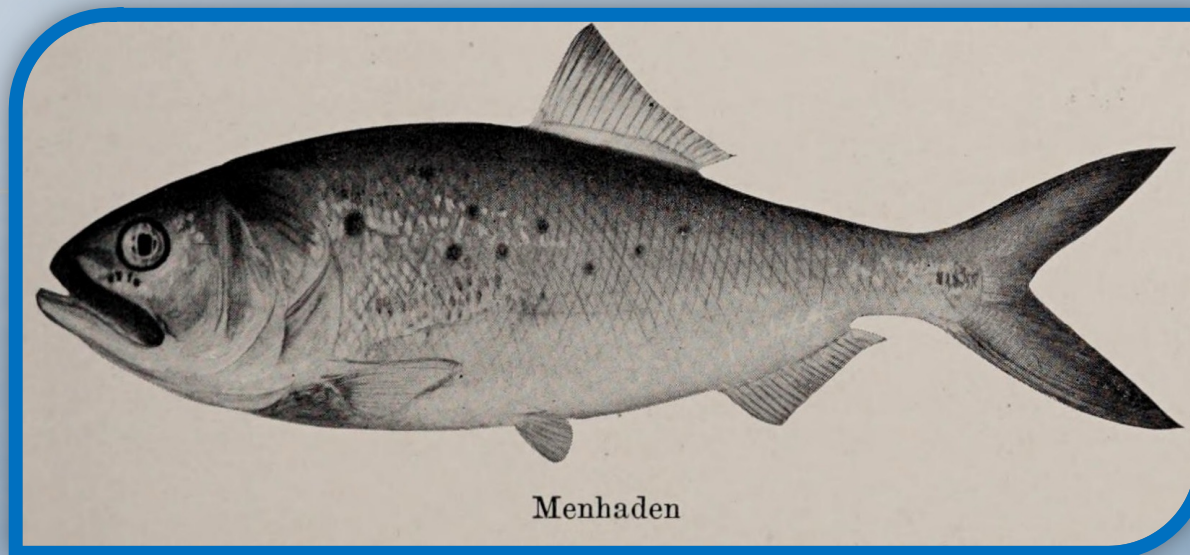


THE MOST IMPORTANT FISH IN THE SEA

*COMPILED BY ALICE MARCH
STRATHMERE FISH AND ENVIRONMENTAL CLUB*



Menhaden



Menhaden:

They are ugly, oily, bony, and smelly.
Why are they the most important fish in
the sea????

MENHADEN ARE FILTER FEEDERS:



- They can filter 7 gallons of water per minute.
- Menhaden become highly nutritional from the plankton they feed on, making its predators healthy, as well.

THE HISTORY OF THE USES OF MENHADEN



- Native Americans taught the Pilgrims how to fertilize their corn using menhaden to nourish the New England soil.
- The European settlers became specialized in their industries, so farmers grew corn to sell to their communities, as well as for their own use.
- At that time, farmers caught their own menhaden.
- As specialization and industry grew, the farmers formed companies to fish for the menhaden they needed.
- Then, creating fertilizer from menhaden became a commercial industry, apart from the farmers.
- The oil that was pressed out of the menhaden when creating the fertilizer was found to be a cheap substitute for industrial oils.
- Eventually, menhaden oil replaced whale oil as the oil of choice for Americans.



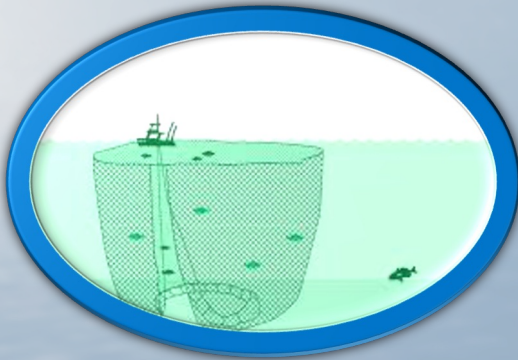
PRODUCTS OF THE MENHADEN REDUCTION INDUSTRY TODAY



Menhaden are processed into:

- Fertilizer
- Oil
- Cosmetics
- Supplements
- Fish/animal food
- And more . . .

THE PURSE SEINE

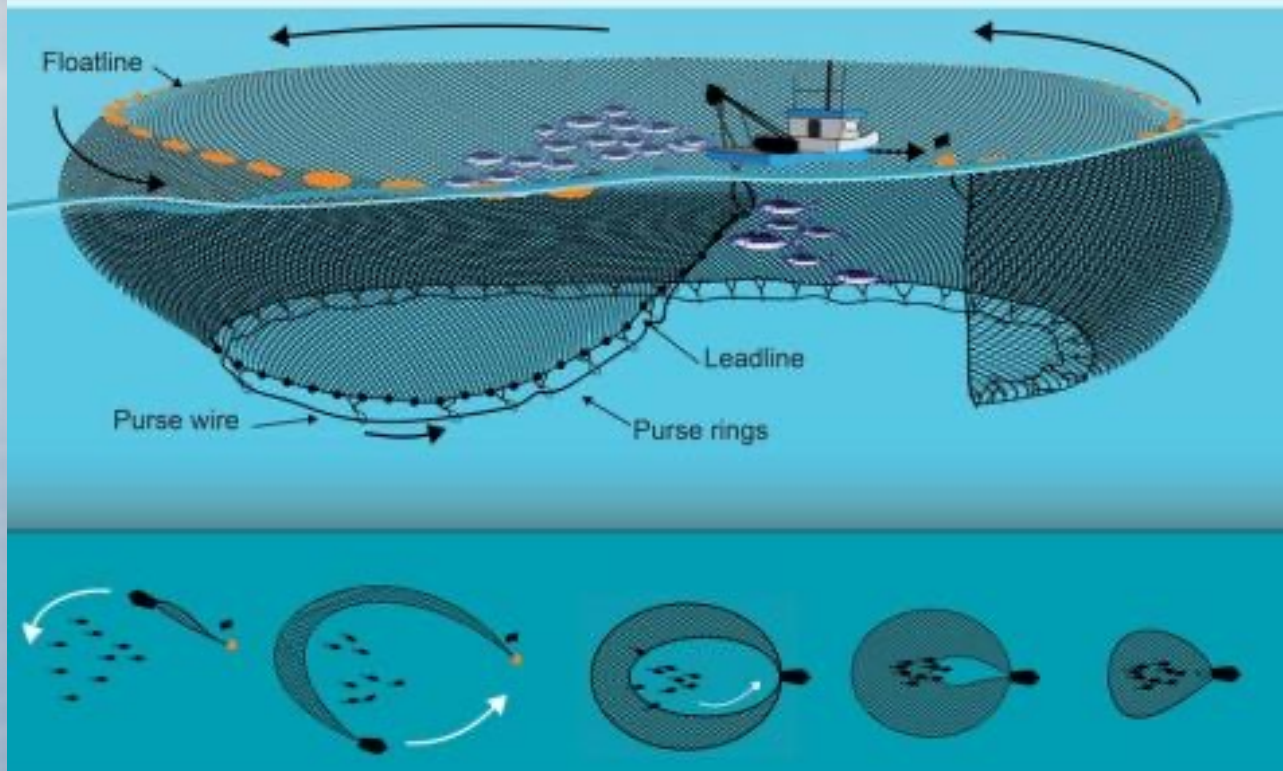


- In the 1860's, the purse seine was invented to catch an entire school of menhaden at one time.
- This led to the development of boats that could hold massive quantities of fish at one time.
- Some boats were designed to process the fish out at sea.
- By the 1880's, commercial fisherman were complaining that the menhaden reduction industry was taking all their bait and fish were not able to find the nutrition they needed.



New Zealand Government
Marine Fisheries Management Authority

Purse Seine



MENHADEN REDUCTION FISHERY TODAY



- Omega Protein (Cooke Inc.), located in the Virginia section of the Chesapeake Bay, is the only menhaden reduction fishery on the Atlantic Coast.
- Due to rapid increases in technology, a purse seine can now catch a school of 400,000 menhaden in one catch (a result of the density of menhaden schools) in 35 to 40 minutes.
- Spotters in helicopters locate a school of menhaden, transmit the location to the boats, which set their purse seine.
- The hydraulic winches of today can lift the weight of a school of fish.
- Holds of the boats can store one to two million fish at a time.



CURRENT MENHADEN RESTRICTIONS



- Commercial menhaden reduction fishing has been outlawed in every state on the Atlantic coast except for Virginia.
- Omega Protein's fisherman are now entering federal waters off the Atlantic Coastal states in addition to fishing in Virginia's waters.

OSPREY STUDY



- 571 Osprey pairs were studied in the Chesapeake Bay and its tributaries.
- Ospreys in lower salinity areas (dominant diet of gizzard shad and catfish) had approximately twice as many osprey chicks survive as those in high salinity areas (dominant diet of menhaden).
- Conducted by the College of William & Mary Center for Conservation Biology in 2024. **Alice can provide the actual data.*

WHY IS THIS IMPORTANT???



- **Where are the fish??** Predators of menhaden (especially striped bass) have become less prevalent.
- **Will there be enough bunker for bait in the future??** It became a problem in the 19th century. Will it become a problem again?
- **Why are some of our osprey stands empty?** Why did I find a dead osprey chick in my backyard?
- It is important that there be a **balanced approach** between the needs of the menhaden reduction industry and concern for a thriving marine ecosystem. What needs to be done to maintain that balance?