

Fisheries and Offshore Wind

What's at stake and aiming for win-win outcomes



Tim Sippel, PhD – Senior Environmental and Fishery Scientist

Northwest Offshore Wind Conference
Portland, OR - January 30, 2024



US National Offshore Wind & Seafood Production Policies

US National Seafood Strategy¹

Vision includes ensuring;

- “The U.S. seafood sector contributes to the nation’s climate-ready food production and to meeting critical domestic nutritional needs”
- “U.S. seafood production increases to support jobs, the economy, and the competitiveness of the U.S. seafood sector”
- “Opportunities are expanded for a diverse and growing seafood workforce”

Plan to achieve the vision includes;

- “Maintain or increase sustainable U.S. wild capture production”
- “Foster access to domestic and global markets for the U.S. seafood industry”
- “Strengthen the entire U.S. seafood sector”

Biden Admin. Offshore Wind Energy Production Targets

- 30 Gigawatts of energy produced from OSW by 2030²
 - Includes 15GW of floating offshore wind by 2035
- Currently awarded and soon-to-be awarded projects would add up to meet these targets³
- 42 megawatts operational in the USA a/o June 2023
 - Production increased recently with South Fork Wind and Vineyard Wind
- Reaching the remaining production goals will require rapid expansion

Meeting US climate and environmental goals depends on both OSW and fisheries

1. NOAA Fisheries (August 9, 2023) <https://www.fisheries.noaa.gov/feature-story/noaa-fisheries-releases-national-seafood-strategy>
2. The White House. 2021. “FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs.” - March 29, 2021. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/>
3. NREL (June 2022). <https://www.nrel.gov/docs/fy22osti/81602.pdf>

Low Environmental Impact of US Seafood¹

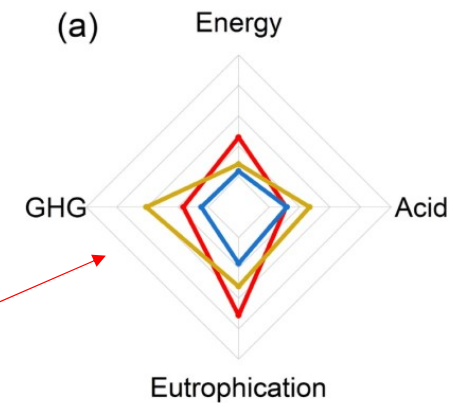


	FOOD	IMPACT (GHG emissions per gram of protein)	COST (Retail price per gram of protein)
LOW	Wheat	[Light Green Bar]	\$
	Corn	[Light Green Bar]	\$
	Beans, chickpeas, lentils	[Light Green Bar]	\$
	Rice	[Light Green Bar]	\$
	Fish	[Light Green Bar]	\$\$\$
	Soy	[Light Green Bar]	\$
	Nuts	[Light Green Bar]	\$\$\$
MEDIUM	Eggs	[Light Green Bar]	\$\$
	Poultry	[Yellow Bar]	\$\$
	Pork	[Yellow Bar]	\$\$
HIGH	Dairy (milk, cheese)	[Orange Bar]	\$\$
	Beef	[Red Bar]	\$\$\$
	Lamb & goat	[Red Bar]	\$\$\$

Lighter shade shows emissions from agricultural production, darker shade shows emissions from land use change.

Source: World Resources Institute²

- Wild capture fish GHG emissions per gram of protein similar to plant crops, and much lower than terrestrial protein production²
- Wild caught fish diet has similar GHG profile as vegetarian diet³.
- Cumulative energy use, air pollution, and water pollution by 3 main sources of animal protein: livestock (yellow), aquaculture (red), and wild-caught fisheries (blue)⁴

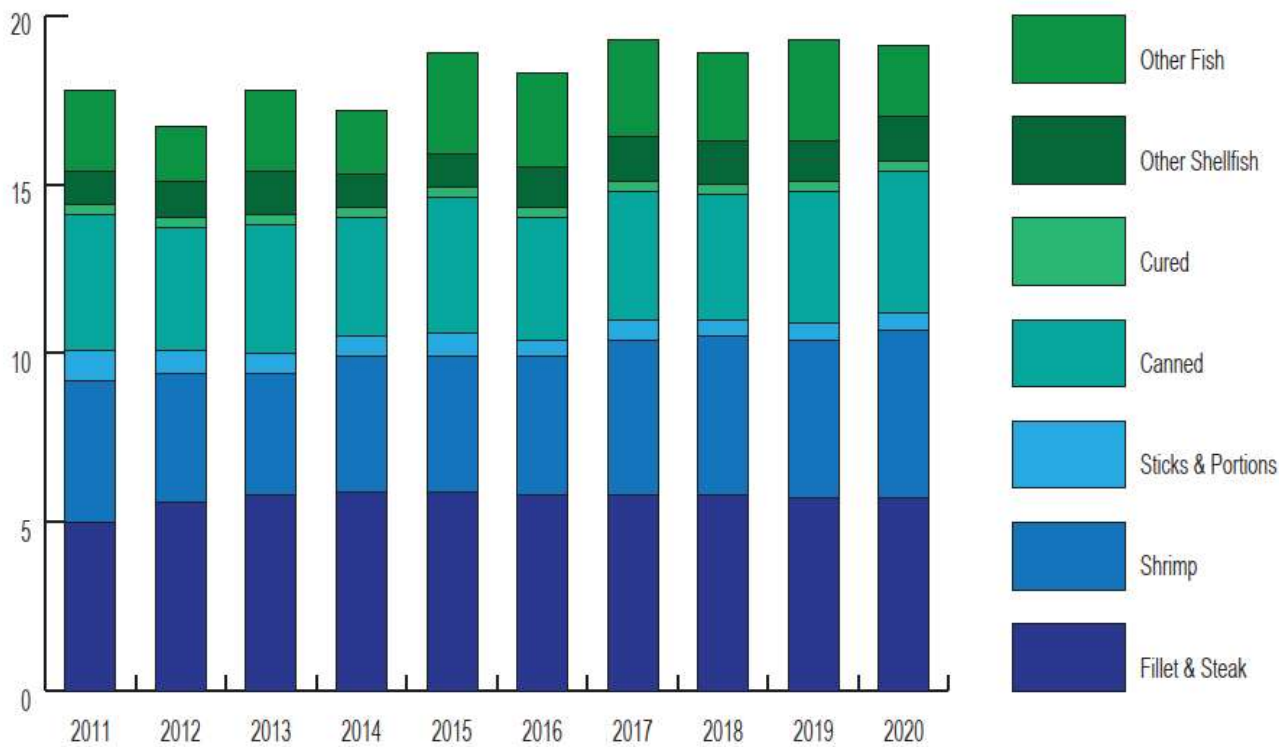


Source: Hilborn et al (2018)⁴

1. Prof Ray Hilborn – University of Washington. <https://sustainablefisheries-uw.org/seafood-101/cost-of-food/>
2. World Resources Institute. <https://www.wri.org/data/protein-scorecard>
3. Scarborough, P., Appleby, P. N., Mizdrak, A., Briggs, A. D. M., Travis, R. C., Bradbury, K. E., & Key, T. J. (2014). Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK. *Climatic Change*, 125(2), 179–192.
4. Hilborn, R., Banobi, J., Hall, S. J., Pucylowski, T., & Walsworth, T. E. (2018). The environmental cost of animal source foods. *Frontiers in Ecology and the Environment*, 16(6), 329–335.

US national seafood consumption - 2020¹

U.S. Per Capita Consumption by Product Type, 2011-2020 (lbs per person)



US per capita seafood consumption has been growing slowly, but steadily.

1. NMFS - Liddel, M., & Yencho, M. (editor). (2022). Fisheries of the United States 2020. US Department of Commerce, 26. <https://repository.library.noaa.gov/view/noaa/40953> ⁴

Headwinds for commercial fishing industry

1. Increasing volatility of fish stocks
 - 2023 Alaskan crab¹ and Pacific ocean salmon² fishery closures
 - Driven by environmental stressors like marine heat waves³
 - Leading to increasing requests for federal fishery disaster determinations and support⁴
2. Increasing regulation and management
 - The circumstances above necessitate increasing management interventions
3. Debt and cost burdens
 - Running, mooring & insurances costs; debit servicing; paying deck hands & fishery observers, etc
4. Ageing of commercial fleet
 - Difficultly recruiting younger/newer generations given 3 points above⁵
5. Increasing competition for space and resources
 - Add offshore wind to sharing ocean with shipping, recreation, military, etc.

1. 2022-23 Bearing Sea (Alaska) snow crab fishery closure. <https://alaskapublic.org/2022/12/19/alaska-crab-fishery-collapse-seen-as-warning-about-bering-sea-transformation/>
2. 2023 ocean salmon fisheries cancelled in California and most of Oregon. <https://www.msn.com/en-us/news/us/california-salmon-festival-will-be-missing-something-this-year-salmon/ar-AA1eyGI8>
3. Ocean heat content. <https://www.climate.gov/news-features/understanding-climate/climate-change-ocean-heat-content>
4. NOAA Fishery Disaster Determination requests. <https://www.fisheries.noaa.gov/national/funding-and-financial-services/fishery-disaster-determinations>
5. Building the next generation of US commercial fishers. <https://www.fisheries.noaa.gov/feature-story/building-next-generation-us-commercial-fishermen>

Consequences of displacing US seafood production

- Trade leakage (ie. the “Transfer Effect”), is fishery economic principal where a fishery policy unintentionally results in US seafood production being driven overseas¹.
- This economic example of the “Law of Unintended Consequences” can result in;
 - Shift of sustainable, scientifically managed US seafood production overseas to nations with lower standards of management and greater environmental impacts²
 - Greater Illegal Unreported Unregulated (IUU) fishing³
 - Increased forced labor in many international fisheries⁴
 - Loss of domestic jobs and innovation
 - Driving US domestic protein consumption away from low-carbon seafood to higher carbon terrestrial animal protein
- These outcomes will undermine US national environmental and economic objectives, including GHG emission targets

1. Helvey, M., Pomeroy, C., Pradhan, N. C., Squires, D., & Stohs, S. (2017). Can the United States have its fish and eat it too? *Marine Policy*, 75, 62–67.

2. Lewison, R. L., Johnson, A. F., Gan, J., Pelc, R., Westfall, K., & Helvey, M. (2019). Accounting for unintended consequences of resource policy: Connecting research that addresses displacement of environmental impacts. *Conservation Letters*, 12(3), e12628.

3. FAO. <https://www.fao.org/iuu-fishing/background/what-is-iuu-fishing/en/>

4. International Labor Organization. <https://www.ilo.org/global/topics/forced-labour/policy-areas/fisheries/lang--en/index.htm>

Supporting seafood production during OSW growth

- Return portion of BOEM lease sale revenues to NMFS to reinvest in fishing industry and scientific surveys
 - Lease revenues currently are deposited to US Treasury general fund
 - Congress would need to pass legislation directing this to happen
- Debt relief for fishing industry
 - Provide financial flexibility for industry to adapt, innovate and grow
 - Possibly funded from lease revenues mentioned above?
- Create fishery trust fund(s) (Privately, publicly, or jointly funded)
 - Support during crises and times of need (ie. fishery closures)
 - Pay vessel mooring, insurance, vessel upkeep, etc. during emergencies
 - Create seafood industry apprenticeships to attract next generation?
- Cover costs of fishery observers, which are currently paid by vessel owners
 - Observers very important to compliance monitoring and data collection to inform fishery management
- Subsidize purchase of fish quotas & catch shares¹
 - Sablefish, groundfish, halibut, and others in Pac NW
 - Many other quota managed fisheries around the USA
- Joint ventures between OSW and fishing industries?
 - JV's common in OSW, and there have been examples in fishing industry as well (ie. tuna longline JVs)
 - Create incubators for innovation and technology transfer
 - Develop AUV's that can help aid fishery targeting and avoid bycatch?

1. NOAA catch shares. <https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares>

Thank you!



worley

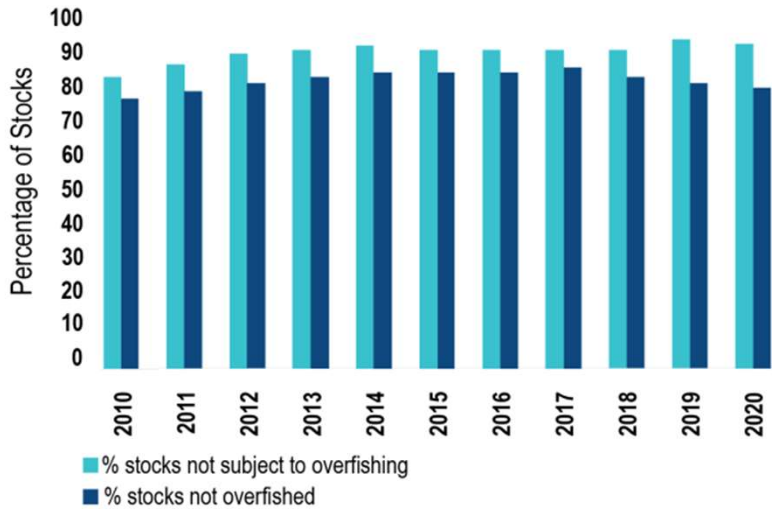
DELIVERING SUSTAINABLE CHANGE

Questions?

Science-based management underpins US seafood sustainability

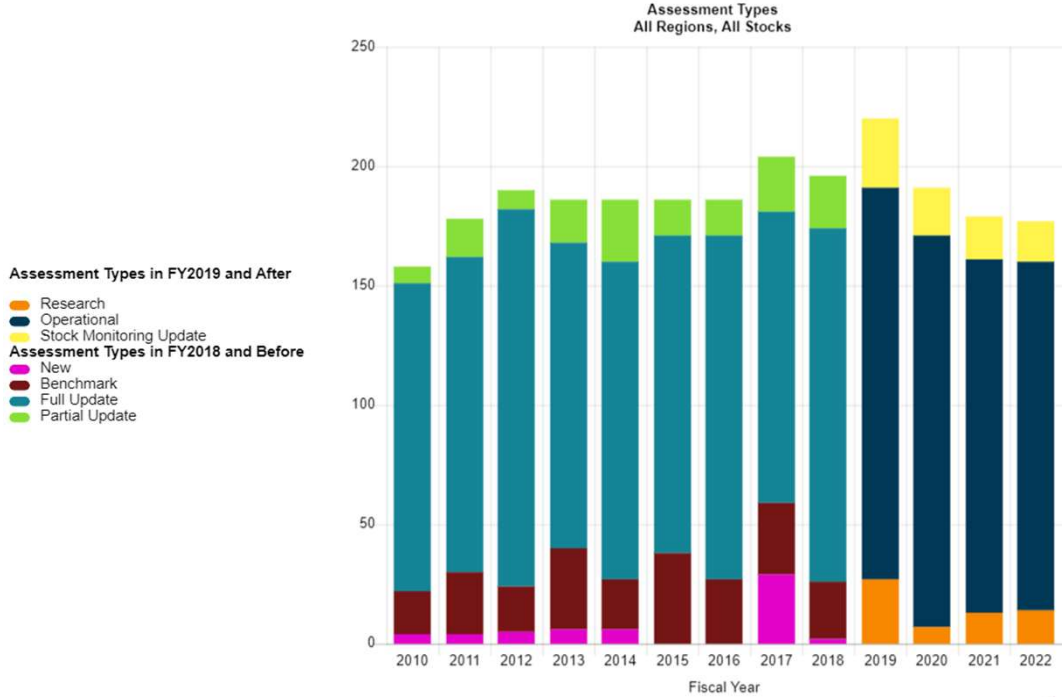
Conservation Status (US stocks 2010-2020)¹

- ~80-90% of all stocks **not** subject to overfishing (ie. fishing effort well-controlled)
- ~75-80% of all stocks **not** overfished (above minimum spawning stock size)



Stock Assessments (US stocks 2010-2020)²

- ~150-220 assessments annually
- Data hungry, scientifically demanding, peer-reviewed
- Mandated under Magnuson-Stevens Act (MSA)



1. NOAA Status of Stocks 2020. <https://www.fisheries.noaa.gov/national/sustainable-fisheries/status-stocks-2020>
 2. NOAA Stock Smart. <https://apps-st.fisheries.noaa.gov/stocksmart?app=homepage>