

MINING EFFECTIVE STRATEGIES FOR CLIMATE CHANGE COMMUNICATION

Aswin Suresh **Lazar Milikic** **Francis Murray** **Yurui Zhu** **Matthias Grossglauser**
EPFL EPFL EPFL EPFL EPFL

ABSTRACT

With the goal of understanding effective strategies to communicate about climate change, we build interpretable models to rank tweets related to climate change with respect to the engagement they generate. Our models are based on the Bradley-Terry model of pairwise comparison outcomes and use a combination of the tweets' topic and metadata features to do the ranking. To remove confounding factors related to author popularity and minimise noise, they are trained on pairs of tweets that are from the same author and around the same time period and have a sufficiently large difference in engagement. The models achieve good accuracy on a held-out set of pairs. We show that we can interpret the parameters of the trained model to identify the topic and metadata features that contribute to high engagement. Among other observations, we see that topics related to climate projections, human cost and deaths tend to have low engagement while those related to mitigation and adaptation strategies have high engagement. We hope the insights gained from this study will help craft effective climate communication to promote engagement, thereby lending strength to efforts to tackle climate change.

1 INTRODUCTION

Climate change is arguably one of the most important challenges facing humanity today with impacts on a global scale. While surveys indicate that a majority of the population in many countries is now knowledgeable about climate change and its impacts, the level of awareness and support for climate-friendly policies still vary widely among people from different countries, income and education levels and age groups (Leiserowitz et al. (2022), Flynn et al. (2021)). It is important to use communication to spread awareness and promote engagement among the groups that are less involved in order to further increase the scale of actions towards mitigation and adaptation and pressure lawmakers and governments to create and enforce climate-friendly laws.

There are several subtopics within climate change including its causes, impacts and mitigation and adaptation strategies. The potential to create engagement is likely to be different for each of these subtopics. For instance, complex technical details might be less appealing than vivid descriptions of impacts or promising solutions. Our goal in this work is to discover in a data-driven way which strategies of communication, as defined by the subtopics being emphasised, are more effective in creating engagement among a general audience.

The data source that we use for this study is Twitter. Twitter is extensively used for climate change communication by individuals, activist groups, and government agencies. Each tweet is associated with several metrics such as the number of *likes*, *retweets*, and *replies*, that quantify the engagement that it generates. All tweets along with their metadata are publicly available and can be easily accessed through the Twitter API, enabling us to curate a large and rich dataset on which to train interpretable engagement prediction models.

However, a significant challenge in building such models is the presence of confounding factors such as author popularity. A tweet might generate strong engagement because its author is popular rather than because of its engaging content. Another potential confounder is the change in public interest in climate change over time. For instance, tweets about climate change made around the time of extreme weather or a major climate change conference might receive greater attention than tweets at other times. We minimise the effect of such confounders by defining the task as comparing

the engagement within a pair of tweets rather than predicting the engagement for a given tweet. The pair of tweets are chosen to be from the same author and from the same window in time.

Climate change communication is an active area of research and the question of which strategies are best to promote engagement has been well-studied in the area (Agin & Karlsson (2021)). Gustafson et al. (2020) find that sharing personal stories on the radio about the harmful impacts of climate change can be a persuasive strategy. Xia et al. (2021) analyse the spreading behaviour of climate-related tweets and identify the factors responsible for virality from a dataset obtained through manual coding of a small number of tweets.

Tweet engagement prediction in general (not restricted to climate change) is also a well-studied problem. Tan et al. (2014) study the effect of wording on engagement by comparing pairs of tweets from the same user about the same topic. More recently, Wang et al. (2018) used multimodal information (images and text) to predict retweet behaviour. Topic modelling (inferring latent topics in text) has been used in Dahal et al. (2019) to understand which topics are prevalent in the global climate change discourse. To the best of our knowledge, we are the first to apply topic modelling in a pairwise comparison framework to predict engagement in climate change tweets and interpret the learned model to understand the engaging subtopics.

The paper is organised as follows. In section 2 we describe the dataset of tweets that we curated. The features we use for prediction and our model architecture are given in Section 3. We describe training and evaluation and discuss our results in section 4 and conclude the paper in section 5.

2 DATASET

We use the Twitter API to obtain 8,041,921 tweets related to climate change created between January 1st 2021 and November 4th 2022. To decide whether a tweet is related to climate change, we check if it contains one of the keywords in the 'General' topic category of UN Global Pulse (2014), a taxonomy for studying climate change tweets. We keep only the tweets in English (94.28% of the dataset). For each tweet, we keep its full text, author and information about whether it contains URLs, hashtags, animated GIFS, images or videos. We also keep the public engagement metrics about the tweet, i.e. the number of likes, retweets and replies that it obtained.

We then construct the pairs of tweets to compare. For each author, we go through their history and obtain pairs of tweets that were created within 7 days of each other and have a difference in engagement (sum of likes, retweets and replies) of 100 units or 10%, whichever is higher. This method of creating pairs ensures that we avoid confounding factors related to the author and time and minimise the noise in the comparison. We finally end up with 774,507 pairs of tweets which we use for training our engagement prediction model.

3 MODEL

Our model uses both the topic of the tweets in a pair as well as their metadata features to predict which of the two tweets receives greater engagement.

3.1 FEATURES

To infer the topics present in a tweet, we use the TopClus method which is described in Meng et al. (2022). The method uses a pre-trained language model called BERT (Devlin et al. (2019)) in combination with an attention model to represent texts (tweets in our case). It then uses a latent variable model to cluster these representations into topics in an unsupervised fashion. The learned topics can be interpreted by looking at the tweets whose representations are closest to the centre of the clusters. Once the model is trained on a set of tweets, it can be used to infer the probability that a new tweet belongs to each of the topics (i.e. compute the tweet's topic probability distribution). The number of clusters or topics K is a parameter that needs to be set prior to training the TopClus model.

In order to have a good representation of the tweets for clustering, we pre-process their texts to be similar to the texts used for training the BERT model by dropping URLs, mentions and hashtags. Due to computational constraints, we train the TopClus model on a 10% random sample of our

dataset instead of the full dataset. We then use the trained model to infer the topic probability distributions of all the remaining tweets in our dataset. Thus, in the end, we have for each tweet i a topic feature vector $\mathbf{t}_i \in \mathbb{R}^K$ ¹.

In addition to topic features, we also include metadata features for each tweet. These are represented as binary values (1 if the corresponding feature is present, 0 if not), and capture the presence of URLs, hashtags, animated GIFs, images and videos. We also include a binary value to represent if the tweet was created during working hours (weekdays, 9 am-5 pm) on the east coast of the US which is likely to have a large fraction of the audience, namely English Twitter users. We represent the metadata features of tweet i by $\mathbf{m}_i \in \mathbb{R}^6$.

3.2 MODEL ARCHITECTURE

The model that we use is reminiscent of the Bradley-Terry model of pairwise comparison outcomes Bradley & Terry (1952). We define the probability that tweet i in a pair gets more engagement than the other tweet j to be

$$P(i \succ j) = \frac{e^{s_i}}{e^{s_i} + e^{s_j}}, \quad (1)$$

where $s_i, s_j \in \mathbb{R}$ are the *engagement potentials* of tweets i and j respectively. The higher the engagement potential of a tweet, the more likely it is to have higher engagement in a pair.

We model the engagement potential as a linear function of the topic and metadata features. More precisely we define

$$s_i = \mathbf{w}_t^T \mathbf{t}_i + \mathbf{w}_m^T \mathbf{m}_i, \quad (2)$$

where $\mathbf{w}_t \in \mathbb{R}^K$ and $\mathbf{w}_m \in \mathbb{R}^6$ are the learned vectors of coefficients for topics and metadata respectively. The choice of a linear model enables us to easily understand the effect of the features (and thereby find effective strategies that are correlated with high engagement) by interpreting the coefficient values. We train three versions of our model that differ in the features they include: *Meta* (only \mathbf{m}_i), *Topic* (only \mathbf{t}_i) and *Topic+Meta* (both \mathbf{t}_i and \mathbf{m}_i)

Note however that the model as defined so far is not identifiable with respect to the topic coefficients \mathbf{w}_t (we cannot precisely estimate their values). In fact, if we modify the model by adding a constant to each of these coefficients we get the same predictions. This can be seen by noting that the sum of the components of topic vectors \mathbf{t}_i are always one (as they are probability distributions). To avoid this issue we fix one of the coefficients to be zero.²

4 EXPERIMENTS AND RESULTS

We split our dataset of tweet pairs chronologically³ into training, validation and testing sets in the ratio 90:5:5. We train our models by finding the optimal set of coefficients $\mathbf{w}_t, \mathbf{w}_m$ that maximise the probability of the pairs in the training set under the model in equation 1. We use classification accuracy as our evaluation metric as our dataset is balanced and errors are symmetric.

We do not use regularisation as overfitting is unlikely (our model is simple and we have a large amount of data). Indeed, we see from the validation performance that overfitting does not occur. We re-train on the union of the train and validation sets and report our accuracy on the test set (see Table 1). For comparison, we also report the human accuracy obtained by one of the authors labelling 200 random pairs from the test set.

We see that all our models significantly outperform the random baseline and achieve performance comparable to a human. *Topic* outperforms *Meta* and the best performance of 66.53% is achieved by *Topic+Meta*, suggesting that the two features provide complementary information. Tan et al.

¹We use $K = 100$ as it gave interpretable topics. It is also the default value suggested in Meng et al. (2022).

²The choice of this coefficient does not affect the relative ordering of coefficients and their interpretation.

³We split chronologically rather than randomly as that is closer to a real setting where we would want to predict the engagement of future tweets based on past tweets.

Table 1: Test accuracies of different models with 95% confidence intervals

Random	Meta	Topic	Topic+Meta	Human
50.17 ± 0.50	58.90 ± 0.49	64.54 ± 0.48	66.53 ± 0.47	65.00 ± 6.61

Table 2: Feature coefficients with 96% confidence intervals, computed from 300 bootstrap samples

Feature	Coeff.	Feature	Coeff.	Feature	Coeff.
President	7.71 ± 0.78	Geology	0.79 ± 0.77	Investment	-6.70 ± 0.81
Clean Energy	4.25 ± 0.82	Mixed	0.00 ± 0.10	Human cost	-8.41 ± 0.90
Drought-resistant	4.00 ± 1.12	Low Water	-0.38 ± 0.90	Projections	-10.68 ± 0.85
Africa	2.79 ± 0.90	Conference	-1.65 ± 0.99	Links/Promo	-13.71 ± 1.26
Planet	2.77 ± 0.84	Research	-2.12 ± 0.84	Meta:URL	-1.54 ± 0.13
Fossil fuels	1.56 ± 0.82	Youth	-2.70 ± 1.12	Meta:Hashtag	-0.12 ± 0.12
Politics	1.51 ± 0.79	Health	-3.58 ± 0.94	Meta:GIF	0.47 ± 0.28
Global warming	1.18 ± 0.84	Rain	-3.62 ± 1.03	Meta:Video	0.76 ± 0.13
Geopolitics	1.09 ± 0.77	News	-5.07 ± 0.93	Meta:Image	0.58 ± 0.10
Anger	0.79 ± 0.90	Deaths	-5.43 ± 0.89	Meta:WorkHr	-0.24 ± 0.10

(2014) report a similar accuracy for models based on wording and metadata when predicting relative engagement of tweets containing the same URL. We also tried models using the words as features, instead of topics. However the accuracy was slightly lower, and the interpretation was more difficult for those models as a clear pattern couldn't be seen among the most predictive words. The accuracy for word-based models could possibly be increased by using contextual word embeddings and state-of-the-art sequence models like Transformers (Vaswani et al. (2017)), but their interpretation is likely to still be difficult.

We re-train *Topic+Meta* on the complete set of pairs to obtain the coefficients for interpretation (see Table 2). A higher coefficient indicates more engagement. Due to limited space in the table, we only include the top 24 topics in terms of their prevalence in our data, in addition to the 6 metadata features. The names of the topics were manually assigned by examining the top 500 tweets with the highest probability for the topic. A random sample of 10 tweets from this set for each of the topics in the table is given in the Appendix for a more detailed interpretation.

Topics without much useful content such as *Links/Promo* clearly have low engagement. Tweets about the long-term *Projections* of climate change effects also have low engagement, which could be due to the temporal discounting of risks that are far away. Topics such as the *Human cost* of climate change and *Deaths* have low engagement, as do the topic of stocks and *Investment*.

Topics that contribute to high engagement include discussion of the *President's* actions and adaptation and mitigation strategies such as *Drought-resistant* plants and *Clean Energy*. Interestingly, tweets about climate change impacts in *Africa* receive high engagement, as do those about climate change on other *Planets* and in Earth's geological history. Tweets about climate change *Conferences* and *Research* get a moderate level of engagement.

Looking at the coefficients for metadata features, we can see that tweets that include URLs tend to receive less engagement (probably due to less information in the tweet itself). As one might expect, tweets created during working hours also receive less engagement. On the other hand, tweets that contain animated GIFs, videos or images tend to receive higher engagement.

5 CONCLUSION

In this work, we curated a large dataset of tweets related to climate change and built interpretable predictive models of tweet engagement. We avoid confounding factors by formulating the task as a pairwise comparison of engagement among a pair of tweets from the same author around the same time. The models achieve good accuracy on a held-out set of pairs. By interpreting the coefficients of the models we could discover the topic and metadata features that are correlated with high engagement. This information could conceivably be used to guide the creation of new climate-

related tweets and other climate communication to promote engagement among the population, thereby giving strength to citizen-driven efforts to tackle the issue of climate change.

ACKNOWLEDGEMENTS

We thank Henrique Da Silva Gameiro, Orfeas Liossatos, and Marko Lisicic for their contributions during the initial stages of this project.

REFERENCES

- Sol Agin and Michael Karlsson. Mapping the field of climate change communication 1993–2018: Geographically biased, theoretically narrow, and methodologically limited. *Environmental Communication*, 15(4):431–446, 2021.
- Ralph Allan Bradley and Milton E. Terry. Rank analysis of incomplete block designs: I. the method of paired comparisons. *Biometrika*, 39(3/4):324–345, 1952. ISSN 00063444. URL <http://www.jstor.org/stable/2334029>.
- Biraj Dahal, Sathish AP Kumar, and Zhenlong Li. Topic modeling and sentiment analysis of global climate change tweets. *Social network analysis and mining*, 9:1–20, 2019.
- Jacob Devlin, Ming-Wei Chang, Kenton Lee, and Kristina Toutanova. BERT: Pre-training of deep bidirectional transformers for language understanding. In *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 1 (Long and Short Papers)*, pp. 4171–4186, Minneapolis, Minnesota, June 2019. Association for Computational Linguistics. doi: 10.18653/v1/N19-1423. URL <https://aclanthology.org/N19-1423>.
- Cassie Flynn, Eri Yamasumi, Stephen Fisher, Dan Snow, Zack Grant, Martha Kirby, Peter Browning, Moritz Rommerskirchen, and Inigo Russell. *Peoples' Climate Vote: Results*. United Nations Development Programme, 2021.
- Abel Gustafson, Matthew T Ballew, Matthew H Goldberg, Matthew J Cutler, Seth A Rosenthal, and Anthony Leiserowitz. Personal stories can shift climate change beliefs and risk perceptions: the mediating role of emotion. *Communication Reports*, 33(3):121–135, 2020.
- Anthony Leiserowitz, Jennifer Carman, Nicole Buttermore, Liz Neyens, Seth Rosenthal, Jennifer Marlon, JW Schneider, and Kelsey Mulcahy. *International Public Opinion on Climate Change 2022*. YPCCC: Yale Program on Climate Change Communication, 2022.
- Yu Meng, Yunyi Zhang, Jiaxin Huang, Yu Zhang, and Jiawei Han. Topic discovery via latent space clustering of pretrained language model representations. In *Proceedings of the ACM Web Conference 2022*, pp. 3143–3152, 2022.
- Chenhao Tan, Lillian Lee, and Bo Pang. The effect of wording on message propagation: Topic-and author-controlled natural experiments on twitter. In *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 175–185, 2014.
- UN Global Pulse. Taxonomy for studying climate change tweets. <http://unglobalpulse.net/climate/>, 2014. Accessed: 2022-11-4.
- Ashish Vaswani, Noam Shazeer, Niki Parmar, Jakob Uszkoreit, Llion Jones, Aidan N. Gomez, Łukasz Kaiser, and Illia Polosukhin. Attention is all you need. In *Proceedings of the 31st International Conference on Neural Information Processing Systems, NIPS'17*, pp. 6000–6010, Red Hook, NY, USA, 2017. Curran Associates Inc. ISBN 9781510860964.
- Ke Wang, Mohit Bansal, and Jan-Michael Frahm. Retweet wars: Tweet popularity prediction via dynamic multimodal regression. In *2018 IEEE winter conference on applications of computer vision (WACV)*, pp. 1842–1851. IEEE, 2018.
- Yan Xia, Ted Hsuan Yun Chen, and Mikko Kivelä. Spread of tweets in climate discussions: A case study of the 2019 nobel peace prize announcement. *Nordic journal of media studies*, 3(1):96–117, 2021.

A APPENDIX

Here we include a sample of 10 tweets chosen uniformly at random from the top 500 tweets that have the highest probability for each of the topics in Table 2. Author names are hidden and special characters are removed. The Title and Description of linked pages in URLs have been expanded where available. Note that some of the tweets may contain offensive language.

PRESIDENT

- Biden plans to fight climate change in a way no US president has done before [httpstcoGgemljiccs](#)
- GinaMcCarthy White House National Climate Adviser discusses Pres Bidens infrastructure plan [httpstcozy24j9Cxuk](#) [httpstcoLOWQgcDdb9](#)
- President Joe Biden has already taken more executive action on climate change and the environment in his first week in office than any president before him [httpstcoFMpGOz6GSt](#)
- Biden will issue executive orders rolling back Trumps climate policies The Washington Post [httpstcon2oCIYmu6X](#)
- Former VP Gore Begged Biden Not to Compromise Climate Change in Bipartisan Infrastructure Deal [httpstcoBTd6n17z4g](#) [httpstcoFSmMV3TCZh](#) via Newsmax Title Newsmaxcom Breaking news from around the globe Description Newsmaxcom reports todays news headlines live news stream news videos from Americans and global readers seeking the latest in current events politics US world news health finance and more
- Joe Biden announces he has cancer during speech about global warming [httpstcoDi-AUXSb7S8](#) Title Joe Biden announces he has cancer during speech about global warming Description JOE BIDEN announced he has cancer during a speech about global warming
- [httpstcouqTL9dePmJ](#) In his first address to Congress President Joe Biden touched on immigration police reform and climate change [httpstcoT7Nt3ksSRc](#)
- Trump dismisses climate change calls on Biden to fire joint chiefs [httpstcoFOaxDK6X3O](#) [httpstcoJN8fNQEFpg](#)
- WATCH LIVE Biden signs climate change executive orders [httpstcoREgDK4ntJq](#)
- Biden will issue executive orders rolling back Trumps climate policies The Washington Post [httpstcoSUC6GLxQAI](#)

CLEAN ENERGY

- Electricity production from fossil fuels nuclear and renewables Switzerland [httpstcoA-pAzM7YM6c](#)
- Three major categories of energy for electricity generation R fossil fuels coal natural gas amp petroleum nuclear energy amp renewable energy sources Most electricity is generated with steam turbines using fossil fuels nuclear biomass geothermal and solar thermal energy
- In 2021 40 of the Electricity Produced in the United States Was Derived from NonFossil Fuel Sources CleanTechnica [httpstcoiw0Y1sTIO0](#) Title In 2021 40 of the Electricity Produced in the United States Was Derived from NonFossil Fuel Sources Description In 2021 40 of the Electricity Produced in the United States Was Derived from NonFossil Fuel Sources reliance on fossil fuels
- Nuclear Power The Reliable Energy Source Nuclear power energys ability to produce electricity with lower carbon emissions than fossil fuels has been driving the markets development Get More info [httpstcoCAPZIDibUV](#) nuclear nuclearpower energy usak France russia [httpstcokiwQvSyRue](#) Title Nuclear Power Market Global Size Share Industry Trends 2022 2028 IMR Description Global Nuclear Power Market was valued at USD 7141 Billion in 2021 and is projected to reach USD 16347 Billion by 2028 growing at a CAGR of 1256 from 2022 to 2028
- Portland General Electric an Oregon utility is poised to build the nations first largescale wind solar and battery facility to accelerate the transition from fossil fuels to 247 cleanenergy [httpstcoxPxHCIX1Zb](#) Title Oregon utility powers up nations first largescale wind solar

and battery facility Description Portland General Electric has built a firstofitskind facility that will use an innovative battery technology supporters are calling a game changer for Oregons renewable energy transition

- Upscaled renewable energy capacity will improve the resilience of Australias main electric-ity grid but outages from fossil fuel plants the main threat to supplies [httpstcowtT6GtDIYj](#) [httpstcocPW92WMOA](#) Title Fossil fuel plant outages pose main threat to summer power supply as renewables bolster grid Description Australian Energy Market Operator says risks of insufficient supply during summer peak load periods remain despite La Nia bringing cooler temperatures
- The Midwest is preparing for a fossilfuelfree future new transmission lines will stabilize the grid as it shifts to renewables It will facilitate retirement of more than 50 gigawatts of fossil fuelpowered electricity primarily from coal plants [httpstcoU7j8yv0VXt](#) Title Biggest story of the year for renewables Description The Midcontinent Independent System Operator approved a 103 billion investment in 18 new transmission lines this week Never before have so many power lines been approved all at once
- More renewables than fossil fuelbased electricity in the grid pv Europe [httpstcoYU3MIDk6eI](#)
- New post Renewables Overtake FossilFuel Power Plants In EU Electricity Generation [httpstcoXviCd5qHxS](#)
- The US Energy Information Administration has forecast in its January ShortTerm Energy Outlook that rising electricity generation from clean energy such as solar and wind will reduce generation from fossil fuel-fired power plants over the next 2 years [httpstcoCDIpgohI15](#) [httpstcoykeMKGuPks](#) Title NonRenewable Energy

DROUGHT-RESISTANT PLANTS

- 7 droughttolerant houseplants to add some greenery to your home [httpstcoQN9B71d6an](#) [httpstcozK8XLtUOQ3](#)
- Drought tolerant soybean variety [httpstcolKfheA21CB](#)
- Tomatoes and Other Crops Wither in California Drought [httpstconZRUEvvzhH](#) Title Tomatoes and Other Crops Wither in California Drought Description The Western drought has come for pasta sauce and ketchup Processing tomatoes used in innumerable grocery store staples are suffering from years of subpar rainfall and snowpack in California The
- Rediscovering ancient crop varieties [httpstcojnWo4iLBLZ](#)
- Diversity Among Synthetic BackDerived Wheat Triticum Aestivum L Lines for Drought Tolerance preprints [httpstcohp8ctHMLhL](#)
- Chile drought fruit crops under threat [httpstcoq0YsYcxSi4](#) [httpstcowkbenXmfQX](#)
- Scientists developing drought and wet tolerant soybean varieties [httpstco2I6IM9fZ29](#) Title Scientists developing drought and wet tolerant soybean varieties Talk Business Politics Description Drought has been a major problem for Arkansas farmers this year and if climate prediction models are correct it will be a major problem in the coming years and decades
- Grafting is a technique used to grow different types of fruits and vegetables For tomatoes a desirable fruitbearing scion the shoot is placed atop a rootstock the roots that contains some other desirable characteristic [httpstcoZyESGFyMdz](#) [camerawithflash](#) Steven Bristow [httpstcoYxcEmu0nwT](#) Title How do rootstocks help tomato growers under heat and drought Description No matter the location plants can experience stress This can be in your home garden the local community garden or on a farm miles away Stresses include heat or drought and they limit a plant
- Echium vulgare a very drought resistant plant [httpstcoiuSgLiC8Be](#)
- Top seller in Jan snowflake Cold Start snowflake Germinates from 5 degrees High wear tolerance drought tolerant fine leaved [httpstcoTWDdNVhVsd](#)

AFRICA

- The Horn of Africa is facing drought and food shortages [httpstcorvez2vHA0q](#) Title The Horn of Africa is facing drought and food shortages Description Ayesha Rascoe speaks to Samantha Power administrator of the United States Agency for International Development about food shortages and drought in the Horn of Africa
- Somali presidents envoy for drought Abdirahman Abdishakur and his delegates visited displaced people in the IDP camps in the outskirts of baardheere town Gedo region today [AAbdishakur HassanSMohamud httpstco4zZk0UjI93](#)
- Horn of Africa faces brutal drought and food crisis [httpstcoI0gvTYzPtj httpst-cozQXsR8naVh](#) Title Horn of Africa faces brutal drought and food crisis Citypress Description The latest outlook confirms the fears of aid agencies which have been warning for months about the worsening consequences of the drought in Ethiopia Somalia and parts of Kenya
- Buhari to attend conference on desertification drought degradation in Abidjan [httpst-cowQvWB0Fk3c](#) News Abidjan buhari [BBnaija](#) [Messi](#) [Wizkid](#) [Davido](#)
- Drought is on going in Angola Congo DRC Namibia [httpstcoAwfWGUzoBF](#)
- Thousands of Ethiopian refugees who have fled Ethiopias Tigray region are now struggling against extreme weather in eastern Sudan cloudwithlightningandrain [httpstcomiCEESE0pt httpstcoXATNkiQJZ0](#)
- DROUGHT AND FAMINE BITE HARD IN KAKUMA REFUGEE CAMP UHAI EASHRI Refugee Coalition of East Africa UNHCR theUNRefugeeAgency Bisoea TheTaalaFoundation TheActionFoundation TeamNosleepfoundation KenyaRefugeeLaw ProjectTransAdvocacy Initiative ORAM [httpstcoZSbsztfJtW](#)
- 35 MILLION Kenyans are facing food shortage due to ongoing drought IGAD executive director Dr Workneh Gebeyehu says [httpstcoouwZge9a8e](#)
- Not Kaizer Chiefs fans blaming Komphela for their trophy drought Kubi facewithtearsofjoy [httpstcoeERuQ9cJI2](#)
- World renowned Oromian athlete of the day she donated 4 mil birr to drought victims in Bale Oromia May Waaqa bless you and Oromia [httpstcoHnb59jJPbx](#)

PLANET

- earth planet of life is destroyed by global warming [pensiveface](#)
- Life may have thrived on early Mars until it drove climate change that caused its demise [space httpstcopbIKibxpac](#) Title Life may have thrived on early Mars until it drove climate change that caused its demise Description If there ever was life on Mars and that's a huge if conditions during the planets infancy most likely would have supported it according to a study led by University of Arizona researchers
- Ancient dinosaurs went extinct 65 million years ago due to planetary catastrophe and climate change from high speed collision with enormous asteroid causing widespread creator explosion
- The titanoboa's existence was made possible by a warming planet [httpstcoNRHrClOHIE](#)
- Astronomers discover potential water world exoplanet nearby Earth [httpstcoE8Ojx1w1vr](#) via Yahoo Mankind is for the foreseeable future confined to Earth not committed to keeping it livable for themselves still use fossil fuels have yet to achieve lightspeed capability Title Astronomers discover potential water world exoplanet nearby Earth Description NASA says the exoplanet located just 100 light years away could be a water world
- How superhot rocks miles under the earth's surface could provide limitless clean energy [httpstcotgzYqkjUqK](#) Title How superhot rocks miles under the earth's surface could provide limitless clean energy Description Superhot rock geothermal energy can be generated from dry rock that's at least 752 degrees Fahrenheit which lies at depths between two and 12 miles

- Cryptocurrency is the intermediary between a fiat controlled divided fossil fuel operating society and a decentralized unified electromagnetically propelled society As long as the Illuminati control the economy and subsequently everything else Earth humans cannot be free
- Jeff Bezos and Elon Musk rather than spending billion of dollars traveling to the space use the money instead to save the planet earth from destruction by global warmingclimate change
- The nations of the Global North have effectively colonised the atmospheric commons Theyve enriched themselves as a result but with devastating consequences for the rest of the world and for all of life on Earth [httpstcoDaFOqaPzWk Title Why climate change is inherently racist Description Climate change divides along racial lines Could tackling it help address longstanding injustices](#)
- In 60 million years we will be the dinosaurs who destroyed ourselves with nukes and climate change our fossils studied by some future intelligent species

FOSSIL FUELS

- Buy electric cars to eliminate fossil fuels Electricity is made through fossil fuels such as oilnatural gas and coal [facewithtearsofjoyfacewithtearsofjoyfacewithtearsofjoy](#)
- There is no such thing as a zero emission vehicle because the electricity to fuel such vehicles and battery require the burning of fossil fuels EVs will NEVER replace their fossil fueled counterparts
- Fossil Fuels vs Renewables ALL Forms of Energy are Intermittent [httpstcoAeGIYC9It3](#)
- Without fossil fuels renewable energy would not exist
- Could carbon fibres soon become free of fossil fuels [httpstcoUW13DTfA8r](#)
- Fossil Fuels Recycling Wealth
- Electric vehicles increase demand for fossil fuels
- Reliance on fossil fuels must be phased out [GovKathyHochul](#)
- Electric cars run on fossil fuels nuclear power is the answer
- Fossil Fuels vs Renewables ALL Forms of Energy are Intermittent [httpstcooeru25EXAH](#)

POLITICS

- Six or more core liberal seats ripped away thanks to scomo running a republican one nation lite platform and ignoring climate change Great result
- Stop Trump Republicans from seizing control of California by voting NO on the recall Front runner is lunatic republican Larry Elder antivax conspiracy spreader and climate change denier [VoteNoOnTheRecall](#)
- Dem says Manchin blocking energy tax provisions in big bill [httpstcoAZDKY6FnJr Title Dem says Manchin blocking energy tax provisions in big bill Description Sen Joe Manchin has told Senate Majority Leader Chuck Schumer that he will oppose a economic measure if it includes climate or energy provisions or boosts taxes on the rich or corporations](#)
- In Florida Dems plan to go after Marco Rubio for voting no on the massive reconciliation bill that deals with climate change health care and taxes [httpstcoyqyaIxsrTn Title Dems hope to punish Rubio over Senate vote Description Big vote cometh The Senate approved its massive reconciliation bill that deals with climate change health care and taxes on Sunday and as expected Sens Marco Rubio and Rick Scott voted no On the home front There's the broader political question of whether the bill will help Democrats and President Joe Biden in November But how will it play in Florida Both sides tried hard over the weekend to make the votes on the legislation which heads to the House next as well as individual amendments](#)
- Dem says Manchin blocking energy tax provisions in big bill [httpstco59NB1CISDI Title Dem says Manchin blocking energy tax provisions in big bill Description Dem says Manchin blocking energy tax provisions in big bill](#)

- Lib Dems call on PM to act local on climate change [httpstcoYcbNfEYziW httpst-coov5kH8ybtm](#)
- Liberal MPs consider crossing the floor to support climate change legislation [httpstco8SHG3qcCle](#) Title Coalition says it will oppose governments plan to legislate emissions reduction target Description The Coalition has confirmed it will oppose Labors plan to enshrine in legislation a 43 per cent emissions reduction target by 2030 after holding a party room meeting
- BREAKING NEWS Key Biden Nominee Open to Raising Taxes on Middle Class to fight for Climate Change [httpstcoj6N4otl17g UnitedStates](#)
- Democrats Want Biden To Go Beast Mode amp Fight ClimateChange Via Executive Action [httpstcoGOX65U2E1q](#) [verbalese Shi4Tech PeterSBecks1 freyyjaa88 BettyFellows ableraces danigirl1207 RaymondNorman AKimCampbell versusplus thumperftw bugs4US MichaelChrisLA httpstco0NE1MlilYt](#) Title Democrats Want Biden To Go Beast Mode And Fight Climate Change Via Executive Action Description Time is of the essence if the US wants to avoid a global climate catastrophe Democratic senators warned after hopes for climate legislation faded once again
- Slimmed Down Energy Tax and Social Spending Package Targeted for Vote Before August [httpstco1Ytdz5Bhn1](#)

GLOBAL WARMING

- Why is it still hot in November Global warming is terrifying
- If this is global warming then I love it warm weather then warm rain
- The weather today is super hot is it because of the global warming or me being effortlessly hot
- Its a hot humid August day in Texas Must be climate change
- How to keep your home cool in the heatwave in preparation for the rising temperatures [httpstcozjVrBcyJqr httpstcoVdZ2l6oHcc](#)
- This country is not prepared for extreme weather of any kind hot cold stormy womanshrugging
- I remain cool until global warming make me hot firefirefire [httpstcoIWxb71NFj8](#)
- Climate changes freakishly hot summer is leading to a new type of insurance coveragefor heat stroke [httpstcoizdt8kKaob](#) Title Climate changes freakishly hot summer is leading to a new type of insurance coveragefor heat stroke iTech News Description Business is booming for heatstroke insurance providers in Japan One company saw a 1600 increase in sales of daily coverage during the final week of June Read More Source Business Fortune
- If global warming isnt real why am I sweating in January [facewithmonocle](#) it shouldnt be this warm in January [fam](#)
- This has to be one of the hottest driest summers ever Global warming is real

GEOPOLITICS

- Saudi Arabia Japan and Australia are among countries asking the UN to play down the need to move rapidly away from fossil fuels [httpstcoNW68HQbBaX](#) Title COP26 Document leak reveals nations lobbying to change key climate report Description Countries are asking the UN to play down the need to move rapidly away from fossil fuels
- Water woes caused by climate change could compel Iran to seek a deal on its nuclear program and join others in the Middle East in water cooperation [httpstcorLxcXE6GLx](#)
- Reuters US President Joe Biden on Friday called on China and other major economies to redouble their efforts to combat climate change and improve energy security warning that Russias invasion of Ukraine had sharpened the need for urgent action
- China stands firmly with Pacific island countries on national sovereignty and security climate change maritime rights and interests said Chinese State Councilor and Foreign Minister Wang Yi [httpstcoD6qA6KH7Tx](#)

- AustraliaChina IRENA and the MEE of the Peoples Republic of China have extended existing cooperation on energy transition [httpstcoyOLiWwJdjm](#)
- Alaska talks reveal the tense relationship between US and China on climate change [httpstcooJ5p2iogsQ](#)
- Obama faults Russia and China for dangerous lack of urgency on climate change [httpstco079770LdDN](#)
- NATO SecretaryGeneral Jens Stoltenberg says climate change and Russian aggression mean defence of the Arctic is key [httpstcoVa3CtBzwZW](#) [httpstcoqLTuWlnoTA](#) Title Stoltenberg Arctic key in defence against Russia Description NATO SecretaryGeneral Jens Stoltenberg says climate change and Russian aggression mean defence of the Arctic is key
- Washington sees Germany as a critical ally on everything from confronting China and negotiating with Iran to climate change Solving their NS2 problem would allow them to focus on their shared agenda FT [httpstcoeACI4OW30v](#)
- Australia is the weakest link in international sanctions on Russia [crikeynews httpstcoCK-zPyUZw4d](#)

ANGER

- This is infuriating [enragedface](#) Screwing the planet to line their pockets and easily selling it all to a gullible constituency [httpstco6JtPick1Qg](#) Title Republican states are trying to force people to keep using fossil fuels Description Most people recognize that we need to wean our way off fossil fuels and embrace clean energy if we have any chance of avoiding the worst effects of climate change Unfortunately some of the people who dont realize this reality happen to be the
- Republicans have spent the last four years calling climate change activists the radical left meanwhile theyve literally created a coup full of conspiracy theorists and racists with guns who are trying to breach the Capitol as we speak to tear down democracy THAT is radical
- These green fanatics are nothing more than the footsoldiers of the elites who invented the man made climate change hoax to control people and not to control the climate [jeremyvine httpstcoY7oocc4XtX](#)
- AGW Climate Change or whatever they want to call it is nothing more than a way to bilk gullible people into forking over Trillions of hard working peoples tax dollars to a multinational MONEY LAUNDERING SCHEME
- Fucking despise the Tories ensuring we are world beating at fucking the planet up [httpstcoaZuEnnXvks](#) Title Fury as government overrules council to approve absurd Surrey gas drilling Description MP Jeremy Hunt blasts decision that goes against local opinion and government commitment to devolution of powers and causes enormous anger
- US castigates China over climate change efforts [httpstcowghTwnLouT](#) via BBCNews Beware you cannot trust the inhuman Communist Government of China No respect for these so called human enslavers
- Liberals are corrupt stupid bastards [httpstcoBL6c8sB06Y](#)
- These Climate Change freaks make me sick Biden and the Democrats are among these filthy trashruining the US economy because they believe they are righteous In reality they are little more than misguided spoiled brat lazy useless punks stealing from the workers
- The gall is staggering They are criminals who are willfully destroying our world amp should be treated as such [httpstcoTYQsNgDPG2](#) cop26 JoeBiden JohnKerry BorisJohnson ScottMorrisonMP EmmanuelMacron EPAMichaelRegan epa JustinTrudeau DemWarRoom HouseDemocrats ap
- The weatherchannel just lost my viewership Theyve become the purveyors of the liberal climate change is based on racism ideology Shame on you for politicizing amp dehumanizing people of color

GEOLOGY

- Supervolcano Eruption Depleted Earths Ozone Layer 74000 Years Ago <http://stcoC-qpooqQAzd>
- Volcanic surge narrowed seas during ancient global warming event Climate GlobalWarming Volcanos <http://stcod7rI4KeDpx> via physorg.com
- Past AMOC collapses were caused by warming of ocean subsurface and reduction of surface salinity due to icebergs separating from glaciers into the sea Uh oh grimacingface BlackBearNews1 Blueoceanarctic newday2020sc WaveFoundation Kameshwarikate <http://stcoXrw4VRhliC> Title Global warming could collapse the Atlantic circulation system Description Global warming could collapse the Atlantic circulation system Earthcom
- Tipping points in Earths system triggered rapid climate change 55 million years ago research shows PhysOrg <http://stcoBH5XvDQ9Jp> <http://stcoZvJlp6Aq58>
- Shifting Signatures of Climate Change Reshuffle Northern Species <http://stcoU6TdpD6Aw4> Title Shifting Signatures of Climate Change Reshuffle Northern Species Current Science Daily Description Analysis of longterm monitoring data for almost 1500 species in Finland shows that four decades of climate change has led species to shift between the better and worse parts of their climatic niches and that these impacts were most pronounced at higher latitudes
- Antarctic Circumpolar Current flows more rapidly in warm phases In future the intensity of the Antarctic Circumpolar Current could increase accelerating climate change <http://stcoOzkbB5r1y4>
- Arctic Animals Movement Patterns Shifting Due to Climate Change <http://stcoiQ39qXuTxW> <http://stcozibpRCLeIS>
- A climate warming event 56 million years ago resulted from the release of greenhouse gases most likely from a volcanic eruption <http://stcou4PqcuGumN>
- Tipping points in Earths system triggered rapid climate change 55 million years ago research shows <http://stcoEtqXhcvVC1> <http://stcoNHdC7aIKOz> Title Physorg News and Articles on Science and Technology Description Daily science news on research developments technological breakthroughs and the latest scientific innovations
- 15 C Cap Could halve Sea Level Rise From Melting Ice Study <http://stcobC7I5dTKJY>

MIXED

- Our atmosphere is shrinking <http://stcoZN4hmHiIGb> <http://stcoTzQekR8iEe>
- Baetokkis survived the renebaebae droughtI hope shell become more active soon
- How the Moon Wobble Affects Rising Tides Ecology astronomy via <http://stcoB2dOvBhk3D> <http://stcoxicR96Q3h8> Title Twinybots Empower your business
- our fandom is probably the most wellfed fandom on all of stan twitter yet ariana doesnt release music for two weeks and yall start acting like were in a drought loudlycryingfaceloudlycryingfaceloudlycryingfaceloudlycryingface
- i just realized now that josh is done releasing songswe might go into a content drought
- hes currently saving stays from instagram drought LMAOOOO <http://stcoYD3GwIU1QR>
- Australia faces constellation of diplomatic pressures over climate <http://stcoEPX83YQ940>
- Latest climate summit draft waters down fossil fuel language <http://stconN4OpAJBoY> ClimateEmergency COP26 JoeBiden XiJinping ClimateCatastrophe ClimateActionNow EnergyTransition GretaThunberg
- did yall know that rsl is ending the acting drought for Me exclamationquestionmark
- New study uncovers hidden behaviour of the Arctic Oceans currents that could alter future climate change predictions National Oceanography Centre <http://stcoZMDaPmOkwi>

LOW WATER

- The Hoover Dam reservoir is at an alltime low [httpstcofaboCIXwap](#)
- Lake Mead falls to an unprecedented low exposing one of the reservoirs original water intake valves [httpstcos8vRKL45o8](#) Title Lake Mead plummets to unprecedented low exposing original 1971 water intake valve Description Lake Meads plummeting water level has exposed one of the reservoirs original water intake valves for the first time officials say
- In dry California salty water creeps into key waterways from AP [httpstcor2Mukxg8eA](#) Title In dry California salty water creeps into key waterways Description RIO VISTA Calif AP Charlie Hamilton hasnt irrigated his vineyards with water from the Sacramento River since early May even though it flows just yards from his crop Nearby to the south the industrial Bay Area city of Antioch has supplied its people with water from the San Joaquin River for just 32 days this year compared to roughly 128 days by this time in a wet year
- Houseboats removed from LakeOroville which stands at 38 percent of capacity CAwater CADrought California water drought SaveOurWater [httpstcoTQKC4K4TxZ](#)
- The Hoover Dam reservoir is at an alltime low [httpstcoxdZxAggtWa](#) [httpstcow4d2ZHUcaO](#)
- Greenhouse gas dynamics in an urbanized river system influence of water quality and land use [httpstcoYIx25xKnDO](#)
- Low water levels due to drought reveal sunken car in Pineview Reservoir Salt Lake Tribune [httpstcoyb8gpqK6U4](#)
- Critically low water levels at Lake Shasta Californias largest reservoir [httpstco-qMHkQGxLRJ](#) Title Critically low water levels at Lake Shasta Californias largest reservoir Description Lake Shasta the largest reservoir in California is experiencing the lowest levels of rainfall since Shasta Dam was constructed in the 1940s Water allotments to Central Valley fammers and urban water districts in the Bay Area have been severely cut back as a result
- The Hoover Dam reservoir is at an alltime low [httpstcosINziskFrF](#)
- Measuring the Bathtub Ring Calculating Reservoir Surface Area Changes in the Colorado River Basin planet SatelliteData Drought Reservoirs [httpstco7BNqhrF7cT](#)

CONFERENCE

- CONFERENCE 57th session of the Intergovernmental Panel on Climate Change IPCC 57 2730 Sep 2022 Geneva Geneve Switzerland [httpstcozgfLPM6hMx](#) Title Event 57th session of the IPCC IPCC 57 SDG Knowledge Hub IISD Description Tracking the Implementation of the 2030 Agenda
- POTUS and world leaders will discuss climate change on the February 19 virtual G7 hosted by BorisJohnson per PressSec
- New Post OPEC hosts coordination meeting on climate change [httpstcoX5sHOjDaeQ](#) OPEC hosts coordination meeting on climate change
- The UK hosts the 26th UN Climate Change Conference of the Parties COP26 Scotland Glasgow now [httpstco0CaEsS9YRr](#)
- COP26 Presidency Meeting with UNFCCC Observer Focal Points has held at the ongoing United Nations Climate Change Conference and censoj participated [httpstco1dGvSO9uni](#)
- The intergovernmental panel on climate change opens second draft on group III sixth assessment report [httpstco6c2IK74YZZ](#)
- The United Nations Framework Convention on Climate Change UNFCCC will hold its 26th Conference of Parties COP26 in November 2021 It will be hosted by the UKinUganda and will take place in Glasgow [httpstco2dta51AAu2](#)
- AIA will send representatives to the United Nations Climate Change Conference COP27 again this year [httpstcogtFBKDOerM](#) Title How AIA is helping to combat the climate crisis at COP27 Description For the second year in a row AIA is sending representatives to the United Nations Climate Change Conference COP27 an annual Conference that brings together government officials and nongovernmental organizations to collaborate on ways to combat the climate crisis

- New Post OPEC hosts coordination meeting on climate change [httpstcobo71mMQ1Us](#)
OPEC hosts coordination meeting on climate change
- ICYMI In this IABC22 plenary session a panel comprised of climate change communicators will discuss the evolving approach to change the conversation Join the discussion at the World Conference 2629 June [httpstcoCJVhU1vNEu](#) [httpstcoLiunP7Bj2Y](#) Title Keynote and Plenary Sessions

RESEARCH

- A major finding using longterm consistent satellite climate data from the esa Climate Change Initiative [httpstcopKDCSaaXO](#)
- A Global LISOTD Climatology of Lightning Flash Extent Density [httpstcoRI3kBcdJl4](#)
- BOE climate stress test results [httpstcosM3xpvdTGo](#) Title Bank of England publishes results of the 2021 Biennial Exploratory Scenario Financial risks from climate change Description The Bank of England Bank has today published the results of the Climate Biennial Exploratory Scenario CBES which explores the financial risks posed by climate change for the largest banks and insurers operating in the UK
- The analysis is the latest in a series of studies that show the influence of climate change on extreme weather [httpstcoTRnNGcZO1e](#) Title Did Warming Play a Role in Deadly South African Floods Yes a Study Says Description Climate change sharply increased the chances of catastrophic rains in the countrys east a team of researchers has found
- This study has improved our understanding of combined droughtheat wave events by considering a much finer temporal resolution than previous studies allowing a more refined consideration of risk forecasting and hazard preparation for such events [httpstcosKZ4X2Pra5](#) Title Simultaneous Drought and Heat Wave Events Are Becoming More Common Eos Description As the world heats up the number and duration of combined stress events are increasing causing harmful environmental and human impacts
- OHC is an important indicator of the global climate change Here we conducted a comparative study of OHC among different data sets including observationbased ones Argoonly and Argoother observations ocean reanalyzes and freerunning model [httpstcoCwyUcPFo09](#) Title A Comparative Study of the ArgoEra Ocean Heat Content Among Four Different Types of Data Sets Description Global and basinswide ocean heat content OHC trends were largely similar among the observationbased data sets Ocean reanalyzes RAs well captured the largescale warming and cooling patterns
- SUNGHOON DROUGHT [rollingonthefloorlaughingrollingonthefloorlaughing](#)
- According to new research from Proceedings of the National Academy of Sciences PNAS regarding climate change and pollen seasons there has been a significant increase of pollen in the air in recent years [httpstcoQeBsZHcBoy](#)
- A study found that 218 infectious diseases had been exasperated by climate change [backhandindexpointingdown](#) [httpstcozvvrNVKUdf](#) Title Climate change may be fueling infectious disease outbreaks Luke O'Neill says Description A study found that 218 infectious diseases had been exasperated by climate change
- Video summary of the Copernicus Climate Change Services report [httpstcob5XcjzKFqI](#)

YOUTH

- Climate Change AnimationInteractive Poster Competition Open to all year groups BIG PRIZES Click link for details [httpstcofHgGijVpdk](#) [httpstcoEd1mgfiCzM](#)
- Our course Climate Change Resources for K12 Teachers and Students is for K12 teachers and students looking for great climaterelated talks videos games websites and more resources they can use in advancing their understanding of climate change [httpstcoL7eqHUOLQI](#) Title Climate Change Resources for K12 Teachers and Students Description Topical Content and Hundreds of Resources for Exploring and Learning About Climate Change

- We are creating 450 jobs for Youth The ScienceHorizons Youth Internship Program equips recent grads with great work experience in the CleanTech sector Apply today [httpst-couds9GnYSBb httpstcorL0dPtvC7F](#) Title Science Horizons Youth Internship Program Canadaca Description The Science Horizons Youth Internship Program provides wage subsidies to eligible employers across Canada to hire recent university college and polytechnic graduates for internships in the environmental science technology engineering and mathematics sectors Description objectives and contact information Application process for employers to receive funding Internship opportunities application process for postsecondary graduates Interactive map of past internships across Canada You will not
- Climate Change Writing Competition open to all UG and PGT students A perfect opportunity for our MA cohort to demonstrate their new WeAreALBERT knowledge [httpstcobNzThDwL3n](#)
- Join SPIDTheatre for the final month of exciting drama workshops as part of the Far Far Away online project in collaboration with sciencemuseum Available to 813 year olds who want to get involved with a performative project about climate change and the environment performingarts globeshowingEuropeAfrica [httpstcozeNG2so53h](#)
- DYK ScienceHorizons Youth Internship Program helps young Canadian graduates gain valuable work experience in STEM This will support their success in the clean energy job market Learn more [httpstcoiZVO4eRYcL httpstcopSOECkpEw6](#) Title Science Horizons Youth Internship Program Canadaca Description The Science Horizons Youth Internship Program provides wage subsidies to eligible employers across Canada to hire recent university college and polytechnic graduates for internships in the environmental science technology engineering and mathematics sectors Description objectives and contact information Application process for employers to receive funding Internship opportunities application process for postsecondary graduates Interactive map of past internships across Canada You will not
- Attention sophomores Consider applying for the Student Climate Change Institute This is a great opportunity to connect with climate experts and take on projects that help address climate change Applications are due 928 [httpstcoT0SHyuUbkL HCConservancy](#)
- Are you an artist between the ages 1422 who wants to inspire social change Young New England artists have the chance at winning cash prizes of 2500 or 5000 for their artwork focused on climate change Submit to the TidalShiftAward today sparkles[httpstcoquf5WbOI6Lsparkles httpstcokxVJgqWhjb](#)
- Weve put together some great STEM resources for parents who want to engage their kids on climate change do some learning and have some fun with these activities [httpstcoMP-KBqJt0aG](#) Title Climate change and easy science experiments for kids Description At some point youre going to have to talk with your kids about climate change This can be intimidating so weve compiled some info on climate change for kids
- SF State launches a new interdisciplinary climate change certificate program this fall for students in any major [httpstcogajrUVtFVJ httpstcoYVxiYQ52wX](#)

HEALTH

- A big number of children below the age of five are suffering from malnutrition coupled with extreme complications [httpstcoFBG9ttoHko](#) Title Over 100 children in Mandera exposed to droughtrelated diseases Description At least 106 children have already been admitted to hospitals across Mandera county
- The Environmental Protection Agency was never given agency to protect the environment Supreme Court rules [httpstcouPYEmQLGLc](#) Title Supreme Court rules for coalproducing states limits EPAs power to fight climate change Description Ruling in favor of coalproducing states Supreme Court says Congress not the EPA has the authority to make decisions on fighting climate change
- Breastfeeding breastfeedingmediumdarkskintoneproduces pushpinZero waste pushpinZero greenhouse gases and leaves pushpinZero water footprint seedling Its the healthiest and most natural way to feed babies Keep supporting breastfeeding for a cleaner healthier and more equal futureglobeshowingEuropeAfrica [httpstcoHyXJO1Aj8Z](#)

- Addressing Climate Change and improving livelihood opportunities for rural women through the production of reusable menstrual pads UNPeacebuilding Gambia UNF-PATheGambia <http://stcomNEAFYyPZX>
- Via euronews Infertility heart failure and kidney disease How does climate change impact the human body <http://stcoh3a7JwSScQ> Title These are the 10 ways climate change affects our bodies every day Description We need the same urgency to treat climate change as when everyone jumped to combat the COVID19 pandemic Otherwise our health is due for a downward spiral in coming years
- One in five deaths every year results from unhealthy diets That is more than the number killed from smoking and armed conflict combined Pictet Nutrition funds Maysa Al Midani tells MerrynSW why we need sustainable food systems Link here <http://stcougzIvBeUKh> <http://stcozPmzAPfcFp>
- backhandindexpointingdowndarkskintone Health problems During food shortages caused by climate change girls are more likely to go hungry and will often eat least and last leading to hunger and malnutrition <http://stcoZcGNS4ROZL> Title 5 ways climate change is disrupting girls lives Plan International Description These stories show how the inequalities experienced by marginalised girls and young women are amplified by the impacts of climate change
- Climate change affects the social and environmental determinants of health clean air safe drinking water sufficient food and secure shelter health healthcare healthy facts healthfact know more at <http://stcoiTXON5Uwn>
- I wonder if climate change causes myocarditis and blood clots
- The pandemic has made things worse in addition to the rising costs of living in Aligarh Women are concerned about the high cost of food which they are unable to offset despite procuring supplies from ration shops writes aashi310 <http://stcoGbf0cASadb>

RAIN

- RAIN FORECAST 7day rain forecast from the Weather Prediction Center Check radargt <http://stcorJpa708eNn> rain flood drought rainfall showers thunderstorm flooding <http://stcoBaEKE6OOw7>
- Storm Barra Severe weather warnings for wind and rain issued NewsEverything NorthernIreland <http://stcozJohxg235r> Title Online Shopping site in India Shop Online for Mobiles Books Watches Shoes and More Amazonin Description Amazonin Online Shopping India Buy mobiles laptops cameras books watches apparel shoes and eGift Cards Free Shipping Cash on Delivery Available
- Drenching showers and strong winds accompanied the weekends arrival of an atmospheric river a long and wide plume of moisture pulled in from the Pacific Ocean The National Weather Services Sacramento office warned of potentially historic rain <http://stcoNvLHc5bq4e>
- Greece Extreme Weather Warning Heavy Rains Thunderstorms Hurricane Winds <http://stcoP2YB87bQam> <http://stcoVq6fZyNv7S>
- RAIN FORECAST 7day rain forecast from the Weather Prediction Center Check radargt <http://stcorJpa708eNn> rain flood drought rainfall showers thunderstorm flooding <http://stcomyR0wFpGE1>
- UKWeather redcircle Thunderstorm warning issued as heavy rain set to soak England <http://stcoN2yW0GF3Sr> Title UK weather Thunderstorm warning issued as heavy rain set to soak England Description Downpour comes days after Britain recorded hottest temperature ever
- A lowpressure system brought extreme weather to Australia from swellbattered beaches to blizzardlike conditions <http://stcopr0Xqt0PyU> Title Watch Australian beaches battered by large swells Description A lowpressure system brought extreme weather to Australia from swellbattered beaches to blizzardlike conditions
- Flash flooding warnings after recordbreaking 40C heatwave Properties may flood <http://stcocuzwzeEzIH> Title Flash flooding warnings after recordbreaking 40C heatwave How

climate change works Description FLASH FLOODING warnings have been issued for Wednesday after the UKs recordbreaking 40C heatwave with one analyst saying this is how climate change works

- Thunderstorms heading to Northeast following heat wave bringing drought relief <http://stcoybw04g4tvq.qua.usatoday.com> Title Thunderstorms heading to Northeast following heat wave bringing drought relief Description The heat wave will send temperatures near 100 in the coming days in some cities while the storms will bring some needed drought relief
- Weather Buoys Ensure More Accurate Forecasts of Extreme Weather Events <http://stcoh-PDi83TNyM>

NEWS

- Climate change The top environment news stories this week <http://stcovLiW4IvjKs.via.wef.com> Title Surprise trees early flowers and green football clubs Everything to know about the environment this week Description Top environment stories Research finds more than 73000 species of tree on Earth Plants in the UK are flowering a month earlier Cutting down on fossil fuelbased plastics is crucial to tackling climate change says EU environment chief
- Canadian onair weather personalities shifting tone amid worsening climate change National Newswatch <http://stcorftrwyIYor.stcoqFvWFkBCyX> Title Canadian onair weather personalities shifting tone amid worsening climate change National Newswatch Description National Newswatch Canadas most comprehensive site for political news and views Make it a daily habit
- HAY Online News Brianna Sacks joins The Post as an extreme weather and natural disasters reporter The Washington Post <http://stcodvNSWrHI88.stpcolnwN8oTD6N> Title Brianna Sacks joins The Post as an extreme weather and natural disasters reporter Description Sacks will explore how climate change is transforming the United States through violent storms intense heat widespread wildfires and other forms of extreme weather
- Climate change disclosures driving awareness and action among companies and investors TabbedNews News NewsToday Goodnews Breaking BreakingNews today story <http://stcos8aNct9UdC>
- fox vs msnbc lies about climate change vs lies about russia
- Oregon wildfires featured in new documentary Elemental Statesman Journal News <http://stcoBSLdIQJe7x.News.BreakingNews> Title Elemental film features Santiam Canyon fires looks to shift relationship with wildfire Description The documentary which includes footage from Oregon wildfires such as the Santiam Canyon and Eagle Creek fires is playing for a week at Salem Cinema
- Reuters a Pulitzer Prize finalist for feature photography on climate change <http://stcoiMjKJQxIHt.stpcoffl0z7L2d2> Title Reuters A Pulitzer Prize Finalist For Feature Photography On Climate Change Description A general view can be seen from a damaged movie theater after a devastating tornado ripped through Mayfield Kentucky December 16 2021 REUTERSCheney Orr
- Extreme Weather Insiders <http://stcocddbuRFjqj>
- Live updates247 Breaking News <http://stcoSgsI2yJkkg.breakingnews> Warming climate may boost Arctic virus spillover risk research shows <http://stcoeIA4CcJmAM> Title Live Update Breaking News 247 Financial Markets Description Breaking News affect financial markets 247 searching all breaking news This channel sponsored by Official InrexEA channel Inrexeaprovides trading robots and analysis service Title Warming climate could boost Arctic virus spillover risk research shows Description Its really unpredictable one research author said It can range from benign to an actual pandemic
- Biden Discusses Climate Change during Visit to florida Today shorts shortsvideo <http://stco9hXX0PcaCV> news politics conservative funny breakingnews alert <http://stcoxwmTM9CJTg> Title YouTube Description Enjoy the videos and music you love upload original content and share it all with friends family and the world on YouTube

DEATHS

- Washington officials share video of four people and car connected to raging wildfire [httpstcoKRvxHKvdY1](#) Title Washington officials share video of four people and car connected to raging wildfire Description Firefighters hiking on steep terrain with a 45pound backpack hand tools chainsaws and water throughout a 12hour shift state Department of Natural Resources says
- Heatwaveravaged areas in China now facing heavy rains prompting evacuations [httpstcojQv74kS6RO](#) Title Heatwaveravaged areas in China now facing heavy rains prompting evacuations National Globalnewsca Description Heavy rain in China was forecast for parts of Sichuan province and Chongqing city through at least Tuesday
- Flash floods and landslides set off by torrential rains swamped a southern Philippine province killing at least 42 people leaving 16 others missing and trapping some residents on their roofs officials said Friday [httpstcoJtvJgHeQ7t](#) Title At least 42 dead in floods landslides in south Philippines Description Flash floods and landslides set off by torrential rains swamped a southern Philippine province killing at least 42 people leaving 16 others missing and trappi
- My condolences are with the family amp friends of those whove lost their lives during this extreme weather event I also thank our emergency services and SES volunteers who are working around the clock to save lives amp protect properties
- Kentucky factory workers threatened with firing as tornado neared reports say The Independent news [httpstcoQWr7zhn5nz](#)
- At least 31 people have died 165 people are missing many more are feared to have died [httpstcoJiO7qC3IH3](#)
- On Monday August 1 search teams found two more bodies within the perimeter of the McKinney wildfire in Northern California [httpstcoXXBk7NgazC](#) Title Wildfire death toll rises to 4 in Northern California Description On Monday August 1 search teams found two more bodies within the perimeter of the McKinney wildfire in Northern California
- On Friday the India Meteorological Department issued a fiveday severe weather warning alert for multiple parts of the country as temperatures in some areas reach more than 113 degrees [httpstco9sbaoqHNPY](#)
- Wind and rain from the storm caused downed trees and power lines as well as flooded roads in some regions of the state [httpstco3SUBcD2urM](#)
- Heavy rains fell across Taiwan on Sunday alleviating the drought in some areas and causing flooding in Changhua County according to the Central Weather Bureau CWB [httpstcoo51mbRYiqJ](#)

INVESTMENT

- cfauk has launched a qualification designed to help the investment management industry understand the implications of climate change on investments by RLawther94 Financial-Advisers WealthManagement [httpstcoXrDDSHiWHE](#)
- Would a prudent fiduciary make comp disclosures based on such unlikely events and negative investment returns its top priorityresearch reflects that some ESG funds have underperformed A vIolation of fiduciary responsibility Shareholder lawsuits [httpstcos7FgtNY2I2](#)
- Most of the information the SEC wants companies to disclose is irrelevant to financial performance It would also expose companies to progressive bullying and classaction lawsuits [httpstcoeHrkN4a9mj](#) Title Opinion Gary Gensler Stonewalls Congress Description The SEC chief refuses to answer questions about his climate rule
- Wall Street is trying to fool investors into thinking they can get rich and save the planet at the same time pareene writes [httpstcozfkKLOMUmz](#) Title ClimateFriendly Investment Funds Are a Scam Description Wall Street is trying to fool investors into thinking they can get rich and save the planet at the same time
- Insurance companies really should seek funds from fossil fuel companies to cover climate related damages [httpstco5O2ZyWsPUO](#)

- Big US banks have utterly failed to protect their shareholders longterm interests as they renege on their netzero commitments [httpstcoBs1b0PADH3](#) Title Investors Must Hold Banks to Their Word on Climate Change Description The biggest financiers of fossil fuels face some tough questions this shareholder season
- GWSO Share Repurchase Announcement Causes Premarket Buying Pressure [httpstcoN-GIOGofwp0](#)
- Italys De Nora bets on cornerstone investors to defy IPO drought [httpstcooeel3qtnnj](#) Title Italys De Nora bets on cornerstone investors to defy IPO drought Description Published by Reuters UK By Francesca Landini and Lucy Raitano MILAN Reuters Italys Industrie De Nora is counting on cornerstone investors to defy volatility that has inhibited several initial
- Dividends from British companies crashed last year and could fall even further in 2021 but the best investment trusts can offer investors sanctuary from the cuts [httpstcoIRI0T2Et3Y](#)
- NEWS QU has millions in hedge fund investments One hedge fund puts millions into fossil fuel industries every year link [httpstcorMs5gr07M6](#) via [stevemac2017](#) [httpstcobE-hhy71Z8F](#)

HUMAN COST

- BONFIRES As well as potentially causing a nuisance bonfires can produce greenhouse gases such as carbon dioxide which add to global warming Bonfires can also produce other poisonous gases and fine particles which can affect human health
- There will be drought throughout the United States lots of people will suffer because of food shortages and escalating food prices
- Floods and droughts are some of the most tangible and devastating consequences of the climate crisis [httpstco1Jhj8fntI7](#)
- extreme weather patterns and blackouts caused as a result of such are always terrifying especially since the people who are affected most by them are typically those who are already most vulnerable disabled poor homeless and marginalised people are often at significant risk
- Very Concerning Sea level rise could threaten hundreds of toxic sites in California [httpstcoOfsQHg5FOO](#)
- Effects Climate Change causes serious problems like droughts floods extinction of animals high temperatures rising sea levels etc [httpstcoubX4oE8S7r](#)
- Fires to floods Extreme weather is occurring worldwide [httpstcoIdoUhsdvp2](#)
- Building in DisasterProne Areas Not More Extreme Weather Causes Rising Losses [httpstcok6KMZRps6C](#)
- RT BrookingsInst Dramatic storms wildfires and floods often generate headlines but more subtle persistent changes in the environment are also creating health and safety hazards across the United States [httpstcozp0Yef92RC](#) Title Sea level rise from climate change is threatening home septic systems and public health Description Dramatic storms wildfires floods and similar events draw the most public attention as examples of how climate change threatens human lives and homes But more subtle persistent changes in the e
- More people are moving into dangerous areas as climate change is making weather disasters stronger and more frequent [httpstcoEMa2pIf0CL](#)

PROJECTIONS

- The plan could allow for emissions to keep growing through 2025 [httpstco0CwBsBOBVX](#) via [voxdotcom](#) [lilipike](#)
- [httpstcotlbfJtofpI](#) 30year global projections More unprecedented droughts ahead
- Most of the new units will be available next year but some could be up as early as this fall [httpstcoIGUR20jKYE](#) Title Younger generations could be the key to reaching older Republicans on climate change Description Utah Tech hosted a conservative climate change panel that focused on the way to bridge the gap between younger and older generations on the issue

- Earth could cross the global warming threshold as soon as 2027 <http://stcoVtO4jMOrig> <http://stcobpH9z7XFz7>
- For a 67 chance of limiting global warming to 15C we would have to reach netzero by 2030
- There is a 5050 chance globalwarming will exceed 15C before 2025 WMO says <http://stcoRbhcdakzmF> Title There is 5050 chance global warming will exceed 15C before 2025 WMO says Description The WMO warns of 5050 chance that global warming will exceed 15 degrees within next five years
- 2020 was a preview of hotter years to come <http://stco4uEiJZms7W>
- Under all scenarios examined Earth is likely to reach the crucial 15 warming limit in the early 2030s <http://stcoxrDjsArY7Q>
- We could be seeing some good news for the fall outlook <http://stcoJlayQnKOMJ>
- Climate change will get worse in 2022 But it wont be the end <http://stco7oxDS12WBF> Title Climate change will get worse in 2022 But it wont be the end Description The best we can hope for is incremental progress two steps forward one step back a string of little victories

LINKS/PROMO

- Check out this cartoon <http://stcosjx1vDnk6c> via TheWeek Title Check out this cartoon Description Editorial Cartoons from The Week
- Check out this cartoon <http://stco1GTmMWFHAJ> via TheWeek
- Extreme Weather Warning Please click the link below for our update <http://stcoUIYbhAtLRT> <http://stcoBa1v9SzTfK> Title Extreme weather Update Description Dear Parent Carer Further to the communication sent out last week please be advised that students can continue to wear uniform with no blaze
- Climate summit If anyone is struggling to get in to the webinar please try again and make sure you are logged in to your zoom account use link on this page <http://stcogHGQAWSE4k> netzerosheffield
- You can listen to and subscribe to the podcast on Apple Podcasts here <http://stcoVgkox15u9q> Title We havent faced anything like climate change before Gaia Vince Description In this episode Gaia Vince joins Krishnan to talk about her new book Nomad Century in which she takes a look at how migration could be the solution to the climate crisis
- Get my art printed on awesome products Support me at Redbubble RBandME <http://stcocok3UhxySc3p> findyourthing redbubble Title Climate Change Is Real Act Now Tote Bag by Peter Baker Description The time to act is now Climate change is real The sea ice is melting polar bears wont survive eating coconuts ENJOY Millions of unique designs by independent artists Find your thing
- fossilfuelfreefriday What do you think about this announcement following COP26 Click this link to learn more <http://stcoia7YB8689K> <http://stco1f3mfmCV5D>
- Check out this article I found on Knewz <http://stcopywaqXAF5Z> Get more Knewz iOS app <http://stco6S79hVObml> Android app <http://stcoZ3n1eS957s> Online <http://stcoT301uhWrEG>
- Check out this cartoon <http://stcop6TPMkc3mv> via TheWeek
- Get my art printed on awesome products Support me at Redbubble RBandME <http://stcoX-iBJJo1LC> findyourthing redbubble Title Climate Change Code Red Tote Bag by Peter Baker Description Climate change code red the time to act is now before its too late ENJOY your earth dont abuse it Millions of unique designs by independent artists Find your thing