



ADPR 5750- SOCIAL MEDIA ANAYLITICS

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Statement of Business Problem

After analyzing National Geographic's social media presence, we identified a few challenges that the company may face, mostly centered around the amount of engagement that their posts generate. The National Geographic Twitter account, @natgeo, has over 25 million followers, but it is uncommon for the number of retweets their content receives to be over 1000. National Geographic acts more as a news source and not as a thought leader in how to combat many of the issues that they publish.

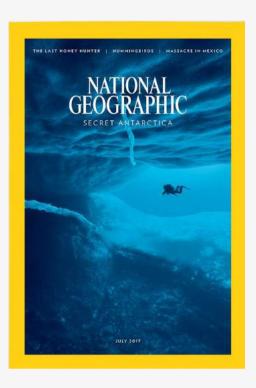
We believe that in conjunction with high-quality content, the implementation of a call to action when dealing with sensitive topics such as animal extinction and the climate crisis, would increase their engagement rates by a significant margin. Also, based on our analysis of which types of posts generate the most engagement, we believe that increasing the amount of animal-related posts would benefit the National Geographic accounts greatly.

National Geographic owns some of the most widely followed accounts on the social media platforms that we analyzed. So rather than setting a goal to expand their audience further, we believe that a specific and attainable goal would be to increase the number of reposts their content gets so that it averages at least one thousand.



Data Overview

For **owned data**, National Geographic's Twitter page was analyzed using the social media monitoring software, Brandwatch, from December 4th, 2020 to February 4, 2021. We analyzed a total of 300 tweets during our timeline. Through this careful analysis, we uncovered what drives the most engagement in posts by National Geographic



For **earned data**, We analyzed data uncovered within the three-month period in the earned, organization, and topic data sets by producing boolean queries and implementing them into Brandwatch to uncover mention data within the platforms Twitter, Tumblr, and the news. In total there were 6 million mentions of National Geographic or closely related search terms. Facebook was omitted as a potential

platform due to a lack of mention data.

For **competition data**, Posts from National Geographic's top competitors including Discovery Channel, Discovery Magazine, Scientific Magazine, and New Scientist were analyzed and compared to National Geographic by quantitative categories like sentiment and overall volume.

Tool Used: Brandwatch

Date Range: Dec. 4, 2020 - Feb. 4, 2021

Platforms Used:

Twitter, Instagram, News, and Tumblr







KPIS

The overall engagement on Twitter was analyzed to assess the organization and how successful their performance was. Specifically, retweets, mention volume, and sentiment, and other interactions with the posts were analyzed.

KPI Goals

The goals throughout this analysis were to determine which posts, whether it be through hashtags or general topics, received the highest levels of engagement and caused a spike in conversation.



Top Recommendations

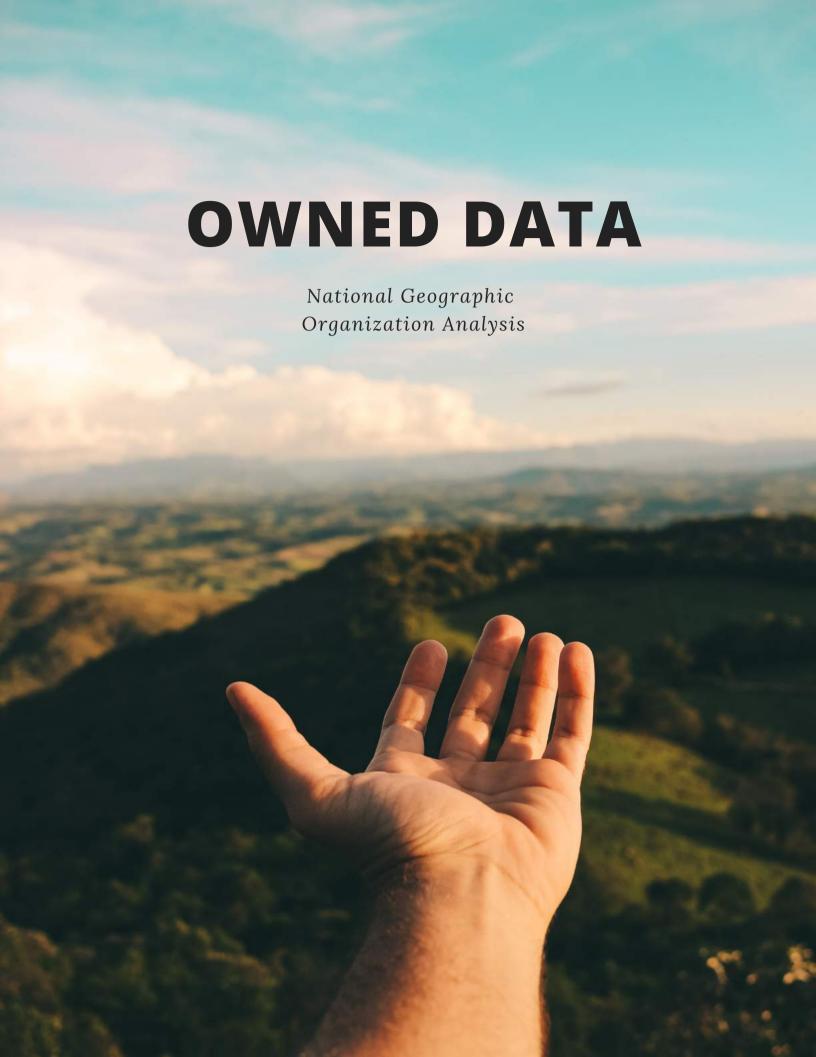
- 1. National Geographic should focus their attention on creating posts, the majority being news articles, that involve the ongoing discussion of social justice and civil rights.
- As a way to communicate more effectively to their large audience,
 @NatGeo should increase the amount of photographic and video content that they post.
- 3. After analyzing their owned data, National Geographic would likely receive higher levels of engagement if they implemented the use of hashtags into their posts. Rarely do they use this function of the social media platforms currently.
- 4. After analyzing their earned data, it would be beneficial for National Geographic to increase their focus on breaking news and current events in the natural world as a way to engage their audience on each platform.
- 5. After analyzing @natgeo's Tumblr data, we believe it would be beneficial to focus on conversations involving nature photography, as these are among the most popular subject matters on the platform.
- 6. Also based on the information we gathered from the earned data, we would recommend that @NatGeo engage with their audience by communicating how events taking place in the natural world may affect our society.
- 7. @NatGeo would benefit from using celebrities as social media influencers to aid them in the promotion of their content that they post on the platforms as well as the films and conservation projects they fund.



Top Recommendations

- 8. National Geographic should continue posting video content, uniquely created for each platform as these receive more engagement than the photos do. Having exclusive video content for their Twitter account only would likely accomplish the goal of receiving more attention in this way.
- 9. National Geographic should increase the amount of interaction that they have with other people by means of their social media accounts.
- 10. National Geographic should increase the number of pop-culture references or events, especially when it benefits those whom they already do business with, like Disney.
- 11. Engage with influential users who are involved in the same conversations as National Geographic and those who are influential in areas that National Geographic would like to expand to, like social politics.
- 12. We recommend that National Geographic appeal more to the emotions of their audience by means of producing more content of attractive landscapes or animals.







Owned Data: Twitter



INTRODUCTION

Our dataset, which investigates a three month period of the twitter account National Geographic (@NatGeo), uncovers interesting actionable insights concerning the categories that induced engagement as well as the demographics that correlate with them. The data set investigates 300 posts of owned data collected between December 4th, 2020 and February 4th, 2021. Overall, we have seen that posts with either animal content or those concerning world history saw the highest levels of engagement.

RECOMMENDATIONS

Our recommendation is to increase engagement by means of the increased usage of hashtags in conjunction with the links to articles on their website. The article posts received close to 60,000 retweets while the other media types received only 5,000 (pg 5). With each major theme of the article or that National Geographic uses, a repeated hashtag could be used to link these posts together as well as increase the traffic by means of the explore page on twitter. For example, to increase the amount of traffic on all animal related posts, we recommend using the #wildlife or #wildlifephotography for each post. In this way, National Geographic can continue to exploit the media type that receives the most attention, while also increasing engagement through the use of hashtags.

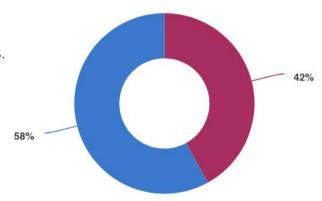


DATASET INFORMATION

VOLUME, TIME & DEMOGRAPHIC

VOLUME & TIME

This is an analysis of 300 tweets of owned data by National Geographic's twitter posts. The owned data was collected from December 4th 2020 through February 4th 2021. The total mentions in this period are up at 6 million, which is up 78% from the previous period.



DEMOGRAPHIC INFORMATION

Based off of the graphs, we see a 16% higher engagement level by females as opposed to men. Females make up 58% while males make up 42%. We can also see that over three months the mentioned volume of females has reached as high as almost 40,000. Males highest levels reached around 20,000 with lows of about 8,000, much lower than the females.



In the infographic below we see what the readers have been engaging in in terms of trending phrases, key words, and hashtags.



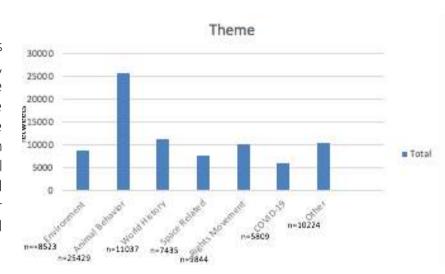


Actionable Insights

Average Engagement by Tweet Theme

ANIMAL BEHAVIOR RELATED POSTS

When National Geographic tweets content that is related to the behavior of animals across the world, they receive a higher rate of engagement. These tweets receive around 14,000 more retweets than the next leading category of "World History." This could be due to the sense of innocence the animals display in these tweets, while appealing emotional to psychographics of viewers. National Geographic will embed a story about what makes the animal great or what a viewer can do to help them. The readers feel led to engage these posts more than other themes.



CALL-TO-ACTION

Rights movements posts have actionable content that the readers should act on. The rate of engagement in these posts can be increased by a specific call to action in the content, whether that be to donate or look at the world in a new way. The already high engagement levels could be due to society starting to be more socially conscious and National Geographic should also continue to relate to readers in this way.



HIGHER RELATABILITY

The second highest level of engagement was "World History" with about 11,000 retweets over a three month span. The rest of the themes are not far behind as Covid-19 related posts are the lowest of the six with about 6,000 retweets. The stable levels of engagement could be due to the fact that the quality of National Geographic content is reliable and appeals to a wide range of viewers.





Actionable Insights

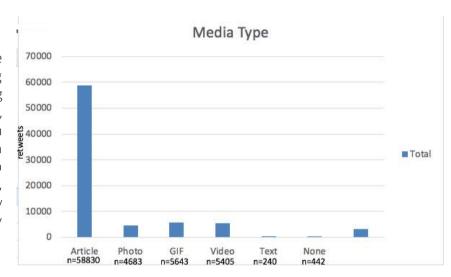
Average Engagement by Media Type

DELIVERING CONTENT BY ARTICLES

National Geographic's twitter posts are dominated by articles relating to their different themes. They know the audience enjoys educating themselves by reading these insightful articles. In the past 3 months, article posts received close to 60,000 retweets. This is substantially larger than the next highest media type which is GIFs and videos with about 5,000 retweets. National Geographic will tweet many articles per day with a few photos, GIFs, and videos posted every few days. National Geographic is well aware of why their audience follows them, and based on this data they should continue to focus on posting resourceful articles.

LACK OF IMAGE CONTENT

The next highest levels of engagement are all about the same between photos, GIFs, and videos. The reasoning for this is that National Geographic is known for sharing large amounts of information following their themes, and articles provide the best platform for this. Though they have a large presence on twitter with 25.6 million followers, much of their audience are the same group who enjoy the articles. By posting more image content, especially related to animals, National Geographic may find that they can continue to expand their reach by posting enjoyable image and video content.



THE VALUE OF PHOTOS, GIFs & VIDEOS

When looking at tweets from the past few days from @NatGeo, when they post videos with no links to an article it receives higher engagement. Although many people enjoy the content from articles, many twitter users like simple and fun pictures or videos. The audience will quickly like, quote, or retweet the post before continuing to scroll to the next topic. For example when looking at these two tweets from the last few days, the video of wildlife receives higher levels of engagement than the usual article.





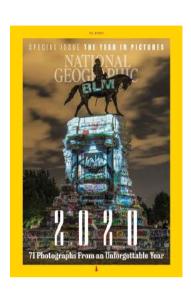


Actionable Insights

Average Engagement by Hashtag Type

MAINTAINING RELEVANCY

The National Geographic Society is in a unique position when compared to many other non-profits that have specific and niche objectives and missions. National Geographic is a multifaceted organization that can stay relevant simply by creating and posting articles about the happenings in our world. In the past year we have seen posts from the Black Lives Matter protest movement to the Wildfires in Australia. National Geographic's jurisdiction is far reaching and can maintain relevancy simply by being current and honest.

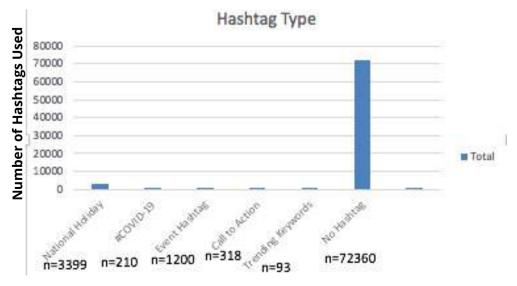


HOLIDAY HASHTAGS

The highest level of engagement on their hashtags are those based around national holidays. This would make sense are there are many holidays relating to nature, history, and animals. These holidays give @NatGeo a chance to expand their engagement in celebration of holidays they know their readers will enjoy. While adding more hashtag to their posts, @NatGeo should also look into posting more hashtags based on trending words. This already has about the third highest level of engagement among their posts, so increasing these would increase views on all their content. a little bit of body text

LACK OF HASHTAGS

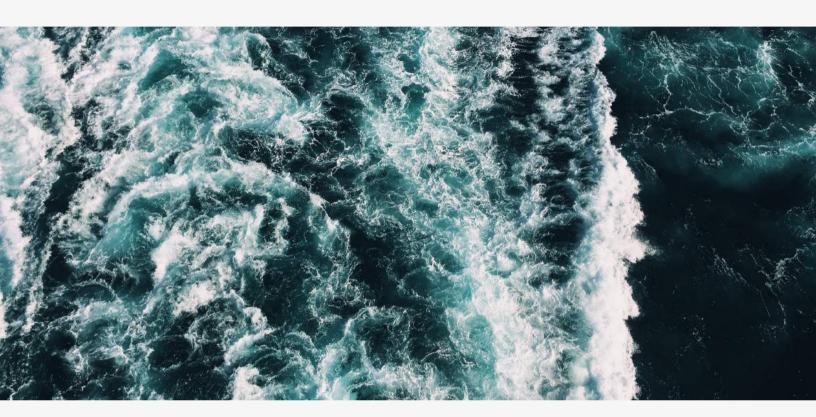
No hashtag is the overwhelming level of engagement for National Geographic's content. There are not nearly as many hashtags as there could be as a way to engage a larger audience. When there is a hashtag it is usually based around a national holiday or event relating to their themes. In the last 3 months national holiday based hashtags have received a few thousand retweets, but compared to over 70,000 for no hashtag, National Geographic could afford to include more. This could help them get more posts trending around a general audience, and increase engagement on all forms on content.







Earned Data Organization Analysis



DEMOGRAPHICS:

TIME FRAME:

December 4th 2020- February 4th 2021

POST VOLUME:

4Million post

GEOGRAPHY

United States: 60.62% United Kingdom: 11.61%

India 8.6% Canada: 8.3% Australia: 2.65% Indonesia: 1.84%

AUDIENCE

51% Female 49% Male

PLATFORMS

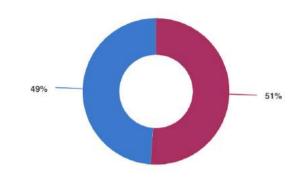
Twitter: 76% News: 11% Instagram 6% Tumblr: 3%



DATASET DESCRIPTION:

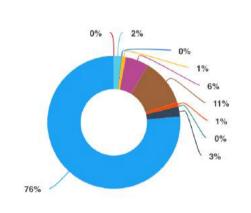
ORGANIZATION <u>DEMOGRAPHIC</u> BREAKDOWN

Of the mentions of National Geographic across their three most popular platforms, there is an almost even distribution of the genders of those posting with 51% being female and 49% male.



ORGANIZATION PLATFORM BREAKDOWN

A heavy majority, 76%, of mentions were posted through Twitter, followed by news sources at 11%.



Blogs

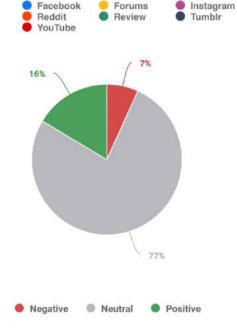
News

Twitter

Female

SENTIMENT ACROSS ALL PLATFORMS

Overall, we see that while the majority of the sentiment was neutral, positive sentiment occupied more than twice the amount of posts than negative ones.



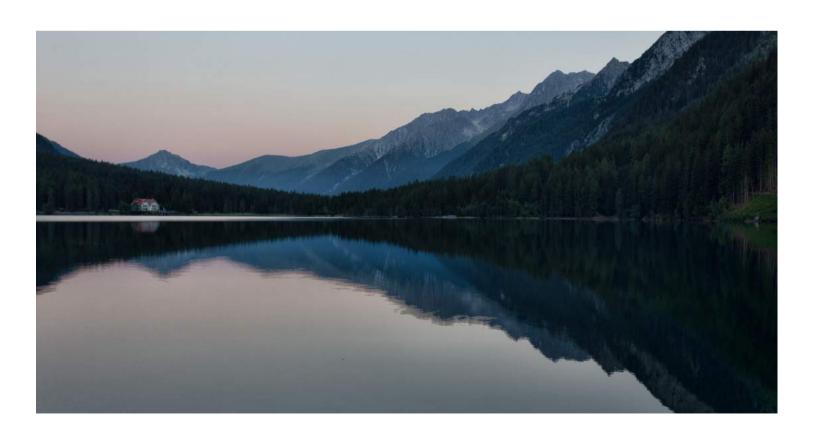


Earned Data Cross-Platform Conversation

First, we analyzed National Geographic's presence on their top three platforms News, Twitter, and Tumblr. Next, we analyzed the conversation about the topics of climate change and environmental events through the news. We then analyzed conversations of species endangerment, COVID-19, and wildlife and nature on Twitter. Finally we analyzed conversations of nature in history and photography on Tumblr. In this search our goal was to figure out what created the most conversation surrounding the National Geographic organization and discover what influential users and certain spikes that could help expand our mention volume

Lastly, we analyzed @NatGeo's Instagram over a one month period to discover what topics of conversation could help expand our reach on this platform.

In conducting our research we asked ourselves a series of questions: What conversations in the posts create the most activity among our platforms? How do NatGeo's competitors compare in mention levels and how can we improve?





PLATFORM-TWITTER

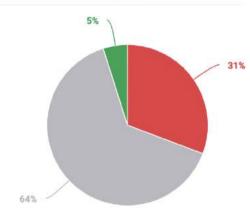
9

Of the 72k mentions isolated by our boolean query, 55k of those were posted through the social media platform, Twitter. While 38% of those mentions involved popular hashtags like #natgeo or #nature, other interesting trends and themes were in conversation during our data's time span of Dec. 4th to Feb. 4th.



SPECIES ENDANGERMENT

24.7% of the mentions discussed the endangerment of specific species of animals and insects. For example, National Geographic released articles on the endangerment of honeybee species which spurred conversation on the topic of the conservation of our wildlife. The sentiment surrounding these posts is 31% negative and 5% positive, since species endangerment is generally a negatively associated issue this is no surprise.

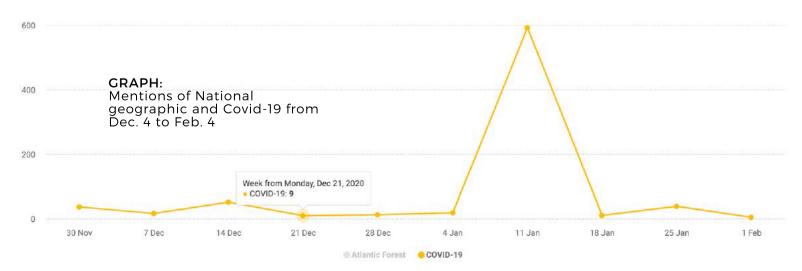


Neutral

Negative

COVID-19

6.5% of the conversation surrounding the organization of National Geographic currently involves the COVID-19 pandemic. During the week of January 11th, National Geographic published an article declaring that gorillas in the San Diego Zoo had tested positive for the virus, causing a spike in the amount of covid related mentions from an average of 12 to 591, which can be seen displayed on the graph below.



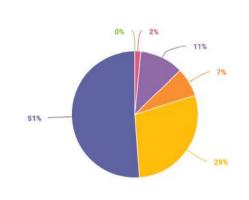


PLATFORM- NEWS

11.5% of the mentions of National Geographic came from various news sources with the majority of mentions originating from websites "yahoo.com" and "msn.com".

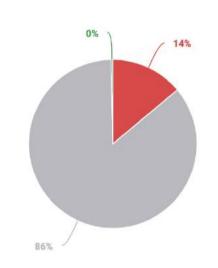
CLIMATE CHANGE

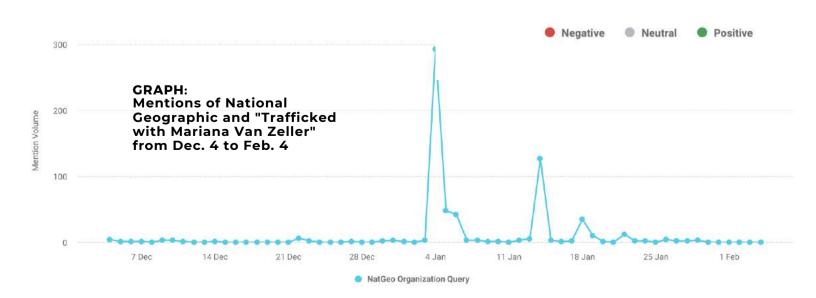
We covered 271 different news sites, with the top two being "yahoo.com" and "msn", the trending topic of climate change seems to be ever-present and accounts for 13.6% of all mentions by news sources during the two month period. Due to the negative implications that are associated with the warming of the climate, 19% of the mentions have a negative sentiment while only 9% are positive. We can also see that over 50% of the emotions associated with climate change is sadness. 29% of the emotion is joyful, which is mostly associated with positive and optimistic conversation concerning the climate crisis.



"TRAFFICKED WITH MARIANA VAN ZELLER

On January 4th, National Geographic announced a new show called, "Trafficked with Mariana Van Zeller." The show follows the dangerous and complicated inner workings of black market trading networks that often move exotic animals like tigers. There was a spike on January 4th when the show was released with 293 mentions and then created a second spike the next week when the show declared that it is, "easier to buy a tiger than adopt a dog in some parts of the US." Realizations like this one are likely why the mentions associated with this show are 19% negative and 86% neutral, with no positive mentions.



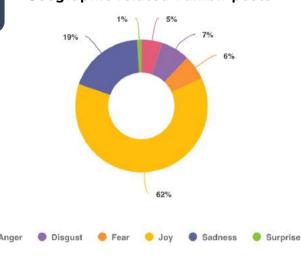




PLATFORM- TUMBLR

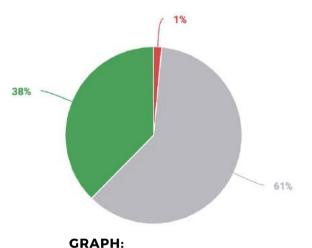
The majority of posts in Tumblr were either about nature, at 34%, or photography at 39%. Overall, this isn't surprising because we can see that wildlife photography saw an increase of 37% over the period of two months. The breakdown of emotions from these posts on Tumblr are largely joyful as seen by the graph. Due to the nature of Tumblr as a blogging platform and the majority of topics involving wildlife photography or nature, it is unsurprising that 62% posts are associated with a joyful emotion.

GRAPH: Emotion breakdown for National Goegraphic related Tumblr posts



TUMBLR AS A PHOTOGRAPHY PLATFORM

Tumblr, a social media platform for "micro blogging", had a majority of mentions associated with users promoting wildlife or nature photography belonging either to themselves or to the National Geographic organization. 330 of the 1809 posts were associated with this topic. 38% of these posts were associated with positive sentiment, a much higher percentage than both twitter and the news organizations previously analyzed in this report.

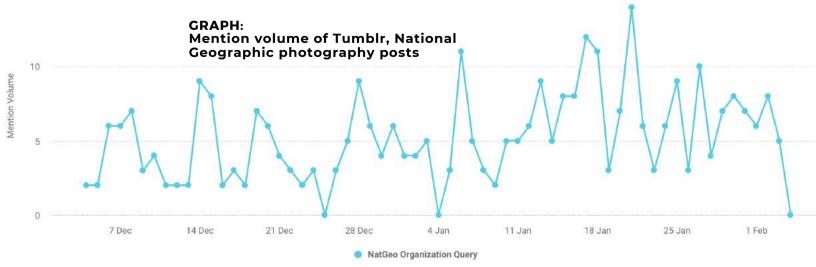


SPIKE ANALYSIS

The volume of Tumblr's photography posts from Dec. 4 to Feb. 4 has remained fairly steady, maintaining between 3 to 10 posts each day with some deviation above and below this average.



Sentiment of Tumblr

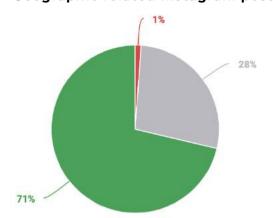




PLATFORM-INSTAGRAM

While we can only view the data from instagram over a much smaller period, 4139 posts were created that mentioned National Geographic just over the span of four days. A heavy majority of 71% of posts were associated with positive sentiment, a much higher percentage than any of the other platforms that we have investigated.

GRAPH: Sentiment Breakdown for National Geographic related Instagram posts



Neutral

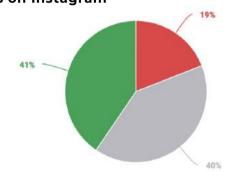
Positive

PLATIC WASTE DURING THE PANDEMIC

One of the major topics of conversation on Instagram is the increased consumption of single use plastic waste during the pandemic. This in conjunction with climate change accounts for 138 of these posts. A higher percentage of negative sentiments can be seen when compared to that of the posts for the entire platform on the graph to the right.

GRAPH: Sentiment of plastic waste posts on Instagram

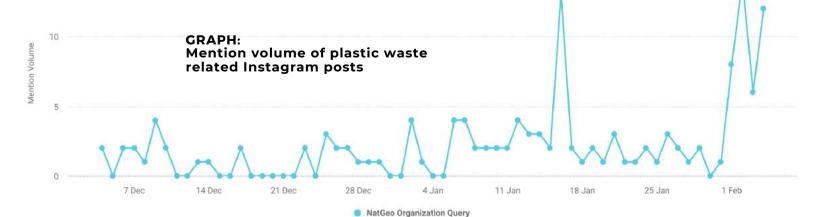
Negative



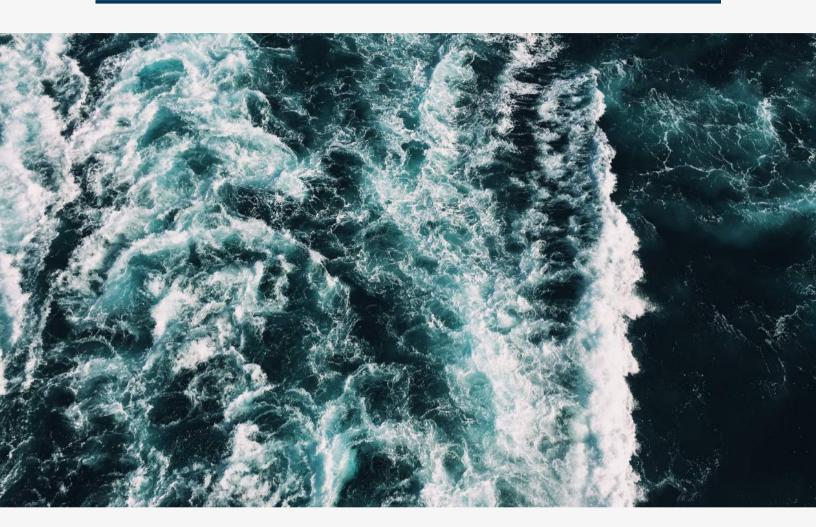


SPIKE ANALYSIS

The two most notable spikes over our time length are January 16th and the beginning of the month of February. It could be assumed that the amount of posts for the months of January and December look similar to that of February but due to the nature of our insight program, we can only see information from the most recent month, which is narrowly included in our data set.



Earned Data Topic Data Analysis



DEMOGRAPHICS

TIME FRAME:

December 4th 2020- February 4th 2021

VOLUME:

511,457 mentions

GEOGRAPHY MENTION VOLUME

USA: 117,609 UK: 47,931

AUDIENCE:

56% Male 44% Female

Top 3 Platforms:

News: 47% Twitter: 28% forums: 7%

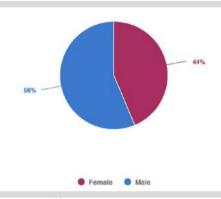


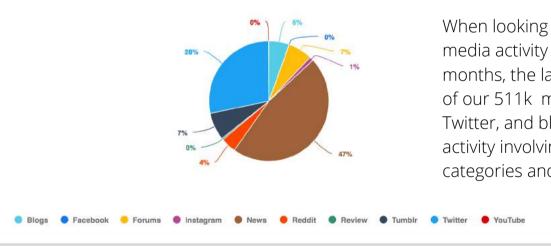
Earned Data

Custom Classifier Topic Analysis

Through the custom classifier tool we were able to narrow the topic data down to three separate categories. The first and most popular was the category of "Historical implications in nature." The second was "Wildlife and nature" and the last category was what exactly is currently "Impacting the environment."

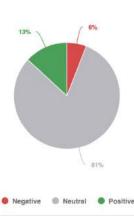
Of the mentions of National Geographic across their three most popular platforms, there is an again almost even distribution of the genders of those posting with 56% being male and 44% being female.





When looking at @NatGeo's social media activity from the last three months, the largest content sources of our 511k mentions were News, Twitter, and blogs with the most activity involving our most engaged categories and themes.

Overall we can see that while the majority of the sentiment was neutral covering 81%. Negative sentiment was only 6% which is a good thing as the positive which was 13%.





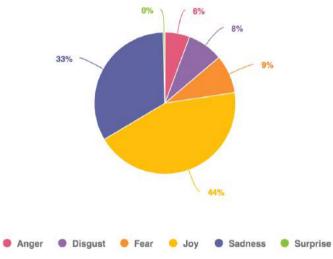
Topics

Category 1: Historical implications in nature

When looking at the most popular category in this classifier, it received a mention volume of close to 18,000. At its lowest it received a mention volume of close to 3,100.

Sentiment

. Based off of this graph the higher mention volume of museums and history in nature was consistently negative and neutral. The positive sentiment of this theme had lower levels of mentions, but was still consistent. When looking at the break down of emotions, it is not suprising 44% experienced joy, while disgust had 33%.



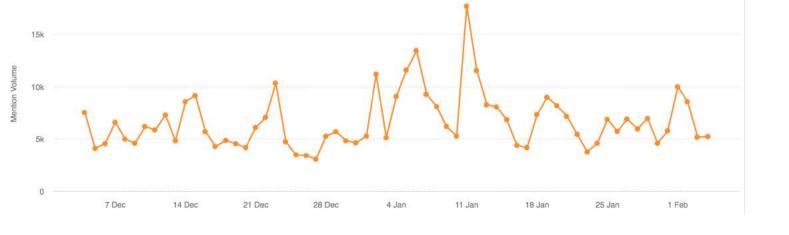
SPIKE ANAYLSIS

When looking at this spike analysis we can see there was a spike in activity, on January 12th, regarding museums of nature because loe Sertich of the Denver Museum of Nature and Science discovered a rare missing skull.



Patriot.ist

After Decades Of Disagreement, First New Skull Of Parasaurolophus Discovered In Nearly 100 Years Solves





Topics

Category 2: Wildlife and Nature

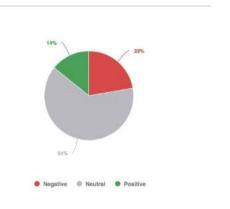
When looking at our topics of conversation, in the past three months, The theme of preserving and maintaining wildlife and nature was a prominent topic. At this categories peak it received a mention volume of close to 4,500. At its lowest it received a mention volume of 0. The specific topic of the Florida manatee received the highest level of mentions. When concerning the safety of animals and nature, Twitter is the source with the most activity involving this conversation and theme.

SENTIMENT

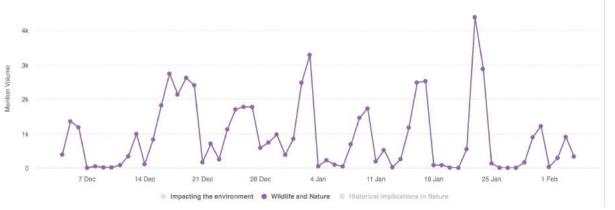
The sentiment among these posts was 64% neutral. Posts regaurding wildlife can be graphic in a positive and negative way, which makes this number not a suprise. This would make sense as the conversation surrounding "Fish and wilflife conservation takes up over 3% of the total twitter mentions.

SPIKE ANLYSIS

The spike in activity on Twitter regarding this topic of conversation was because of a recent post by @DrEricDing describing a mutilated manatee with the word "Trump" in it. This was posted in January 23rd, and received over 4,000 mentions.





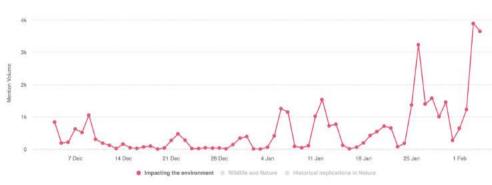




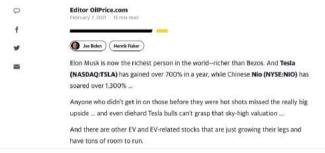
Topics

Category 3: Impacting the Environment

The final category of the custom classifier is how cetain events are impacting the environment. When this category peaked it received a mention volume of close to 4,000. At its lowest it received a mention volume of 187



Biden's Green Energy Boom Could Send These Electric Vehicle Stocks Soaring





SPIKE ANALYSIS

When looking at this spike analysis, we see the biggest spike in activity, on February 7th, regarding politicians impacting the environment was due to the new green deal proposed by Joe biden. Different articles and news outlets discussed the impact this new Green Deal will have on the electric car market and therefore the impact these cars will have on the environment.

SENTIMENT

33% 9% 44% Sadness Surp

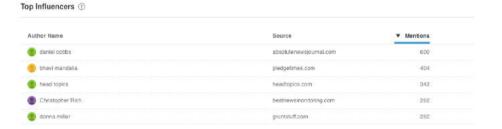
When looking at the sentiment of the audience it was mainly joy taking up 46%, but disgust was close with 33% level of sentiment. These numbers make sense as news is constantly releasing new content.



Key Influencers

When looking at the topic data, the most influential users, based off mention levels, came from the Twitter platform as they consistently saw the highest mention levels. This is not surprising as Twitter allows the most activity for discussion and engagement when compared to the other top platforms for @NatGeo.

NEWS:



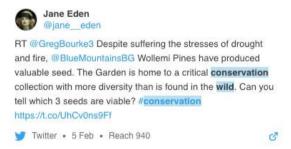
Top News influencer



TWITTER:



Top Twitter influencer



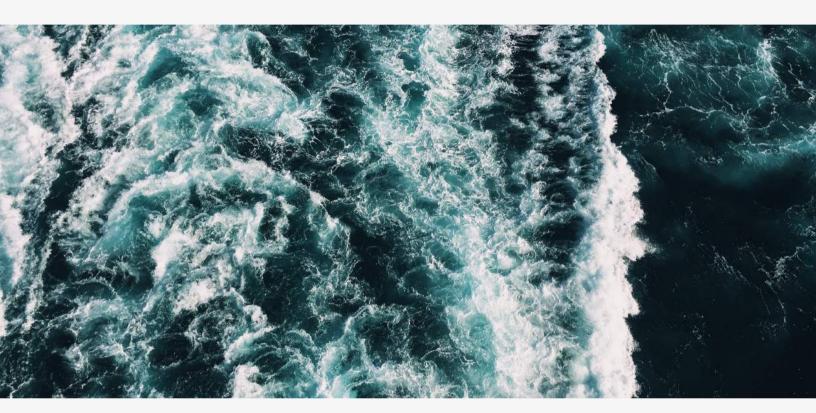
Forums:

Top Forums Influencer





Earned Data Competition Analysis



DEMOGRAPHICS:

TIME FRAME:

December 4th 2020- February 4th 2021

POST VOLUME:

3,439,328

GEOGRAPHY:

United States of America: 825,018

United Kingdom: 317,647

Canada: 96,897 India: 89,282

AUDIENCE:

42% Female 58% Male

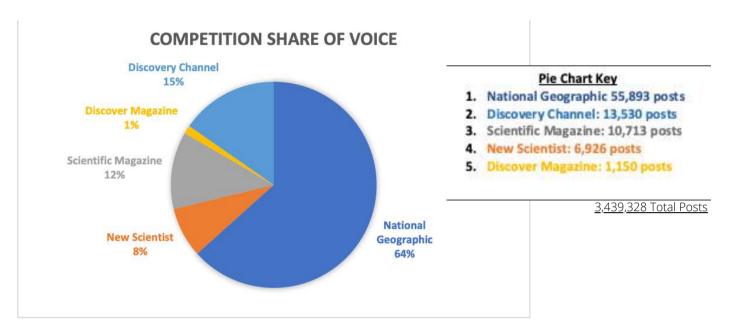
PLATFORMS:

Twitter: 59%
News: 19%.
Tumblr: 6%
Reddit: 6%
Forums: 6%

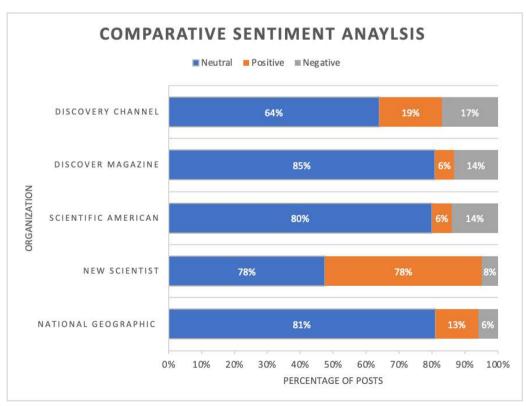


COMPETITION ANAYLSIS

Data for competition analysis is compiled only from Twitter:



National Geographic dominated the SOV with over 64% of the total eared posts. The company's competition pales in comparison when it comes to industry domination. Following Nat Geo, the second highest share of voice is the Discovery Channel with 15% of the total earned posts, with 13,530 mentions. The third highest competitor, Scientific Magazine, has 12% of the voice with 10,713 posts. Next up, is New Scientist with 8% of the total voice and 6,926 posts. Finally the smallesy competitor is Discover Magazine that brings in 1% with 1,150 posts.



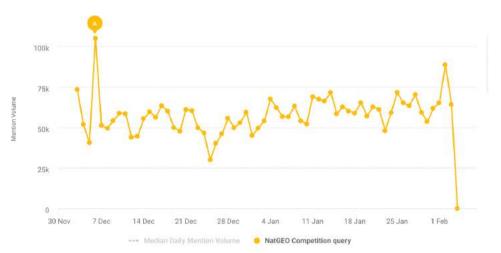


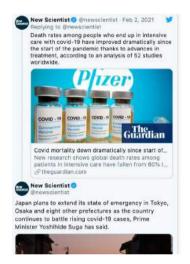
COMPETITION SPIKE ANALYSIS:



At Georgia rally, Trump tells GOP to vote in 'rigged' election

- 1. <u>December 6th 2020:</u> This main spike "A" on the graph. On this day was a lot of noise on twitter about "discoveries". This was around the same time that the highly contested presidential eection in the US was taking place. That day information was discovered by the trump administration that the election was rigged. This increased the activity exponentially that day.
- 2. <u>December 25th 2020:</u> There was a significant dip in the number of mentions on this day because it was Christmas Day.





3. <u>February 2nd 2021:</u> This day had the second largest spike in mentions. President Biden was sworn into office and the Covid-19 vaccines were in rapid production. There were new studies reporting the updated studies and medical discoveries. These conversations increased the overall conversation and circulation of articles about this topic, as seen here by New Scientist.

Actionable Insights

- The trending topics of the competition data set talk about discoveries, countries like America, Egypt and
 Africa and lots major world events. This shows that the audiences like to be informed about
 governments and life outside of their personal experience. NatGeo could feed into this by posting more
 content discussing world events.
- Through analyzing the spike analysis, National geographic should address more on the current events and medical discoveries around the world. Their competitors generate lots of activity when they discuss hot current topics like politics, current events and medical advancements.
- Increase the use of unique language because the typical "discoveries" becomes ambiguous.



Appendix

BOOLEAN QUERIES FOR BRANDWATCH

Organization Data Search Terms:

("National Geographic" OR @NATGeo OR @NatGeoTV OR @NATGeoMag OR @NATGeoPhotos OR @ngadventure OR "national geographic" OR "natgeo" OR @NATGeoTravel OR @natgeowild)

AND (Animal OR Animals OR "animal behavior" OR conservation OR wildlife OR "environmental sustainability" OR "world history" OR artifact OR insect OR space OR #wildlife OR #space OR #COVID19 OR #overheardnatgeo OR #nature

Topic Data Search Terms:

((wild OR wildlife OR "#Wildlife" OR #wild) AND (forest OR deforestation OR environment OR conservation)) OR

((nature OR scenery OR scene OR outdoors) AND (history OR historical OR #historical OR science OR "scientific discovery")) OR

((exotic OR "exotic places" OR #exotic OR #exoticplaces OR #travel OR #traveling OR #exploring) AND (photos OR photography OR #photos OR #photography))

Competition Data Search Terms:

(ORGANIZATIONS: NEWSCIENTIST, SCIENTIFIC AMERICAN, DISCOVER MAGAZINE, DISCOVERY CHANNEL)

"NEW SCIENTIST" OR NEWSCIENTIST OR @NEWSCIENTIST OR #NEWSCIENTIST OR "SCIENTIFIC AMERICAN" OR SCIAM OR @SCIAM OR #SCIAM OR "DISCOVER MAGAZINE" OR "DISCOVER" OR @DISCOVERMAG OR #DISCOVERY OR @DISCOVERY OR "DISCOVERY" OR @DISCOVERY OR #DISCOVERY OR #DISCOV