Name: Morgan Kammerer **Topic:** Unsustainable Fishing Methods

Presentation Outline: Unsustainable Fishing Methods

I. **Introduction**

a. **Opening Statement:** Raise your hand if you consume any type of seafood. Now keep your hand raised if you know where and how you get your seafood, is it caught wild, is it farmed, is the method sustainable or unsustainable? For the majority of people, the seafood that is consumed is done so without even knowing where and how it was caught. Although we have briefly covered this topic in class, today I am going to be talking about a few unsustainable fishing methods and the harm that is caused from it.

b. **Purpose of Research and Presentation:** The purpose of this presentation is not to scare you away or tell you not to consume seafood. It is to introduce you all to the reality of how a lot of our seafood is caught and inform you about the food you maybe consuming.

c. **Preview of Subtopics**

i. Purse Seine of Tuna

ii. Purse Seine of Bait Fish

iii. Shrimp Trawling (Bottom Trawling)

II. **Body Presentation**

a. **Purse Seine of Tuna Fish**

i. A Little About the Fishing Method:

1. About 63% of tuna caught globally each year by purse seine vessels
2. 1,101is the estimated number of purse seine vessels authorized to fish for tuna

ii. Target Species: Skip Jack, Yellowfin, and Bluefin

1. Skip Jack
    a. commonly used in canned tuna
    b. lifespan of 8-12 Years

c. eat small fish, squid. Pelagic crustaceans, and invertebrates

2. Yellowfin and Bluefin
    a. marked as ahi
    b. used in sushi and sashimi
    c. lifespan of 6-7 years
    d. eat squid, cuttlefish, octopus, shrimp, lobster, crabs, small fish

iii. Bycatch: Can vary between 1.75% and 8.9% depending on region
    1. Animals caught could include: turtles, rays, dolphins, juvenile fish, and sharks

iv. How it Works:
    1. Large wall of net deployed under school with floats on top
    2. 6,500 ft. in length and 650 ft. in depth
    3. they find the schools using helicopters, radar fish finders, birds, ruffling in the ocean (boils), and used to use pods of dolphins

v. Why This is Unsustainable:
    1. Amount of bycatch
    2. Small juvenile fish are caught which can destroy the species because the juveniles are dyeing and can also destroy the coming seasons of fishing

b. Purse Seine of Bait Fish

i. Target Species: Sardines, Mackerel, and Anchovies
    1. Sardines
        a. 38 cm long
        b. coastal pelagic fish that are about 150 miles offshore
        c. lifespan of about 12-13 years under natural conditions
    2. Mackerel
        a. 12-22 in. in length
        b. lifespan of 25 years in natural conditions

c. eat small copepods, small fish, shrimp, and squid

3. Anchovies
    a. 7 cm
    b. 4-7 years
    c. eat krill, copepods, and larvae

ii. Bycatch:
1. Just like tuna fish, bait fish have the same types of bycatch
2. Their bycatch can also include anything that shoals (schools) tightly together
    a. This is because the hole in the seiner nets are tighter making anything that school together a unwanted target

iii. How it Works and Why it is unsustainable:
1. How it works is identical to the purse seine for tuna fish, except the nets are woven tighter with smaller hole so the schools are unable to escape
2. The same methods are used to find them, fish finders, birds, and ruffling in the ocean
3. And the reason it is unsustainable is the same as well
    a. The amount of bycatch and the killing of the juvenile fish

c. Bottom Trawl (Shrimp Trawl)

i. Target Species: Shrimp
1. .3-5 cm long
2. 1-2 years
3. 2,000 different species
4. eat algae and plankton

ii. Bycatch:
1. By far the worst bycatch, for every 1 shrimp there are 6 bycatch

2. Shrimp trawls in particular catch very high amounts of bycatch– often *2-10 times* the amount of shrimp caught.
3. Sea stars, rays, turtles, small fish, halibut, coral, anything that is found on the bottom of the ocean

iii. How it Works:

1. mesh sizes ranging from 60-80 mm
2. Gulf of Mexico trawl is a model of traditional shrimp trawl
3. cone-shaped net consisting of a body
4. dragged across the bottom of the ocean heal down by large weights that help tow the net across the bottom as the boat drives

iv. Why it is Unsustainable:

1. highly indiscriminate, capturing any and all species in their path
2. cause significant damage to habitats on the bottom of the ocean
3. the bycatch
4. turns physically diverse environments, teeming with life into barren deserts

III. Summary and Conclusion

a. Review of Subtopics and concluding thoughts: Today I have discussed unsustainable fishing methods. Including: purse seine of tuna, purse seine of bait fish, and bottom shrimp trawling. We discussed what the target species is, how much bycatch is produce, how it works, and why it is considered unsustainable. FAO describes that over 70% of the world's fisheries as either "fully exploited", "over exploited, or "significantly depleted". I hope that you all have learned a little something new about unsustainable fishing methods and if there is one thing to be taken away it is to make sure that you know where and how your seafood gets to your plate.

Bibliography

Animals, A-Z. “Shrimp.” A-Z Animals, 18 Apr. 2018, a-z-animals.com/animals/shrimp/.

“Bottom Trawling.” FAO Fisheries & Aquaculture - Fishing Technique, www.fao.org/fishery/fishtech/1022/en.

Davis, Tasha, et al. “Engraulis Mordax (Northern Anchovy).” Animal Diversity Web, animaldiversity.org/accounts/Engraulis_mordax/.

“Fishing Gear 101: Trawls - Bulldozers of the Ocean.” The Safina Center, 6 June 2016, safinacenter.org/2015/02/fishing-gear-101- trawls-bulldozers-ocean/.

“Impact of Overfishing On Human Lives.” Marine Science Today, 8 Apr. 2014, marinesciencetoday.com/2014/04/09/impact-of-overfishing-on-human-lives/.

ISSF. “Fishing Methods.” International Seafood Sustainability Foundation, 14 Dec. 2017, iss- foundation.org/about-tuna/fishing-methods/.

“Mackerel Facts.” Math, www.softschools.com/facts/animals/mackerel_facts/631/.

Museum, San Diego Natural History. “Sardinops Sagax Caerulea California Pilchard, Pacific Sardine, Sardina Monterrey.” SDNHM - Sardinops Sagax Caerulea (California Pilchard, Pacific Sardine), www.sdnhm.org/oceanoasis/fieldguide/sard-cae.html.

NOAA. “Dive into Our New Website!” Welcome to NOAA | NOAA Fisheries, www.fisheries.noaa.gov/welcome.

“Purse Seine .” FAO Fisheries & Aquaculture - Fishing Technique, www.fao.org/fishery/fishtech/40/en.

WWF. “Yellowfin Tuna.” WWF, World Wildlife Fund, www.worldwildlife.org/species/yellowfin-tuna.