

# Alaska Fisheries Science Center FY21 Survey Scenarios

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# NPFMC letter to AFSC

- *Concern and consequences with 2020 survey cancellations*
- *Plan for 2021 surveys...including the northern Bering Sea*
- *Support for technical assistance from SSC to prioritize*
- *Funding scenario for 2021 surveys*
- *Cautious support for UxS (uncrewed systems) and modeling*
- *Support for cooperative research opportunities with industry*
- *Update in October and December*



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# AFSC communication plan for 2021-22 surveys

- **October 2020:** update on scenario planning
- **December 2020:** update on update...semi-final plan with criteria for 2021 surveys
- **February or April 2021:** AFSC State of the Center



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# AFSC planning for 2021 surveys

- Surveys during COVID-19 pandemic: unprecedented consideration to ensure the health and safety of NOAA Fisheries employees, vessel employees, and communities while minimizing impacts to industry.
  - Addressed health care and medevac insurance
- Collaborating with NOAA Office of Marine and Aviation Operations (OMAO)
  - Protocols will reduce full survey schedule
  - Additional testing added
- Charter protocols similar to industry through medical professionals
- Vaccine prioritization



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# AFSC planning for 2021 surveys

- Planning scenarios **IF** needed
  - Full complement based on current staffing capacity (prioritized core areas)
  - Partial survey coverage (prioritized regions)
  - Advanced tech and analysis tools/ cooperative research
- Mitigating staffing or infrastructure limitations
  - Center-wide participation/state & community partners/industry assistance/trained contractors
  - Charter and saildrone considerations (>\$1.0M)
  - Testing/SIP (>\$1.5M)



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# Gulf of Alaska

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

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

no saildrone backup

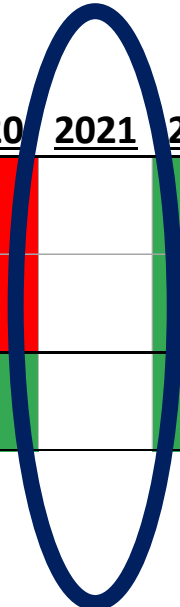
Possible charter backup  
Possible charter backup



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# Aleutian Islands

<u>Survey</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Aleutian Island vessel 1	Green	White	Green	White	Green	White	Green	White	Green	White	Red	White	Green
Aleutian Island vessel 2	Green	White	Green	White	Green	White	Green	White	Green	White	Red	White	Green
Deep shelf and slope groundfish longline	Green	White	Green	White	Green	White	Green	White	Green	White	Green	White	Green



- Biennial AI



# Bering Sea

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

possible saildrone backup

Possible charter backup



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# 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 Steller sea lion abundance and post-delisting monitoring (WA, OR)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Green	CA
Gray whale west coast feeding aggregation (WA, OR)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	CA



# AFSC funding for FY21 surveys **(update)**

- FY21 charter costs increasing and Oscar Dyson days at sea decreasing
  - OMAO protocols: 45DAS/16 days shore
- Dependent on FY21 fiscal process (pre-funded contracts, carry-over funds, base budget)
- FY20 congressionally directed **New** funds (\$1.1M) to support 2021 surveys as originally planned.
- **NMFS and AFSC prioritizing NBS funding**



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# Alaska Fisheries Science Center FY21 Survey Scenarios

# Thank You!



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# AFSC survey priorities informed by:

- SSC-subgroup (2018)
  - 1) eastern Bering Sea shelf; 2) Gulf of Alaska; 3) Aleutian Islands; 4) northern Bering Sea; and 5) Bering Sea slope
- International Council for Exploration of the Sea (ICES) WK on Unavoidable Survey Effort Reduction (e.g. Barnett et al. → two vs three vessels in GOA)
- Bias and uncertainty analyses (e.g. Meaghan Bryan et al. → loss of survey impact)
- Survey optimization
- SSC-subgroup (2020)
  - northern Bering Sea survey is combined with the eastern Bering Sea Shelf survey
  - Include Norton Sound
  - **BS slope and GOA deep stations are important!** But prioritize NBS



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