



NOAA
FISHERIES

Accidental EBM through management of charismatic megafauna?

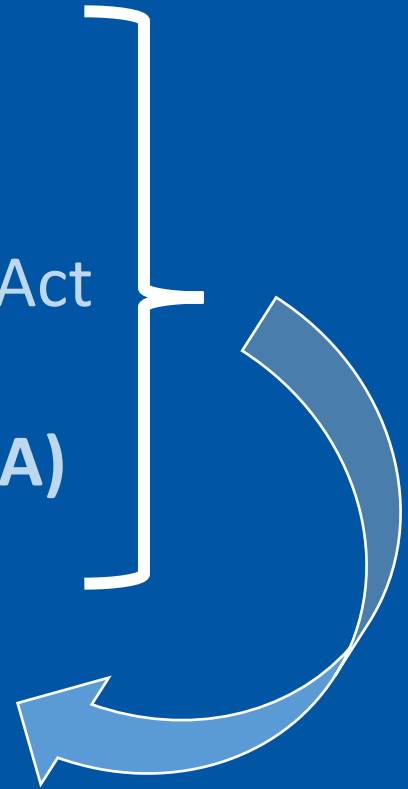
Sean Hayes, NEFSC



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NMFS Legal Mandates

- Endangered Species Act (ESA)
- Marine Mammal Protection Act (MMPA)
- Magnuson Stevens Fishery Conservation and Management Act (MSA)
- Atlantic Coastal Fisheries Cooperative Management Act (**ACA**)
- National Environmental Policy Act (NEPA)



<https://seagrant.noaa.gov/Portals/1/Guidance/NEPA%20101%20-%20Roles%20and%20Responsibilities.pdf>

<https://www.fisheries.noaa.gov/topic/laws-policies>

<https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act>

Charismatic megafauna

- Charismatic megafauna are animal species that are large—in the relevant category that they represent—with symbolic value or widespread popular appeal, and are often used by environmental activists to gain public support for environmentalist goals. (Wikipedia)
- If you strike me down I shall become more powerful than you could possibly imagine. (Obi-Wan Kenobi)

Keystone Species



Keystone Management Species

- has a disproportionate influence on humans to effect the natural environment relative to its abundance.
- Specifically humans act to maintain the structure of an ecological community required by the KMS, thus affecting many other organisms in an ecosystem and helping to determine the types and numbers of various other species in the community.
- Without KMS, the ecosystem would be dramatically different or cease to exist altogether.

Pacific Northwest



BPA fish and wildlife investments 2005 – 2015 (\$ in millions)

Cost category	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Expense or direct	\$135.8	\$137.9	\$139.5	\$148.9	\$177.9	\$199.6	\$221.1	\$248.9	\$239.0	\$231.8	\$258.2
Reimbursable	57.9	60.7	60.3	62.2	64.3	69.7	74.3	73.0	78.5	90.3	84.9
Capital repayment	89.7	87.5	112.9	116.2	120.0	123.5	127.2	131.5	143.4	141.3	150.6
Power purchases	110.8	168.2	120.7	274.9	240.3	310.1	70.7	38.5	85.8	196.2	67.5
Lost opportunity costs	182.1	397.4	282.6	273.5	142.8	99.4	156.7	152.2	135.5	122.7	195.8
TOTAL	\$576.3	\$851.7	\$715.9	\$875.8	\$745.3	\$802.3	\$649.9	\$644.1	\$682.4	\$782.6	\$757.0

This information was made publicly available by BPA in January 2016 and is consistent with agency-approved financial information. Numbers may not add due to rounding.



<https://nriverpartners.org/wp-content/uploads/2020/02/BPA-fish-and-wildlife-investments-Jan-2016.pdf>



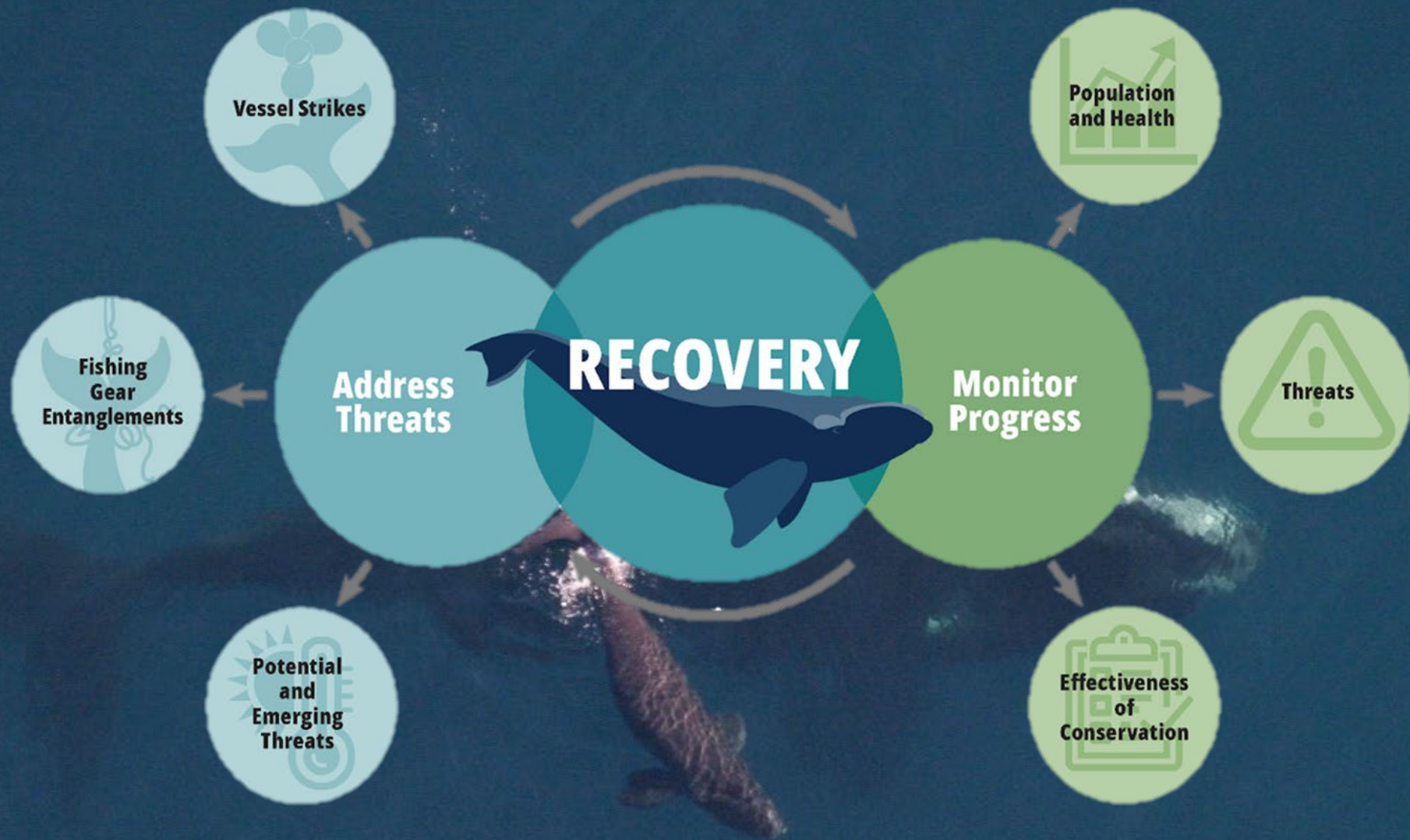
\$460,000,000

\$3,700,000,000,000

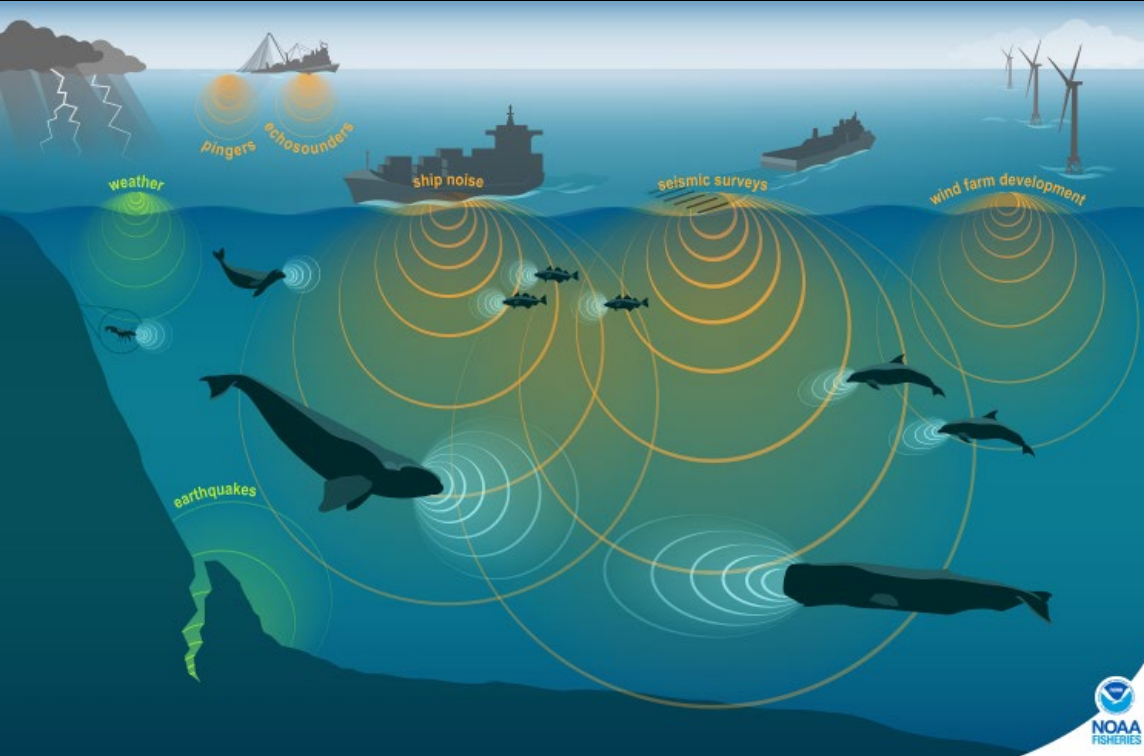
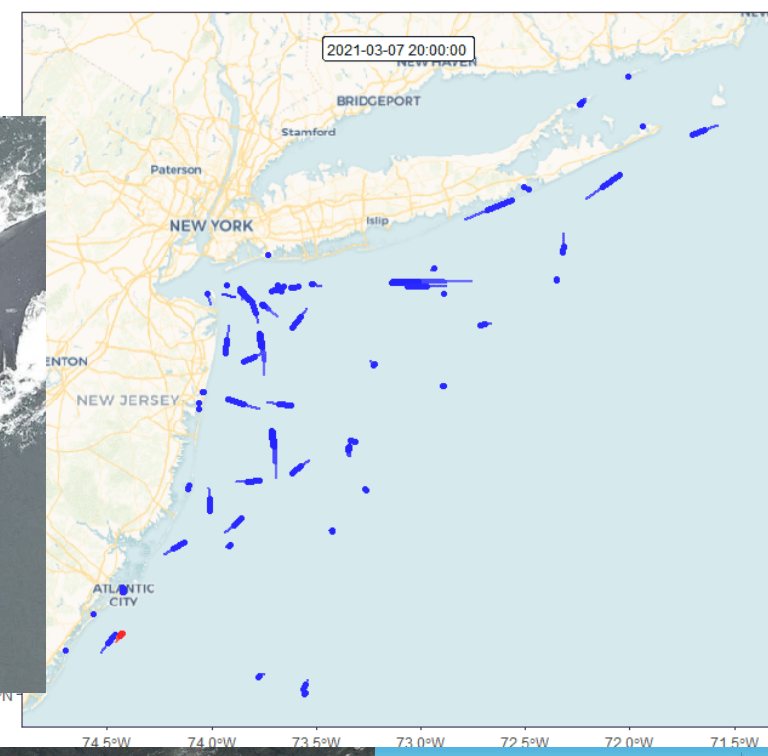


Google
Google





Clearwater Marine Aquarium Research Institute, taken under NOAA permit #594-1759



● Vessel traffic

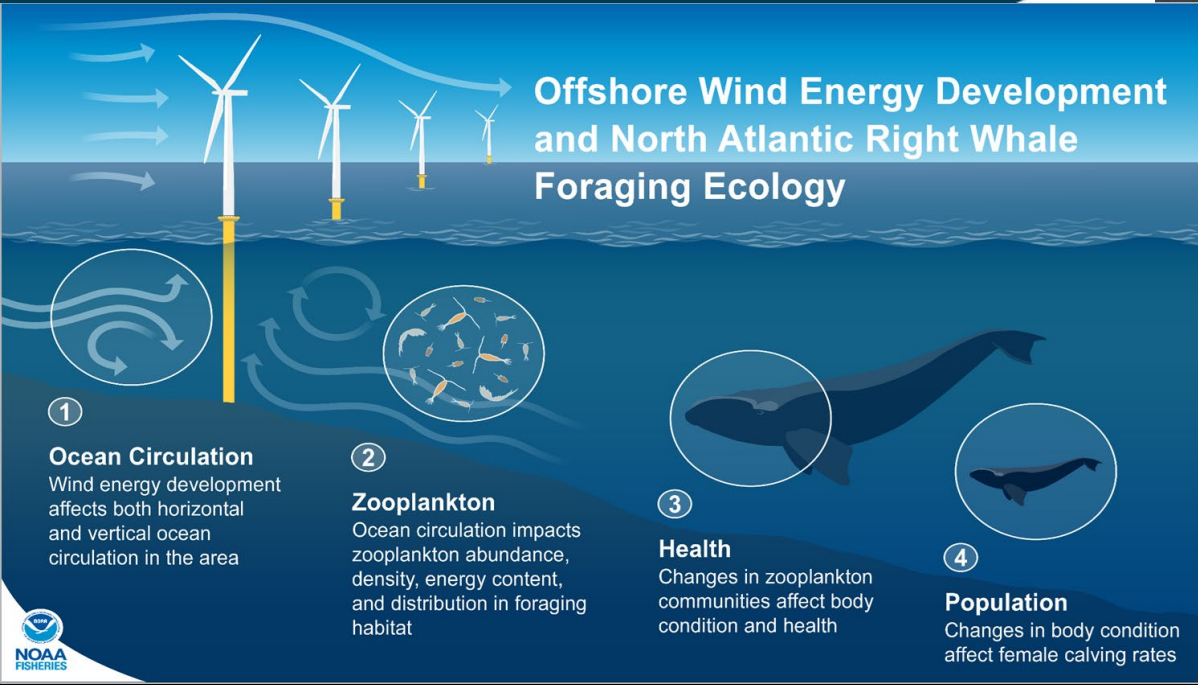
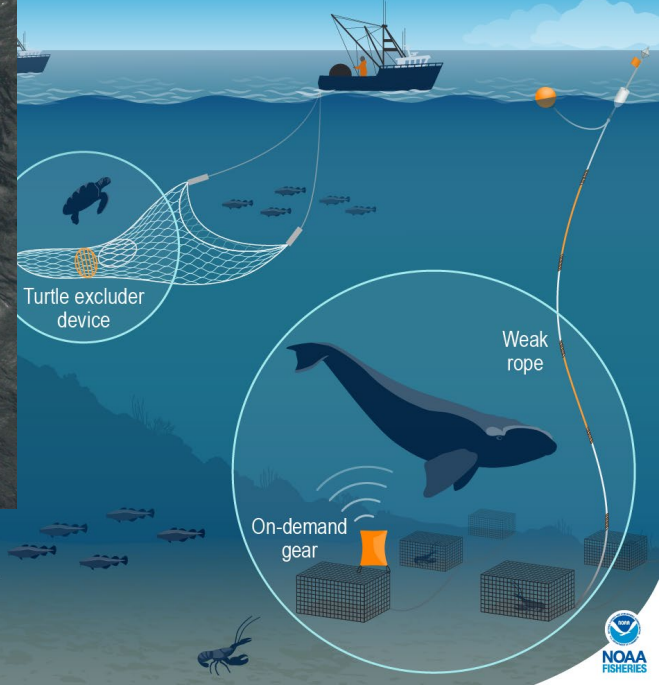
● Right Whale (1-year old)

UNITED STATES
FLEET FORCES COMMAND

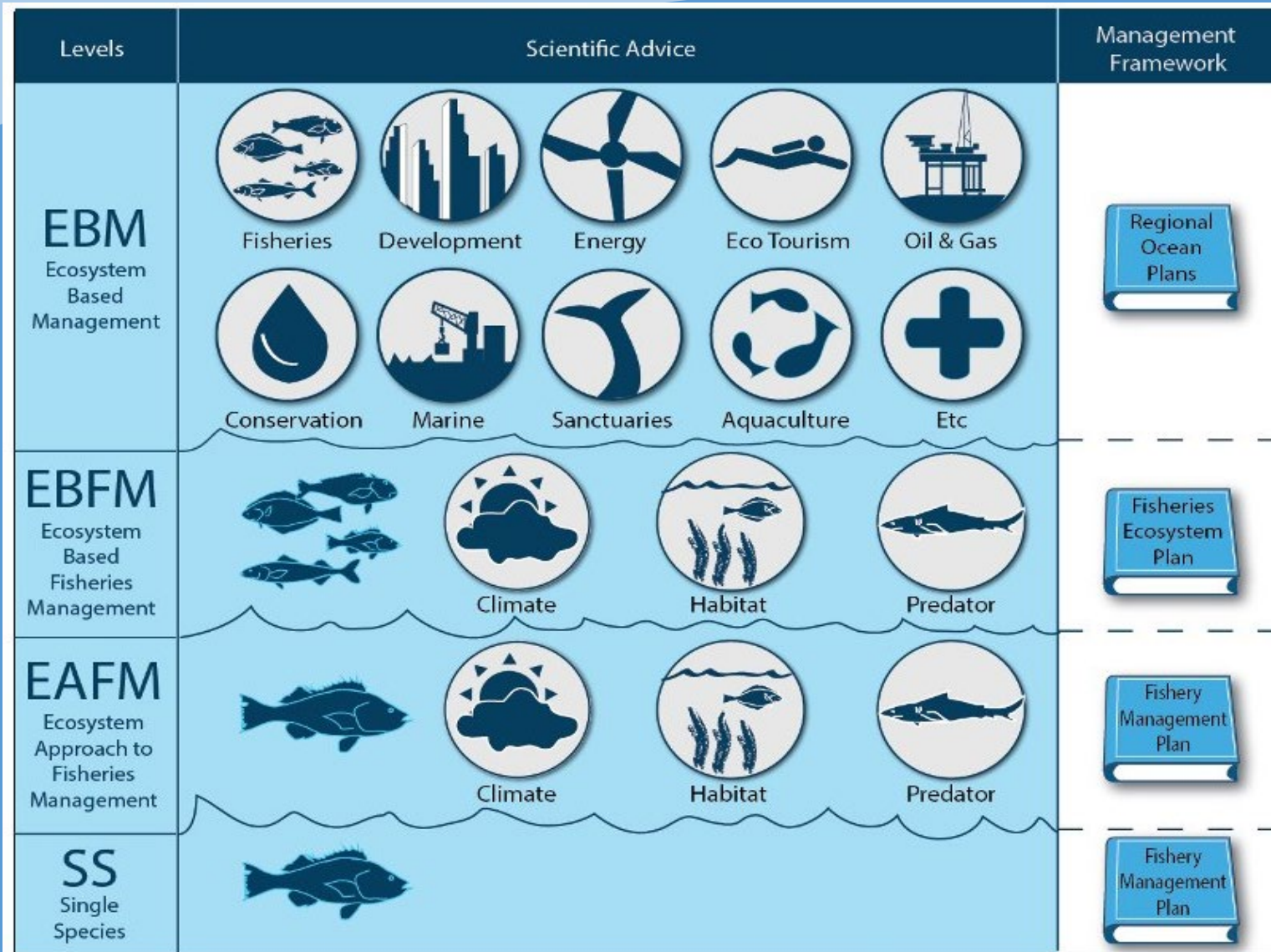
NAVFAC
Naval Facilities Engineering Systems Command

HDR

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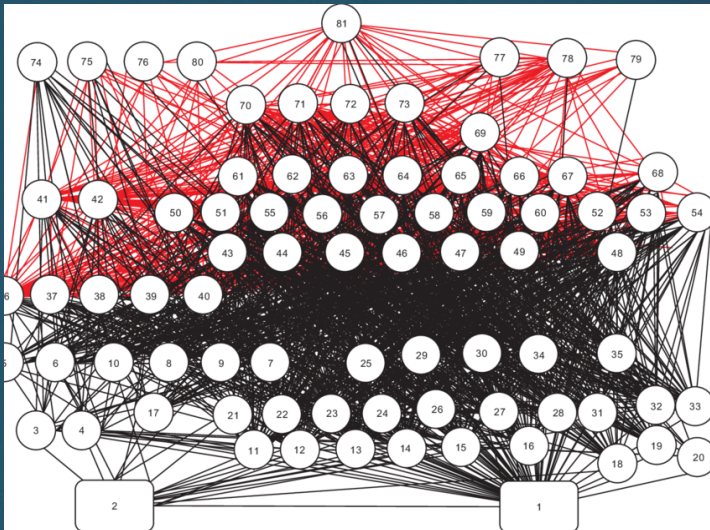
North Atlantic Right Whale management?



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EBM and Keystone Management Species

- What motivates people?



Link, 2002 MEPS 230:1-9



Aquaculture
Agriculture
Commercial fishing
Carbon Emissions
Defense
Forestry
Energy
-Non-renewable
-Renewable
Housing
Population Growth
Shipping
Urbanization
Water Storage/Usage



SPECIES:
Baleen whales
Benthic Species
Delta Smelt
Odontocetes
Pelagic species
Pinnipeds
Plankton
Sea Turtles
Spotted Owls
Sturgeon

HABITAT:
Estuaries
Forests
Flood plains
Watersheds

