colors_inventory: codebook and rules

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I. Codebook

sample_ID: An ID label that connects the inventoried graphic to the sample image.

graphic: Name of graphic on webpage.

office: Which NCEP office the graphic was produced from.

use: The overall purpose of the graphic, which was either pulled from a product description or written by the research team if no description was provided.

hazard: Which weather phenomenon the graphic was describing, e.g., flooding, precipitation, wind, etc.

data_type: Describing the data the graphic product is displaying. Numeric refers to data depicting the physical extent of a hazard (e.g., inches of rain). Probability describes the data showing likelihood of a hazard (e.g., 50% chance). Categorical describes the data depicting categorical impacts or groupings of a hazard (e.g., watch or warning categories).

scheme_type: Describing the sets of values that describe the data in the graphic together. Qualitative refers to schemes that display categories of data that are related by topic, but not in a direct, numerical fashion. These schemes use sets of colors with distinct hues (e.g., convective outlook). Sequential schemes refer to numerical data that goes from a low point to a high point, using color palettes varying shades from light to dark or dark to light (e.g., probability of precipitation– POP). Diverging schemes refer to groups of data ranging in an interval that includes a neutral or midpoint value (e.g., temperature anomalies).

palette_type: This is a label for the type of color set the graphics were using. Rainbow refers to colors in a palette that cover multiple hues and saturations, following the visible spectral schema of light. Monochromatic describes colors in a palette that are the same hue, though are different shades (e.g., light orange to dark orange). Analogous refers to color palettes where the hues are next to each other on a color wheel (e.g, yellow, orange, red). Lastly, Complementary color palettes refer to hues that are opposite to each other on the color wheel (e.g. blue, orange).

bin_count: Documented number of colors used in graphics; e.g.,the SPC Convective Outlook has 5 colors. This is also known as bins in a legend or key. If there were continuous color schemes that did not have discrete bins, this number was counted from the number of tick marks on the legend.

bin_style: If the colors on the graphic were discrete (e.g., finite colors for each step in legend) or continuous (e.g., smoothed, blended colors throughout legend).

color_name: The names of the color(s) in the graphic, following the list of empirically-validated universal basic color terms: white, black, brown, gray, red, orange, yellow, green, blue, purple, and pink (Berlin & Kay, 1969).

hexcode: The hex code(s) of the color(s) on the legend of the graphic, which was pulled using the ColorZilla hex code picker tool (iosart 2024).

colorblind_friendly: Binary marker (yes or no) if graphic's color scheme was colorblind-friendly, determined using Toptal Colorblind Web Page Filter (Colorblind Web Page Filter n.d.).

key: Binary yes or no if the graphic used a key or legend.

key_label: The labels listed in the key that correspond with each color on the graphic (e.g., 1.00, 1.50, 2.00).

graphic_label: If the graphic had additional labels (text or numbers) on the image (e.g., enhanced, slight).

interactive: Binary capture for if the product was interactive (e.g., had zoom capabilities or overlay toggles) or static.

operational: Whether the product is operational or experimental.

target_audience: Who the target audience of the product is, if provided from product description documentation.

citations: Links to the product, product description, and other related websites that provided the information to fill out the previous columns.

archive_link: Link to archive of previous products, if available.

II. Rules followed by research team

Inclusion

1. Do not include graphics that are area maps, such as WFO county warning areas.
2. Do not include text products.
3. Do not include maps in black and white with no key nor categories.
4. Do not include climatology graphics (i.e. historical data) unless they incorporate current forecast information.

Color identification

1. Use the color in the key; isopleths/boundary lines are not considered colors unless they are in the key.
2. Do not double count graphics. For example, the NHC time of arrival graphic doesn't have distinct colors, but is overlaid sometimes with WSP. Therefore, not cataloged twice.
3. Black and white lines are not counted as colors when displaying path (e.g., cone of uncertainty lines); only color categories are considered in this scope of this project.
4. Use Colorzilla hex code picker to determine colors.
5. Pull colors from a saved PNG/JPEG in the GoogleDrive, rather than from the site itself to ensure consistency across researchers.
6. If it is a continuous color scheme, take the hex codes from tick marked spots as close to the midpoint as possible, but if not, go to the right.

Individual column rules

1. interactive: Interactive graphics are defined as something that the user changes the view or data by selecting options on site or toggle, so for example changing the zoom alters the colors or amount of data shown on the screen.
2. palette_type options: rainbow, monochromatic, analogous, complementary, unclassified. A palette is considered "unclassified" if it cannot reasonably be classified under another palette type, or if the graphic displays multiple hazards and each hazard has its own, unrelated, palette, such as the CPC 8-14 Day U.S. Hazards Outlook.
3. key_label: label that appears next to the color in the key/legend.
4. graphic_label: label that appears in the colored region on the graphic.
5. colorblind_friendly: Determined using the Toptal website.