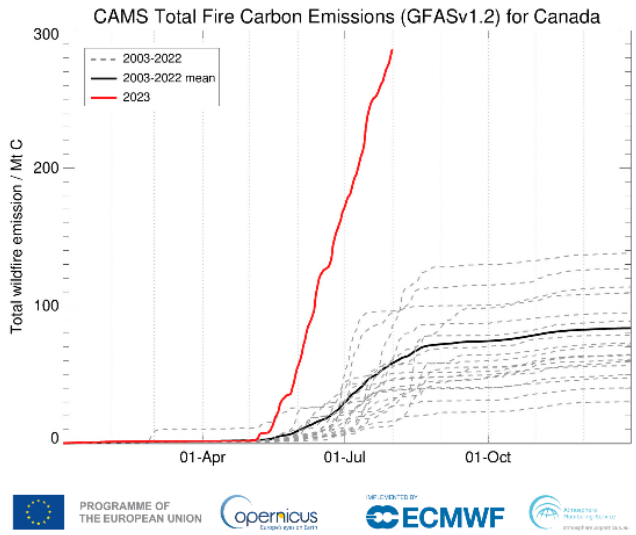
MACQUARIE University

Graphic 1: Statistical graphic about the 2023 bushfires in Canada



Citation:

Copernicus Atmosphere Monitoring Service (CAMS). Total fire carbon emissions for Canada graph [image]. GFASV1.2 daily total cumulative estimated carbon emissions for Canada since 1 January. [Internet]. 2023 Aug 3 [cited 2023 Aug 13]. Available from: https://atmosphere.copernicus.eu/record-breaking-boreal-wildfire-season

Reason for choosing the graph:

I picked this graph because it clearly shows the significant impact of the 2023 bushfires in Canada, especially when compared to the fires from 2003-2022. While the main idea is easy to understand, some parts could be improved.

Description of the graph:

The graph tells us about the fire carbon emissions in Canada from 2003 to 2023. The red line is for 2023, which is much higher than the average for the earlier years, shown by the black line. The grey dashed lines are for each year from 2003 to 2022. 2023 had extreme wildfires, releasing as much as 300 Mt C. The side of the graph (y-axis) shows the emission amounts, and the bottom (x-axis) shows the months.

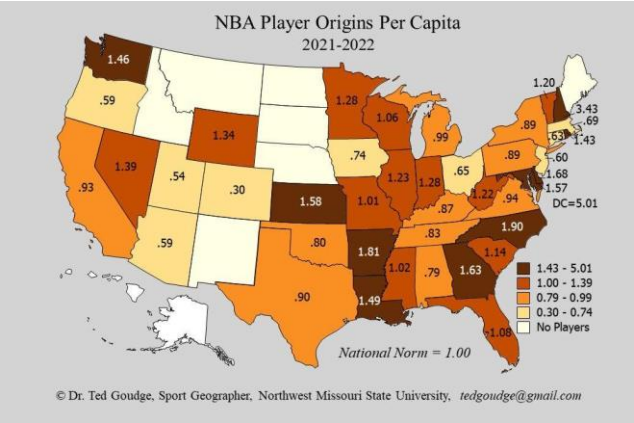
Critique:

The colours are helpful: red for 2023, black for the average of earlier years, and grey dashed lines for each of those years. We see months at the bottom and emission amounts on the side. There is a legend on the top left to explain the colours and a title that tells us what the graph is about. The chart does an excellent job of showing how destructive the 2023 fires were.

However, a few things could make it even better: Firstly, previous years' shades could be used to see the emission pattern over time. Secondly, the emission numbers could be put on both sides of the graph, and the background grid could be placed horizontally for easier reading. Lastly, a label for the months could be placed at the bottom.

This graph does a good job of showing the data. It's easy to see and understand the main points, especially how 2023 compares to earlier years. But adding slight changes could improve the graph's readability and even illustrate more from its data.

Graphic 2: A choropleth map: NBA Player Origins, 2021-22



Citation:

Goudge T. Geography with Goudge: NBA Player Origins, 2021-22 [Internet]. KMAland; 2021 Oct 24 [cited 2023 Aug 14]. Available from: https://www.kmaland.com/news/geography-with-goudge-nba-player-origins-2021-22/article_31e65774-34d1-11ec-bfc8-b333afbed31f.html

Reason for choosing the graph:

The NBA, being a global sensation, consistently piques the curiosity of fans, players, and stakeholders about the geographical origins of its players. The selected choropleth map effectively employs colour gradients to depict the number of NBA players across U.S. states, offering readers a swift grasp of the regions where most NBA players grew up.

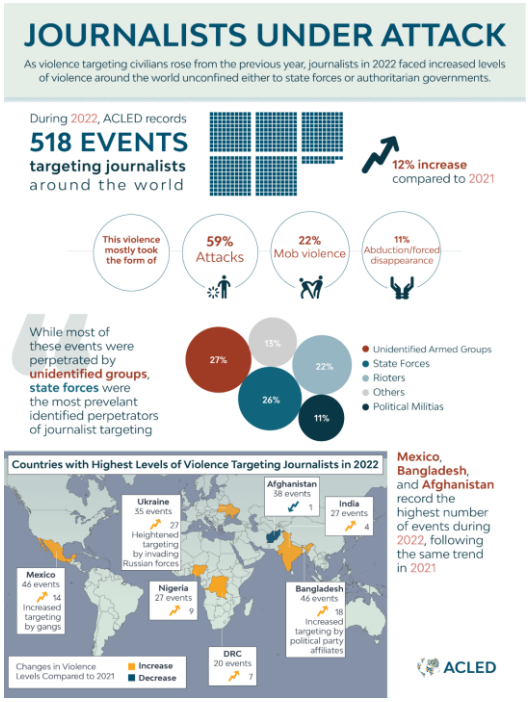
Description of the Graph:

This choropleth map visually represents NBA players' origins, considering each area's population. Rather than showcasing raw numbers, the 'per capita' approach reveals that although certain states have fewer NBA players, they might produce a higher ratio of players relative to their population size. Data values have been normalized such that the national average is denoted as "1". Regions surpassing this benchmark produce NBA players at a rate higher than the national average. In contrast, those below it are less prolific in this context. Notably, DC, with a score of 5.01, produces NBA players at a rate five times the national average. The east of the U.S. showcases a denser representation of NBA players compared to its Western counterpart.

Critique:

The choropleth map's strategic use of colour gradients offers readers a clear visual representation, distinguishing regions with a higher per capita count of NBA players. Setting the national average as "1" is commendable for its dual benefits: it ensures equitable comparisons among states and simplifies interpretation. One area of potential improvement, however, is the inconsistent intervals between different shades. The differences in the range values, such as the lightest colour representing values between 0.3 to 0.74 and the subsequent darker tones spanning from 0.79 to 0.99, 1 to 1.39, and 1.43 to 5.01, respectively, can lead to potentially misleading interpretations. The lack of clarity on why there are gaps between these intervals further exacerbates this issue. An explanatory note or legend clarifying "National Norm=1" would be beneficial for those unfamiliar with data normalization. Additionally, incorporating an element of interactivity or providing more contextual details would further elevate the map's informative potential.

Graphic 3: Statistical infographic: Journalists Under Attack in 2022



Citation:

Jaffe C, Murillo C, Lay T. Infographic: Journalists Under Attack [infographic]. ACLED. [Internet]. 2023 [cited 2023 Aug 15]. Available from: https://acleddata.com/2023/07/11/infographic-journalists-under-attack/

Reason for choosing the graph:

In an era characterized by the rise of fake news, fact-checking, and the immense influence of media on global events, journalists' safety is paramount. This infographic encapsulates the increasing dangers journalists face worldwide, making it an essential tool for understanding and advocating for press freedom. It serves as a powerful reminder of the challenging environments journalists navigate, especially in particular countries. For this reason, this infographic is chosen for this assignment.

Description:

The infographic titled "JOURNALISTS UNDER ATTACK" emphasizes the heightened violence against journalists in 2022. It records 518 violent events, a 12% rise from the previous year. The types of violence are segmented into Attacks (59%), Mob Violence (22%), and Abductions (11%). Perpetrators are mainly unidentified groups (27%) and state forces (26%), among others.

A map pinpoints seven countries with significant violence levels. All except Afghanistan showed an increase in violent incidents. Mexico, Bangladesh, and Afghanistan had the highest event counts, a trend that looks consistent with 2021.

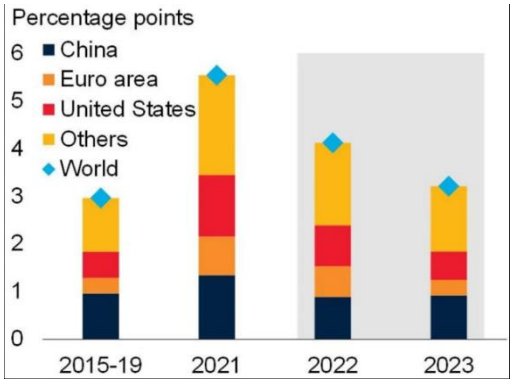
Critique:

The title instantly conveys the infographic's primary message, drawing attention and setting the context. Breaking down violence types and identifying key perpetrators offers a layered understanding of the issue. This layered approach helps readers quickly discern the magnitude and nature of the problem. The map serves as an effective tool to immediately convey regions with significant concerns, making the data geographically relatable.

However, some elements could be refined for better clarity and impact. The colour choices might be more apparent, particularly for differentiating data segments. A distinct colour could help emphasize the 12% increase among the small squares representing the 518 events. When breaking down the types of violence using circles, it's noticeable that their percentages don't sum up to 100%, which can lead to confusion. A bar chart might be a more straightforward representation of the segments that display who is targeting journalists, allowing for easier comparisons between groups.

In conclusion, while the infographic skillfully sheds light on the perils journalists encountered in 2022, a few adjustments in design and presentation could elevate its overall impact.

Graphic 4: A statistical graphic relating to Global Economic Outlook (business)



Citation:

Quaglietti L, Wheeler C. The Global Economic Outlook in five charts [image]. World Bank. [Internet]. 2022 Jan 11 [cited 2023 Aug 14]. Available from: https://blogs.worldbank.org/voices/global-economic-outlook-five-charts-1

Reason for choosing the graph:

The global economic situation remains at the forefront of international concern, especially given the upheavals instigated by the COVID-19 pandemic. This bar chart, published by a reputable organization, the World Bank, offers invaluable insights into the contributions of major economies to global growth, giving readers an easily digestible overview of how the world's most powerful economies are faring. Its representation over multiple years, including a historical average and future estimate, provides depth and a broader context.

Description of the Graph:

The presented stacked bar chart showcases the contributions of major economies — namely China, the Euro area, the United States, and other countries — to global growth from the average period of 2015-19, 2021, and extends to projections for 2022 and 2023. Expressed as percentage points, these figures denote how much each country's GDP grew relative to the global average.

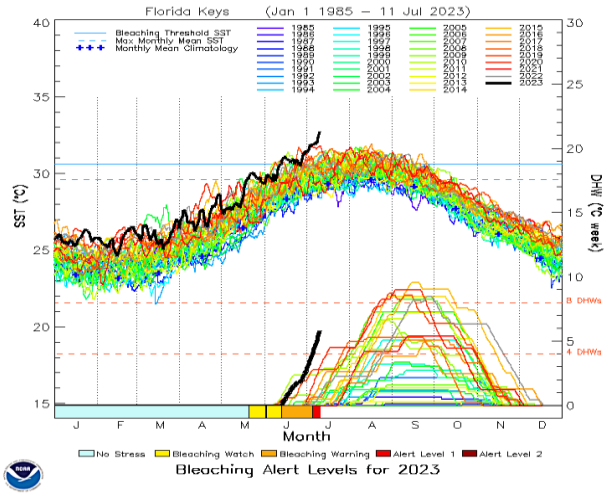
Interpreting the bar chart in dept, "Others" consistently registering the highest contribution across the four periods, trailed by China and the United States. A noticeable growth in all contributors' contributions from 2015-19 to 2021, followed by a gradual global decrease in the following years. The United States showed an upturn in 2021 but anticipates a decline for 2022 and 2023. Both 'other countries and the world average echo the trajectory exhibited by the United States, suggesting a global trend.

The chart uses a stacked format with distinct colour codes for each region: China (Dark blue), Euro area (orange), U.S. (red), others (yellow), and the global average (ocean blue). Years are marked on the X-axis, with 2022 and 2023 shaded differently, indicating projections. The Y-axis shows percentages ranging from 0 to 6%. The "Percentage Points" text on the top looks like the title, but I suspect it is most probably a y-axis label.

Critique:

While the stacked format effectively illustrates individual contributions and their cumulative impact, the close colour shades of yellow and orange make differentiation challenging. Including specific percentage labels would enhance clarity and accuracy. The shaded region for 2022 and 2023 subtly suggests projections, but this could be more explicitly stated for the benefit of readers unfamiliar with such conventions. Furthermore, the chart lacks essential elements like a descriptive title and clear data labels. While the chart provides an overview of global economic contributions, incorporating these suggestions would considerably boost its clarity and impact.

Graphic 5: Multi-line chart: Rising Ocean Temps Raise New Concerns for Coral Reefs



Citation:

Manzello D. Rising Ocean Temps Raise New Concerns for Coral Reefs. NOAA Satellite and Information Service News [Internet]. 2023 Jul 26 [cited 2023 Aug 15]. Available from: https://www.nesdis.noaa.gov/news/rising-ocean-temps-raise-new-concerns-coral-reefs

Reason for choosing the graph:

The graph depicting bleaching alert levels in relation to sea surface temperatures (SSTs) is selected for its relevance to the urgent environmental issue of ocean warming. NOAA's consistent tracking of this rise, coupled with Dr Derek Manzello's insights, highlights the acute threats coral reefs face. The graph serves as a visual warning of the significant and rapid changes in SSTs. Through this, it emphasizes the immediate risks to marine ecosystems and underscores the necessity for preventive measures.

Description of the Graph:

The graph presents the sea surface temperatures (SSTs) in relation to coral bleaching alert levels. The black line, representative of the year 2023, prominently indicates that the SSTs for this year have consistently been among the highest on record. A reference blue horizontal line marks the threshold where corals begin to experience heat stress. The visual representation underscores that the SSTs in 2023 surpassed this bleaching threshold much earlier in the year than historical patterns, such as the severe bleaching events of 2014 and 2015. The part below must be related to DHW, which measures the intensity and duration of oceanic heat stress. It is calculated in units of degrees Celsius per week. A high DHW value indicates that the ocean has been under much heat stress for a long time.

Critique:

The graph has several challenges that affect its clarity and usability. To briefly address these issues, I'll highlight the most critical ones. The chart is not particularly user-friendly; parts convey highly technical data, and specific details remain elusive due to overlapping lines and ambiguous figures. There's an information overload: The entire dataset's inclusion makes the historical data almost indistinguishable. Resorting to 5- or 10-year averages might have rendered the chart more digestible. The title is insufficient: It provides only a broad context (location and timeframe) without hinting at the graph's core narrative. A more descriptive title would have amplified its value. Dual metrics on one chart: Merging two distinct metrics (SST on the left and DHW on the right of the y-axis) within a single graph adds unnecessary complexity. Presenting these metrics in separate charts could have simplified interpretation. As it stands, bleaching alert levels over the x-axis becomes confusing, making it unclear whether they relate to SST, DHW, or both. There are many uncertainties to discuss; However, the main challenges are mentioned for this assignment.