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# D2 BERING SEA GREENLAND TURBOT LONGLINE POTS

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# OVERVIEW

## **FUTURE ACTION?** Allow longline-pot gear for turbot in the Bering Sea

- **PURPOSE:** Mitigate killer whale depredation that has impacted the Greenland turbot HAL fishery

Section 2

- **CONTEXT**

- Existing regulations
- Participation & cooperative agreements

- **EVIDENCE**

- Fishery performance
- Depredation

Sections 3,4

- **ISSUES TO CONSIDER**

- Future participation
- Catch accounting
- Bycatch
- Marine mammals
- Monitoring
- Assessment



# CONTEXT (SECTIONS 2.1 & 2.2)

- **Groundfish gear regulations**

- Longline pots authorized for: Aleutian Islands (all), BS sablefish, BSAI IFQ/CDQ halibut, and GOA IFQ sablefish
- BS Greenland turbot directed fishing authorized for trawl, HAL, and single pots

- **License requirements**

- FFP with groundfish and pot endorsements
- LLP with BS and Non-Trawl endorsements

- **Other**

- Season: May – December (non-CDQ); Typically fished June – August
- Pacific cod retention & accounting
- No “pot limits”
- A80/FLC voluntary agreement



# EVIDENCE (SECTIONS 2.2 & 2.3)

Table 2-2 Bering Sea Greenland turbot catch by HAL CPs (mt) and number of vessels (non-CDQ), 2010-2021

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<i>BS Non-CDQ TAC</i>	3,587	3,500	5,296	1,438	1,481	2,186	2,272	3,719	4,356	4,356	4,356	4,356
Total Catch	1,281	1,631	1,397	564	620	1,053	947	923	250	519	272	0.3
Catch in Target	1,177	1,503	1,319	558	610	1,043	894	816	166	474	221	0
% in Target	92%	92%	94%	99%	98%	99%	94%	88%	66%	91%	81%	0%
Total #Vessels	18	16	13	9	9	8	8	16	16	12	12	3
#Vessels Targeting	9	8	7	3	3	3	5	4	3	3	4	0

## ■ Performance

- GT is a small part of the FLC portfolio, but is important to a subset of vessels
- Catch and revenue clearly fall off, likely via combination of depredation – i.e., less productive fishing – and general market forces RE: BSAI flatfish

## ■ Depredation

- Killer whales are clearly a factor in the BS and they have a taste for turbot
- Survey data
- Fishery observer data



# SURVEY EVIDENCE (FIGS 2-1 & 2-2)

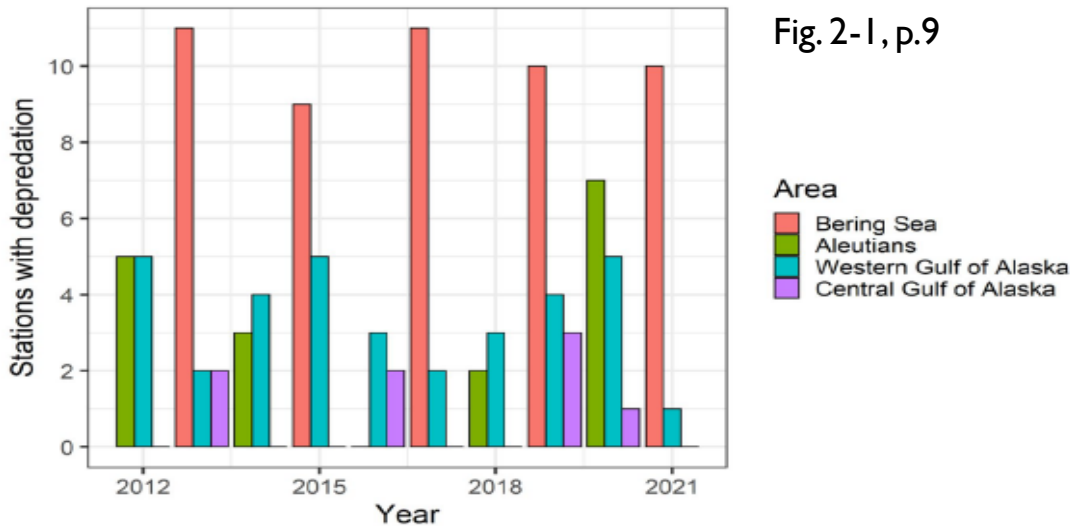


Fig. 2-1, p.9

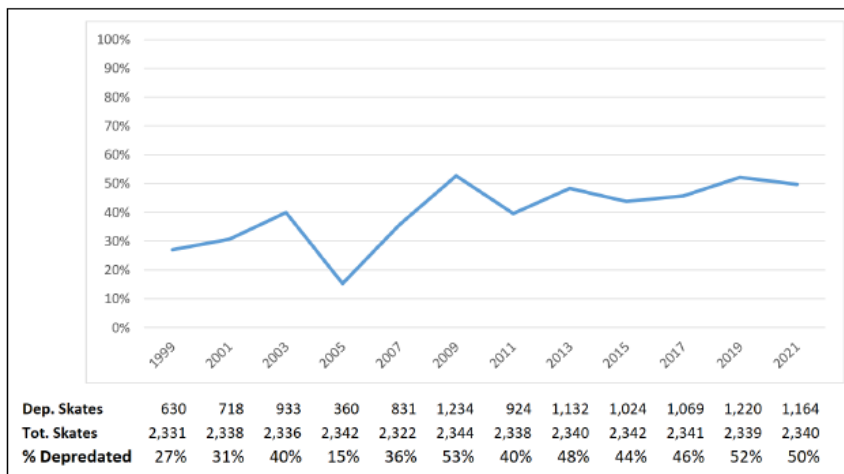


Fig. 2-2, p.10



# FISHERY EVIDENCE (TABLES 2-7 & 2-8, P.11)

**Table 2-7 Estimated frequency of killer whale depredation on Bering Sea hook-and-line CP hauls based on observer data, 2011 through 2020 (Source: NMFS FMA Division)**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total hauls	13,264	14,219	14,144	16,192	15,029	13,636	12,203	9,008	7,083	5,548
% Total hauled *gear* monitored for marine mammals	25.3	23.9	23.5	24.2	24.4	21.5	22.0	20.4	17.2	18.2
#hauls feeding on catch, feeding on discards, and/or deterred)	92	100	107	92	102	209	144	102	103	79
#hauls deterrence	17	29	10	2	13	37	25	24	5	13
#hauls feeding on discards	8	16	5	2	6	7	1	1	3	0
#hauls feeding on catch	83	87	98	89	84	179	137	92	99	78
Est. %hauls with one or more mammal interaction types	2.7	2.9	3.2	2.3	2.8	7.1	5.4	5.5	8.5	7.8

**Table 2-8 Number of instances that an observer noted a species as “depredated” by killer whales during Bering Sea hook-and-line CP hauls, 2011 through 2020 (Source: NMFS FMA Division)**

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total	%
Greenland turbot	22	39	24	12	20	68	59	49	37	26	356	34%
Kamchatka/Arrowtooth/Gturbot - unidentified	40	24	15	18	19	65	39	21	27	13	281	27%
Halibut	11	14	50	44	44	23	36	3	2	21	248	24%
Flatfish (unidentified)	5	8	6	3	6	2		1	20	3	54	5%
Pacific cod	1	1	3	10	3	9	1	4	8	11	51	5%
Sablefish	2	2	1	1		5	1	12		4	28	3%
Unidentified	1				1	7		2	5		16	2%
Other	1			1			1				3	0%
<b>Total</b>	<b>83</b>	<b>88</b>	<b>99</b>	<b>89</b>	<b>93</b>	<b>179</b>	<b>137</b>	<b>92</b>	<b>99</b>	<b>78</b>	<b>1,037</b>	

Note: “Other” includes flathead sole, Alaska plaice, and grenadier.



# PARTICIPATION (3.1)

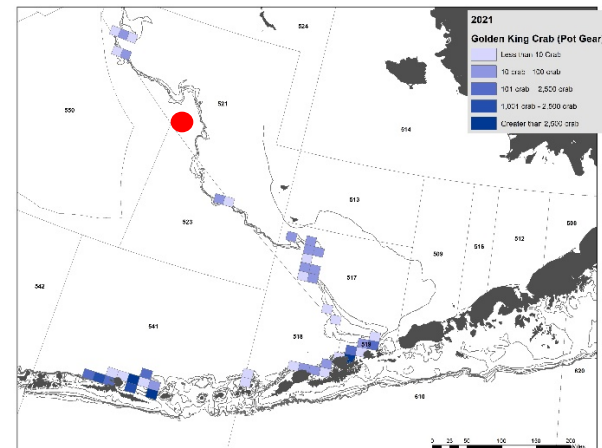
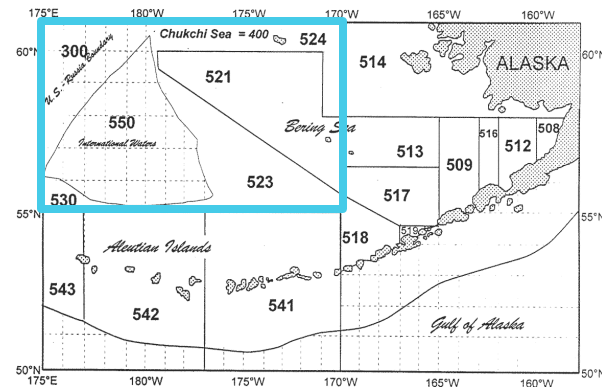
What is the **potential** scope of a change? What is **intended**? What is **likely**?

- Practical issues associated with a new gear fishery
  - Accessibility
  - Catch accounting for incidental commercial species (e.g. PCod)
  - Grounds preemption; gear conflict
  - Bycatch
- Competition
  - Within non-trawl sector
  - Trawl/non-trawl – FLC/A80 agreement



# BYCATCH (3.2)

- **Shift to pot gear**
  - Paper focused on PSC spp. (crab, halibut, salmon)
  - Need to consider:
    - Other FMP species
    - Potential for climate-driven changes
  - Data-thin in the **western Bering Sea**
- **Management**
  - PSC limits
  - Groundfish v. crab seasons
- **IFQ species**
  - Retention and pot-tunnel opening depend on “IFQ onboard”
  - Different mortality rate for pots?
  - Determine how to report mixed turbot/IFQ landings





# MARINE MAMMAL CONSIDERATIONS (3.3)

## ■ Potential area of concern

- If switch from HAL to longline pots resulted in an increase in number of vertical lines.

## ■ Potential positives or no net effect

- Reduced HAL sets equals reduced opportunities for depredation which could result in fewer opportunities for entanglement.

## ■ Unknowns

- If switch to longline pots occurs and vessels choose to use slinky pots, unclear how marine mammals interact with slinky pots.
- If switch from HAL to longline pot gear resulted in a change in diameter of anchor line used, unclear how this change may affect entanglement risk.



# MONITORING (3.4)

- **CP vessels in the BSAI are typically in the “full coverage category”**
  - NMFS will consider if existing monitoring requirements are sufficient depending on the scope of the action.
- **Main enforcement consideration is observer access to unsorted catch**
  - Currently, 5 FLC vessels are set up to fish both Pots and HAL
  - Additional vessels that wish to fish both gear types may incur costs
- **Catch accounting**
  - CPs must report catch, Daily Production Reports, and landing reports by gear type
  - If CVs fished, would need to create two landing reports at the end of each trip
  - No vessel may fish Pots and HAL on the same set



# SUMMARY

**AP task** is to recommend whether potential benefits of longline pot turbot fishing in the western Bering Sea merit further analysis

**If so**, advise as to issues that were not identified

**And** – based on your knowledge – how an analysis could best approach topics that are not well supported by existing data because:

Historical pot fishing in the area is sparse, and

The context of the non-trawl Greenland turbot fishery and other fisheries that it interacts with may be changing due to climate and market factors



# Questions?

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## Acknowledgements

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