AGUACEROWX IN-DEPTH GUIDE

PGEN forecast maps

PGEN (Product Generation) is the forecast-map drawing tool. It draws weather fronts, high and low centers, hurricane and hazard symbols, smooth or straight lines and arrows, filled and hatched areas, shapes, styled text and your own images, all anchored to the map or pinned to the screen. Use it for surface analyses, severe outlooks, snowfall forecasts and tropical graphics, then save each map as a product you can load again later.

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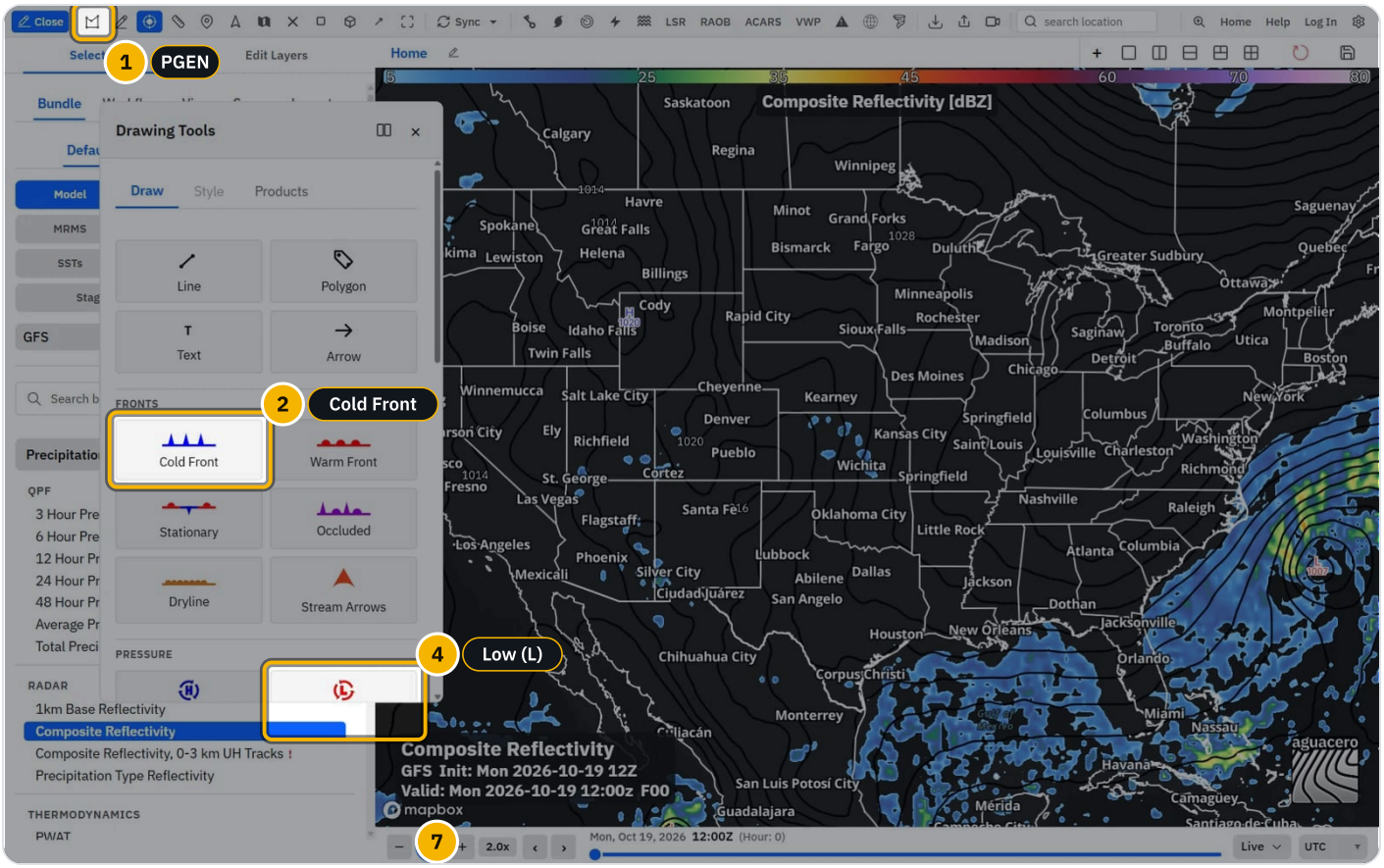
BEFORE YOU START

- PGEN lives on the toolbar as the **PGEN** button (its tooltip reads **Product Generation Tool**). If you don't see it, open **Settings** → **Toolbar** → **Toolbar buttons** and turn on **PGEN**.
- Drawing, styling and saving work on every plan, including Free. Uploading your own images under **Images** and using **Custom tropical icons** need Professional or above.
- Saving a product needs a free account. Products are stored in your account, so they load on any device where you sign in.
- What you draw is not saved on its own. It stays on the map while you switch bundles, workflows and panels, but a reload clears it. Click **Save New** or **Update** to keep it.

01 Draw your first forecast map

Open the Drawing Tools window, draw a front, add a low and a label, and save the result as a product.

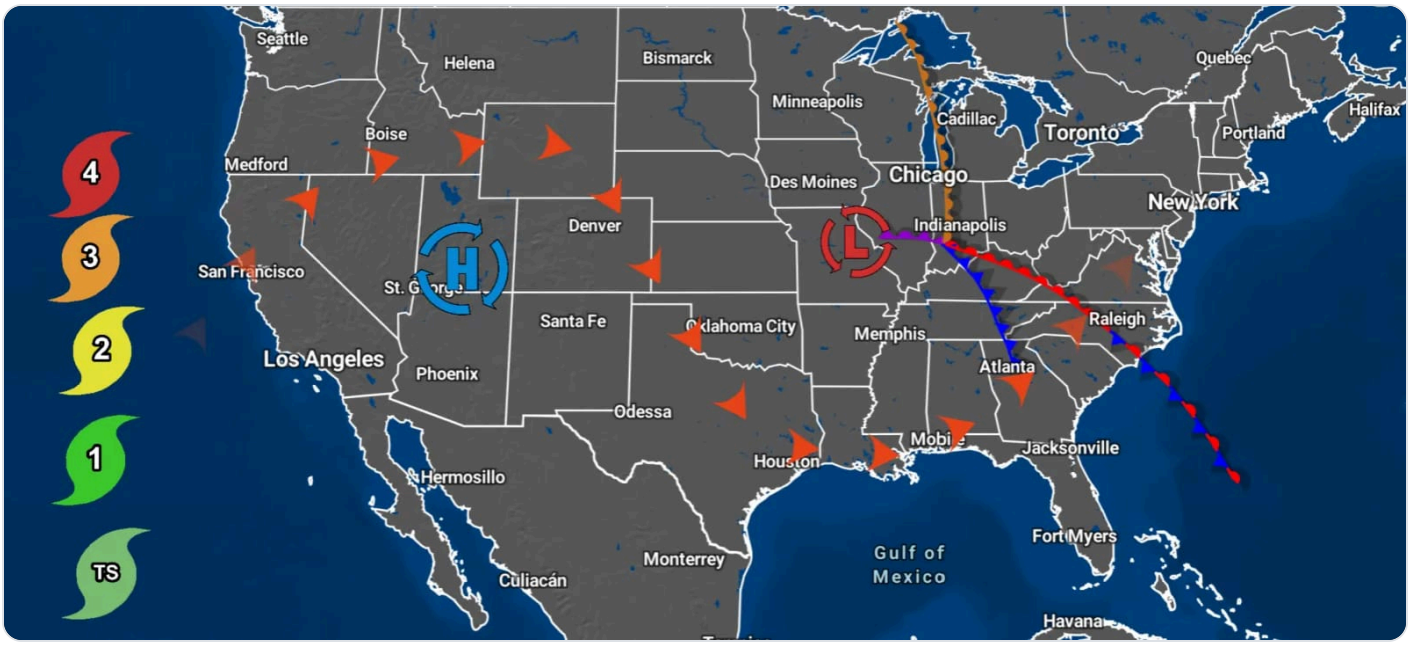
1. Click **PGEN** on the toolbar. The **Drawing Tools** window opens on the **Draw** tab.
2. Under **Fronts**, click **Cold Front**. The button stays highlighted while the tool is on.
3. On the map, press where the front starts, drag along its position and let go. The line comes out smooth and the tool stays on, so you can draw the next one right away. Press `Esc` when you are done drawing.
4. Under **Pressure**, click **Low (L)**, then click the map at the low's center.
5. Click **Text**, then click the map. Double-click the **New Text** label, type your text and click anywhere else on the map to finish.
6. To change anything, click it on the map (with no tool on) or click its row in the **Layers** list. Its settings open on the **Style** tab.
7. Type a name in the **Product Name** box and click **Save New**. Sign in if asked.



The PGEN button opens the Drawing Tools window. Pick a tool on the Draw tab, then name and save your map.

TIPS

- Each tool draws one feature and then turns itself off. Click the tool again to draw another.
- Click a highlighted tool button to turn the tool off without drawing.
- Picking a tool clears the current selection, and clicking the map with a tool on draws instead of selecting. Turn the tool off to select things again.



A PGEN map with fronts, high and low centers and hurricane category icons.

02 Find your way around the Drawing Tools window

The window has three tabs: Draw for tools and the layer list, Style for the selected feature, and Products for saved maps.

The window floats over the map. Drag its header to move it. The **Mount in map UI** button next to the close button docks it beside the map on a desktop screen. Closing the window with **×** keeps everything you drew on the map.

TABS	
Draw	All drawing tools, **Clear All**, the product name and save buttons, **Layer Position** and the **Layers** list.
Style	Settings for the selected feature. Greyed out until something is selected. It opens on its own when you select or finish a feature.
Products	Your saved products, plus the same **Product Name**, **Save New** and **Update** controls. The list loads when you open the tab.

DRAW TAB, TOP TO BOTTOM	
Line	An open line through the points you click, straight or curved.

Polygon	A closed, filled area. It can be hatched and filled with a gradient.
Text	A text label. Click the map to place it.
Arrow	A line with an arrowhead at the end you finish on.
Fronts	**Cold Front**, **Warm Front**, **Stationary**, **Occluded**, **Dryline** and the animated **Stream Arrows**.
Pressure	**High (H)** and **Low (L)** centers with circulation arrows.
Tropical	**Hurricane**, a cyclone symbol with a category label.
Hazards	**Fire** and **Rotating Storm** symbols.
Images	**Upload** your own images and stamp them on the map. Professional and above.
Shapes	**Rectangle**, **Circle**, **Ellipse** and **Triangle**, drawn by dragging.
Clear All	Removes every feature from the map at once and turns off the active tool. It asks first, and it can’t be undone.
Product Name	The name used when you save. Default **Untitled Product**.
Save New	Saves the drawing as a new product.
Update	Overwrites the product you last saved or loaded. Shown only after a save or load.
Layer Position	**Fills above other layers** and **Fills behind water**, which set where filled areas draw.
Layers	Every feature on the map, front to back, with its feature count in the heading.

03 Draw lines, arrows, polygons and fronts

Fronts and Stream Arrows draw freehand by default. Line, Polygon and Arrow, and fronts set to Points, share one point-by-point method that makes straight or curved segments.

Fronts and **Stream Arrows** have two ways to draw, set by **Draw** under **Fronts** on the **Draw** tab: **Freehand** (the default) and **Points**. Your choice is saved to your account.

1. Under **Fronts**, click the front type and check that **Draw** is set to **Freehand**.
2. Press on the map, drag along the front's position and let go. The stroke is smoothed for you.
3. Draw the next front right away: the tool stays on and nothing is selected.
4. Press `Esc` or click the tool's button to turn it off. Then click a front to select and style it, or drag its points to reshape it.

Everything below is the point-by-point method, used by **Line**, **Polygon**, **Arrow** and by fronts set to **Points**.

1. Click **Line**, **Polygon**, **Arrow** or one of the **Fronts** tools.
2. Click the map to set the first point.
3. Click to add each next point. The segment to it is straight.
4. To curve a segment, press on the spot for the next point and drag before you let go. The segment bends toward where you drag, and the preview follows the pointer.
5. Press `Backspace` to take back the last point you added.
6. Press `Enter` or double-click to finish. With **Polygon**, you can also click the square handle on the first point (it appears after three points) to close the area.
7. The new feature is selected and its **Style** tab opens. The tool turns off.

SHORTCUTS

`Enter`	Finish the line, polygon, arrow or front you are drawing
Double-click	Finish the path (the map doesn't zoom while a path tool is on)
`Backspace`	Remove the last point while drawing
`Esc`	Cancel the path you are drawing

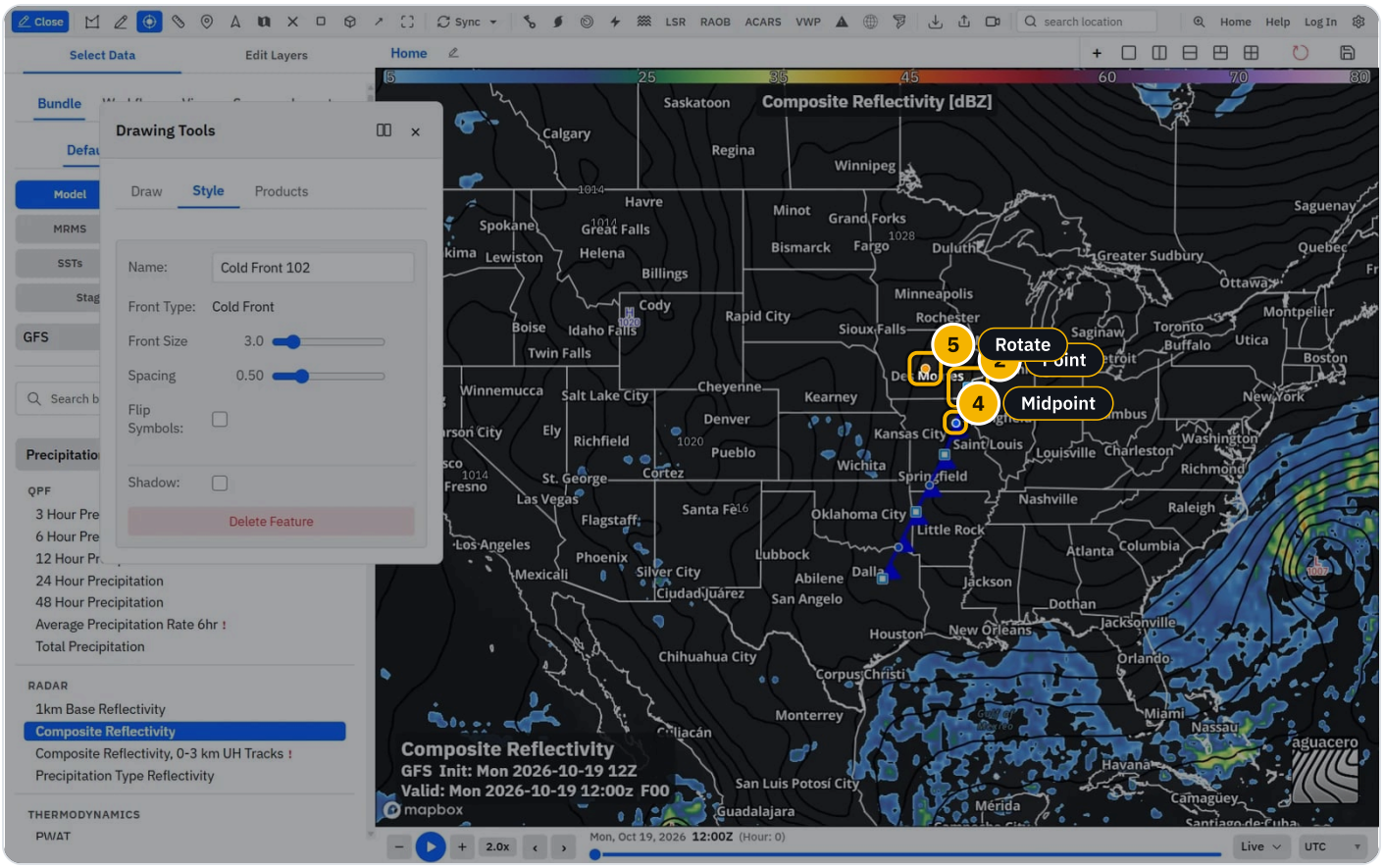
TIPS

- A line, arrow or front needs at least two points, and a polygon needs at least three. With fewer, nothing is added.
- A click within about 15 pixels of the last point is ignored, so a slow double-click doesn't add a stray point.
- Finishing a polygon with `Enter` or a double-click closes it back to the first point for you.
- While a path tool is on, dragging on the map bends the segment or draws a freehand stroke instead of panning. Zoom with the scroll wheel, or turn the tool off before you pan.
- The arrowhead on **Arrow**, the side the front symbols sit on and the way **Stream Arrows** point all follow the direction you draw.
- Right-clicks are ignored while you draw.

04 Reshape, move and rotate a path

Select a line, arrow, polygon or front to drag its points, bend its segments, add points, rotate it or move it as a whole.

1. With no tool on, click the line, front or polygon on the map, or click its row in the **Layers** list.
2. Drag any white square to move that point.
3. On a curved segment, drag the small white circle (its tooltip reads **Drag to adjust curve**) to change the bend.
4. Click a blue dot in the middle of a segment to add a point there. On a straight segment, drag the blue dot instead to bend it into a curve.
5. Drag the orange dot above the path (**Drag to rotate**) to turn the whole path around its center.
6. Drag the line or area itself to move all of it. The pointer turns into a hand when you are over it.



A selected cold front on the map, with its settings on the Style tab.

TIPS

- Front symbols are re-spaced along the new shape every time you edit it.
- There's no way to delete a single point once a path is finished. To drop points, delete the feature and redraw it, or use `Backspace` while you are still drawing.
- Shapes (rectangle, circle, ellipse, triangle) don't have points. See the shapes section for how to resize and rotate them.

05 Draw fronts, drylines and stream arrows

Draw standard weather fronts with evenly spaced symbols, or a path of arrows that can flow along it.

Fronts use standard NWS symbols and colors, and the colors are fixed. **Cold Front** draws blue triangles, **Warm Front** red half-circles, **Stationary** alternates red half-circles and blue triangles on opposite sides of a red and blue line, **Occluded** alternates purple triangles and half-circles on one side, and **Dryline** draws brown half-circles. **Stream Arrows** draws arrowheads spaced along the path, pointing the way you drew it.

1 Under **Fronts**, click the front type.

2. Drag along the front's position and let go. With **Draw** set to **Points**, click points along it and press `Enter` to finish.
3. If the symbols are on the wrong side, turn on **Flip Symbols** on the **Style** tab.
4. Set **Front Size** and **Spacing** to taste.

FRONT SETTINGS (COLD FRONT, WARM FRONT, STATIONARY, OCCLUDED, DRYLINE)	
Name	The feature's name in the **Layers** list. New fronts get a name like **Cold Front 123**.
Front Type	The kind of front. Shown for reference; it can't be changed. Draw a new front to change type.
Size on zoom	**Fixed on screen** keeps the front the same size at every zoom, with symbols evenly spaced along the line. **Scales with map** makes it grow and shrink with the map. New fronts use the **Size on zoom** setting on the **Draw** tab.
Front Size	Size of the symbols and the thickness of the line. 0.5–18, default 3.
Spacing	Gap between symbols. 0.05–2, default 0.5. Lower packs the symbols closer together.
Flip Symbols	Moves the symbols to the other side of the line. Off by default, which puts them on the left side as you look along the direction you drew.
Shadow	Adds a drop shadow. New fronts fixed on screen start with a soft one. See the shadows section.

STREAM ARROWS SETTINGS	
Arrow Size	Size of each arrow. 0.5–24, default 6.
Spacing	Gap between arrows. 0.05–3, default 1.

Fill Color	Arrow color. Default orange-red (#e8451a). Accepts a gradient.
Fill	On by default. Turn it off for hollow arrows, and turn on **Outline** so they still show.
Opacity	0–1 in steps of 0.1, default 1.
Animate	Makes the arrows flow along the path in the direction you drew it. Off by default.
Anim Speed	Shown when **Animate** is on. 0.25–4, default 1. Higher is faster.
Outline	Draws an outline around each arrow. Off by default.
Outline Color	Default black. Accepts a gradient.
Outline Width	0.5–2 in steps of 0.5, default 1.

TIPS

- Draw a cold front from the low outward toward the southwest, and a warm front from the low toward the east. The symbols then face southeast and north without flipping.
- Fronts can’t be recolored or made screen relative. For a front in another color, draw a **Line** and style it instead.
- Stream arrows work well for jet streams, moisture plumes and low-level jets. Turn on **Animate** to show motion in a GIF or MP4 export.

06 Place highs and lows

Drop NWS-style H and L centers with curved circulation arrows that can spin.

1. Under **Pressure**, click **High (H)** or **Low (L)**.
2. Click the map at the pressure center. The symbol is placed and selected.
3. Drag the blue box around it to move it.
4. Drag the small blue square at the box’s bottom-right corner to make it bigger or smaller.

5 On the **Style** tab, set the arrows, colors and outline.

HIGH AND LOW SETTINGS	
Reverse	Flips the direction of the circulation arrows, for example for the Southern Hemisphere. Off by default.
Animate	Turns the circulation arrows around the letter. Off by default.
Anim Speed	Shown when **Animate** is on. 0.25–4, default 1.
Fill Color	Color of the letter and arrows. Default blue (#0000ff) for a high and red (#ff0000) for a low. Accepts a gradient.
Outline	Draws an outline around the letter and arrows. On by default.
Outline Color	Default black. Accepts a gradient.
Outline Width	0.5–4 in steps of 0.5, default 0.5.
Shadow	Adds an offset drop shadow. See the shadows section.

TIPS

- Highs and lows have no size slider. Use the corner handle.
- A new symbol starts at the same screen size at whatever zoom you place it. With **Size on zoom** set to **Fixed on screen** (the default) it stays that size. With **Scales with map** it grows and shrinks with the map.
- Add the central pressure with a **Text** label next to the symbol.

07 Add hurricane, fire and rotating storm symbols

Place tropical cyclone symbols with a category label, and fire or rotating storm icons, with optional spin.

1 Click **Hurricane** under **Tropical**, or **Fire** or **Rotating Storm** under **Hazards**.

2 Click the map. The symbol is placed and selected.

3. Drag its box to move it, or drag the corner square to resize it. The **Size** slider sets the same value.
4. Set the category, colors and spin on the **Style** tab.

HURRICANE SETTINGS	
Category	**TD**, **TS**, **1**, **2**, **3**, **4** or **5**, drawn in the middle of the symbol. Default **1**.
Custom tropical icons	A switch that swaps in your own uploaded icon for each category. When on, each category has an **Upload** button, which becomes **Replace** (with **Remove** beside it) once a file is set. An uploaded icon replaces both the spiral and the label for that category. Professional and above; uploading needs sign-in.
Font	Font of the category label. Type to search. Default is your account's default font.
Category Color	Color of the category label. Default white. Accepts a gradient.
Category Outline	Outlines the category label. On by default.
Category Outline Color	Default black.
Category Outline Width	1–6 in steps of 0.5, default 2.
Fill Color	Color of the cyclone spiral. Default red (#ED2D24). Accepts a gradient.
Size	1–40 in steps of 0.5, default 6.
Outline	Outlines the spiral. Off by default.
Outline Color	Default black.
Outline Width	0.5–4 in steps of 0.5, default 0.5.
Animate	Under **Spin**. Spins the symbol. This setting is shared: it turns spin on or off for every hurricane symbol on the map.

Spin Speed	Shown when spin is on. 0.25–4, default 1. Also shared by every hurricane symbol.

FIRE AND ROTATING STORM SETTINGS	
Type	**Fire** or **Rotating Storm**. Shown for reference.
Fill Color	Default orange (#E85D04) for fire and near-black (#111111) for a rotating storm. Accepts a gradient.
Size	1–40 in steps of 0.5, default 6.
Outline	Off by default.
Outline Color	Default black.
Outline Width	0.5–4 in steps of 0.5, default 0.5.
Direction	Rotating Storm only, under **Rotation**. **Clockwise** (default) or **Counterclockwise**.
Rotate	Rotating Storm only. Spins this symbol. Off by default.
Spin Speed	Shown when **Rotate** is on. 0.25–4, default 1.

Custom tropical icons needs Professional or above; below that the switch shows a lock and opens an upgrade dialog. It is one account-wide setting with slots for **Invest**, **Potential Tropical Cyclone**, **Tropical Depression**, **Tropical Storm**, **Category 1–5** and **Post-Tropical**. PGEN uses the TD, TS and category slots; the others replace the symbol on current storms and forecast tracks.

08 Stamp your own images PROFESSIONAL

Upload logos, icons or graphics once and stamp them on any map, with recolor, outline, rotation and spin.

1. On the **Draw** tab, find **Images** and click **Upload**.
2. Pick a PNG, JPEG, WebP, SVG or GIF file. While it uploads the button reads **Uploading…**.

3. When it finishes, the image appears as a thumbnail and its tool is on. Click the map to stamp it.
4. To stamp it again later, click its thumbnail, then click the map. Click a highlighted thumbnail to turn the tool off.
5. Select the stamped image to set its size, rotation, color and spin on the **Style** tab.
6. To delete an image from your library, click the **×** on its thumbnail (**Remove from library**) and confirm.

IMAGE SETTINGS	
Image	The image's name, taken from its file name. Shown for reference.
Screen Relative	Keeps the image at a fixed screen position and size. See the screen relative section.
Size	1–40 in steps of 0.5, default 6. The corner handle sets the same value.
Rotation	0–360°, default 0.
Opacity	0–1 in steps of 0.05, default 1.
Recolor as icon	Paints the whole image one color, using its transparent areas to cut out the shape, the way the fire and high and low symbols are colored. Off by default.
Fill Color	Shown when **Recolor as icon** is on. Default orange (#E85D04). Accepts a gradient.
Outline	Draws an outline around the image's shape. Off by default.
Outline Color	Default black.
Outline Width	0.5–4 in steps of 0.5, default 1.
Direction	Under **Spin**. **Clockwise** (default) or **Counterclockwise**.
Animate	Spins the image. Off by default.
Spin Speed	Shown when **Animate** is on. 0.25–4, default 1.

Images need Professional or above and a signed-in account. Below Professional, **Images** shows a lock and **Upload** opens an upgrade dialog. Files can be up to 8 MB; each one is scaled so its longest side is at most 512 pixels and stored as a PNG, so animated GIFs become still images. You can keep up to 40 images; **Upload** is greyed out at 40.

TIPS

- Your image library is saved to your account and shows up on every device where you sign in.
- Removing an image from your library deletes the uploaded file, so maps and saved products that use it can no longer draw it.
- White or single-color logos with transparent backgrounds work best with **Recolor as icon**.

09 Draw rectangles, circles, ellipses and triangles

Drag out a ready-made shape, then move, resize and rotate it with its box.

1. Under **Shapes**, click **Rectangle**, **Circle**, **Ellipse** or **Triangle**.
2. Press on the map at one corner and drag to the opposite corner. Let go to finish. Press `Esc` while dragging to cancel.
3. With the shape selected, drag its blue box to move it.
4. Drag the blue square at the bottom-right corner to resize it.
5. Drag the orange dot above the box to rotate it.

TIPS

- **Circle** draws the largest circle that fits in the box you drag. **Triangle** points up, with its base along the bottom of the box.
- A drag smaller than about 8 pixels is ignored.
- New shapes have a 2-pixel light blue (#3bb2d0) outline and a light blue fill at 0.2 opacity.
- Shapes take the same line, fill, hatch, gradient and shadow settings as polygons, plus **Screen Relative**. The **Shape** row shows which shape it is.

10 Style lines, fills and hatching

Set the color, width and dash of lines and outlines, and the fill color, opacity and hatch pattern of areas.

These settings appear on the **Style** tab for lines, arrows, polygons and shapes. New lines, arrows and polygons use a 2-pixel light blue (#3bb2d0) stroke; polygons get a matching fill at 0.2 opacity.

LINES AND OUTLINES	
Name	The name shown in the **Layers** list.
Stroke Color	Color of the line or the area's outline. Default #3bb2d0. Accepts a gradient.
Stroke Width	0–10 pixels in steps of 0.5, default 2. It stays the same width at every zoom. Set 0 to hide an area's outline.
Line Type	**Solid** (default), **Dashed**, **Dotted**, **Dash-Dot**, **Long Dash-Dot** or **Dash-Dot-Dot**. Hidden while **Stroke Color** is a gradient.
Arrow Size	**Arrow** only. Size of the arrowhead. 1–5 in steps of 0.5, default 2.
Double Sided	**Arrow** only. Draws a head on both ends. Off by default.

FILLS (POLYGON AND SHAPES)	
Fill Color	Default #3bb2d0. Accepts a gradient.
Opacity	Fill opacity. 0–1 in steps of 0.1, default 0.2. Set 0 for an outline or hatching with no fill.
Hatch Pattern	Draws hatch lines inside the area. Off by default.
Hatch Style	Shown when **Hatch Pattern** is on. Under **Solid**: **Diagonal ↗ (45°)** (default), **Diagonal ↘ (135°)**, **Horizontal (—)** and **Vertical (|)**. Under **Cross**: **Cross (+)** and **Diagonal Cross (×)**. Under **Dashed**: **Dashed ↗ (45°)** and **Dashed ↘ (135°)**.

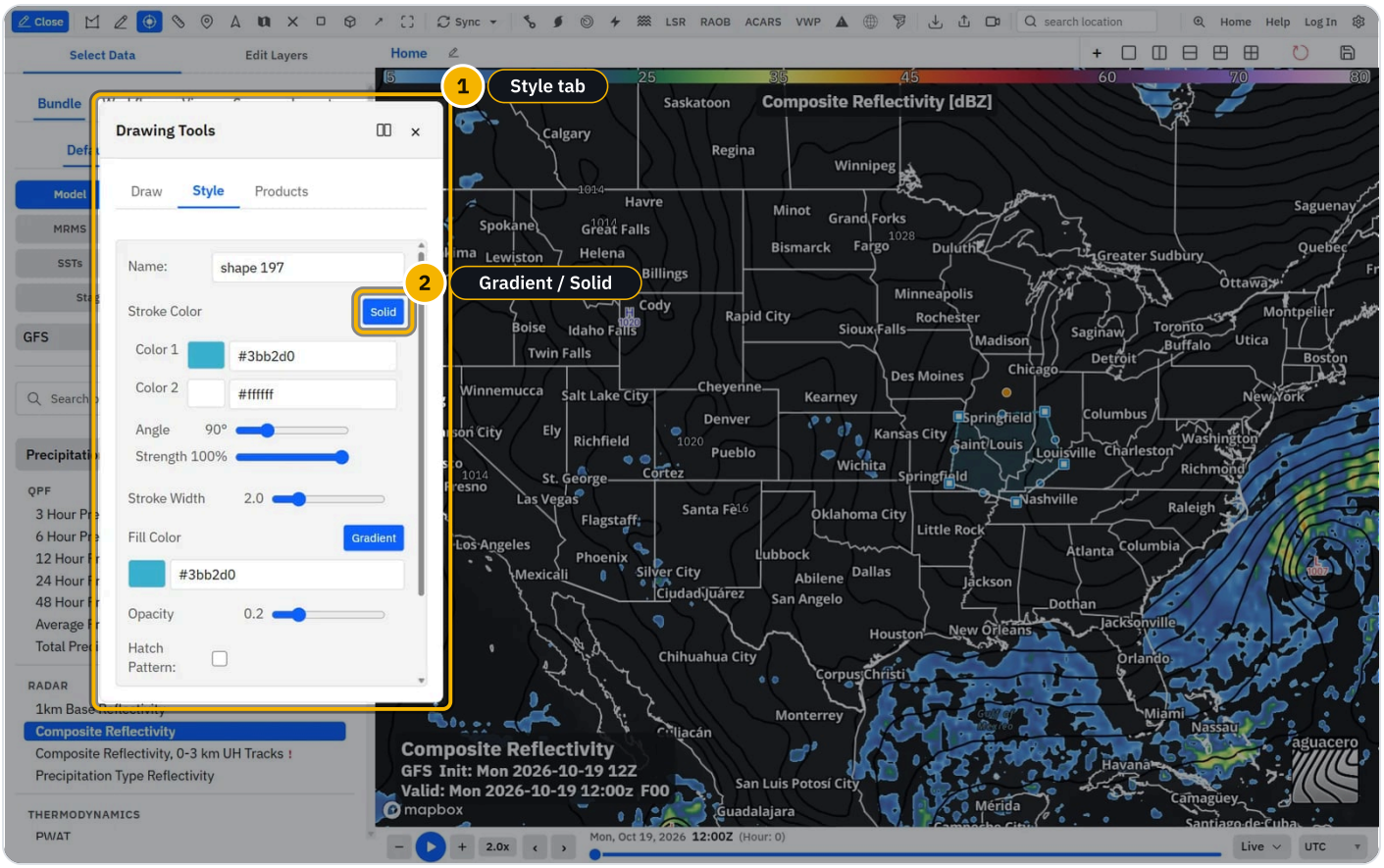
TIPS

- Hatch lines are always black and 1.5 pixels wide. Their spacing adapts to the zoom, with fewer lines when you zoom out.
- Hatching on a screen-relative shape is spaced in screen pixels, so it looks the same at every zoom.
- Type a hex code such as #F6F67F in the box next to any color swatch, or click the swatch to open the color picker.

11 Fill with a gradient

Most color settings can switch from a solid color to a two-color gradient with an angle and strength.

1. Select a feature and find a color setting with a **Gradient** button next to it, such as **Fill Color**.
2. Click **Gradient**. The setting expands to **Color 1**, **Color 2**, **Angle** and **Strength**.
3. Pick **Color 1** and **Color 2**.
4. Drag **Angle** to set the direction of the blend.
5. Drag **Strength** to set how far across the feature the blend runs before it reaches **Color 2**.
6. To go back to one color, click **Solid**. The feature keeps **Color 1**.



A polygon's Style tab, with the gradient controls open on its stroke color.

GRADIENT SETTINGS	
Gradient	Switches the color to a gradient. The button reads **Solid** while a gradient is on.
Color 1	Start color. It begins as the solid color you had.
Color 2	End color. Default white.
Angle	Direction of the blend. 0–360°, default 90°.
Strength	Where **Color 2** is fully reached. 0–100%, default 100%. Lower values reach **Color 2** sooner.

TIPS

- Gradients work on fills, strokes, text color, text backgrounds, stream arrows, highs and lows, hurricane symbols and their labels, fire and rotating storms, and recolored images.
- **Shadow Color** is always a solid color.
- Outlines on text and on text backgrounds draw best with a solid color.

12 Add and style text

Place labels with any font, size, color, outline, alignment and an optional rounded background box.

1. Click **Text**, then click the map. A **New Text** label appears, selected.
2. Double-click the label to edit it. Type your text. Press `Enter` for a new line.
3. Click anywhere else on the map to finish editing. If you leave it empty, it goes back to **New Text**.
4. To move it, click it once to select it, then press on it again and drag.
5. Drag the blue square at its bottom-right corner to set a box size. The text wraps inside the box.
6. Drag the orange dot above it to rotate it.

TEXT SETTINGS	
Name	For text, this box holds the text itself. Editing it changes the label on the map.
Screen Relative	Keeps the label at a fixed screen position and size. See the screen relative section.
Font	Click and type to search all fonts. Default is your account's default font (**Settings** → **Appearance** → **Default font**).
Font Size	8–72, default 22.
Line Height	Space between lines. 0.8–3 in steps of 0.1, default 1.4.
Text Color	Default black. Accepts a gradient.

Alignment	**Left**, **Center** (default) or **Right**.
Bold	Off by default.
Italic	Off by default.
Outline	A stroke around each letter. On for new text.
Outline Color	Default white. A solid color only (no gradient).
Outline Width	0.5–4 in steps of 0.5, default 0.5.

BACKGROUND BOX	
Background	Puts a box behind the text. Off by default. Turning it on fixes the box to the label's current size (or 340 × 100 if it can't be measured).
Background Color	Default black. Accepts a gradient.
Opacity	0–1 in steps of 0.05, default 0.75. Applies to a gradient background too.
Padding	Space around the text. 0.5–3 in steps of 0.1, default 1.
Radius	Corner rounding. 0–24, default 8.
Background Outline	A border around the box. On by default.
Outline Color	Box border color. Default white. A solid color only.
Outline Width	Box border width. 0–4 in steps of 0.25, default 1.

TIPS

- The **Style** tab reminds you: **Double-click text on map to edit. Drag corner to resize.**
- With **Size on zoom** set to **Scales with map**, text doubles in size for each zoom level in, and changing **Font Size** sets the size at the current zoom. With **Fixed on screen** (the default for new text) it stays the same size.
- The **Layers** list adds **· box background** to the name of a label with a box.
- Applying or resetting **Default font** in **Settings → Appearance** also changes the font of text already on your PGEN map.

13 Add a drop shadow

Give any feature an outer, inner or combined shadow with its own color, opacity, distance, angle, blur and spread.

1. Select the feature.
2. Near the bottom of the **Style** tab, turn on **Shadow**. Starting values that suit the feature are filled in.
3. For text, lines, polygons and shapes, pick a **Shadow Type**.
4. Adjust the color and sliders.

SHADOW SETTINGS	
Shadow	Turns the shadow on. Off by default.
Shadow Type	**Outer** (default) casts the shadow outside the feature, **Inner** shades inside its edge, and **Both** does both. Text, lines, polygons and shapes only.
Shadow Color	Solid color only. Default black.
Opacity	0–1 in steps of 0.05.
Distance	How far the shadow is offset. 0–100 pixels.
Angle	Which way the shadow falls. 0–360°.

Blur	Softness of the edge. 1–48 pixels. Text, lines, polygons, shapes and fronts fixed on screen only.
Spread	Grows the shadow before blurring. 0–24 pixels. Text, lines, polygons and shapes only.

Fronts, stream arrows, highs and lows, hurricanes, fire, rotating storms, images and arrows get a crisp offset shadow, so they show only **Shadow Color**, **Opacity**, **Distance** and **Angle**. On all of these except arrows, the shadow's distance grows and shrinks with the map along with the symbol.

TIPS

- Starting values when you turn on **Shadow**, all with a black **Shadow Color**:
- Fronts, stream arrows, highs and lows, hurricanes, fire and rotating storms: **Opacity** 0.5, **Distance** 3, **Angle** 25.
- Arrows: **Opacity** 0.45, **Distance** 2, **Angle** 50.
- Images: **Opacity** 0.55, **Distance** 10, **Angle** 35.
- Text: **Outer**, **Opacity** 1, **Distance** 3, **Angle** 80, **Blur** 1, **Spread** 0.
- Lines, polygons and shapes: **Outer**, **Opacity** 1, **Distance** 48, **Angle** 360, **Blur** 48, **Spread** 0.

14 Pin features to the screen

Choose whether a feature stays on its spot on the map or stays fixed on the screen while you pan and zoom.

By default every feature is anchored to the map. It moves with the map when you pan. New fronts, highs and lows, storm symbols, images and text also stay the same size on screen as you zoom. To make them grow and shrink with the map instead, set **Size on zoom** to **Scales with map** on the **Draw** tab for new drawings, or on the **Style** tab for one drawing. Drawings saved before this setting existed keep scaling with the map. Line and outline widths stay the same in pixels.

1. Select a **Text** label, **Line**, **Arrow**, shape or image.
2. Near the top of the **Style** tab, turn on **Screen Relative** (tooltip: **Keep size and position fixed on screen when panning/zooming**).
3. Pan and zoom. The feature stays where it is on the screen at the same size.
4. Turn **Screen Relative** off to drop the feature back onto the map at the spot it covers now.

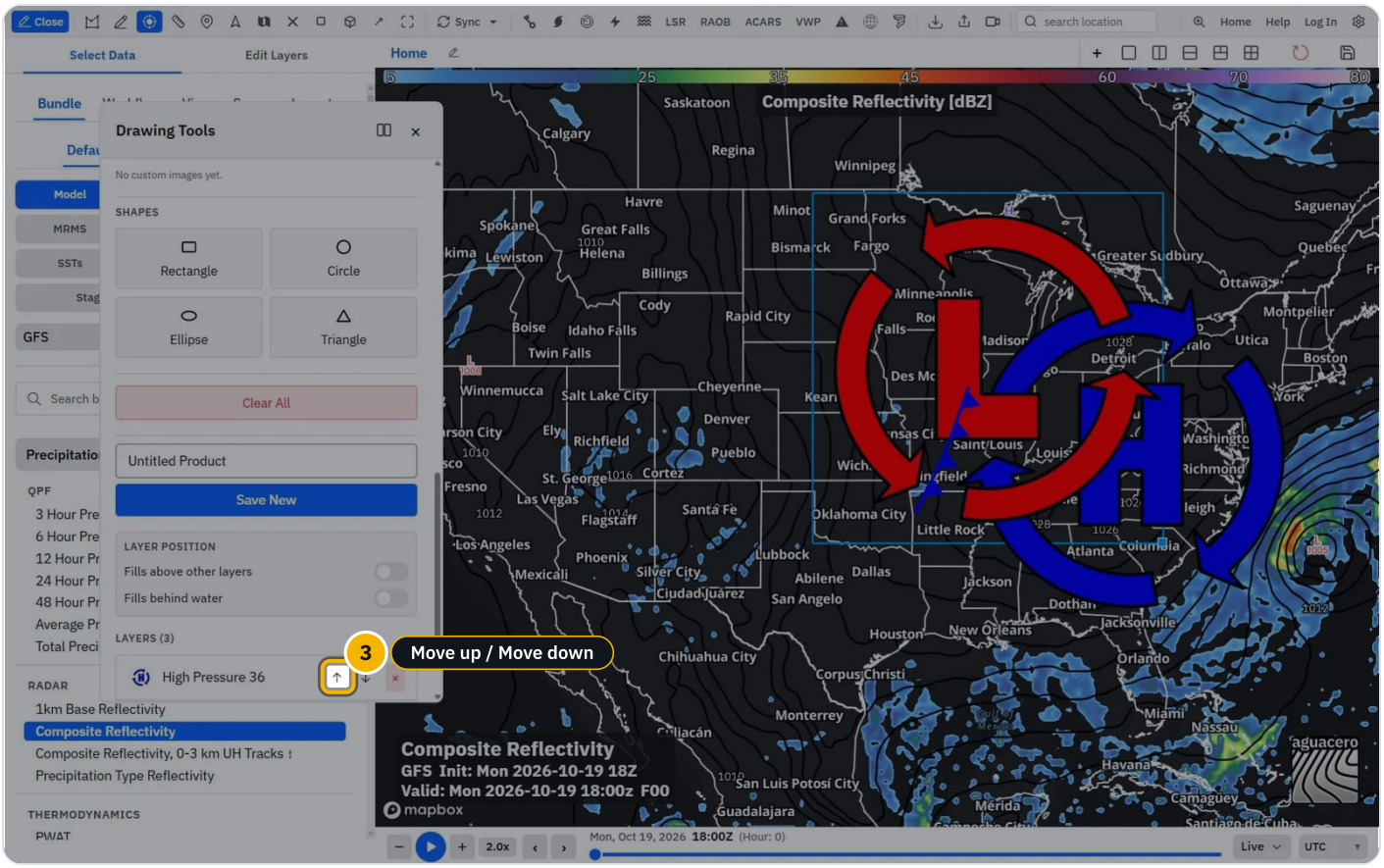
TIPS

- Use it for titles, legends, logos, timestamps and callout boxes that should stay put while the map moves underneath.
- **Screen Relative** isn’t offered for fronts, stream arrows, polygons, highs and lows, hurricanes, fire or rotating storms.
- You can still drag and resize a screen-relative feature.

15 Manage layers and drawing order

Use the Layers list to select, reorder and delete features, and Layer Position to set where filled areas sit among the map’s layers.

1. On the **Draw** tab, scroll down to the **Layers** list. Each row shows a small preview and the feature’s name.
2. Click a row to select that feature and open its **Style** tab.
3. Click **Move up** or **Move down** (the arrows on the row) to change the order. Features higher in the list draw on top.
4. Click **×** on a row to delete that feature.
5. Under **Layer Position**, choose where filled areas draw.



The Layers list at the bottom of the Draw tab, with Layer Position above it.

LAYER POSITION	
Fills above other layers	Filled areas draw over model, radar and satellite layers, still under state, county and country borders. Off by default; greyed out while **Fills behind water** is on.
Fills behind water	Filled areas draw under the basemap's water, so oceans and lakes cover them and the fill shows only over land. Off by default; greyed out while **Fills above other layers** is on.

TIPS

- With both off, filled areas draw under your model, radar and satellite layers. If a fill seems to vanish under data, turn on **Fills above other layers**.
- **Layer Position** affects polygon and shape fills only. Lines draw under the map's place labels, highs and lows, storm symbols and images draw above city labels, and text floats above the map.
- Order matters among features of the same kind, for example one polygon over another. Moving a polygon to the top of the list doesn't lift its fill above a front or a label.
- New features go to the top of the list.
- With a feature selected and no text box focused, `Delete` or `Backspace` deletes it. The **Delete Feature** button at the bottom of the **Style** tab does the same. Closing the Drawing Tools window clears the selection, so the keys can't delete anything then.
- Deleting and **Clear All** can't be undone (**Clear All** asks first). Save the product first if you might want it back.

16 Save, update, load and delete products

A product is a saved PGEN map in your account. Save new ones, overwrite the current one, and load or delete them from the Products tab.

1. Type a name in **Product Name**, on the **Draw** tab or the **Products** tab.
2. Click **Save New**. If you aren't signed in, the **Sign in to Save Product** dialog opens. The button area shows **Saving...** and then **Saved!**.
3. After more changes, click **Update** to overwrite the same product. **Update** appears once you have saved or loaded a product.
4. To open a saved map, click the **Products** tab and click its row. Rows read like **Surface 12Z (14)**, where the number is the feature count; the product that is loaded now is highlighted.
5. To delete a product, click **×** on its row and confirm.

A product keeps every feature with its position, shape, style, animation settings, text box size and screen-relative position, plus the **Fills behind water** setting. It doesn't keep **Fills above other layers**, the map view, or the data layers, bundle or workflow you drew over. Products are stored in your account, private to you, and load on any device where you sign in.

TIPS

- Loading a product replaces everything on the map without asking. Save what you have first.
- Deleting a product asks first, and it can’t be undone.
- Signed out, the **Products** tab asks you to sign in. With no products yet, it says **No saved products yet**.
- **Save New** always makes another product, even with the same name. To rename a product, load it, change **Product Name** and click **Update**.
- **Clear All** keeps the current product loaded. Click **Save New** for your next map, or **Update** will overwrite the old one.
- With nothing on the map, saving shows **No features**.
- There is no share link for products. To send a map to someone, export it as an image or video.

17 Use PGEN with panels, bundles, scenes and exports

How a PGEN drawing behaves across panels, time steps, saved workspaces and image or video exports.

TIPS

- There is one PGEN drawing at a time. It shows on every map panel and every tab, at the same place on each map.
- PGEN features don’t change with time. They stay the same on every frame as you step or loop through the time bar.
- Bundles, workflows, layouts and scenes don’t store PGEN features, and loading them doesn’t clear your drawing. Save the map as a product and load it from the **Products** tab when you need it.
- **Download board**, **Share board** and **Export animation** include your PGEN features. Animated stream arrows, spinning symbols and turning high and low arrows move in GIF and MP4 exports, timed to the export’s frame rate.
- While the Drawing Tools window is open or a PGEN tool is on, clicking the map doesn’t pin a mouse readout.
- Turning on the **Ruler** turns off the active PGEN tool.

18 Recipe: a surface analysis with fronts, highs and lows

Trace a classic surface map over model pressure: a low with cold and warm fronts, a high, a dryline and pressure labels.

1. Load a layer with mean sea level pressure so you can trace the features, then open **PGEN**.
2. Click **Low (L)** and click the low center. Drag the corner handle until the symbol reads well at your zoom. Turn on **Animate** under **Arrows** if the map will be shown live or exported as a video.
3. Click **High (H)** and place each high the same way.
4. Click **Cold Front**. Start at the low and click southwest along the front, dragging on a point or two to curve it. Press `Enter`. The triangles face southeast.
5. Click **Warm Front**. Start at the low and click east along the front, then press `Enter`. The half-circles face north. If either front's symbols face the wrong way, turn on **Flip Symbols**.
6. Add an **Occluded** front from the low to the triple point, a **Stationary** front where a boundary has stalled, and a **Dryline** across the southern Plains if there is one.
7. For a bolder broadcast look, select each front and raise **Front Size** to 4 and **Spacing** to 0.7, then turn on **Shadow** (Opacity 0.5, Distance 3).
8. Click **Text** and click beside the low. Double-click the label and type the central pressure, such as 996. Set **Font Size** to 28, turn on **Bold**, and keep the white **Outline**.
9. Name it, for example **Surface analysis 12Z**, and click **Save New**.

19 Recipe: a severe outlook-style hatched risk map

Build nested risk areas with SPC-style colors, a hatched significant-severe area and labeled risk boxes.

1. Open **PGEN** and click **Polygon**. Click around the outer risk area, dragging on points to round the edges, and click the first point to close it.
2. On the **Style** tab, set **Fill Color** to a light green such as #7FC57F, **Opacity** to 0.6, **Stroke Color** to a darker green and **Stroke Width** to 2. Name it **Marginal**.
3. Draw the next area inside it with **Polygon**, colored yellow (#F6F67F), then orange (#E6C27F) and red (#E67F7F) for higher risks. Each new area lands on top of the list, so the inner areas draw over the outer ones.

4. For the significant-severe area, draw another polygon. Set **Opacity** to 0, turn on **Hatch Pattern**, pick **Diagonal ↗ (45°)** under **Hatch Style**, set **Stroke Color** to black and **Line Type** to **Dashed**.

5. Under **Layer Position**, turn on **Fills behind water** for clean coastlines and lakes, or **Fills above other layers** if the map has radar or model data under it.

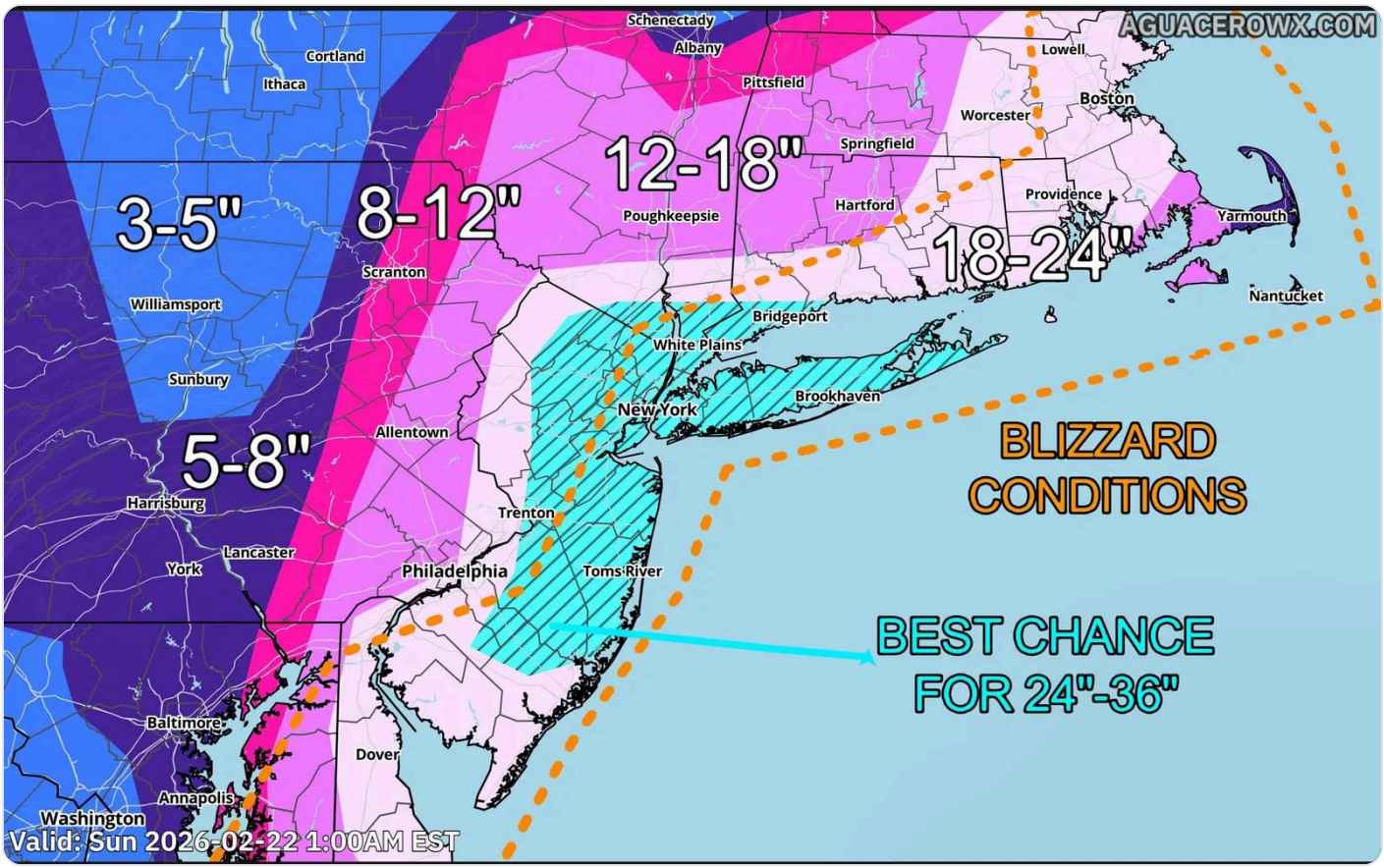
6. Add labels: click **Text**, type **SLGT**, turn on **Background**, set **Background Color** to the area's color, **Opacity** to 0.9 and **Radius** to 6, and set **Text Color** to black.

7. Add a title such as **Severe Weather Outlook – Thursday** with **Text**, turn on **Screen Relative** and drag it to the top of the map.

8. Click **Save New**, then **Download board** to share the image.

20 Recipe: a TV-style snowfall forecast map

Draw smooth snowfall bands with gradient fills, keep them off the water, and label each band.



A hand-drawn snowfall forecast map for the Northeast.

1. Open **PGEN** and click **Polygon**. Outline the lightest band, such as 1–3 in, pressing and dragging on most points so the edges curve smoothly. Close it on the first point.

2. Set **Fill Color** to a pale blue, click **Gradient**, and set **Color 2** a little darker, **Angle** to 135° and **Strength** to 80%. Set **Opacity** to 0.8.
3. Set **Stroke Color** to white and **Stroke Width** to 1.5 for a crisp edge.
4. Draw each heavier band inside the last (3–6 in, 6–12 in, 12+ in), stepping the colors from blue to purple to pink. Reshape any edge by dragging its points or the blue midpoint dots.
5. Under **Layer Position**, turn on **Fills behind water** so the Great Lakes and the ocean stay clear.
6. On the heaviest band, turn on **Shadow**, set **Shadow Type** to **Inner**, **Opacity** to 0.4 and **Blur** to 12 for depth.
7. Label each band with **Text**: type the amount, set **Font Size** to 24, turn on **Bold** and **Background**, and give the box **Radius** 8 and **Opacity** 0.75.
8. Add a screen-relative title box at the top, and if you have Professional or above, stamp a snowflake or station logo under **Images**.
9. Click **Save New**, then **Download board** or **Export animation**.

21 Recipe: a hurricane track and cone graphic

Combine a cone polygon, a dashed track and hurricane symbols at each forecast point, with time labels.

1. Open **PGEN** and click **Polygon**. Draw the days 1–3 cone, narrow at the storm and widening along the track, dragging points to round the end. Set **Fill Color** to white, **Opacity** to 0.4, **Stroke Color** to white and **Stroke Width** to 2.
2. Draw the days 4–5 part as a second polygon. Set **Opacity** to 0, turn on **Hatch Pattern** and pick **Dashed ↗ (45°)**.
3. Click **Line** and click through each forecast position. Set **Stroke Color** to black, **Stroke Width** to 2 and **Line Type** to **Dashed**. Or use **Arrow** for a track with a head at the end.
4. Click **Hurricane** and click each forecast point. Set each one's **Category** (**TD**, **TS** or **1**–**5**) and **Size**. Turn on **Shadow** for depth.
5. Turn on **Animate** under **Spin** on any one symbol to spin them all.
6. Label the forecast times with **Text** (for example **Thu 8 PM**), with **Background** on and a dark **Background Color**.
7. With Professional or above, turn on **Custom tropical icons** in a hurricane's **Style** tab and upload your station's own category icons.

8 Click **Save New**. Use **Export animation** to capture the spinning symbols as an MP4 or GIF.

22 Common questions

Answers to the PGEN questions that come up most.

Why is the Style tab greyed out?

Nothing is selected. Click a feature on the map with no tool on, or click its row in the **Layers** list.

Why do I get a new symbol when I click a feature to select it?

A drawing tool is still on, so the click draws. Click the highlighted tool button to turn it off, then click the feature.

How do I undo?

PGEN has no undo. While drawing a path, `Backspace` removes the last point and `Esc` cancels it. Deleted features and **Clear All** can't be brought back, so click **Update** often, or reload the saved product to go back to it.

My drawing disappeared after I reloaded. Can I get it back?

Only if you saved it. PGEN features live in the open window until you click **Save New** or **Update**. Saved products are on the **Products** tab.

Why can't I change the color of a front?

Fronts use fixed NWS colors. You can change their size, spacing, side and shadow. For a custom-colored boundary, draw a **Line** and style it.

The triangles on my cold front face the wrong way.

Turn on **Flip Symbols** on the front's **Style** tab. Symbols sit on the left of the direction you drew, so drawing the front the other way also flips them.

How do I resize a high or low?

Select it and drag the small blue square at the bottom-right of its box. Highs and lows have no size slider.

My filled areas disappear when I add radar or model data.

By default, fills draw under weather data layers. Turn on **Fills above other layers** under **Layer Position**.

Why does my text get tiny when I zoom out?

Text anchored to the map keeps its size on the ground. Turn on **Screen Relative** to keep it the same size on screen at every zoom.

Why is Upload locked or greyed out under Images?

Images need Professional or above and a signed-in account. **Upload** is also greyed out while a file uploads and once you have 40 images. Remove one to add another.

What image files can I upload?

PNG, JPEG, WebP, SVG or GIF, up to 8 MB. Images are scaled to at most 512 pixels on the longest side and saved as PNG, so GIFs don’t animate.

Do bundles, workflows or scenes save my PGEN map?

No. PGEN is separate: save it as a product and load it from the **Products** tab. Your drawing stays on the map when you switch bundles or workflows.

Can I share a product with someone else?

Products are private to your account and have no share link. Export the map with **Download board**, **Share board** or **Export animation** instead.

Is there a keyboard shortcut to open PGEN?

No. Inside PGEN, `Enter` finishes a path, `Esc` cancels a path or a shape you are dragging, `Backspace` removes the last point while drawing, and `Delete` or `Backspace` deletes the selected feature.

Why did the font of my PGEN text change?

Clicking **Apply** or **Reset** for **Default font** in **Settings** → **Appearance** updates text already on the PGEN map and the hurricane category labels too.