



# "The Future of Fish"

7th Annual NC Catch Summit  
Sustaining Local Fishing Communities  
Southport, NC

March 13, 2018

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# Increasing Worldwide Demand for Seafood

- Incomes are rising in developing countries (esp. China/India)
- Rising incomes ==> increasing meat/seafood demand
- Many key population centers are coastal (Tokyo, Hong Kong, Shanghai, Mumbai), already familiar with seafood
- Rising demand will increase world prices
- Per capita fish consumption is expected to increase in all continents.
- In particular, major increases are projected in Brazil, Peru, Chile, China and Mexico.
- Overall, developing countries are projected to eat 93 percent of the additional fish available for human consumption by 2025, due to a 10 percent projected increase in their per capita fish consumption

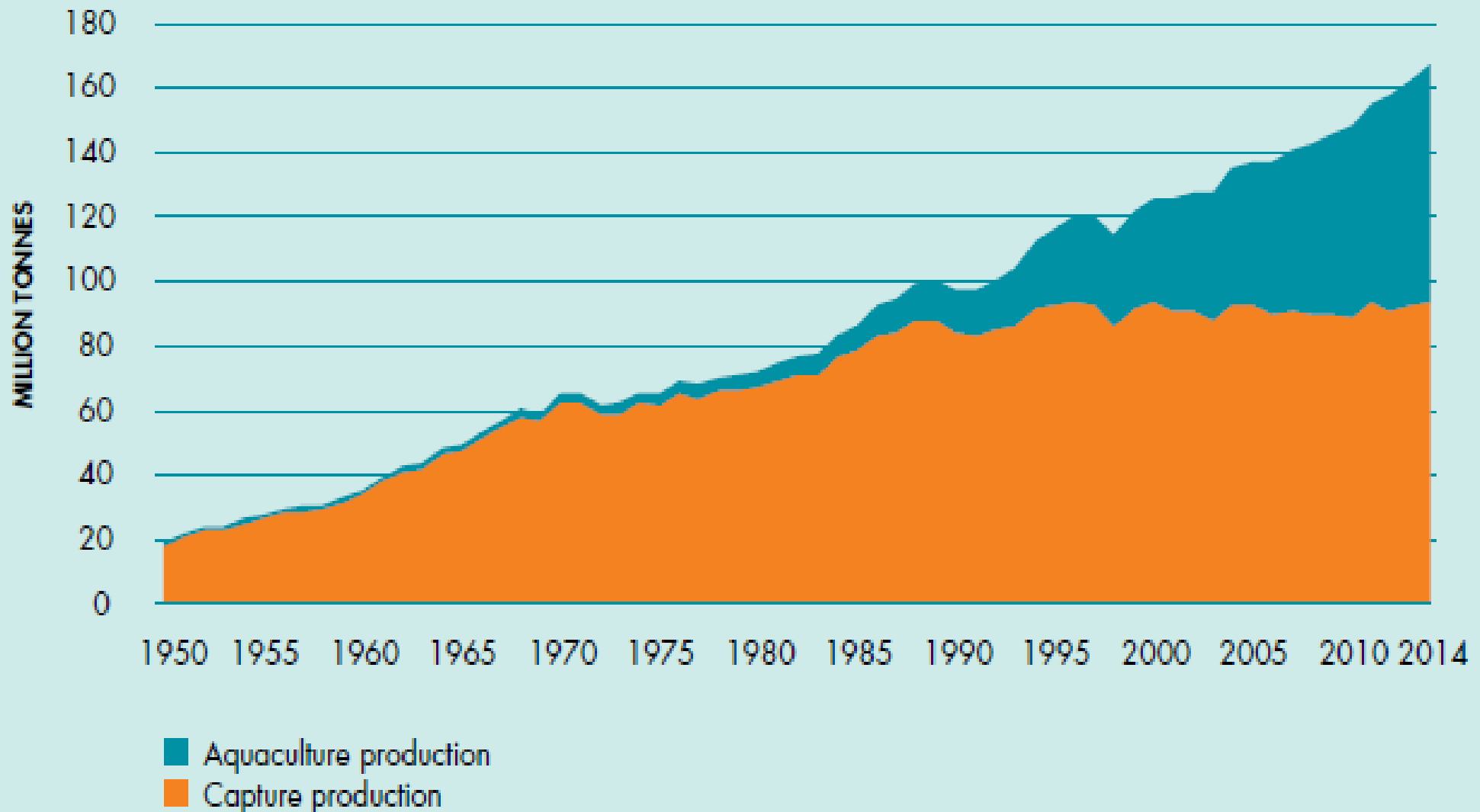


# Increasing Production / Increasing Aquaculture

- World production of fish and seafood expected to increase 17% (29 million tonnes) between 2014 and 2025 (FAO 2016).
- Much of the increase due to aquaculture.
- Worldwide, wild catch only expected to increase about 1% by 2025.



# WORLD CAPTURE FISHERIES AND AQUACULTURE PRODUCTION



# Increased Branding



- Continued demand for wild caught, esp. for upper-end consumers and tourists
- Increased use of ecolabels / origin certification
- Also increasing domestic (USA) demand for fish/seafood due to health benefits
- Branding / emphasis on "clean water" / increasingly important, esp. among domestic consumers -- the rise of Fresh Market / Whole Foods and demand for Natural/Organic products



# U.S. Shale Oil Caps Gas/Oil Prices

- gas/diesel price increases limited by technology improvements in U.S. shale oil industry ==> increased domestic oil availability



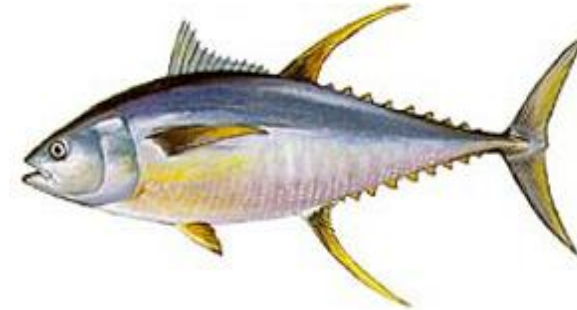
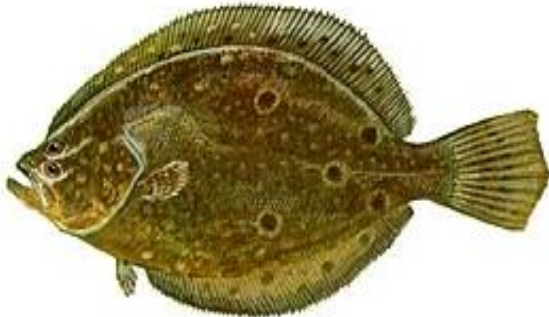
# Rising Interest Rates

- Global economic growth ==> increased demands for capital ==> rising interest rates
- challenge for vessel purchasing, starting new small businesses



# Increased Globalization

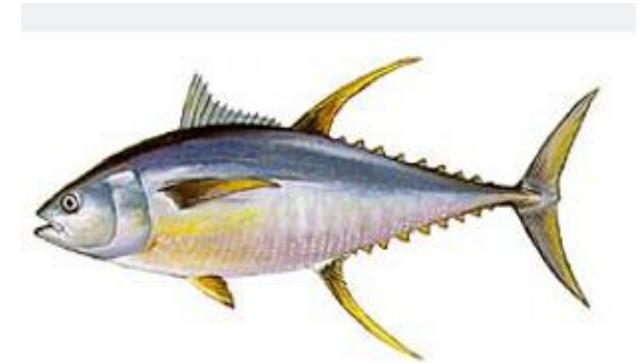
- Increased need for those in the industry to understand import/export processes and world markets to take advantage of highest prices
- World trade in fish for human consumption is expected to exceed 46 million tonnes in live weight equivalent in 2025, up 18% from 2014 to 2025.



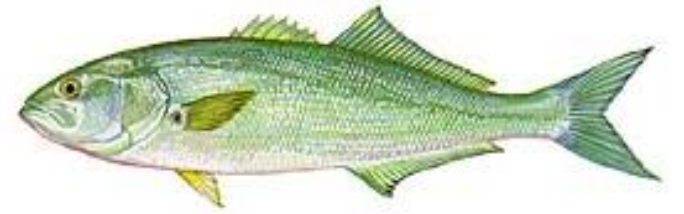


# The Value of the Dollar (relative to foreign currencies)

- Large effect on Import/Export prices
- Fishermen need to become familiar with effects on import/export prices



# Water Quality / Habitat Quality



- Coastal Development continues ==> vigilance in maintaining coastal water quality
- Offshore energy development ==> threat of spills, vessel collisions, habitat improvement?
- Shellfish restoration ==> improvements in water quality/ habitat structure ??
- Again, Branding / consumer demand for product from "clean waters" / increasingly important

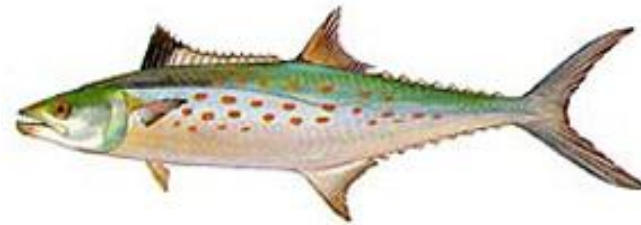


# Conflicts About Resource Access



- Feds / Between States

- cost share of inlet and waterway dredging/management
- migratory species management

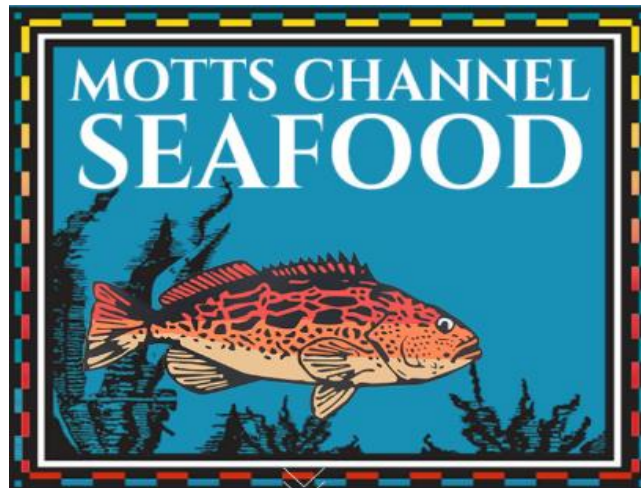


- Within the State

- Working Waterfronts
- Marine Protected Areas (MPAs) ==> short run vs. long run tradeoff
- Commercial vs. Recreational (grow the source! --> rising tide lifts all boats!)

# Pressure for More Efficient Fishing Methods

- Continued pressure to increase fishing efficiency (decrease bycatch, increase CPUE)
- Fishing methods that produce high bycatch will be under pressure to change
- Technology and better data may provide means to decrease bycatch



# Better Technology / Better Data / Better Management / Higher Sustainable Harvest

- Better Techn on vessels ==> better fish finders, more more catch per effort, more selective/targeted catches, better phone coverage, better weather info, better safety
- High resolution mapping of sea floor ==> Better habitat identification, characterization ==> stock improvement
- Coastal Ocean Observation System bouys and sensors ==> better weather / sea conditions info ==> improved safety.
- Aerial drones / Satellites ==> fish location, vessel monitoring, potential reduction in illegal/unreported/unregulated foreign catch
- Submersible Drones / Sensors ==> improved species targeting?



# Better Technology / Better Data / Better Management / Higher Sustainable Harvest

- Better targeting/more selective catching ==> reduced bycatch, reduced biological uncertainty  
==> more confident fishery managers ==> reduced regulation, larger catch
- We're turning a corner ==> managers have more data, more fish stocks are stable or rebuilding,  
increased sustainable harvests in the future
- Shellfish restoration / genetics / breeding programs ==> water quality / habitat improvement,  
more hardy/resilient oysters
- The Internet ==> worldwide markets/ consumer base, social media  
increased export opportunities, increased import threats  
BRANDING, WHAT IS DIFFERENT/SPECIAL ABOUT YOUR PRODUCT?
- Citizen Science ==> better/cheaper data, more citizen involvement and input



# Thank you!



## Photo Credits

- Black Sea Bass (NC DMF)
- Blue Crab (Maryland DNR)
- Bluefish (NC DMF)
- Wahoo (NC DMF)
- Spanish Mackerel (NC DMF)
- Red Snapper (NC DMF)
- Mahi/Dolphin Fish (NC DMF)
- Yellowfin Tuna (NC DMF)
- Flounder (NC DMF)
- Croaker (NC DMF)
- Oyster (NC Shellfish Sanitation)
- Shrimp and Beer (Oceanic Restaurant, Wrightsville Beach, NC)
- Oceanic (Wrightsville Beach, NC)
- Lone Cedar Cafe (Nags Head, NC)
- Sanitary Fish Market (Morehead City, NC)
- Mott's Channel Seafood (Gene Long, Wrightsville Beach, NC)
- Wanchese Fish Company logo (Wanchese, NC)
- Charter Boats (Oregon Inlet Fishing Center, Dare County, NC)
- Winner Fleet Headboat (Carolina Beach, NC)
- Ocean Isle Fishing Center World Cat charter boat (Ocean Isle Beach, NC)
- Ocean Isle Fish Company logo (Ocean Isle Beach, NC)

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