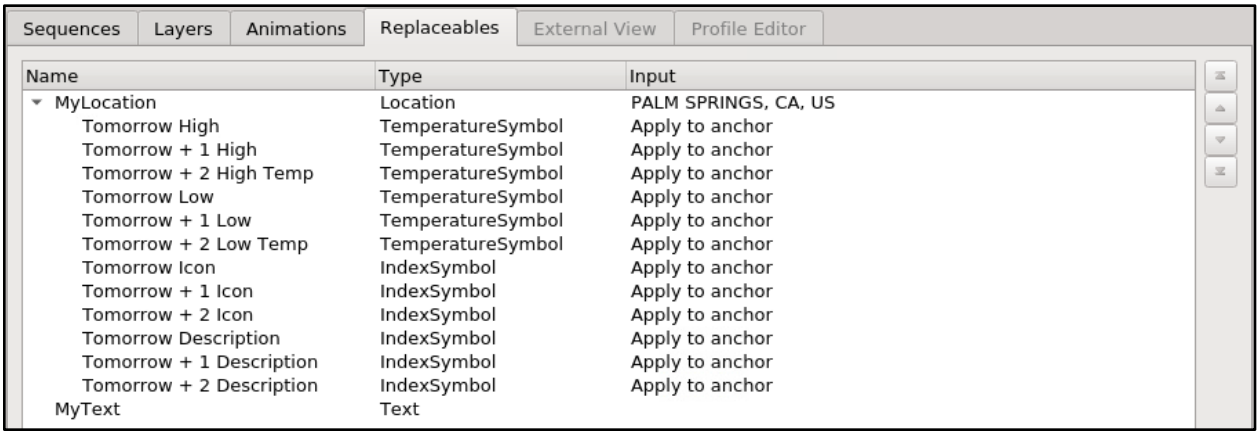
1. Click the **Replaceables** tab. The **Replaceables Panel** displays:



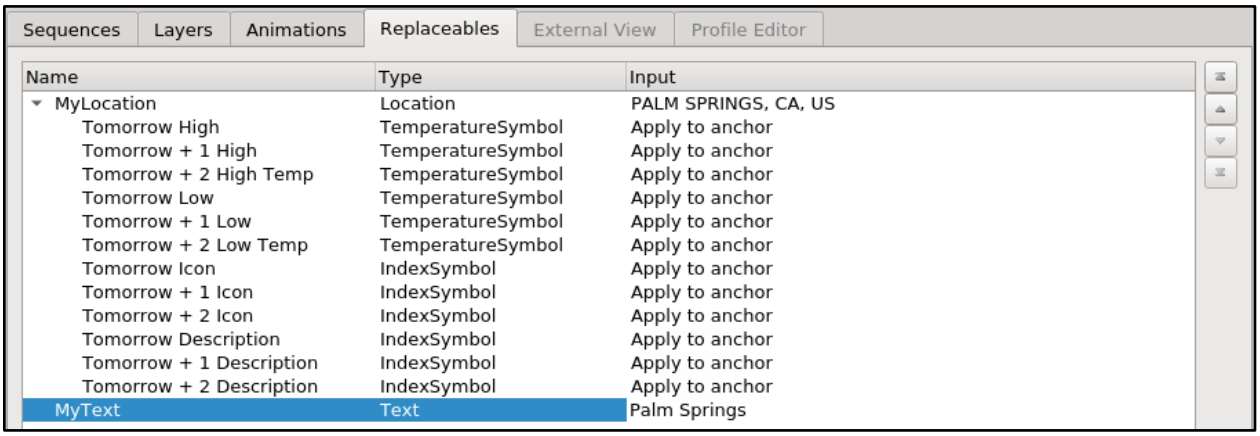
2. Click **Add Replaceable** or right-click anywhere in the **Replaceables Panel**, and then select **Add text**.



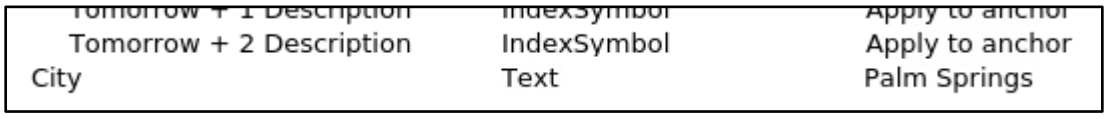
A **MyText** item appears in the **Replaceables** list.



3. Double-click the **Input** field, and then enter the desired text.



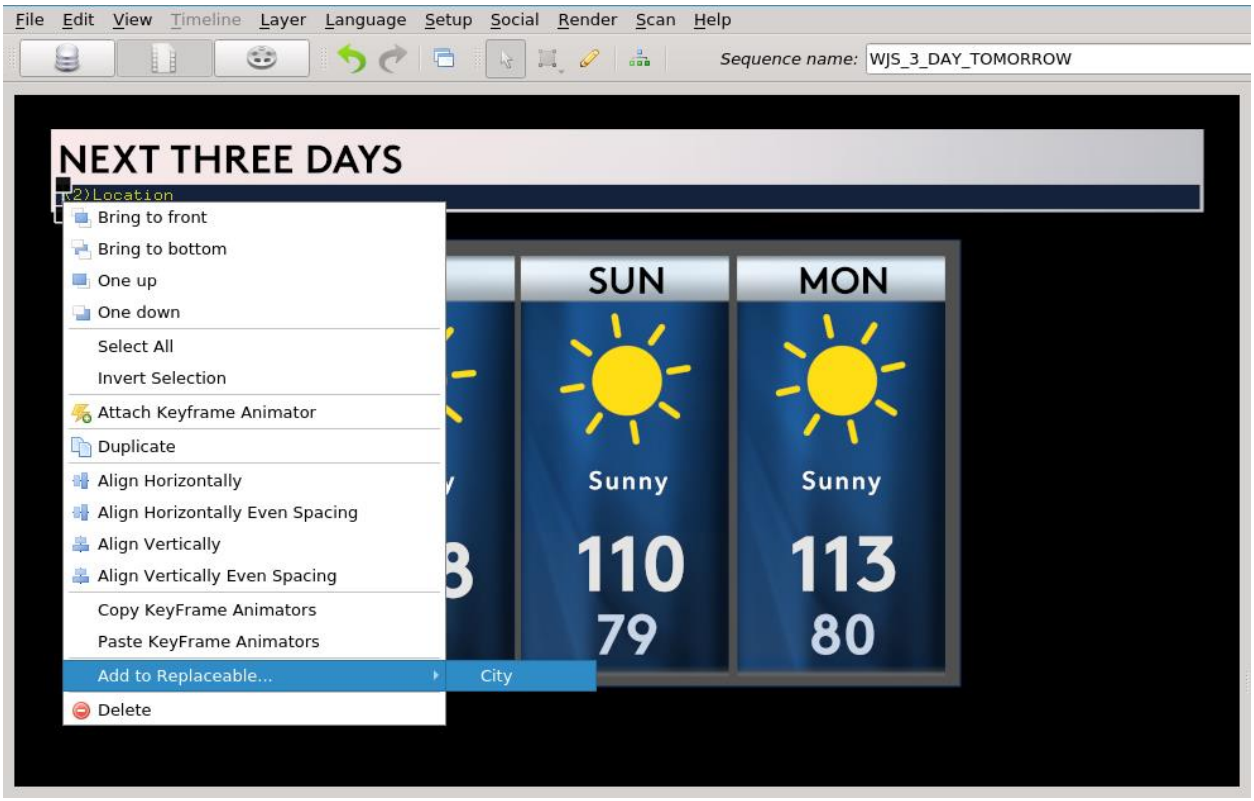
4. If desired, then you can rename the **Replaceable**. Double-click the **Name** field of the replaceable, enter a new name, and then press **Enter**.



You can add multiple **Text Replaceables**, to, for example, to display a comment in multiple languages in the same Weather sequence.

To associate a **Free Text** symbol to a **Text Replaceable**:

1. Click the **Layers** tab to display the **Layer Collection**.
2. In the **Layer Collection**, select the layer that contains the symbol to be assigned to a **Replaceable**.
3. If the layer is locked, then unlock the layer.
4. From the **Sequence Preview**, right-click the **Free Text** symbol that you would like to assign to the **Text Replaceable**, select **Add to Replaceable**., and then select the desired **Location Replaceable**. In the following, it is **City**.



As a symbol is added to a **Replaceable**, it appears in the list of symbols associated with the **Replaceable** in the **Replaceables Panel**.

> **NOTE:** If **Add to Replaceable** is grayed out, then either the symbol cannot be assigned as a **Replaceable**, or it has already been assigned as a **Replaceable**.

5. To assign each additional symbol to a **Replaceable**, repeat Steps 2 through 4. Note that each **Free Text** symbol assigned to the same **Text Replaceable** displays the same text, as specified in the **Text Replaceable Input** field. Each **Free Text** symbol can be styled differently, however. To assign multiple **Free Text** symbols to distinct **Replaceables**, then you must add a separate **Text Replaceable** for each.

You can rename a symbol assigned with the **Replaceable**. When there are multiple symbols, renaming them can make it easier to distinguish them from one another:

1. Click the **Replaceables** tab.
2. Double-click the **Name** field for the symbol, type the new name, and then press **Enter**.

Add a View Replaceable

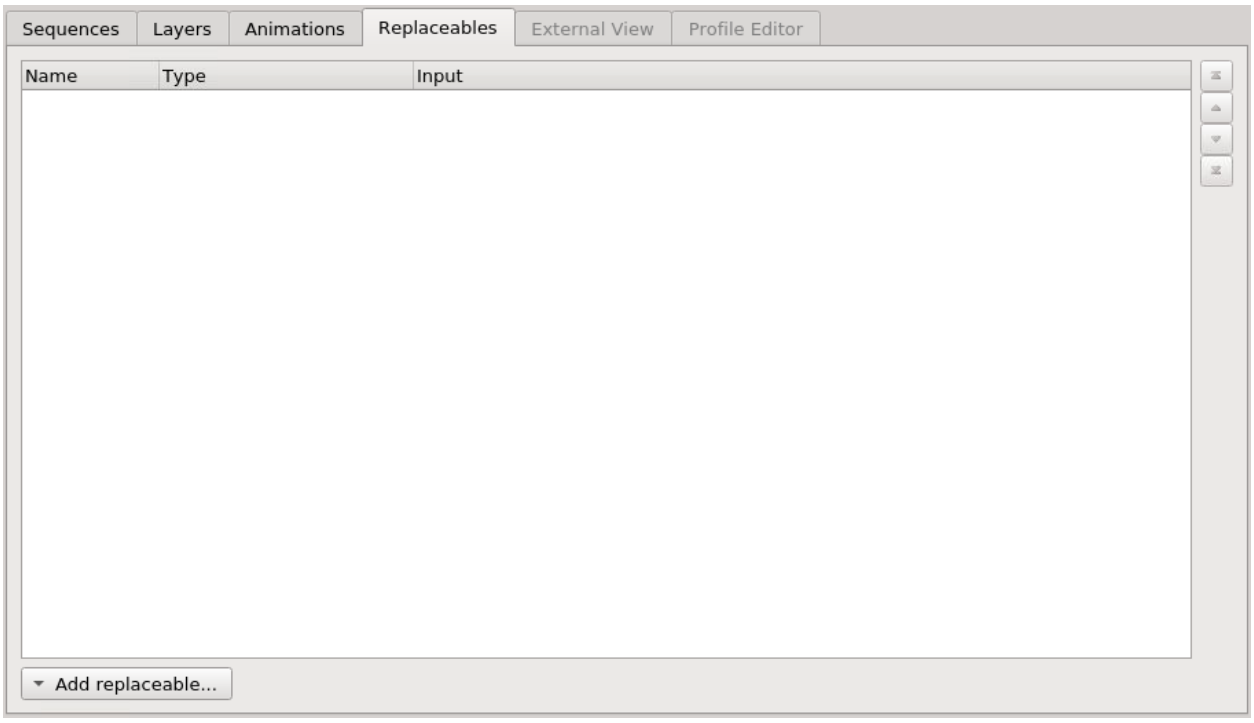
The **View Replaceable** enables you to associate a **Location** with an animation keyframe. For example, you can create two-keyframe animation in which the first keyframe centers on one location, and the second keyframe centers on a different location.

BEST PRACTICE: When designing an animation in which a **View Replaceable** is to be used, ensure that the speed and **Camera Altitude** are appropriate to the full range of potential **Locations**.

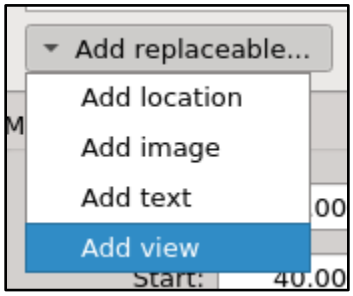
- If the distance between one keyframe's linked **Location** and the next keyframe's linked **Location** are far apart, and/or the **Camera Altitude** is too low, then the animation speed may be too high.
- If the distance between one keyframe's linked **Location** and the next keyframe's linked **Location** are close together, and/or the **Camera Altitude** is too high, then the animation may not appear to move enough for the desired effect.

To create a **View Replaceable**:

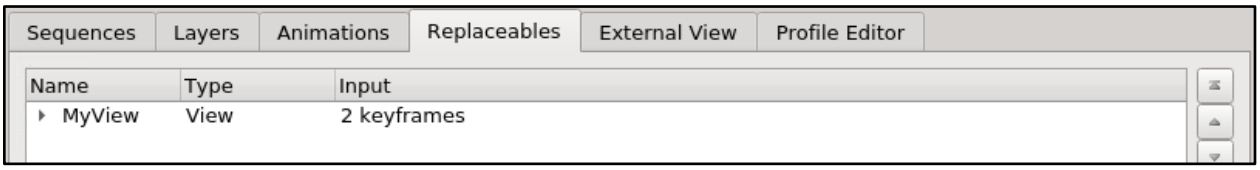
1. Click the **Replaceables** tab. The **Replaceables Panel** displays:



2. Click **Add Replaceable** or right-click anywhere in the **Replaceables Panel**, and then select **Add view**.

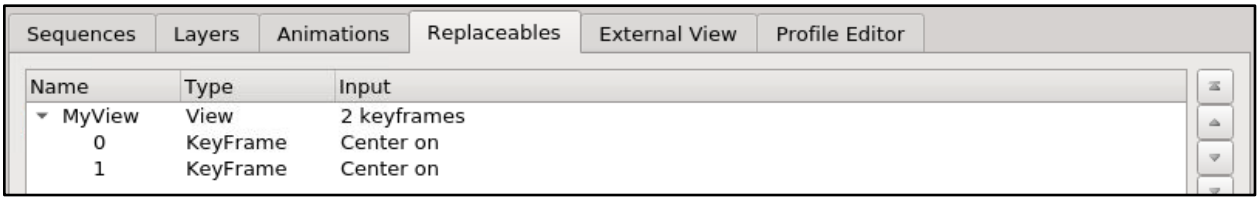


A **MyView** item appears in the **Replaceables** list. Note that the Input field displays the number of keyframes in the sequence animation.



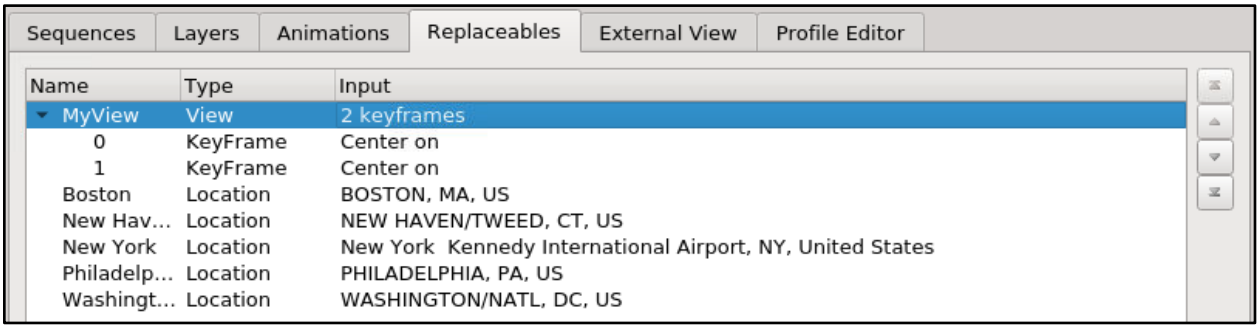
3. If desired, then you can rename the **Replaceable**. Double-click the **Name** field of the replaceable, enter a new name, and then press **Enter**.

4. Click the dropdown arrow to the left of **MyView**. The sequence keyframes display.

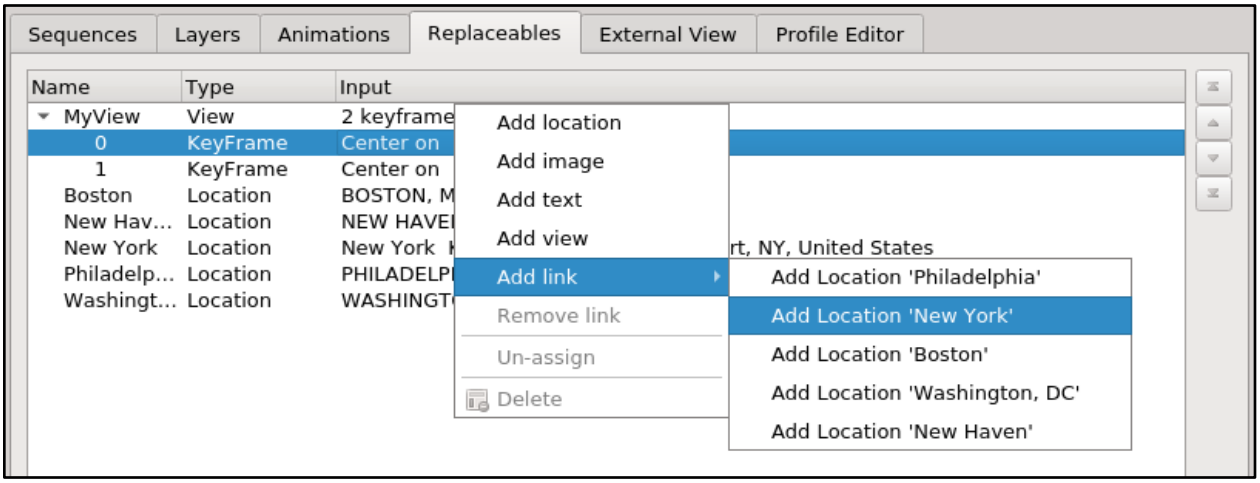


NOTE: When setting keyframes in an animation, keyframe numbering starts at **1**. In the **Replaceables Panel**, the keyframe numbering starts at **0**.

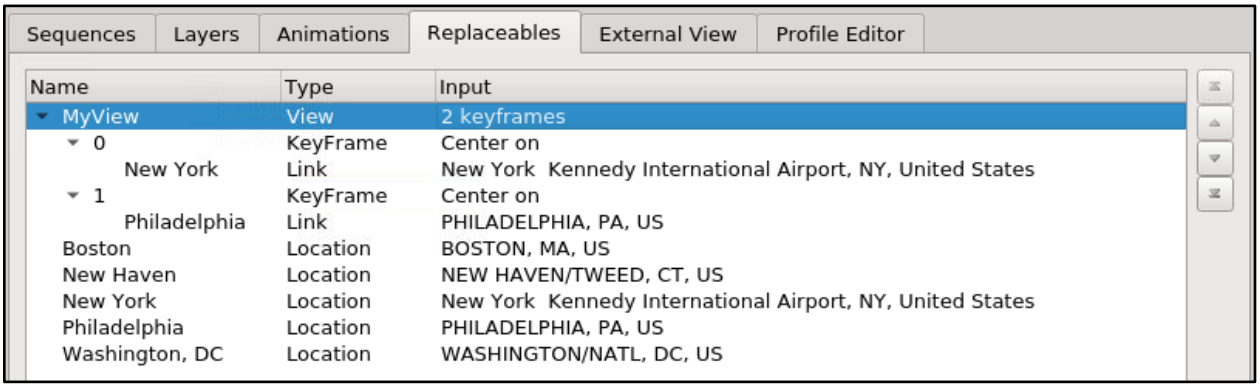
5. Add the locations to potentially apply to the keyframes. In this example, Boston, New Haven, New York, Philadelphia, and Washington DC are added. Rename if desired.



6. Right-click **Keyframe 0**, select **Add Link**, and then select a location. In this example, **Add Location 'New York'** is selected.



7. Repeat Step 5 for any additional keyframes. In this example, **Add Location 'Philadelphia'** is selected. When location selection is complete, the **Replaceables Panel** appears as follows:



8. Test the animation.

Reposition a Replaceable in the Replaceables List

A **Replaceable** and its individual items can be repositioned in the **Replaceables** list.

- When you move a **Replaceable**, then the **Replaceable** and its associated items move.
- When you move an item, then it moves within the list of items associated with the selected **Replaceable**.

NOTE: Not all items within a **Replaceable** can be repositioned in the list. If an item cannot be repositioned, then the move icons, as described below, are grayed out.

To reposition a **Replaceable** or an individual item:

- Select the **Replaceable** or the individual item to move, then perform one of the following operations:
  - Click  to move the **Replaceable** or the individual item up as follows:
    - If you select a **Replaceable**, then the **Replaceable** and its items move to the top of the **Replaceables** list.
    - If you select an individual item, then the item moves to the top position within the **Replaceable**.
  - Click  to move the **Replaceable** or item up one position.
  - Click  to move the **Replaceable** or item down one position.
  - Click  to move the layer, symbol or sublayer down as follows:
    - If you select a **Replaceable**, then the **Replaceable** and its items move to the bottom of the layer collection.
    - If you select an individual item, then the item moves to the bottom position within the selected **Replaceable**.

Unassign a Symbol from a Replaceable

To remove an item from a **Replaceable**:

- In the **Replaceables Panel**, right-click the item to remove, and then select **Un-assign**.

Delete a Replaceable

To delete a **Replaceable** and all items associated with the **Replaceable**:

- Right-click the **Replaceable**, and then select **Delete**.

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Chapter 12: External View

Overview

External View provides a view of the sequence **Flight Path**, so that the flightpath, including altitude, can be viewed in its entirety.

Flight Path elements are indicated as follows:

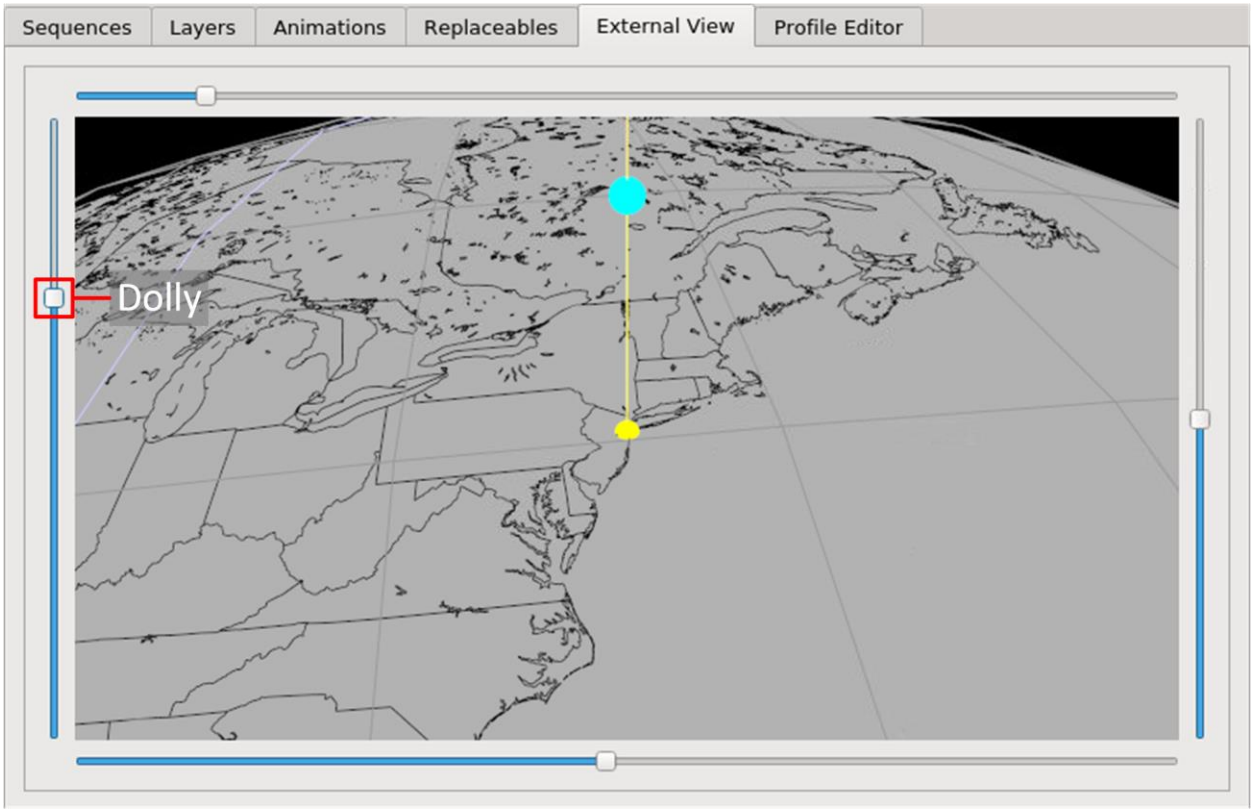
- **Yellow Dot: Flight Path Latitude/Longitude** of second-to-last keyframe. In a two-keyframe flight path, the second-to-last keyframe is the first keyframe.
- **Blue Dot: Flight Path Latitude/Longitude** and **Altitude** for second-to-last keyframe. In a two-keyframe flight path, the second-to-last keyframe is the first keyframe.
- **Yellow Line:** Connects **Latitude/Longitude** with **Camera** for second-to-last keyframe. In a two-keyframe flight path, the second-to-last keyframe is the first keyframe.
- **Light Blue Dot: Flight Path Camera** for all keyframes except second-to-last keyframe.
- **Pink Dot:** Current **Flight Path Latitude/Longitude/Altitude** position.
    - At first keyframe, is coincident with **Flight Path Camera** start point.
    - At last keyframe, is coincident with **Flight Path Camera** end point.
- **White Line Extending down from Pink Dot:** Current **Flight Path Latitude/Longitude**.
    - At first keyframe, bottom end is coincident with starting **Latitude/Longitude**.
    - At last keyframe, bottom end is coincident with starting **Latitude/Longitude**.
- **Pink Line: Flight Path**

Adjust the External View

You can adjust the **External View** using the sliders at the top, bottom, left and right of the **External View** display. Doing so does not affect the sequence. The following images show an **External View** of a two-keyframe zoom into New York County (Manhattan), with no change to **Latitude** or **Longitude**.

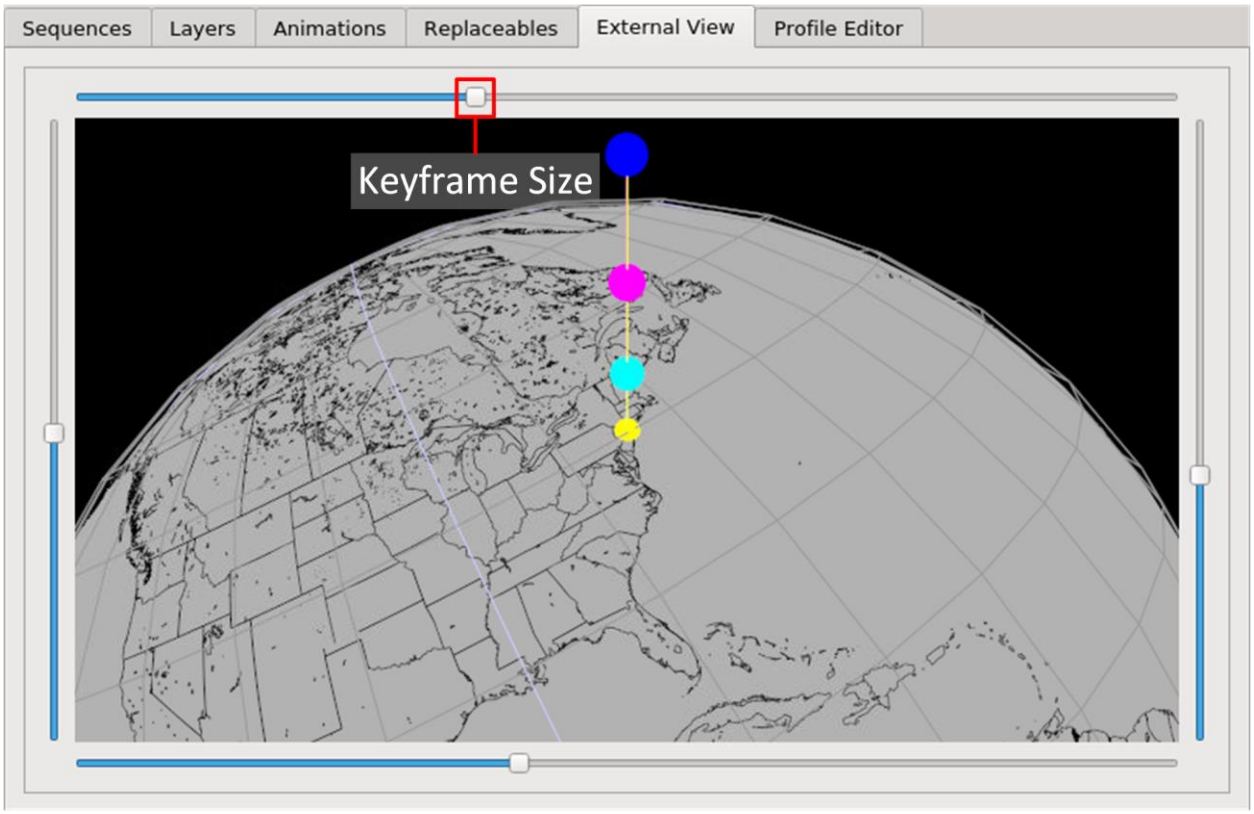
Left Slider - Dolly: Moves the view closer to or away from Earth, same as a camera dolly.

- Drag slider up to move the view closer to Earth.
- Drag slider down to move the view further away from Earth.



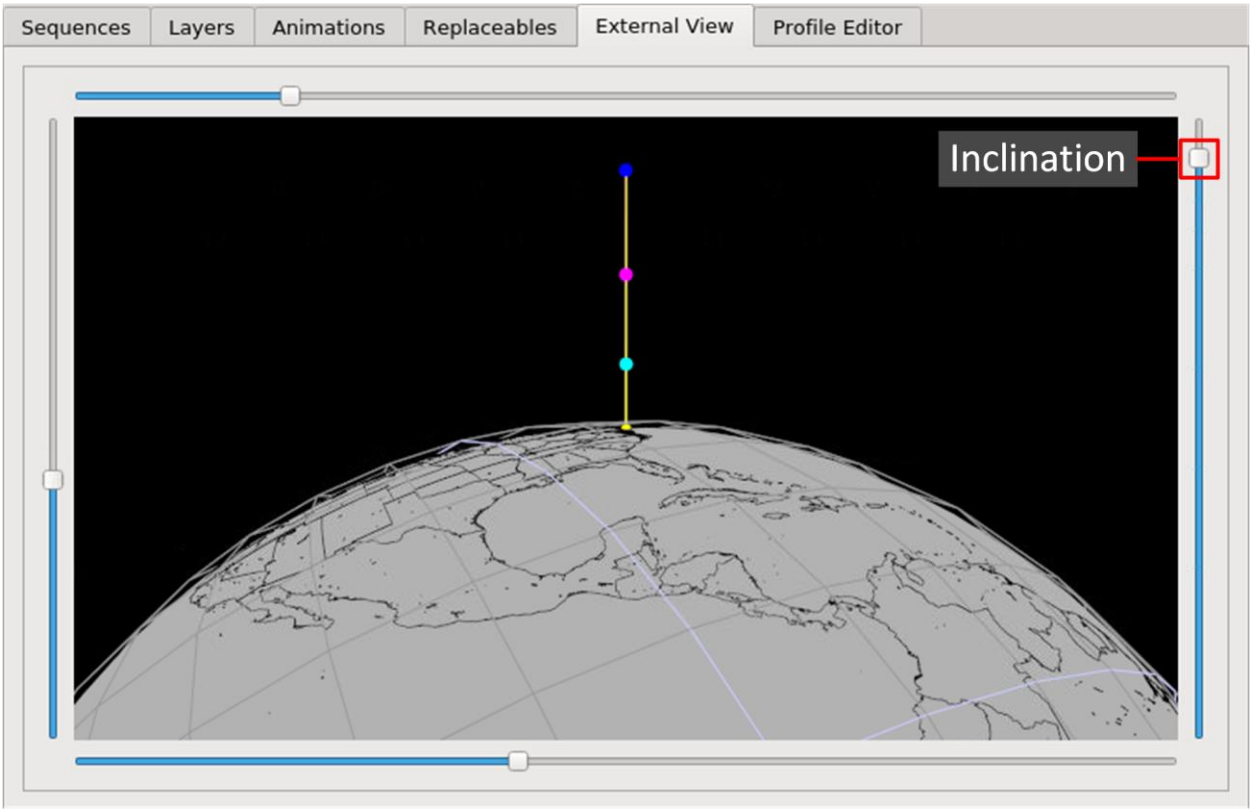
Top Slider - Keyframe Size: Enlarges/decreases the size of the dot representing the keyframes and the **Camera Flight Path** position.

- Drag slider to the right to enlarge the keyframe and **Camera Flight Path** position dot size.
- Drag slider to the left to enlarge the keyframe and **Camera Flight Path** position dot size.



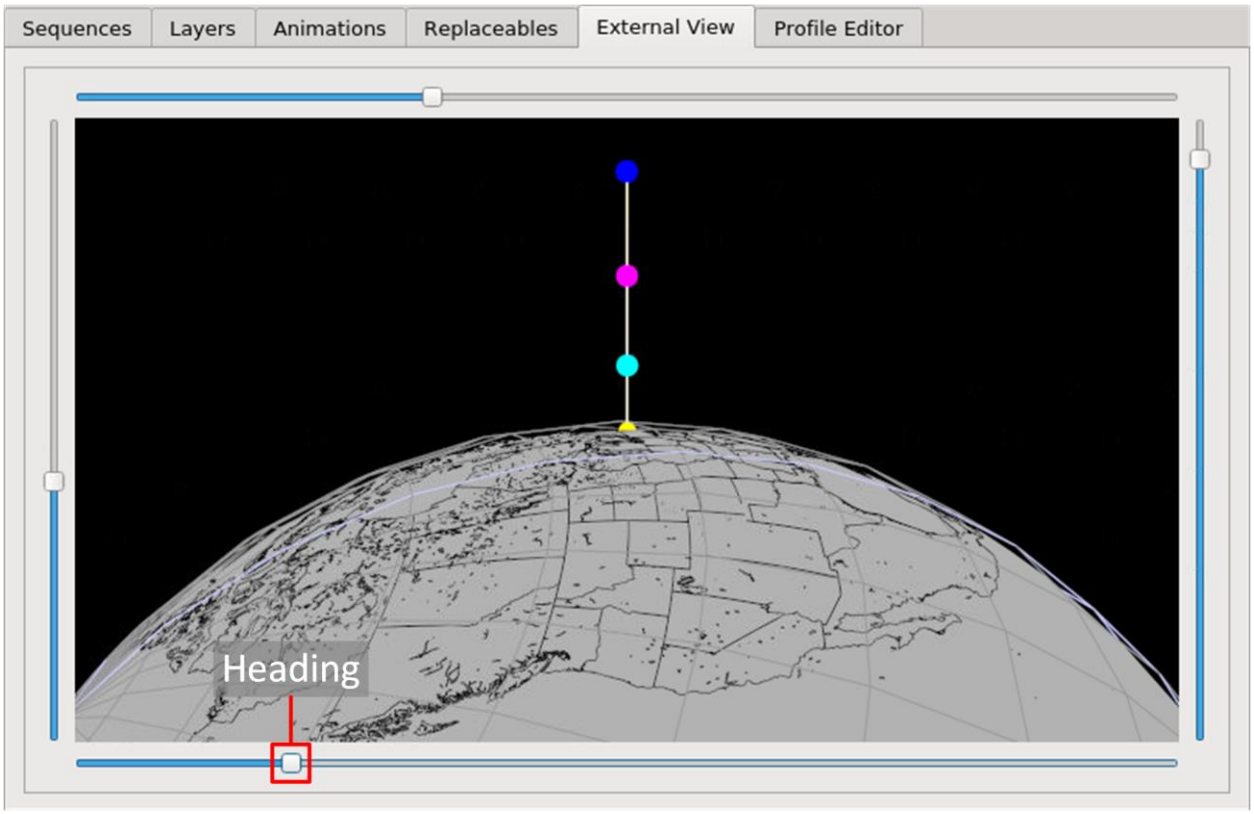
Right Slider - Inclination: Increases/decreases the angle at which you view the Earth,

- Drag slider up to increase inclination.
- Drag slider down to decrease inclination.



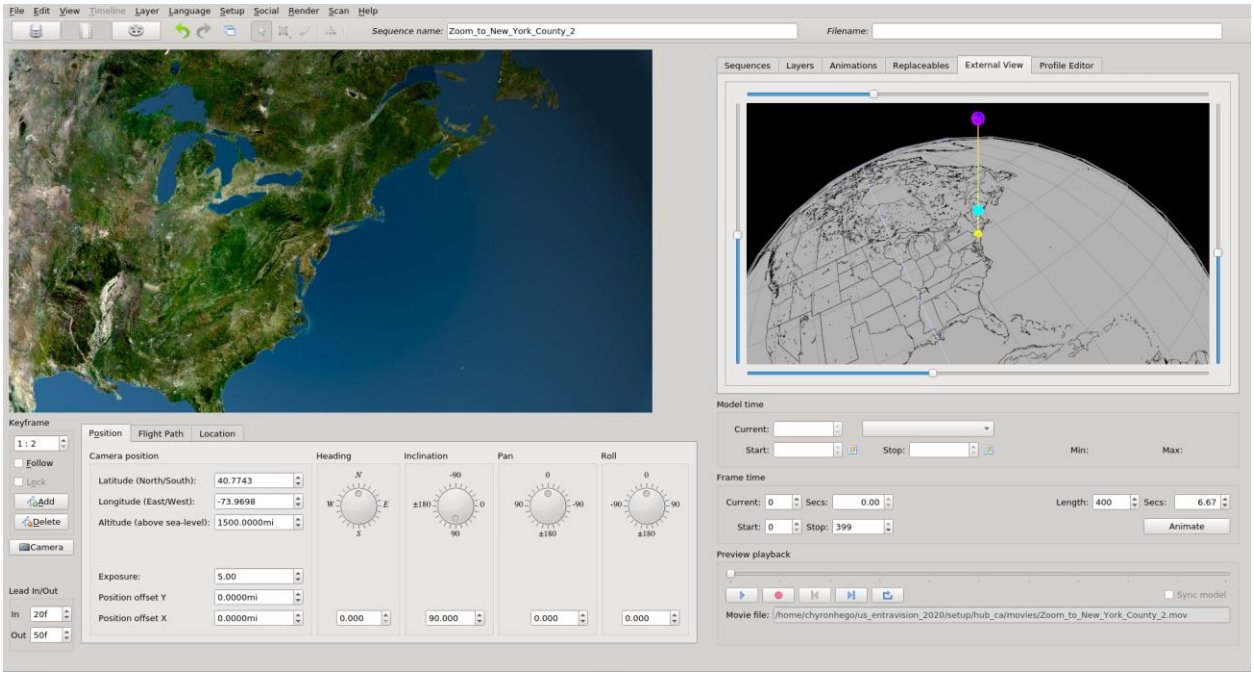
Bottom Slider - Heading:

- Drag slider to the right to spin the view of Earth counterclockwise around the zoom destination.
- Drag slider to the left to spin the view of Earth clockwise around the zoom destination.

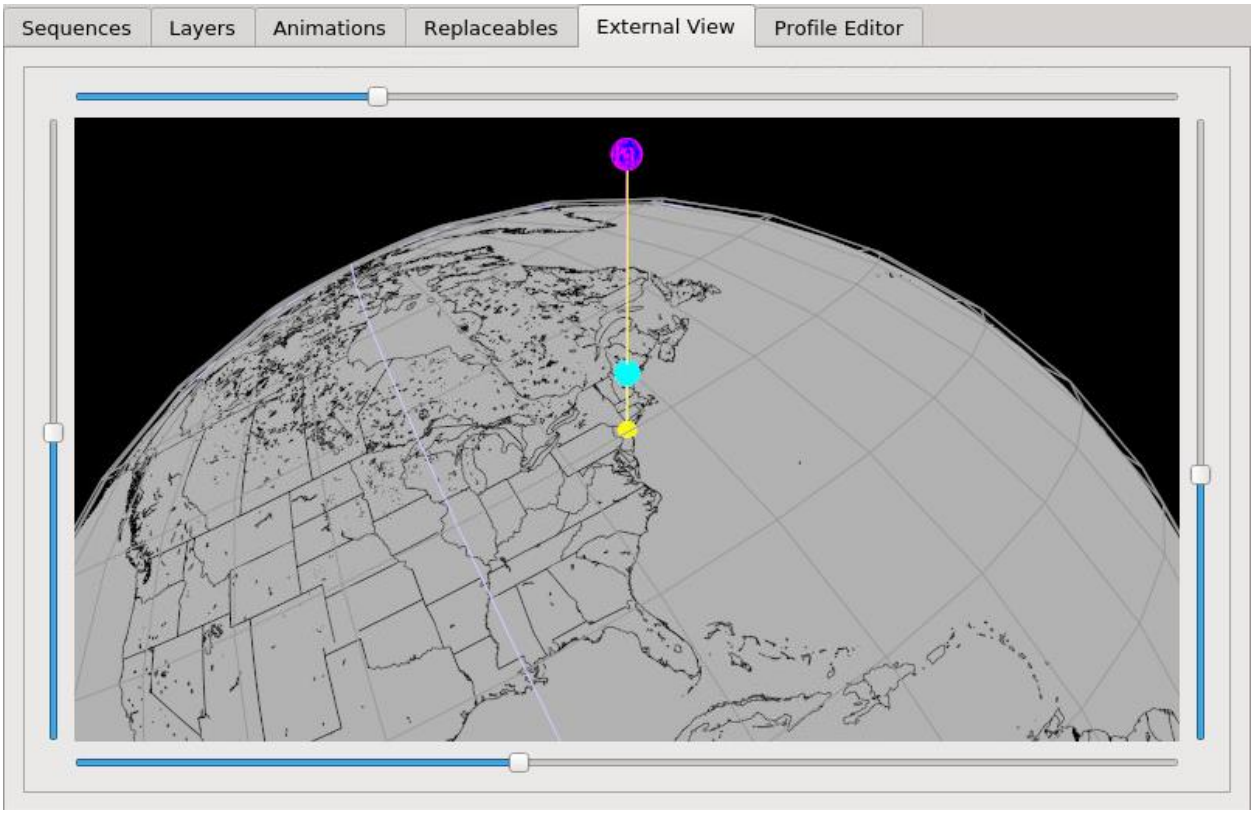


Two-Keyframe Flight Path

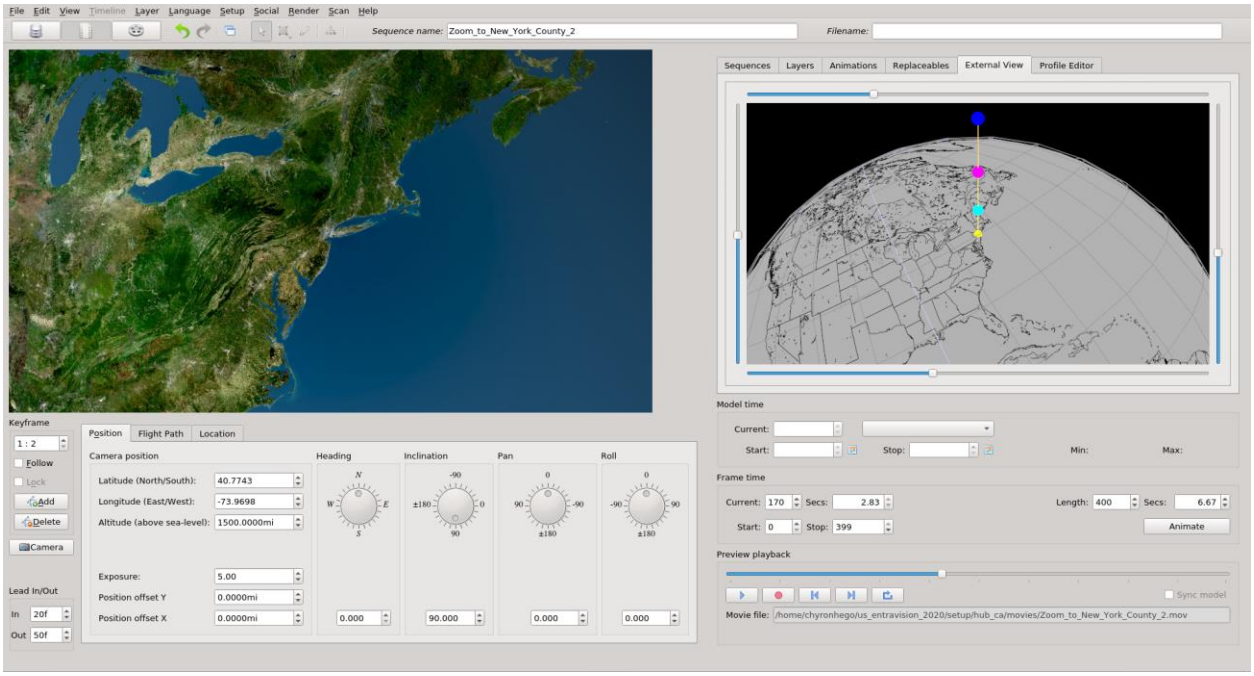
The following shows a two-keyframe **Flight Path** of a **Zoom to** sequence. The **Position** tab displays **Keyframe 1** settings.



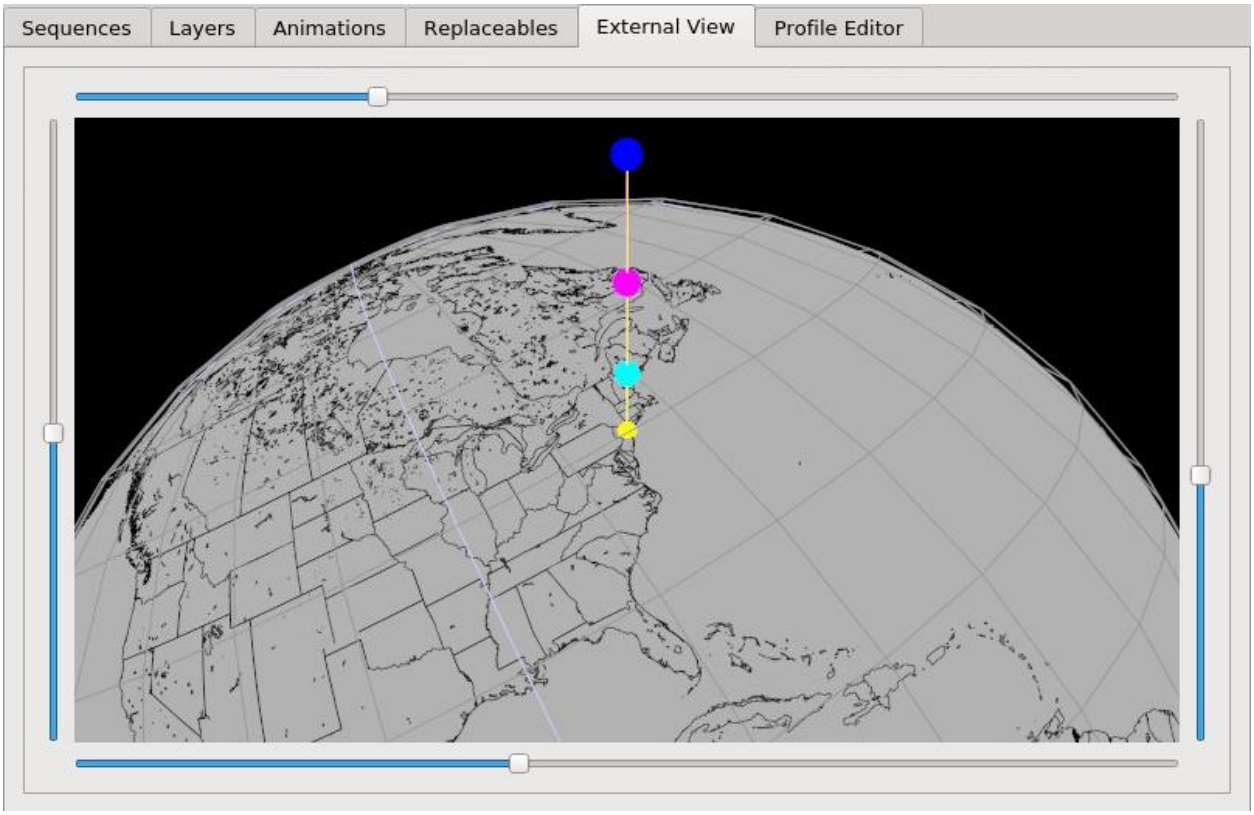
The start and end locations are the same, hence the display of a single vertical line depicting the **Flight Path**. The pink dot indicates the starting altitude and location of the **Flight Path**.



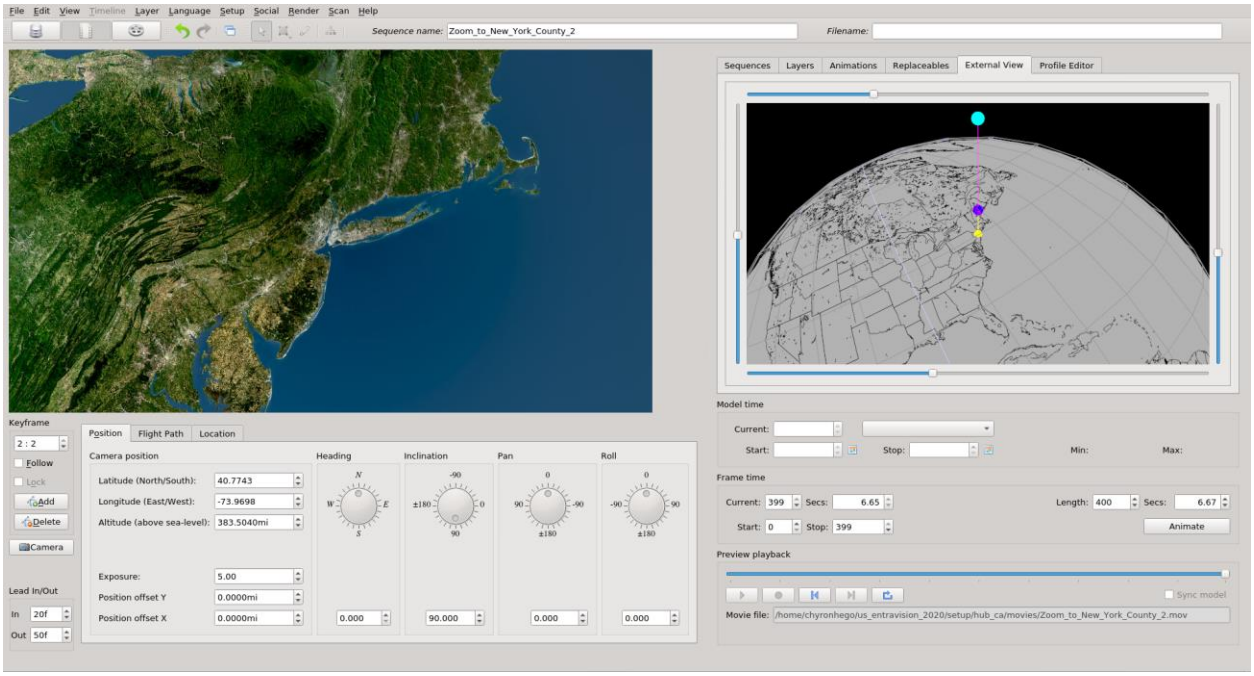
The following shows the same zoom mid flight. The **Sequence Preview** reflects the playback.



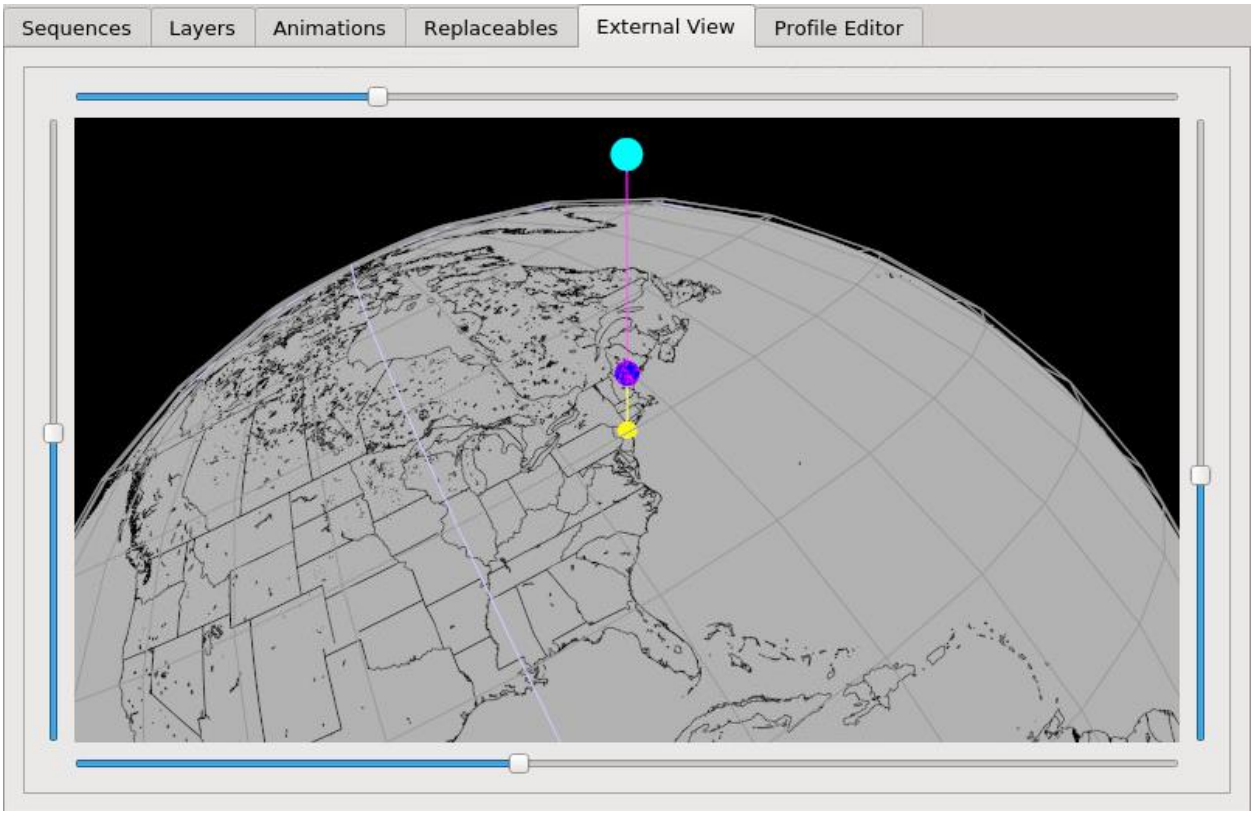
Note that the pink dot has descended in altitude from the start point.



The following shows the end point of the zoom. The **Position** tab displays **Keyframe 2** settings.



Note that the pink dot is now at the ending **Camera** altitude and location.



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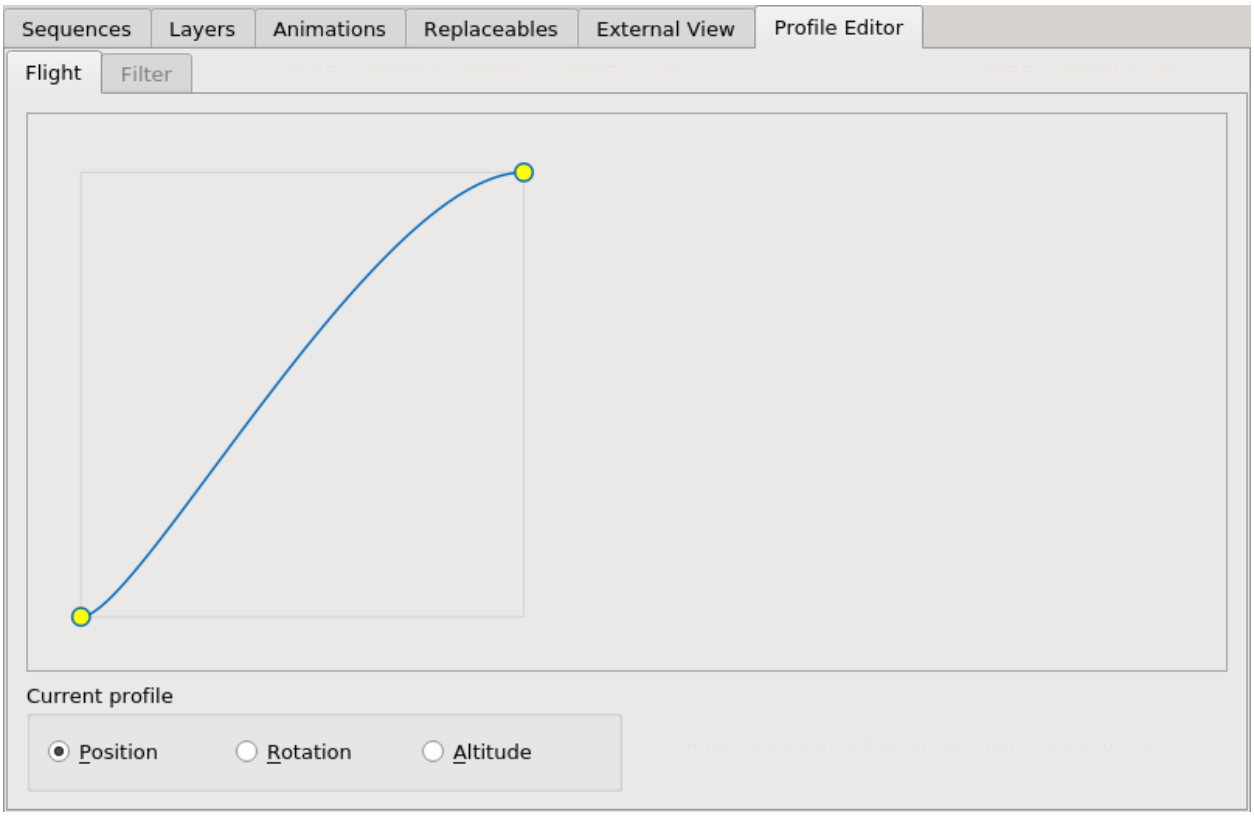
Chapter 13: Profile Editor

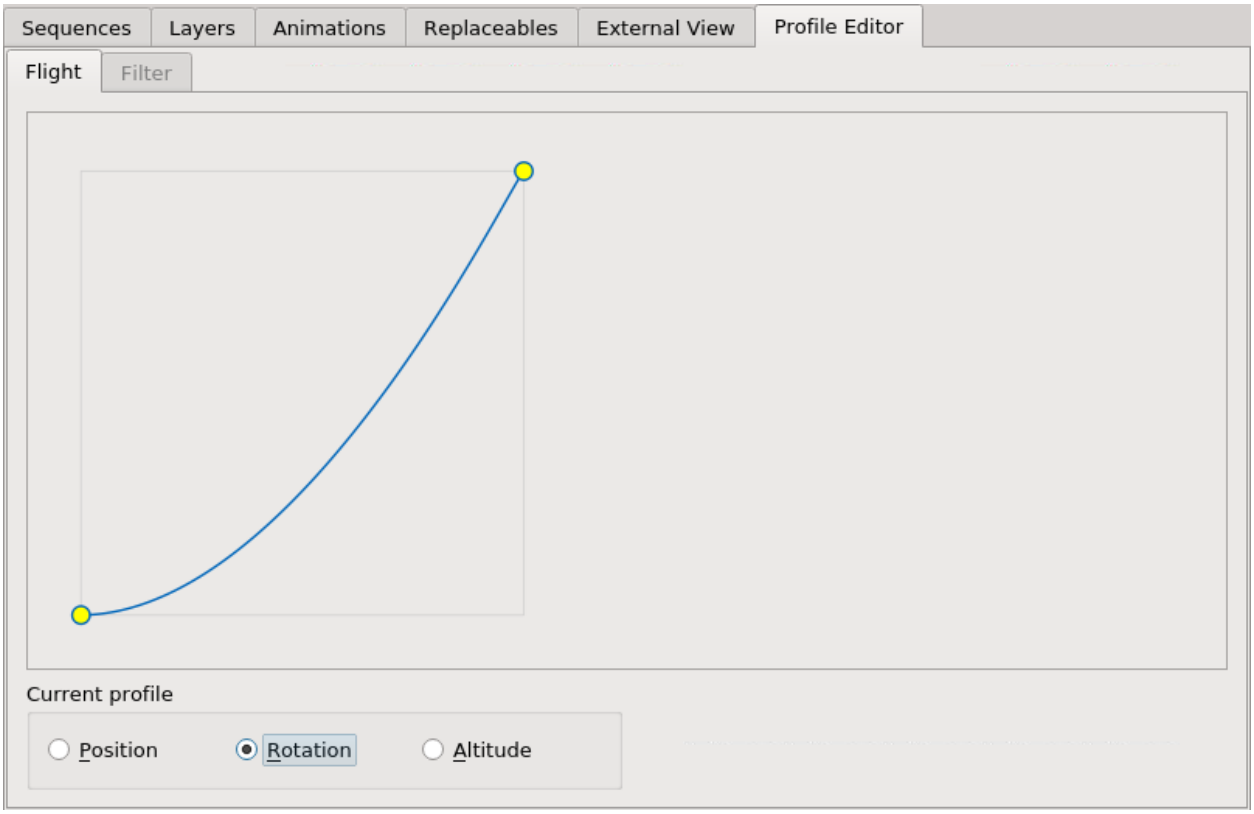
Flight

The **Flight** tab displays changes in the flight path vectors. The following images show the profiles for the Two-Keyframe Flight Path described above. The curves at the beginning and ends of the vectors indicate ease that is applied.

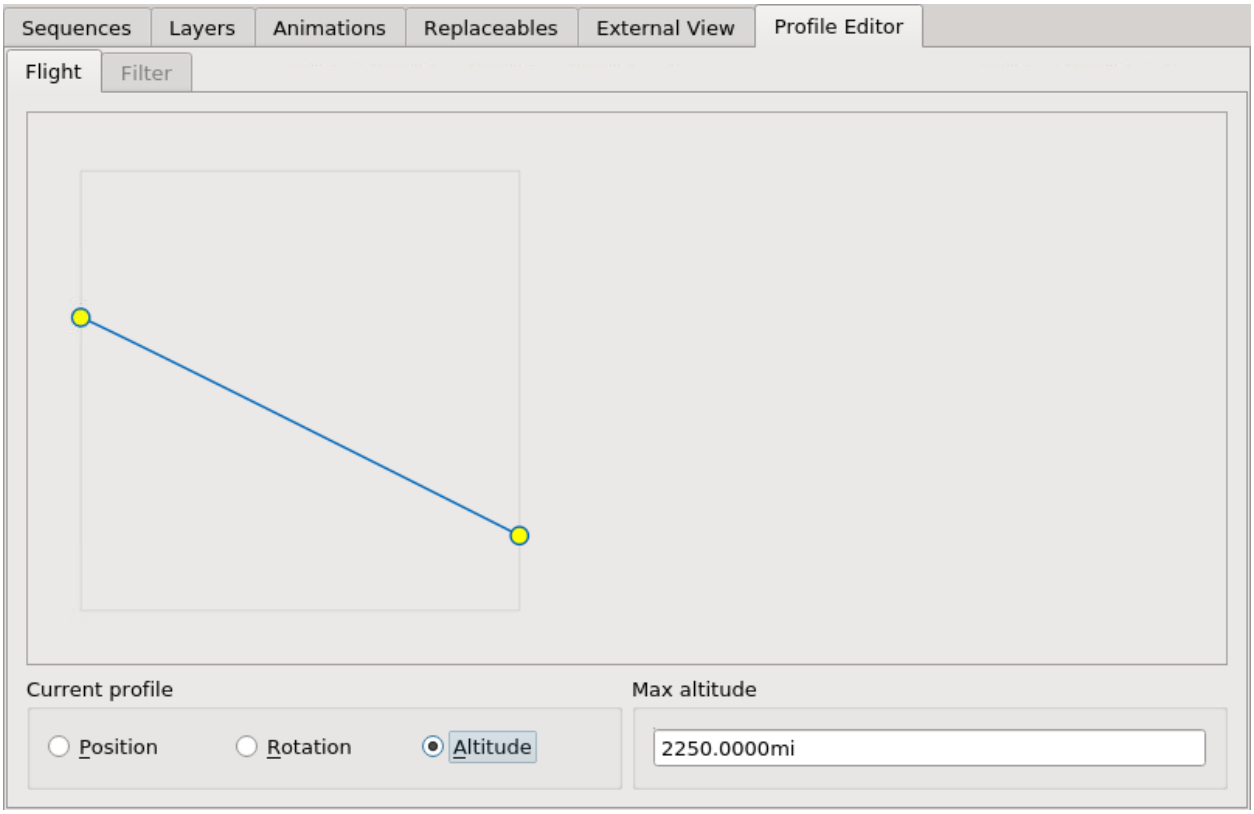
- **Position:** Displays change in position from keyframe to keyframe.



- **Rotation:** Displays change in rotation from keyframe to keyframe.



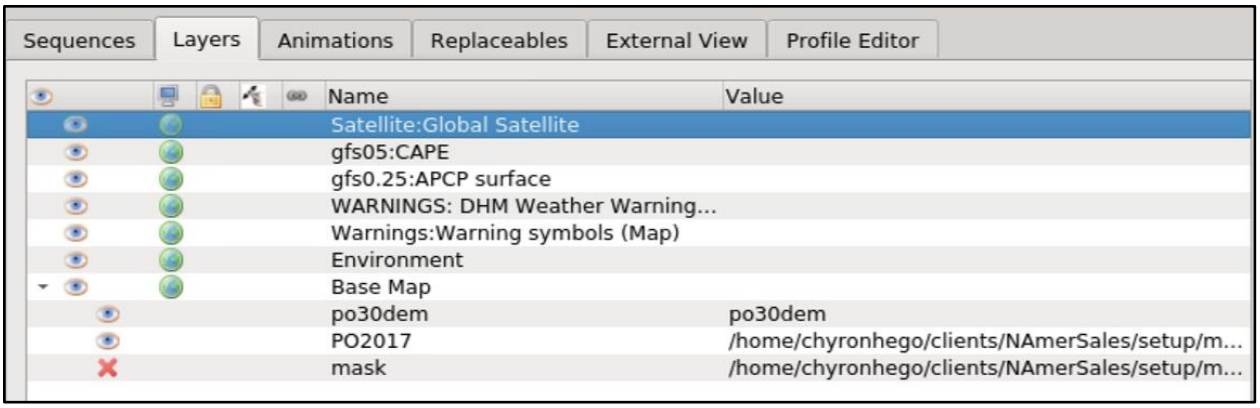
- **Altitude:** Displays change in altitude from keyframe to keyframe.



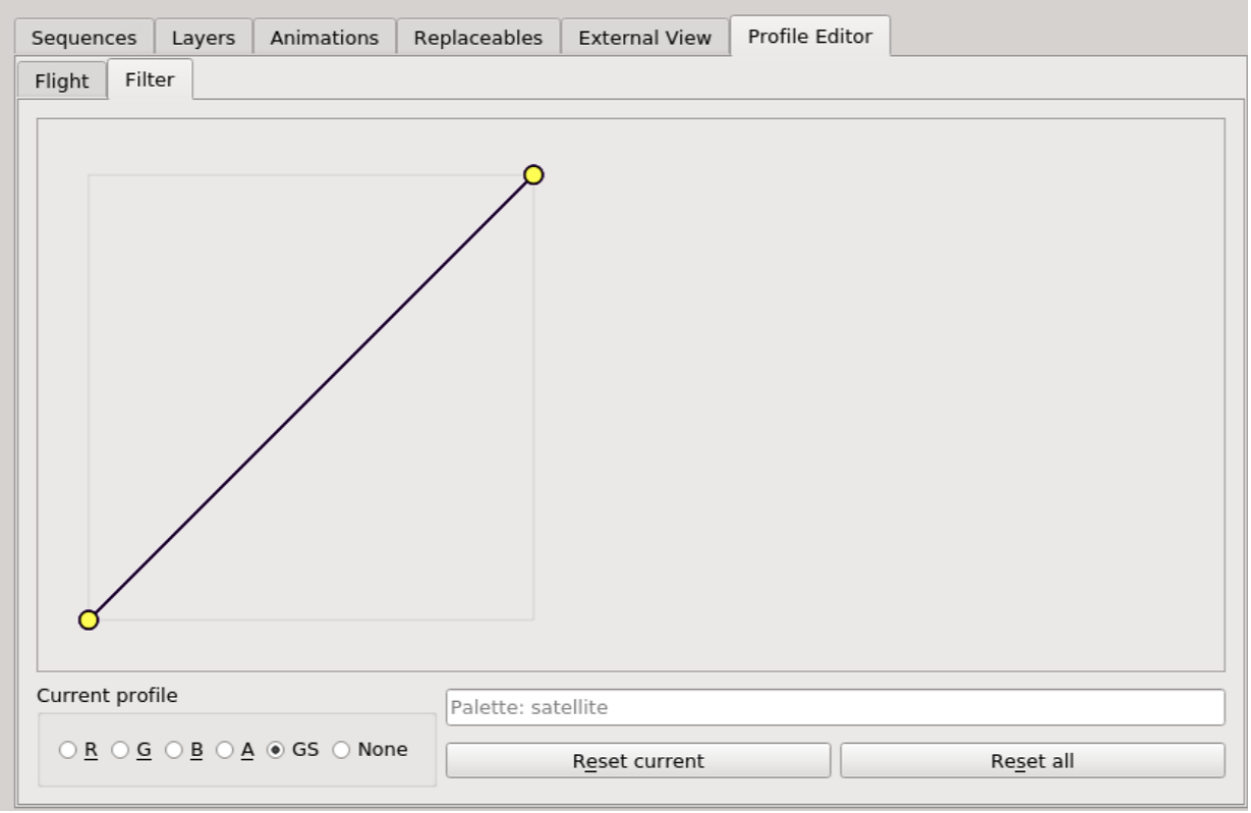
Filter

If the currently selected layer is an imagery data layer, then a special **Filter** curve is also present, through which you can edit the non-linear gradient of an incoming data pixel and the outgoing RGBA value for the displayed pixel. Note that if the layer is not an imagery data layer, then the **Filter** tab is grayed out.

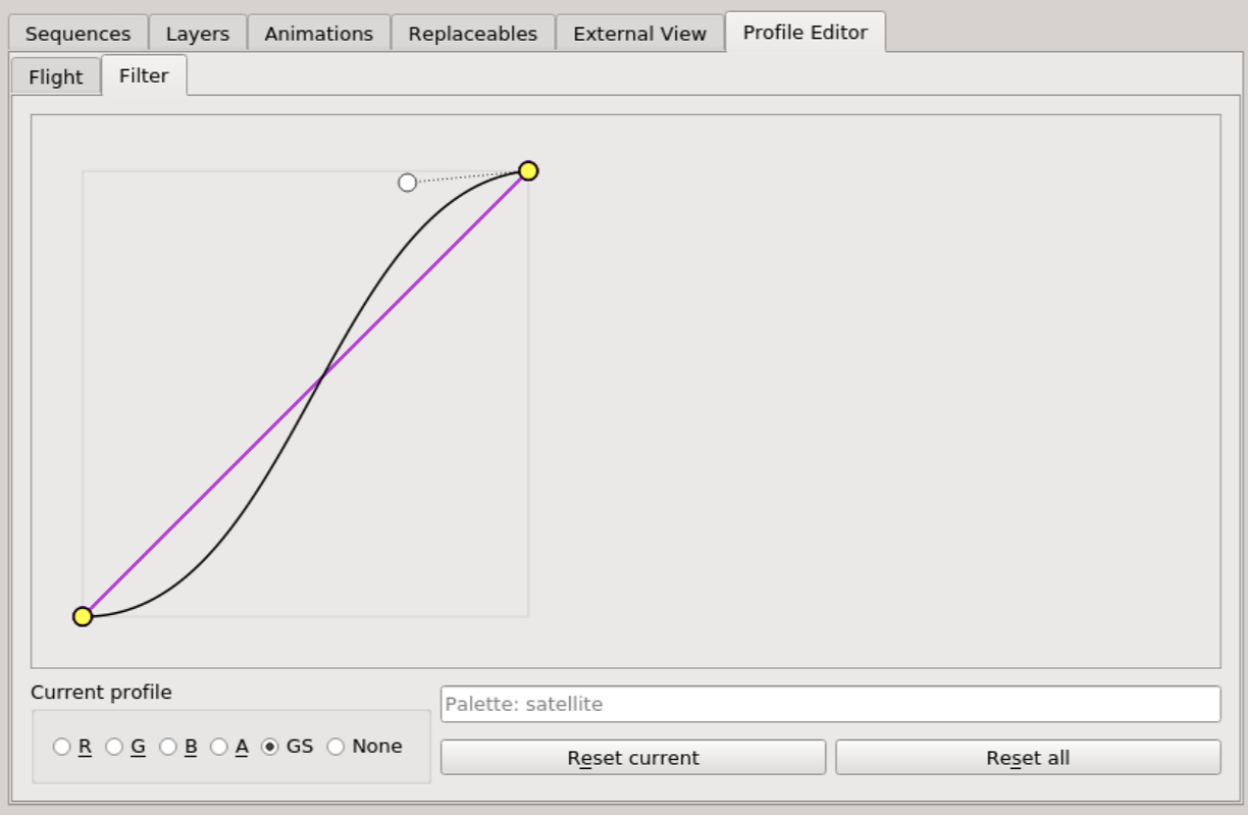
In the filter you can set either a **grayscale (GS) + alpha (A)** curve, or individual **RGB + A** curves, as shown in the following figures. The selected layer is **Satellite Global Satellite**, which is an imagery data layer.



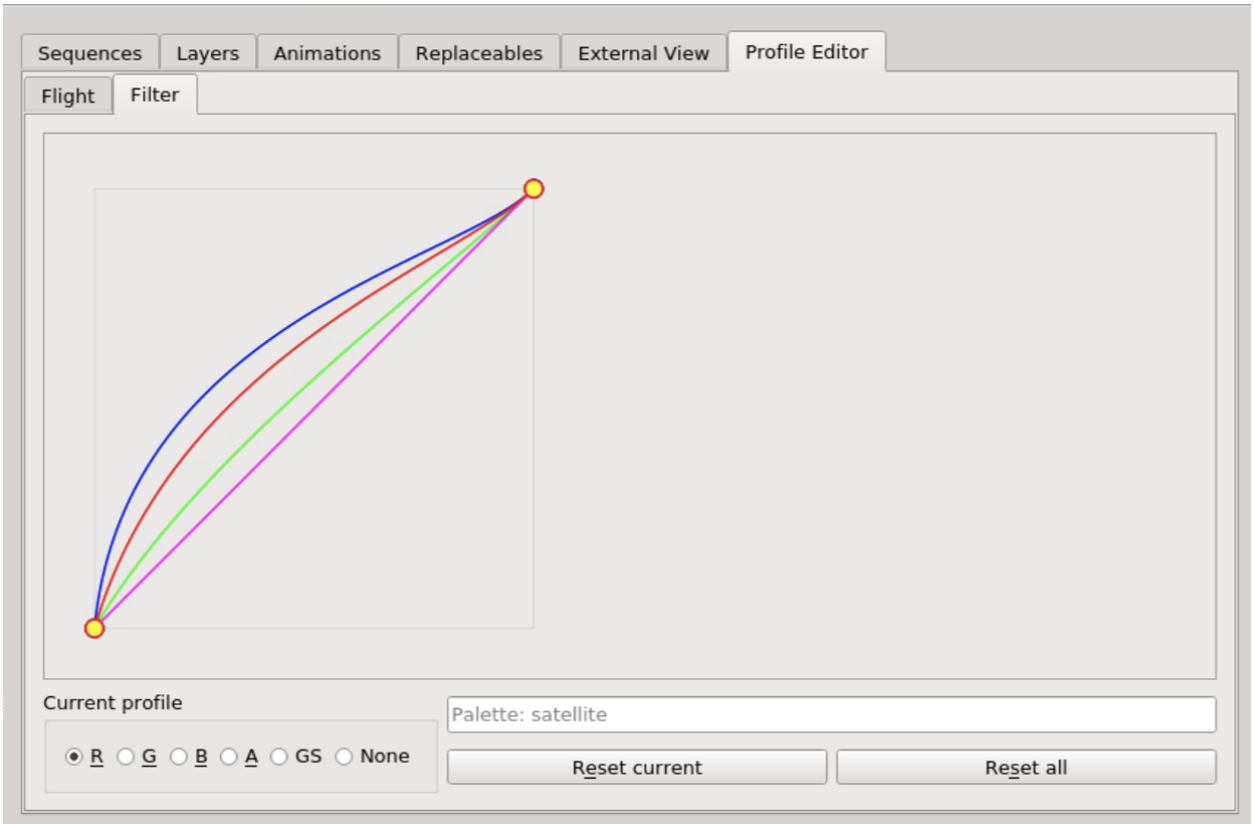
The following figure shows an unmodified **Filter**:



The following figure shows a modified **Grayscale (GS) Filter**.



The following shows a modified **RGBA Filter**:



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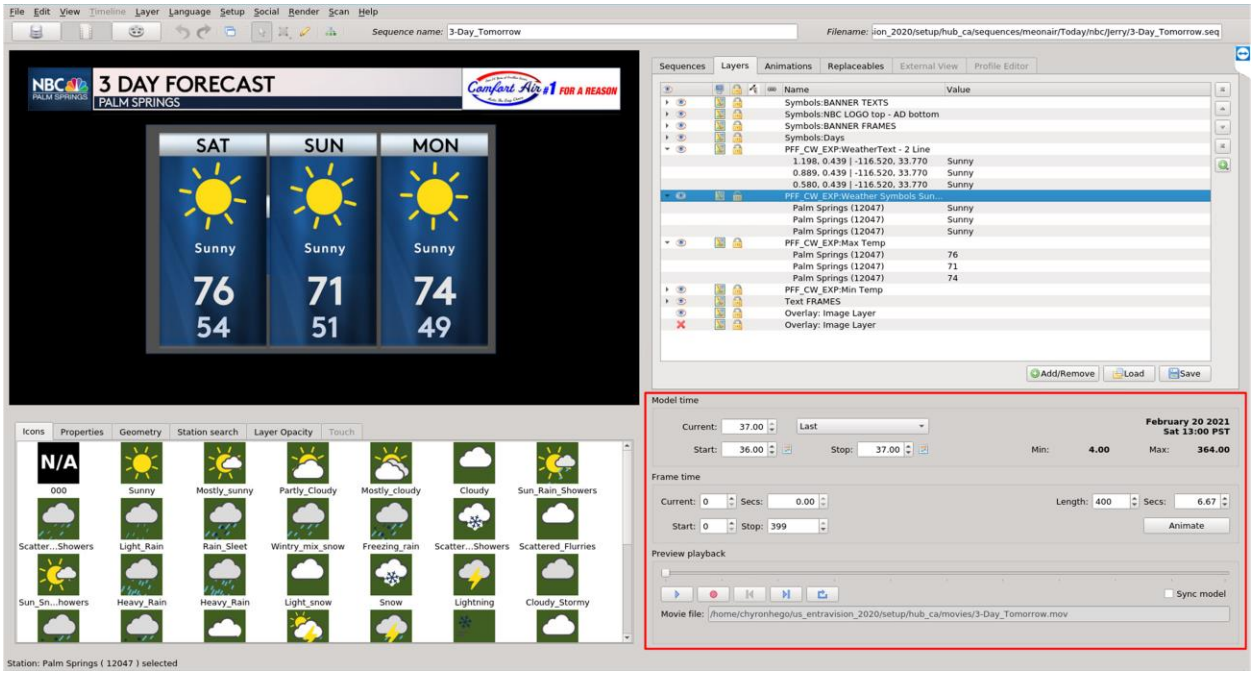
Chapter 14: Sequence Playback

Overview

The **Sequence Playback Area** provides the ability to:

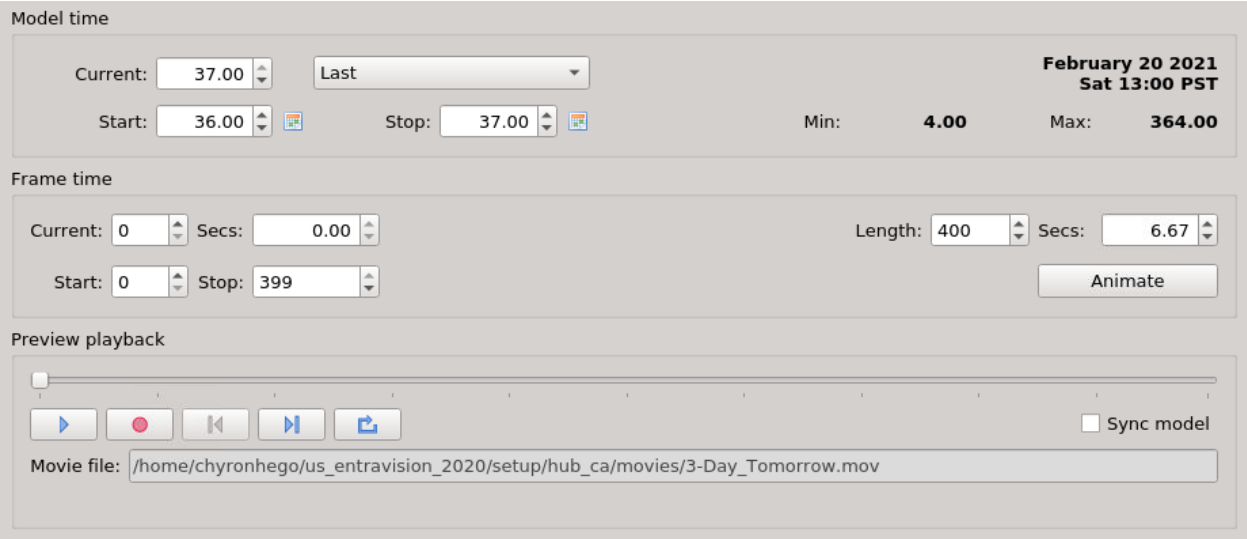
- Play the sequence so that it can be previewed.
- Edit the sequence length and other attributes
- Edit the data time for the data displayed in the sequence.

The **Sequence Playback** area is in the lower right quadrant of the Weather UI.



The **Sequence Playback** area comprises three areas:

- **Model time:** Displays information about the model, and enables adjustment of **Start** and **Stop** hours.
- **Frame time:** Displays frame information, and enables adjustment of **Start** and **Stop** frames, and **Length**.
- **Preview playback:** Provides playback, model sync and recording operations.



Model Time

Weather and other data with an associated time reference is organized into **time steps**. A **time step** corresponds to one hour. It is important to understand this concept when working with the application.

A data product has a specific time span, which varies for each type of data. For example, a 72-hour forecasting model is divided into 72 time steps where the "zero time step" corresponds to the first time for which the data is valid, and then a subsequent 71 time steps - one for each hour. The last time step of the 72-hour model would thereby be time step 71, since the first time step is 0.

In the previous image, the **Current** time step specifies **37.00**, and corresponds to **February 20, 2021 at 13:00 PST**. Advancing the **Current** time step to 38.00 would change the date/time to **February 20, 2021 at 14:00 PST**.

The data is split into intervals of one hour, each hour is called a data time step.

In a sequence, you can set the time step with reference to different times or data products. As such, there is flexibility in what you choose to set as the **0 time step**:

When referenced to the data product, the **0 time step** will be the first time there is data for the sequence.

When referenced to a specific time (e.g., **Today at time 00:00**), this time corresponds to **0** and then each hour corresponds to a new time step. With this reference, displaying data for **Today at noon** would correspond to **time step 12** in the sequence (12 hours after 00:00).

The time reference is set in each sequence and is set in the sequence **Property** panel.

In a sequence displaying weather or other time-related data, the time correlation of the data must be defined via the **Model time** panel.

The model time panel for a sequence displays:

- **Current:** Displays current time step of the sequence. To display a specific time step, do one of the following:
    - In the **Current** field, enter the desired time step.
    - Click the **Current** spin box up/down arrows to advance or back through to the desired time step.
    - Drag the **Preview Playback** scrub bar to the desired time step.
    - Click  or  to advance to or back through to the desired time step.
- Next to the **Current** text box you will see a pull down menu, which will allow you to quickly select a specific time as your current time.
    - By clicking on the pull down menu, (see red arrow on the image to your left) you will see a menu appearing with different options.
    - By using the left mouse button to select one of the alternatives, your "Current" time step will automatically be set to that time.
    - The options are, **Blank**, **Today at noon**, **Tomorrow morning**, **Tomorrow afternoon** and **Last** (indicating the last time step available). These settings are relative to the time zone configured for the system.
- To the right of this text box, you can see the same time frame referenced in regular time in local time.
- To display data for a specific time during the entire duration of the sequence, the **Sync model** toggle in the **Preview playback** area must be toggled OFF. The sequence will display data for the time step defined in the "current" text box.
- In the **Start** and **Stop** text boxes, you can define for what time steps you want the data in the sequence to start and stop in a data animation during sequence playback.
- To make data animate over a time period, the **Sync model** toggle in the **Preview playback** area must be toggled ON. The data will then animate in the time span defined in the **Start** and **Stop** text boxes.
- The **Min** and **Max** text boxes indicate the overall time span available in the data currently loaded in your sequence.

To provide an accurate forecast, the sequence must have a defined reference time. There are several alternatives to define the reference time in a sequence, e.g., the first time step could correspond to today at 00:00 UTC, but other options are available. This is all explained further in the Model time article.

Frame Time

NOTE: Content for this section is under development. Information about this subject is available in Advanced Timeline Operations: Add Pauses in Radar Sequences and Animated Sequences.

Current: Current frame of sequence playback.

Secs: Current time of sequence playback.

Start: Start point.

Stop: Stop point.

Length: Sequence length, in frames.

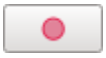
Secs. Sequence Length, in seconds.

Animate (button): Preview the frame animation.

- To preview frame animation, click **Animate**. The **Animate** button turns red. When you play the animation, the frame animation plays.
- To turn off frame animation preview, click **Animate**. The **Animate** button turns gray.

Preview Playback Controls

Preview playback provides transport controls, including the ability to record the sequence.

-  Play sequence.
-  Record sequence.
-  Go to beginning of sequence.
-  Go to end of sequence.
-  Loop sequence.

Record Sequence

You can record a sequence to a movie file. By default, the movie records to the sequence filename, at the movie file location configured in Weather setup. The movie filename is displayed in the **Movie file** field.

To record the sequence to a movie file:

1. Click the **Go to Beginning** button to return the sequence to its start keyframe.
2. Click the **Record** icon. A progress bar displays the recording status.

3. When the recording is complete, the status window closes.

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Chapter 15: Layer Palette

Overview

Chyron Weather's **Palette** provides the ability to set value range colors to effectively communicate your weather story by visualizing radar, cloud, rain, and temperature data.

Data sources that use palettes:

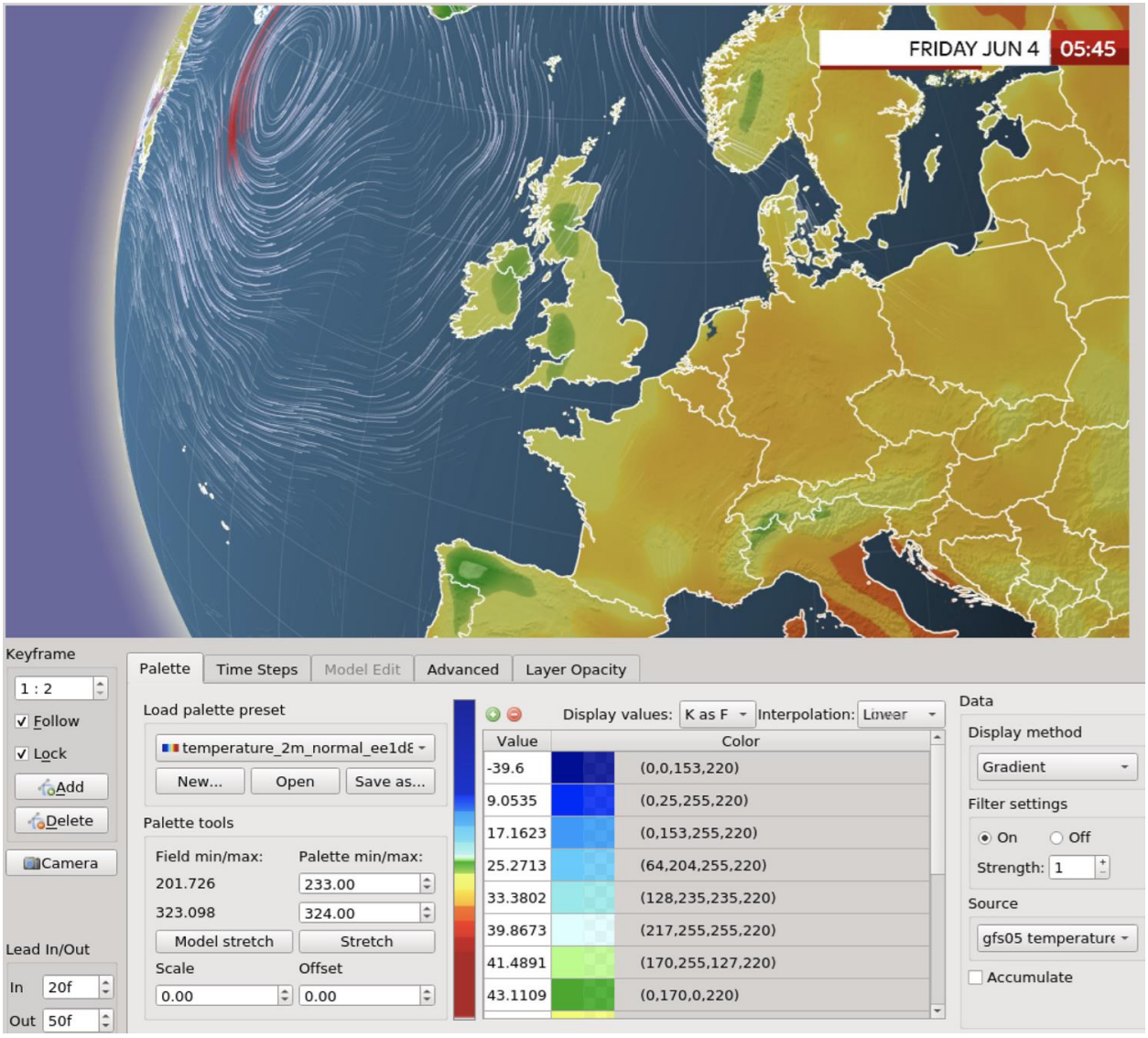
- Radar: North America
- Radar: NorthAmerica [low sensitivity]

Weather features two types of palettes:

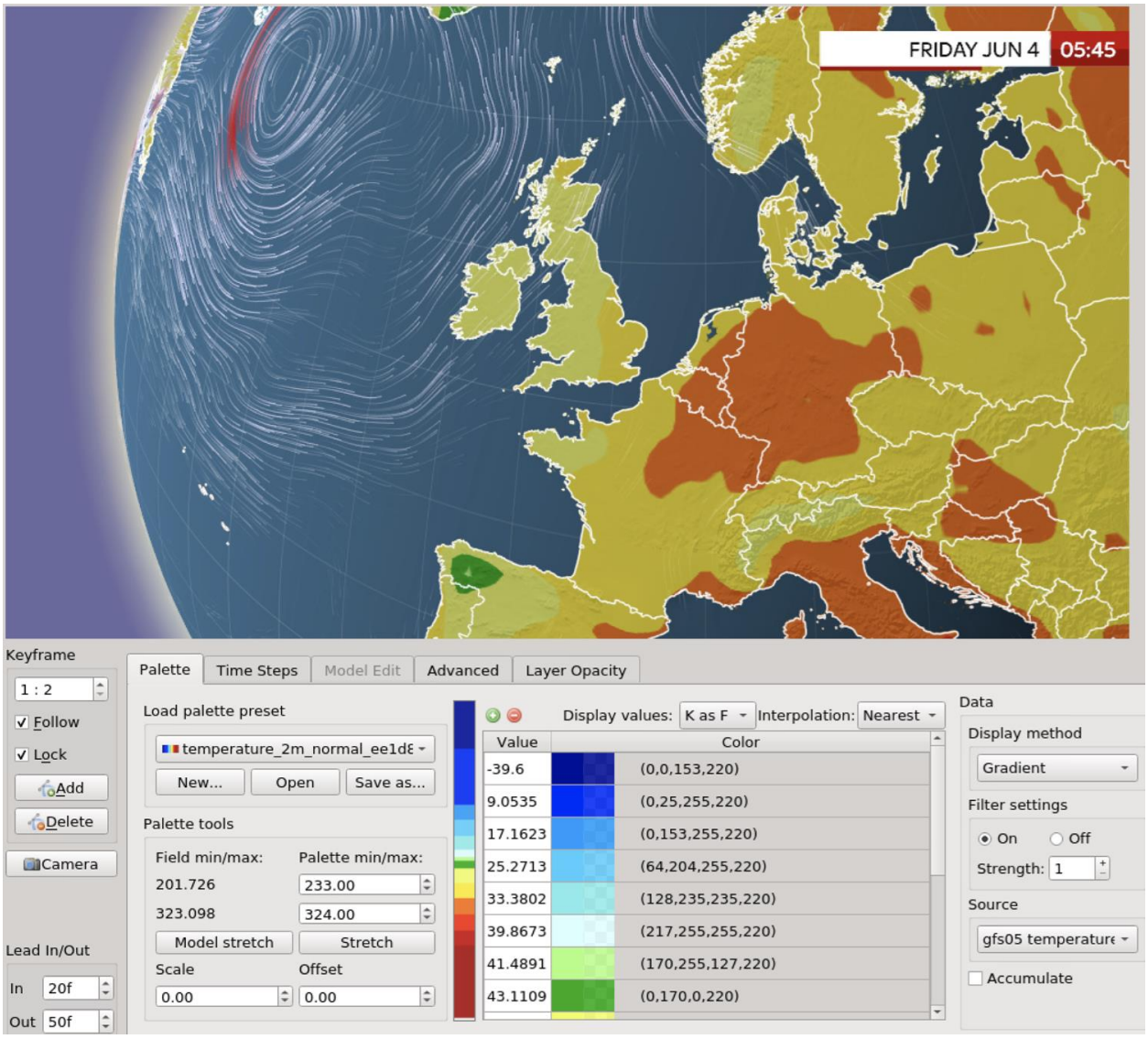
- **Range Palette**
- **Tripoint Palette**

Range palette: Multiple ranges, each visualized by a specific color. There are three interpolation methods for display of **Range Palettes: Lower**, **Nearest**, and **Linear**. The strip to the left of the **Values** shows how the ranges transition between **Values** in the Chyron Weather graphic.

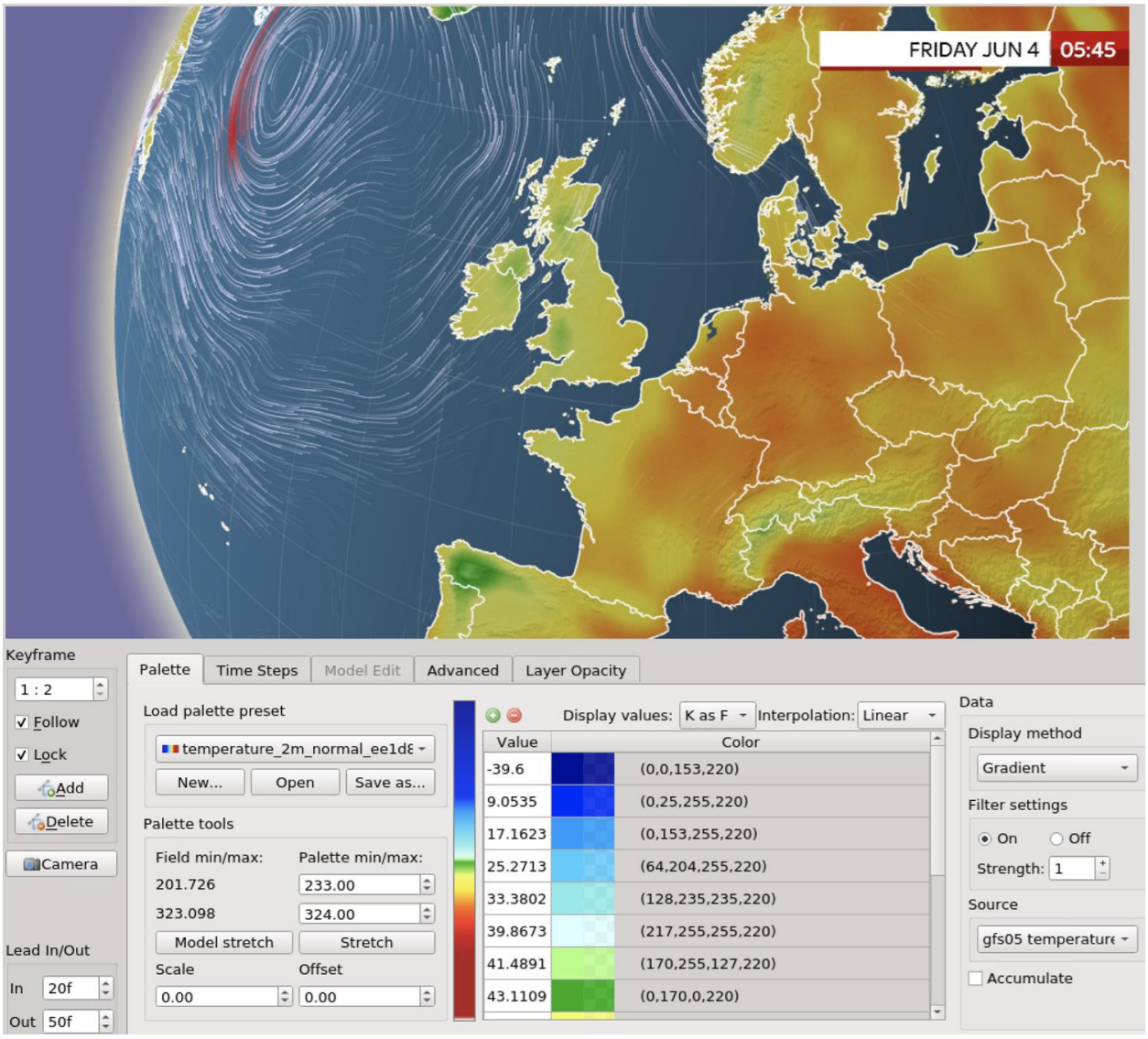
- **Lower:** Changes color precisely at the specified value.



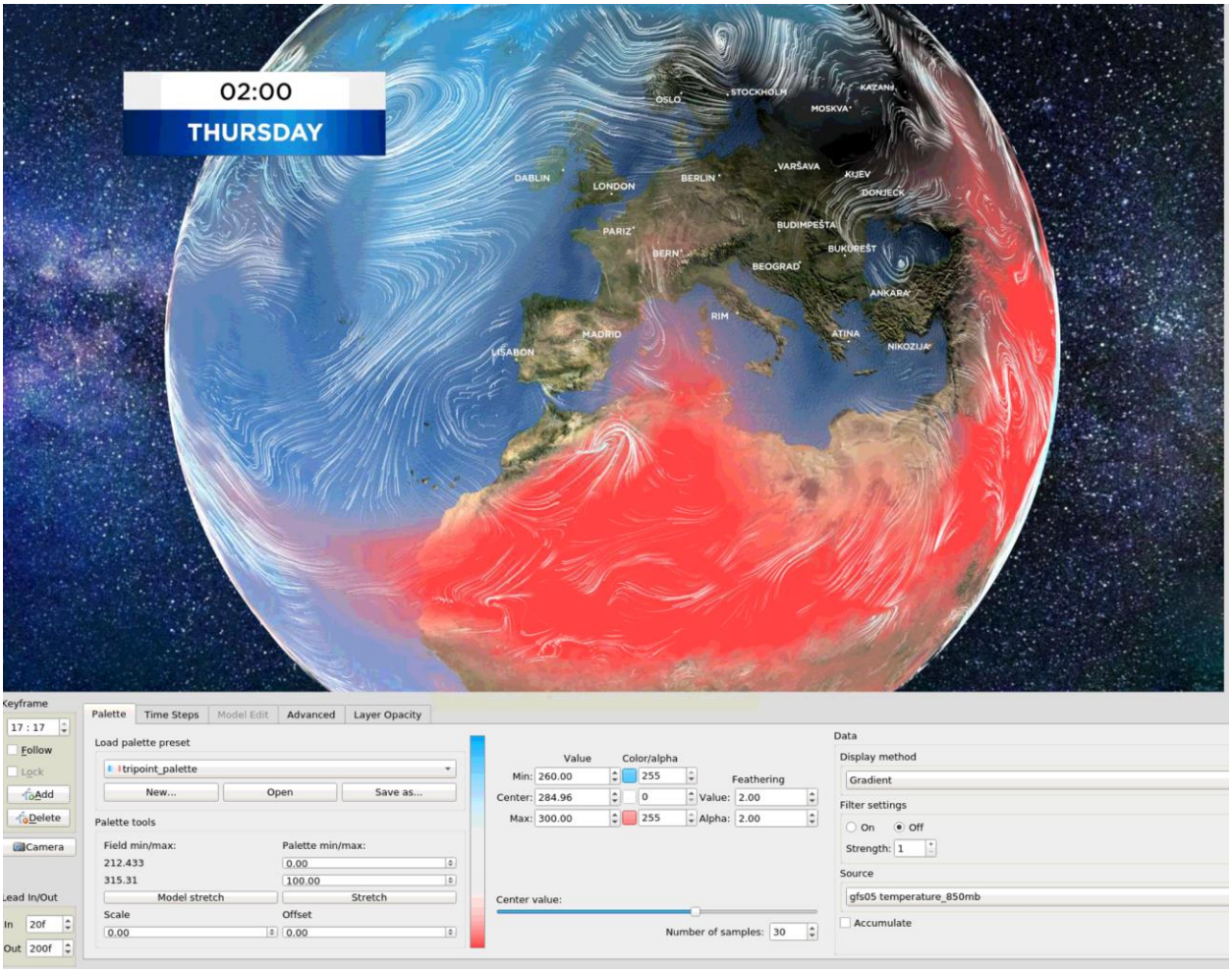
- **Nearest:** Changes color between the values.



- **Linear:** Changes color gradually from one value to the next value.



Tripoint palette: Range specified by three values and three colors.



You can save a **Palette** to a preset (***.cpl***) file, for reuse in multiple sequences. The **Palette** tab consists of the following areas:

- **Load palette preset:** Select and load an existing palette file.
- **Palette tools:** Set field specifications, scale, and offset.
- **Palette:** Set ranges and colors.
- **Data:** Set data display specifications.
- **Filter settings:** Set filter specifications.
- **Source:** Specify data course for the palette.

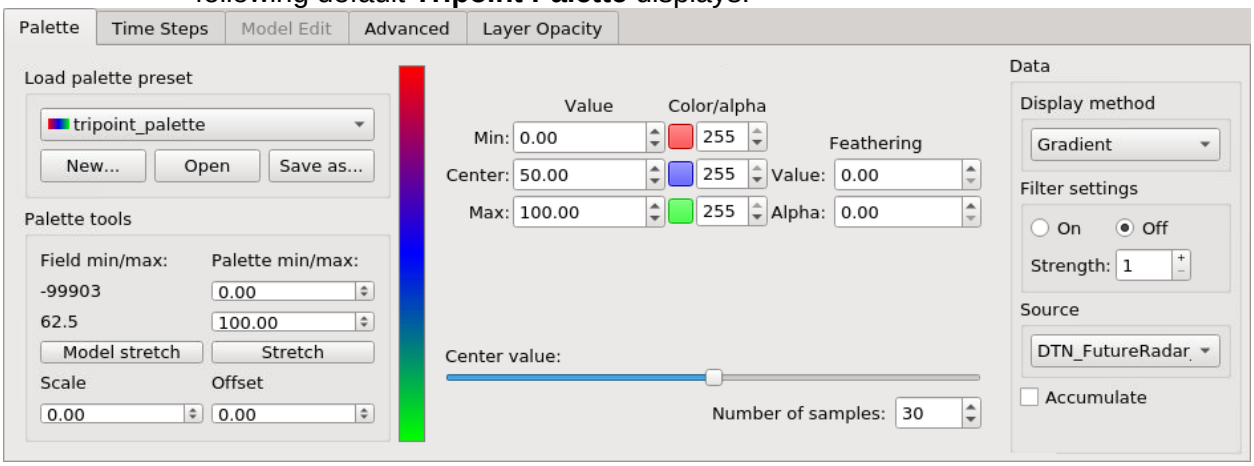
Palette Load, Open, Save As

Load palette preset

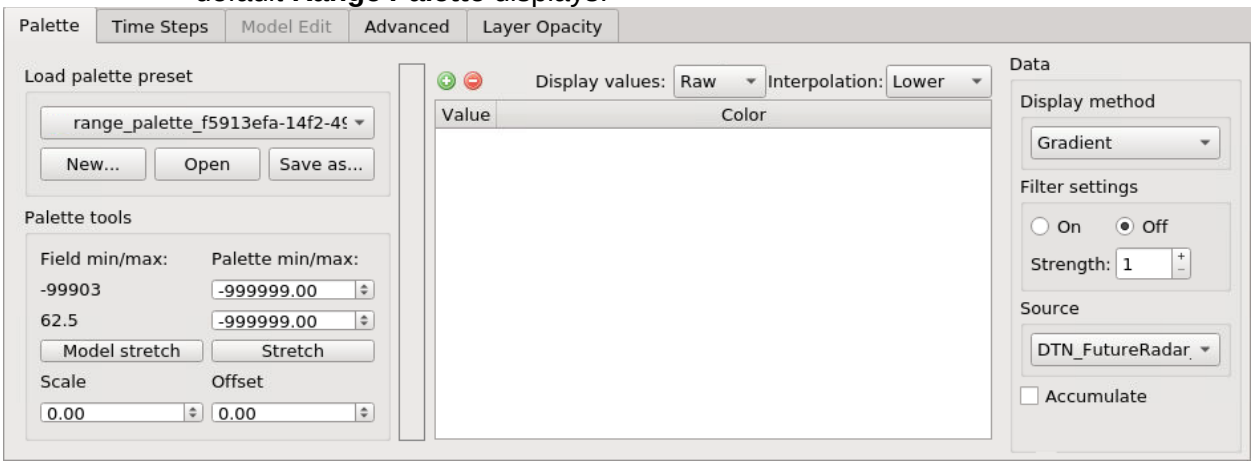
Select a preset from the dropdown.

New: You can create custom palettes to visualize data using your style. Prior to creating the palette, you may like to decide on the minimum and maximum range values, the number of ranges (if a **Range Palette**) to include in the palette, and their colors. As you build the palette, you can experiment with how to set the ranges, colors, and other parameters. To create a new palette:

1. Click **New**.
2. From the dropdown, select the type of palette to create:
   - **New tripoint palette:** Creates a new **Tripoint Palette**. If selected, then the following default **Tripoint Palette** displays:



   - **New range palette:** Creates a new **Range Palette**. If selected, then the following default **Range Palette** displays:



   - **Clone current palette:** Creates a copy of the current palette. If selected, then a copy of the current palette displays.
3. Set the palette parameters.

Open Existing

To open an existing palette:

1. Click **Open**, then select the desired palette file.
2. Click **Open**..

Save as

To save the current palette:

1. Click **Save as**.
2. Browser to the desired location.
3. Enter the **Filename**.
4. Click **Save**.

Palette saves as ***.cpl*** file.

Settings Common to Range and Tripoint Palettes

Palette tools

Field min/max: Displays the available **Value** range for the selected data **Source**.

Palette min/max: Specifies the **Value** range for the palette. All **Value** settings then fall within this specified **Palette min/max**.

Model stretch: Stretch palette to current time step's **Max/Min** range. The values are taken from the field layers data for the current time step. Click **Model stretch** to fit the palette **Value** range between model maximum and minimum.

- The **Value** specified for the first range of a **Range Palette** or the **Min Value** of a **Tripoint Palette** reflects the **Field Min**.
- The **Value** specified for the last range of a **Range Palette** or the **Max Value** of a **Tripoint Palette** reflects the **Field Max**.
- The **Value(s)** specified for the ranges in between the first and last range in a **Range Palette**, or the **Center Value** of a **Tripoint Palette** is/are adjusted proportionately, so that the ratio of each **Value** to the **Field min/max Value** matches the corresponding ratio of the **Palette Min** to the **Palette /Max** value.

Stretch: Applies the specified **Min/Max** values for the palette, in order to focus on a specific range of values within the field layer. To set and apply the **Palette Max/Min** values:

- If desired, then enter new **Palette Max** and **Min** values, and then click **Stretch**.

Scale: Adds the specified value to the **Min/Max Values** as follows:

- If the **Scale** is positive, then changes the **Min Value** lower and the **Max Value** higher by the specified **Scale**, expanding the range by 2 x the specified **Scale**.
- If the **Scale** is negative, then changes the **Min Value** higher and the **Max Value** lower by the specified **Scale**, reducing the range by 2 x the specified **Scale**.
- The **Value(s)** specified for the ranges in between the first and last range in a **Range Palette**, or the **Center Value** of a **Tripoint Palette** is/are adjusted proportionately.

The following table shows the effects of a **10.00** and **-10.00 Scale** on a **Tripoint Palette**.

Parameter	Start Value	Scale 10.00	Scale -10.00 (from Start Value)
Min	0.00	-10.00	10.00
Center	30.00	26.00	34.00
Max	100.00	110.00	90.00

Offset: Applies the specified offset to the **Min/Max**.

- If the **Offset** is positive, then changes the **Min Value** higher and the **Max Value** higher by the specified **Scale**. The size of the range does not change.
- If the **Offset** is negative, then changes the **Min Value** lower and the **Max Value** lower by the specified **Scale**. The size of the range does not change.
- The **Value(s)** specified for the ranges in between the first and last range in a **Range Palette**, or the **Center Value** of a **Tripoint Palette** shift by the specified **Offset**.
- The **Value(s)** specified for the ranges in between the first and last range in a **Range Palette**, or the **Center Value** of a **Tripoint Palette** do not change.

The following table shows the effects of a **15.00** and **-24.00 Offset** on a **Tripoint Palette**.

Parameter	Start Value	Offset 15.00 (from Start Value)	Offset -24.00 (from Start Value)
Min	0.00	15.00	24.00
Center	30.00	45.00	6..00
Max	100.00	115.00	76.00

Data

Display method:

- **Gradient:** Visualizes data on a color scale as specified in the **Palette** range settings. **Gradient** is the default **Display method** for **Field Layers**. The **Gradient Display method** maps a color to a value based on one of three interpolation methods: **Lower**, **Nearest** and **Linear**. The **Gradient Display method** is suitable for all continuous or stepped model fields such as radar, satellite, temperature, precipitation, cloud cover, wave height and more. Note that the layer altitude and layer order must match for the layer to be visible.

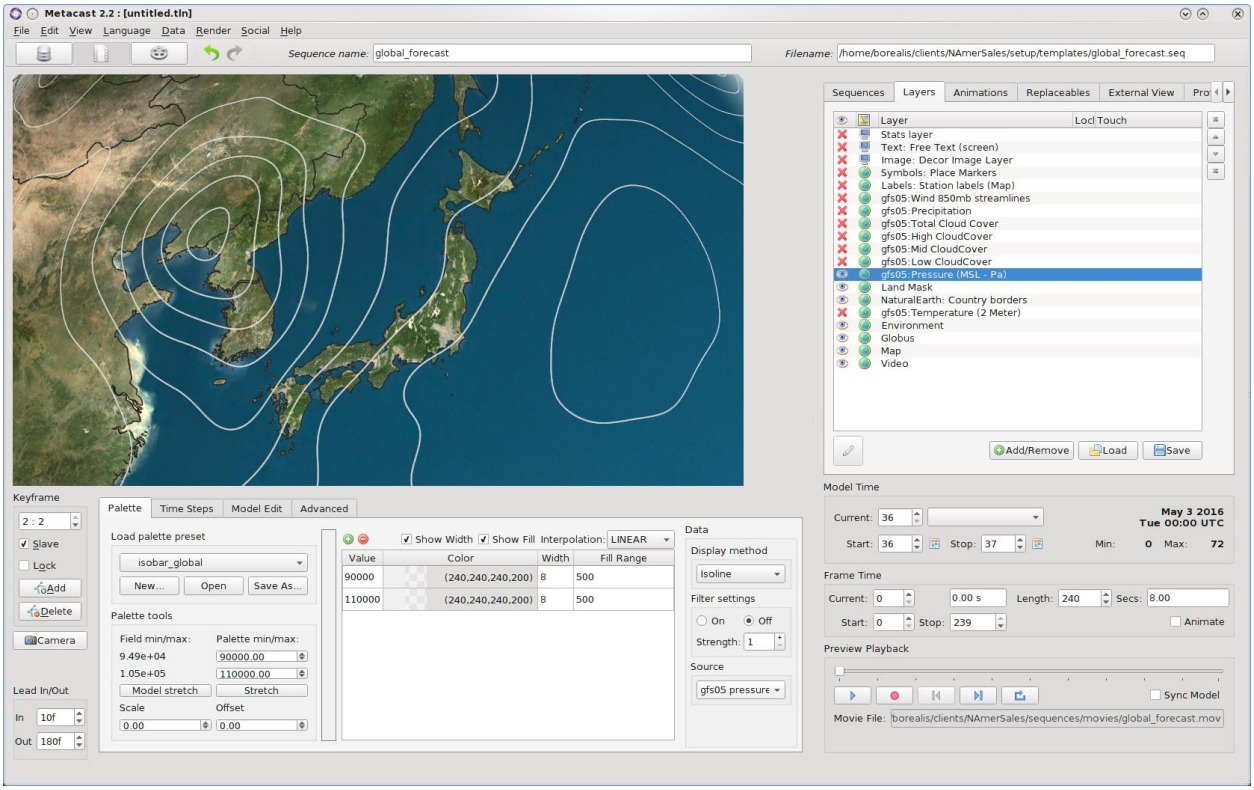
- **Isoline: Isoline** draws a contour through the data set, where all points along the line are through the same value. This is the method used in regular pressure analysis as isobars and isohypses (geo-potential levels), but can also be used to create contours of any data set.

  The lines can be any color, and can be variable in width throughout the plot range. For isobars, it is common to use a line fill value of one line per 250, 400 or 500 Pa (which is typical values for mean sea level pressure fields). Note that the layer altitude and layer order must match for the layer to be visible.

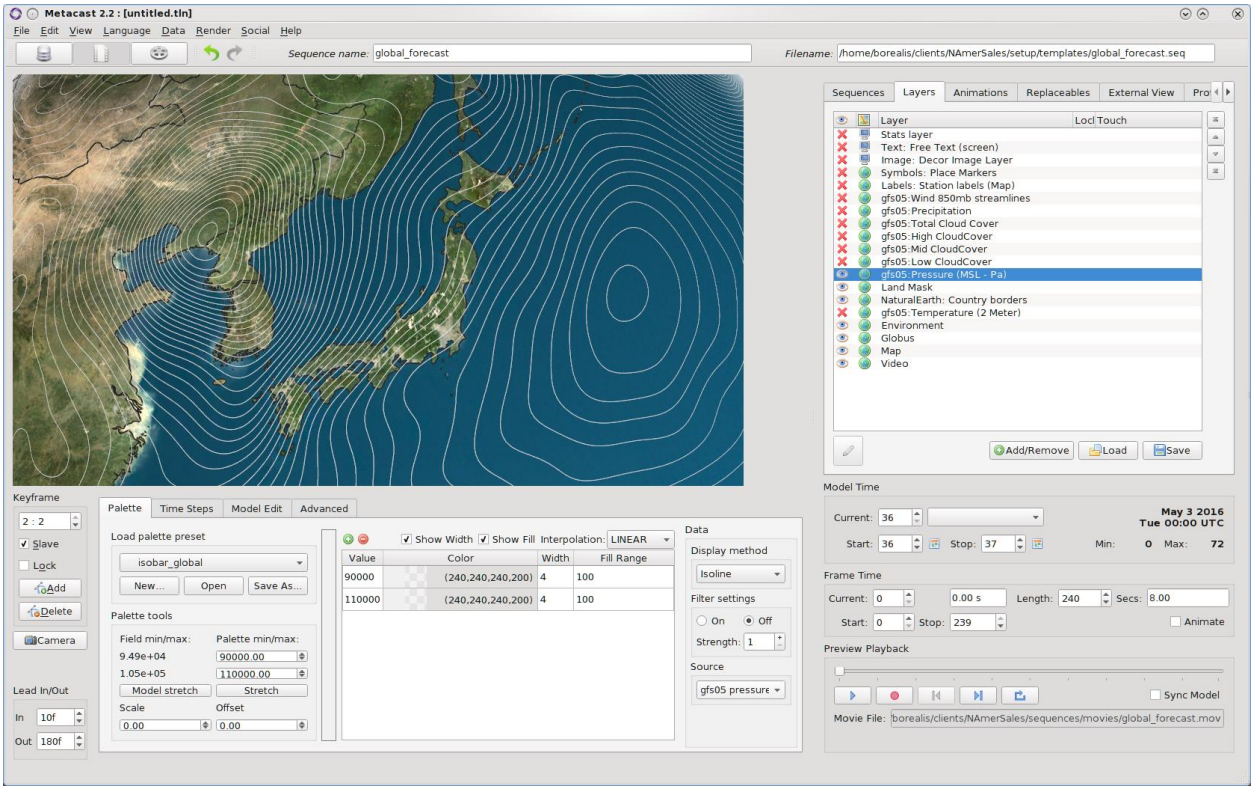
  Checking **Show width** and **Show fill** adds two columns to the palette editor where isoline-specific settings can be adjusted:

  - **Width:** The width of the isoline.
  - **Fill Range:** The interval, in Pa at which lines are displayed.

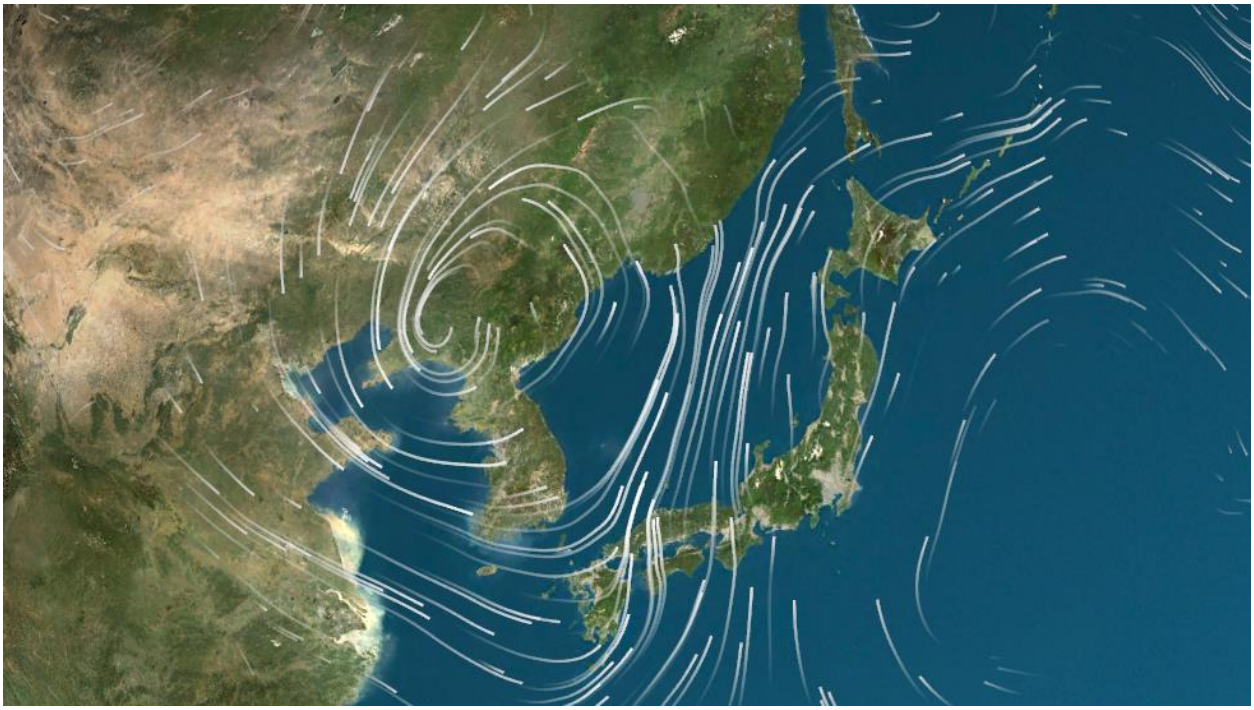
Width = 8; Fill Range = 500:

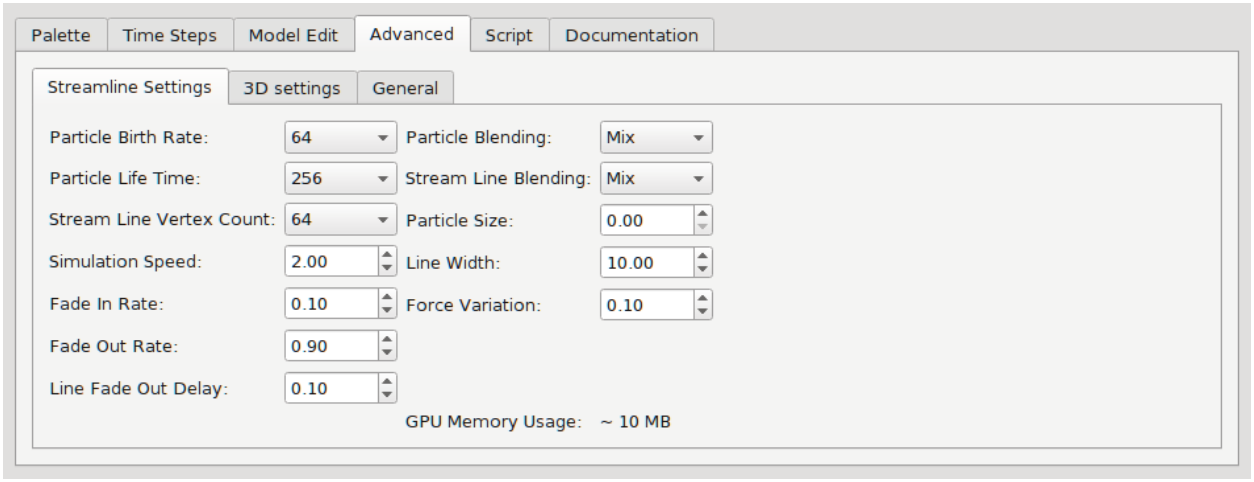


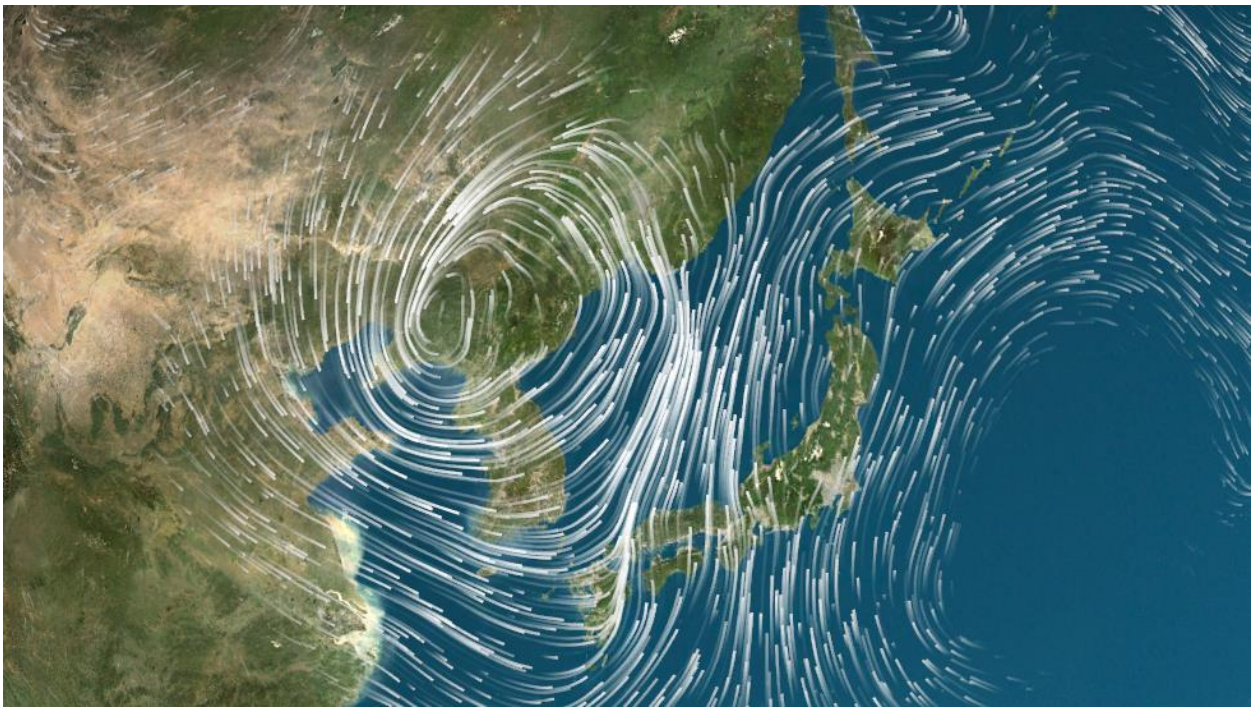
Width = 4; Fill Range = 100:

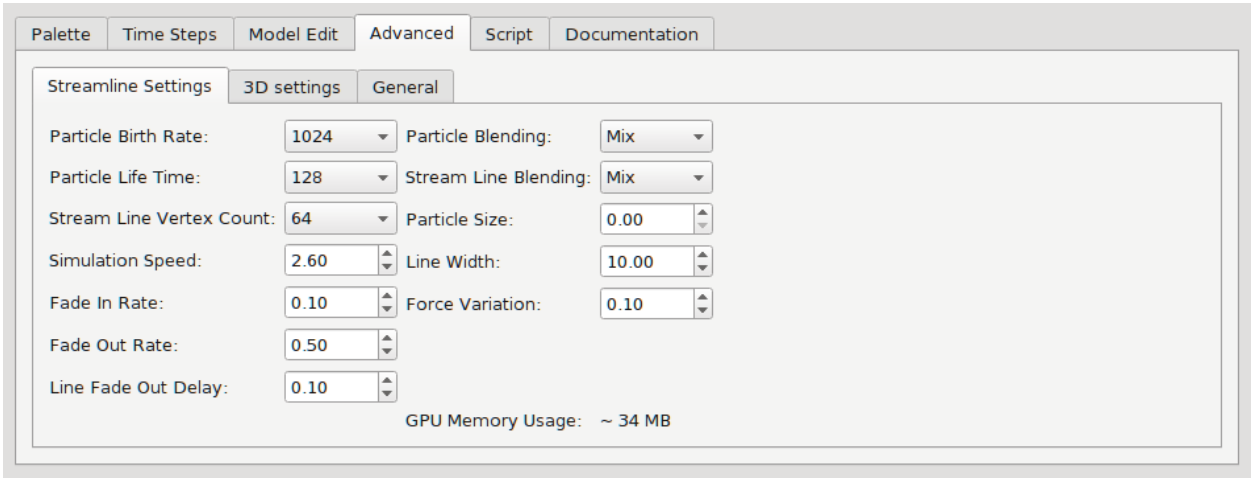


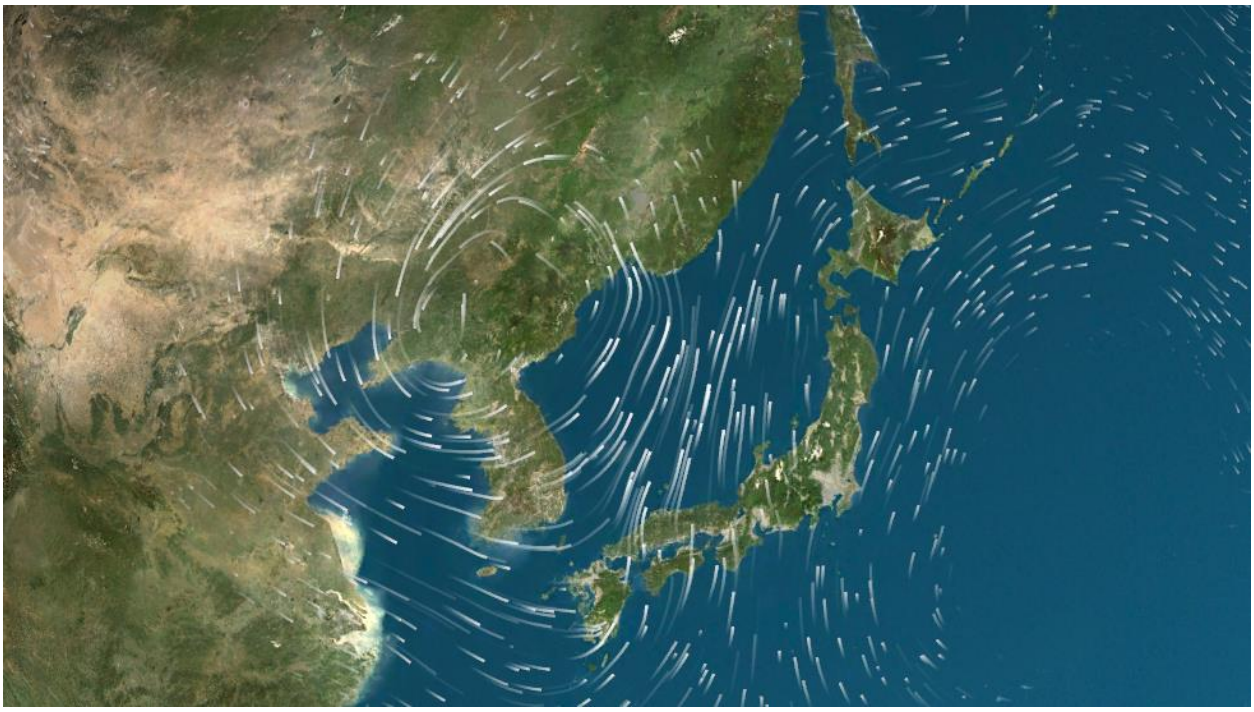
- **Streamline: Streamline** is useful for visualizing two component fields, such as wind and currents. Use a **Tripoint** or **Range Palette** to map the visibility of the effect. e.g., in a field where wind is measured in meters per second, a range where 7 is transparent and 30 is white and opaque can result the following effects depending on the settings:

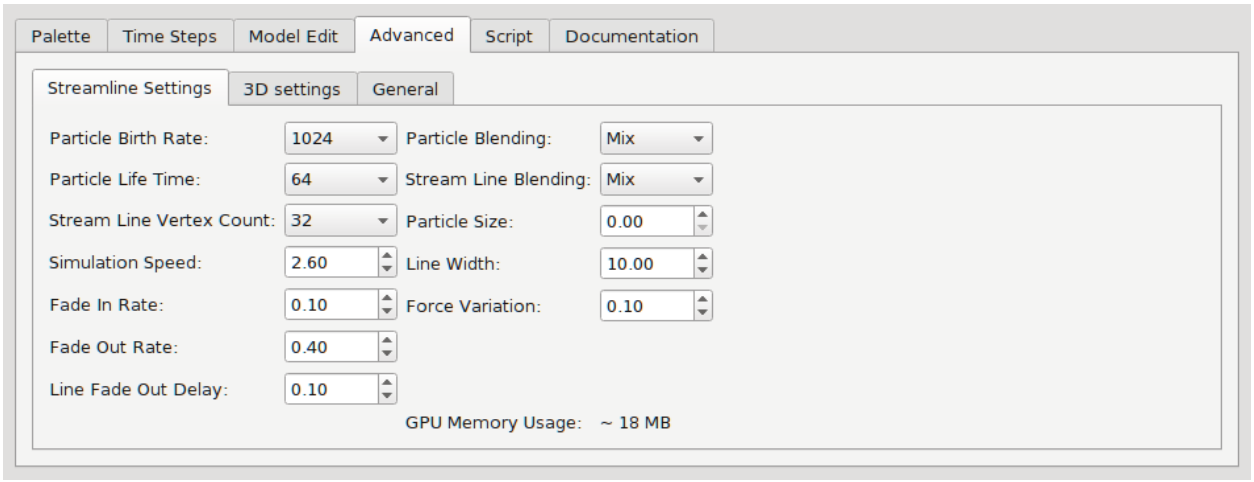







Palette
Time Steps
Model Edit
Advanced
Script
Documentation
Streamline Settings
3D settings
General
Particle Birth Rate: 1024
Particle Life Time: 128
Stream Line Vertex Count: 64
Simulation Speed: 2.60
Fade In Rate: 0.10
Fade Out Rate: 0.50
Line Fade Out Delay: 0.10
Particle Blending: Mix
Stream Line Blending: Mix
Particle Size: 0.00
Line Width: 10.00
Force Variation: 0.10
GPU Memory Usage: ~ 34 MB





Filter settings: Simplifying the visualization of the data may make the presentation more readable. Increasing filter strength smooths the data in the field. A typical example is the display of mean sea level isobars from a high resolution model, as the isoline effect may appear jagged.

- **On:** Applies filter settings.
- **Off:** Does not apply filter settings.

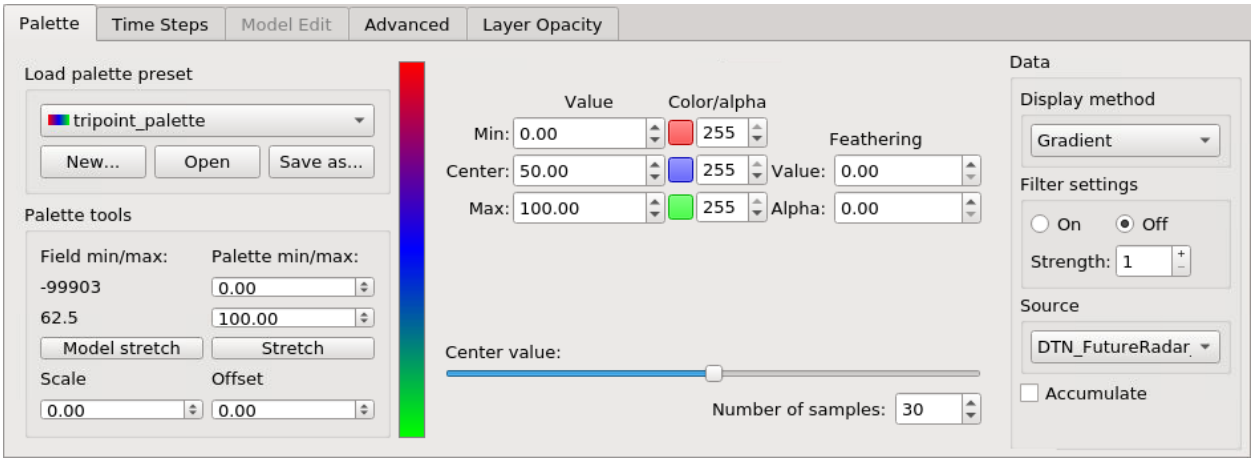
- **Strength:** Filter strength.

Source: Select data source.

Accumulate: Specifies if new data is accumulated.

- When enabled, accumulates new data.
- When disabled, does not accumulate new data.

Tripoint Palette Settings



Tripoint Palette Strip: Displays the entire range of colors set in the palette.

Value: Specifies the **Min**, **Center** and **Max** values. The **Values** can be set within the specified **Palette Min/Max** values.

Color/alpha: Specifies the colors for **Min**, **Max**, and **Center**.

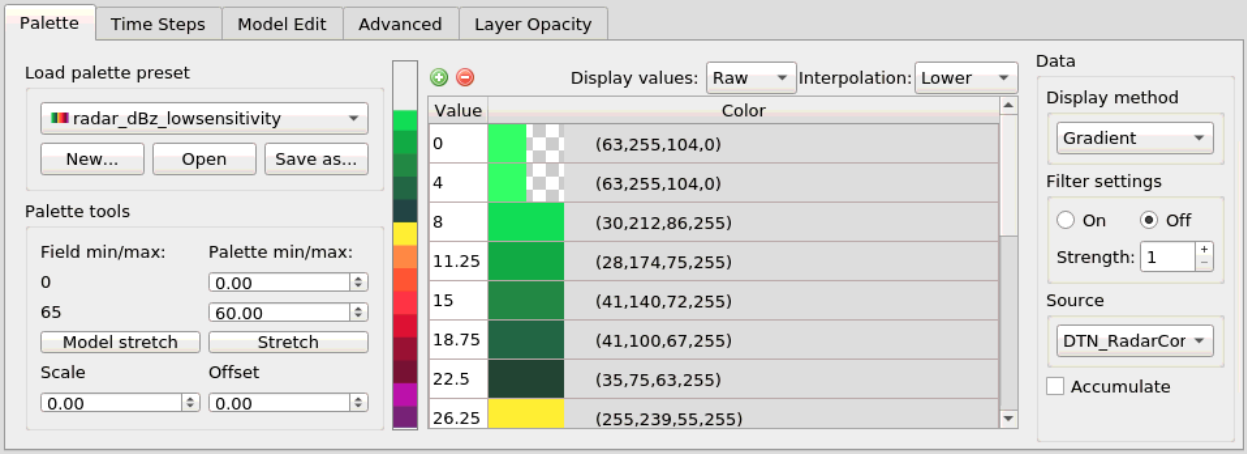
To set color for **Min**, **Center** or **Max**:

1. Click the color chip next to the **Min**, **Center** or **Max** field, respectively. The **Color Picker** appears.
2. Set the color and if desired, the **Alpha channel** (transparency). The **Alpha channel** setting is reflected in the **Color/alpha** settings in the palette.
3. Click **OK**.

Feathering: Specifies the spread of the **Center** color into the **Min** and **Max** colors, and the transparency of the spread.

- **Value:** Specifies the spread of the **Center** color into the **Min** and **Max** colors. The higher the value, the larger the spread.
- **Alpha:** Applies specified transparency to the **Feathering**.

Range Palette Settings



Range Palette Strip: Displays the entire range of colors set in the palette.

Value: Specifies the **Min**, **Center** and **Max** values. The **Values** can be set within the specified **Palette Min/Max** values.

Color/alpha: Specifies the colors and alpha values for **Min**, **Max**, and **Center**.

- **Value:** Specifies the value for each range.
- **Color:** Specifies the color for each range.
- **Alpha:** Specifies the alpha value for each range.

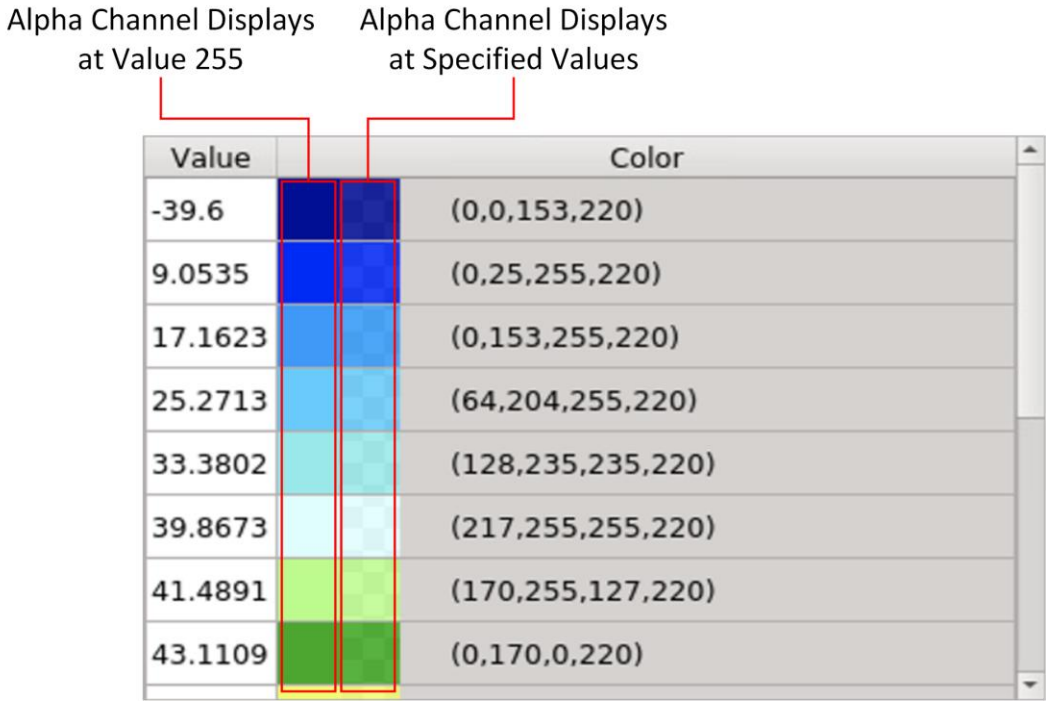
Add/Delete Palette Range: You can add or delete a color range.

To add a color range:

1. Click the color range setting below the range setting at which you would like to insert the new color range setting.
2. Click the **Add Color Range** icon . A duplicate of the selected range setting appears.
3. Set the color range as desired.

On the palette interface, the color display for each range is split vertically.

- The left displays the specified color with the **Alpha channel** set at **255**, i.e., completely opaque.
- The right displays the specified color with the specified **Alpha channel**. In the following example, **Alpha** is set to **220** for all ranges.



To delete a color range:

1. Click the color range setting that you would like to delete.
2. Click the Delete Color Range icon . The selected color range is deleted from the palette.

Display values:

- **Raw: Value** for range interpreted as degrees Kelvin. For non-temperature palettes, the value is interpreted as entered.
- **K as C: Value** for entered range expressed as degrees **Centigrade**. For example:

  Raw value **0** = **K of C** value **-273**. For non-temperature palettes, this setting does not apply.
- **K as F: Value** for entered range expressed as degrees Fahrenheit.
  Raw value **0** = **K of F** value **-459**. For non-temperature palettes, this setting does not apply.

Interpolation:

- **Lower:** Changes color precisely at the value.
- **Nearest:** Changes color between the values.
- **Linear:** Changes color gradually from one value to the next value.

TIP: Linear is typically used for coarser grids with larger value ranges, and where the **Linear** setting has more significant effect. In addition, **Linear** is not recommended for radar, or any discrete value image object, as a closeup may reveal banding effects.

Chapter 16: Opacity

Overview

Weather provides the ability to customize opacity, from an entire layer to individual temperature ranges. The opacity parameters for a layer depend upon the nature of the layer. The Opacity panel is either simple, with one parameter, or sweet spot, providing the ability to fade objects in and out based on a variety of parameters.

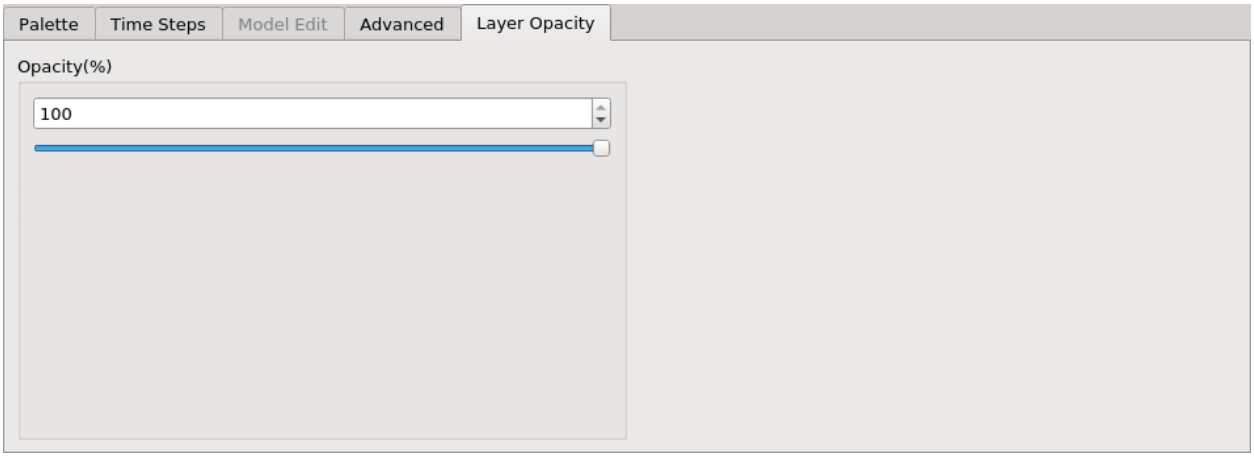
Layer Opacity - Simple

The **Layer Opacity** setting specifies the transparency percentage for the entire layer. **Range: 0 - 100%**, where **0** is completely transparent, and **100** is completely opaque.

If **Alpha** for a specific color within the layer is set at **175** (on a scale of **0 - 255**), then at **Layer Opacity 100%**, the color displays at **175**.

To set **Layer Opacity**, use one of the following two methods:

- Enter the desired value in the spin box.
- Drag the slider to the desired value.



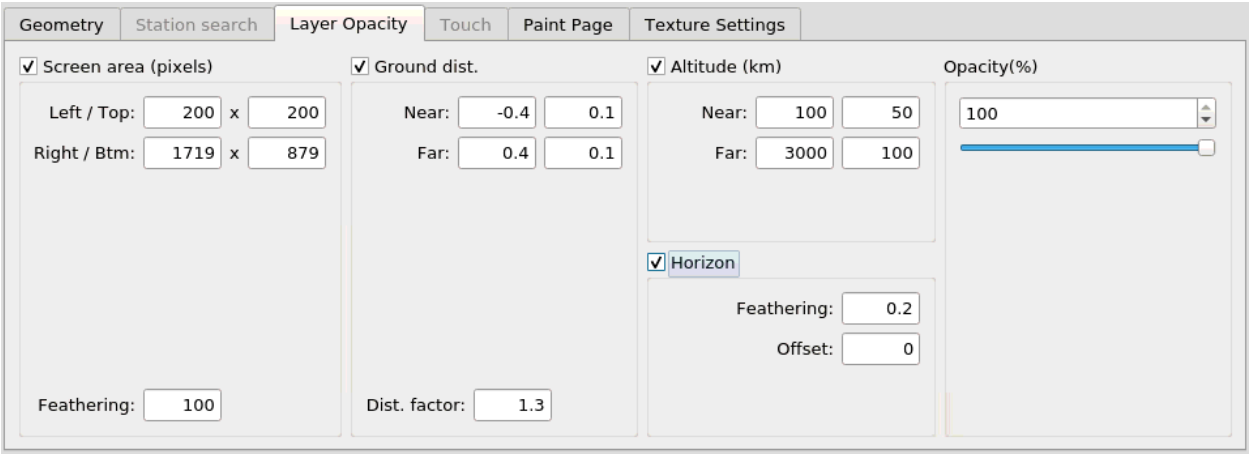
Layer Opacity - Sweet-spot

Overview - The Sweet-spot Effect

You can apply opacity to an entire layer, or create a sweet-spot effect in which the opacity is applied as specified by the **Layer Opacity** settings. The **sweet-spot** effect is a layer-wide symbol fade in/fade out effect affecting the display of all symbols within the layer. The **sweet-spot** effect is accumulated on top of, and is independent of, any **Parametric Animators** or **Keyframe Animations** applied to individual symbols.

There are four types of sweet-spot:

- **Screen Area:** Sweet-spot area is defined by rectangular coordinates.
- **Ground Distance:** Sweet-spot relative to projected distance on the ground.
- **Altitude:** Sweet-spot defined relative to camera altitude.
- **Horizon:** Sweet-spot defined relative to horizon.



You can simultaneously apply one or more sweet-spot types, as the effects are accumulative. In practice, however, one or two is what you most likely need to achieve the desired effect.

Note that the **sweet-spot** effect does not appear in the **Animations** tab in the upper right screen area.

Default configuration is provided for each type of sweet spot. If included in the Chyron Weather setup, then it is most likely located in the *setup/config/sweetspot.rc* file.

Screen area (pixels) - Sweet-spot Effect

Screen area defines a rectangular sweet-spot., that limits the area in which the symbols are fully visible. Hence, for a 1920x1080 resolution the following values could be a good starting point:

- **Left: 300**. Sets left margin to 300 pixels.
- **Top: 200**. Sets top margin to 200 pixels.
- **Right: 1620.** Sets right margin to 300 pixels.
- **Bottom: 880.** Sets bottom margin to 200 pixels.

Inside these margins, a symbol is fully visible. When crossing the boundary of this inner rectangle, the symbol starts to fade out. The distance the symbol must travel to fade out depends on the **Feathering** value. If the **Feathering** is set to **50** pixels, then a symbol will be fully invisible 50 pixels away from the margin boundary.

- **Screen area (pixels):** Enables/disables the **sweet-spot** effect for the rectangle specified in pixels.
- **Left/Top: Left border of screen in pixel x Top border of screen in pixels**
- **Right/Btm.: Right border of screen in pixels x Bottom border of screen in pixels**
- **Feathering:** Specifies the amount of feathering, in pixels, around the borders of the screen defined by the **Left/Top** and **Right/Btm.**

The **Screen area default** values can be set via the following configuration parameters:

```
default_symbollayer.screen_area_sweetspot_enabled=<true/false>
default_symbollayer.screen_area_sweetspot_rectangle="x1 y1 x2 y2"
default_symbollayer.screen_area_sweetspot_feathering=<double>
```

Ground Distance

Ground Distance sweet-spot fading of symbols in 3D maps is less straightforward than a **sweet-spot** based on **Screen area**, but it can be quite effective for camera flights at near-constant altitude.

The **Ground distance** is the projected distance on the ground. The idea is that the symbols are visible within a distance "band," where the width of the band is limited by near and far boundaries, and where the midpoint of the band is controlled by a **Distance factor**.

The **Near** value is a relative quantity normally centered on zero. **Near** values are typically in the range **-0.2** to **-0.8**. The zero value corresponds to an estimate of the "midpoint" of the current view. Similarly, typical values for the **Far** boundary are in the range **0.2** to **0.8**. Together the **Near** and **Far** boundaries define the width of the area within which the symbols will be fully visible.

A sweet-spot based on **Ground distance** is not useful for 3D maps in which the camera is facing straight down. Instead, set sweet-spot using **Altitude**.

- **Ground Dist.:** Enables/disables the **sweet-spot** relative to projected distance on the ground.
- **Near:** Defines the near boundary of the **sweet-spot** band. It is a relative quantity normally centered on zero.
- **Far:** Defines the far boundary of the **sweet-spot** band. It is a relative quantity normally centered on zero.
- **Dist Factor:** Specifies the mid-point of the band defining the visible zone for the symbols. **Default: 1.3**.

The **Ground Distance default** values can be set via the following configuration parameters:

default_symbollayer.ground_distance_sweetspot_enabled=<true/false>
default_symbollayer.ground_distance_sweetspot_near=<double>
default_symbollayer.ground_distance_sweetspot_far=<double>
default_symbollayer.ground_distance_sweetspot_near_feathering=<double>
default_symbollayer.ground_distance_sweetspot_far_feathering=<double>
default_symbollayer.ground_distance_sweetspot_factor=<double>

Altitude

The **Altitude sweet-spot** effect defines an altitude band below the camera where symbols are fully visible. The altitude band follows the elliptical plane around the globe and has no geographic limits.

- **Altitude:** Enables/disables the sweet-spot effect relative to the camera's altitude.
- **Near:** The left field specifies the low-altitude limit for the **sweet-spot** effect. The right field specifies the **feathering** of the low-altitude limit.
- **Far:** The left field specifies the high-altitude limit for **sweet-spot** effect. The right field specifies the **feathering** of the high-altitude limit.

The **Altitude default** values can be set via the following configuration parameters:

default_symbollayer.altitude_sweetspot_enabled=<true/false>
default_symbollayer.altitude_sweetspot_near=<double>
default_symbollayer.altitude_sweetspot_far=<double>
default_symbollayer.altitude_sweetspot_near_feathering=<double>
default_symbollayer.altitude_sweetspot_far_feathering=<double>

Horizon

The **Horizon** sweet-spot effect defines symbol fading relative to the horizon. All **Horizon** parameters are relative to the distance to the horizon.

Since both the **Offset** and **Feathering** values are relative to the camera's distance to the horizon, both values typically have small value ranges. The **Offset** is typically between **0** and **-0.5**, while the **Feathering** value is typically between **0.1** and **0.2**.

- **Horizon:** Enables/disables the sweet-spot effect relative to the horizon.
- **Feathering:** Specifies **feathering** as a factor of the distance to the horizon. The **Feathering** value is centered on the **Horizon Offset** value.
- **Offset:** Specifies **offset** as a factor of the distance to the horizon.
    - A zero **Offset** keeps the horizon boundary at the actual horizon.
    - A negative **Offset** value sets the **sweet-spot** boundary closer to the camera
    - A positive **Offset** value sets the **sweet-spot** boundary beyond the horizon.

The **Horizon default** values can be set via the following configuration parameters:

default_symbollayer.horizon_sweetspot_enabled=<true/false>
default_symbollayer.horizon_sweetspot_feathering=<double>
default_symbollayer.horizon_sweetspot_offset=<double>

Opacity

Specifies opacity of the entire layer.

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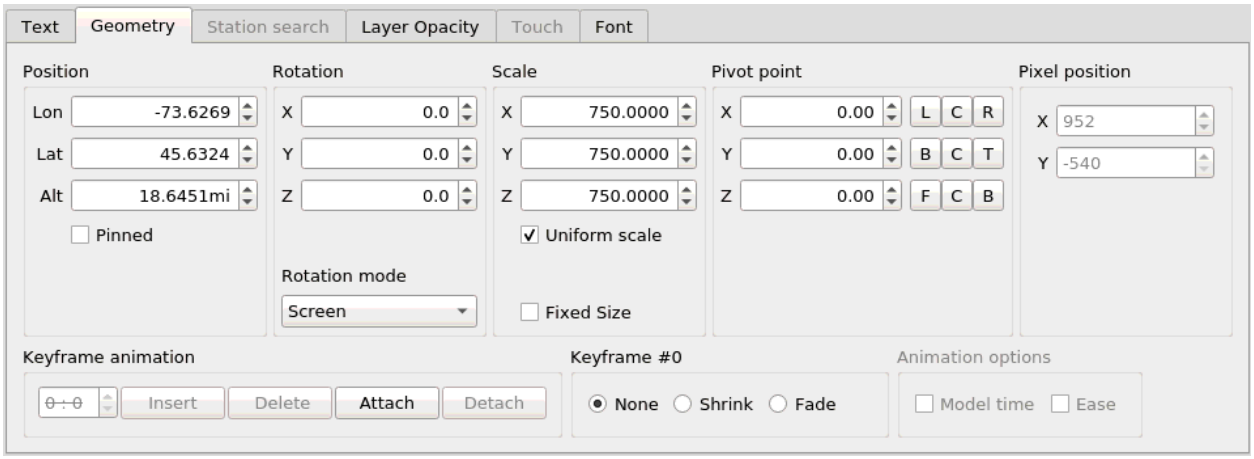
Chapter 17: Geometry

Overview

Geometry properties provide the ability to set position, scale rotation, set keyframe animation and other orientation-related properties.

Settings



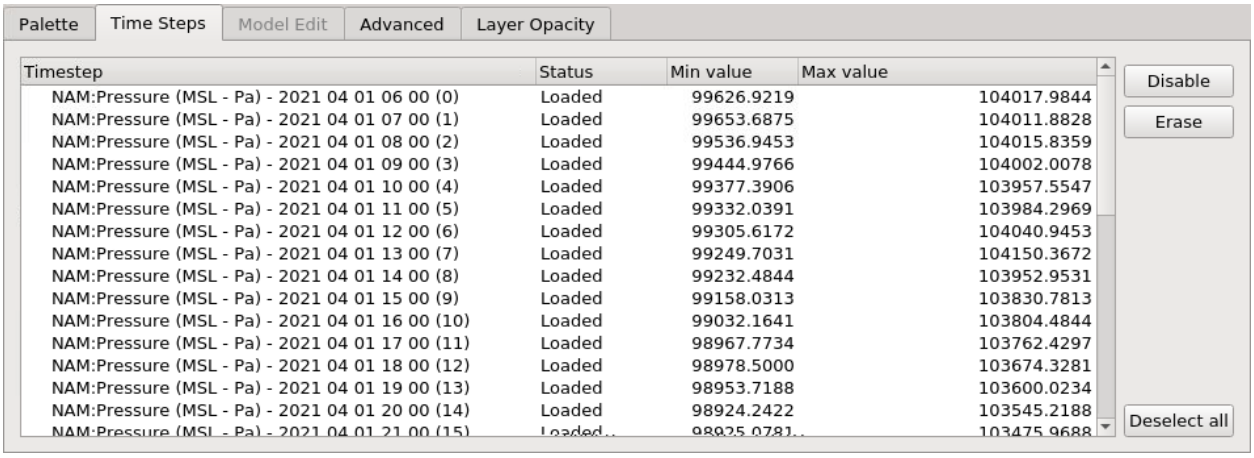
Various layers have **Geometry** properties as follows:

- **Position:** Position of the object in XYZ space..
  - **X, Y, Z:** X, Y, and Z positions.
  - **Pinned:** When enabled, locks the current position. When disabled, object can be moved.
- **Rotation:**
  - **X, Y, Z:** Axes of rotation.
  - **Rotation Mode (3D Symbols in Map Mode Layers Only): Rotation Mode** determines how an object faces the camera, and is often referred to as “billboarding.” **Rotation Mode** is active only for 3D symbols in **Map Mode**. For all other symbols, the setting is grayed out.
    - **None:** Rotation is specified by the **Geometry XYZ** rotation triplet.
    - **Screen:** The face of the object (with **0°** rotation in **X**, **Y**, **Z**) is planar with the screen.
    - **Camera:** The face of the object (with 0° rotation in **X**, **Y**, **Z**) points towards the camera.
    - **Axial:** Rotates the object facing the projected point from the camera on the ground, causing the object to swivel around its axis to face the camera lat/lon position, ignoring the altitude of the camera.
- **Scale:**
  - **X, Y, Z:** Scale in X, Y or Z dimension. When **Uniform Scale** is enabled, then modifying any dimension changes all dimensions, in order to maintain aspect ratio.

  - **Uniform Scale:** Maintains aspect ratio in all three dimensions.
  - **Fixed Size:** Size is fixed and cannot be changed.
- **Pivot Point:** The point in XYZ space around which the object rotates.
  - **X: L- Left, C - Center, R - Right**
  - **Y: B - Bottom, C - Center, T - Top**
  - **Z: F - Front, C - Center, B - Back**
- **Pixel Position:** Position of the object in pixels. Any change in **Pixel Position** is reflected in the Position setting.
  - **X, Y**
- **Keyframe animation:** Animation parameters applied if the text object is animated. If **Detach** is grayed out, then animation parameters are not applied. To apply animations parameters, click **Attach**, then set the following parameters:
  - **Keyframe:** Use spinner to select keyframe to edit.
  - **Insert:** Insert keyframe.
  - **Delete:** Delete keyframe.
  - **Attach:** Attach an overall geometry animator to the object, enabling the insertion/addition/deletion of keyframes for that object. When attaching, the initial keyframe values (**Position**, **Scale**, **Rotation**, etc.) reflect those of the current view.
  - **Detach:** Detach the geometry animator from the object, removing all animation keyframes and features from the object. Note that there is typically no undo for this function.
  - **Keyframe behavior for selected keyframe:**
    - **None:** No in/out effect.
    - **Shrink:** On first keyframe, grow symbol from nothing. On last keyframe, shrink symbol to nothing.
    - **Fade/Fade In:** On first keyframe, fade in symbol. On last keyframe, fade out symbol.
  - **Animation options:**
    - **Model time:** Animates in model time, as opposed to **Frame Time**.
    - **Ease time:** Smoothly starts and stops the animation.

Chapter 18: Layer Time Steps

The **Time Steps** tab displays the list of time steps as pulled from the data and displayed in the sequence. You can drag the column border of the **Timestep** column to the right to view the entire **Timestep** column.



Timestep: Displays the data source name, and the date, time, and index of the time step.

Status: The status of the data at that time step.

Min Value: The minimum value, in Pascals, of the data pulled at that time step.

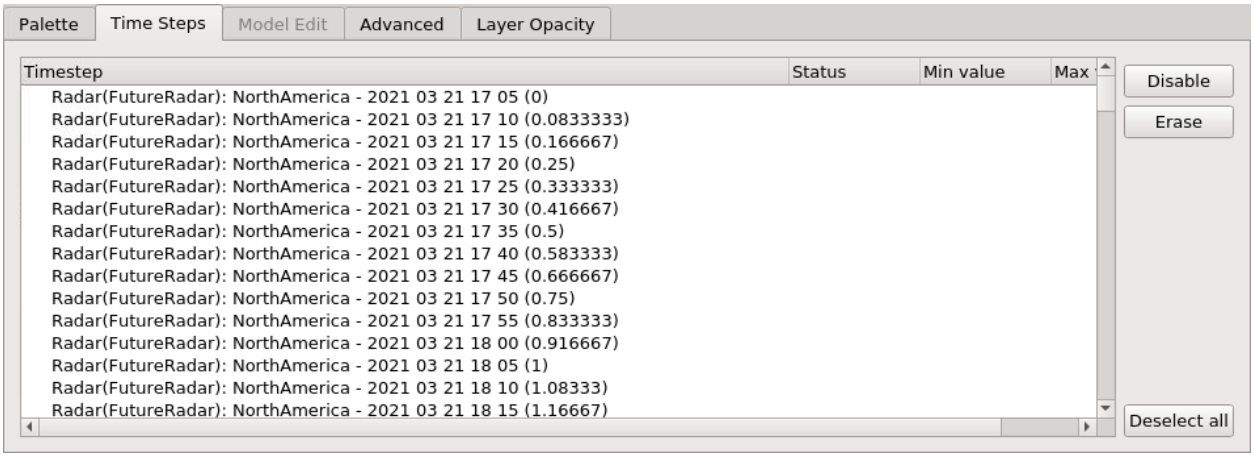
Max Value: The minimum value, in Pascals, of the data pulled at that time step.

Disable: Disable the display of the data of the selected time step.

Erase: Erase the selected time step.

Deselect all: Deselects all selected time steps.

Status, **Min value** and **Max value** may not be available at specific times or for specific data sources, and as shown in the following image, may not display.



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Chapter 19: Layer Model Edit

NOTE: Content for this section is under development. Information about this subject is available in Advanced Timeline Operations: Add Pauses in Radar Sequences and Animated Sequences.

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Chapter 20: Layer Advanced Settings

Gradient Settings

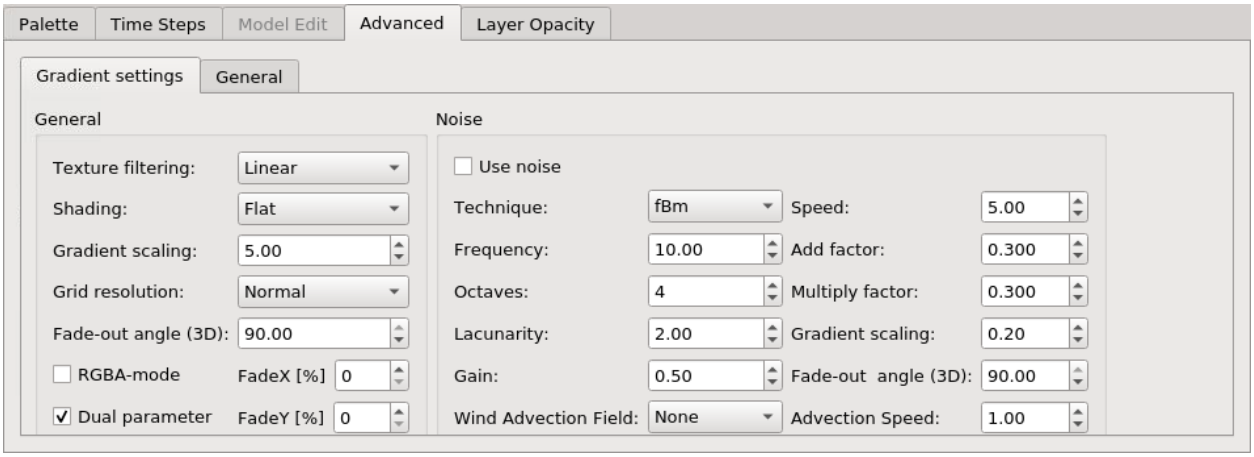
Overview

Gradient is the default method for field layers. **Gradient** maps a color to a value based on one of three interpolation methods as set in the **Palette** tab:

- **Lower:** Changes color precisely at the value.
- **Nearest:** Changes color between the values.
- **Linear:** Changes color gradually from one value to the next value.

Gradient is suitable for all continuous or stepped model fields such as radar, satellite, temperature, precipitation, cloud cover, wave height and more.

Note that the layer altitude and layer order must match for the layer to be visible.

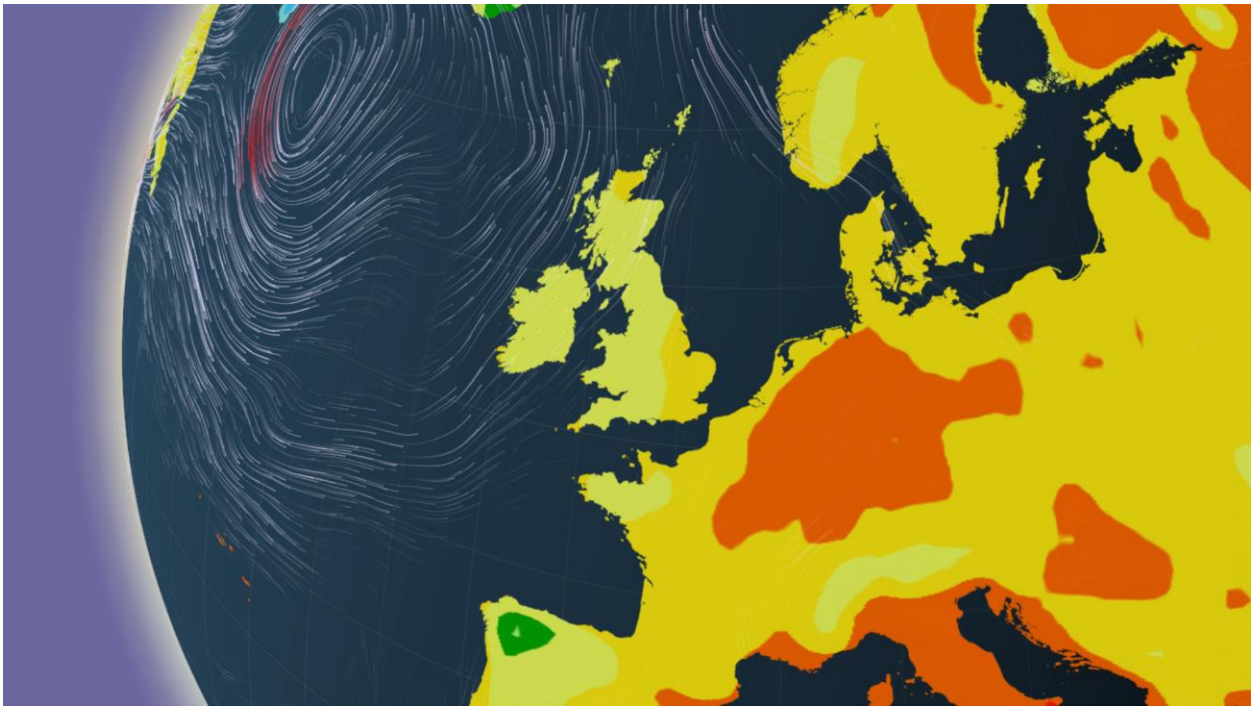


General

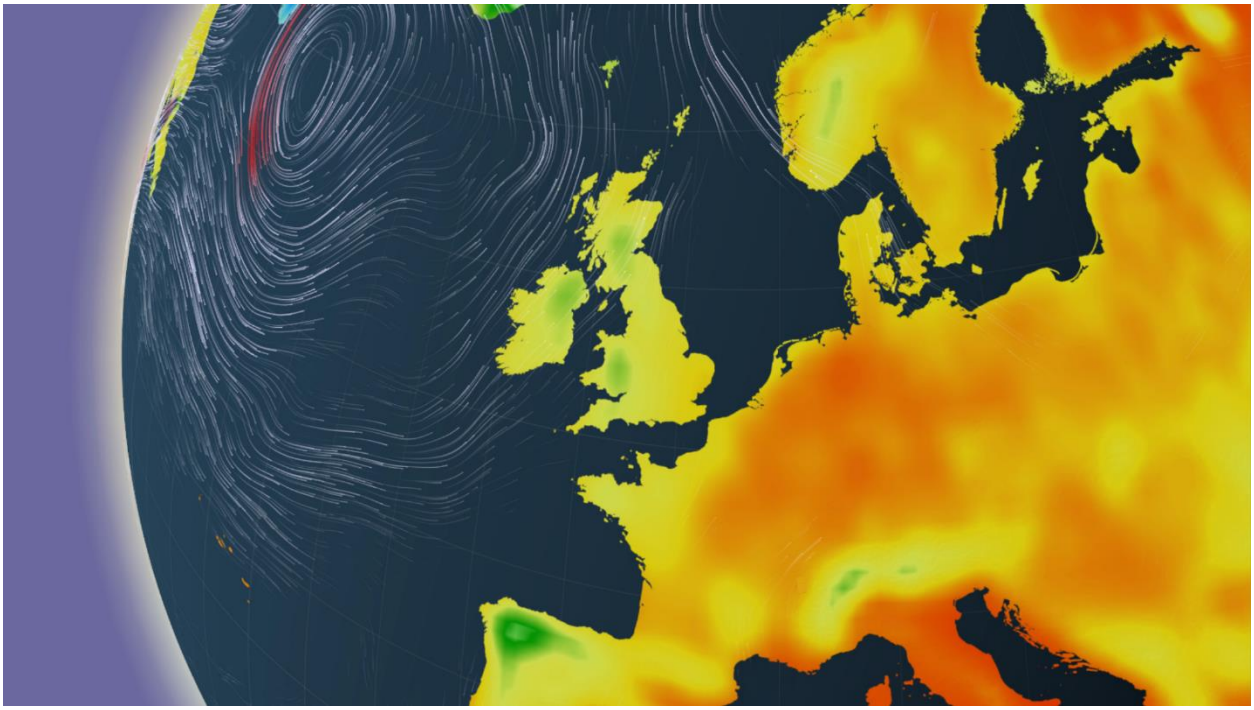
Texture filtering: The type of texture filtering. **Cubic** texture filtering creates smoother curves between grid cells than the **Linear** texture filtering. For coarse data this might be especially useful, but for some high-resolution products such as satellite or radar, the effect might be less visible or even appear more noisy than **Linear**. **Nearest** rounds the texture color to the single nearest color value, which may. For example make a radar layer appear pixelated. **Nearest** is used with precipitation, to display hard contour lines, and for temperature ranges when distinct limits between e.g., 70s and 80s, is desired. For other fields, **Linear** is often preferable.

The following shows a temperature layer displayed using **Nearest** and **Linear Texture filtering**:

- **Nearest:**

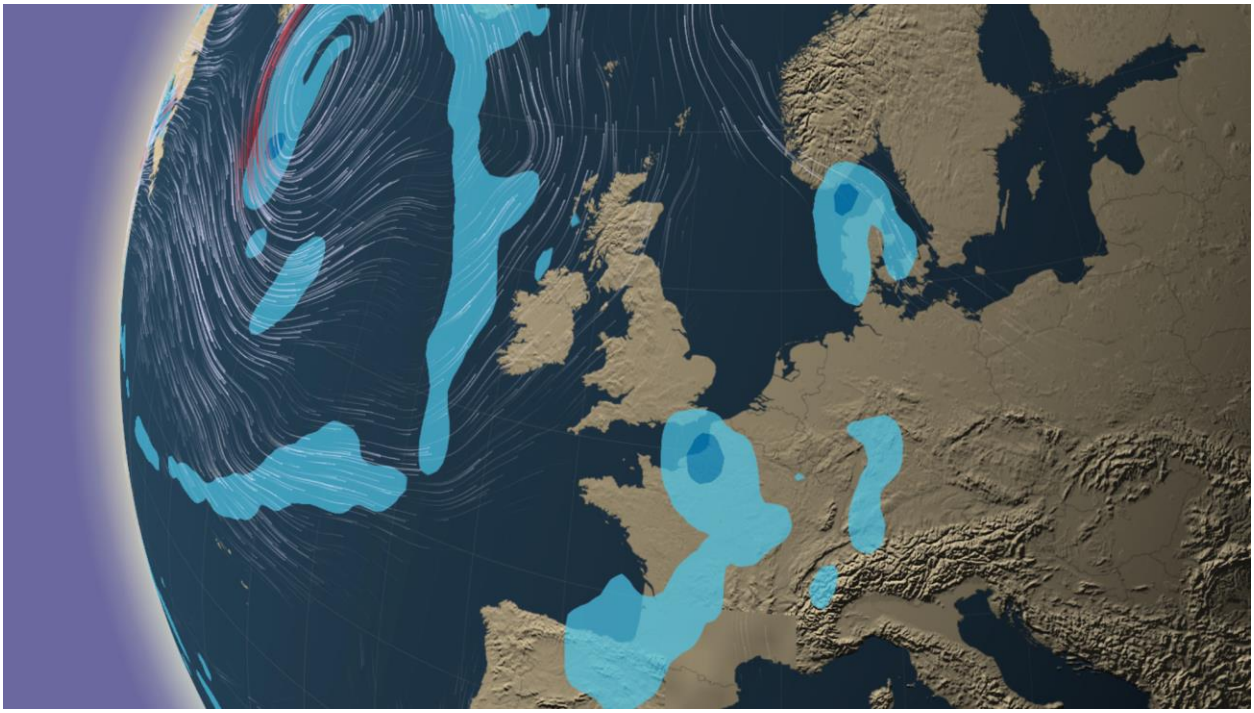


- **Linear:**

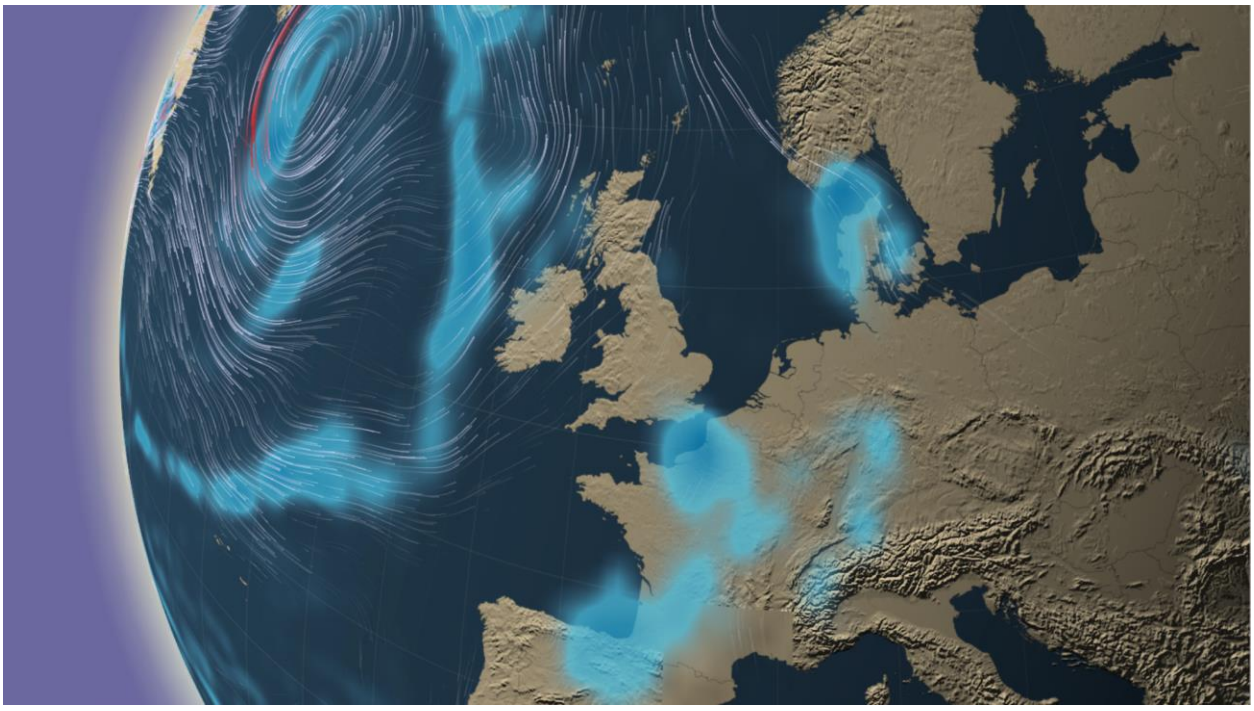


The following shows a precipitation layer displayed using **Nearest** and **Linear Texture filtering**:

- **Nearest:**

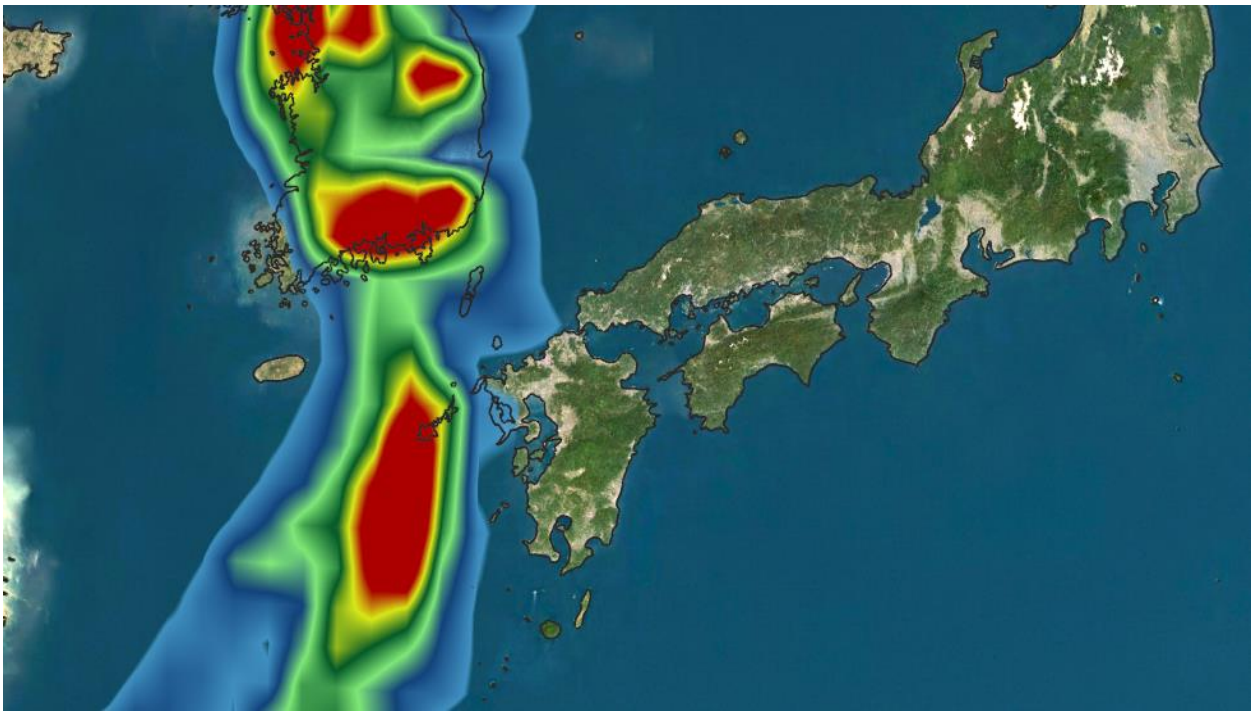


- **Linear:**

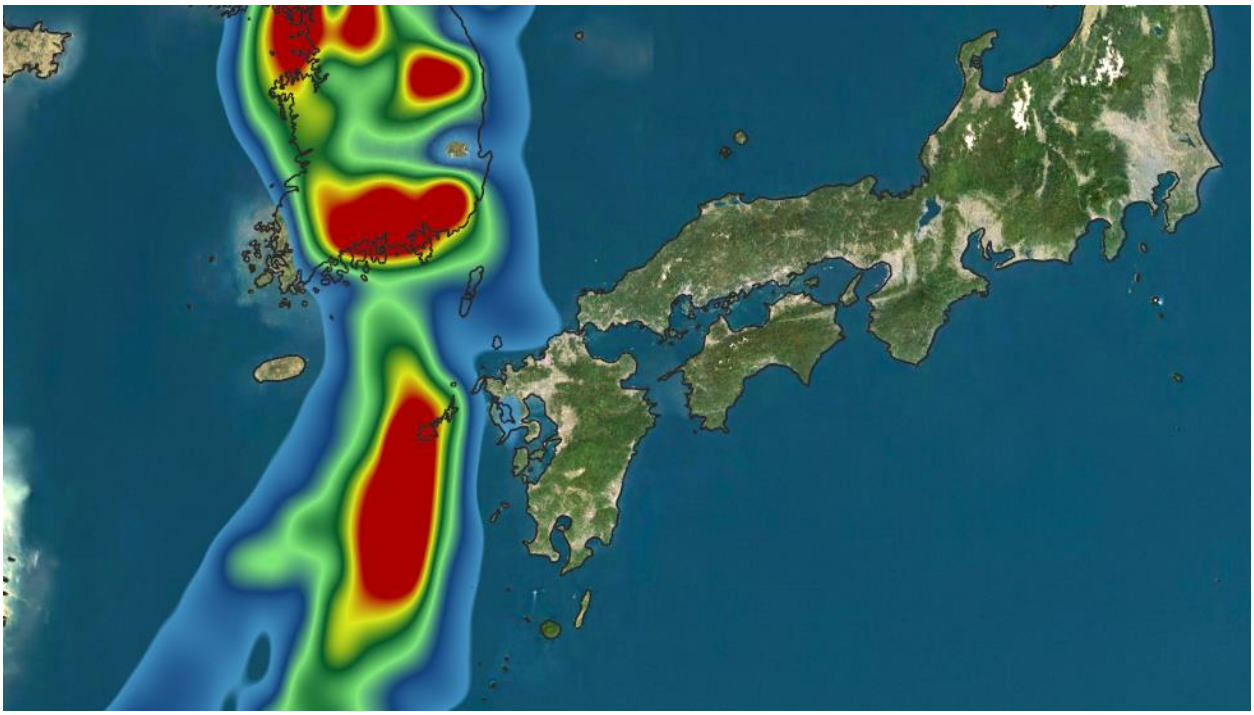


The following shows a temperature layer displayed using **Linear** and **Cubic Texture filtering**:

- **Linear:**



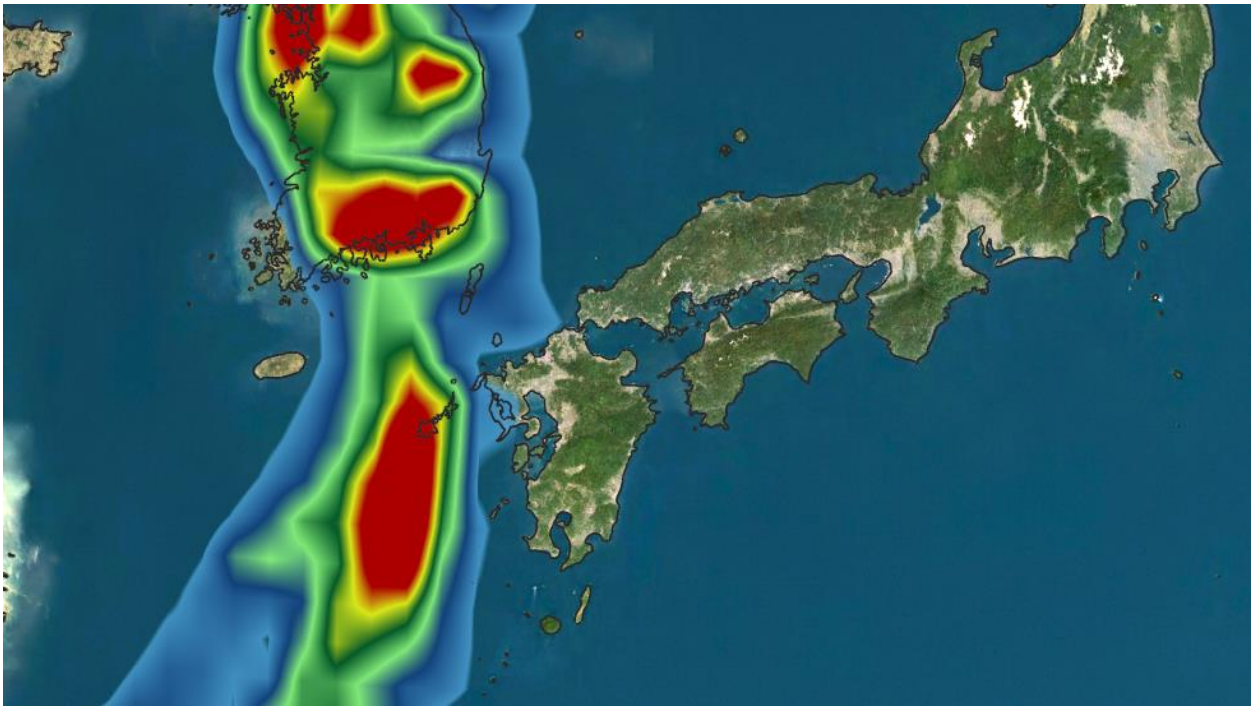
- **Cubic:**



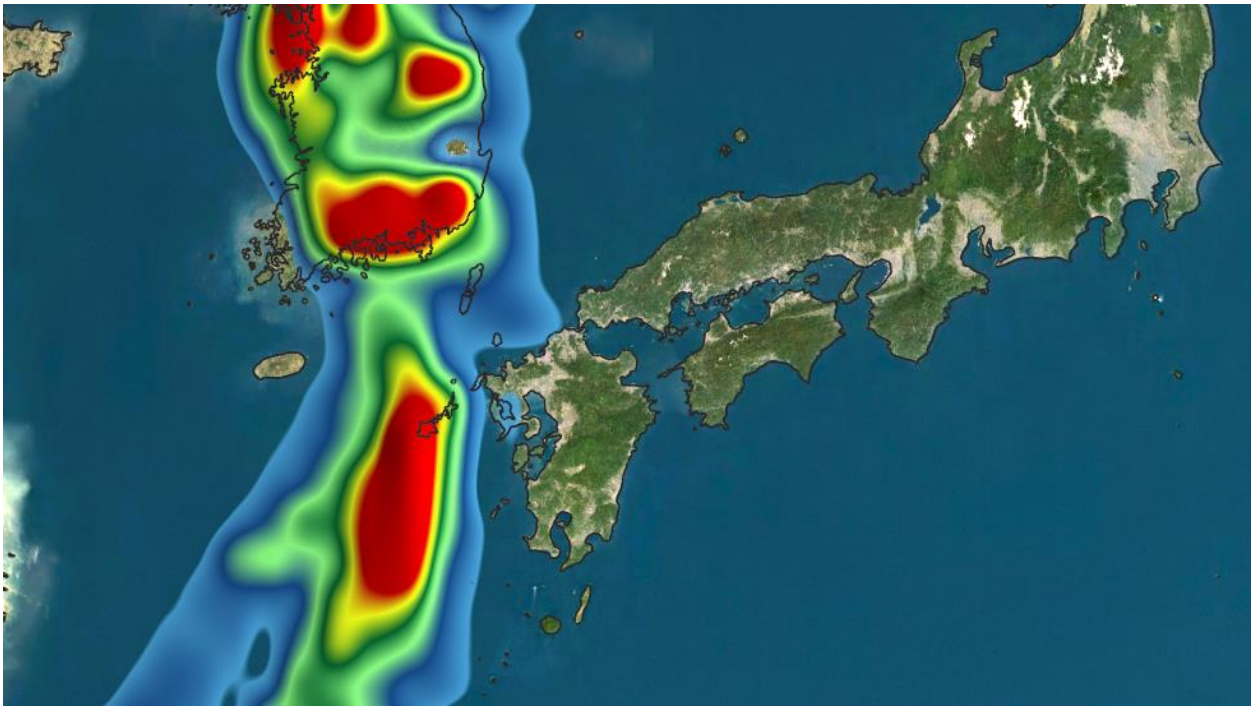
Shading: The type of shading. **Cubic** texture filtering enables the option of doing **Phong** shading. **Phong** shading adds the emulation of extrusion to the visualization, which is useful for satellite images or when choosing a visual style.

The following shows **Flat** and **Phong Shading** applied to a temperature layer:

- **Flat:** No extrusion applied to the visualization.



- **Phong:** Adds the emulation of extrusion to the visualization.



Gradient scaling: Specifies the degree that the gradient of the field data influences the Phong shading of the field. **Range: 0 - 99.99**

Grid resolution: Adjusts the number of samples that is used to create the mesh for the layer. For high-resolution data, a low value is often acceptable (**0.1 - 0.5**). High values may impact performance.

- **Very Sparse**
- **Sparse**
- **Normal**
- **Dense**
- **Extreme**

Fade-out angle (3D): The angle, in degrees, between the surface normal and view direction where the field starts to fade out. Adjusts the noise effect's fade-out separately from the gradient. If moiré-like effects appear when the view is tangent to the earth's surface, then it could be useful to reduce this angle. **Range: 0.00 - 90.00**. In the following, observe the falloff towards the edge of the view.

RGBA-mode: RGBA-mode interprets incoming data values as RGBA values directly, and is normally used only for pre-processed imagery data, such as satellite images with false coloring for visible image channel effects. **RGBA-mode** does not work if the input value is not 24 or 32 bits deep. In fact, if **RGBA-mode** is enabled for an 8- or 16-bit layer, then the layer does not display.

Dual parameter: Enables the use of field layers that switch palettes based on threshold from a different field. The following settings would render with the snow palette from 220 Kelvin and rain palette from 276.1 Kelvin.

```
myfieldlayer.field="precipitation gfs05"

myfieldlayer.dual_parameter_field="temperature gfs05"

myfieldlayer.dual_parameter_palettes="220 multiphase_snow_palette 276.1
multiphase_rain_palette"
```

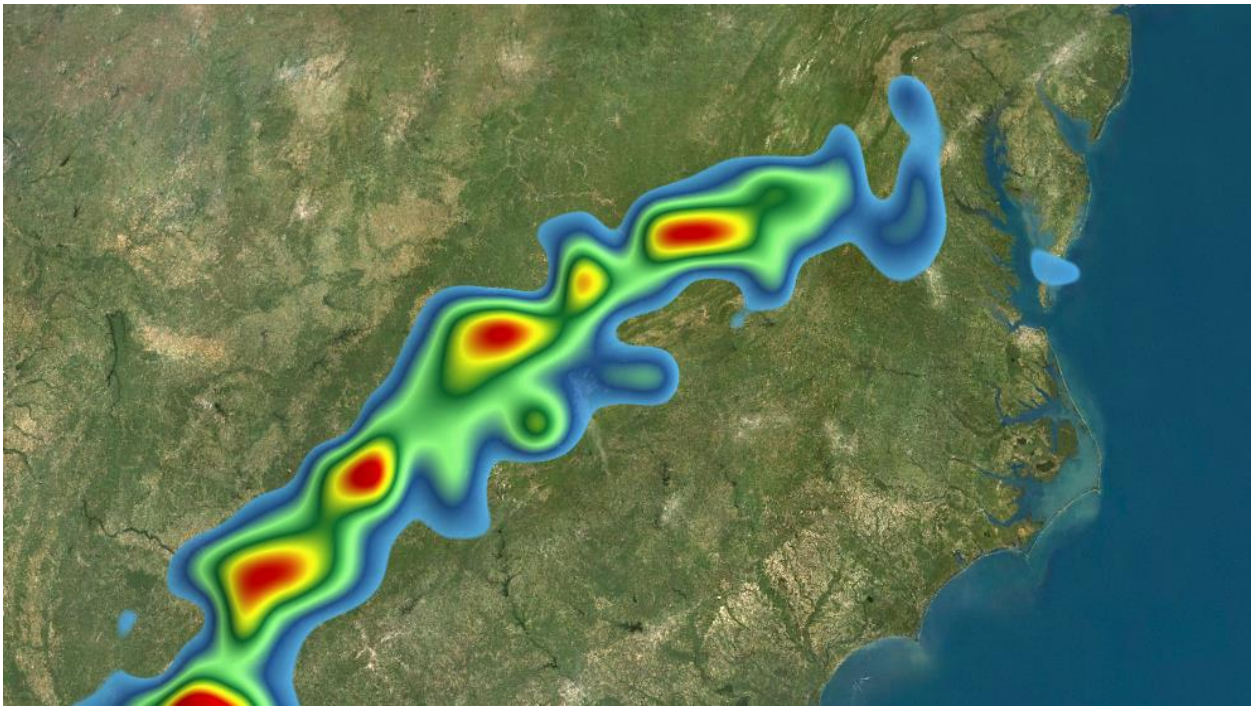
FadeX [%]: Range of horizontal fading on the edges. **Range: 1 - 100**.

FadeY [%]: Range of horizontal fading on the edges. **Range: 1 - 100**.

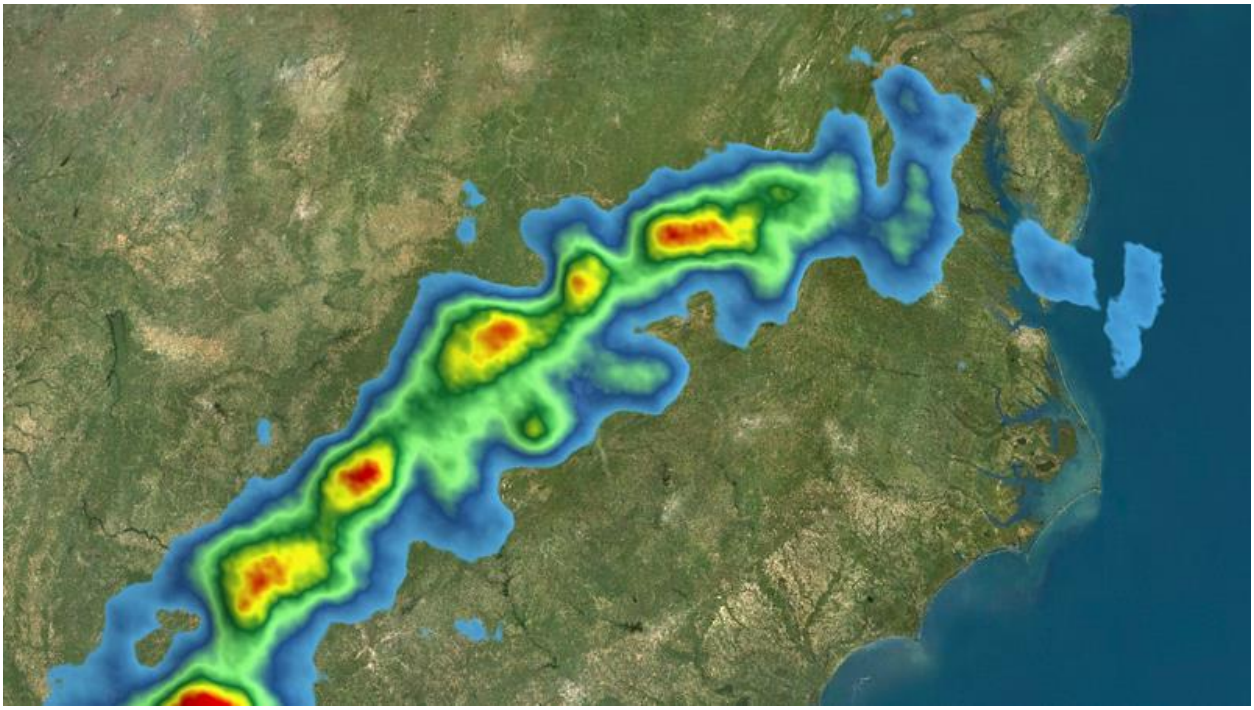
Noise

Noise can add nice detail to uniform model data visualizations. Noise also animates at the speed settings, meaning that it can add motion to sequences that are not playing, and is therefore useful in templates only showing one timestep. Note that the add and multiply values affect the gradient value mapping; therefore, both values, and possibly the palette range should be adjusted to best reflect the original data.

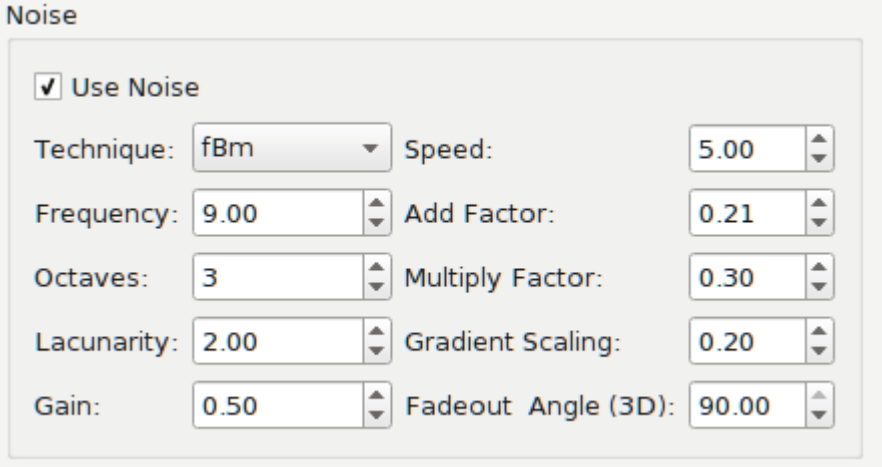
- **Use Noise Disabled**



- **Use Noise Enabled**



Settings for the above **Noise** effect:



Use noise: Enable/disable the use application of noise to the layer.

Technique: The noise algorithm to apply.

- **fBm (Fractal Brownian Motion):** Results in a more uniform appearance.
- **Turbulence:** Results in a more cloud-like appearance.

Frequency: Spatial frequency of the lowest (base) noise component. **Range: 0 - 99.99**.

Octaves: Number of frequency components to create in the noise. Adds visible detail to low-frequency settings, but is not as visible at higher frequencies. High numbers can affect the frame rate. A value of **2 - 3** is optimum in most cases. **Range: 1 - 64**.

Lacunarity: How patterns fill space. Patterns that have more or larger gaps generally have higher lacunarity. In Weather, **Lacunarity** is the factor by which each new octave's frequency is scaled. **Default: 2**. **Range: -10.00 - 10.00**.

Gain: The factor by which each new octave's amplitude is scaled. **Default: 0.5**. **Range -10.00 - 10.00**.

Wind Advection Field: The displacement of the individual texture cells, along the vector of the wind. This field is available only for a wind or vector parameter field layer. For all other layers, this setting is grayed out.

- **None:** The **Advection** factor is a random oscillating number, to show an internal structure. It is not related to meteorology data, but is rather a visual effect.
- **Additional Wind Advection Field Setting(s):** The available setting or settings may differ depending upon the field. Examples:
    - **Wind_10meter:** Visualizes **Advection** data 10 meters above ground, often referred to as the standard surface wind; the most representative for the wind experienced on the ground.
    - If available, then one may like to use **850 millibar** or **700 millibar** wind to visualize precipitation and cloud displacement, as this is where most of the precipitous clouds occur.

Speed: The rate of movement of the noise over time. A high value moves the noise more per frame. **0** results in a static noise effect. **Range: 0.00 - 99.99**.

Add factor: Amplitude of noise added to data in normalized palette space. **Range: -10.000 - 10.000**.

Multiply factor: Amplitude of noise multiplied to data in normalized palette space. **Range: -10.000 - 10.000**.

Gradient scaling: The amount that the noise's gradient influences Phong shading of the field. **Range: 0.00 - 10.00**.

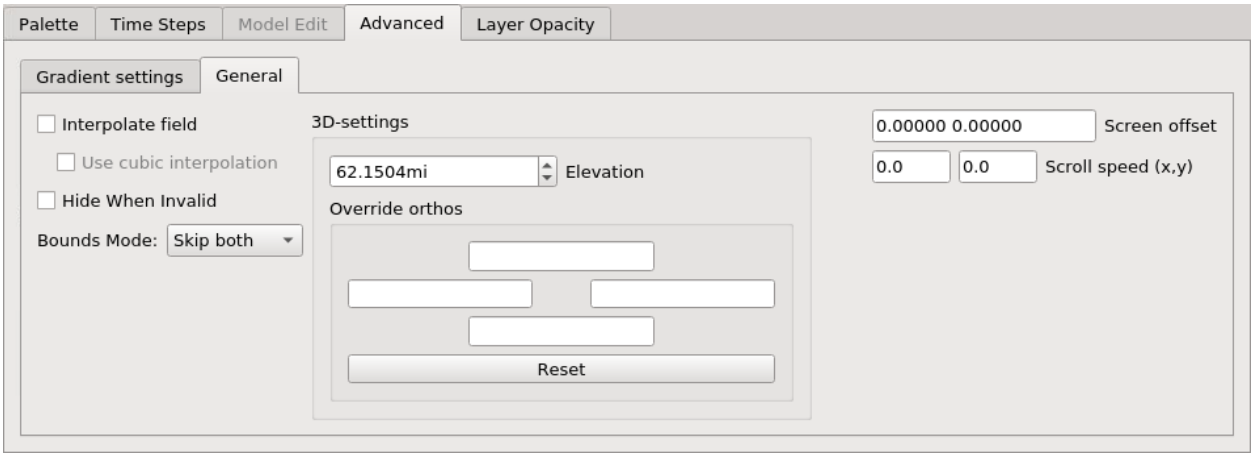
Advection Speed: The speed of the transfer of an atmospheric property via the horizontal movement of air. **Range: 0.00 - 99.99.**

Fadeout angle (3D): For 3D, this is the angle (in degrees) between surface normal and view direction, where noise starts to fade out.

General

Overview

The **Advanced General settings** include interpolation, valid/invalid behavior, outside timespan behavior, and 3D specifications.



Interpolation, Valid/Invalid Behavior, Outside Timespan Behavior

Interpolate field: Enables/disables interpolation of field values between time steps.

- **Use cubic interpolation:** When **Interpolate field** is enabled, then provides the ability to enable disable **Use cubic interpolation**.

Hide When Invalid: When enabled does not display outside the valid model time interval.

Bounds Mode: The behavior when current time is outside the timespan of the field.

- **Skip Both**
- **Keep lower**
- **Keep upper**
- **Keep both**

3D-settings

Elevation (miles): Range: 0.0000 - 1,000,000,000.0000. Elevation of the layer display above Earth. As **Elevation** is increased, the layer display moves closer to the viewer.

Override orthos:

- **North**
- **South**
- **East**
- **West**
- **Reset:** Resets the **Override orthos** settings.

Screen offset {x y]: Displace field in 2D in percent of screen space.

Scroll speed (x,y): Scroll speed **x**- and **y**-direction, respectively, in pixels.

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Chapter 21: Map and Environment Layers and Properties

Overview

Chyron Weather provides one or more configurable maps, specific to your system. Depending upon the type of map, it may include layers and properties, such as terrain, water, masking, etc. The sections in this chapter cover layers that may or may not be on your system.

An **Environment** layer, which is not a **Base Map** sublayer, provides customizable sun and sky settings.

Base Map Properties

Overview

The **Base Map** layer specifies the appearance parameters of the terrain and water, including the height and scale depiction of the terrain, lighting, water color, wave height, etc.

Various **Terrain** and **Water** settings are specified using the **Color Picker**. See Select Color - Color Picker for details.

Terrain Properties

Overview

Terrain properties refer to physical characteristics of the land areas that are above water.

Terrain

Specifies the **Terrain** file. If multiple **Terrain** files are available, then you can browse to and select the file of your choice.

Geometry

Height Exagg.: The degree of exaggeration of the height of the terrain. A value of **1.0000** reflects the actual elevation of the landscape (slow update). **Range: 0.0001 - 1000.0000**.

Normal Scaling: The scaling applied to the terrain. **Range: 0.0001 - 9.9999**.

Material

The **Material** settings specify the lighting properties.

Ambient: Light that is already available before lighting is applied. **Range: 0.00 - 10.00**. To set:

- Use the **Color Picker** to set the color, and enter a value in the **Multiplier** field.

Diffuse: Light that directly strikes an object and is reflected in all directions. **Range: 0.00 - 10.00.** To set:

- Use the **Color Picker** to set the color, and enter a value in the **Multiplier** field.

Specular: Bright spots of light that appear on shiny objects when illuminated. **Range: 0.00 - 10.00.** To set:

- Use the **Color Picker** to set the color, and enter a value in the **Multiplier** field.

Shininess: Specular reflectivity of a surface. **Range: 0.00 - 10.00.** To set:

- Enter a value in the **Multiplier** field.

Levels low/high: Range for Both: 0.00 - 10.00

Water Properties

Ocean Color

Deep: Deep Color (Perpendicular).

Shallow: Shallow Color (Parallel).

Water mask:

- **No mask**
- **Red/Green mask**
- **Red mask**
- **Inverted Red mask:**
- **Alpha mask**

Ocean Wave Effect

Ocean wave effect: Enables/disables the display of waves.

Wave size: Range: 0 - 20.

Wave height: Range: 0.00 - 99.99.

Wave speed (u.v): Velocity components of the waves in the x, y directions, respectively.

Ocean Shore Line Effect

Ocean shore line effect: Enables/disables the display of ocean shoreline.

Wave extents: If the coastal ocean mask has a grey ramp, this setting allows the shore effect to extend further out from the actual shoreline.

Wave speed: Speed of the waves.

Base Map Mask Properties

Image Layer Visibility

Layer opacity: Specifies opacity of the layer. **Range: 0.00000 (completely transparent) - 1.00000 (Completely Opaque)**.

Minimum visible range: Minimum camera range at which this layer is visible.

Maximum visible range: Maximum camera range at which this layer is visible.

Image Layer Settings

Image layer source: Image layer source.

Source URL: Specifies mask image source.

Source raster style: Select an upstream pre-defined style.

Layer role: Use imagery as a texture as follows.

- **Map**
- **Night**
- **Mask**

Layer cache policy:

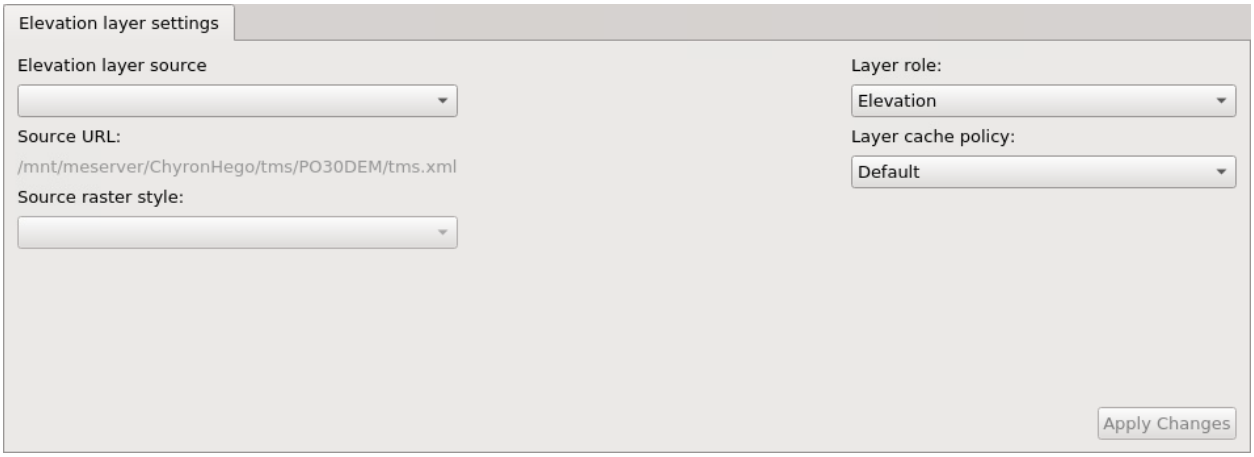
- **Default:** Default as set in the system configuration.
- **Read/Write**
- **Cache only**
- **Read only**
- **No cache**

Apply Changes: If any setting is changed, then the **Apply Changes** becomes active. To apply change(s):

- Click **Apply Changes**.

PO30DEM Properties

PO30DEM is a **Base Map** sublayer that specifies **Elevation layer settings** digitally. Data point spacing is at 30-arc seconds (approximately 1 km).



Elevation layer source: Elevation layer source.

Source URL: Displays the filepath of the **Elevation layer** file.

Source raster style: Select an upstream pre-defined style.

Layer role: Use imagery as a texture as follows.

- **Elevation**

Layer cache policy:

- **Default:** Default as set in the system configuration.
- **Read/Write**
- **Cache only**
- **Read only**
- **No cache**

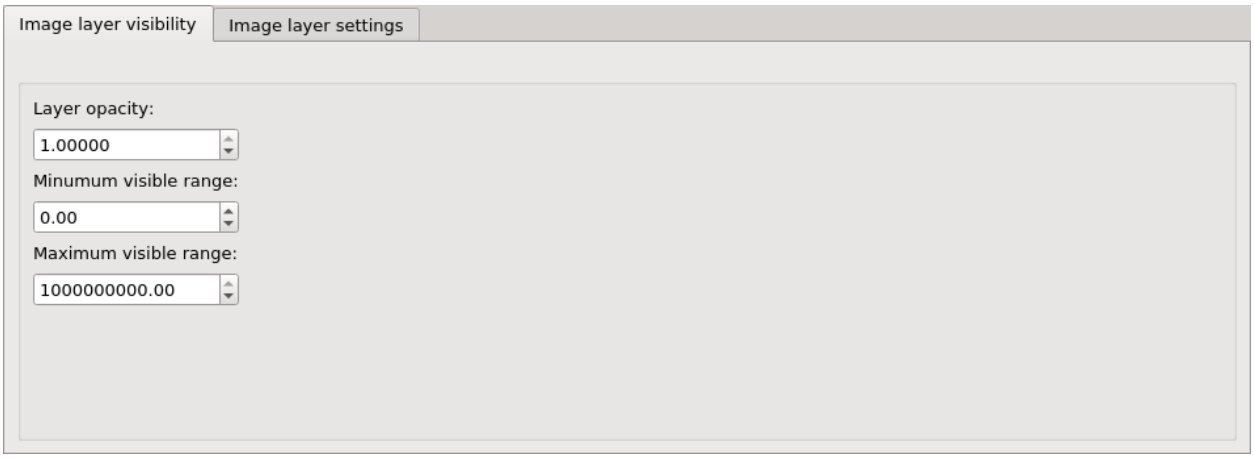
Apply Changes: Click to apply changes to **Elevation layer settings**.

PO2019 Properties

Overview

PO2019 is a **Base Map** sublayer that specifies **Image layer visibility** and **Image layer settings** for water features.

Image Layer Visibility



Layer opacity: Specifies opacity of the layer. **Range: 0.00000 (completely transparent) - 1.00000 (Completely Opaque)**.

Minimum visible range: Minimum camera range at which this layer is visible.

Maximum visible range: Maximum camera range at which this layer is visible.

Image Layer Settings

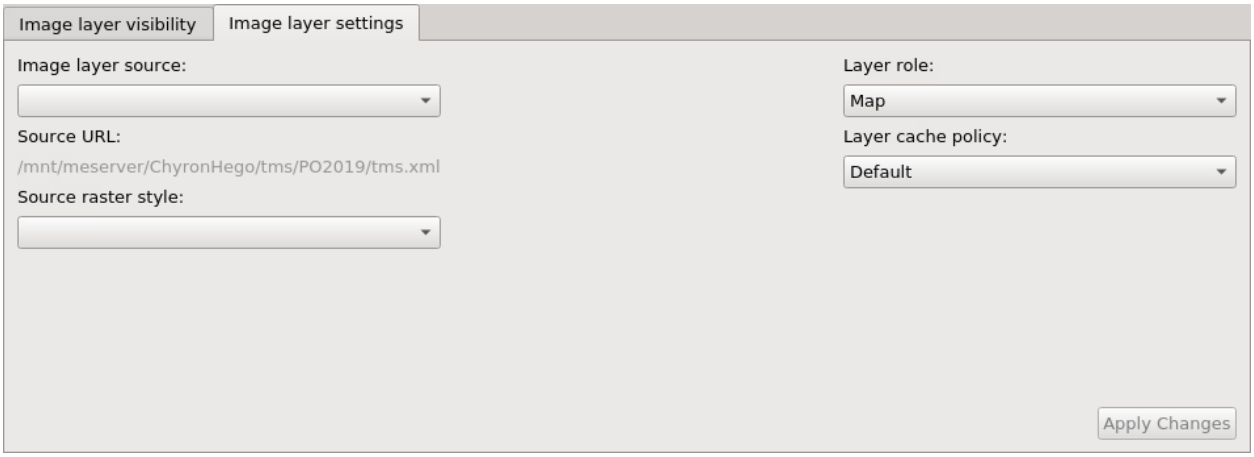


Image layer source: Image layer source.

Source URL: Displays the filepath of the **Image layer** file.

Source raster style: Select an upstream pre-defined style.

Layer role: Use imagery as a texture as follows.

- **Map**
- **Night**
- **Mask**

Layer cache policy:

- **Default:** Default as set in the system configuration.
- **Read/Write**
- **Cache only**
- **Read only**
- **No cache**

Apply Changes: Click to apply changes to **Image layer settings**.

Mapbox Layer Properties

Properties

Enable lighting: Enables/disables lighting.

Opacity: Specifies opacity of the layer. **Range: 0.00000 (completely transparent) - 1.00000 (Completely Opaque)**.

Style Sheet

The style sheet defines the appearance of the Mapbox element (e.g., streets, labels). You can edit the styles within the **Style sheet** tab.

NOTE: This **User Guide** does not cover Mapbox style sheet creation, editing or scripting. Please consult Mapbox documentation for additional information.

Please ensure that you do not inadvertently change Mapbox style sheet configurations, scripts and/or files that may be used in other sequences.

The Style Sheet features three main areas:

- **Styles:** Lists the styles in the style sheet.
- **Selectors:** Lists the function that is called in the **Script** tab.
- **Script:** Displays the script that is associated with the Mapbox layer.

The **Style sheet** tab also provides file functions:

Style sheet: Select style sheet from dropdown.

New: Provides the ability to create a new style sheet:

- **New feature style sheet:** Creates a blank style sheet.
- **Clone current style sheet:** Makes a copy of the current style sheet.

Save as: Saves current style sheet as a template. To perform a **Save as:**

1. Click **Save as**. The **Save style sheet as template** dialog displays.
2. Enter a name for the template, and then click **OK**.

Apply & Reload: Applies and reloads any changes to the **Style sheet**.

Configure

Layer Cache policy:

- **Default:** Default as set in the system configuration.
- **Read/Write**
- **Cache only**
- **Read only**
- **No cache**

Apply & Reload: Applies and reloads any change to the **Layer Cache Policy**.

Source options

URL: Specifies the URL of the Mapbox data source.

Format: Mapbox data source format:

Default: Default as set in system configuration.

- **gml**
- **json**
- **pbf**

Invert Y:

- **True:** Inverts **Y**.
- **False:** Does not invert **Y**.

Level: Mapbox level.

Apply & Reload: Applies and reloads any changes to the **Source options**.

Select source

Choose a predefined source: Provides the ability to select a different, predefined source.

Open feature data from file: Provides the ability to apply a feature data file. To do so:

1. Click **Open File**. The **Open geometry file** dialog displays.
2. Browse to the desired file of format ***.shp***, ***.gml***, ***.json***, ***.kml*** or ***.xml***, then click **Open**. The selected file is applied.

Apply & Reload: Applies and reloads any changes to the **Select source** settings.

Environment Properties

Overview

The **Environment** layer specifies sun and sky settings based on a variety of parameters, including date, time, synchronization with **Model Time**, elevation, azimuth, sun and sky color, etc.

Various **Environment** layer color settings are specified using the **Color Picker**. See Select Color - Color Picker for details.

Sun Position

The following settings specify the sun position based on date and time, model time, and elevation and azimuth. Select one of the following, and set any associated parameters:

- **Date and Time:** Sun azimuth changes with time of year.
    - In left field, enter date or select date from drop-down calendar.
    - In right field, enter time of day.
- **Sync hours to Model Time:** Syncs hours to model time.
    - Enter date or select date from drop-down calendar.
- **Sync to Model Time:** Syncs to model time.
- **Elevation and Azimuth:** Sun altitude and sun azimuth. Set the following:
    - **Sun altitude:** In the left field, enter sun altitude, in degrees. **Range: 0.00 - 90.00**.
    - **Sun azimuth:** In the right field, enter sun azimuth, in degrees. **Range: 0.00 - 180.00**.

Local to Camera Location: Moves the sun to where the camera points.

Classic Sky Effect

Sunlight color: Specifies the color sunlight color.

- Click the color chip, and use the **Color Picker** to set a different color.

Global ambience: Specifies global ambience color.

- Click the color chip, and use the **Color Picker** to set a different color.

Fog/Haze: Enable/disable the display of fog/haze.

Color: Specifies color and transparency (alpha channel) of the sky.

- The color chip displays the current color. The field to the right of the color chip displays the current **Alpha channel** setting (transparency).
    - Click the color chip, and use the **Color Picker** to set a different color and **Alpha channel**.
    - The **Alpha channel** setting in the color picker is reflected in the **Alpha channel** field to the right of the color chip, and vice versa. If desired, then enter a different setting in the **Alpha channel** field. **Range: 0 - 255**.

Begin (km): The highest altitude at which the sky is visible.

End (km): The lowest altitude at which the sky is visible.

Realistic Sky Effect

Realistic sky effect: Enables/disables the appearance of a more realistic sky.

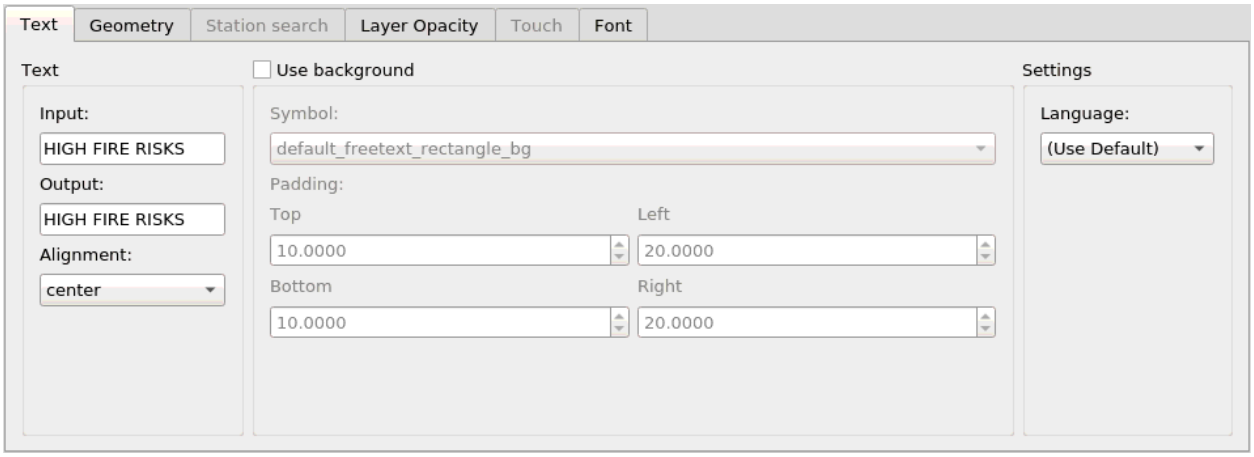
When **Realistic sky effect** is enabled, then **Classic sky effect** settings are disabled.

Effect intensity: The intensity of the **realistic sky effect**. **Range: 0.1000 - 10.0000**.

Chapter 22: Text Edit

Overview

Chyron Weather provides the ability to edit a text layer's font style, size, and many other characteristics.



Properties

Text Tab

- **Input:** Enter text to be displayed, either as text or a formula. The result is reflected in the **Output** field, and in the **Sequence Preview**. The following codes display day, date, and time:

Input	Output	Examples
$current_time	Current time	11:17 PM, 9:30 AM
$weekday	Day of week	Monday
$sh_weekday	Day of week short name	Mon
$month	Month: Full name	August
$sh_month	Month - short name	Aug
$mm	Month: 2-digit number	08, 12
$m	Month: 1- or 2-digit number	8. 12
$dd	Day: 2-digit number	03, 24
$d	Day: 1- or 2-digit number	3, 24

Input	Output	Examples
$y	Year: 4-digit year	2021
$hh	Hour: 2-digit number	07, 11
$h	Hour: 1- or 2-digit number	7, 11
$ii	Minutes	25
$ampm	AM/PM	AM, PM

Examples:

Input	Output
$weekday, $month $d, $y $hh:$ii $ampm	**Saturday, March 13, 2021 11:00 PM**
$sh_weekday, $sh_month $d, $y	**Sun, March 7, 2021**
$sh_weekday, $sh_month $dd, $y	**Sun, March 07, 2021**
$m/$d/$y	**3/7/2021**
$mm/$dd/$y	**03/07/2021**

- **Output:** The text that displays in the **Sequence Preview**., and is based on the **Input**. No action necessary.
  - If the text is typed directly in the **Input** field, then the **Output** text is the same as the **Input** text and displays in the **Sequence Preview**
  - If a formula is entered in the **Input** field, then the results of the formula display in the **Output** field and in the **Sequence Preview**.
  - If the date and/or time display changes during sequence playback (e.g., Radar Last 12 Hours), then the first date/time is displayed in the **Output** field. When played, the sequence progresses through the dates/times as designed. **Alignment:** Set alignment within the text field as follows.
    - **lower_left**
    - **lower_center**
    - **lower _right**
    - **center_left**
    - **center**
    - **center_right**
    - **upper_left**
    - **upper_center**
    - **upper_right**

- **Use background:** Enable or disable. If enabled, then set the following:
  - **Symbol:** Click to display list of available background graphics. Select background graphic. Note that the list contains all available background graphics, some of which may not be suitable for the specific text box.
  - **Padding:**
    - **Top**
    - **Left**
    - **Bottom**
    - **Right**
- **Settings:** The languages listed below are a sample. The languages available on your system may be different.
  - **Language:**
    - **Use Default**
    - **English (US)**
    - **Spanish (MX)**

Geometry

See Geometry for additional information.

Station Search

See Station Search for details.

Layer Opacity - Sweet-spot

See Opacity - Sweet-spot.

Font

- **Preset text styles:** Select from available preset text styles. **Preset text styles** are set during system commissioning.
- **Font**
  - **Font name:** Name of the font.
  - **Style:** Select from available styles.
  - **Font size:** Set font size. Maximum font size **120**.
  - **S:** Apply strikethrough to text.
  - **U:** Apply underline to text.
  - **O:** Apply overhead line to text.
  - **Fill:** Enable/disable fill.
    - **Color:** Set fill color.
  - **Outline:** Enable/disable text outline. Note that if **Fill** is not enabled, then outline does not display.
    - **Color:** Set outline color.
    - **Width:** Set outline width.

- **Drop Shadow:** Enable/disable drop shadow. Note that if Fill is not enabled, then the drop shadow still displays.
  - **Angle:** Either drag dial or user spinner to set drop shadow angle.
  - **Length:** Set drop shadow offset.
  - **Color:** Set drop shadow color.
  - **Opacity:** Set drop shadow opacity. Set opacity for **0** (completely transparent) - **100** (maximum drop shadow opacity)
- **Spacing:**
  - **Letter:**
    - **%:** Percentage: Select **%**, then set to increase/decrease character spacing by the specified percentage.
    - **abs:** Select **abs**, then set to increase/decrease character spacing by the specified value.
  - **Word:** Set to increase/decrease spacing between words. Does not affect character spacing within a word. **0** is normal word spacing.
  - **Line:** Set to increase/decrease distance between lines of text.
  - **Use font kerning:** Enable/disable the application of kerning.
    - When **Use font kerning** is enabled, characters can overlap in horizontal space.
    - When **Use font kerning** is not enabled, each character occupies its own horizontal space, and characters do not overlap.
  - **Fixed pitch:** Applies monospace spacing to the characters. i.e., characters each occupy the exact same amount of horizontal space.
- Styling:
  - **Capitalization:** Set capitalization.
    - **Mixed Case:** First letter of each word is capitalized.
    - **ALL UPPERCASE:** All characters are uppercase.
    - **all lowercase:** All characters are lowercase.
    - **Small Caps:** First letter of each word is capitalized. All other characters are small capitalized. Note that the selected font must provide this option.
    - **Capitalize:** First word of the text is capitalized.
  - **Stretch:** Set type of stretch. **Stretch** encompasses both stretching and condensing.
    - **Ultra Condensed**
    - **Extra Condensed**
    - **Condensed**
    - **Semi Condensed**
    - **Unstretched**
    - **Semi Expanded**
    - **Expanded**
    - **Extra Expanded**
    - **Ultra Expanded**

Chapter 23: Icon Symbols

NOTE: Content for this section is under development.

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Chapter 24: Paint Symbols

Paint Page

Create Shape

Creates the specified shape on the screen:

- **Rectangle:** Creates a rectangle on the **Sequence Preview**.
- **Circle:** Creates a circle on the **Sequence Preview**.
- **Curve:** Creates an open or closed curve, based on points clicked on the **Sequence Preview**.

To create a shape, you must first add the **Paint Symbols {Map 2D]** layer:

1. Add a **Paint Symbols {Map 2D]** layer to the **Sequence**.
2. In the Chyron Weather toolbar, click the **Add Symbol** icon  .
3. Ensure that the **Paint Symbols {Map 2D]** layer is highlighted, and then click the **Paint** tab.

To create a **Rectangle** or **Circle**:

1. In the **Paint Page** tab's **Create shape** area, select **Rectangle** or **Circle**.
2. Click the **Sequence Preview** where you would like to add the **Rectangle** or **Circle**. It need not be precise, as you can adjust.
3. If desired, you can drag the shape's handles to resize. You can also click and hold within the shape to drag the shape to a different position. You can more precisely set size and position in the **Geometry** tab.
4. Edit the symbol's settings.

To create a **Curve**:

1. In the **Paint Page** tab's **Create shape** area, select **Curve**.
2. In the **Curve** type area, select one of the following:
    - Enable **Closed** to create a closed curve.
    - Disable **Closed** to create an open curve.
3. Click the **Sequence Preview** where you would like to add the first point of the curve.
4. Add a second point. A line appears connecting the first and second points.
5. If desired, continue adding points until complete. It need not be precise. You can adjust after you have created the curve.
6. After you have placed the last point, then press **Esc**.
7. If desired, you can drag the curve's handles to reposition the points of the curve. You can also click and drag the small square within the curve and drag the shape to a different position.
8. Edit the symbol's settings.

Shape settings

Fill: Enable, **Color Selection (Color Picker)**. **Alpha channel** setting applies to both the **Fill** color and the **Texture**.

Stroke: Thickness of the stroke along the curve. Enable, **Color Selection (Color Picker)**. **Alpha channel** setting applies to both the **Fill** color and the **Texture**.

Stroke size: Range: 0.0 - 100.0.

To set:

1. Enable **Stroke**.
2. Click the color chip. The **Color Picker** displays. Set the color and **Alpha Channel**.

Curve type

Type:

- **Line:** Creates straight lines between the points.
- **Bezier:** Creates smooth curve within the points.
- **Spline:** Creates smooth curve through the points.

Style:

- **Solid**
- **Dotted**
- **Stippled**
- **Dots and Stipple**

Closed: Closes the curve. It therefore can be filled with a color.

Textured: Applies selected texture to curve path.

Curve settings

Grow duration: Range: 0 - 9999

Animation speed: Range: -99.9999 - 99.9900

Closed curve edge

- **Color:** Color chip, 0 - 255 (transparency)
- **Width:** Fades edges of textures in closed 4-point curves. Range: 0 - 999

Texture Settings

Texture

Select texture to fill the symbol. In the case of a Paint symbol, may also texture the line.

Transform

Position:

- **X:** Controls how a texture is positioned within the X-axis of an object.
- **Y:** Controls how a texture is positioned within the Y-axis of an object.

Scale:

- **X:** Controls how texture is scaled within a geometry. Larger values scale down, i.e., repeat the texture by ***n*** times.
- **Y:** Controls how texture is scaled within a geometry. Larger values scale down, i.e., repeat the texture by ***n*** times. Enable **"Y"** scaling by selecting **Free Scale Mode** from the **Scaling** mode dropdown in the **Settings** area of this panel.

Rotation: Rotates the texture coordinate system within the geometry. Adjusted via spin box or dial.

Animate

Speed: Speed of texture animation.

Direction: Direction of texture animation. Adjusted via spin box or dial.

Settings

Scale mode: Controls how texture is scaled.

- **Free**
- **Uniform**
- **Maintain Aspect Ratio**

Wrap mode: Controls how texture is repeated when it is scaled down. You can set for both X and Y axes.

- **Repeat:** The texture coordinate loops **0.0-1.0**; then repeats **0.0-1.0** again, to create a repeating pattern in either **X** or **Y**, or both.
- **Clamp:** Last pixel in X,Y are retained for the remaining geometry for the texture coordinate. As such, texture coordinates over **1.0** will have the same value.
- **Transparent:** Last pixel in the range is set to transparent, to ensure a soft edge of a textured object. This is in fact the most common for an arbitrary textured object.

Blend Mode: Controls how the **Fill** and **Texture** are blended with each other. These settings are from OpenGL directly, but mimic those of Adobe Photoshop.

- **Modulate:** Modulates underlying pixels with the overlay texture.
- **Add:** Adds texture pixel values to symbol **Fill** pixel values, for a burn-effect.
- **Multiply:** Multiplies texture pixel values by symbol **Fill** pixel values. Similar to **Add**, except that channel-by-channel darkening occurs.
- **Replace:** Replaces **Fill** pixel values with the **Texture** pixel values, i.e., underlying pixels are replaced by the overlay texture pixels.

Animate once: Runs **Texture Animation** only once. Useful for advanced reveal animations in the texture.

Ken Burns effect: Applies a small zoom in to the texture.

Chapter 25: Animation

Overview

Chyron Weather provides a wide variety of animations that you can apply to text and graphic objects, either during sequence creation using the **New Sequence Wizard**, or after you have created the sequence. You can edit the type, start point and duration independently for each object, creating interesting effects, such as fading in temperatures one after another.

Chyron Weather provides the following animation methods:

- **Keyframe Animation**
- **Parametric Animation**
- **Texture Animation**
- **Layer Type-Specific Keyframe Animation:** Keyframe animations that may be performed on symbols within specific types of layers, e.g., **Fronts**, **Station labels**, independently of map type.

Altitude and Scale

Chyron Weather uses **Altitude** in multiple ways:.

- **Camera Altitude:** Sets the position of the **Camera** above a **Projected** or **3D Map**.
- **Altitude Range:** Sets an **Altitude Range**, specified by **Near** and **Far Altitude** settings within which a symbol is displayed, so that when the **Camera Altitude** is within that range, then the symbol displays. Commonly used to display city labels and temperatures within specific **Altitude Ranges**. For example, when the **Camera** is at high **Altitude**, then only major city labels and temperatures display within a specified **Altitude Range**. As the **Camera** zooms in and becomes closer to the ground, then the major city names and temperatures are replaced by regional or local city labels and temperatures. See Opacity - Sweet-spot for additional information.

You can use **Scale** to change the size of text and graphic symbols, especially during animations.

Keyframe Animation

Keyframe Animation enables the animation of a symbol or a map through a series of keyframes to dynamically illustrate weather conditions, making your weather presentation more interesting, informative, and eye-catching for the viewer. You can apply **Keyframe Animators** to most Chyron Weather objects, for example, to:

- Zoom in on a map.
- Display a front moving to show a synoptic analysis. Note that a **Front** object has its own **Front**-specific keyframe animation settings, located within its **Geometry** panel.
- Fade in or out a symbol during sequence playback.
- Move or scale a symbol.

Keyframe Animation is available for:

- **Still Maps:** Yes
- **3D Maps:** Yes
- **Projected Maps:** No.

Keyframe Animation is distinct from **Texture Animation**, in which the symbol itself is animated, and **Parametric Animation**, in which an effect is applied to a symbol.

To determine which type of animation to employ:

- Use **Keyframe Animation** to move a symbol over a map, or over the screen.
- Use **Texture Animation** to animate a texture on a symbol.
- Use **Parametric Animation** to create more design-related effects.

Texture Animation

Texture Animation is distinct from **Keyframe Animation**, in which the symbol or map is animated from keyframe to keyframe, and **Parametric Animation**, in which an animated effect is applied to a symbol.

Parametric Animation, aka Animation

Overview

Parametric animation is independent of **Keyframe Animation**, and provides an additional level of control over individual symbols. For example, temperatures in a layer can fade in one ??after another down a coastline.

Parametric animations can display dynamic visual effects in a sequence. more so than keyframe animations. Chyron Weather provides a wide range of effects that are easy to adjust, and to which ease can be applied.

Parametric Animation is distinct from **Texture Animation**, in which the symbol itself is animated, and **Keyframe Animation**, in which the symbol or map is animated from keyframe to keyframe.

To determine which type of animation to employ:

- Use **Parametric Animation** to create more design-related effects.
- Use **Texture Animation** to create effects such as looping animations in a strap or weather symbol.
- Use **Keyframe Animation** to move a symbol over a map, or over the screen.

Add Animator

Chyron Weather provides four types of animators from the **Animation** tab:

- **Entrance:** Applies animator as the object comes on screen.
  - **Default**, as set in the system configuration
  - **Expand Depth [3D symbol only]**
  - **Fade In**
  - **Flip-in horizontal**
  - **Flip-in vertical**
  - **Expand horizontally**
  - **Popup [3D only]**
  - **Scale In**
  - **Expand vertically**
- **Emphasis:** Applies animator that emphasizes the object.
  - **Default**, as set in the system configuration
  - **Rotate X**
  - **Rotate Y**
  - **Rotate Z**
- **Exit:** Applies animator as the object leaves the screen.
  - **Default**, as set in the system configuration
  - **Squish depth [3D symbol only]**
  - **Drop down [3D symbol only]**
  - **Fade Out**
  - **Flip-out horizontal**
  - **Flip-out vertical**
  - **Squish horizontally**
  - **Scale Out**
  - **Squash vertically**
- **Texture:** Applies animation to texture.

Additional content under development.

Animation List

Enable/Disable Animation: Enables/disables animation.

- 👁 indicates that the animation is enabled.
- ❌ indicates that the animation is disabled.

To enable/disable an animation:

- Click ❌ or 👁, respectively.

Animation Trigger: Content under development.

Target: Symbol to which the animation is applied.

Animator: Type of animation to be applied.

Timing: Displays **Start**, **End**, and **Duration** of the animation, relative to other animations in the sequence.

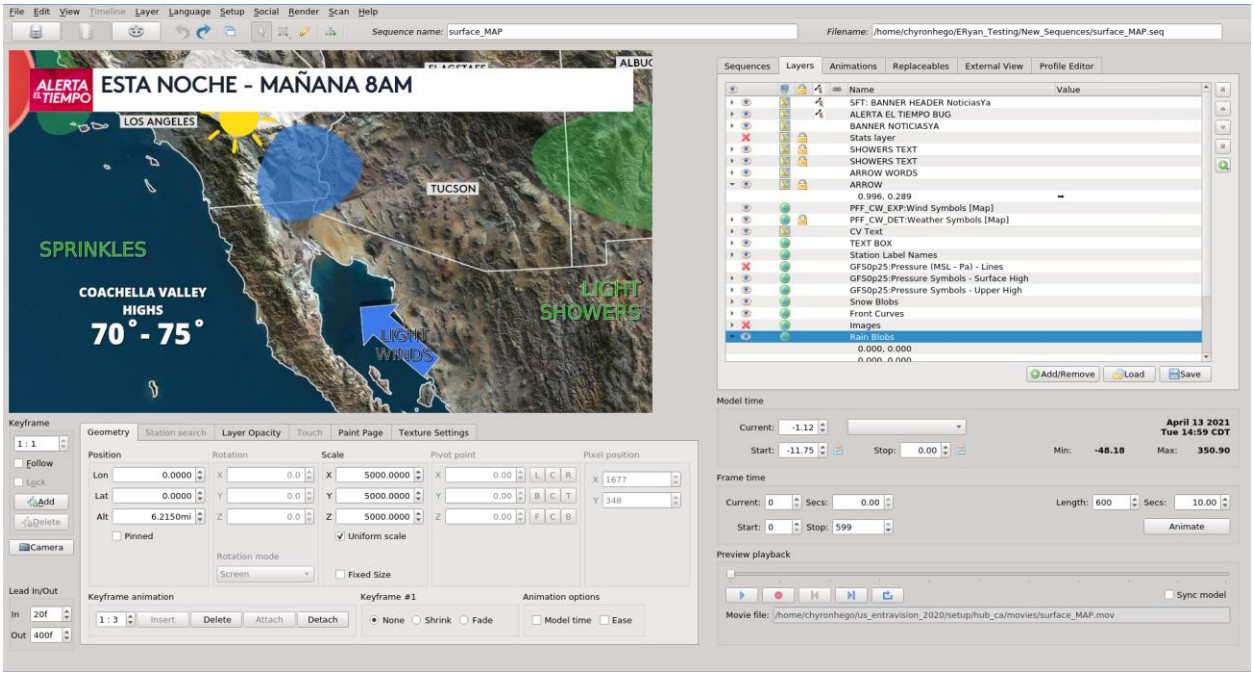
Layer Type-Specific Keyframe Animation

Overview

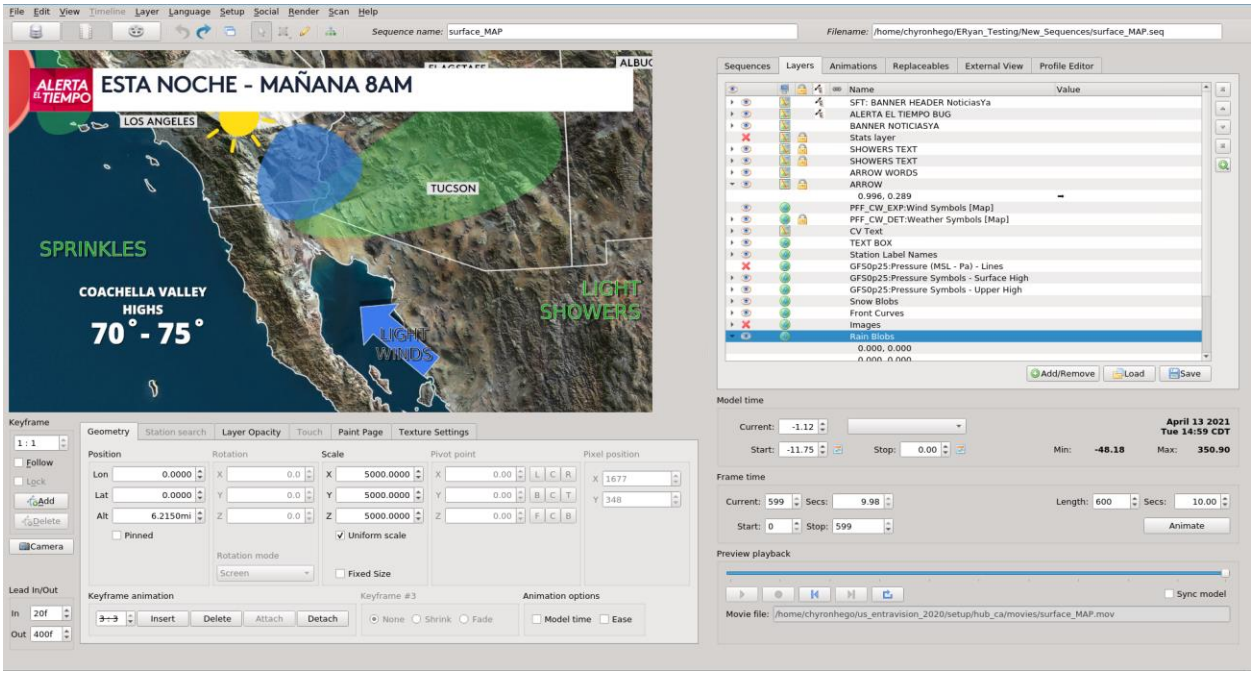
You can apply **Keyframe animations** to symbols of specific **Layer** types, independent of the map-based **Keyframe animations**. Such layer types include most layers with Geometry properties and **Fronts**.

If a **Layer** symbol has a **Geometry** properties tab that is similar to the following, then you can create a **Keyframe animation** to apply to the symbol. The following shows the start and end **Keyframes** of this type of animation.

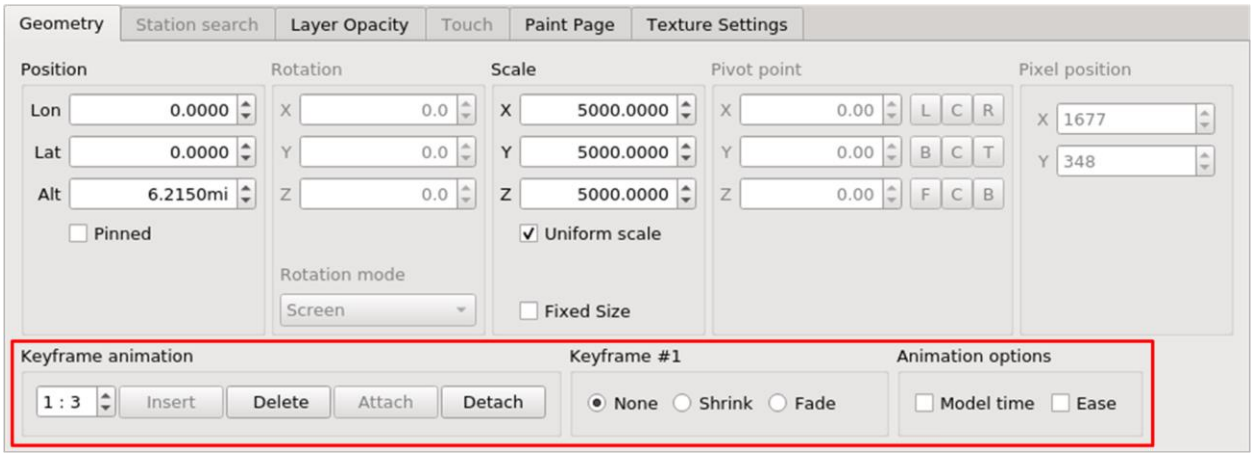
- **Start Keyframe:**



- **End Keyframe:**



The following shows the **Geometry** tab, with the **Keyframe animation** area outlined.



Keyframe animation available in the **Geometry** tab is independent of map-based **Keyframe animation**, and is available to all maps, including **Projected Maps**, which do not have map-based **Keyframe animation**.

The following settings apply to the specific **Keyframes** in the symbol's **Keyframe animation**:

- **Keyframe animation:**
    - **Keyframe:** Specifies the selected **Keyframe** and the total number of **Keyframes**.
    - **Insert:** Inserts a **Keyframe** at the current point in the **Sequence**, inheriting the current state of the symbol.
    - **Delete:** Deletes the currently selected **Keyframe**.
    - **Attach:** Attaches an overall geometry animator to the object, enabling the insertion/addition/deletion of keyframes for that object. When attaching, the initial keyframe values (**Position**, **Scale**, **Rotation**, etc.) reflect those of the current view.
    - **Detach:** Detaches the geometry animator from the object, removing all animation keyframes and features from the object. Note that there is typically no undo for this function.
- **Keyframe-specific effects:**
    - **None:**
    - **Shrink:** On first **Keyframe**, grow symbol from nothing. On last **Keyframe**, shrink symbol to nothing.
    - **Fade:** Applies **Fade** effect to the first or last **Keyframe** as follows.
        - **Fade in:** On first **Keyframe**, fades in symbol. Radio button label changes to **Fade in**.
        - **Fade out:** On last **Keyframe**, fades out symbol. Radio button label changes to **Fade out**.

      Fade cannot be applied to intermediate **Keyframes**.

The following settings apply to the symbol's entire **Keyframe animation**:

- **Model time:** animates the object in **Model time**, not **Frame time**.
- **Ease:** Smoothly starts and stops the symbol's animation smoothly..

NOTE: Shrink and **Fade** effects cannot be applied to some types of symbols. For example, **Fade** can be applied to **Symbols:Paint Symbols [Map 2D]**, **Symbols:Paint Symbols [Screen]** and **Symbols:Station labels**, but **Shrink** cannot.

Create Keyframe Animation

To create a **Keyframe** animation:

1. Set the starting state of the symbol, i.e., how you would like it to appear at the beginning of **Sequence** playback.
2. Click **Attach** to create **Keyframe 1**. If desired, apply a **Shrink** or **Fade** effect to the **Keyframe**.
3. Set the ending state of the symbol, , i.e., how you would like it to appear at the end of **Sequence** playback.
4. Click **Insert** to create **Keyframe 2**. If desired, apply a **Shrink** or **Fade** effect to the **Keyframe**.
5. If desired, add one or more intermediate **Keyframes**. For each new **Keyframe**:

    a. Set the intermediate state of the symbol at the point at which you would like to insert the **Keyframe**

    b. Click **Insert** to create the intermediate **Keyframe**.

    For each added intermediate **Keyframe**, any following **Keyframes** increment by **1**.

You can attach the first **Keyframe** at other than **Frame time 0** of a **Sequence**, and/or the last **Keyframe** at other than the last **Frame** of a **Sequence**. For example, in a 360-frame sequence, if you would like to hold the state of the symbol for **60** frames, start the symbol's **Keyframe animation** at **Frame 60**, and then hold the state of the animation for the last **60** frames, then:

1. Set the starting state of the symbol, then enter **60** in the **Frame time Current** field to the right of the **Geometry** tab. The **Scrub Bar** moves to the **60-frame** point.
2. Click **Attach**.
3. Enter **300** in the **Frame time Current** field. The **Scrub Bar** moves to the **300-frame** point.
4. Set the ending state of the symbol.
5. Click **Insert**.

The Keyframe Indicator

The **Keyframe** Indicator displays two fields:

- The left field Indicates the currently specified keyframe in the animation.
- The right field specifies the total number of keyframes in the animation.

To change the currently selected keyframe, do one of the following:

- In the left field, enter the keyframe number.
- Use the spin box to select the keyframe number.

Edit Keyframe Animation

You can edit each **Keyframe** in the **Keyframe** animation.

To change state of an object of an animation at a keyframe:

- Select the keyframe of the object, then edit.

Delete Keyframe

To delete a **Keyframe** from the animation of an object:

- Select the **Keyframe** that you would like to delete, and then click **Delete**.

Remove a Keyframe Animation

To remove a **Keyframe** animation from an object:

- Select the object, then click **Detach Animator**. Note that there is typically no undo for this function.

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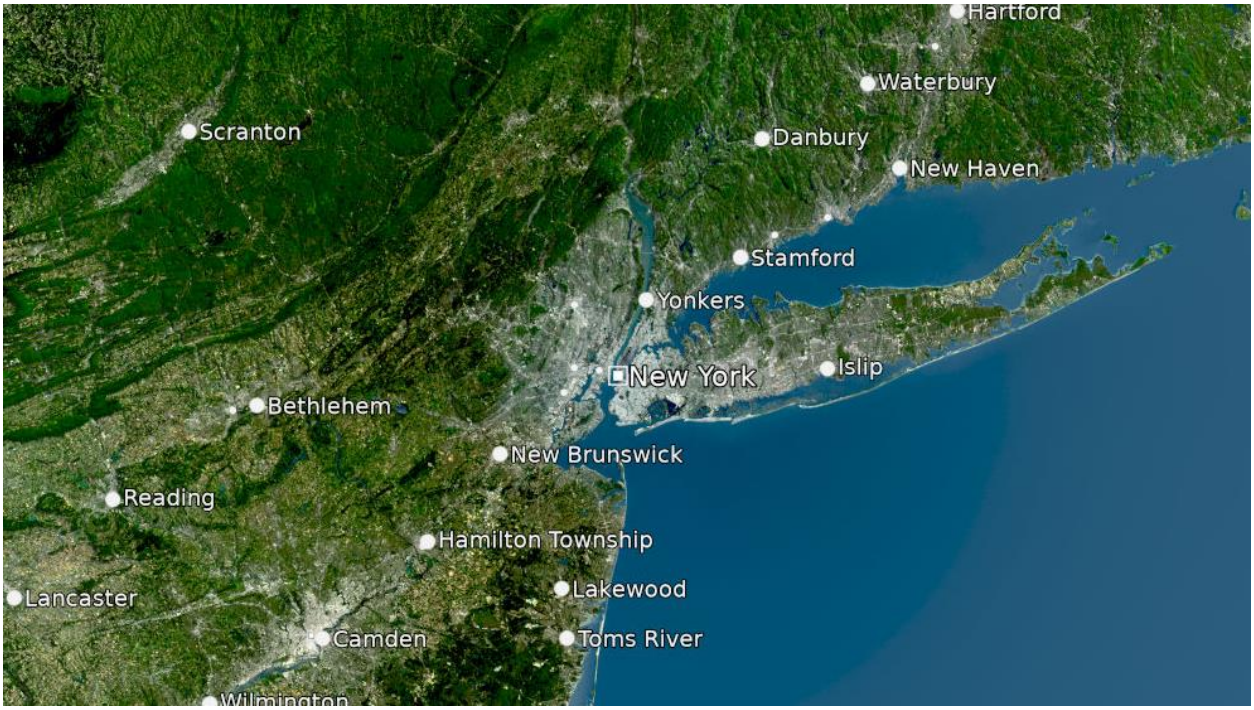
Chapter 26: Station Search

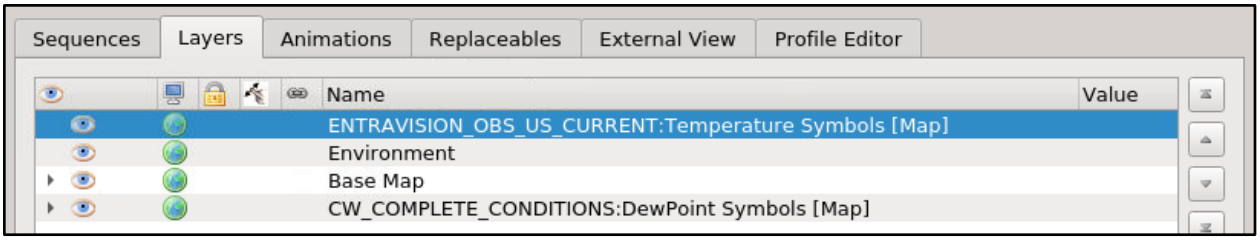
Chyron Weather provides the ability to search for weather stations, based on the available data products, and to display the data in a sequence. A common station-based data display is temperature.

To demonstrate how to use **Station Search**:

- The start point is a map centered on New York City and the surrounding area.

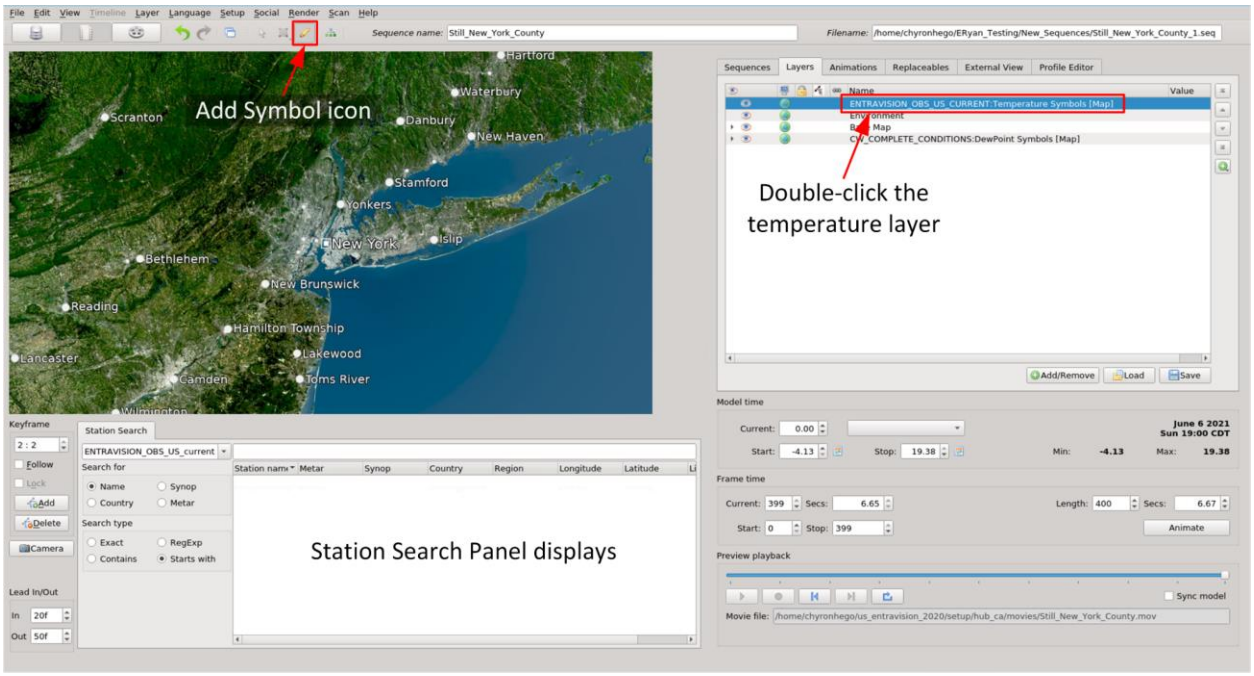


- The **OBS_US:Temperature Symbols [Map]** is already in the **Layer Collection**.



To use **Station Search**:

1. From the **Layer Collection**, double-click the data layer that you would like to use. For this example, **OBS_US:Temperature Symbols [Map]** is selected.



2. In the **Weather** toolbar, click the **Add Symbol** icon.

3. There are two methods to add a symbol to the map, which can be used alone or in combination with each other.
    - Click the map at the location where you would like to add a symbol, and then drag the symbol to its final location. If need be, you can use **Station Search** to fine-tune the location.
    - Click the map to add a symbol to the map, and then use **Station Search** to set the location.

4. Set search parameters as follows:

   Source (unlabeled): Specifies the station source.

   - Click the dropdown to view the available sources. Select each to see how the **Station** list changes.

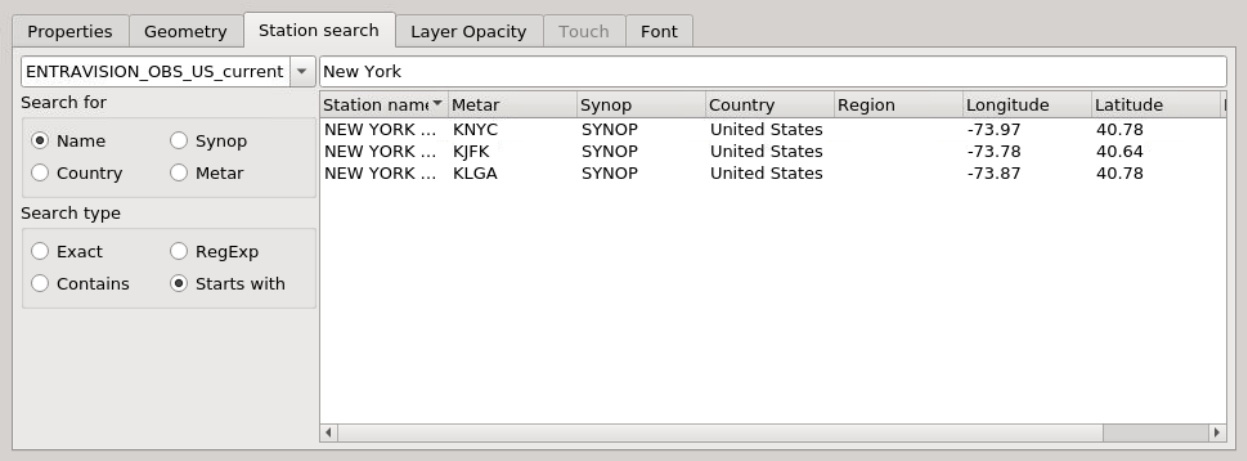
   Search for:

   - **Name:** Search **Station names** for entered search term.
   - **Country:** Search **Countries** for search term.
   - **Synop:** Search **Synop** codes for search term.
   - **Metar:** Search **METAR** codes for search term.

   Search type:

   - **Exact:** Search for **Station Name** that exactly matches the entered search string.
   - **Contains:** Search for **Station Name** that contains the entered search string.
   - **RegExp:** Search for **Station Name** based on the entered **Regular Expression**, also known as **Rational Expression**.
   - **Starts with:** Search for **Station Name** that begins with the entered search string.

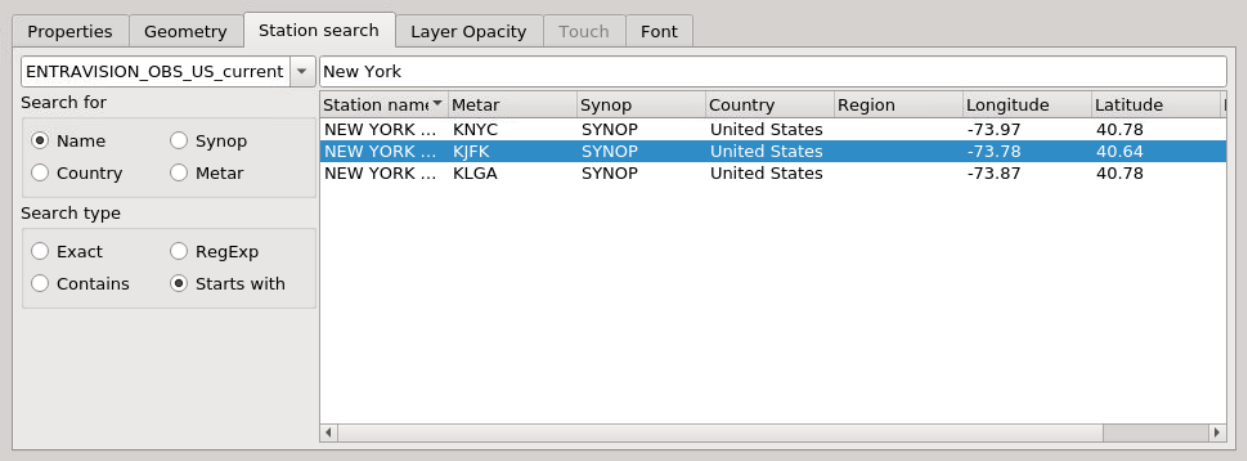
   Search field (unlabeled): Enter the search terms, e.g., a city name or airport code, then press **Enter**. This example shows **New York** as the search term. The search results display in the **Station List Results**.



Station List Results (unlabeled): Displays the results of the **Station** search.

- **Station name:** Station name.
- **Metar:** METAR code.
- **Synop:** Synop code.
- **Country:** Country in which the Station is located.
- **Region:** State or other major region in which the Station is located.
- **Longitude:** Longitude of the Station.
- **Latitude:** Latitude of the Station.
- **List name:** Data source name.

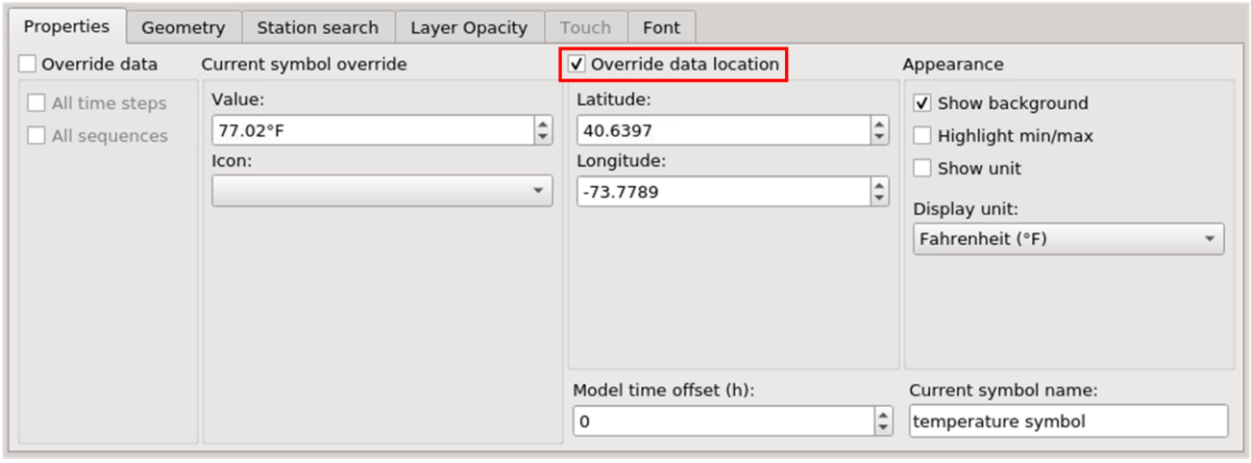
5. Double-click the desired **Station** name in the **Station List Results**. This example shows **Metar KJFK** selected.



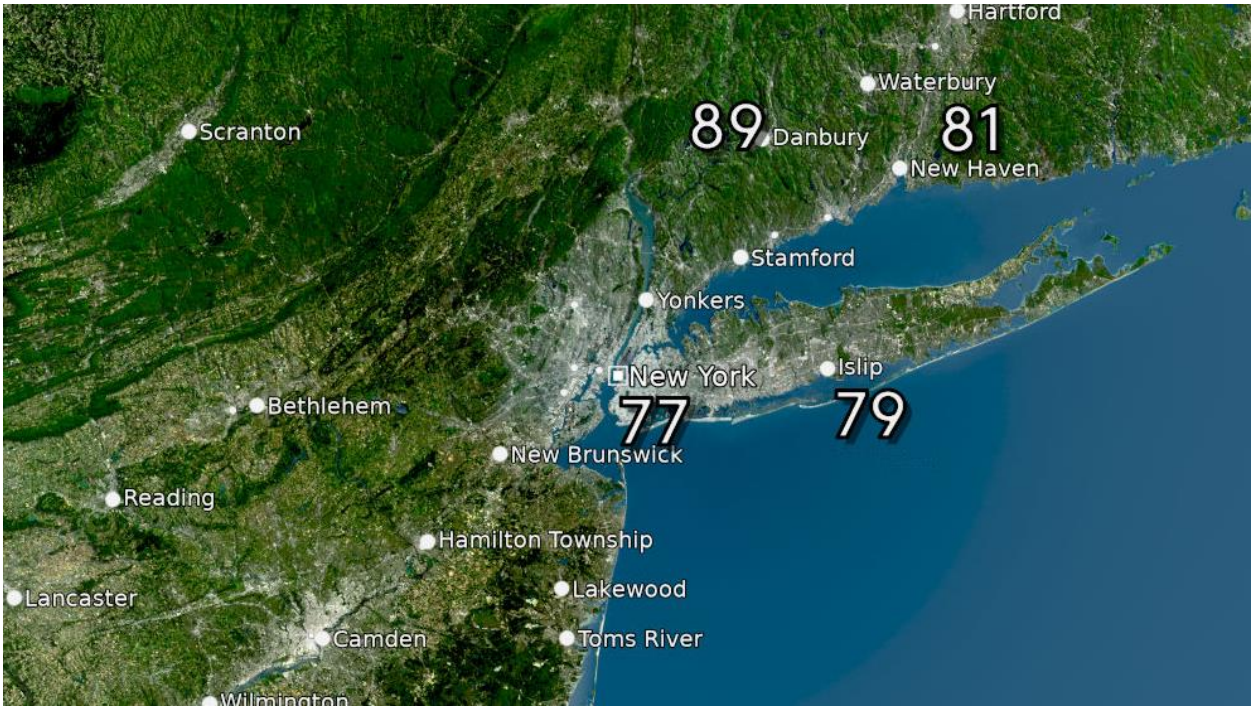
The currently available data appears on the **Sequence Preview**.

6. If need be, then drag the temperature to the desired location. You can also adjust the font size/style/color.

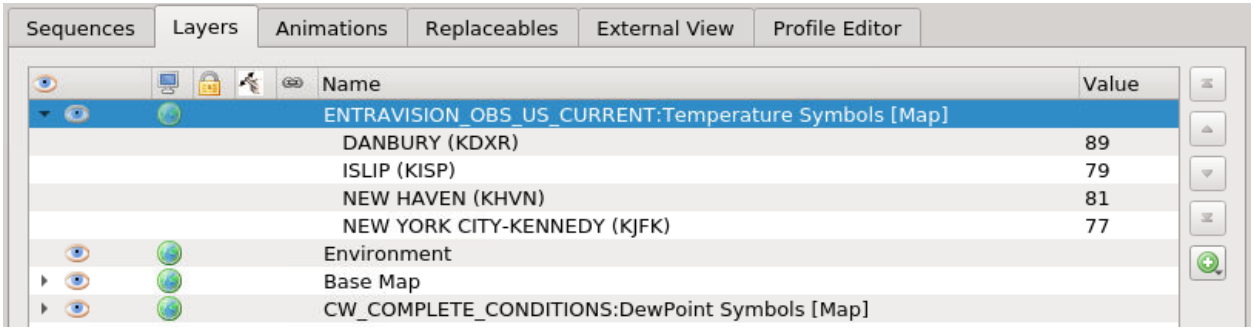
   Before you reposition the temperature symbol, go to the symbol's **Properties** panel and check (enable) the **Override data location** checkbox. This locks the temperature data to the intended location. If **Override data location** is not enabled, then moving the symbol may pick up data from a different location.



7. For each additional data point to display, perform steps 3 through 6. This example shows temperatures added to New York, Islip, Danbury, and New Haven.



As each symbol is added to the map, it is added to the layer, as well:



To further edit any symbol, double-click the symbol in the list. Its settings display under the **Sequence Preview**.

8. When **Station** search is complete, then click the **Select** icon in the Chyron Weather toolbar. This takes it out of **Add Symbol** mode.

Chapter 27: Fronts

Overview

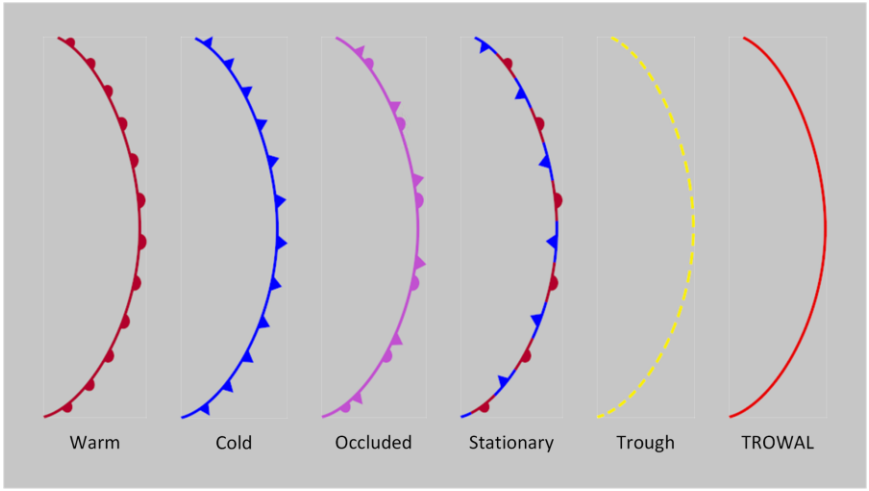
A **Front** line delineates the boundary where two different air masses meet. A **Front** symbol consists of two parts:

Line, which follows the shape of the boundary between the two air masses.

- Semi-circle and/or triangle, which points in the direction of the front movement.
    - **Semi-circle:** Indicates warm air boundary. Displayed in **Warm**, **Occluded** and **Stationary Fronts**.
    - **Triangle:** Indicates cold air boundary. Displayed in **Cold**, **Occluded** and **Stationary Fronts**.

Chyron Weather provides the following **Front Types**:

- **Cold:** Specifies the color for the warm front, traditionally depicted as a blue line punctuated by triangles.
- **Occluded:** Specifies the color for the occluded front, traditionally depicted as a purple line punctuated by alternating semi-circles and triangles.
- **Stationary:** Specifies the color for the stationary front, traditionally depicted as alternating warm (red) and cold (blue) front segments. If other colors are specified in the **Fronts** settings for **Warm** and **Cold** fronts, then the **Stationary** front is displayed using those colors.
- **Trough:** Specifies the color for the trough front, traditionally depicted as a dashed line.
- **Trowal:** Specifies the color for the trowal (**TRO**ugh of **W**arm **A**ir **AL**oft) front, traditionally depicted as a solid line.



Station Search

Not applicable to fronts.

Layer Opacity

You can apply a **Sweet-spot** effect to a front. See Opacity - Sweet-spot for details.

Touch

Currently not implemented.

Create a Front

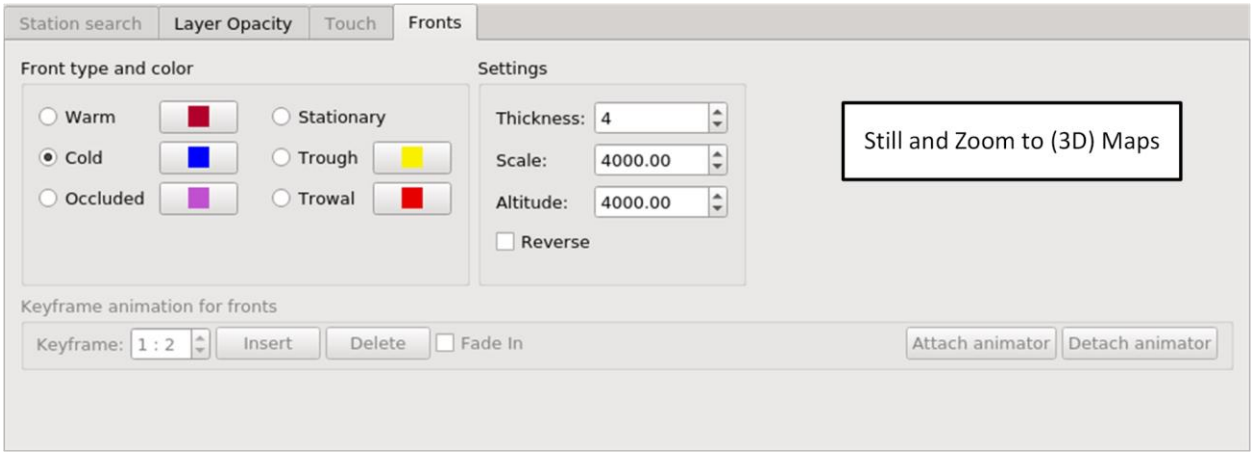
To create a **Front**, you must first add the **Symbols:Fronts** layer:

1. Add a **Symbols:Fronts** layer to the **Sequence**.
2. In the Chyron Weather toolbar, click the **Add Symbol** icon  .
3. Ensure that the **Fronts** layer is highlighted, and then click the **Sequence Preview** at the point where you would like to start to draw the **Front**.
4. Move the mouse to the position of the next point. Note that the **front** line follows the mouse. When you initially create a **Front**, it is in the default **Front type**, typically a **Warm Front**. You can change this later.
5. Click the **Sequence Preview** to place the next point of the **Front** line.
6. Continue to click the **Sequence Preview** to create the shape of the **Front**, until all points are placed. You need not be precise, as you can adjust all points.
7. Once you have completed placing the points, press **Esc**.
8. Fine-tune the **Front** appearance in the **Fronts** tab.

Fronts Tab

Front Type and Appearance

In the **Fronts** tab, you can change the **Front type**, **color**, and other attributes that control appearance. The type of map determines the available **Fronts** settings.



To access the **Fronts** tab:

- In the **Layer Collection**, double-click the **Front** symbol's name. The **Front** tab displays, and the **Front** is selected in the **Sequence Preview**.

Front type and color

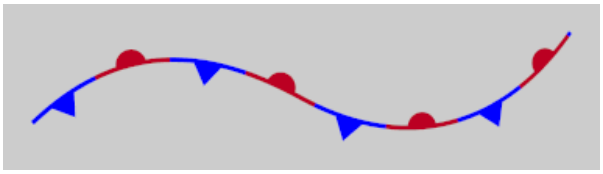
To set the **Front type** and **color**:

1. Select the radio button corresponding to the **Front type**.
2. If desired, click the color chip and use the **Color Picker** to set a color. **Warm**, **Cold**, **Occluded** and **Stationary Fronts** are set by default to the traditional, easily recognizable colors. The **Trough** and **TROWAL Fronts** do not have traditional colors.

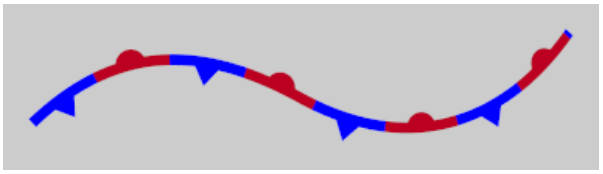
Settings

The **Settings** specify the appearance of the front. You can modify all **Front** settings after you create the front, including changing the **Front** type. Note that when you modify **Thickness**, **Scale** and/or **Altitude**, and/or apply **Reverse**, the length and curvature of the front do not change.

- **Thickness:** The line width of the **Front** symbol. When modified, only the line changes.

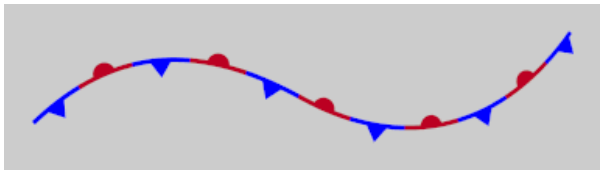


Thickness Lower

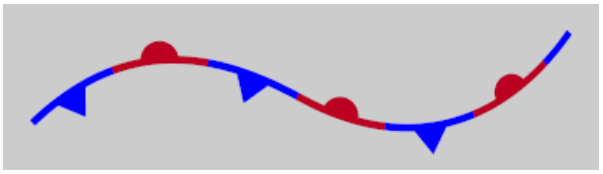


Thickness Higher

- **Scale (Still and Zoom to (3D) Maps only):** Scale of the entire **Front** symbol. When modified, the line, semi-circles and/or triangles change size.

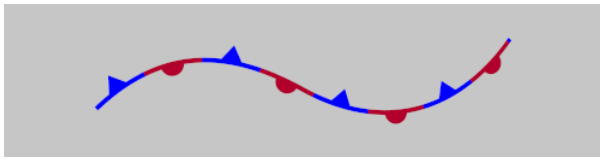


Scale Lower

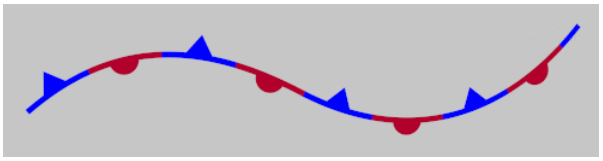


Scale Higher

- **Altitude (Still and Zoom to (3D) Maps only):** The altitude above the map at which the **Front** symbol displays.
  - At a higher **Altitude**, the **Front** appears closer to the viewer.
  - At a lower **Altitude**, the **Front** appears further away from the viewer



Front Altitude Lower

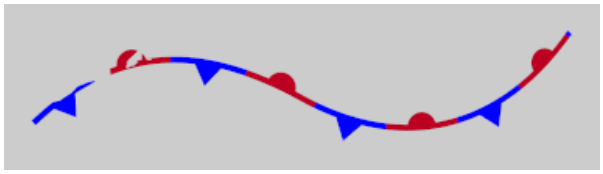


Front Altitude Higher

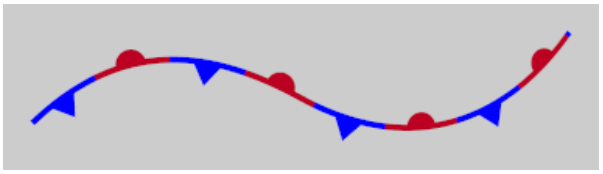
At higher **Camera Altitudes**, changing **Front Altitude** has a less discernible effect on its appearance. At lower **Camera Altitudes**, the change in the appearance of the **Front** is more pronounced.

If the **Front** appears to fray, then adjust one or both of the following:

- Increase the **Altitude**.
- In the **Base Map** layer **Terrain Properties** tab, decreasing **Height Exaggeration** setting.

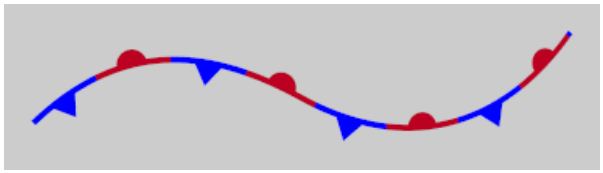


Front Appears to Fray

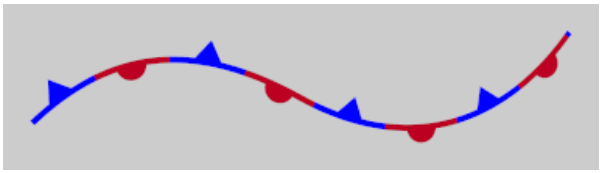


Altitude Increased to Correct Fraying

- **Reverse:** When **enabled**, reverses the direction of the front.



Not Reversed



Reversed

Edit a Front

Select a Front

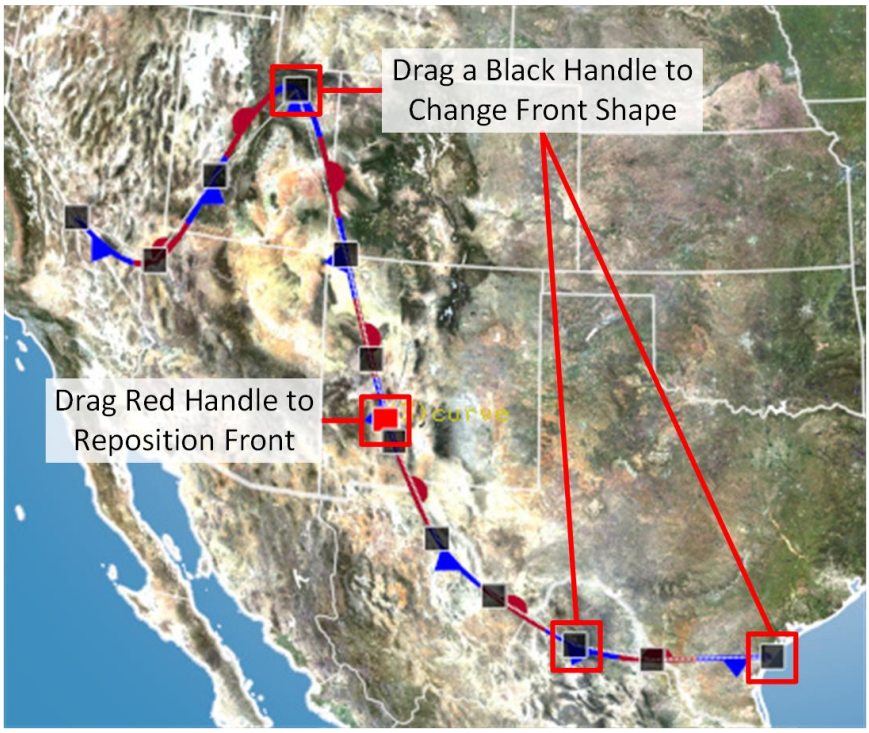
You can edit, align, and apply **Keyframe Animators** to **Fronts**. To start editing a front:

- In the **Layer Collection**, do one of the following:
  - Double-click the **Front** symbol's name; or,
  - Hover the mouse over the **Front** until the handles appear.

The **Front** displays a square black handle at each point that was used to create the **Front**, and a red square handle.

- The black handle controls the shape of the **Front**.
- The red handle controls the position of the **Front**.

The following images show wide and closeup views of a selected **Stationary Front**:



Change Front Shape

The points, i.e., black handles, define the shape of the **Front**. To change the shape of a **Front**:

- Drag a black handle.

Change Front Position

The red handle defines the position of the **Front**. To change the position of a Front:

- Drag the red handle.

Add or Delete Points

You can add one or more points to the **Front**. The location at which a point is added depends on the location of the start and end points of the **Front**, i.e., the order in which the points were added to create the **Front**. For sake of the following instructions, assume that a Front has points numbered 1 through 7, in the order in which they were added to the **Front** as it was created. To add a point between, for example points 3 and 4:

1. Select point 3.
2. Right-click, then select **Insert Point** from the context menu. A point is inserted between points 3 and 4.

Delete a Point from a Front

To delete a point:

- Right-click the point, then select **Remove Point** from the context menu.
- Duplicate a Front

You can duplicate a **Front**, and then move and edit it. To copy a **Front**:

1. Select the **Front**.
2. Do one of the following:
    - Press **Ctrl+D**; or,
    - Right-click, and then select **Duplicate** from the context menu.

    The duplicate **Front** is positioned directly on top of the original Front. To move the duplicate **Front**:
    - Drag the red handle.

Keyframe Animation for Fronts

Keyframe animation for fronts is independent of map-based **Keyframe animation**, and is available to **Projected Maps**, which do not have map-based **Keyframe animation**.

NOTE: Sync Model must be enabled in order to create a keyframe animation of a front.

Settings are as follows:

- **Keyframe:** Specifies the selected keyframe and the total number of Keyframes.
- **Insert:** Inserts a keyframe, inheriting the current state of the symbol.
- **Delete:** Deletes the currently selected keyframe.
- **Fade In:** Applies a fade in effect to the selected keyframe.
- **Attach animator:** Attaches an overall geometry animator to the front, enabling the insertion/addition/deletion of keyframes for that object. When attaching, the initial keyframe values reflect those of the current view.
    - **Detach animator:** Detaches the geometry animator from the front, removing all animation keyframes and features from the object. Note that there is typically no undo for this function. If you would like to retain the animation, but disable it currently, then enable (check) the **Disable** checkbox.

Chapter 28: PFF_CW_EXP:Weather Symbols [Screen]

Icons

The Icons tab displays thumbnails of the symbols available for the selected layer. The icons in the sequence change, depending upon the weather conditions.

Properties

Overview

There may be situations in which you may like to override data and/or symbols, e.g., if you do not agree with the depiction of the data. Chyron Weather provides the ability to override symbols and the data associated with them.

Override data

You can override data for one or multiple symbols in a layer as follows:

- **Override data:** Enables/disables data override.
  - **All time steps:** Overrides all **time steps.**
  - **All sequences**.

Current symbol override

You can override one or more symbols in the sequence as follows:

1. Select the symbols in the sequence.
2. Click the **Symbol** dropdown and then select the symbol that you like to replace the selected symbols in the sequence.

Override data location

You can override the location of the data as follows:

- **Override data location:** Enables/disables data point location.
- **Latitude:** Set latitude to the desired value.
- **Longitude:** Set longitude to the desired value.

Model time offset (h)

You can specify an offset, in hours from the current model time. To do so:

- Enter the desired offset in the **Model time (h) offset** field.

Current symbol name

The **Current symbol name** field displays information about the selected symbol(s) as follows:

- If one symbol is selected, then displays the name of the currently selected symbol.
- If more than one symbol is selected, then displays **Multiple symbols selected**.

Geometry

See Geometry for additional information.

Station Search

See Station Search for details.

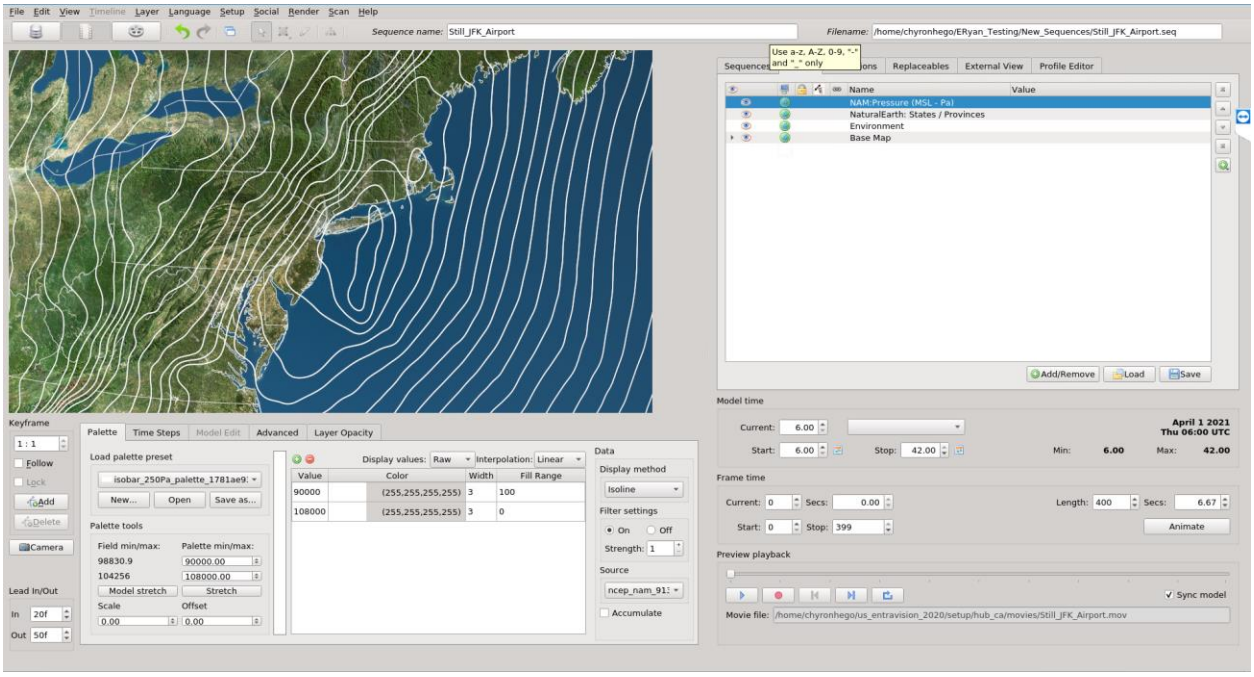
Touch

Currently not implemented.

Chapter 29: NAM:Pressure (MSL - Pa)

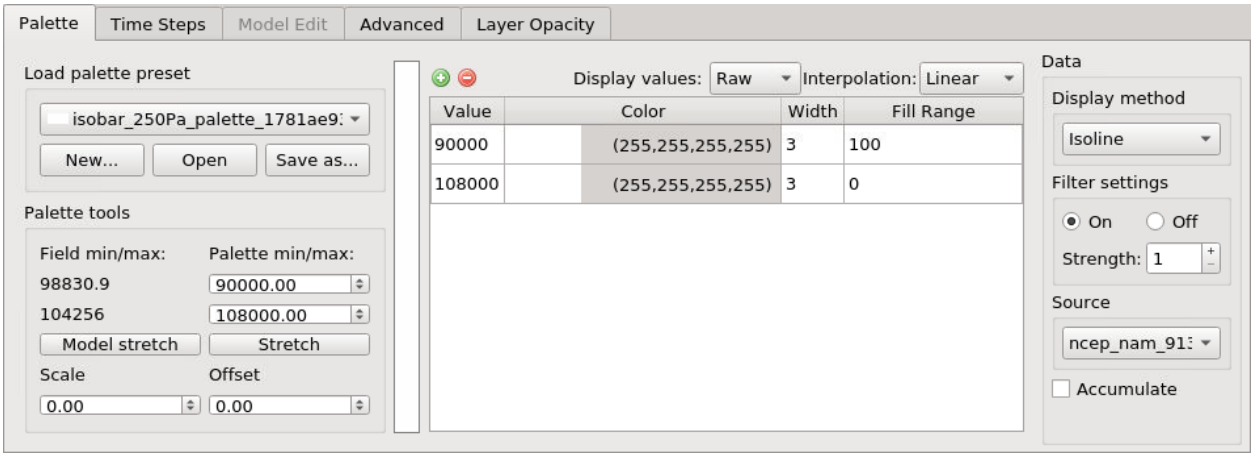
Overview

NAM:Pressure (MSL- Pa) provides pressure data that is displayed using isolines. The following shows a typical pressure visualization for the Northeast US.



Palette

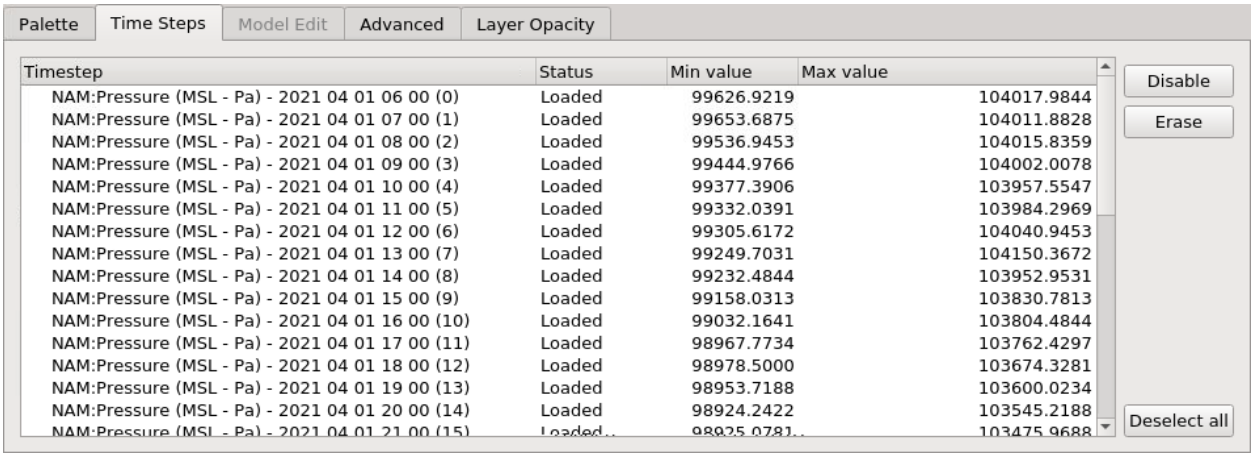
To create a pressure visualization, use a **Range Palette** with **Display method** set to **Isoline**. The **Value** is in **Pascal** units.



See Layer Palette for information on **Palette** creation.

Time Steps

The **Time Steps** tab displays the list of time steps as pulled from the data and displayed in the sequence. You can drag the column border of the **Timestep** column to the right to view the entire **Timestep** column.



Timestep: Displays the data source name, and the date, time, and index of the time step.

Status: The status of the data at that time step.

Min Value: The minimum value, in Pascals, of the data pulled at that time step.

Max Value: The minimum value, in Pascals, of the data pulled at that time step.

Disable: Disable the display of the data of the selected time step.

Erase: Erase the selected time step.

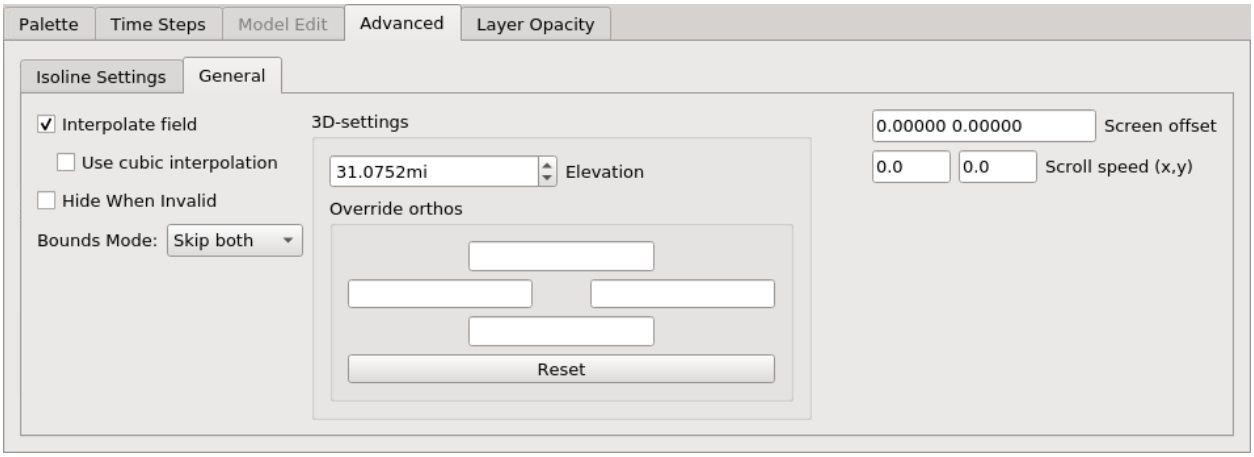
Deselect all: Deselects all selected time steps.

Model Edit

Not active for this data source.

Advanced - General

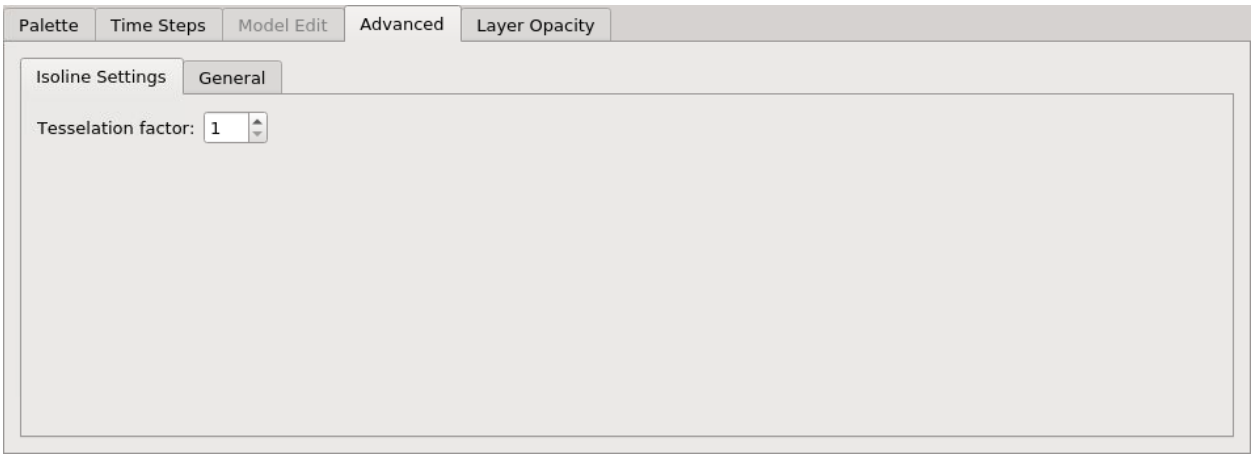
The **Advanced General settings** include interpolation, valid/invalid behavior, outside timespan behavior, and 3D specifications.



See General for detailed settings information.

Advanced - Isoline Settings

The **Advanced Isoline Settings** specifies **Tessellation**. If the individual grid cells cover large areas of land, or you have zoomed into a detail in the map, the **Tessellation** value can be increased to improve the curve smoothness at the expense of rendering speed. **Default: 1**. If you do not observe any edges on the visible isolines, then the setting can remain at **1**.



The following shows examples of **Tessellation factor set** at **1** and **11**, respectively.

Tessellation: 1

Tessellation: 11

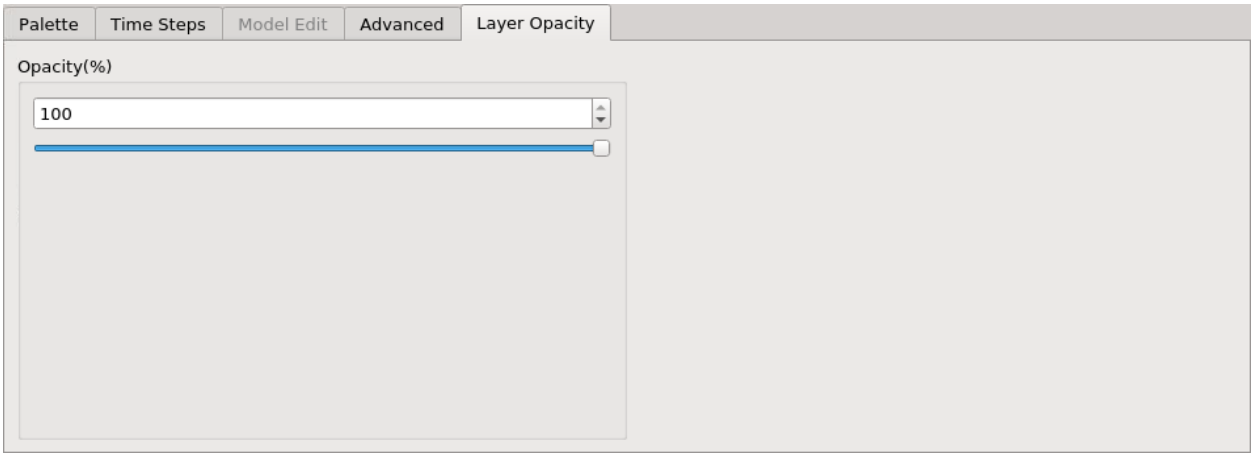
Layer Opacity

The **Layer Opacity** setting specifies the transparency percentage for the entire layer. **Range: 0 - 100%**, where **0** is completely transparent, and **100** is completely opaque.

If **Alpha** for a specific color within the layer is set at **175** (on a scale of **0 - 255**), then at **Layer Opacity 100%**, the color displays at **175**.

To set **Layer Opacity**, use one of the following two methods:

- Enter the desired value in the spin box.
- Drag the slider to the desired value.



Chapter 30: Warnings: NWS Warnings [NSI]

Overview

The NWS Warnings includes watches, warnings, advisories, and statements pertaining to flooding, freezes, frost, wind, fog, fire gales, marine, winter weather, etc. Hurricane and tornado warnings are not included.

Layer Opacity

See Opacity - Sweet-spot.

Touch

Currently not implemented.

Watches and Warnings

This tab lists the watches, warnings, advisories, and statements available to this data source.

Type (raw): Lists the watches, warnings, and advisories.

State: US States.

#Areas: Number of areas impacted.

Start time: Date and time of day at which the watch or warning goes into effect.

Expire time: Date and time of day at which the watch or warning is no longer in effect.

Bulletin: Bulletin ID.

Show legend: Enable/disable display of the map legend that identifies the types of warnings/watches.

Legend always on top: Enable/disable display of the map legend display always on top of the map and other graphics.

Elevation: The elevation at which the watch/warning/advisory is displayed.

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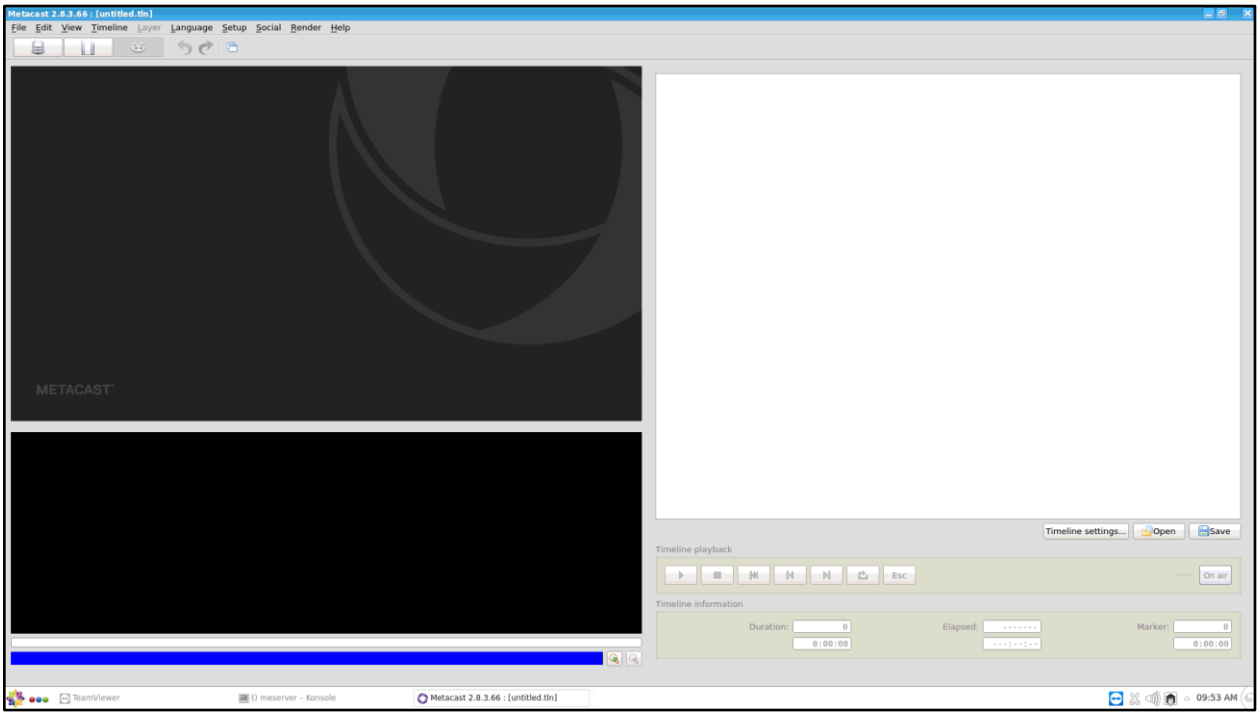
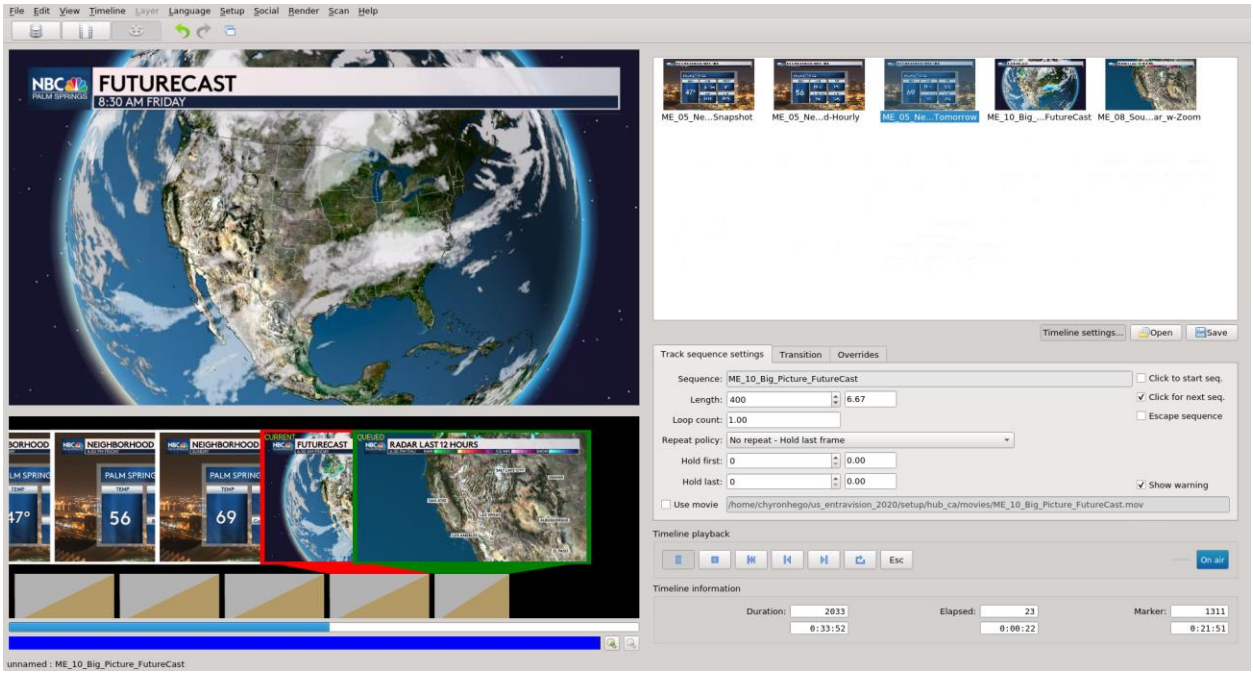
Chapter 31: Timeline Editor (Ctrl+3)

Overview

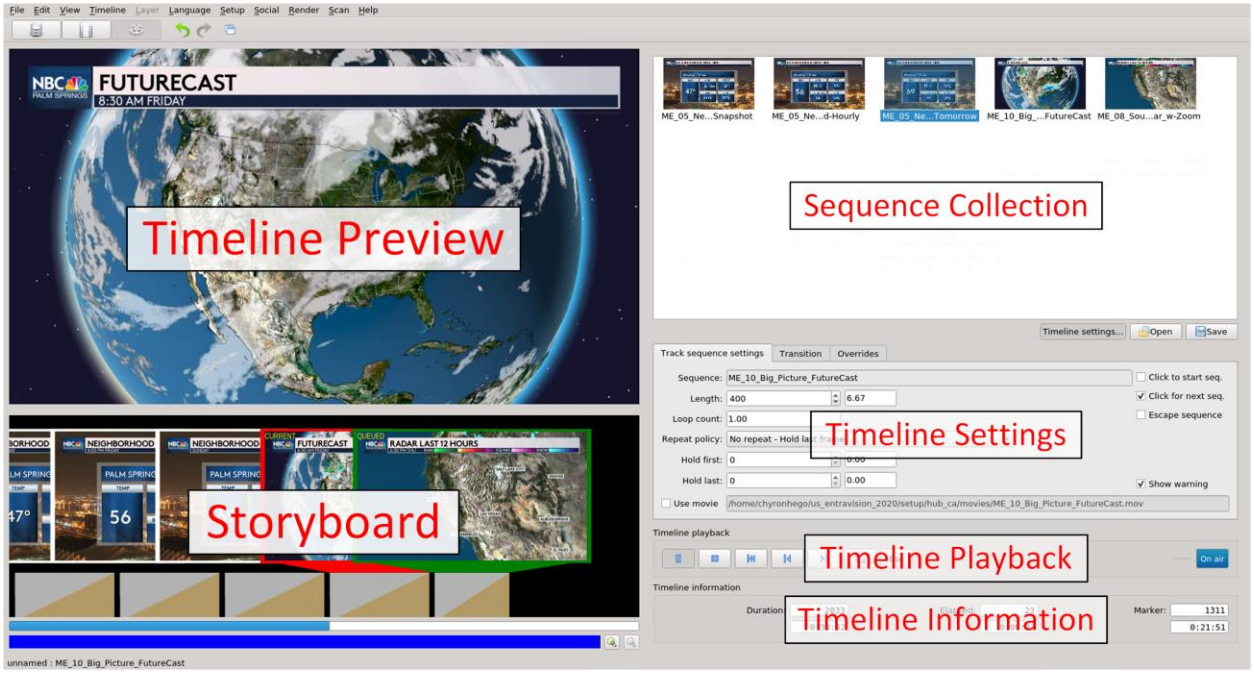
The **Timeline Editor**, also called **Timeline Mode** is where you build your broadcast. Upon first opening Weather, the **Timeline Mode** interface is blank:



The following shows a typical timeline:



The following shows the main **Timeline Mode** components:



Main components:

- **Timeline Preview:** The upper left quadrant displays a preview of the sequence that is currently selected in the timeline.
- **Storyboard:** The lower left quadrant displays the **Storyboard**, in which you create your weather story. You can drag sequences into the **Storyboard**, and reposition them in the order in which they will play. The color of the sequence frame indicates the status of the sequence:
    - **Red:** Segment currently playing. "**CURRENT**" displays in the upper left corner.

    - **Green:** Currently selected segment; segment next in line to play. "**QUEUED**" displays in the upper left corner.

- **Olive Green:** Segment that is both currently playing and is currently selected as next to play. "**CURRENT**" displays in the upper left corner.

NOTE:

- If the last (end) segment in the timeline is currently playing, and **Loop** is not enabled, then the last segment displays an olive green frame. Since there is no next segment to play, then the last segment is both playing and is selected. If the timeline has completed playback, then clicking **Jump to Next Transition Segment** plays the last sequence again.
- If the last (end) segment in the timeline is currently playing, and **Loop** is enabled, then the last segment displays a red frame. The first segment in the timeline displays a green frame, as it is next in line to play.

- **White:** Segment neither playing nor next in line to play.
- **Yellow:** Segment being moved to new position, i.e., dragged by user.

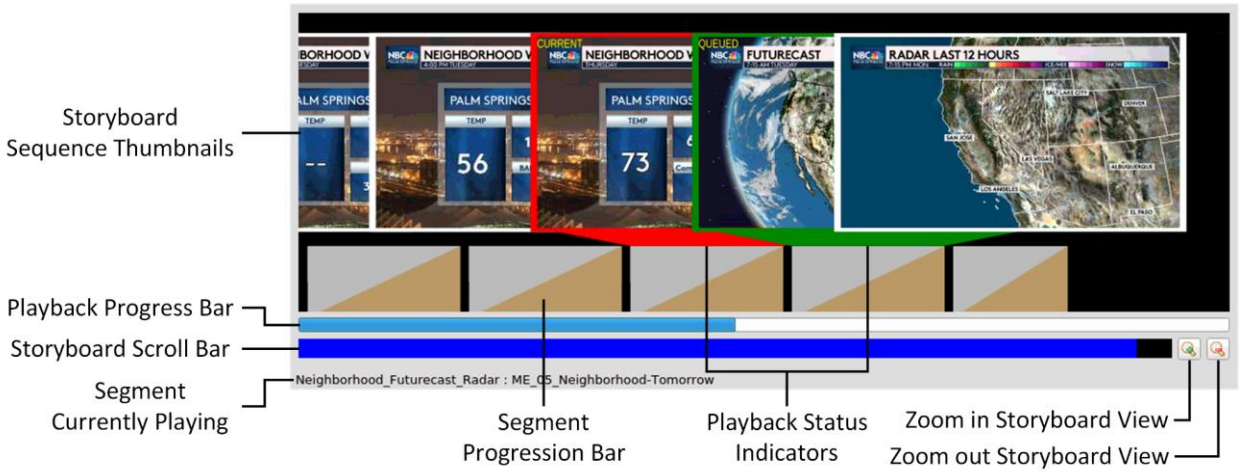
- **Sequence Collection:** The upper right quadrant displays the thumbnails of the sequences that can be added to the timeline.
- **Timeline settings**, **Timeline playback, Timeline information:** The lower right quadrant displays the **Timeline settings**, **Timeline playback** controls and **Timeline information**. The **Timeline playback** controls serve two purposes:
  - To navigate the timeline in order to select a sequence for **Timeline settings** editing.
  - To play back the timeline.

  In general, if a **Timeline playback** button symbol is blue, then the button is available for use. If a **Timeline playback** button is grayed out, then it is not available for use.

Anatomy of a Storyboard

The **Storyboard** is a visual representation of the sequences, in the order in which they play, the **Current** playing and **Queued** status, and the attributes of each sequence, including sequence **Length**, **Hold First/Hold Last**, **Loop count**, **Transition Length/Overlap**.

You can scroll through the **Storyboard**, and zoom in/out to focus on a specific area, or to view the entire **Storyboard**.



Timeline sequence thumbnails: Visual representation of each of the sequences on the timeline. The frame color specifies their status

Playback Progress Bar: Indicates the currently playing frame in the timeline.

Segment Currently Playing: Specifies the segment that is currently playing, and has a red- or olive-colored frame. "**CURRENT**" is displayed in the upper left corner.

Segment Next to Play: Specifies the segment that is next in line to play, and has a green frame. "**QUEUED**" is displayed in the upper left corner. In the instance in which it is both currently playing and next to play, it has an olive-colored frame, and "**CURRENT**" is displayed in the upper left corner.

Segment Progression Bar: Visual representation of sequence **Length**, **Hold First/Hold Last**, **Loop count**, **Transition Length/Overlap**.

Timeline Scroll Bar: If the entire timeline is not visible, then drag the scroll bar left or right to view the timeline.

Zoom Icons: Enable you to zoom in and out of the storyboard.

Navigate the Timeline

The terms **Next** and **Previous** refer to the sequence to the left and right, respectively, of the currently selected sequence in the timeline.

When **Loop** is active  , and the last sequence in the timeline is selected, then **Next** also refers to the first sequence in the timeline, as that would be the next sequence to play back when looping.

When the timeline is not currently playing, you can navigate the timeline as follows:

- Click a sequence thumbnail in the timeline to select s sequence.
- Press **Cursor L/R (← →)** to select sequence adjacent to the currently selected sequence in the timeline as follows:
    - Press **cursor R (→)** to select the next sequence in the timeline.
    - Press **cursor L (←)** to select the previous sequence in the timeline.

You can navigate the timeline while it is stopped or playing, as follows:

- Click **Jump to Next Transition Segment**  to select the next sequence in the timeline.
- Click **Jump to Previous Transition Segment**  to select the previous sequence in the timeline.
- Click **Jump to First Transition Segment**  to select the first sequence in the timeline.

Other playback-specific actions are covered in Timeline Playback.

The timeline provides viewing aids:

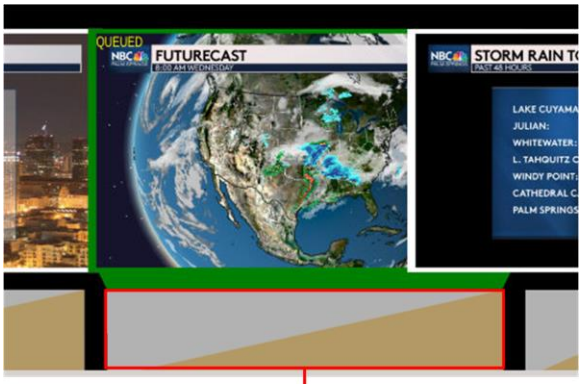
- **Timeline Scroll Bar:** If the entire length of the timeline is not visible, then drag the scroll bar left or right to view the timeline.
- **Zoom Icons:** Click the zoom icons to zoom in  and out  of the timeline. If a zoom icon is grayed out  , then it has reached the maximum zoom range.

Segment Progression Bar

The **Segment Progression Bar** is a visual representation of the following settings associated with a segment:

- **Length:** The length of the segment
- **Loop count:** The number of times the sequence within the segment loops.
- **Repeat policy:** Determines how sequence looping is handled. See Repeat Policy for additional information.
- **Hold First:** The length of time to hold the first frame of a segment.
- **Hold Last:** The length of time to hold the last frame of a segment.
- **Transition Length:** Length of the transition from the current segment to the next segment.
- **Transition Overlap:** Length of the overlap between the current segment and the next segment.

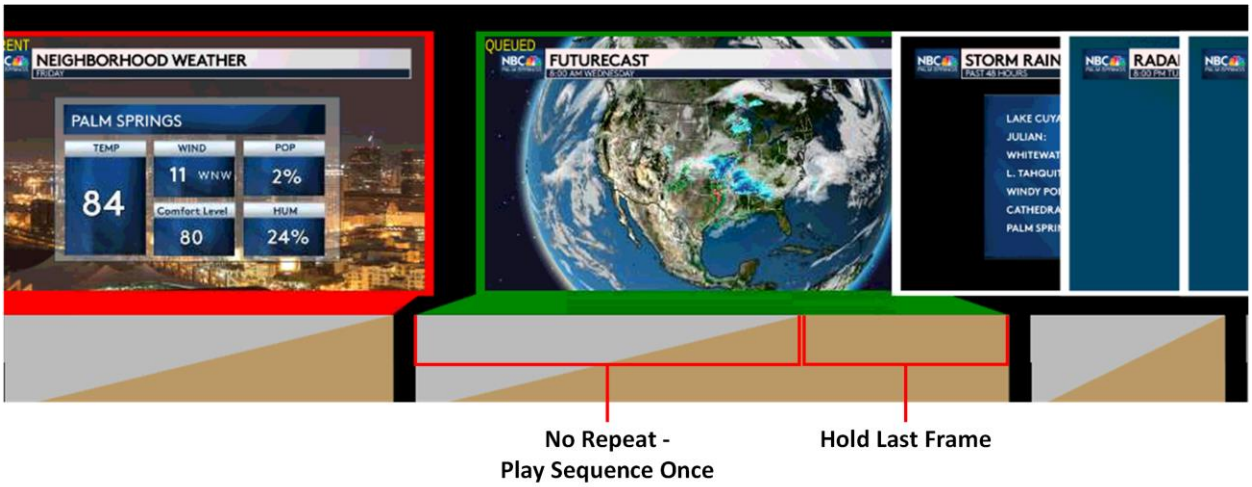
The **Segment Progression Bar** is represented visually in the timeline by the rectangle directly below the sequence to which it is connected:



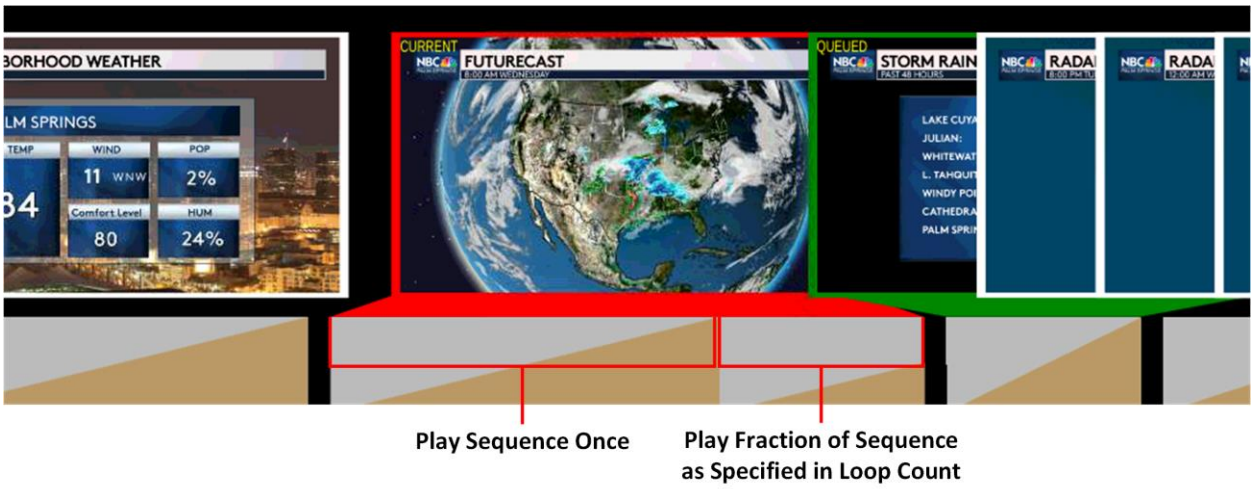
Following is a typical timeline, with **Transition Length** at **24** frames and **Overlap In** and **Overlap Out 1** each at **1** frame (common default settings). The first three segments are full **Length**, with **Loop count 1.00**. The last two segments are part of a pause sequence (see Advanced Timeline Operations: Add Pauses in Radar Sequences and Animated Sequences).

As settings change, the appearance of the **Segment Progression Bar** changes to reflect the settings.

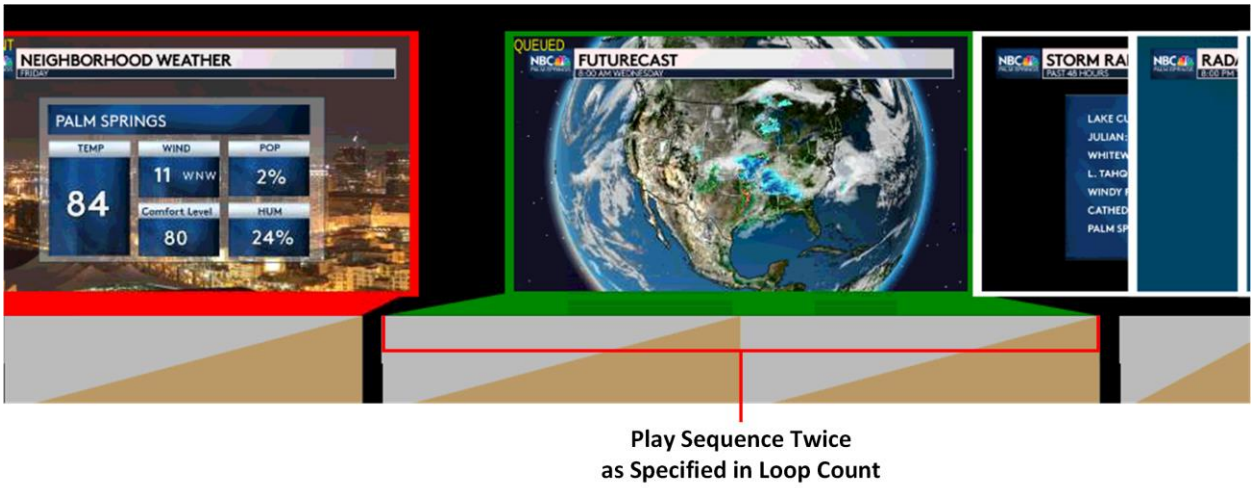
The following shows the previous timeline, with the second sequence **Length** increased from **400** frames to **600** frames. Increasing this sequence **Length** also increased the **Loop count** to **1.52**. **Repeat policy** is set to **No repeat - Hold last frame**, which specifies that if the sequence **Length > 1.00**, then the segment plays once, and the last frame holds for the duration of the additional **Loop** count.



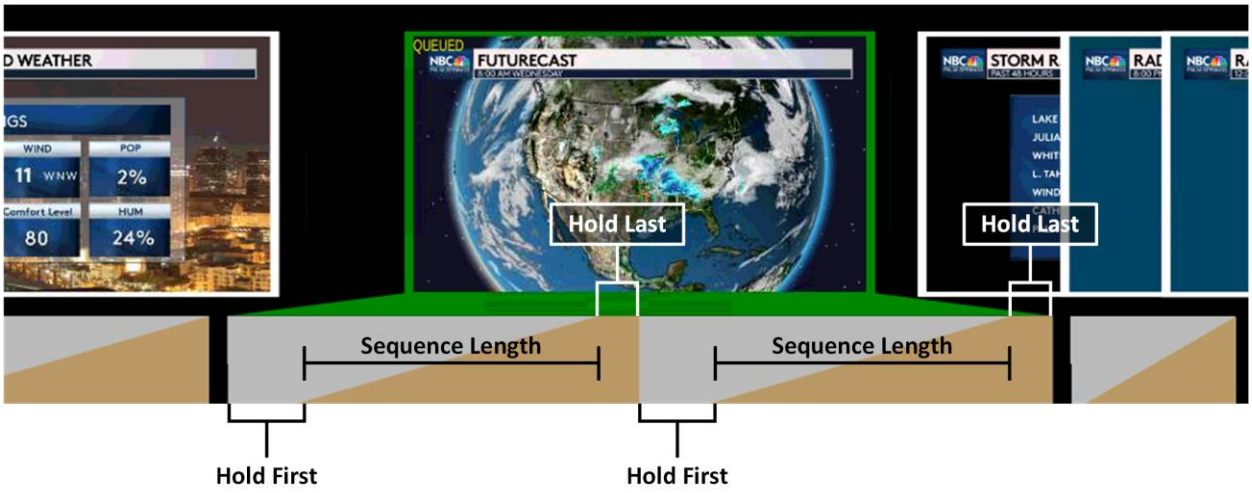
The following shows the same timeline, but with **Repeat policy** set to **Repeat - Hold last frame**. The segment plays the specified number of loops, i.e., **1.52**. Note the change in the **Segment Progression Bar**, that shows that the sequence within the segment plays more than once.



You can also set **Loop count**, which then adjusts the segment **Length**. The following shows **Loop count** set to **2**, with **Repeat policy** set to **Repeat - Hold last frame**.

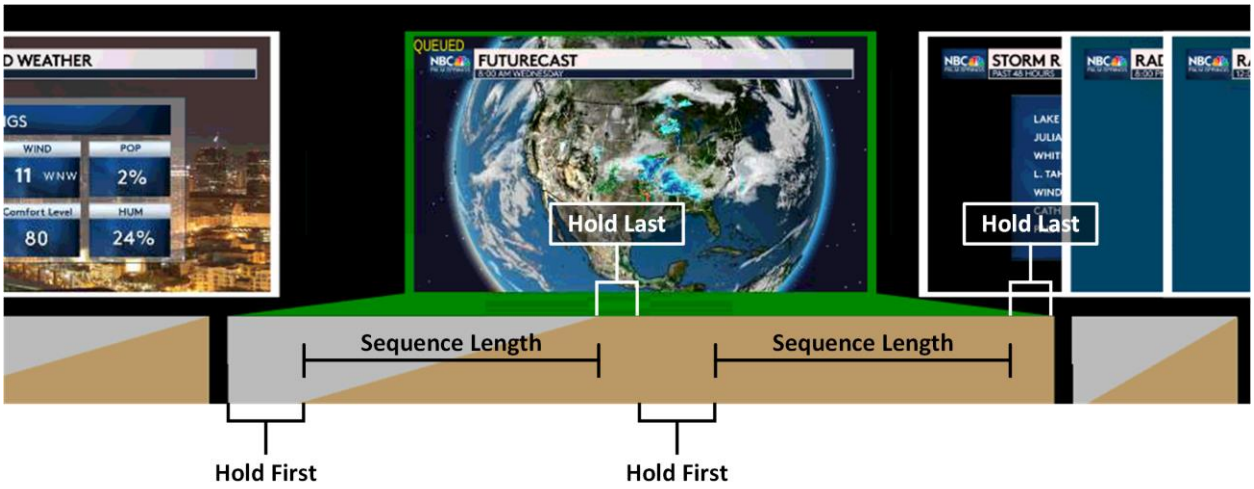


The **Hold first** and **Hold last** settings specify the number of frames to hold the sequence at the beginning and end, respectively. The following shows a sequence with **Loop count** set to **2**, and Hold first and **Hold last** each set to **50**. **Repeat policy** is set to **Repeat - Hold last**. As such, the sequence loops as specified in **Loop count**.

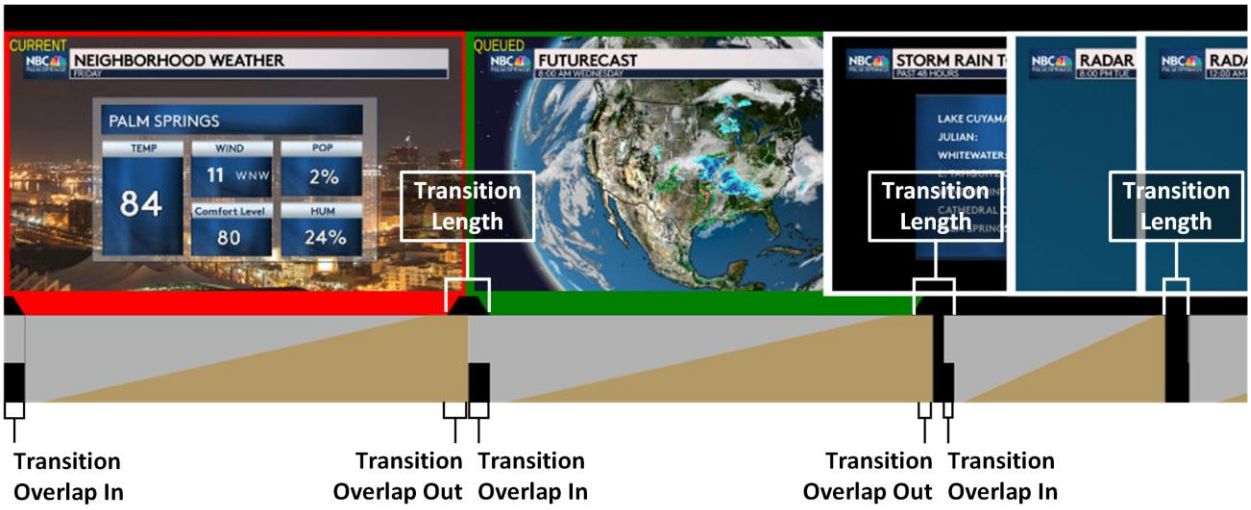


- The **Hold first** setting is reflected at the lower left of the **Segment Progression Bar** for each instance of the sequence in the segment.
- The **Hold last** setting is reflected at the upper right of the **Segment Progression Bar** for each sequence.

If **Repeat Policy** is set to **No Repeat - Hold Last**, but with the same settings otherwise, then the sequence plays once, and the last frame holds for the duration of the **Hold last** for the first sequence, and **Hold first**, sequence **Length** and **Hold last** for the second sequence as specified in **Loop count**.



The following shows **Transition Length**, **Overlap In** and **Overlap Out**.



- **Transition Length** is specified by the black area between the bottoms of the red, green, or olive frames surrounding adjacent segment thumbnails. For segments that have white frames, the black area between the **Segment Progression Bars** are good guides, although the **Transition Overlap Out** may encroach upon the black area, as shown between the first and second, and second and third segments.

- **Transition Overlap In** is specified by the gray extension at the left of **Segment Progression Bar**. With a longer **Transition Overlap In** (> approximately 40), the lower orange area may also extend to the left. The following shows the **Transition Overlap In** equal to the **Transition Length**.

- **Transition Overlap Out** is specified by the extension of the orange area at the right of the **Segment Progression Bar**.
- If a **Transition Overlap Out** of a segment overlaps the **Transition Overlap In** of the next segment, then the **Transition Overlap Out** displays over the **Transition Overlap In**.

Create a Timeline

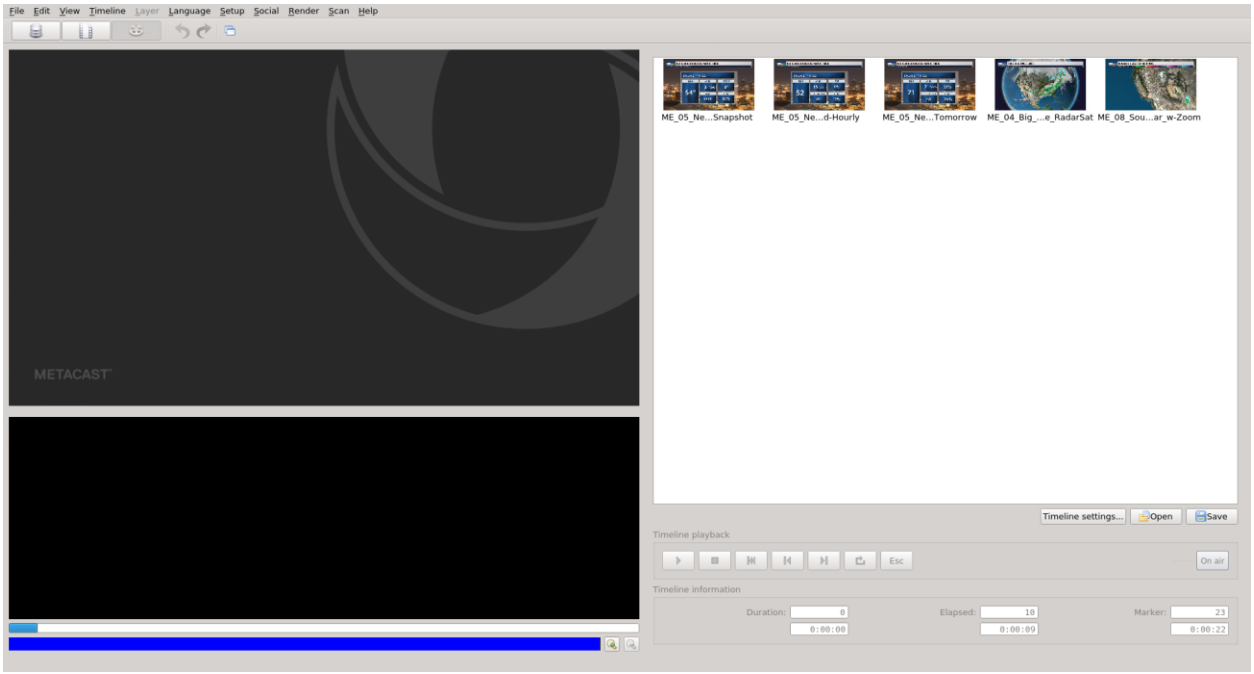
Create a Basic Timeline

It is simple to create a timeline using drag and drop.

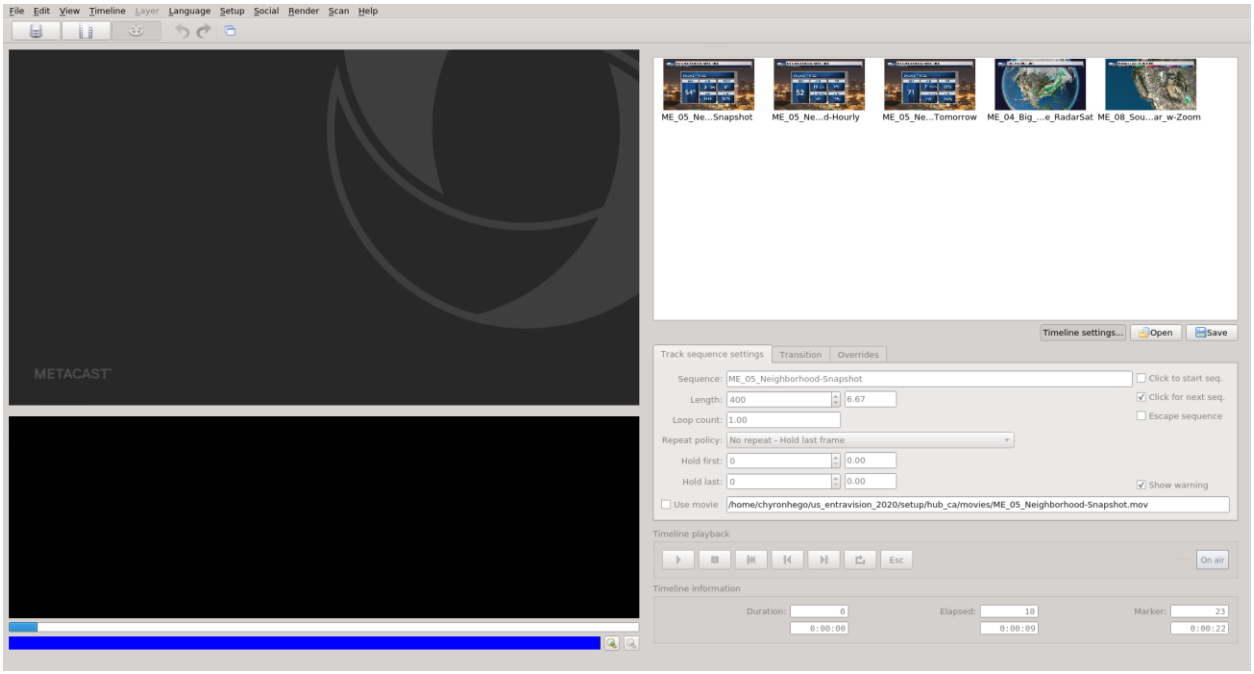
1. Use one of the following methods to open the **Timeline Editor**:
    - Press **Ctrl+3**.
    - In the toolbar, click the **Timeline Editor** icon.

    - Go to **View** menu > **Timeline Mode**.

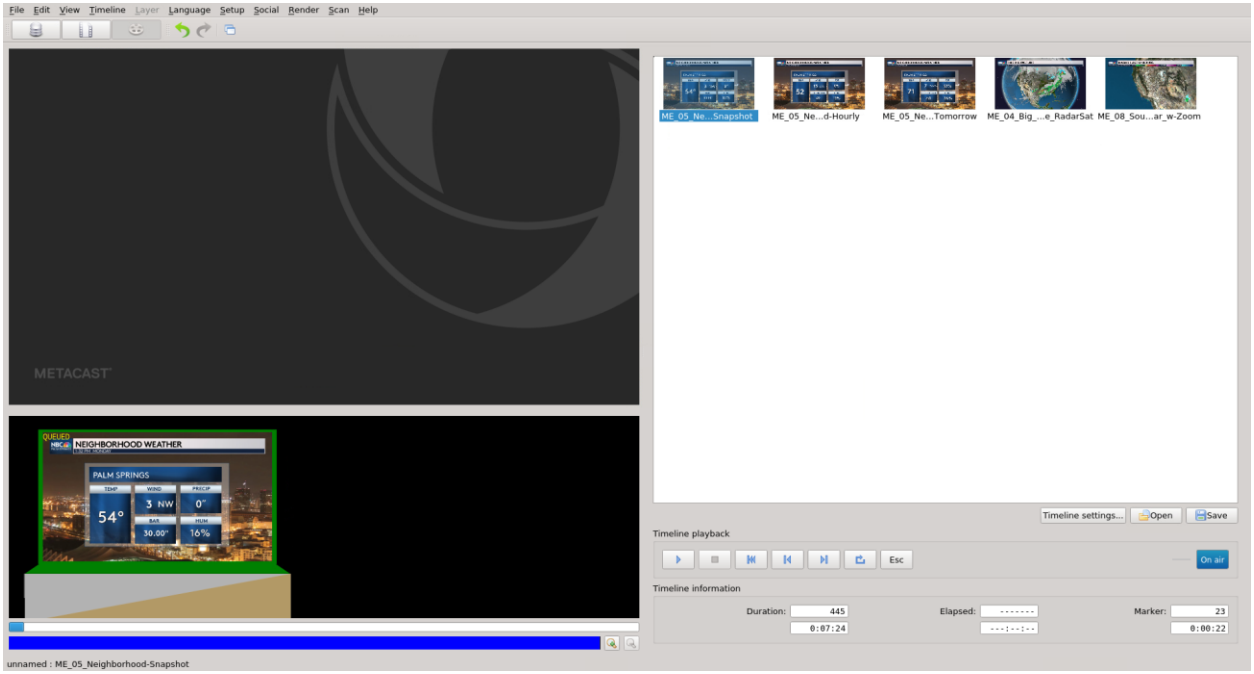
    The **Sequence Collection** displays the thumbnails of the sequences that you can add to the timeline.



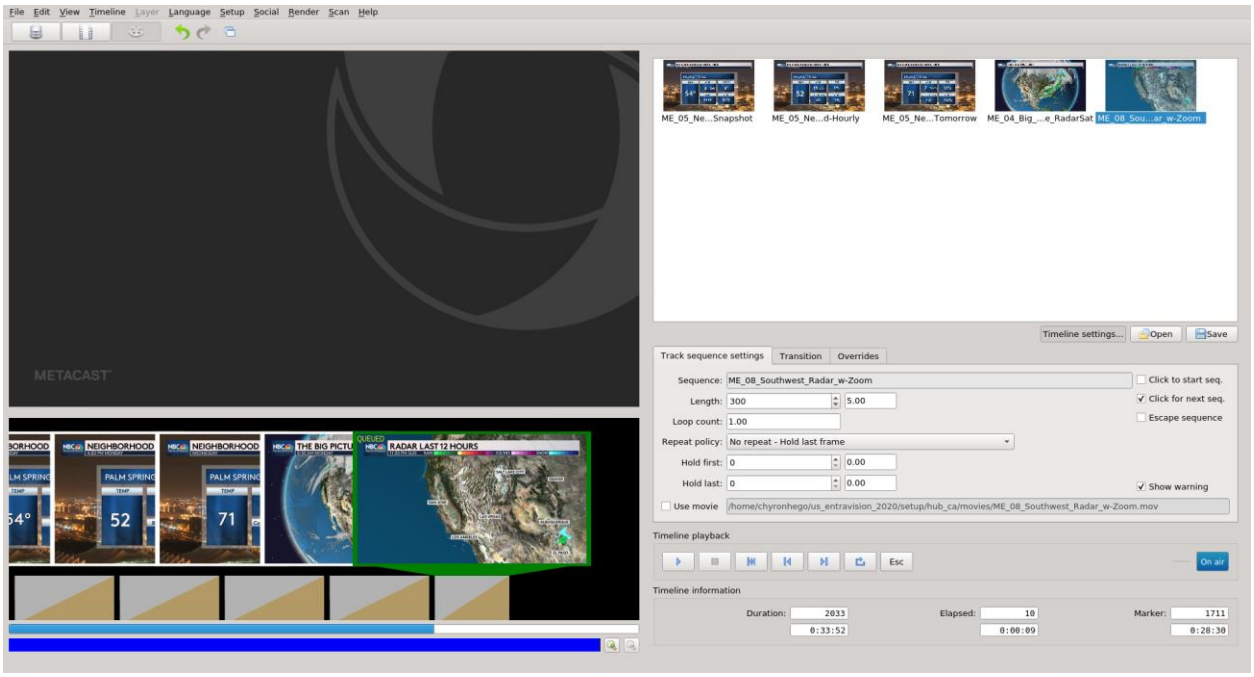
2. Click the **Timeline settings** button, located just below the **Sequence Collection**. For the purposes of the quick start instructions, you will not change settings.



3. Drag the thumbnail of a sequence that you would like to add to the timeline from the **Sequence Collection** to the **Storyboard**. As you drag a sequence to the **Storyboard**, it displays a yellow frame and a pointer showing its location on the timeline. Once placed, the newly added sequence displays a green frame, and "**QUEUED**" in the upper left corner. For sake of brevity, the terms "**Storyboard**" and "**timeline**" are used interchangeably.

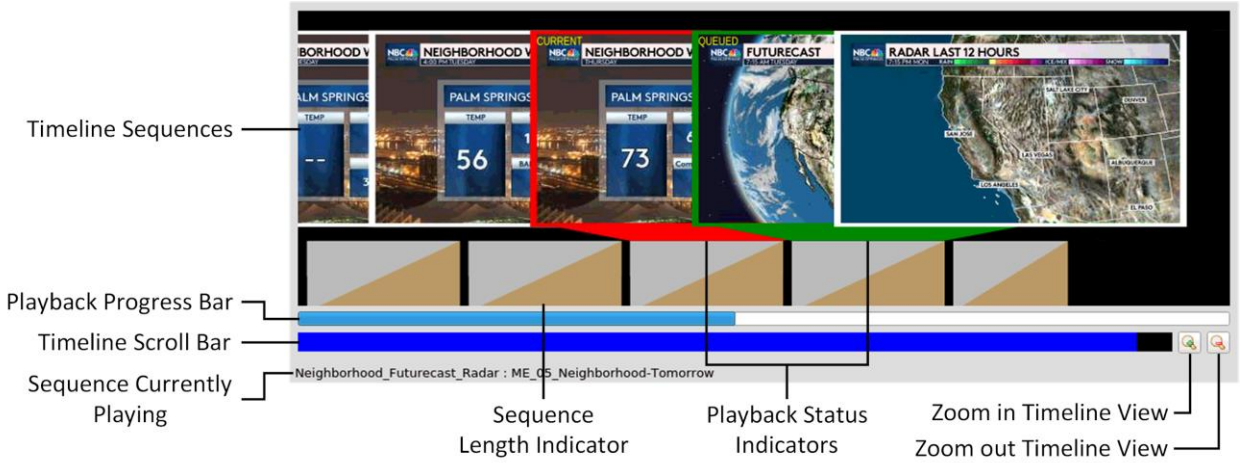


4. Continue dragging sequences into the **Storyboard**. As you drag a sequence into the timeline, if a sequence already on the timeline displays as completely yellow, the sequence that you are dragging will replace the yellow-highlighted sequence. If you would like to add the sequence to the timeline, but not replace another sequence, then drag it off of the other sequence, until the other sequence is no longer highlighted in yellow.



By default, the sequences are set for manual triggering (**Click for next seq.** enabled), as displayed in the **Track sequence settings** tab in the **Timeline settings**.

Following is a detailed view of the timeline:



5. You can reposition a sequence one at a time on the timeline. If desired, simply click and drag a sequence to its new position on the timeline. The sequence displays a yellow frame until it is in its new position, at which point, it turns green, and displays "**QUEUED**" in the upper left corner..

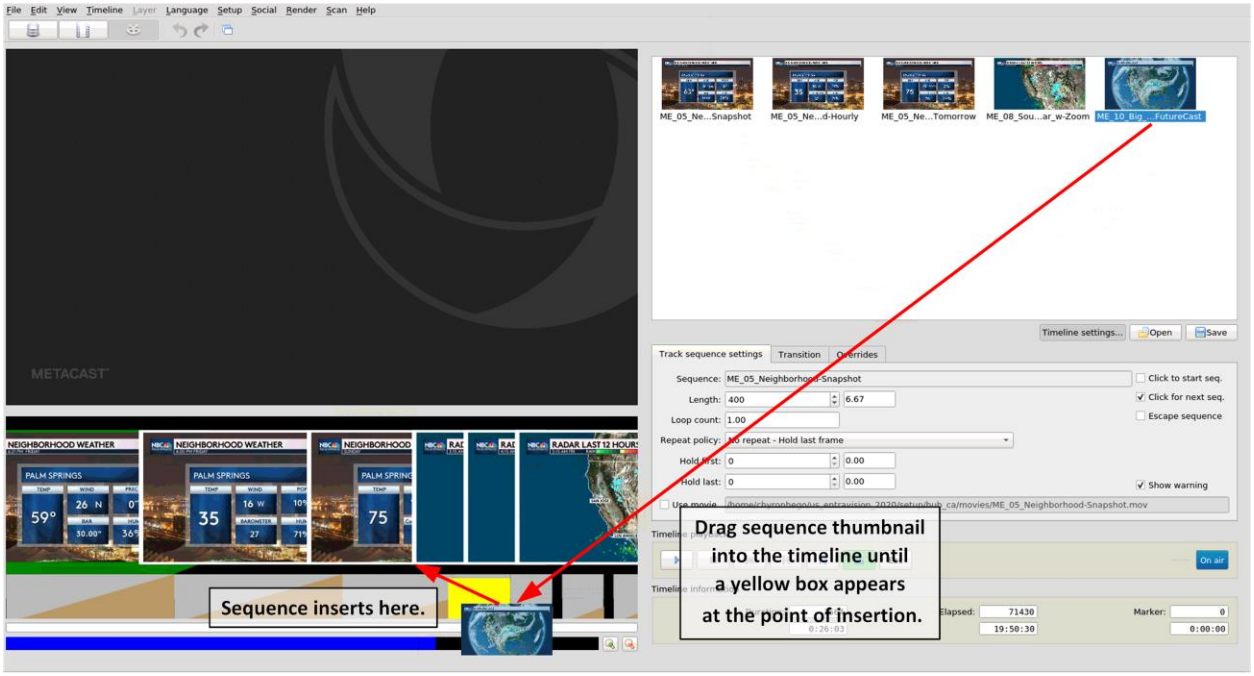
To remove a sequence from the timeline:

- Right-click the sequence thumbnail, and then select Remove from the dropdown menu. The sequence is removed from the timeline.

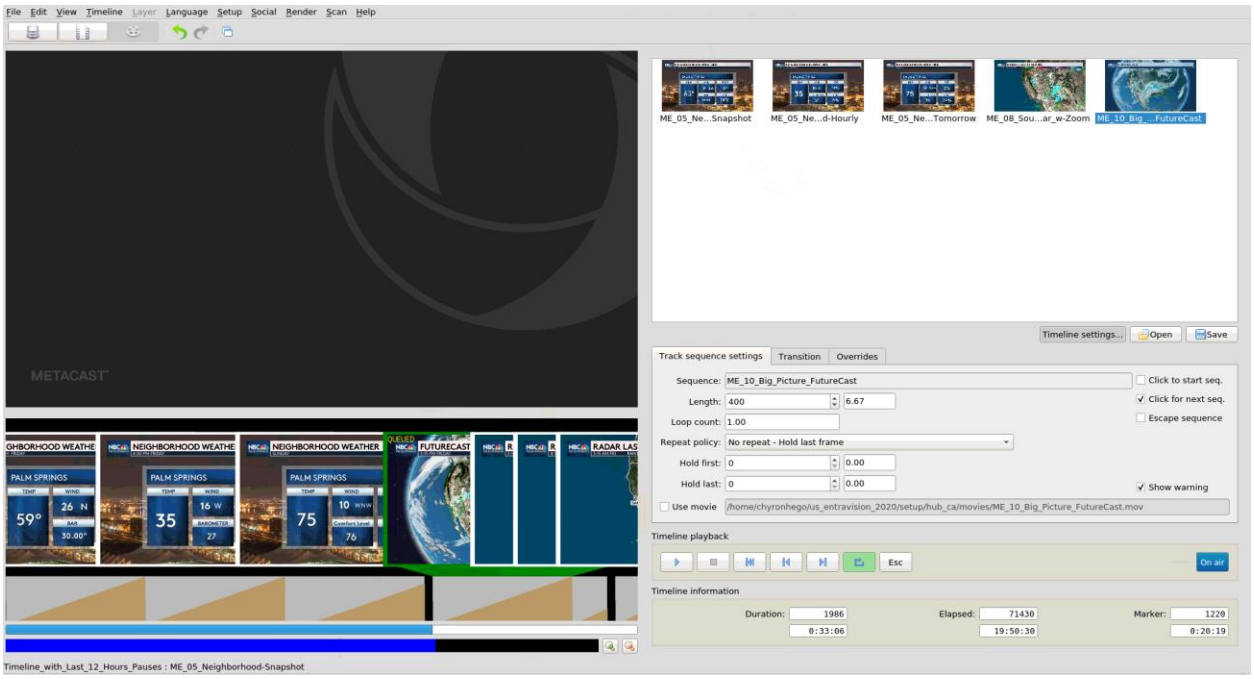
Insert Sequence into the Timeline

To insert a sequence at the beginning, end, or between two sequences in the timeline:

1. Drag the sequence thumbnail from the **Sequence Collection** to the point in the timeline at which to insert the sequence. A yellow box appears under the timeline thumbnails at the point of insertion.



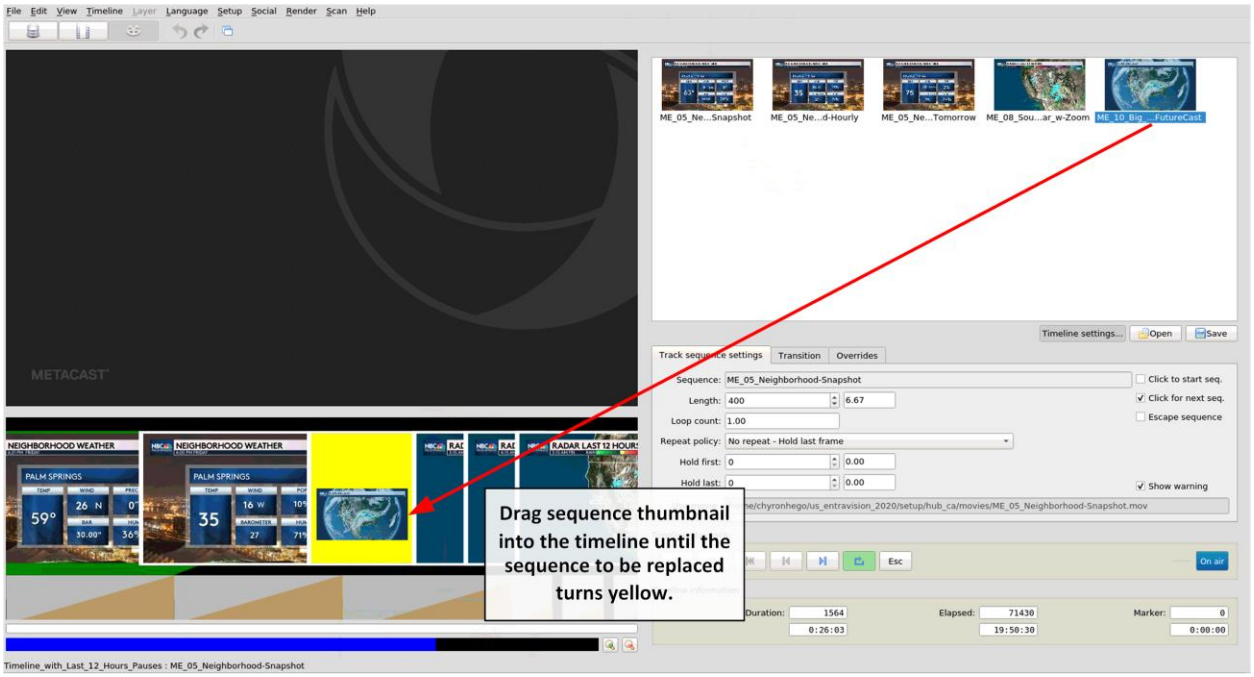
2. Release the mouse. The sequence appears in the timeline.



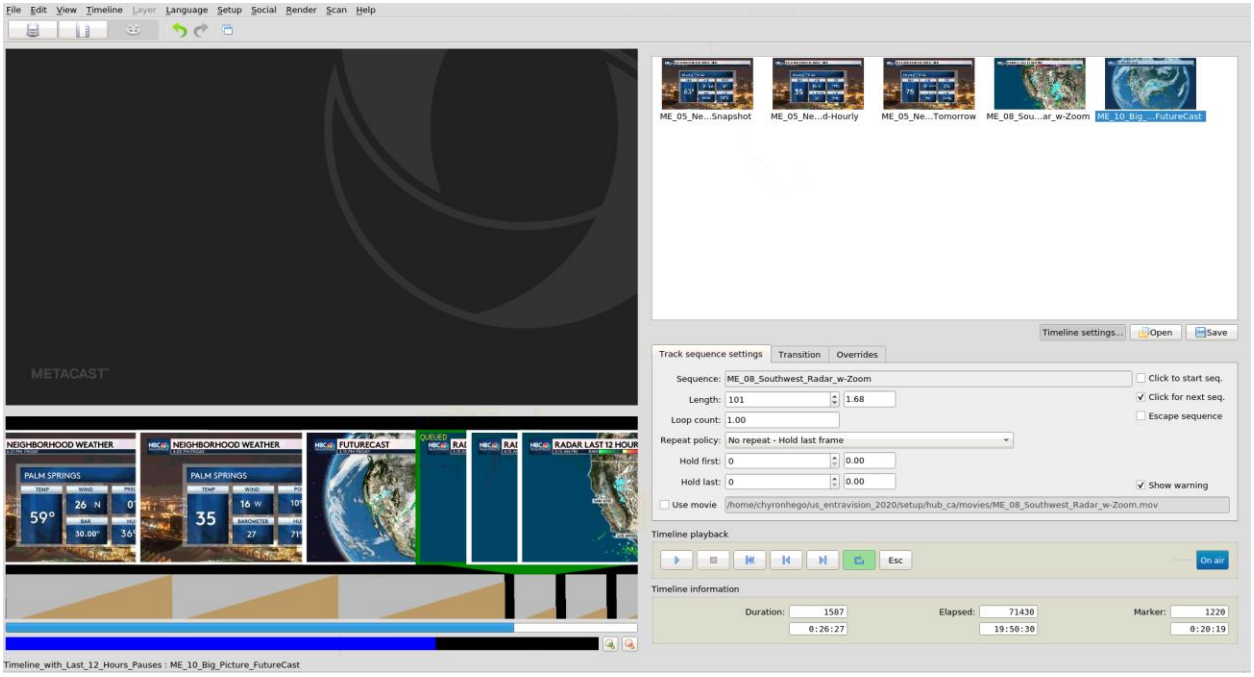
Replace Sequence in Timeline

To replace a sequence in a timeline:

1. Drag the sequence thumbnail from the **Sequence Collection** on top of the sequence in the timeline that you would like to replace. The sequence on the timeline turns yellow.



2. Release the mouse. The replacement sequence appears in the timeline.



Reposition Sequence in Timeline

To reposition a sequence in a timeline:

1. Select the sequence in the timeline.
2. Drag the sequence to the new position in the timeline.

Save Timeline

To save a timeline:

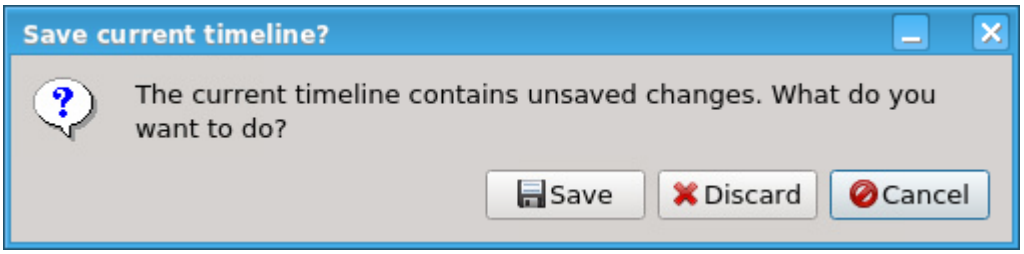
- Click **Save**, and then save the timeline to the desired location. When a timeline is saved, the sequences in the timeline are also saved to a **Sequence Collection** file (****.scl***).

Open Timeline

To open a saved timeline:

- Click **Open**, and select the timeline that you would like to open.

Only one timeline can be open at a time. If you attempt to open a timeline when the **Sequence Collection** already displays sequence thumbnails, then the following displays:



- Select **Save** to save the current timeline and open the new timeline.
- Select **Discard** to discard any changes to the current timeline and open the new timeline. If the current timeline had already been saved, then the saved timeline is not affected.

To add sequences that are not displayed in the Sequence Collection to the timeline:

1. Go to **Sequence Mode**, then add the desired sequences.
2. Go to **Timeline Mode**, and add the sequences to the timeline.

Insert Saved Timeline into Current Timeline

You can add a saved timeline to the current timeline, either before or after the selected sequence. To insert a saved timeline to current timeline:

1. Select the sequence adjacent to the point where you would like to insert the saved timeline.
2. Right-click the sequence, and then select either **Insert Timeline before** or **Insert Timeline after**. The **Insert** timeline dialog opens.
3. Browse to the timeline file, and then click **Open**. The timeline is inserted into the current timeline. Sequences from the inserted timeline are added to the **Sequence Collection** area.

Timeline Playback

Overview

Chyron Weather provides a flexible timeline playback environment. You can:

- Play the timeline from beginning to end, with or without pauses.
- Play the timeline out of order.
- Loop individual sequences, and/or the entire timeline.
- Change playback on the fly, while on air.
- Set playback parameters for each sequence on the timeline.
- Set transitions between sequences.
- And much more!

BEST PRACTICE: Rehearse Your Presentation!
Prior to going on air, rehearse your presentation to ensure that all sequences display the correct graphics and most up-to-date data, timeline playback triggers work as expected, and there are no glitches.

Remote Playback

A variety of handheld devices can control Weather. To set up a remote control device, please contact Chyron for additional information.

Timeline Playback Controls

 **Play/Pause**

Play/Pause operates as follows:

- Starts playing the first segment on the timeline. When the timeline starts to play, the **Play** button turns into a **Pause** button.
- **Pause** stops the playback at the current frame. The **Pause** button turns into a **Play** button.
- **Play** button restarts playback.

When a segment completes playback, then to play the next segment, click **Jump to Next Transition Segment**.

If **Stop**, **Jump to First Transition Segment**, **Jump to Previous Transition Segment** or **Jump to Next Transition Segment** is executed, then the **Play** button can resume playback.

Any time that a segment is playing, the **Pause** button can pause playback, and then the **Play** button can resume playback.

To resume playback:

- Click **Play**.

 **Stop**

Jumps to beginning of current transition segment and holds at the first frame.

 **Jump to First Transition Segment**

Stops playback and returns to the beginning of the first segment. i.e., the beginning of the timeline.

 **Jump to Previous Transition Segment**

If current segment is playing or has completed playing, then playback stops and jumps to beginning of current segment. You can then click again to jump to the beginning of the previous transition segment.

 **Jump to Next Transition Segment**

Jumps to beginning of next transition segment.

 **Loop (Inactive/Active)**

Loops timeline playback until timeline is stopped.

Esc

You can set a sequence to act as the **Escape** sequence, in the event that you must wrap up the presentation earlier than expected. **Escape** jumps to the designated sequence.

To set an **Escape** sequence:

1. Select the sequence to designate as the **Escape** sequence.
2. In **Timeline settings**, click the **Track sequence** setting tab, and then enable (check) the **Escape sequence** checkbox.

When you execute an **Escape** during timeline playback:

- Click **Esc**. Timeline playout jumps to the designated sequence.

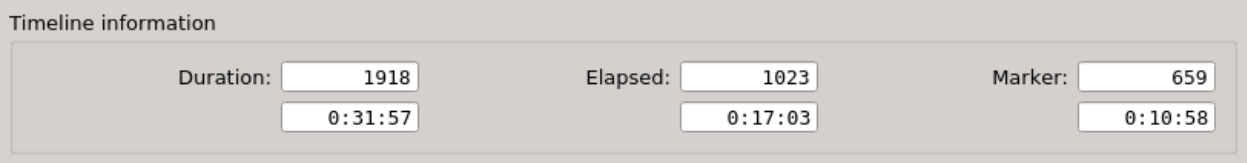
Two items to note:

- If the sequence following the specified **Escape** sequence does not have **Click for next seq.** enabled, then playout will continue into the following sequence.
- If no sequence in the timeline is designated as an **Escape** sequence, then clicking **Esc** jumps back to the first sequence and starts to play the sequence.
- If an **Escape** sequence is not specified in the timeline, then clicking **Esc** goes to the first sequence in the timeline.
    - If **Click to start seq.** is not enabled, then the first sequence starts to play.
    - If **Click to start seq.** is enabled, then the timeline holds at the first frame of the first sequence. To play, click **Jump to Next Transition Segment**.

NOTE: A segment may appear to have completed playing, but it may be waiting for the **Hold last** time to elapse. In addition, when starting playback of the next segment, it may not appear as if the segment is playing, but it may be waiting for the **Hold first** time to elapse prior to playing.

Timeline Information Settings

The **Timeline** information panel displays **Duration** of the timeline, **Elapsed** playback time, and **Marker** (current frame).



For each of the **Time information** settings:

- The top field specifies **frames**.
- The bottom field specifies **minutes:seconds:hundredths of a second**.

Duration: Total length of the timeline, taking into account transitions. If performing multiple modifications to the timeline, the **Duration** may not display the most current value. To view the most current **Duration**:

- Play the timeline.

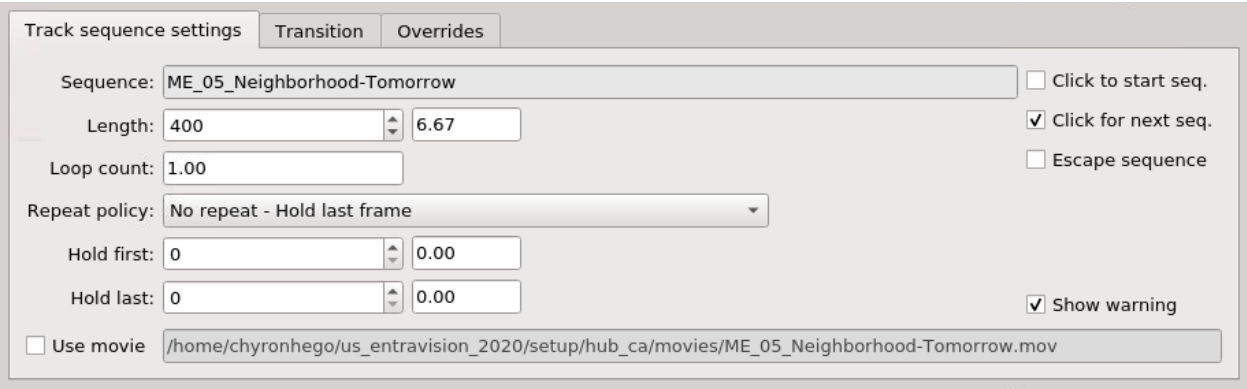
Elapsed: Total elapsed time since the timeline started to play. Unless the timeline is stopped, the **Elapsed** clock continues to run. It resets to **0** when the timeline is restarted using the **Play** button.

Marker: Current playback frame.

Track Sequence Settings

Overview

The **Track sequence settings** panel specifies duration, loop, trigger, movie enable, and warning settings for the currently selected sequence.



Sequence

Sequence: Displays the name of the currently selected sequence.

Length, Loop Count, Hold First, Hold Last

Length, **Loop count**, **Hold first** and **Hold last** settings are playback time parameters.

Length: Sequence playback length, in frames (leftmost field) and seconds (rightmost field). If you modify **Length**, then:

- **Loop count** adjusts to reflect the modified **Hold First**.
- Timeline **Duration** adjusts to reflect the modified **Length**.

Loop count: Number of times to loop the sequence. If you modify **Loop count**, then:.

- **Hold first** and **Hold last** values do not change.
- **Length** value adjusts to reflect the modified **Loop count**.
- Timeline **Duration** adjusts to reflect the modified **Loop count**.

Hold first: Number of frames to hold first frame, specified in frames (leftmost field) and seconds (rightmost field). The **Hold first** frames are appended to the beginning of the sequence. If you modify **Hold first**, then:

- **Length** value does not change.
- **Loop count** adjusts to reflect the modified **Hold First**.
- Timeline **Duration** value does not change.

Hold last: Number of frames to hold last frame, specified in frames (leftmost field) and seconds (rightmost field). The **Hold last** frames are appended to the end of the sequence. If you modify **Hold last**, then:

- **Length** value does not change.
- **Loop count** adjusts to reflect the modified **Hold Last**.
- Timeline **Duration** value does not change.

Use movie: Plays the movie recorded from the sequence, instead of the sequence. The sequence must first be recorded to a movie in **Sequence** mode. See Record Sequence.

Repeat Policy

Repeat policy determines how looping is handled. You can set a segment to:

- Play from beginning to end with no looping.
- Loop a specified number of times, including fractional.
- Loop the entire length continuously until you trigger the next segment or stop the timeline.

Be aware that looping executes differently, depending on the selected **Repeat policy** selected, and whether or not **Click for next seq.** Is enabled or disabled. **Repeat policy** works as follows:

- **No repeat - Hold last frame:** The segment does not loop, and plays as follows:
    - If **Loop count ≤ 1.00,** then the segment plays as specified in the **Loop count**, which may be fractional.
    - If **Loop count > 1.00**, then the segment plays though once, and holds for the remainder of the **Length** as specified by the **Loop count**.

      For both of the above:
        - If **Click for next seq.** is enabled for the sequence, then the current sequence holds the last frame.
        - If **Click for next seq.** is not enabled for the sequence, then the current sequence does not hold the last frame, and the next sequence starts to play.
- **Repeat - Hold last frame:** The segment plays as specified in the **Loop count**, including any fractional portion:
    - If **Click for next seq.** is enabled for the sequence, then the current sequence holds the last frame.
    - If **Click for next seq.** is not enabled for the sequence, then the current sequence does not hold the last frame, and the next sequence starts to play.
- **Repeat - Keep looping:** The segment plays as follows:
    - If **Click for next seq.** is enabled for the sequence, then the current sequence loops continuously from beginning to end, regardless of the specified **Loop count**. Fractional loops are ignored.
    - If **Click for next seq.** is not enabled for the sequence, then the current segment plays as specified in the **Loop count**, including any fractional portion. It does not hold the last frame, and the next sequence starts to play.

Trigger Settings

Click to start seq. and Click for next seq. Overview

Weather provides precise control over how segments are played.

- You can hold the first frame of a segment until ready to trigger. A segment with **Click to start seq.** enabled displays and holds the first frame of the sequence. You can trigger playback when you are ready. When a previous segment has completed playout, the first frame of a segment with **Click to start seq.** enabled automatically displays and waits for the trigger.
- You can hold the last frame of a segment until ready to trigger the following segment. A segment with **Click for next seq.** enabled completes playout of the segment, and waits for a trigger to start playing the next segment.
- You can enable both functions to further control playback. For example, if a segment A has **Click for next seq.** enabled, and the following segment B has **Click to start seq.** enabled, then:
    a. Segment A completes its animation and holds the last frame.
    b. Upon triggering segment B, the first frame of segment B displays and holds the first frame.
    c. A subsequent trigger plays segment B.

To play through one or more segments without holds:

- Disable **Click to start seq. and Click for next seq.** as appropriate for each segment.

Click to start seq.

If you want to hold the first frame of a sequence before playing, then enable **Click for next seq.** for the segment.

Note that if you play a movie, the first frame will be a still frame and symbols on it will not animate. As such, **Click to start seq.** is best used for live sequences.

Click to start seq. is disabled by default.

- If **Click to start seq.** Is enabled for the first sequence in the timeline, then:
    - Click **Play**. The first frame of the first segment displays, and its frame turns from green to red, and "**CURRENT**" displays in the upper left corner.
    - When ready to play the first segment, click **Jump to Next Transition Sequence**.
- If **Click to start seq.** Is enabled for a subsequent sequence in the timeline, then when the timeline reaches the segment, the first frame of the sequence automatically loads:
    - When ready to start the segment's animation, click **Jump to Next Transition Sequence**.

- If you have selected a segment other than the first segment at which to start playback, and **Click to start seq.** is enabled for that sequence, then:
    - Click **Play**. The first frame of the segment displays, and its frame turns from green to red, and "**CURRENT**" displays in the upper left corner.
    - When ready to play the segment, click **Jump to Next Transition Sequence**.

Click for next seq.

If you want to play a segment on a timeline immediately upon triggering, then enable **Click for next seq.** for the preceding segment.

- If **Click for next seq.** Is enabled for the first sequence in the timeline, then:
    - Click **Play**. The first sequence plays. The first frame of the next segment does not load.
- If **Click to next seq.** Is enabled for a subsequent sequence in the timeline:
    - Click **Jump to Next Transition Sequence**. The segment plays.
- If you have selected a segment other than the first segment at which to start playback, and **Click for next seq.** is enabled for previous sequence, then:
    - Click **Play**. The sequence plays.

Click to start seq. and Click for next seq.

- If **Click for next seq.** is enabled for a sequence that precedes a sequence that has **Click to start seq.** enabled, then the preceding sequence plays and holds the last frame.
    - Click **Jump to Next Transition Sequence**. The first frame of the next sequence displays and holds. The sequence thumbnail's frame turns olive, as it is both selected and playing. "**CURRENT**" displays in the upper left corner of the thumbnail.
    - Click **Jump to Next Transition Sequence**. The segment plays.

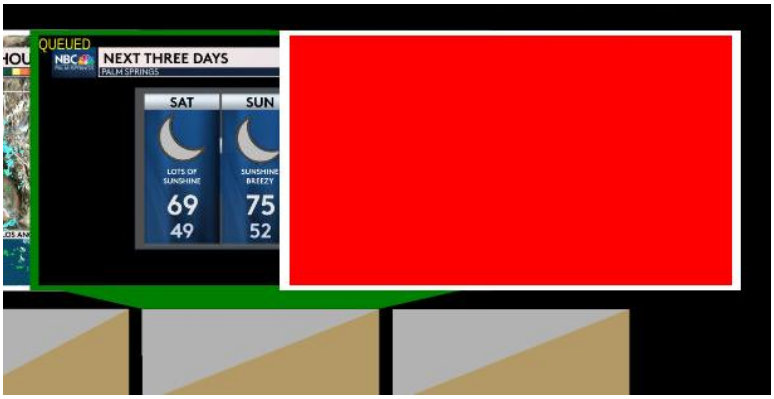
Escape sequence

Specifies that the sequence is designated as an escape sequence. Note that if specified **Escape** is not specified as **Click for next seq.**, then the next sequence will play.

Use Movie

You can play the exported movie of a sequence, instead of the live sequence.

- Enable **Use movie**.
  - If the movie exists, then the appearance of the sequence on the timeline does not change..
  - If the movie does not exist, then the sequence displays as a red rectangle.



To fix:

1. Go to **Sequence Mode**, select the same sequence, and then click **Record** . The sequence records to the default configured location.
2. Return to the timeline. The sequence thumbnail in the timeline displays the sequence image.

Show Warning

Show warning: Shows warning in timeline if sequence is not ready for On-Air.

EXERCISE: Experiment with the **Track Sequence** settings and try out the **Timeline playback** buttons to become familiar with how they affect playback.

Transition Settings

A sequence can transition to the next sequence using an effect, adding interest to your weather report. You can set the transition from the previous sequence to the current sequence (**Intro**), and from the current transition to the next sequence (**Outro**), applying a **Transition Type**, **Length** and **Overlap** for each transition.

It is possible to create custom transitions using a grayscale image to control the alpha blending between the two sequences. Contact Chyron technical staff for support for such requests.

NOTE: The **Length** and **Transition Type** of an **Outro** of a transition for a sequence are automatically the same as the **Length** and **Transition Type** of the **Intro** of the next transition, i.e., the transition from one sequence to the next takes place over the length set in the above mentioned **Outro/Intro**.

For example, if the **Outro** of a sequence is set to 20 frames and the **Transition Type** is **PushLeft**, then the **Intro** of the next transition is the same 20 frames with **Transition Type PushLeft**. The entire transition from one sequence to the next takes 20 frames.

Intro: Sets the transition parameters for the beginning of the sequence, as it transitions from the previous sequence.

- **Transition Type:** Transition effect, as selected from the dropdown, applied to the sequence as it comes on screen.
- **Length:** Length, in frames, of the transition into a sequence.
- **Overlap:** Length, in frames, of the animation overlap with the previous sequence.

Outro: Sets the transition parameters for the end of the sequence, as it transitions to the next sequence.

- **Transition Type:** Transition effect, as selected from the dropdown, applied to the sequence as it goes off screen.
- **Length:** Length, in frames, of the transition out of a sequence.
- **Overlap:** Length, in frames of the animation overlap with the next sequence.

The **Transition Types** are as follows:

- **Blend:** Sequence dissolves from one sequence to the next.
- **BlendCorner:** Screen splits diagonally outward from lower left to upper right, revealing the next sequence. The borders of the split change from a blend of the two sequences to a sharp border as the transition progresses outward.
- **BlendCornerIn:** Looks the same as **BlendCorner**. Screen should reverse split, from the corners to inward, diagonally from lower left to upper right, revealing the next sequence.
- **Cut:** Sequence cuts directly from the current sequence to the next sequence. Currently, it operates the same as **BlendCorner**.
- **FoldUp:** Current sequence shrinks towards the top of the screen to reveal the next sequence.

- **PushDown:** The next sequence pushes the current sequence down, off the bottom of the screen.
- **PushLeft:** The next sequence pushes the current sequence off the left side of the screen.
- **PushRight:** The next sequence pushes the current sequence off the right side of the screen.
- **PushUp:** The next sequence pushes the current sequence up, off the top of the screen.
- **Rotate:** The current sequence rotates on the X-axis to reveal the next sequence on the “backside.” The effect is similar to spinning a blackboard to reveal the back of the board.
- **Supermix:** The current sequence fades to white, and then white fades to the next sequence.
- **WipeDown:** The next sequence slides from top of screen to cover the current sequence.
- **WipeLeft:** The next sequence slides from the right side of the screen to cover the current sequence.
- **WipeRight:** The next sequence slides from the left side of the screen to cover the current sequence.
- **WipeSpecialImage:** Wipes using an image.
- **WipeUp:** The next sequence slides from bottom of the screen to cover the current sequence.
- **ZoomIn:** The next transition starts from zoomed in and zooms out until it is full screen.
- **ZoomOut:** The current transition zooms in to reveal the next transition.

You can use the following keyboard shortcuts to set **Intro** and **Outro Length** and **Overlap**. The timeline must be stopped in order to use the keyboard shortcuts.

Ctrl+Alt+cursor L/R (← →) increments/decrements **Transition Intro Length** as follows:

- **Ctrl+Alt+cursor R (→)** increments by **10** frames.
- **Ctrl+Alt+cursor L (←)** decrements by **10** frames.

Alt+cursor L/R (← →) increments/decrements **Transition Outro Length** as follows:

- **Alt+cursor R (→)** increments by **10** frames.
- **Alt+cursor L (←)** decrements by **10** frames**.**

Ctrl+cursor L/R (← →) decrements/increments **Transition Intro Overlap** as follows:

- **Ctrl+cursor R (→)** decrements by **10** frames.
- **Ctrl+cursor L (←)** increments by **10** frames.

Shift+cursor L/R (← →) increments/decrements **Transition Outro Overlap** as follows:

- **Shift+cursor R (→)** increments by **10** frames.
- **Shift+cursor L (←)** decrements by **10** frames.

Ctrl+Shift+cursor L/R (← →) increments/decrements the **Length** of the sequence *preceding* the selected sequence by **10** frames as follows. The **timeline Duration** reflects the change in the sequence **Length**.

- **Ctrl+Shift+cursor R (→)** increments the **Length** of the sequence preceding the selected sequence by **10** frames. The timeline **Duration** reflects the increased **Length** of the sequence.
- **Ctrl+Shift+cursor L (←)** increments the **Length** of the sequence preceding the selected sequence by **10** frames. The timeline **Duration** reflects the decreased **Length** of the sequence.

Alt+Shift+cursor L/R (← →) increments/decrements the **Length** of the selected sequence as follows. The **Timeline Duration** reflects the change in the sequence **Length**.

- **Ctrl+Shift+cursor R (→)** increments the **Length** of the selected sequence by **10** frames. The timeline **Duration** reflects the increased **Length** of the sequence.
- **Ctrl+Shift+cursor L (←)** increments the Length of the selected sequence by **10** frames. The timeline **Duration** reflects the decreased **Length** of the sequence.

Ctrl+Alt+Shift+cursor L/R (← →) scrolls through the timeline.

Overrides

Overview

Overrides enable the ability to override the sequence settings as displayed in the **Sequence Editor Sequences** tab. A common use of overrides is to create a timeline with sequences that contain pauses, by dragging multiple instances of the sequence into the timeline, and setting start and stop times, so that after a sequence plays, the next plays where the other left off.

- Sequence settings as set in the **Sequences** tab of the **Sequence Editor** can be overridden.
- **Overrides** settings are reflected in **Track Sequence** Length
- **Overrides** settings do not affect **Transition** settings.

Enable Override sequence settings: Enable/disable override of the sequence settings for the selected sequence, as set in the **Sequence Editor**.

Model Time

Current: Specifies **Model time** at the current point in the timeline.

Current Offset: Shortcut offsets. **Today Noon**, **Tomorrow Morning**, **Tomorrow Noon**, **Last**. These settings are relative to the time zone configured for the system.

Date: Displays date and time at current point in the timeline.

Start: Start point in hours.

Stop: Stop point in hours.

Min: The furthest back in time, in decimal hours, that the model can be set.

Max: The most recent point in time, in decimal hours, that the model can be set.

Frame Time

Current: Specifies **Model time** at the current point in the timeline, in frames and seconds.

Total: **Length** of sequence, in frames, as specified in the **Sequence Mode Sequence** tab. This value is not editable.

Start: Start point in frames.

Stop: Stop point in frames.

Sync model: Specifies if **Model time** is synchronized to the **Frame time** of the selected sequence.

- If enabled, then the **Model time** progresses in step with the **Frame time**.
- If disabled, then the state of the model at the selected Model time is displayed throughout the sequence animation. This is useful if you would like to display, for example, a specific time point of a radar model, while displaying a map zoom. The model remains static at the selected **Current** time, as the **Frame** animation runs.

Advanced Timeline Operations: Add Pauses in Radar and Animated Sequences

Overview and Instructions

Timelines can be paused to enhance playback or animations and radar sequences. There are two main methods to create pauses:

- **Model time:** If the sequence is built on a model, e.g., radar, then the pauses are based on **Model time Start/ Stop** times.
- **Frame time:** If the sequence is built as an animation, then the pauses are based on **Frame time Start/ Stop** times.

The general process for creating pauses in a sequence is as follows:

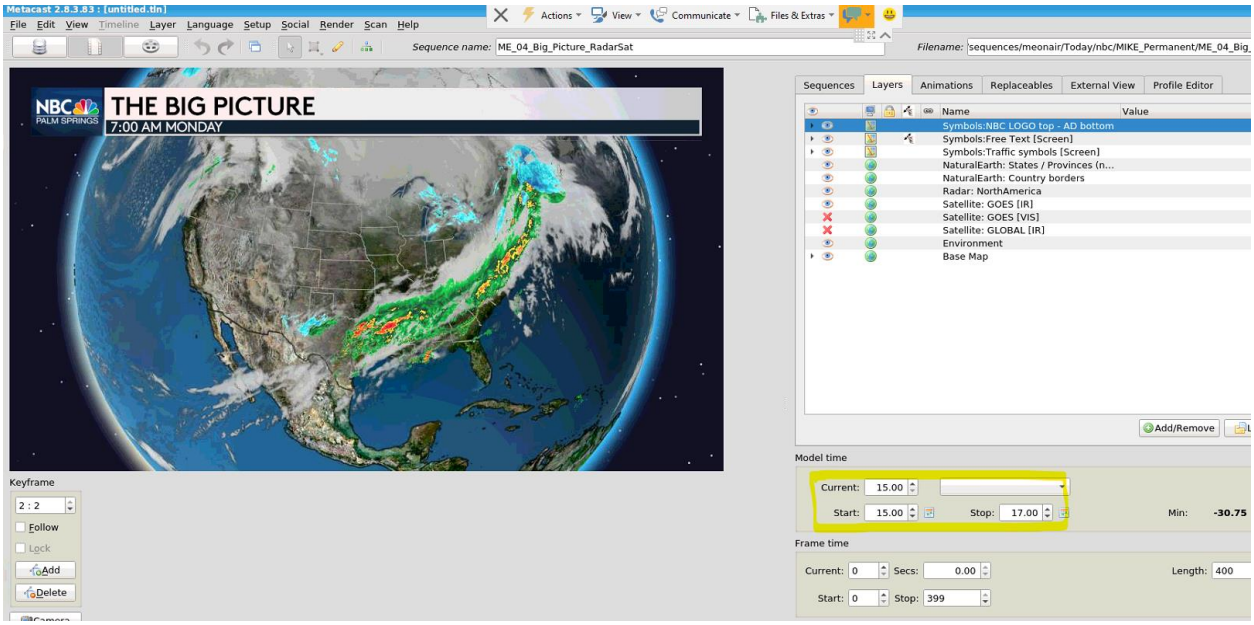
1. Follow the steps for creating a timeline.
2. Select the sequence to which pauses will be added.
3. Drag the selected sequence thumbnail into the timeline multiple times, i.e., the **number of pauses that you are adding to the timeline + 1**. For example, if a sequence contains three pauses, then there must be four instances of the sequence on the timeline.
4. In the **Timeline settings Overrides** tab, set the sequences to play from one sequence to the next without time or frame skips. The following examples show how to set pauses via **Model time**, **Frame time**, and both **Model time** and **Frame time**.

TIP: If you have set only **Model times** as pause points, and the sequence plays in its entirety each time that you click **Jump to Next Segment Transition**, then the sequence also contains an animation. To match the animation to the pauses, you must also set **Frame times**.

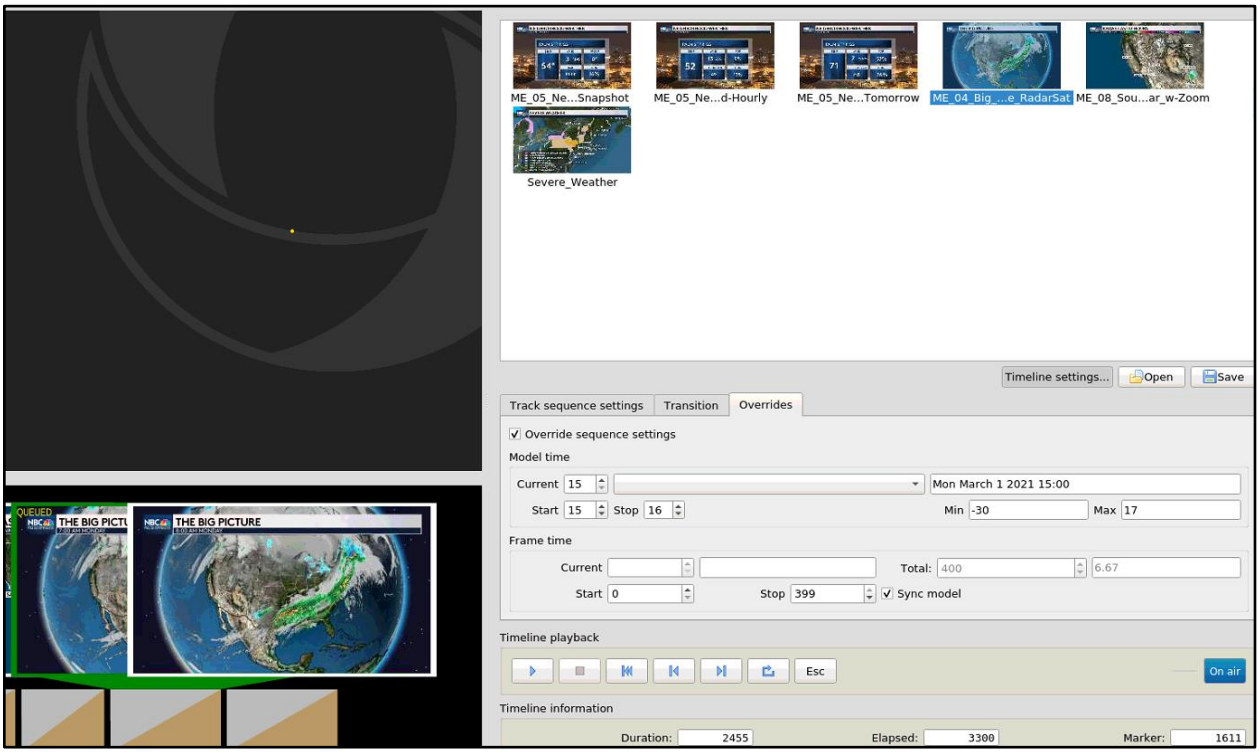
Example 1: Radar Sequence - Set Pause via Model Time Start/Stop

This method enables the user to split a sequence into pauseable sections. This is important, as an edit to the map view or other changes to the sequence will then apply to all instances of the sequence in the timeline.

1. To add a **Pause** to a **Radar Sequence**, you must first go to **Sequence Mode**, and set the **Start** and **Stop** times in the **Model Time** for the **Sequence**:



2. Go to **Timeline Mode**, then drag the thumbnail into the timeline the **number of Pauses + 1**. In this example, there will be one pause in the middle of the radar sequence. The set of sequences used to create the pauses is the **Sequence Pause Group**.



3. Click the **Timeline Settings** button, located directly under the **Sequence Collection**.

The **Timeline settings** panel displays.

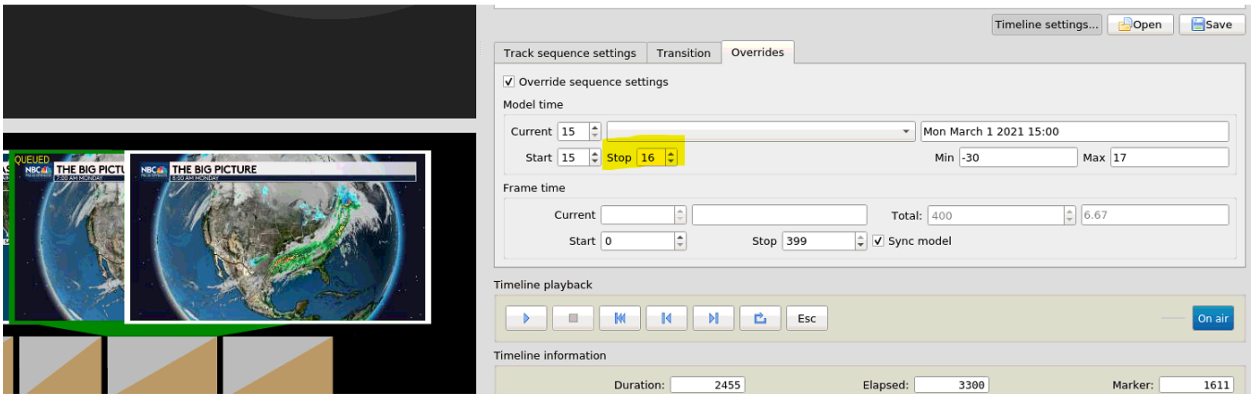
4. Select the first instance of this Sequence in the Timeline.

5. In the **Timeline settings**, click the **Overrides** tab and check (enable) **Override sequence settings**.

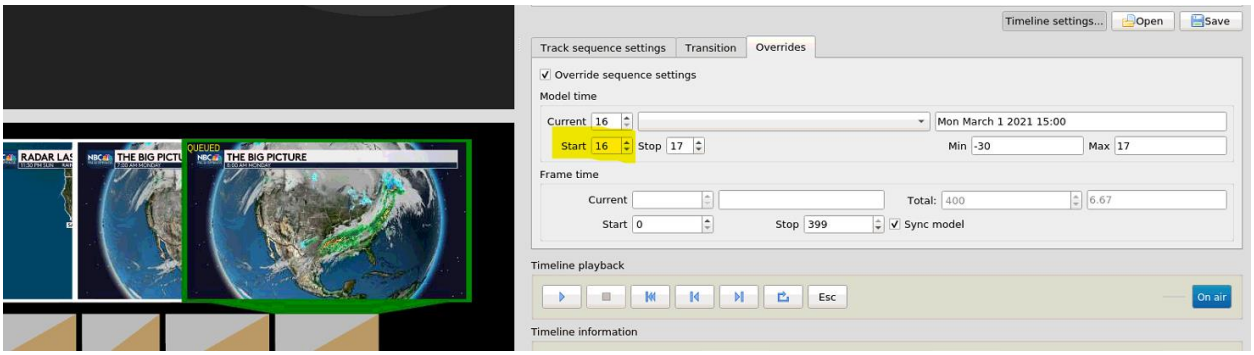
6. For a radar view sequence, one method to set pauses is using **Model Time**. The **Start** and **Stop** times are based on the units used in the sequence. In this example, the sequence runs from **15** to **17** hours. A pause will be set at **16** hours.

> **NOTE: Override** settings must lie within the **Model time Min/Max** settings. Depending upon the latest available data, **Min/Max** specifications may not show whole-hours, but rather, decimal fractions of an hour.

7. Change **Stop** to **16**:



8. Select the second instance of the sequence in the timeline, and then change **Start** to **16**.

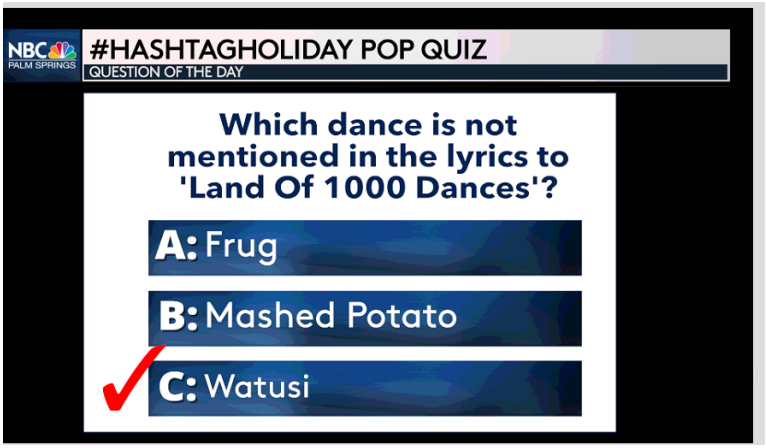


9. Play the timeline. The first instance of the sequence plays from 15 hours to 16 hours and then stops. When you click **Jump to Next Transition Segment** to continue, the second instance starts at **16** hours and plays to the end.

Example 2: Animated Quiz Sequence - Set Pauses via Frame Time Start/Stop

This method allows the user to create animated sequences that pause for effect.

1. This example sequence is a trivia question with answers and a checkmark for the correct answer. An animation has been created that reveals the answers and then reveals the correct answer. The user can pause when first played, and then after each answer.

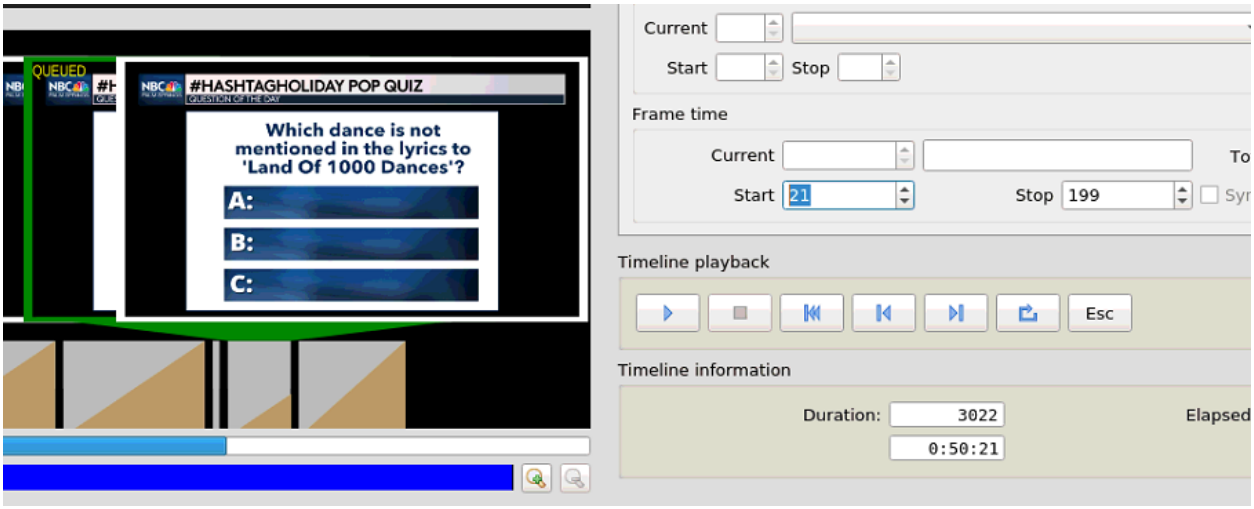


2. This sequence will contain two pauses. Drag the sequence thumbnail into the timeline 3 times (for 2 pauses). The set of sequences used to create the pauses is the **Sequence Pause Group**.

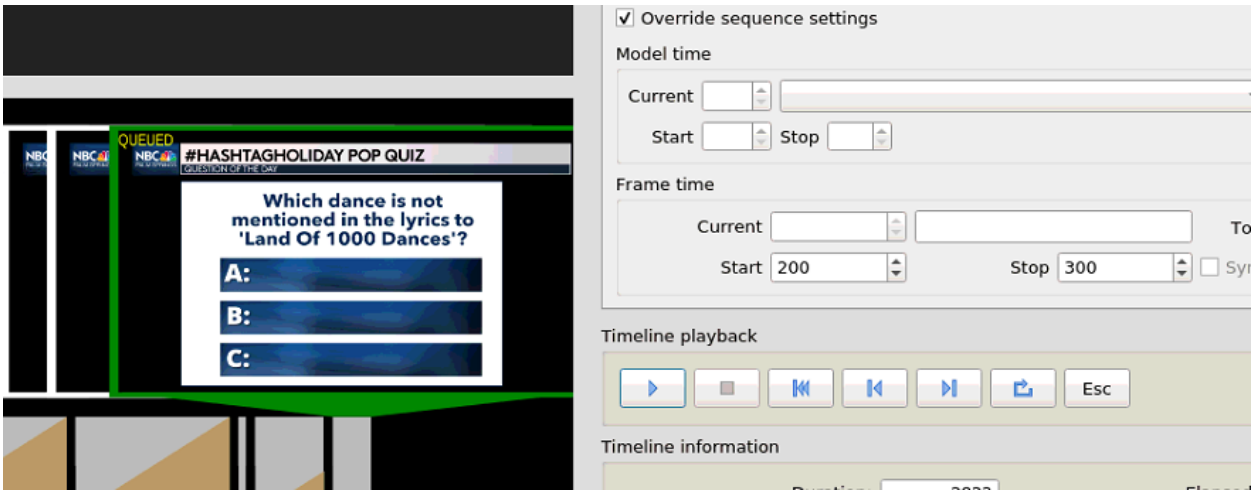
3. **Model time** does not work for an animation, as there is no association with a clock; therefore, **Frame time** is used for this sequence. The **Frame time Start/Stop** frames are determined by the animation within the sequence. There should be a few frames of buffer between when one animation ends and the next one starts.

   In the **Timeline settings Overrides** tab, enable **Override sequence settings**, then set **Frame time Start/Stop** for the first instance of the sequence to **0/20**, respectively.

4. Set **Frame time Start/Stop** for the second instance of the sequence to **21/199**, respectively.



5. Set **Frame time Start/Stop** for the third instance of the sequence to **200/300**, respectively.



6. Play the sequence. When played, it will pause before the answer list is revealed, then again showing the list, before the correct answer is highlighted.

Example 3: Set Pauses via Model Time and Frame Time Start/Stop

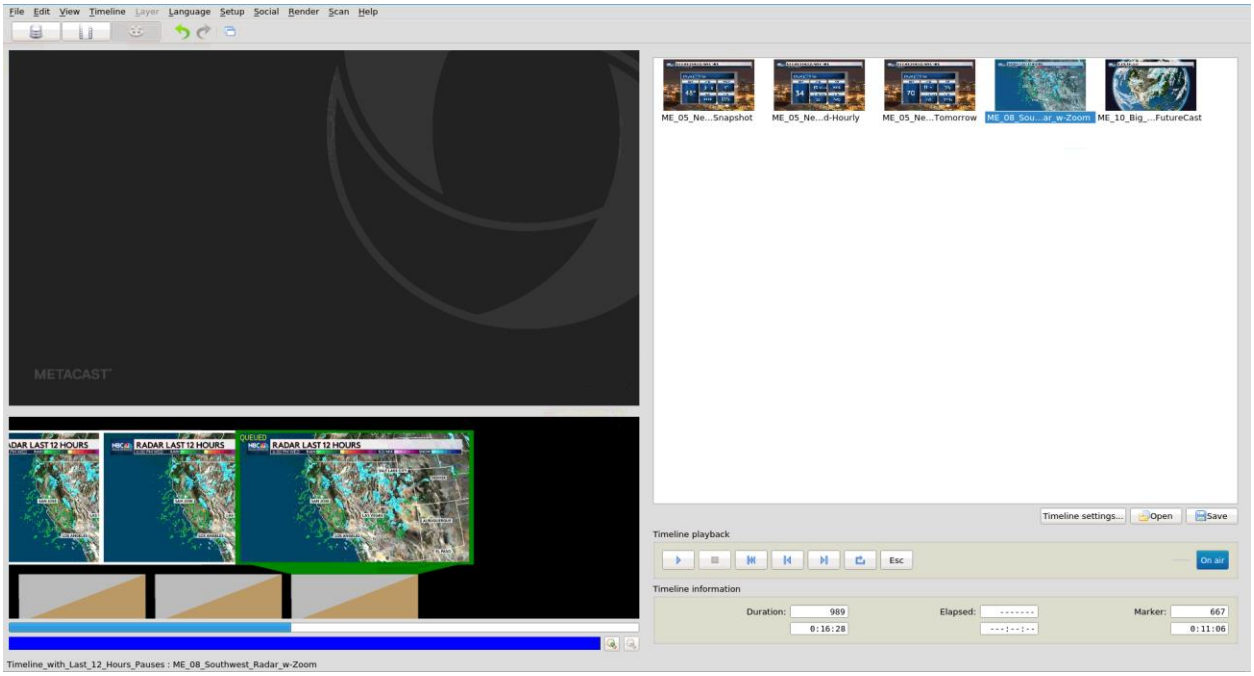
Overview

Many animations incorporate both a model and an animation. In setting up the pauses, determine whether the **Model time** or **Frame time** takes precedence, i.e., do you want the pause to be based on a specific **Model time** or a specific **Frame time**? Most likely, it will be **Model time**, as the animation would be paused at specific hours or days.

Set Pauses via Model Time and Frame Time, Based on Model Time

To set based on **Model time**:

1. In **Timeline Mode**, select the sequence that you would like to pause into the timeline three times. This example shows Radar Last 12 Hours.



2. Follow the instructions in Example 1: Radar Sequence - Set Pause via Model Time Start/Stop to set the **Model time** pauses. For this example, the **Model time** pauses every 4 hours:

Sequence 1:	**Start:**	**-12**	**Stop:**	**-8**
Sequence 2:	**Start:**	**-8**	**Stop:**	**-4**
Sequence 3:	**Start:**	**-4**	**Stop:**	**0**

Play the timeline. The model plays and pauses as set in **Overrides**, but each time the timeline progresses from sequence to sequence, the frame animation plays from beginning to end. As such, the **Frame times** must be set in the **Overrides**, as well.

For this example, the sequence highlighted in green displays radar for the last 12 hours, with **Length = 300 frames**, **Min = -48 hours**, and **Max = 0 hours**. It will be set to pause twice, i.e., every 4 hours in the **Model time**, starting at **-12 hours** and stopping at **-0 hours**.

> **NOTE: Override** settings must lie within the **Model time Min/Max** settings. Depending upon the latest available data, **Min/Max** specifications may not show whole-hours, but rather, decimal fractions of an hour.

3. Go to **Sequence Mode**.
4. For each sequence in the **Sequence Pause Group**, do the following:
    a. Scrub through the **Preview playback**, until you reach the precise **Frame time** at which the first pause is located, and make note of it. You can also approximate this point mathematically. For example, if a 12-hour sequence is 300 frames in length, and is to be paused every four hours, then the first **Frame time** pause point will be at or about 100 frames. Adjust the location of the scrub bar until you have precisely located the pause point.
    b. For each additional pause point, repeat step a. Make sure to make a note of the **Frame time** of each pause point.
    c. Once all pause points have been located and noted, proceed to the next step. For the example sequence, the **Start/Stop** would be as follows:

Sequence 1:	**Start:**	**0**	**Stop:**	**100**
Sequence 2:	**Start:**	**101**	**Stop:**	**200**
Sequence 3:	**Start:**	**201**	**Stop:**	**299**

5. Go to **Timeline Mode**.
6. Select the first sequence in the **Sequence Pause Group**, then in **Timeline settings**, click the **Overrides** tab, and enable **Override sequence settings**.
7. Set **Frame time Stop** to the frame number that you noted for the first pause. For the example **Sequence Pause Group**, **Frame time Stop = 100**. Note that the **Segment Progression Bar**, located directly under the sequence thumbnail, reflects the new length of the sequence in the timeline.
8. Select the next sequence in the **Sequence Pause Group**.
9. Set the **Frame time start** for the previous **Frame time Stop +1**. For the example **Sequence Pause Group**, **Frame time Start = 101**. Note that the **Segment Progression Bar**, located directly under the sequence thumbnail reflects the new length of the sequence in the timeline.

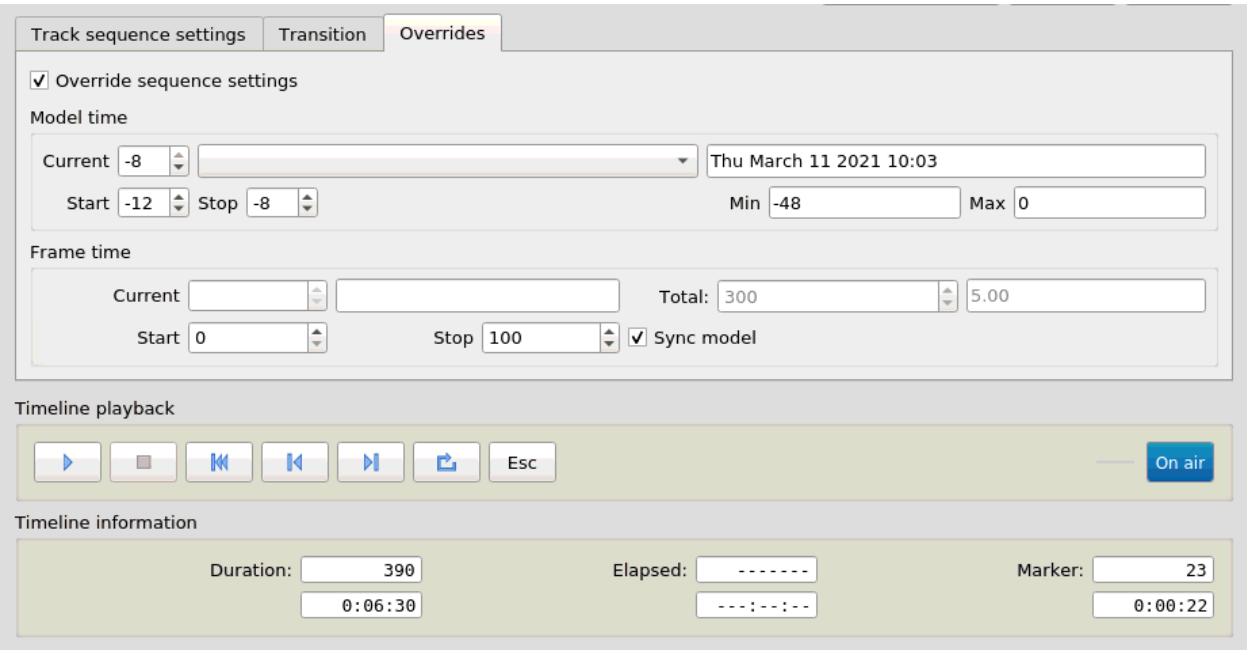
10. Do one of the following:

    - If this sequence is the last sequence in the **Sequence Pause Group**, then settings are complete. Go to Step 10.
    - Set **Frame time Stop** to the frame number that you noted for the next pause, then go to Step 7. For the example **Sequence Pause Group**, **Frame time Stop = 200**.

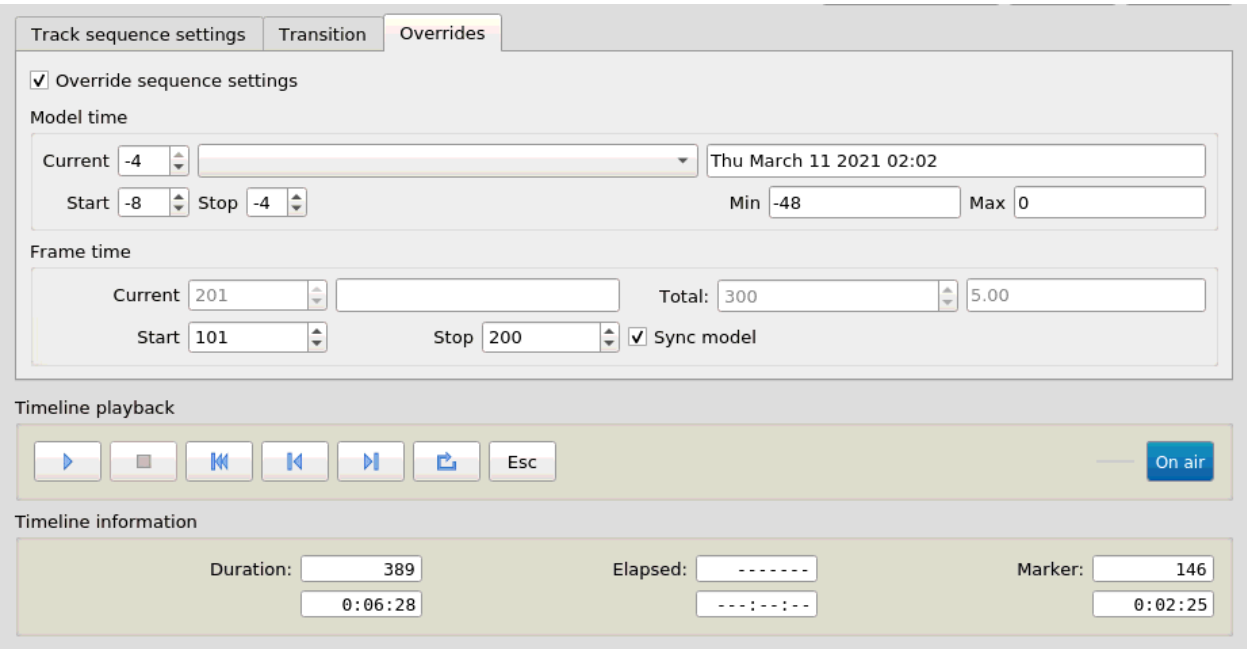
    For the last sequence in the example **Sequence Pause Group**, **Frame time Start = 201** and **Frame time Stop = 299**. Note that the length indicator rectangle under the sequence thumbnail reflects the new length of the sequence in the timeline.

The settings for the example, as displayed in the timeline **Overrides** tab. are as follows:

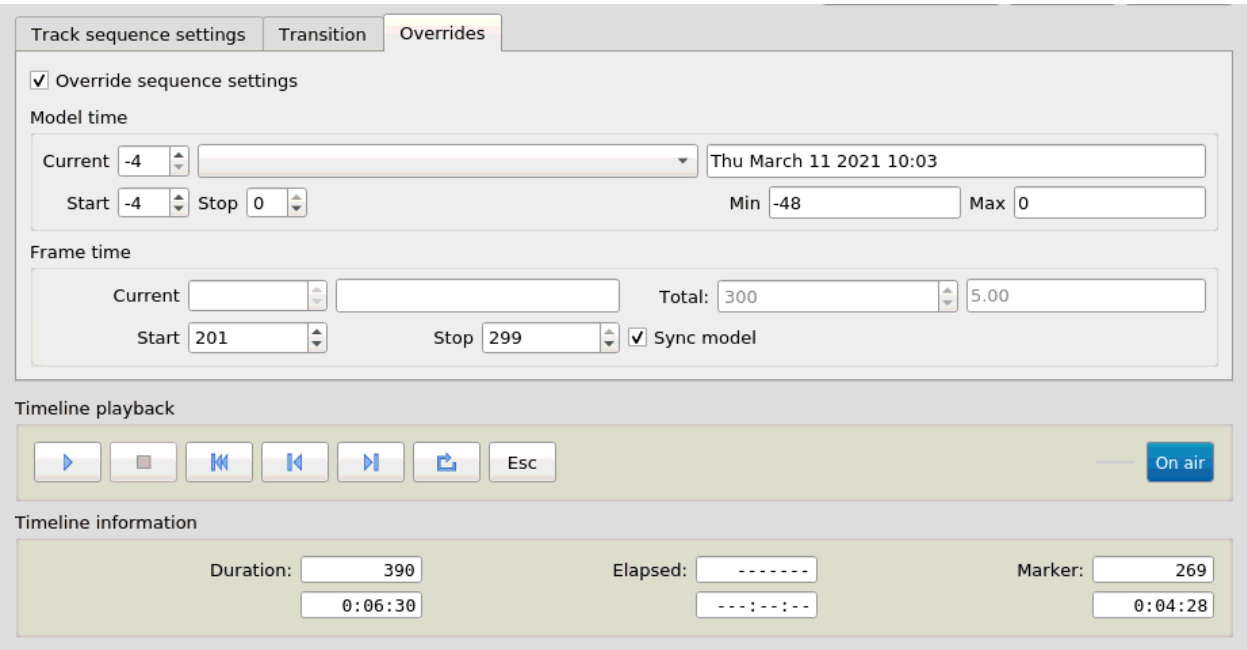
Sequence1:



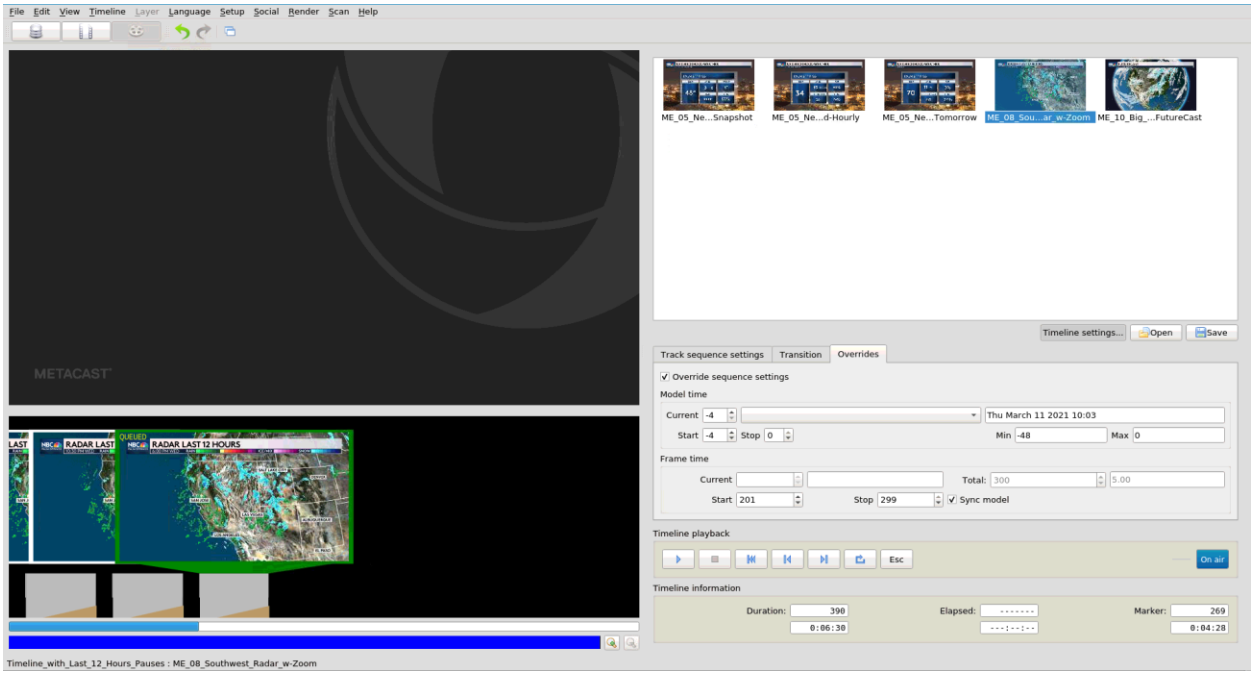
Sequence2:

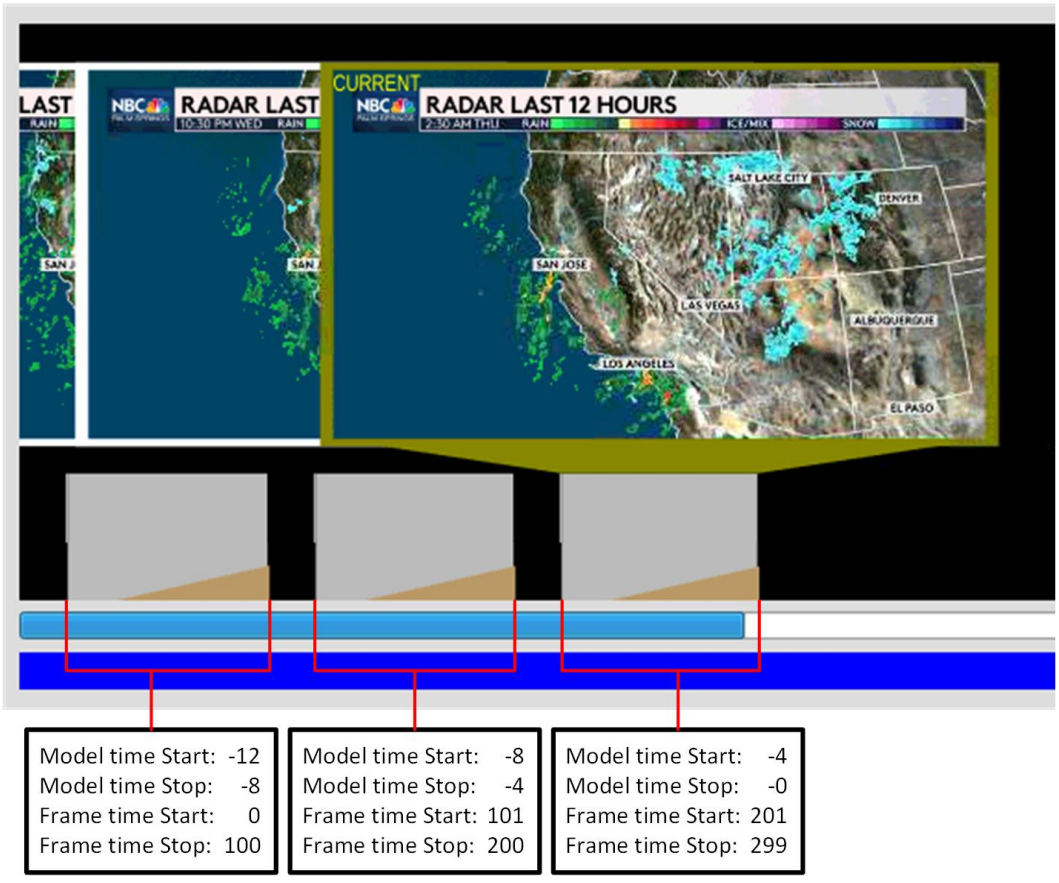


Sequence3:



The timeline appears as follows:





11. Play the **Sequence Pause Group** to test. Both the model and the frame animation should pause, and then progress to the next pause point.

Set Pauses via Model Time and Frame Time, Based on Frame Time

You can base pauses on the **Frame time**. To do so:

1. In **Sequence Mode**, determine the **Frame time** pause points.
2. In **Sequence Mode**, determine the corresponding **Model time** pause points.
3. In **Timeline Mode Overrides** tab, set the **Model time Start/Stop** and **Frame time Start/Stop** for each sequence in the timeline.

Rehearse Playback

BEST PRACTICE: Rehearse Your Presentation!
Prior to going on air, rehearse your presentation to ensure that all sequences display the correct graphics and most up-to-date data, timeline playback triggers work as expected, and there are no glitches.

WARNING: When rehearsing (previewing) playback, make sure that the timeline is not on air!

- A blue **On air** button indicates that playback is in **Preview Mode**. Playback plays to the **Timeline Preview** on the Weather interface.

- A red **On air** button indicates that playback is in **On air Mode**. Playback is output to the configured air channel and does not display on the **Timeline Preview**.

In addition, a red stripe displays at the bottom of the interface.

The playback instructions assume default **Click** settings for each sequence, i.e.:

- **Click to start seq.** is disabled.
- **Click for next seq.** is enabled.

If settings are different, then playback is affected as follows:

- If neither **Click to start seq.** nor **Click for next seq.** are enabled for a sequence, then the timeline plays from beginning to end without pause.
- If **Click to Start Seq.** is enabled and **Click for next seq.** is disabled for a sequence, then after the sequence plays, the first frame of the next sequence holds, and you must click **Jump to Next Transition Sequence** to start playback.
- If **Click to Start Seq.** is disabled and **Click for next seq.** is enabled for a sequence, then after the sequence plays, the last frame holds, and you must click **Jump to Next Transition Sequence** to start playback of the next sequence.
- If both **Click to start seq.** nor **Click for next seq.** are enabled for a sequence, the first frame of the sequence holds, and you must click **Jump to Next Transition Sequence** to start playback of the sequence. After the sequence plays, the last frame holds, and you must click **Jump to Next Transition Sequence** to start playback of the next sequence.

EXAMPLE:

If a sequence “A” for which **Click for next seq.** is disabled, is followed by a Sequence “B” for which **Click to start seq.** is enabled:

1. Sequence “A” plays and holds the last frame, until you click **Jump to Next Transition Sequence**, then:
2. The first frame of sequence “B” holds, until you click **Jump to Next Transition Sequence** to start playback.

To preview timeline playback:

1. The **On air** button toggles playback between **Preview Mode** On air and **On air Mode** On air . Make sure that the **On air** button is blue.
2. Click the first sequence in the timeline to select the sequence. Its thumbnail displays a green frame, and "**QUEUED**" in the upper left corner.
3. To start playback of the timeline, click **Play**. The first sequence in the timeline starts to play.
    - The sequence thumbnail's red frame indicates that it is playing, and displays "**CURRENT**" in the upper left corner.
    - The next sequence to play is indicated by a green frame, and displays "**QUEUED**" in the upper left corner.

4. To trigger each subsequent sequence, click **Jump to Next Transition Segment**.
5. To return to the first sequence, click **Jump to First Transition Segment**.

NOTE: If **Track sequence settings** are set to other than the default, then playback triggers may change, depending upon the settings. See Timeline Playback and Track Sequence Settings for details.

NOTE: To make changes to the timeline, playback must be stopped. To stop playback:

- Click **Jump to First Transition Segment**.

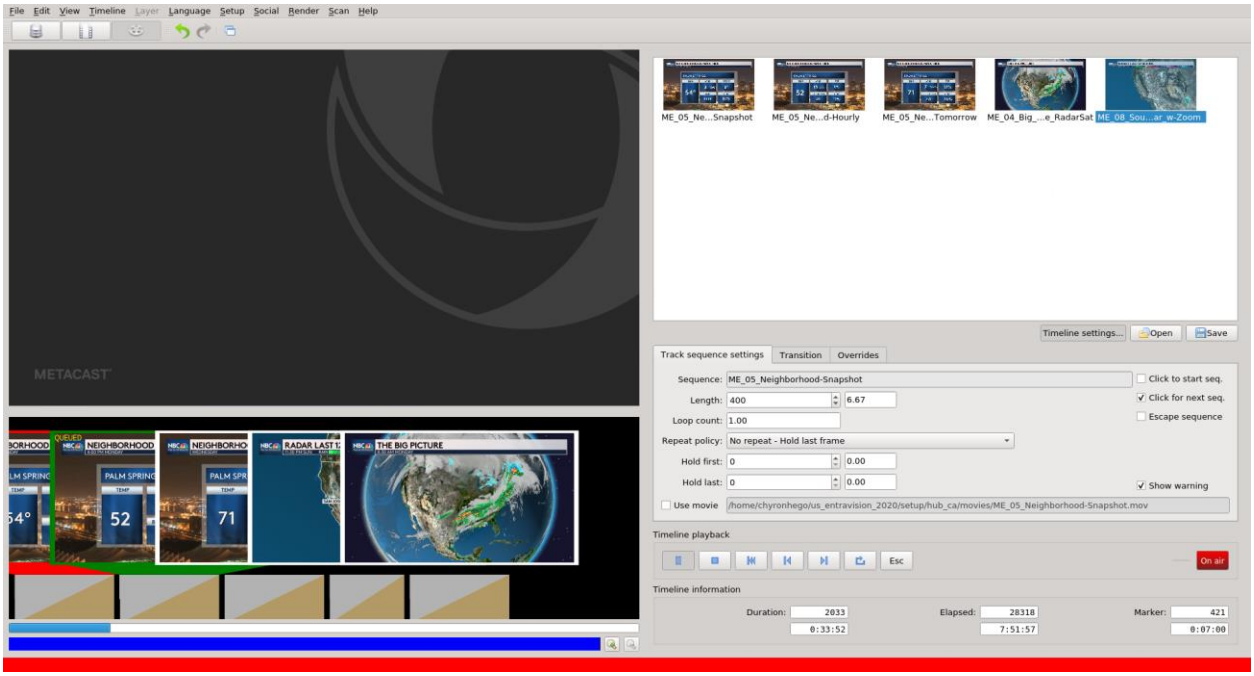
Go Live!

When it is time to go live:

1. If there is time prior to your presentation, then ensure that the **On air** button is blue, then preview the timeline playback to ensure that data is current and that none is missing.
2. Click the blue **On air** button.

The button changes to red, and a red stripe appears along the bottom of the interface.

3. Play the timeline as rehearsed. Playback is output to the configured air channel and does not display on the **Timeline Preview**.



Change Timeline Playback While on Air

Overview

You may need to suddenly shorten or lengthen your presentation while live on air, or present sequences out of order. When jumping to a sequence using the methods described in Jump to Sequence Later in the Timeline and Jump to Sequence Earlier in the Timeline:

- If **Click to Start Seq.** is disabled, then the selected sequence immediately plays.
- If **Click to Start Seq.** is enabled for the selected sequence, it will be necessary to click **Jump to Next Transition Segment** to trigger playback.

Jump to Sequence Later in the Timeline

Jump Ahead in the Timeline

To jump ahead in the timeline:

- Press "**+**" to increment through the timeline until the sequence that you would like to play displays a green frame, and "**QUEUED**" in the upper left corner.

Step Quickly through the Timeline

To step more quickly through the timeline:

1. Click **Jump to Next Transition Segment**.
2. Repeat step 1 as necessary.

Jump to Escape Sequence

If the timeline has not yet reached the sequence designated as the **Escape** sequence:

- Click **Esc**. The timeline jumps to the designated **Esc** sequence.

Jump to Sequence Earlier in the Timeline

Jump to Previous Sequence

To jump to a previous sequence in the timeline as it plays:

1. Press "-" (minus key) to decrement through the timeline until the sequence that you would like to play displays a green frame, and "**QUEUED**" in the upper left corner.
2. Click **Jump to Next Transition** segment to play the selected sequence.

Stop and Hold Playback, Jump to Previous Sequence

To stop and hold timeline playback, and jump to a previous sequence:

1. Click **Jump to Previous Transition Segment** until the sequence that you would like to play displays a green frame. The timeline stops playing and holds the video at its current position.
2. Click **Play** to play the selected sequence.

Stop and Hold Playback, Jump to Beginning of Currently Playing Sequence

To jump to the beginning of the currently playing sequence:

1. Click **Stop**.
2. Click **Play** to play the sequence.

Stop and Hold Playback, Jump to First Sequence

To stop and hold timeline playback, and jump to the first sequence in the timeline:

1. Click **Jump to First Transition Segment**.
2. Click **Play** to play the first sequence in the timeline.

Jump to Escape Sequence

If the timeline has passed the sequence designated as the **Escape** sequence:

- Click **Esc**. The timeline jumps to the first sequence in the timeline.

Loop the Timeline

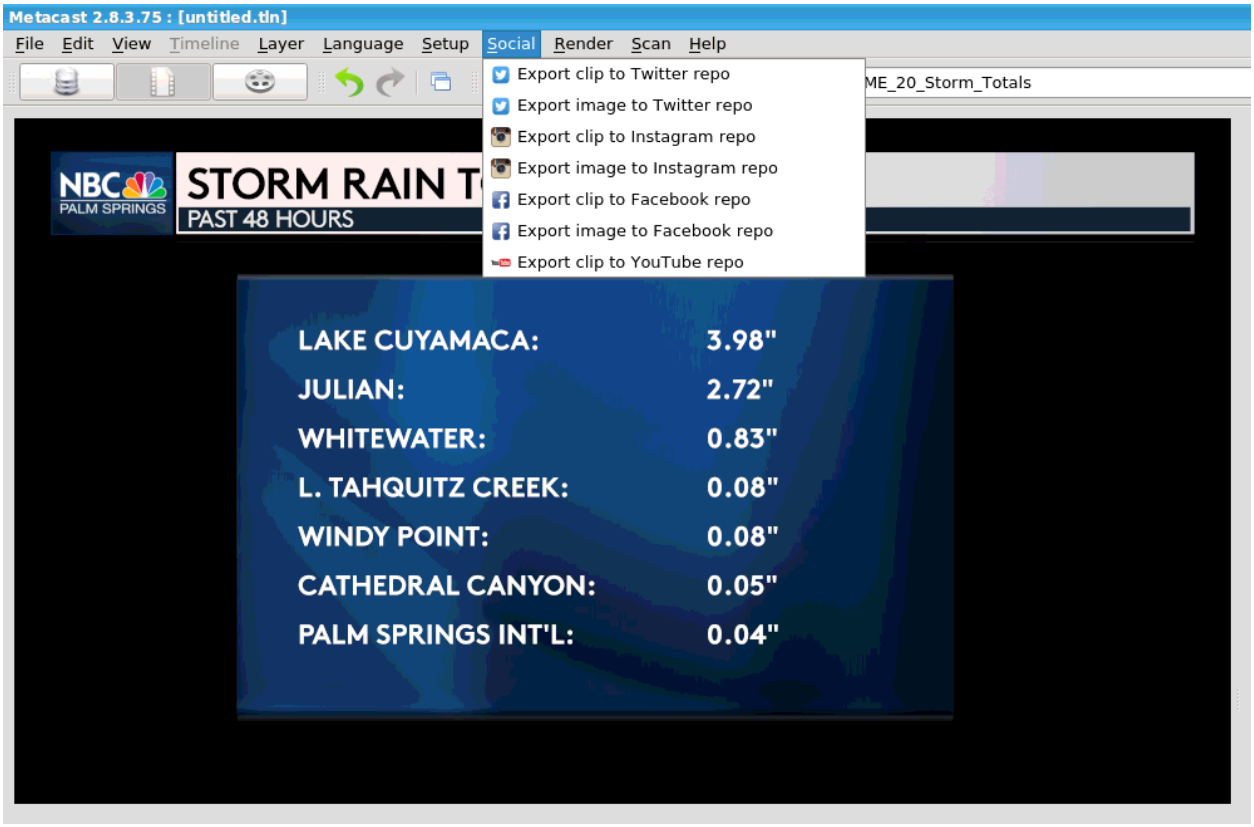
You activate looping while the timeline plays:

- Click **Loop**. After the last sequence in the timeline plays, the timeline jumps to the first sequence in the timeline.

Chapter 32: Export Weather Clips and Images to Social Media

You can post Weather clips and images graphics to social media. Once the clip or image is finalized:

1. On the menu bar, go to the **Social** menu, then select the desired media type/social media platform.



2. In the Save as dialog, save the file to the desired name, including typing the extension (e.g., ***.jpg**, ***.mov**) and location. It is ready to upload to the social media platform. The system automatically opens the default web browser to the selected application. If you are logged in to that app, then you can immediately post the image/movie.

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Chapter 33: Acronyms

The following table lists acronyms used in this document and in the application.

Acronym	Description
ARTCC	**A**ir **R**oute **T**raffic **C**ontrol **C**enters
CW	**C**ustom **W**eather
DEM	**D**igital **E**levation **M**odel
DET	**Det**ailed
DMA, DMAWDS	**D**igital **Ma**rine Weather, **D**igital **Ma**rine **W**eather **D**issemination **S**ystem
EXP	**Exp**anded
GFS	**G**lobal **F**orecast **S**ystem
HRRR	**H**igh **R**ange **R**esolution **R**adar
IEEE	**I**nstitute of **E**lectrical and **E**lectronics **E**ngineers
METAR	**Met**eorological **A**erodrome **R**eport
NAM	**N**orth **A**merican **M**esoscale Forecast System
NCEP	**N**ational **C**enters for **E**nvironmental **P**rediction
NDBC	**N**ational **B**uoy **D**ata **C**enter
NOAA	**N**ational **O**ceanic and **A**tmospheric **A**dministration
NOHRSC	**N**ational **O**perational **H**ydrologic **R**emote **S**ensing **C**enter
NWS	**N**ational **W**eather **S**ervice
PFF	**P**oint **F**orecast **F**ile
OGC	**O**pen **G**eospatial **C**onsortium
PO30DEM	Elevations in GTOPO30 are regularly spaced at 30-arc seconds (approximately 1 km).
QPF	**Q**uantitative **P**recipitation **F**orecast
SYNOP	**Synop**tic

Acronym	Description
TROWAL	**TRO**ugh of **W**arm **A**ir **AL**oft
USGS	**U**nited **S**tates **G**eological **S**urvey
WATWARN	**Warn**ings/**Wat**ches
WCS	**W**eb **C**overage **S**ervices
WFS	**W**eb **F**eature **S**ervices
WIP	**W**eather **I**mpact **P**laybook
WMS	**W**eb **M**eteorological **S**ervices - Links to **W**eb **F**eature **S**ervices.