Project Fork-Cast

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Introduction

The constant expansion of human population and activity has caused immense damage to our planet's biosphere, geosphere, atmosphere, and hydrosphere. Corporations are allowing for greenhouse gases to billow into our atmosphere, mass overfishing has taken an alarming toll on the biodiversity and health of our oceans, and agricultural industries have pushed further into to untouched forests thus depriving animal and plant life of a safe habitat and necessary resources. The detrimental effects of climate change are not far off and cannot be pushed aside; the consequences of unchecked activity will touch everyone within our lifetime. Due to rising global temperatures and unruly weather patterns foods such coffee beans, chickpeas, cocoa beans, and fish will no longer be accessible. By giving up these 12 foods we are simulating an earth which is no longer suitable to grow foods which have become human dietary staples and raising awareness about how global climate change with touch us within our lifetime.

Goals

1. Raise awareness about how the effects of climate change will touch our lives within the century.
2. Through raising awareness about climate change we hope to encourage others to switch to a plant based or mediterranean diet.

Specifications

This is a two week project which will feature a controlled week and an experimental week in which participants will completely give up a list of 12 foods which are expected to go extinct within our life time and record their experiences. This list of foods includes: Avocados, Chickpeas ,Coffee beans, Bananas, Fish, Peanuts, Maple syrup, Honey Chocolate, Italian durum wheat, Grapes,Oranges

2 Week Plan

I. Week One

Week one is the controlled variable within this project. For this week you will keep a 7 day journal of what you eat for that week. This journal should include the meals you eat and the general ingredients within them.

II. Week Two

During week two you will be asked to give up the following 12 foods

1. Avocados
2. Chickpeas
3. Coffee beans
4. Bananas
5. Fish
6. Peanuts
7. Maple syrup
8. Honey
9. Chocolate
10. Italian durum wheat
11. Grapes
12. Oranges

All of the food about for a number of reasons are expected to go extinct within our lifetime due to changing global climate. The goal of this project is to realize how close to home the effects of climate change are so you will also be asked to make 1-2 short video logs each day which tells about your experience without these foods. In these videos please include any shifts in energy levels, discomfort, inconvenience or straight up aggravation you experience due to your new dietary restrictions.

Why Plant Based or Mediterranean?

https://youtu.be/nUnJQWO4YJY

Why Are These Foods Going Extinct?

1. Avocados

a.) it takes “74 gallons of water to produce a pound of avocados,”

b.) California produces about 90 percent of the nation's avocado crop -https://www.californiaavocado.com/the-california-difference/fun-avocado-facts

c.) California is just now coming out of a massive drought, as of 2017 51 percent of California remains in some form of drought and compares with 81 percent three months prior. The CA drought took a massive toll on agricultural water supply, if the drought is to continue due to rising temperatures and lack of water the avocado crop could go completely extinct or become extraordinarily expensive.

2. Chickpeas

a. Chickpeas are grown primarily in Washington (36 percent of total production), Idaho (35 percent), Montana (20 percent), and California (4 percent). 46% of world chickpeas were grown in india

b. it takes 76 gallons of water for every ounce of chickpeas.

C. India, Cali, montana were all hit by devastating droughts which lead to a 40% decrease in chickpea production. if these droughts are to continue due to rising temperatures and lack of water the chickpea crop could go completely extinct or become extraordinarily expensive.

3. Coffee beans

a. A full half of the world's area that's deemed suitable for growing coffee will be lost by 2050 if climate change remains unchecked, this is due to rising temperatures, pests and fungi.
b. Arabaica coffee which makes of 70% of the worldś coffee can only be grown in a climate of 64 to 70 degrees f, this means the highest temp it can live in is up to 73 degrees f. According to https://www.climate.gov/news-features/climate-and/climate-coffee " Above those moderate temperatures, fruit development and ripening accelerate. (If you didn't know, coffee "beans" are actually the pit, or seed, of the plant's fruit.) Faster ripening might not sound bad, but it actually degrades coffee bean quality. Continuous exposure to temperatures up to and just over 86°F (30°C) can severely damage coffee plants, stunting growth, yellowing leaves, even spawning stem tumors.ˆ
c. As temperatures rise farms will move farther from the equator into higher altitude land which will require deforestation in order to create cultivation worthy land, this means less photosynthetic plants taking co2 out of the atmosphere and an increase in global temps.
d. ' A 2011 study reported that the coffee berry borer, *Hypothenemus hampei*, appeared to be thriving under warming conditions. The pest, which probably originated in central Africa, had spread to all coffee-producing regions in the world except China and Nepal. The authors reported that berry borer damage to coffee beans was

already causing losses of more than $500 million per year. - https://www.climate.gov/news-features/climate-and/climate-coffee 'Not only are these insects severly damaging the coffee product, they are also continuing to adapt with changing temps and are able to survive in higher altitiude environments there fore pushing farms even further up into new land.

e. For all these reasons it is expected that by 2080 the coffee crop will become extinct, this will cause catastrophic damage to the farming nations which rely very heavily on the coffee industry for their livelihood.

4. Bananas

a.)banana crops are under attack from a disease called tropical race 4 which , infects and destroys Cavendish banana plants. Once present, the disease can't be controlled by common chemical or cultural management practices. Available methods for disease containment are not fully efficient on TR4; and alternative options are still at the evaluation stage. The social consequences of Fusarium wilt can be severe: bananas are an important source of food, income, employment and government revenues in many tropical countries. -
http://www.fao.org/world-banana-forum/projects/fusarium-tr4/disease/en/

5. Seafood

a.) 2048, That's when the world's oceans will be empty of fish, this is because of overfishing, pollution, habitat loss, and climate change.
B. Ocean overfishing is simply the taking of wildlife from the sea at rates too high for fished species to replace themselves. In 2003, a scientific report estimated that industrial fishing had reduced the number of large ocean fish to just 10 percent of their pre-industrial population. Overfishing has occurred in the past ex) overfishing of the california sardines led to the extinction of the species by the 1990s. If illegal fishing and unsustainable harvesting still continues the oceans diverse ecosystem could entirely collapse leaving millions without a key diet element and a livelihood.
C. ocean pollution consists of 4 main contributors

➔ "Ocean dumping Dumping involves depositing all the waste materials from factories and industries, tankers and ships and sewerage waste materials into the oceans and seas. Some of the materials emitted by the industrial wastes and sewage wastes contain materials like mercury, cryolite and DDT. Certain industrial wastage also includes radioactive materials." - https://www.marineinsight.com/environment/causes-and-effects-of-ocean-dumping/

The oceans absorbed 4.8 million to 12.7 million metric tons of plastic trash in 2010. Other than regular plastics and metals, ballast water which is water carried in ships' ballast

tanks to improve stability has been known to take an immense toll on fish populations in the surrounding area.

- ➔ Land run off exposed soil from recently fertilized land on farms has been known to runoff into oceans after a rainstorm. Rain water carries fertilizer, pesticide, and petroleum riddled soil into to ocean, the fertilizer causes massive algae blooms which can be toxic to surrounding fish populations and dismantle surrounding ecosystems.

- ➔ Oil spills 'Fish and shellfish may not be exposed immediately, but can come into contact with oil if it is mixed into the water column. When exposed to oil, adult fish may experience reduced growth, enlarged livers, changes in heart and respiration rates, fin erosion, and reproduction impairment. Oil also adversely affects eggs and larval survival. ' - https://oceanservice.noaa.gov/facts/oilimpacts.html

- ➔ Noise pollution massive sounds emitted from boats, oil rigs, cargo boats ect. Have contributed immensely to the sound within the ocean, this has interfered which the way marine mammals communicate, breed, travel, and orient themselves. "'Whales were trying to hide behind rocks to escape in a sound shadow when seismic surveys were being conducted along the California coast.'
- ➔ Ocean acidification as human carbon emissions increase globally, more carbon dioxide dissolves in this ocean, carbonic acid is formed. This leads to higher acidity, mainly near the surface, which has been proven to inhibit shell growth in marine animals and is suspected as a cause of reproductive disorders in some fish. "Ocean acidification is expected to impact ocean species to varying degrees. Photosynthetic algae and seagrasses may benefit from higher CO_2 conditions in the ocean, as they require CO_2 to live just like plants on land. On the other hand, studies have shown that a more acidic environment has a dramatic effect on some calcifying species, including oysters, clams, sea urchins, shallow water corals, deep sea corals, and calcareous plankton. When shelled organisms are at risk, the entire food web may also be at risk. Today, more than a billion people worldwide rely on food from the ocean as their primary source of protein. Many jobs and economies in the U.S. and around the world depend on the fish and shellfish in our oceans. " - https://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F

6. Peanuts

a. peanuts require very specific and stable growing conditions that just aren't being kept up due to climate change. Too little rain or too much heat isn't good for the growth of peanuts and too much rain can cause mould

b. The us produced 5.7 billion pounds of peanuts in 2016 however these plants were cultivated in southern states such as CA which have suffered through massive droughts and heat waves which have been detrimental to the peanut crop.

7. Maple syrup

a . 'Maple syrup production has been greatly affected by global warming— the syrup-producing season is starting earlier and earlier. On top of that, warmer summers and droughts don't meet the climate needs for sugar maples, which need freezing temperatures in the winter, and warm spring days to produce sap. '
-http://www.businessinsider.com/foods-that-may-go-extinct-2016-6?op=1&r=UK&IR=T#maple-syrup-6

8. Cocoa beans

a. On top of increased consumption, West Africa, which produces 70 percent of the world's chocolate, is seeing rising temperatures and less water, which has taken a toll on production.
b. Rising temps have also taken a toll on Mozambique's coastal biodiversity and due to rising ocean levels have caused massive erosion

c. Trees are very sensitive to a soil water deficiency. Rainfall should be plentiful and well distributed through the year. An annual rainfall level of between 1,500mm and 2,000mm is generally preferred. Dry spells, where rainfall is less than 100mm per month, should not exceed three months. - https://www.icco.org/about-cocoa/growing-cocoa.html