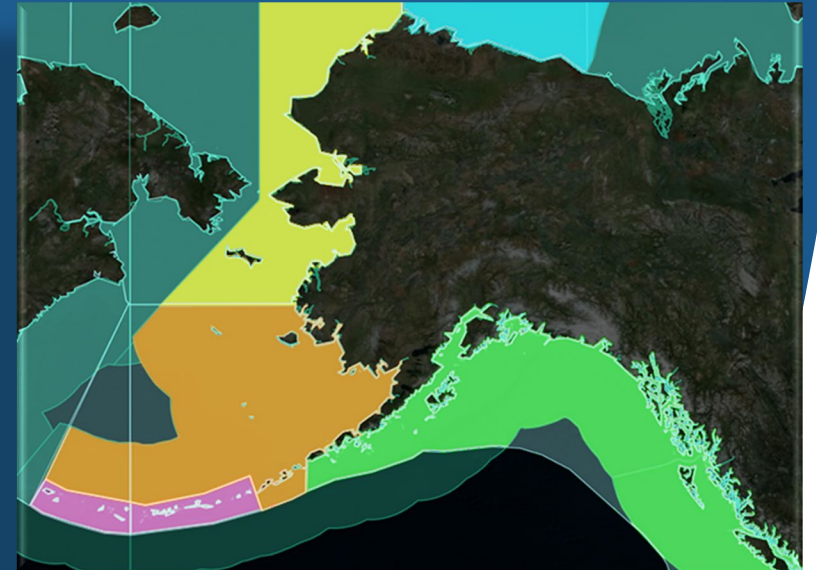


Alaska Fisheries Science Center 2021 State of the Center

Robert Foy

AFSC Research and Science Director

Presentation to North Pacific Fisheries Management Council
February 5, 2021



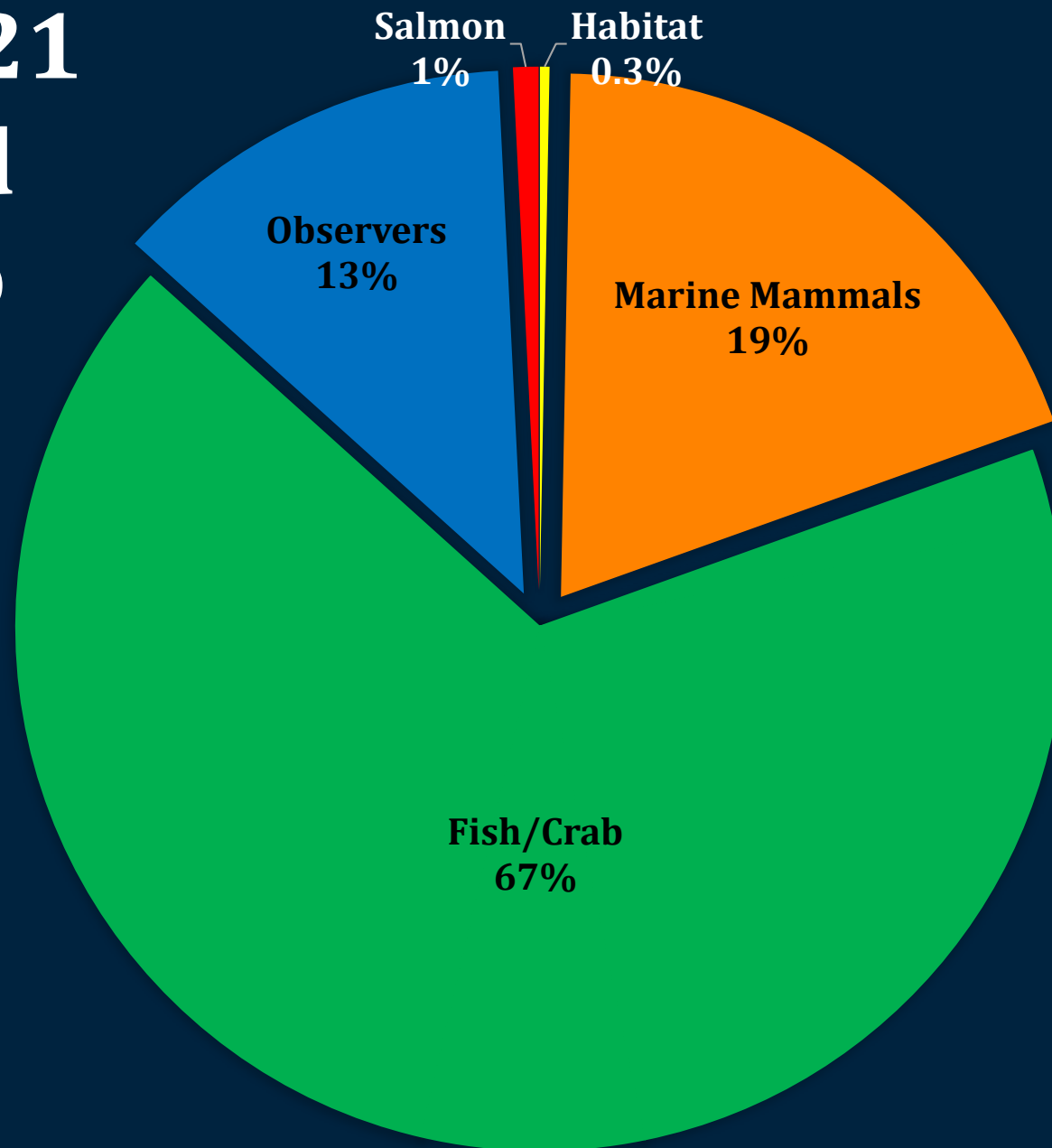
AFSC State of the Center

- **2021 Expectations and Challenges**
 - Research Portfolio
 - Prioritization process
- **2022 Looking forward**
 - *How do we adapt the science to support sustainable fisheries management and marine mammal conservation in the next decade?*



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AFSC 2021 balanced portfolio



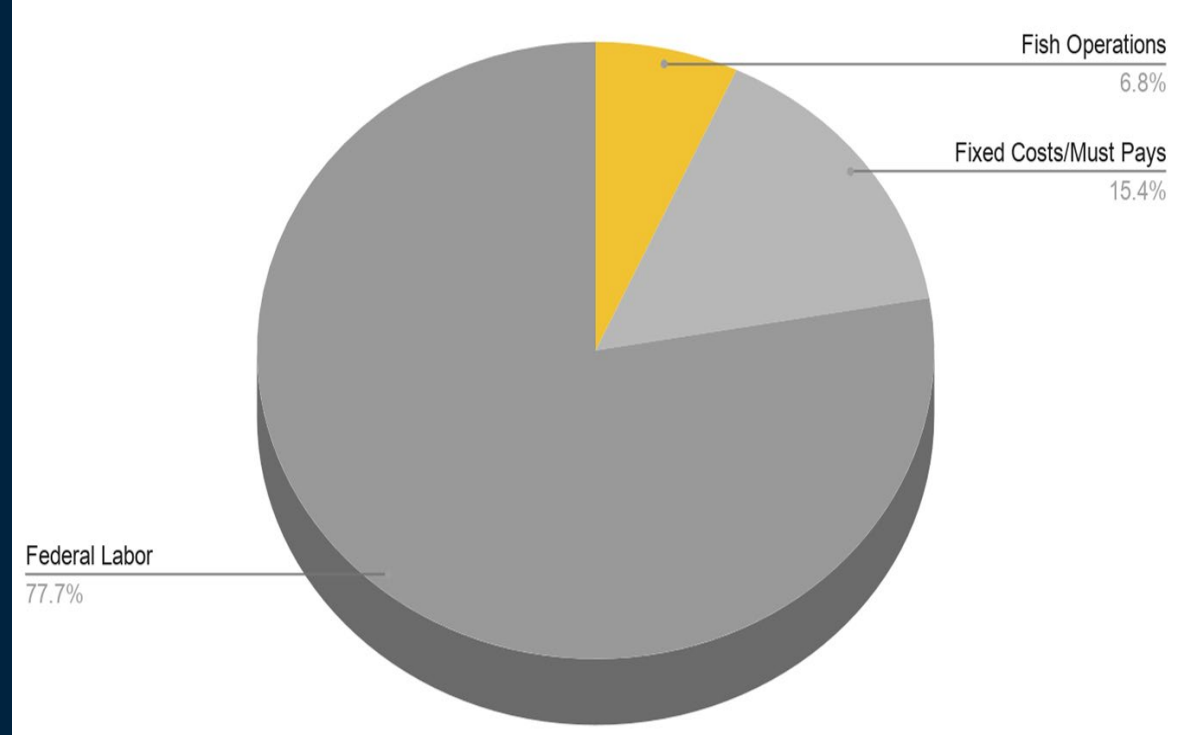
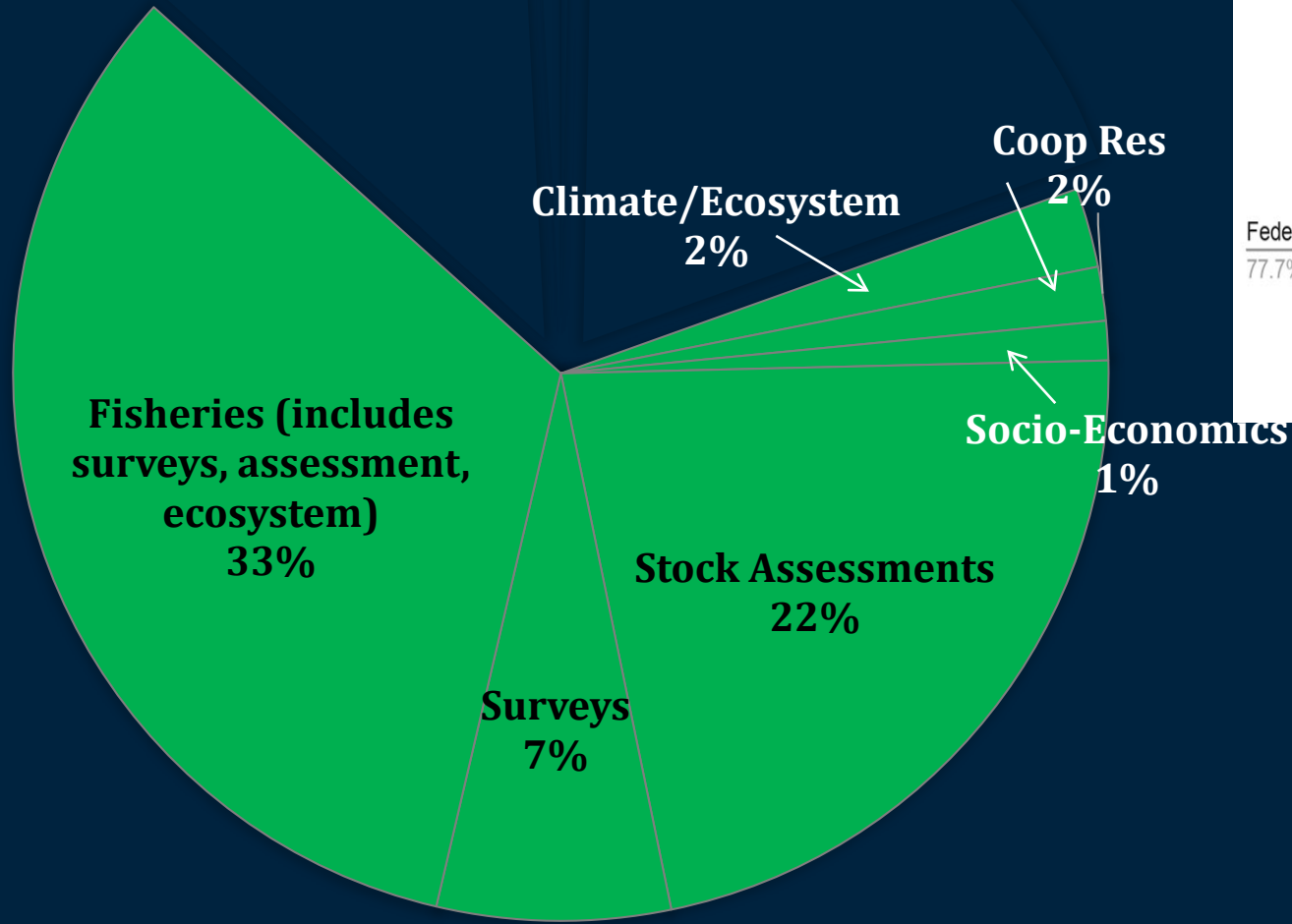
Budget breakdown

Federal labor	74.6%
Fixed costs	14.7%
Fish/crab operations	4.7%
Marine mammals operations	3.8%
Cooperative research	1.3%
Observer operations	1.0%



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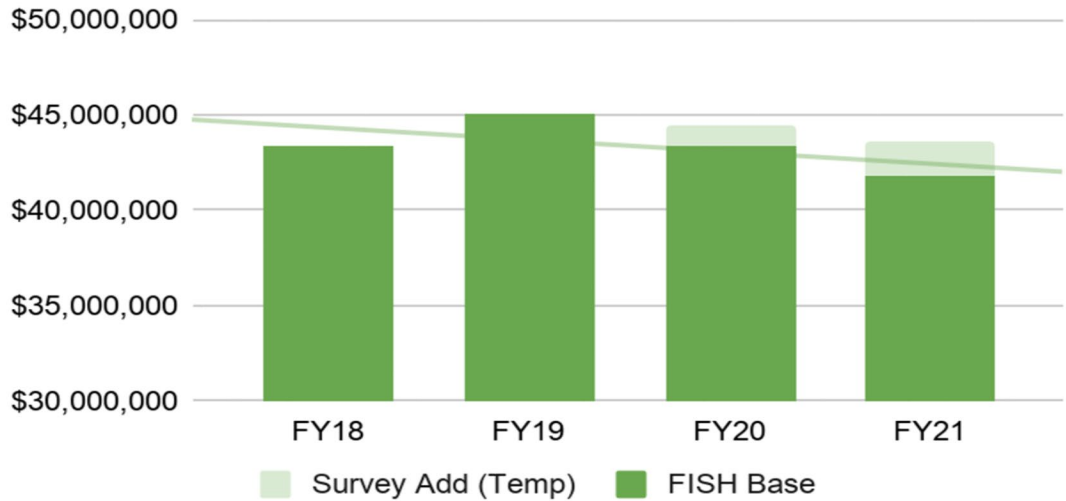
AFSC 2021 Fish/Crab Portfolio



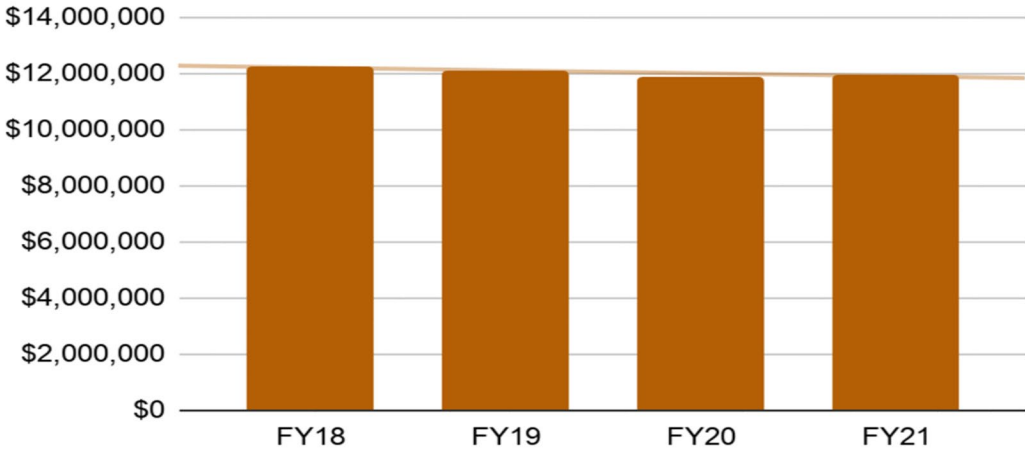
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AFSC Recent Budget Trends

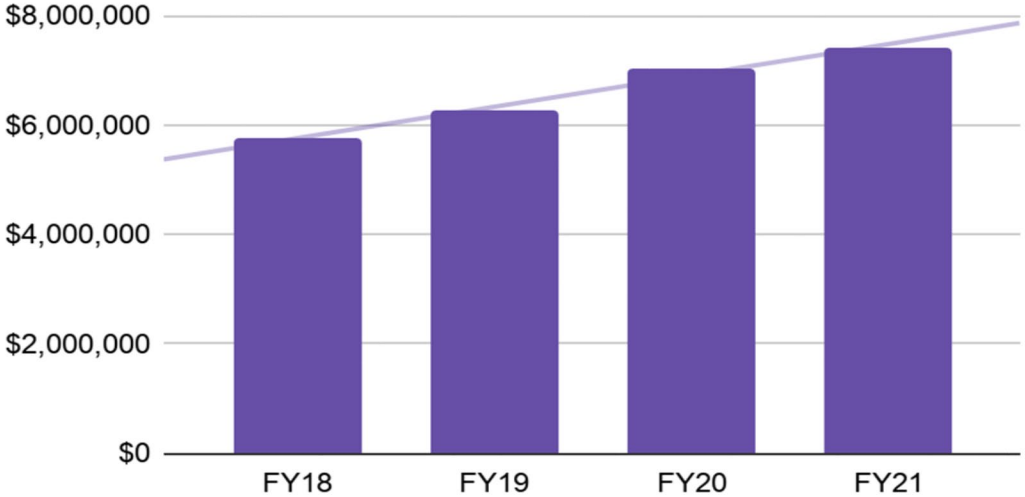
Fisheries (w/o NCRP)



Protected Resources

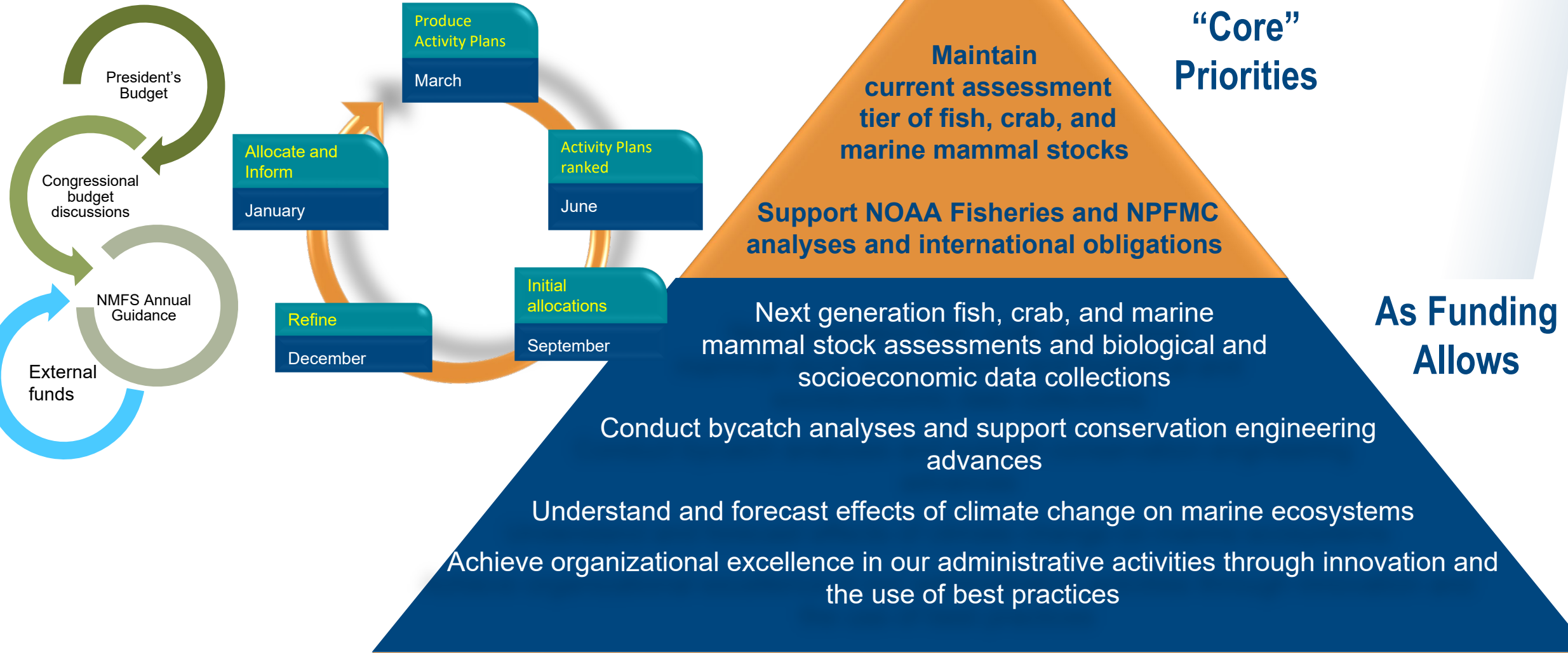


Observers & Training



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AFSC Science Prioritization



2021 Annual Guidance

NMFS

- Amplify the economic value of commercial and recreational fisheries while ensuring their sustainability
- Recover and conserve protected species while supporting responsible fishing and resource development
- Improve organizational excellence and regulatory efficiency

AFSC

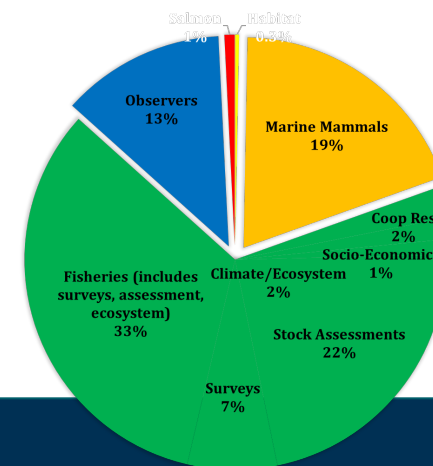
- Commitments to our external partners
- Sustained stock assessments, observer program
- Hot topics: decreased uncertainty, bycatch, climate, ecosystem, processes
- Future preparation: Arctic, mariculture
- FY22: NOAA Diversity and Inclusion Strategic Plan, COVID-19 mitigation
- Program Streamlining to carry out our mission critical functions and maintain a balanced research portfolio given our ongoing fiscal constraints.



Mitigating Challenges in 2021

- Covid-19
- Survey expansion
- Management adaptation
- Collaboration
- Innovations (Uncrewed systems, EM, eDNA)
- Program streamlining (refocus effort, cut projects, reduce capacity)

.....while maintaining balance if possible



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High Priority Underfunded Work (Fish)

Partially Funded

- EBFM of Pacific cod: Short and longer term projections of climate impacts
- RPA: Gulf of Alaska Assessment
- RPA: Northern Bering Sea surface trawl and ecosystem survey
- Next gen ecosystem-based assessments and MSEs
- Next gen climate enhanced stock projection models and MSEs
- Food habits collections and analysis
- BSAI, GOA seabird and fisheries interactions
- Strategies and impacts for reducing costs and increase efficiency of AFSC fishery-independent surveys.



High Priority Underfunded Work (Fish)

Unfunded

- RPA: Eastern Bering Sea fisheries surveys and ecosystem assessments
- Seabed characterization and modeling
- eDNA analyses
- Identifying and surveying untrawlable habitat
- Pacific cod early life-history dynamics
- Improving stock assessment and IEA through experimental parameterization of biological processes
- AFSC-ADF&G cooperative trawl surveys & database
- FMP crab growth, condition, habitat, and reproductive potential
- Bottom-trawling impacts on northern Bering Sea habitats



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High Priority Underfunded Work (PR)

Partially Funded

- Steller sea lion vital rates - western Aleutian Islands

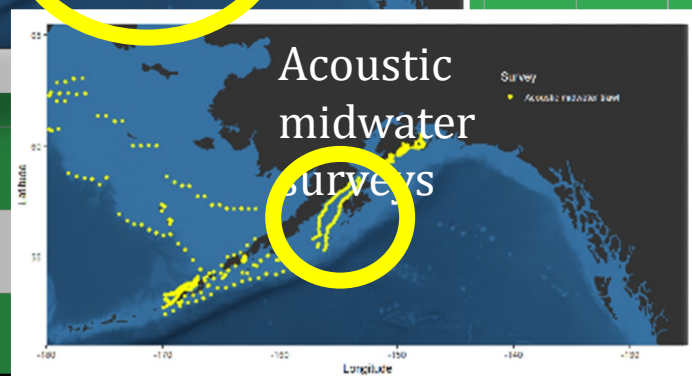
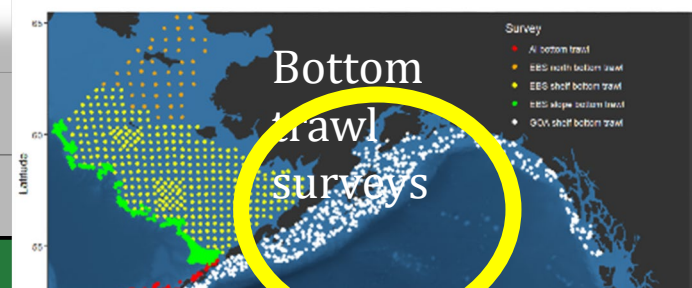
Unfunded

- Pacific Marine Assessment Program for Protected Species in the Gulf of Alaska (PacMAPPS)
- Application of long-range uncrewed aerial systems to assessment of Aleutian pinnipeds



Gulf of Alaska

Survey	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
GOA BT vessel 1												
vessel 2												
vessel 3												
Deep shelf and slope groundfish longline												
Winter Acoustic-Trawl Shumagin/Sanak												
Winter Acoustic-Trawl Bogoslof												
Winter Acoustic-Trawl PWS/Kenai												X
Winter Acoustic-Trawl Shelikof												
Summer Acoustic-Trawl GOA												
GOA larval												
Spring GOA Ichthyoplankton												?
Summer GOA Age-0												?
Kodiak Pacific cod nursery habitat												
Large-Scale GOA Pacific cod nursery												
GulfWatch oceanography&forage												



• Limited coverage of GOA deep (>700 m) stations in favor of NBS

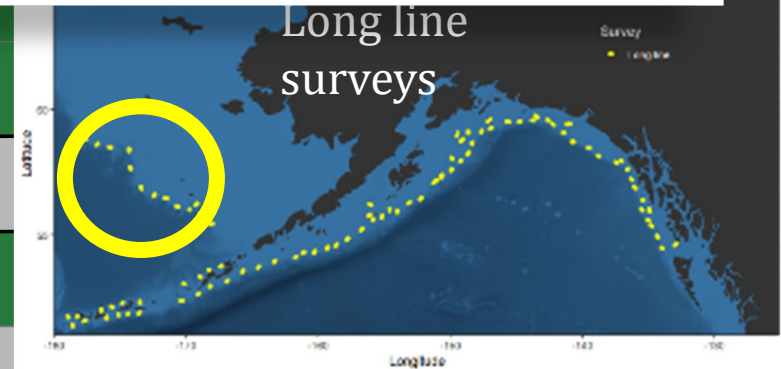
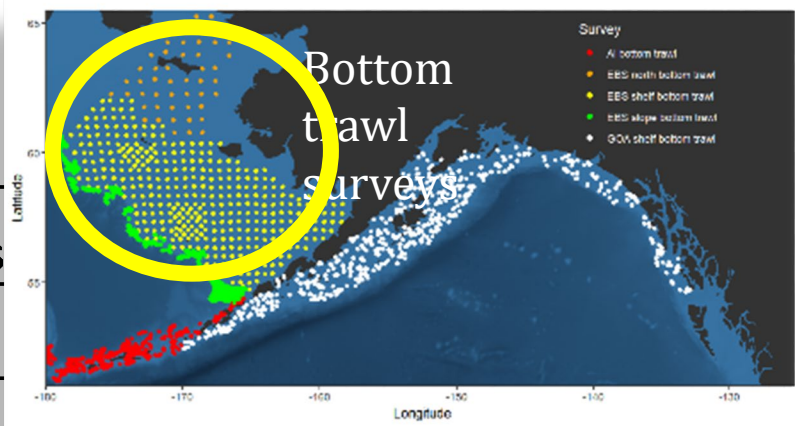
no saildrone backup

Possible charter backup
Possible charter backup



Bering Sea

Survey	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Eastern Bering Sea vessel 1												
vessel 2												
Summer Acoustic-Trawl EBS											Drone	
Bering Sea Slope												
Northern Bering Sea vessel 1												
vessel 2												
Deep shelf and slope groundfish longline survey												
Spring EBS Ichthyoplankton												
Summer EBS Age-0 (Inc. BASIS)												
Spring EBS Ecosystem/Moorings												X
Fall EBS Ecosystem/Moorings												
Northern Bering Sea juvenile salmon and age-0												?
Distributed Biological Observatory (Ecosystem)	AE	AE	AE/RUSALC A IES	AE EIS	AE RUSALCA	AE	AE	AIERP DBO	DBO AIERP	AIERP DBO	DBO	?



possible saildrone backup

Possible charter backup



Marine Mammals

GOA & AI

Survey	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	LME
Eastern stock SSL aerial surveys		█		█		█		█		█			GOA
Harbor seal aerial surveys (GOA)			█	█				█	█				GOA
Harbor seal aerial surveys (glacial fjords)	█					█					█		GOA
Cook Inlet beluga (CIB) abundance aerial survey	█		█		█		█		█		█	█	GOA
CIB distribution and habitat use				█	█	█	█	█	█	█	█	█	GOA
CIB demography and condition								█	█	█	█	█	GOA
Harbor porpoise surveys (SE Alaska)	█	█	█	█	█	█	█		█	█			GOA
Gulf Watch Alaska marine mammal (Humpback whale)	█	█	█	█	█	█	█	█	█	█	█		GOA
W. stock SSL vital rates monitoring (vessel/remote)	█	█	█	█	█	█	█	█	█	█	█	█	GOA/AI
Marine mammal acoustic monitoring	█	█	█	█	█	█	█	█	█	█	█	█	GOA/EBS/NBS
Harbor seal aerial surveys (e. Bering Sea/w. GOA)	█					█					█		GOA/EBS
Harbor seal aerial surveys (e. Bering Sea/GOA)					█					█			GOA/EBS
Western stock Steller sea lion (SSL) aerial surveys	█		█		█		█		█		█	█	AI
SSL pup condition in w. Aleutians	█		█	█	█	█	█	█	█	█	█	█	AI
W. stock Steller sea lion vital rates (field camps)	█	█	█	█	█	█	█	█	█				AI
Harbor seal aerial surveys (Aleutian Islands)		█					█					█	AI
Harbor seal condition and health						█	█						AI



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Marine Mammals

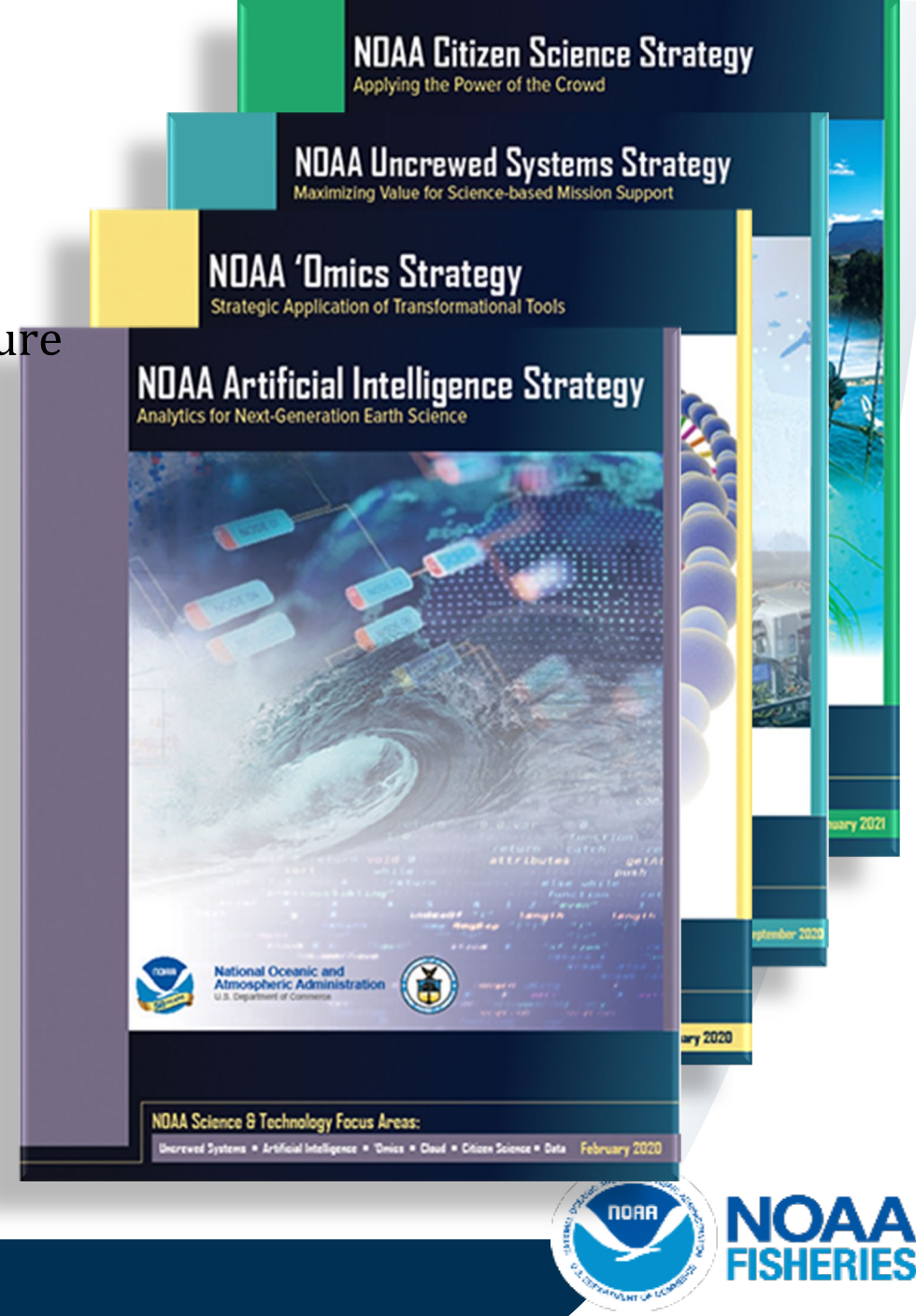
EBS, NBS, CS, BS

Survey	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	LME
Northern fur seal (NFS) vital rates (Pribilof Is.)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Green	EBS
NFS abundance trend monitoring (Pribilof Is.)	Green	White	Green	White	Green	White	Green	White	Green	White	Red	Green	EBS
NFS abundance trend monitoring (Bogoslof Is.)	White	Green	White	White	White	Green	White	White	White	Green	White	White	EBS
Ice seal abundance aerial surveys (Bering Sea)	White	White	Green	Green	White	White	White	White	White	White	White	White	EBS
Beluga whale abundance aerial survey (SE Bering Sea)	White	White	White	White	White	White	Green	White	White	White	White	White	EBS
W. stock SSL vital rates (Russia)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	WBS
Ice seal abundance aerial surveys (Chukchi Sea)	White	White	White	White	White	White	Green	White	White	White	White	White	NBS/CS
Ice seal condition and health	Green	White	Green	White	Green	White	Green	White	Green	White	Red	Red	NBS/CS
Beluga whale abundance aerial survey (NE Bering Sea)	White	White	White	White	White	White	White	Green	White	White	White	White	NBS/CS
Beluga whale abundance aerial survey (e. Chukchi Sea)	White	White	White	White	White	White	White	Green	White	White	White	White	NBS/CS
Bowhead whale aerial surveys (Chukchi and Beaufort Seas)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Red	NBS/CS/BS
Ice seal abundance aerial surveys (Beaufort Sea)	White	White	White	White	White	White	White	White	White	White	Red	Green	BS
Northern fur seal and California sea lion surveys and	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Green	CA
Steller sea lion abundance and post-delisting monitoring (WA, OR)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	CA
Gray whale west coast feeding aggregation (WA, OR)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	CA



AFSC looking forward to 2022

- **AFSC Strategic Planning 2022-2026**
 - EBFM, Climate, Socio-economics, Bycatch, Arctic, Mariculture
- **NOAA**
 - Focal strategies
 - Executive Orders
- **NMFS**
 - Climate-Ready Fisheries
 - Ecosystem Based Fisheries Management
 - Resilient US Seafood and Fishing Sector
- **AFSC Surveys**
 - Forward funding and staffing
- **Collaboration**
 - Industry research and survey support
 - Tribal liaison and Indigenous community engagement



Thank You!



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