AGUACEROWX IN-DEPTH GUIDE

Layer styles: colors, contours, wind and readouts

Every data layer can draw as a color fill, contour lines, values printed on the map and wind symbols, each with its own colors and fonts. This guide covers every control in a layer's Edit Layer panel and in Settings → Data, where you set one style for every layer of a variable. Use it to build broadcast-ready temperature maps, clean contour charts and your own color tables.

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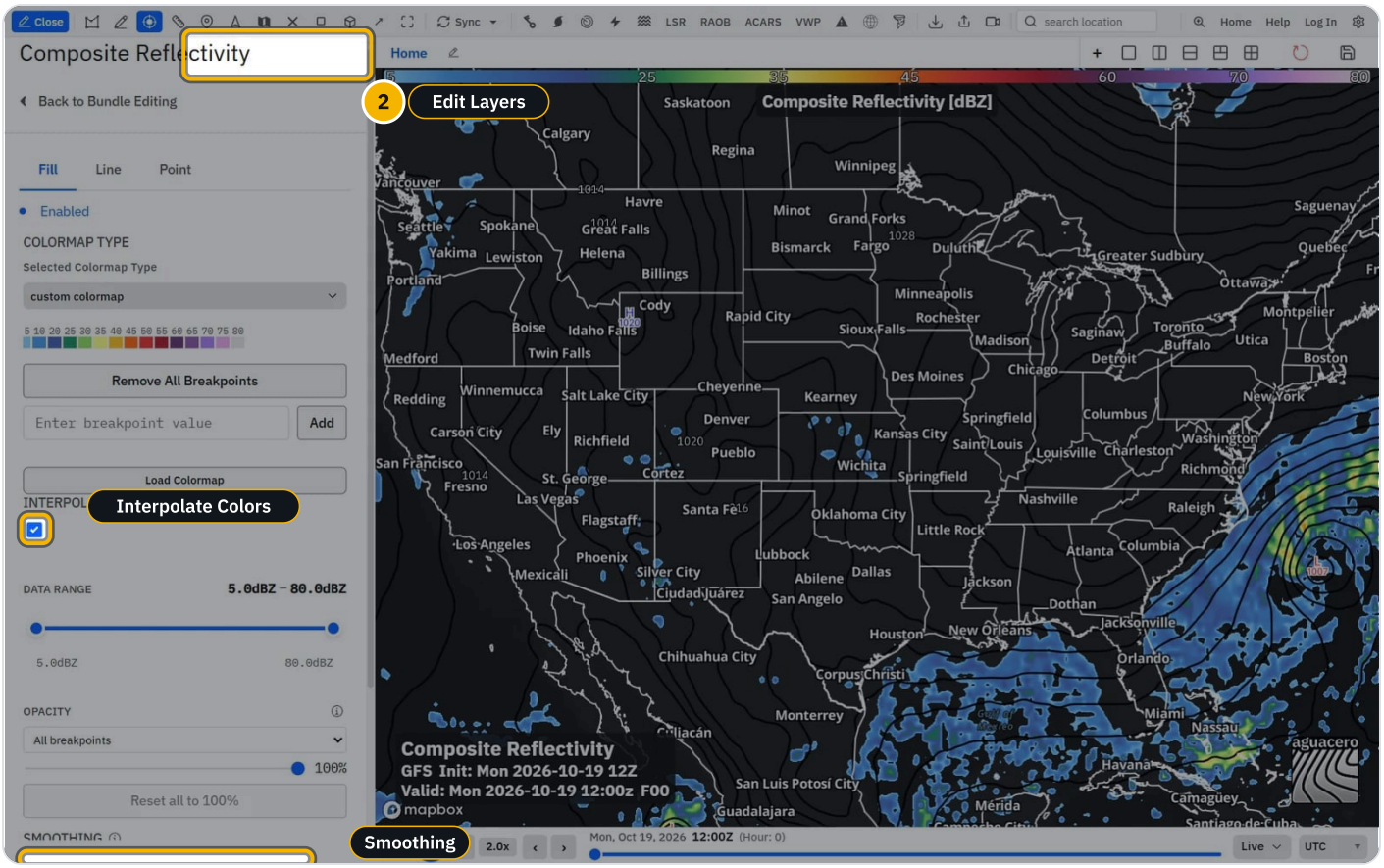
BEFORE YOU START

- Layer styles live in the sidebar: click **Edit Layers**, then **Edit Layer** on a layer row.
- Styling is on every plan. Frame blending and 3D cloud tops need Professional, custom fonts and custom High/Low icons need Professional, and the radar shadow needs Creator.
- Changes you make in Edit Layer belong to the bundle on that panel. Click **Save Bundle** to keep them.
- Sign in to save colormaps to your library, set default colormaps and use **Settings** → **Data**. Those save to your account and follow you to every device.

01 Open a layer’s style settings

Each layer has tabs for its drawing types: Fill, Line, Point and, on wind fields, Barb. Turn a type on, then style it on its tab.

1. Open the sidebar with **Edit** on the toolbar, or press `F1`.
2. Click **Edit Layers**. The bundle’s layers are listed.
3. On a layer row, click **Edit Layer**. You can also click the small data-type label above the layer’s variable name.
4. Click a tab such as **Fill**, **Line**, **Point** or **Barb**.
5. If the switch at the top of the tab reads **Disabled**, click it so it reads **Enabled**. A tab’s settings only show while it is enabled.
6. Change settings. The map updates as you go.
7. Click **Back to Bundle Editing** to return to the layer list, then click **Save Bundle** to keep your changes.



A layer’s Edit Layer panel open on its Fill tab.

TABS IN EDIT LAYER	
Fill	The color-filled field. Not shown on line-only products such as the 0 °C isotherms, or on hodograph and satellite layers.
Line	Contour lines and their labels. Not shown on radar, satellite or hodograph layers.
Point	Values printed on the map, on a grid or at cities. Not shown on line-only products, outlook and warning layers, custom layers, hodograph layers, or radar products other than precipitation estimates.
Barb	Wind barbs, vectors, streamlines or particles. Only on wind fields. On wave-direction and Q-vector layers the tab reads **Vector**. Not shown for ensemble statistics or fields that have no direction, such as NBM 10 m wind speed.

Hodograph	Hodographs plotted across the map. Only on hodograph plot layers.
SkewT	Small soundings plotted across the map. Only on Skew-T plot layers.
Satellite	Colors and recipes for a satellite layer. Satellite layers have no other tabs.
Enabled	The switch at the top of each tab. Click it to turn that drawing type on (**Enabled**) or off (**Disabled**). It does the same as the type pills on the layer row.
Back to Bundle Editing	Returns to the bundle's layer list.
Reset to Defaults	At the bottom of each tab. Puts that tab back to the app's built-in style for the variable. See "Where your styles are saved".

ON THE LAYER ROW	
Fill	Pill that turns the color fill on or off. Highlighted when on.
Line	Pill that turns contours on or off.
Point	Pill that turns printed values on or off.
Barb	Pill that turns wind symbols on or off. Only on wind fields.
Drag to reorder layer	The handle at the left of the row. Drag a layer up to draw it on top of the layers below it.
Hide layer on map	The eye button. Hides the layer without removing it from the bundle.

TIPS

- The first time you turn on a type, the layer copies the variable's built-in colormap for that tab, so each tab starts with sensible colors.
- Each tab has its own colormap. The Point tab colors the printed numbers and the Barb tab colors the barbs, independent of the fill.
- A layer can show several types at once, for example a temperature fill with contours and city values on top.

02 Edit a colormap

A colormap is a list of stops: a value and a color at each one. Add, move and recolor stops, and choose smooth blending or hard color bands.

1. Open **Edit Layer** and click the tab you want to color: **Fill**, **Line**, **Point** or **Barb**.
2. Set **Colormap Type** to **custom colormap**. The row of stops appears, each with its value above a color swatch.
3. Click a swatch to open the color picker and choose a new color.
4. Click a stop's number for its menu: **Edit Breakpoint**, **Remove Breakpoint**, **Add Breakpoint** and **Opacity**.
5. To add a stop, type a value in the box under the stops and click **Add**.
6. Turn **Interpolate Colors** on for smooth blending between stops, or off for hard bands.

COLORMAP CONTROLS

Colormap Type	**custom colormap** gives each stop its own color. **single color** paints the whole tab one color. Switching to **custom colormap** loads the variable's built-in colormap. Not shown on precipitation-type, outlook, custom and hodograph layers.
Color	In **single color** mode, the swatch that sets the one color.
Add	Type a value in the box under the stops, then click **Add** or press `Enter`. The new stop takes the blended color at that value. It shows "Please enter a valid number" or "This value already exists" when it can't add.

Remove All Breakpoints	Keeps only the first and last stop, after you confirm with **Remove All**. It can't be undone. Disabled when the colormap has two stops.
Interpolate Colors	On by default. Blends neighboring stops so values fade smoothly. Off draws a hard band from each stop to the next. Not shown on class-code grids such as MRMS precipitation flag, on radar hydrometeor classification, or on outlook layers.

A STOP'S MENU (CLICK ITS NUMBER)

Edit Breakpoint	Type a new value and click **Update** or press `Enter`. The stop keeps its color, opacity and width and moves into order. `Esc` cancels.
Remove Breakpoint	Deletes this stop. Only shown when the colormap has more than two stops.
Add Breakpoint	Opens a box to type a new stop's value, then click **Add**.
Opacity	This stop's opacity, 5–100% in steps of 5. Default 100%. Stops below 100% show their percentage under the swatch.
Width	Line tab only. The contour width at this stop, 0.1–10. A stop with its own width shows the number under the swatch.

COLOR PICKER

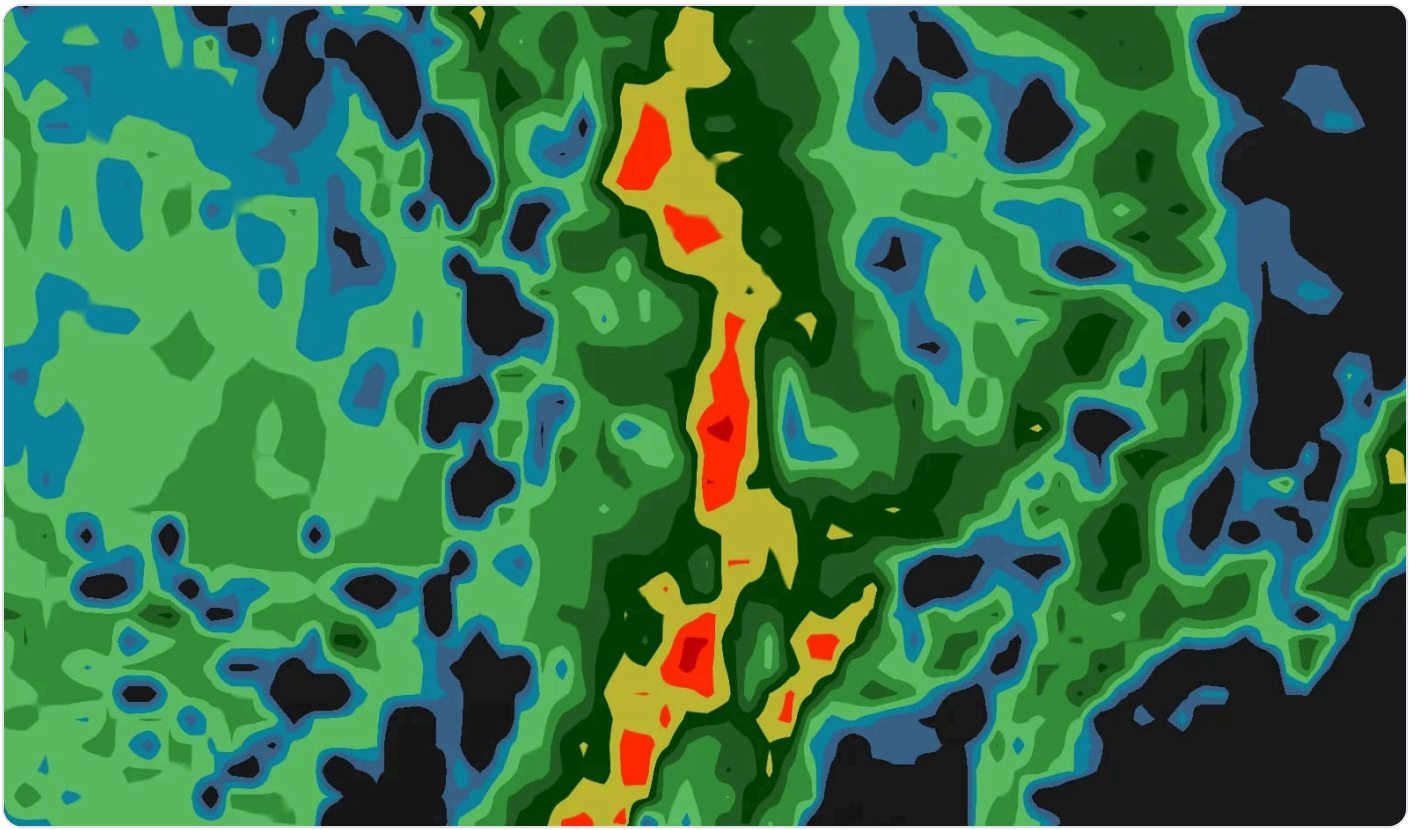
HEX	Type a color as #RRGGBB in the box, or click **HEX** to switch to **RGB** and type "R, G, B". Above the box, drag in the square for shade and along the bar for hue. The map updates as you drag.
Pick color from screen	The eyedropper button. Click it, then click anywhere on screen to copy that color. Only shown in browsers that support it.

SHORTCUTS

Enter	Add or update a stop from the value box
Esc	Clear the value box or cancel an edit

TIPS

- For a stepped scale such as precipitation totals, turn **Interpolate Colors** off and put a stop at each threshold.
- Very long colormaps, such as imported tables with hundreds of stops, scroll sideways under the stops box.
- To start over, set **Colormap Type** to **single color** and back to **custom colormap**, or click **Reset to Defaults**.



A hard-step colormap on a model precipitation field.

03 Show only part of the data

The Data Range slider hides values outside the range you pick, on fills, readouts, barbs and contours.

1. Open **Edit Layer** and the tab you want to limit.
2. Drag the left handle of **Data Range** up to hide low values, or the right handle down to hide high values.
3. The values at each end show above the slider.

SETTINGS

Data Range	Two handles that snap to the colormap's stops. Values below the left handle or above the right one are not drawn. On the Line tab it limits which contours draw; on the Barb tab, which wind speeds get a barb. Default: the whole colormap. In **single color** mode the handles snap to the variable's built-in stops.

TIPS

- Add a stop where you want a handle to stop, for example at 1 inch to show only heavier rain.
- Loading a saved colormap resets the range to that colormap's first and last stop.
- If a layer seems to have holes or missing values, check this slider first.

04 Fade a layer or part of its colors

Fade a whole tab, or only values above, below or between thresholds, so the basemap or lower layers show through.

1. Open **Edit Layer** and the **Fill**, **Point** or **Barb** tab.
2. With a **custom colormap**, find the **Opacity** panel further down the tab. Leave it on **All breakpoints** and drag the slider to fade the whole tab.
3. To fade only some values, choose **At or above**, **At or below** or **Between**, type the value (and **Upper** for Between), set the slider and click **Apply**.
4. Click **Reset all to 100%** to clear every fade.

SETTINGS	
Opacity	A single slider, shown in **single color** mode and on precipitation-type layers. Fades the whole tab, 0.05–1 in steps of 0.05. Default 1 (fully opaque). With a custom colormap it becomes the Opacity panel below.
All breakpoints	In the Opacity panel, the slider fades the whole tab, 5–100%.
At or above	Applies the slider's opacity to every stop at or above the value you type.
At or below	Applies it to every stop at or below the value.
Between	Applies it to every stop from **Value** to **Upper**.
Apply	Writes the opacity to the chosen stops. Shows "Enter a valid value" if a box is empty.
Reset all to 100%	Sets every stop and the whole tab back to 100%. Disabled when nothing is faded. **Custom** shows next to the panel title while any stop is faded.

TIPS

- The Line tab has no fade slider. To fade contours, click each stop's number and lower its **Opacity**.
- Drag a layer's handle in the layer list to change which layer draws on top.
- **Frame Blending** on the Fill tab of gridded layers cross-fades between times as a loop plays. It needs Professional, and Performance mode in **Settings** → **Performance** turns it off.

05 Save, load and share colormaps

Save a colormap to your library, load your own or other users' public colormaps, and make one the default for a variable.

1. Edit the colormap on a tab, then click **Save Colormap**.
2. Type a **Colormap Name**. Leave **Public** on to let other users find and use it, or turn it off to keep it private.

3. Click **Save Colormap**.
4. To use a saved colormap, click **Load Colormap** and click a card. It applies at once.
5. To make the current colormap your default for this variable, click **Set as default colormap**. The button reads **Saved as default** for a moment.

SAVE COLORMAP DIALOG	
Colormap Preview	The colors you are saving. The dialog also says which variable and units it saves for, and the other variables that share it (“It can also be used for”).
Colormap Name	Required. **Save Colormap** stays disabled until you type a name.
Public	On by default. Other users can see and use this colormap. Off keeps it in your own list only.

LOAD COLORMAP WINDOW	
Search saved colormaps...	Filters the list by name.
All Colormaps	The built-in **Default** colormap, your colormaps and every public colormap saved for this variable. Signed-out users see this list only.
My Colormaps	Only colormaps you saved. Each shows **Public** or **Private**.
Favorites	Colormaps you marked with the heart button.
Add to favorites	The heart button on a card. Click again to remove it.
Export as .pal file	The download button on a card. Saves the colormap as a .pal file with one “value R G B” line per stop. Not shown on phones.
Delete colormap	The trash button on your own cards.

DEFAULT BUTTONS	
Set as default colormap	Saves this tab's colormap, with its opacity and contour widths, as your account default for this variable from this data type (Model, MRMS, RTMA and so on are separate). New layers of the variable start with it. Bundles you load use it as set under **Apply customizations to** in **Settings** → **Data**.
Set as default color	The same in **single color** mode.

Sign in to see **Save Colormap** and **Set as default colormap**. **Load Colormap** works signed out.

TIPS

- Saved colormaps belong to a variable's colormap group, so a CAPE colormap shows up for surface-based, mixed-layer and most-unstable CAPE alike.
- Each card shows the units it was saved in. Values convert to your layer's units when you apply it.
- To make one colormap the default for a whole group of variables, use **Colormap groups** in **Settings** → **Data**.
- On a computer you can drag the Load Colormap window by its title. It opens in the same place next time.

06 Import .pal palettes and Wx Tools color tables

Paste or open a GRLevelX-style .pal file, or open a color table shared from Wx Tools, and apply it to a layer.

1. Open **Edit Layer**, then the tab to color, and set **Colormap Type** to **custom colormap**.
2. Click **Load Colormap** and open **Import .pal file**.
3. Paste the palette text into the box and click **Apply .pal**, or click **Choose .pal file**. You can also drop a .pal or .txt file on the section.
4. Check the colors on the map, then click **Save Colormap** if you want to keep it in your library.

These formats import:

TIPS

- “value R G B”, one stop per line with 0–255 color numbers. A fifth number is alpha (0 hidden, 255 opaque) and sets the stop’s opacity.
- “value #RRGGBB”, one stop per line with a hex color.
- GRLevelX, Wx Tools and RadarScope “Color:” and “Color4:” lines, which ramp to the next stop. Color4 carries alpha, and a second color on the line sets the end of the ramp.
- “SolidColor:” and “SolidColor4:” lines, which hold one color from that value up to the next, for hard bands.
- JASC-PAL paint-program palettes. Their colors land on stops 0, 1, 2 and so on.
- Lines starting with ;, # or ! are skipped. Very dense, evenly spaced tables (512 stops or more) are thinned to fewer stops with no visible change.

A Wx Tools color table link opens the app at /palette. The app switches to the matching radar product (**Reflectivity**, **Base Velocity (BV)**, **Correlation Coefficient (CC)** or **Spectrum Width (SW)**) and applies the table to every matching layer. If you are signed in, it also becomes your default for that product on radar, MRMS and model layers. The desktop app opens the same links.

TIPS

- .pal values are used as written. Switch the layer’s **Units** to the palette’s units before you import.
- If a Wx Tools link can’t download or read its table, a window opens where you can paste the table and click **Parse paste**, click **Retry download**, or click **Choose file**.

Import .pal file isn’t shown on phones. If the text can’t be read you see “Could not parse .pal format”; a dropped file must end in .pal or .txt.

07 Change units

Switch a layer between units such as °F and °C, or inches and millimeters. The colormap converts with it.

1. Open **Edit Layer** on the layer.
2. Open **Units** at the top of the tab and choose a unit.

SETTINGS	
Units	Only shown when the variable has more than one unit. Converts the stops and data range on every tab of the layer. Signed in, your choice also becomes your default unit for that variable, so new layers of it use the same unit. Infrared and water vapor satellite layers offer °C or K.
Show units on readouts	On the Point tab, adds the unit after each printed value. See “Plot values on the map”.

TIPS

- To set Imperial or Metric for every variable at once, use **Settings** → **Data** → **Units**.

08 Smooth a blocky field

Blend between grid points so a coarse model fill looks smooth, or turn smoothing off to see each grid cell.

1. Open **Edit Layer** and the **Fill** tab (or the **Satellite** tab).
2. Drag **Smoothing** to the right for a smoother field, or all the way left for **Off**.

SETTINGS	
Smoothing	Five steps: **Off**, 0.25, 0.50, 0.75 and 1.00. Off shows each grid cell. 0.25 blends between grid points; higher steps blur the field more. Default 0.25 on gridded fills and Off on satellite. Shows **n/a** on class-code grids such as MRMS precipitation flag.
Frame Blending	Fill tab of gridded layers. Cross-fades between times during playback. Needs Professional; turning it on without it opens the upgrade window.

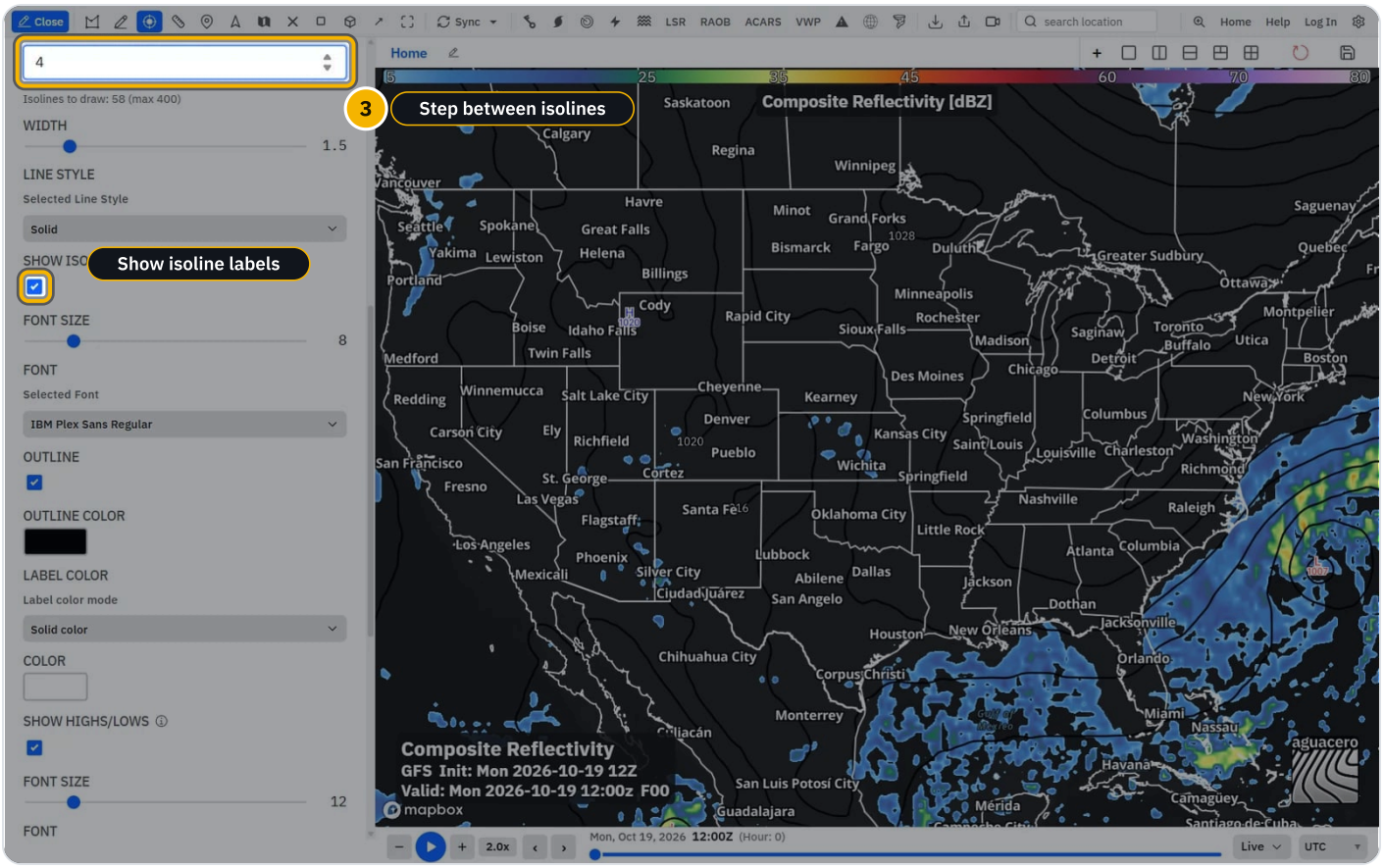
TIPS

- In Performance mode (**Settings** → **Performance**), **Smoothing** becomes a single checkbox that uses the 0.25 step.
- Contour lines are smoothed for each model on their own. There is no per-layer contour smoothing control.
- Radar layers have their own **Smoothing** slider for the radar gates. See the NEXRAD guide.
- **Settings** → **Data** → **Layer styles** → **Fill** → **Smoothing** sets one amount for every variable of a data type.

09 Draw contours

Draw any field as contour lines, at the built-in spacing, every N units or at exact values you type, with your own width, dash and colors.

1. Turn on the **Line** pill on the layer row, or open **Edit Layer**, click **Line** and set it to **Enabled**.
2. Choose **Contour intervals**: **Field defaults**, **Uniform step** or **Custom levels**.
3. For **Uniform step**, type the spacing in **Step between isolines**, in the layer's units.
4. For **Custom levels**, type values in **Isoline values**, separated by commas, and click **Apply**.
5. Check the line under it: **Isolines to draw** shows how many contours will draw, up to 400.
6. Set **Width** and **Line Style**, and the colors with **Colormap Type**.



The Line tab with Uniform step contour spacing and label settings.

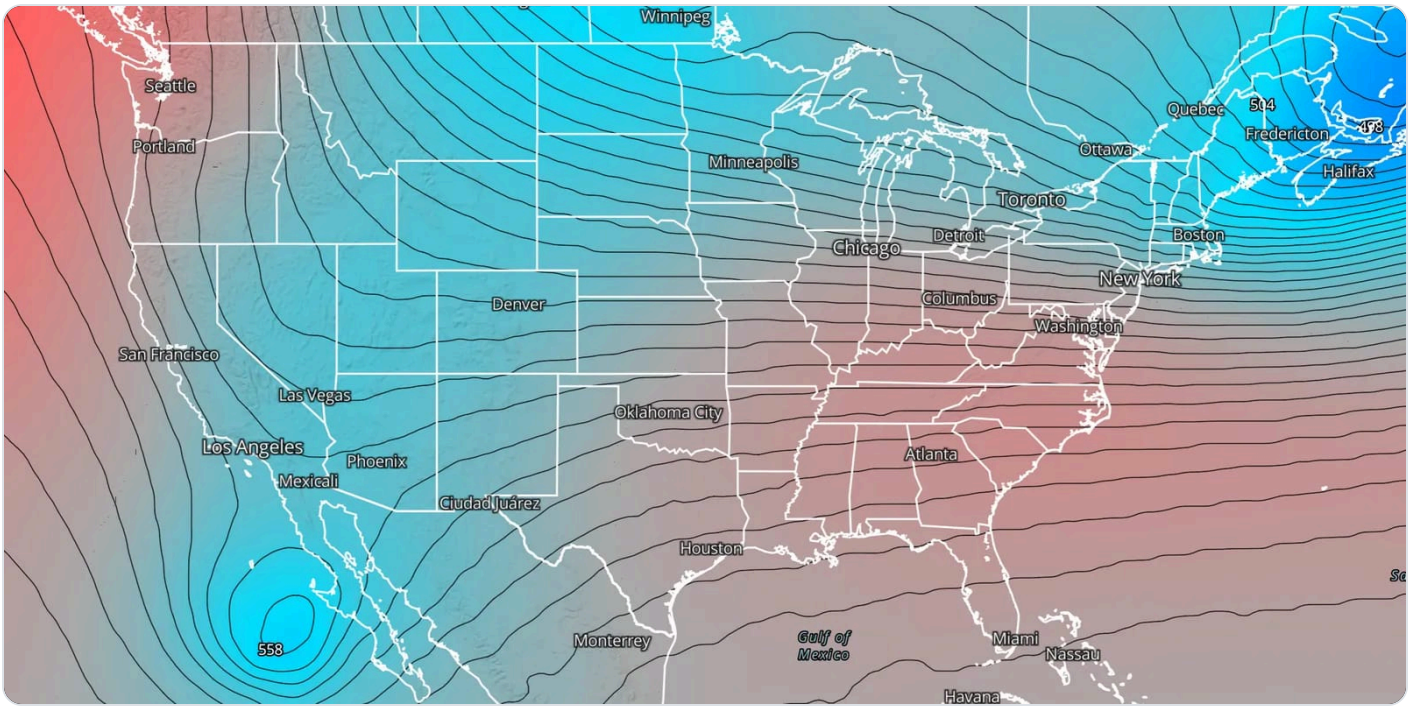
CONTOUR LINES	
Colormap Type	**custom colormap** colors each contour by its value. **single color** draws every contour in one color. Sea-level pressure starts all black.
Contour intervals	**Field defaults** (the default) uses the variable's built-in spacing, for example every 3 dam for 500 mb heights. **Uniform step** draws a contour at every multiple of a step. **Custom levels** draws only the values you type.
Step between isolines	Uniform step only. Any positive number in the layer's units. Contours draw at multiples of the step between the first and last stop of the Line colormap.
Isoline values	Custom levels only. Values separated by commas, spaces, semicolons or new lines, for example 980, 985, 990. Click **Apply** to use them.

Isolines to draw	How many contours the current settings draw, with a maximum of 400. When something is wrong it shows a red message instead, such as “Too many contour levels” or “No isolines fall in the selected line range”.
Width	Line thickness, 0.1–10. Default 1. With a custom colormap this becomes a **Width** panel with **All breakpoints**, **At or above**, **At or below** and **Between**, an **Apply** button and **Reset all to 1**.
Line Style	**Solid** (default), **Dashed**, **Dotted** or **Dash-Dot**.
Data Range	Only contours inside the range draw, in every interval mode.

To make one value stand out, such as the 540 dam line or the freezing line, give it its own color and width. Use a **custom colormap**, add stops at that value and at the next contour above it, click the value’s number and raise **Width**, and turn **Interpolate Colors** off so the width and color stop at the next stop.

TIPS

- “Too many contour levels” means more than 400 lines. Raise the step or narrow **Data Range**.
- Line-only products such as the 850 mb 0 °C isotherm have no Fill tab.
- Contours have no fade slider. Lower a stop’s **Opacity** in its menu instead.



A model anomaly field with contours over North America.

10 Style contour labels and highs and lows

Choose the font, size, outline and color of contour labels, and style the H and L centers on sea-level pressure.

1. Open **Edit Layer** and the **Line** tab.
2. Leave **Show isoline labels** on, then set **Font Size**, **Font** and **Outline**.
3. Under **Label color**, choose **Solid color** and pick a **Color**, or **Follow colormap** to match each line.
4. On sea-level pressure, use **Show Highs/Lows** and the settings under it.

CONTOUR LABELS	
Show isoline labels	On by default. Prints each contour’s value along the line.
Font Size	5–24. Default 8.
Font	Any app font, plus fonts you upload in **Settings** → **Fonts** (Professional), listed first. New layers use your **Default font** from **Settings** → **Appearance**.

Outline	On by default. Draws a halo around the label text.
Outline Color	The halo color. Default black.
Label color	**Solid color** (default) uses one color. **Follow colormap** colors each label like its contour.
Color	Solid color only. Default white.

HIGHS AND LOWS (SEA-LEVEL PRESSURE ONLY)	
Show Highs/Lows	On by default. Marks the high and low pressure centers found in the pressure grid.
Font Size	Size of the H and L, 5–50. Default 12.
Font	Font for the H and L.
High Pressure Color	Default blue.
Low Pressure Color	Default red.
Custom High/Low icons	Professional. Upload your own PNG, JPEG, WebP, SVG or GIF images for the High and Low markers. They also replace the markers on WPC surface analysis. Sign in to upload.
Show Stroke	On by default. Outlines the H and L.
Stroke Color	Default white.
Stroke Width	0.5–10 in steps of 0.5. Default 2.

11 Plot values on the map

Print the field's values on a regular grid or at cities, with the decimals, units and spacing you want.

1. Turn on the **Point** pill on the layer row.
2. Click **Edit Layer**, then the **Point** tab.

3. Under **Readout Type**, click **Switch to City** to print values at cities, or leave it on grid and set **Point Distance**.
4. Set **Font Size**, **Decimal Places** and, if you want them, **Show units on readouts**.
5. Color the numbers with the tab's colormap, or set **Colormap Type** to **single color** for one color.

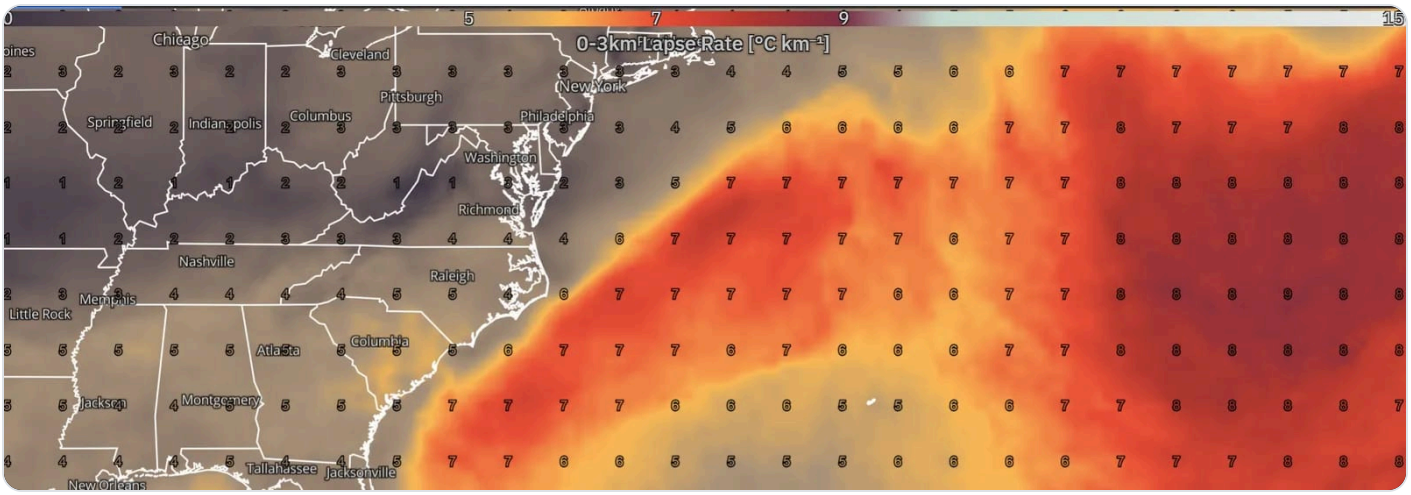
WHERE VALUES GO	
Readout Type	Click **Switch to City** or **Switch to Grid**. **Current** shows the mode. Grid (the default) prints values at evenly spaced grid points. City prints them at the place names the basemap shows and at your name markers.
Point Distance	Grid only. Spacing between values, 40–200 in steps of 10. Default 50. Higher values thin the grid.
City readout vertical offset	City only. Moves values up or down from the place name, −50 to 50 px. Default 0.
Allow point overlap	Off by default, so a city value hides when it would sit on another city's value or name. On draws every value.

THE NUMBERS	
Font Size	5–50. Default 12.
Decimal Places	0–2. Default 0, except precipitation totals (1) and WPC QPF (2).
Show units on readouts	Off by default. Adds the unit after each value, such as 72°F.
Degree symbol only (hide °C / °F / K)	Temperature layers with units shown. Prints 72° instead of 72°F.
Colormap Type	Values take their color from the Point tab's colormap. **single color** prints them all in one color.
Data Range	Values outside the range are not printed.

Opacity	Fades every value, 0.05–1. With a custom colormap, use the Opacity panel instead.

TIPS

- City values follow the basemap's labels. Show more places under **Map style** → **Labels** → **Cities**, or zoom in.
- To print the highest and lowest value in view, open **Select Data** → **Layout** → **On-map text** and turn on **Show viewport min/max**.
- A highlight area (Professional) with **Hide labels outside highlight** drops values outside the area.
- Radar precipitation estimates and WPC QPF can also print values. WPC QPF starts in inches with 2 decimals.

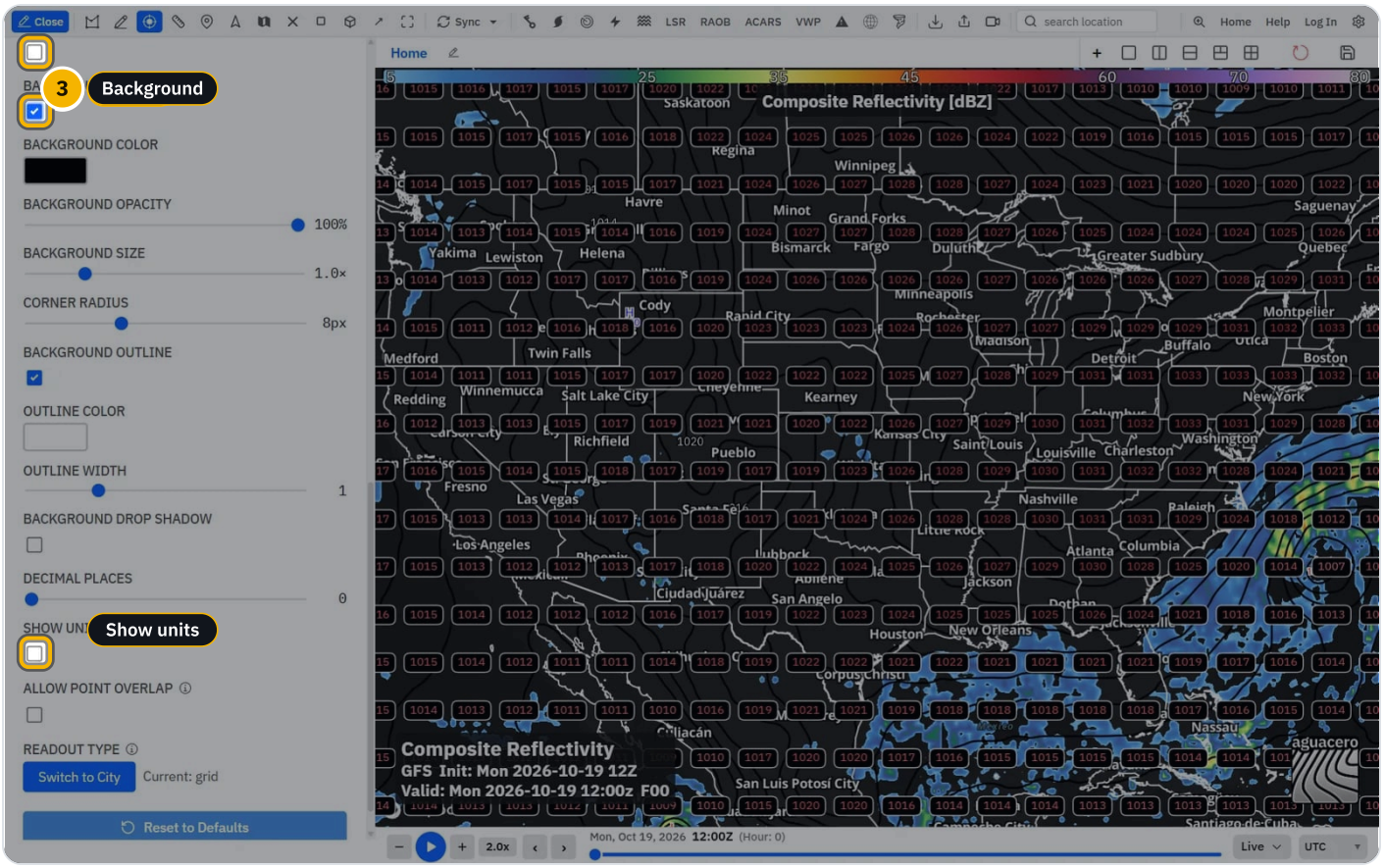


0–3 km lapse rates with grid point values.

12 Style the printed values

Give values a font, weight, outline, background box and drop shadow so they read on any basemap.

1. Open **Edit Layer** and the **Point** tab.
2. Pick a **Font** and tick **BOLD** if you want it heavier.
3. Leave **Stroke** on for a halo, or tick **Background** for a box behind each value.
4. Tick **Drop shadow** to lift the text or box off the map.



The Point tab's stroke, background and units settings.

TEXT	
Font	Any app font, plus your uploaded fonts. New layers use your **Default font**.
BOLD	Heavier text. Off by default.
Stroke	On by default. A halo around each value.
Stroke Color	Default black.
Stroke Width	0.5–10 in steps of 0.5. Default 2.

BACKGROUND BOX	
Background	Off by default. Draws a box behind each value.

Background Color	Default black.
Background Opacity	0–100%. Default 75%.
Background Size	Box padding, 0.5–3×. Default 1.0×.
Corner Radius	0–24 px. Default 8 px. 0 gives square corners.
Background Outline	On by default. A border around the box.
Outline Color	Default white.
Outline Width	0–4 in steps of 0.25. Default 1.

DROP SHADOW	
Drop shadow	Off by default. Reads **Background drop shadow** when the box is on, and then shadows the box.
Shadow Color	Default black.
Shadow Opacity	0–100%. Default 55%.
Shadow Blur	0–16 px in steps of 0.5. Default 3 px.
Shadow Distance	0–16 px. Default 2 px.
Shadow Angle	0–360° in steps of 5. Default 45°.

13 Barbs, vectors, streamlines and particles

Draw wind as barbs or arrows on a grid or at cities, as static flow lines, or as animated particles, colored by speed if you like.

1. Turn on the **Barb** pill on a wind layer.
2. Click **Edit Layer**, then the **Barb** tab.
3. Choose **Wind display**: **Barbs**, **Vectors**, **Streamlines** or **Particles**.

4. For barbs and vectors, set **Barb Size**, **Barb Distance** and **Width**, and the **Readout Type**.
5. For particles, set **Particle density**, **Particle length**, **Particle speed** and **Speed exaggeration**.
6. To color by speed, set **Colormap Type** to **custom colormap**.

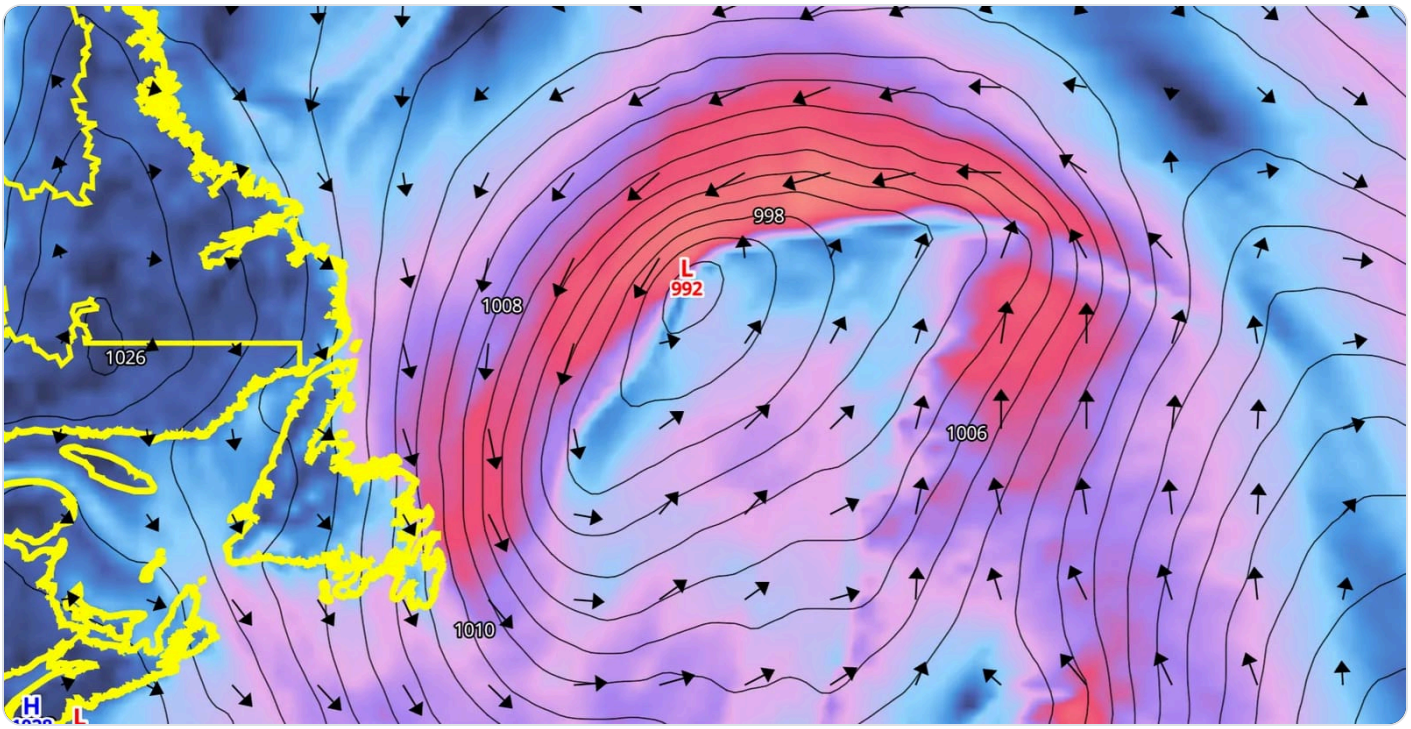
BARBS AND VECTORS	
Wind display	**Barbs** (default) are standard wind barbs. **Vectors** are arrows. **Streamlines** are static flow lines. **Particles** are animated tracers. Wave-direction layers show **Wave display** with **Vectors** and **Particles**. Q-vector layers have no menu.
Barb Size	10–70. Default 25. Reads **Vector Size** on wave and Q-vector layers.
Barb Distance	Grid only. Spacing, 40–200 in steps of 10. Default 50. Higher thins the barbs. Reads **Vector Distance** on wave and Q-vector layers.
Width	Line thickness of barbs and arrows, 0.1–10. Default 1.
Opacity	0.05–1. Default 1. Also fades streamlines and particles. With a custom colormap, use the Opacity panel instead.
Colormap Type	Barbs start in **single color** black. **custom colormap** colors barbs, arrows, streamlines and particles by wind speed.
Data Range	Speeds outside the range get no barb.
Readout Type	Barbs and vectors only. **Switch to City** plots one barb at each place name; **Switch to Grid** goes back to the grid.
City readout vertical offset	City only. −50 to 50 px. Default 0.

STREAMLINES AND PARTICLES	
Streamline spacing	Streamlines only. Distance between flow lines, 40–200. Default 50.

Particle density	Particles only. How many tracers draw, 0.25–4×. Default 1.00×. Lower is cleaner and lighter on the computer.
Particle length	Length of each tracer’s trail, 0.25–3×. Default 0.50×.
Particle speed	Overall animation speed, 0.25–8×. Default 1.00×.
Speed exaggeration	0–3×. Default 1.00×. At 0 every tracer moves at the same pace; higher values make stronger winds race ahead of light winds.
Save as wind display default	Streamlines and particles. Saves the length, speed and density as your account default, and the current display as the default for this data type. Every bundle you load then uses them, unless **Wind** in **Settings** → **Data** is set to **Bundle/Variable**. Shows **Saved**. Sign in first.

TIPS

- In Performance mode (**Settings** → **Performance**), particles draw as still streamlines.
- **Settings** → **Data** → **Layer styles** → **Wind barbs & vectors** → **Wind** sets one display for every wind layer of a data type.
- A wind field can show its speed as a fill and barbs at once: turn on both its **Fill** and **Barb** pills. To put barbs over another field, add the wind as its own layer above it and turn its **Fill** pill off.



Wind vectors around a North Atlantic low.

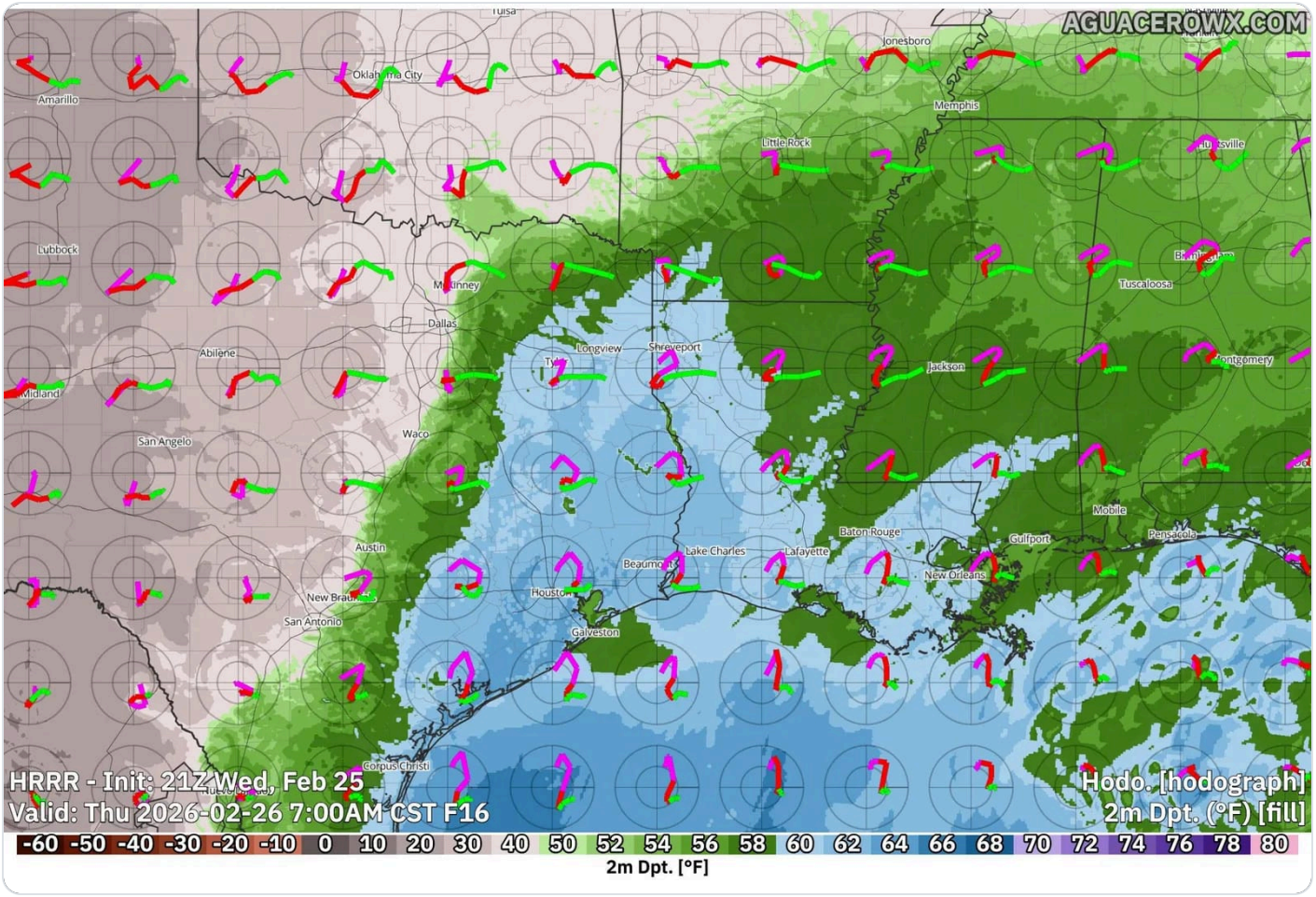
14 Precipitation type, map plots, radar and other layers

Some layers swap the usual tabs for their own controls. Here is what changes and where each is covered.

PRECIPITATION TYPE AND MAP PLOTS	
Full Precipitation Type Colormap	Precipitation-type layers split their colors into **Rain**, **Snow**, **Freezing Rain** and **Ice Pellets** groups. Each group has its own **Save** and **Load** buttons, and the top row saves or loads all four at once. There is no Colormap Type or value box; click a stop's number to edit it.
Hodograph Size	Hodograph tab. Size of each plot, 5–50. The tab also has **Opacity** and **Background Color**.
Hodograph Distance	Spacing between hodographs, 40–200 in steps of 10.
SkewT Size	SkewT tab. Size of each small sounding, 5–50.
SkewT Distance	Spacing between soundings, 40–200 in steps of 10.

TIPS

- Radar layers add the site's elevation buttons, gate **Smoothing**, **Shadow** (Creator) and **Frame Blending** (Professional). Velocity products add **Show range-folded gates**, and storm-relative velocity adds **Storm-relative motion**. Radar has no Line tab.
- Satellite layers have one **Satellite** tab with recipes, a colormap on infrared and water vapor bands, **Smoothing** (default Off) and **3D cloud tops** (Professional).
- SPC, WPC, CPC and similar outlook layers replace the Fill and Line tabs with their own color editor. Their colors also live in **Settings** → **Data** → **NOAA**.
- Custom shape layers have their own colors, outline and labels, plus **Enable Reverse Mask** to dim everything outside the shape.
- Ensemble layers add **Field Options** for the statistic, probability and members. See the Models guide.

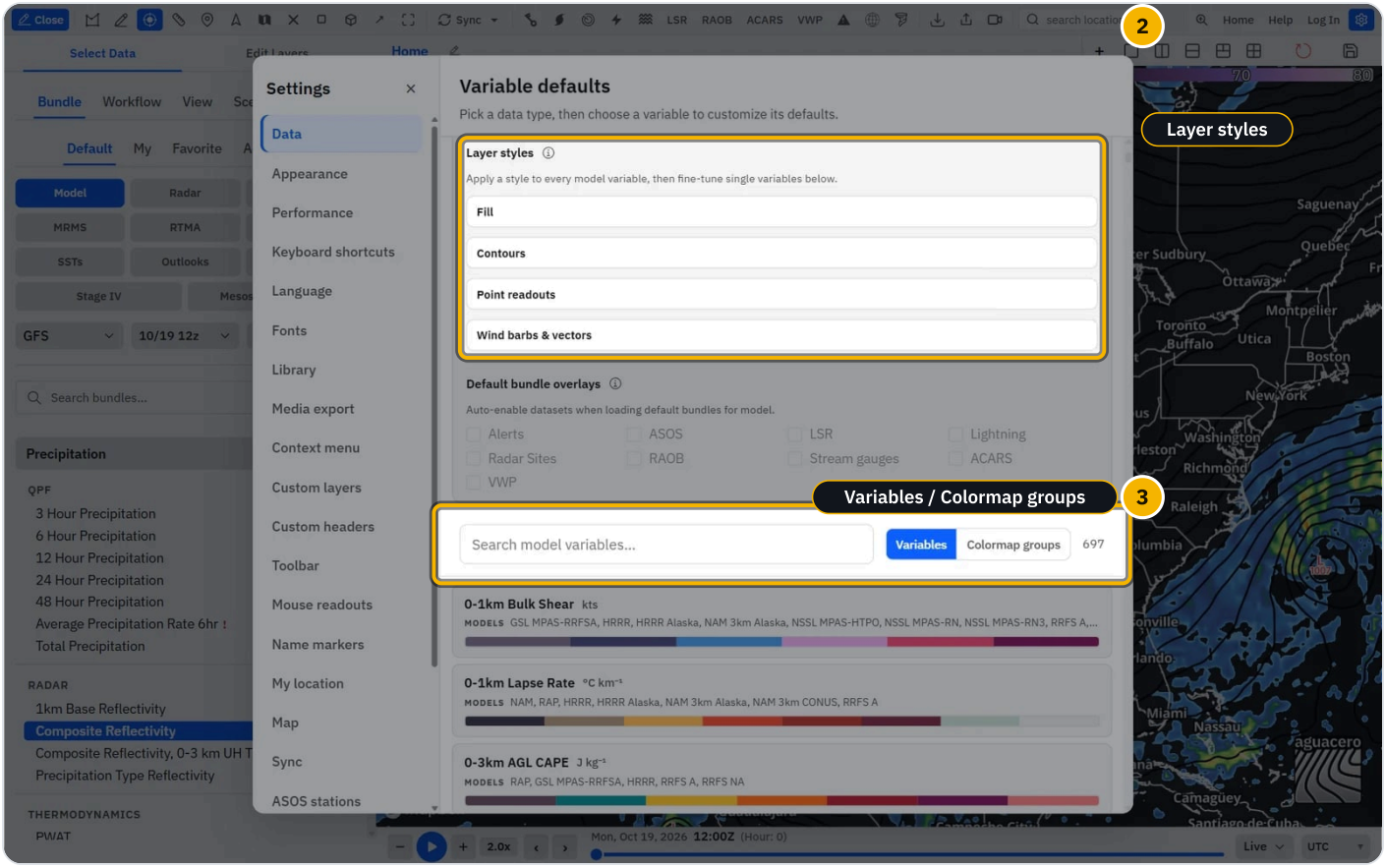


HRRR hodographs plotted across the map over 2 m dew point.

15 Set a style for every layer of a variable

Settings → Data holds your default style for each variable. Every new layer of that variable starts with it, and you choose whether bundles you load use it too.

1. Click **Settings** (gear) on the toolbar. The Settings window opens on **Data**.
2. Pick a data type tab, such as **Model**, **Radar**, **MRMS** or **Satellite**.
3. Search for a variable and click its card.
4. Style it on the same **Fill**, **Line**, **Point** and **Barb** tabs as Edit Layer.
5. Changes save to your account a moment after you stop, and matching layers already on the map update.
6. Click the back arrow (**Back to all variables**) to return to the list.



Settings → Data with its data type tabs, Layer styles and the variable search.

The data type tabs are **Model**, **Radar**, **MRMS**, **RTMA**, **Mesoscale Analysis**, **Stage IV**, **NDFD**, **CRW**, **CDAS**, **ARMOR3D** and **Satellite**, each with its variable count. Each data type keeps its own defaults, so MSLP on Model and MSLP on RTMA are set separately. **NOAA**, **Tropical**, **Nadocast** and **DAT** open their own color settings.

VARIABLE LIST	
Search model variables...	Filters the list. The placeholder names the data type you are on, and reads **Search colormap groups...** in the groups view.
Variables	One card per variable, with its units, the models that carry it and a preview of its colors.
Colormap groups	One card per group of variables that share a colormap, such as all CAPE fields. Edit the group's colormap once for all of them.
Choose colormap...	On a group card. Opens the colormap picker with **All**, **Mine** and **Favorites** tabs, the **Built-in** colormap and **Import .pal file**. What you pick becomes the default for every variable in the group.
Reset colormap	On a group card you changed. Puts the group back to the built-in colormap.

ONE VARIABLE	
Available models	Model variables only. The models that carry the variable, by category.
Colormap group:	A banner that names the variable's group and lists the variables in it. Only shown when the variable shares its colormap with others.
Apply colormap to group	Copies this variable's colormap to every variable in its group. Reads "Applied to" with the number of variables when it is done.
Enabled	Shown on a tab when the variable has more than one drawing type. Sets which types a new layer of the variable starts with. Bundles you load keep their own mix.
Reset to defaults	In the header. Clears everything you saved for this variable. Disabled when you saved nothing.

Sign in to use Data Defaults. Signed out, the controls are disabled and a variable shows "Log in to save variable defaults to your account."

16 Apply one style to a whole data type

Set units, smoothing, wind display, readout style and contour style for every variable of a data type at once, and choose which bundles your defaults reach.

1. Open **Settings** → **Data** and pick a data type tab.
2. Under **All datasets**, choose **Units** and **Apply customizations to**.
3. Open **Layer styles**, then a group such as **Contours** or **Point readouts**, and change a setting. It saves into every variable of the data type.
4. Open a single variable afterwards to set it differently.

ALL DATASETS	
Units	**Imperial** or **Metric** for every variable of every data type. **Bundle/Variable** keeps each variable's own unit.
Apply customizations to	**Default bundles** (the default): your per-variable styles and colormaps apply when you load built-in bundles; your own saved bundles keep their look. **All layers/bundles**: they also apply to your saved and startup bundles. **All layers/bundles (colormaps only)**: colormaps apply everywhere, other per-variable styles only on built-in bundles. **Interpolate colors** set under **Layer styles** applies to every bundle whichever you pick, like smoothing.
Reset customizations	Next to the data type name. After you confirm, clears every saved customization for that data type: colormaps, units, smoothing, display settings and default bundle overlays. It can't be undone.

LAYER STYLES	
Fill	**Smoothing** (**Custom** with a slider, or **Bundle/Variable**), **Interpolate colors**, **Opacity** (5–100%), plus **Frame blending** (Professional), **3D cloud tops** on satellite (Professional) and **Shadow** on radar (Creator).

Contours	**Interpolate colors**, **Width**, **Line style**, **Labels**, **Label font size**, **Label font**, **Label outline**, **Label outline color**, **Label color** (**Solid** or **Follow colormap**) and **Label solid color**.
Point readouts	**Points** (**Gridded**, **City** or **Bundle/Variable**), **Point overlap**, **Show readouts**, **Interpolate colors**, **Font size**, **Font**, **Bold**, **Stroke**, **Stroke color**, **Stroke width**, **Background**, **Background color**, **Background opacity**, **Drop shadow**, **Point distance**, **Show units** and **City readout offset**.
Wind barbs & vectors	**Wind** (**Barbs**, **Vectors**, **Streamlines**, **Particles** or **Bundle/Variable**), **Barb size**, **Barb distance**, **Width**, **Opacity**, **Readout** (**Grid** or **City**) and **City readout offset**. The **Wind** row shows on Model, RTMA, Mesoscale Analysis and NDFD.
Mixed	Shows when the variables use different values. Picking a value sets it on all of them. A status line says how many variables changed.

TIPS

- Smoothing, wind display, frame blending, shadow and point settings always apply when you load a bundle. Pick **Bundle/Variable** on those to leave layers as they are.
- Colormaps, data ranges, contour levels and decimal places stay per variable. Use **Colormap groups** or a variable's own colormap for those.
- If a bundle you saved "keeps changing colors" when you load it, check **Apply customizations to**.
- **Default bundle overlays** on the same page picks which toolbar overlays turn on with built-in bundles of each data type.

17 Where your styles are saved

Layer edits live in the bundle; colormaps, defaults and units live on your account.

TIPS

- Edit Layer changes are stored on the layer, in the bundle on that panel. They last until you load another bundle or reload the app. Click **Save Bundle** to keep them. Saving bundles needs an account: Free saves 10, Enthusiast 20, Professional and up unlimited.
- Saved colormaps go to the colormap library on your account, per variable group. Public ones are visible to every user.
- **Set as default colormap**, Data Defaults, **Save as wind display default** and colormap favorites are stored on your account and follow you to every device you sign in on. Data Defaults save as you edit.
- Changing a layer's **Units** while signed in also saves your default unit for that variable on your account.

WHAT RESET TO DEFAULTS RESTORES

Fill	The variable's built-in colormap and data range, opacity 1, **Smoothing** 0.25 and **Interpolate Colors** on.
Line	Built-in colormap, **Width** 1, **Solid** lines, **Field defaults** spacing and the default label style. Highs and lows go back to blue and red with a white stroke.
Point	Built-in colormap, font size 12, **Point Distance** 50, grid readouts, the default stroke, no background or shadow, units hidden and the variable's default decimals.
Barb	Black barbs, **Barb Size** 25, **Barb Distance** 50, **Width** 1, grid readouts and your data type's default wind display (or **Barbs**).

Reset to Defaults uses the app's built-in style, not your Data Defaults, and keeps the layer's units. To start from your own defaults, delete the layer and add it again.

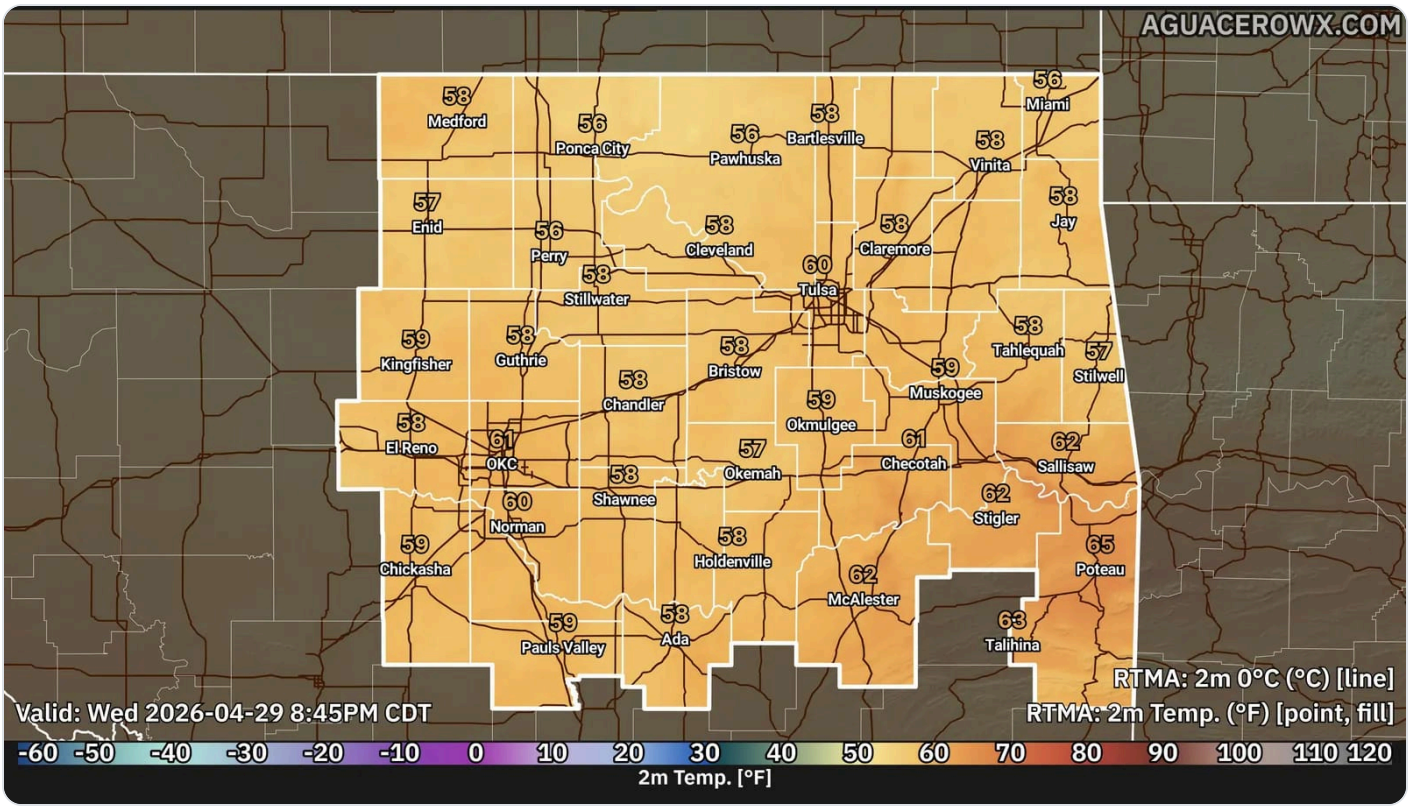
18 Recipe: a broadcast-style temperature map with smooth colors and city values

A smooth 2 m temperature fill with bold, outlined city temperatures, ready for air.

1. In **Edit Layers**, click **Add Layer** and add **2m Temperature** from a model such as the HRRR.
2. Click **Edit Layer**. On the **Fill** tab, leave **Colormap Type** on **custom colormap** and **Interpolate Colors** on, and set **Smoothing** to 0.75.
3. Optional: load a TV-style palette with **Load Colormap**, or import your station's .pal file.
4. Turn on the **Point** pill and open the **Point** tab.
5. Set **Colormap Type** to **single color** and pick white.
6. Click **Switch to City**. Set **Font Size** to 18, pick your station **Font** and tick **BOLD**.
7. Leave **Stroke** on and set **Stroke Width** to 3, then tick **Drop shadow**.
8. Tick **Show units on readouts** and **Degree symbol only (hide °C / °F / K)**. Leave **Decimal Places** at 0.
9. If too few cities show, open **Map style** → **Labels** → **Cities** and show more places, or zoom in.
10. Click **Save Bundle** to keep the look.

TIPS

- Use a highlight area (Professional) with **Hide labels outside highlight** to keep values inside your market.
- Prefer a box look? Tick **Background**, set **Background Opacity** to 60% and **Corner Radius** to 4 px, and turn **Stroke** off.



RTMA 2 m temperature with Oklahoma highlighted and county values plotted.

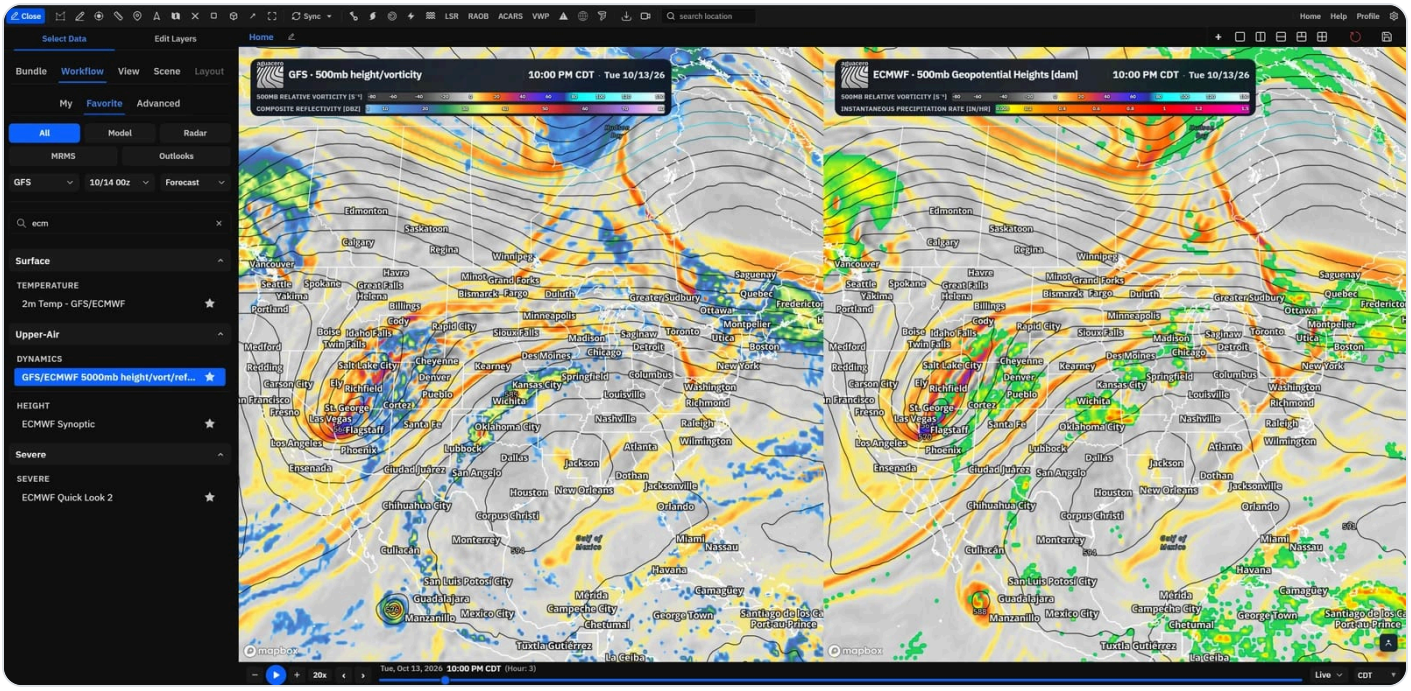
19 Recipe: contour-only 500 mb heights over a satellite basemap

White 500 mb height contours every 6 dam over satellite imagery, with the 540 dam line picked out.

1. Click **Map style** on the toolbar and choose the **Satellite** basemap card.
2. In **Edit Layers**, click **Add Layer** and add **500mb Geopotential Heights**. It starts with only the **Line** pill on; leave **Fill** off.
3. Click **Edit Layer**, then the **Line** tab.
4. Set **Contour intervals** to **Uniform step** and type 6 in **Step between isolines**. Units are dam.
5. Set **Colormap Type** to **single color** and pick white. Set **Width** to 1.5.
6. Leave **Show isoline labels** on. Set **Font Size** to 11, keep **Outline** on with black, and set **Label color** to **Solid color** white.
7. To pick out 540 dam: set **Colormap Type** to **custom colormap**, add stops at 540 and 546, set every swatch to white except 540 (yellow), click 540 and set **Width** to 3, then turn **Interpolate Colors** off.
8. Click **Save Bundle**.

TIPS

- In **Map style → Satellite imagery**, lower **Saturation** so the white lines stand out.
- Add **MSLP** as a second layer with **Show Highs/Lows** for a classic surface-and-aloft chart.



GFS and ECMWF 500 mb height and vorticity side by side.

20 Recipe: make every CAPE layer use your colormap

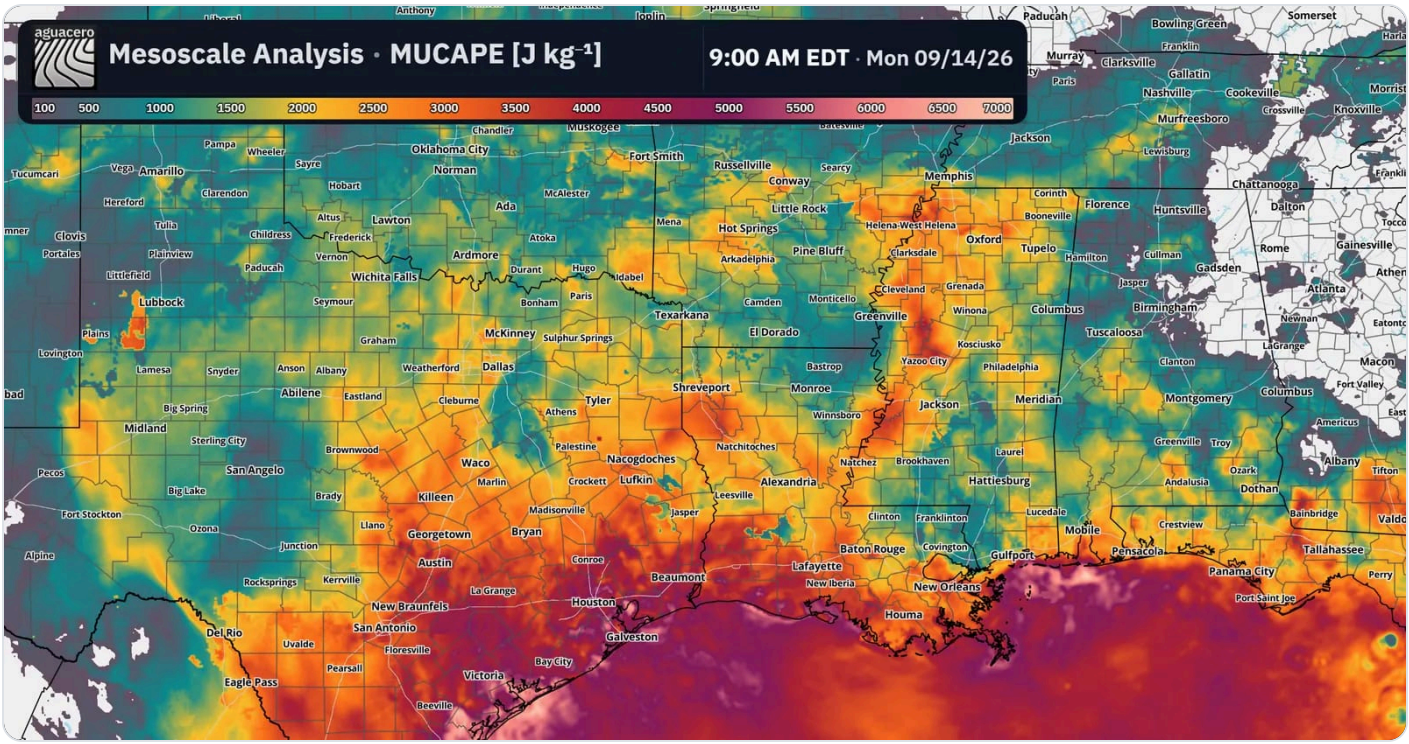
Build one CAPE colormap and make it the default for surface-based, mixed-layer and most-unstable CAPE, in every bundle.

1. Add **Surface Based CAPE** to a panel and click **Edit Layer**.
2. On the **Fill** tab, build the colormap: set stops and colors, and turn **Interpolate Colors** on or off.
3. Click **Save Colormap**, name it and save. The dialog lists the other CAPE variables that can use it.
4. Open **Settings → Data**, stay on **Model** and click **Colormap groups**.
5. Search for CAPE and click **Choose colormap...** on the CAPE group card, the one whose key reads cape_0.
6. Click **Mine** and click your colormap. It becomes the default for every variable in the group, and CAPE layers on the map update.

7 Under **Apply customizations to**, choose **All layers/bundles (colormaps only)** so your saved bundles use it too.

TIPS

- Shortcut: open the CAPE variable in **Settings** → **Data**, edit its Fill colormap there and click **Apply colormap to group**.
- Colormap groups are per data type. Repeat on **Mesoscale Analysis** for the SPC mesoanalysis CAPE fields.
- Click **Reset colormap** on the group card to go back to the built-in colors.



SPC mesoscale analysis of most-unstable CAPE over the central United States.

21 Common questions

Missing tabs, empty layers, defaults that don’t apply and other snags.

Why can’t I see any settings on a tab?

The tab is turned off. Click the switch at the top so it reads **Enabled**, or turn on that type’s pill on the layer row.

Why is there no Fill, Point or Barb tab?

Tabs depend on the data. Line-only products such as isotherms have no Fill tab. Point is missing on line-only, outlook, warning and custom layers and on most radar products. Barb only shows on wind fields, and not on ensemble statistics or fields with no direction such as NBM 10 m wind speed. Radar has no Line tab.

Part of my layer is missing. Why?

Check **Data Range**: values outside it are not drawn. Also check the **Opacity** panel and each stop's **Opacity** for stops faded to 5%.

Why don't I see Save Colormap or Set as default colormap?

They need an account. Sign in and they appear. **Load Colormap** works signed out, with **All Colormaps** only.

I set a default colormap, but my saved bundle still uses its old colors.

By default your colormaps only apply to built-in bundles. In **Settings** → **Data**, set **Apply customizations to** to **All layers/bundles** or **All layers/bundles (colormaps only)**. The same setting explains a bundle that "changes colors" on load.

Why are there no city values?

City readouts sit at the place names the basemap shows and at your name markers. If **Map style** has **Hide all labels** on, or you are zoomed far out, there are few or none. Show more places under **Map style** → **Labels** → **Cities**, turn on **Allow point overlap**, or switch to grid readouts.

My .pal file imported with the wrong colors in the wrong places.

Import uses the values as written. Set the layer's **Units** to the palette's units first, then import again. Colormaps you load from the library convert units for you.

Why does Smoothing show a checkbox instead of a slider?

Performance mode is on in **Settings** → **Performance**. It uses one basic smoothing level. Switch to **Auto** to get the slider back. Smoothing shows **n/a** on class-code grids and radar hydrometeor classification.

Turning on Frame Blending or Shadow opens an upgrade window.

Frame Blending and **3D cloud tops** need Professional. The radar **Shadow** needs Creator.

My particles stopped moving.

Performance mode draws particles as still streamlines. Turn it off in **Settings** → **Performance**.

Contours show “Too many contour levels”.

A layer draws at most 400 contours. Raise **Step between isolines**, remove custom levels or narrow **Data Range**.

How do I fade contours? The Line tab has no Opacity slider.

Click each stop’s number and lower its **Opacity**. With a **single color** colormap, switch to **custom colormap** first.

Are my layer changes saved automatically?

No. Edit Layer changes stay on the panel until you load another bundle or reload. Click **Save Bundle** to keep them. Data Defaults, default colormaps and saved colormaps save to your account right away.

Reset to Defaults didn’t bring back my default colormap.

Reset to Defaults restores the app’s built-in style. To start from your Data Defaults, delete the layer and add it again, or click **Load Colormap** and pick your colormap.