

Lower Cook Inlet Salmon Stock of Concern Review, 2019

RC-3, Tab 3:
McNeil/SOC Oral Report

Otis et al. 2016
McNeil Chum Action Plan
www.adfg.alaska.gov/FedAidPDFs/SP16-12.pdf



- Aialik Lake Sockeye
- South Nuka Pink
- China Poot Pink

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Outline

- Key terms
- Stock of Concern (SOC) Designation Process
- Study Area: McNeil River State Game Sanctuary
- Factors contributing to current status
- McNeil River chum salmon status update
- Review of other stocks
 - Aialik Lake sockeye salmon
 - South Nuka Island pink salmon
 - China Poot Creek pink salmon



Definition of Key Terms

- Stock of Concern: Stock with a yield, management or conservation concern
- Management Concern: Chronic inability, despite management measures, to meet the escapement goal
- Chronic inability: continuing or anticipated inability to meet EG over 4–5 year period
- Action Plan: Board and Department develop goals and management actions to restore stock to historical productivity



Stock of Concern (SOC) Designation Process

1. Escapement Goal review indicates issue
2. Department recommends SOC status
3. Department develops Action Plan for BOF
4. BOF and Department review situation and determine if SOC status is warranted
5. BOF can amend or develop FMPs
6. Actions commensurate with concern level

Otis et al. 2016

McNeil Chum Action Plan

<http://www.adfg.alaska.gov/FedAidPDFs/SP16-12.pdf>



Lower Cook Inlet Management Area

Lower Cook Inlet

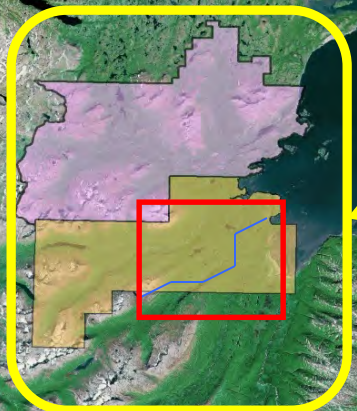
Homer

Kamishak Bay District

Barren Islands

Gulf of Alaska

Kodiak/Afognak Islands



McNeil Sanctuary: Established in 1967 by Alaska Legislature to provide permanent protection to brown bears and other fish and wildlife populations for scientific, aesthetic, and educational purposes.

McNeil River State Game Refuge

Kamishak Bay

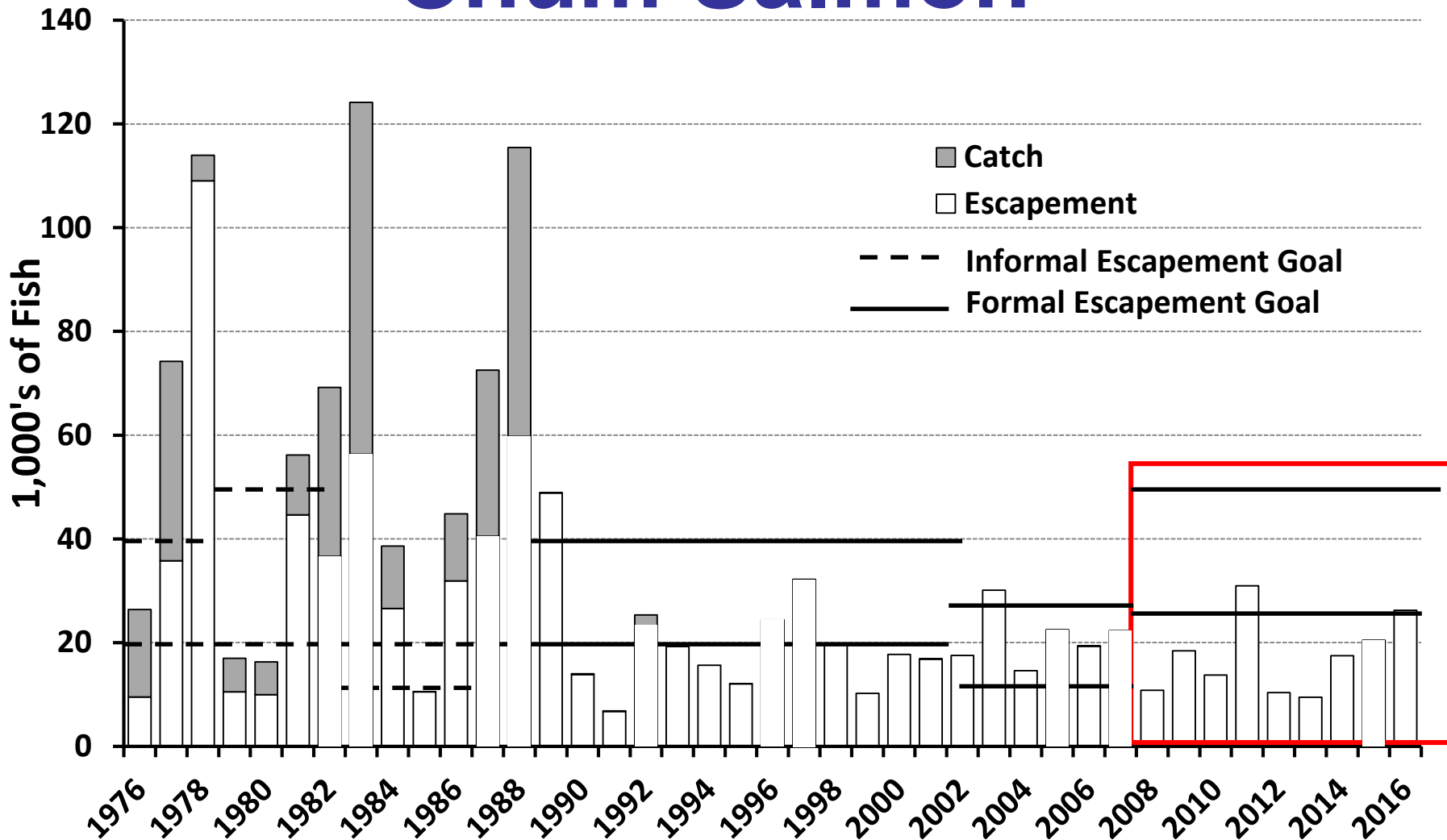


McNeil Falls

McNeil River State Game Sanctuary



Status of McNeil River Chum Salmon



Contributing Factors

- McNeil Falls: Physical obstacle
- Bears at McNeil Falls: High predation rates
- Limited spawning habitat below falls
- Abundant spawning habitat above falls not being consistently used
- Escapement goal set high to increase use of above-falls spawning areas and maintain higher stream-wide productivity



McNeil Falls



Photo: Larry Aumiller



Spawning Distribution vs. Available Habitat

Legend

-  2005 Tag Recoveries
-  2006 Tag Recoveries



McNeil River



McNeil Falls

SEG: 24,000-48,000
2005 Esc.: 22,496
2006 Esc.: 19,324

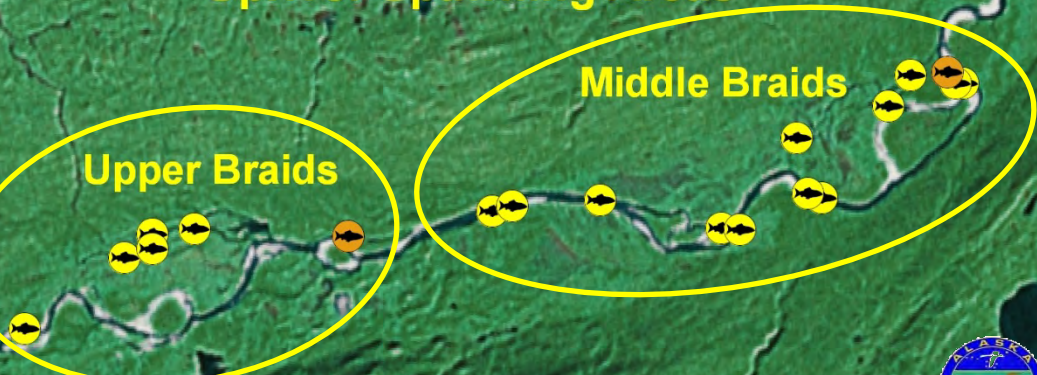
Below-the-Falls
>90% of escapement
~50% spawned
SL = 12.6 d

Above-the-Falls
<10% of escapement
>90% spawned
SL = 21.9 d

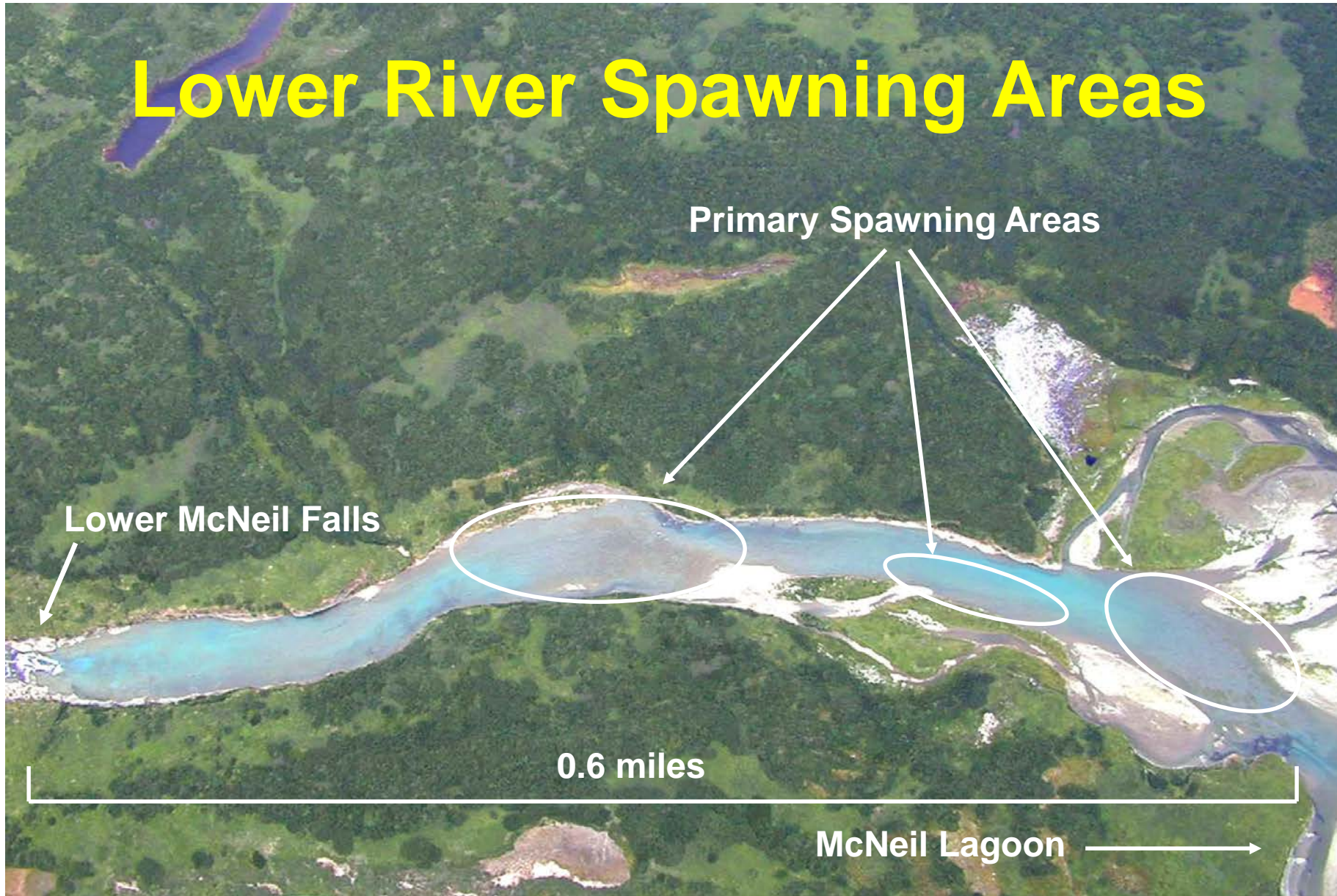
Lower Braids



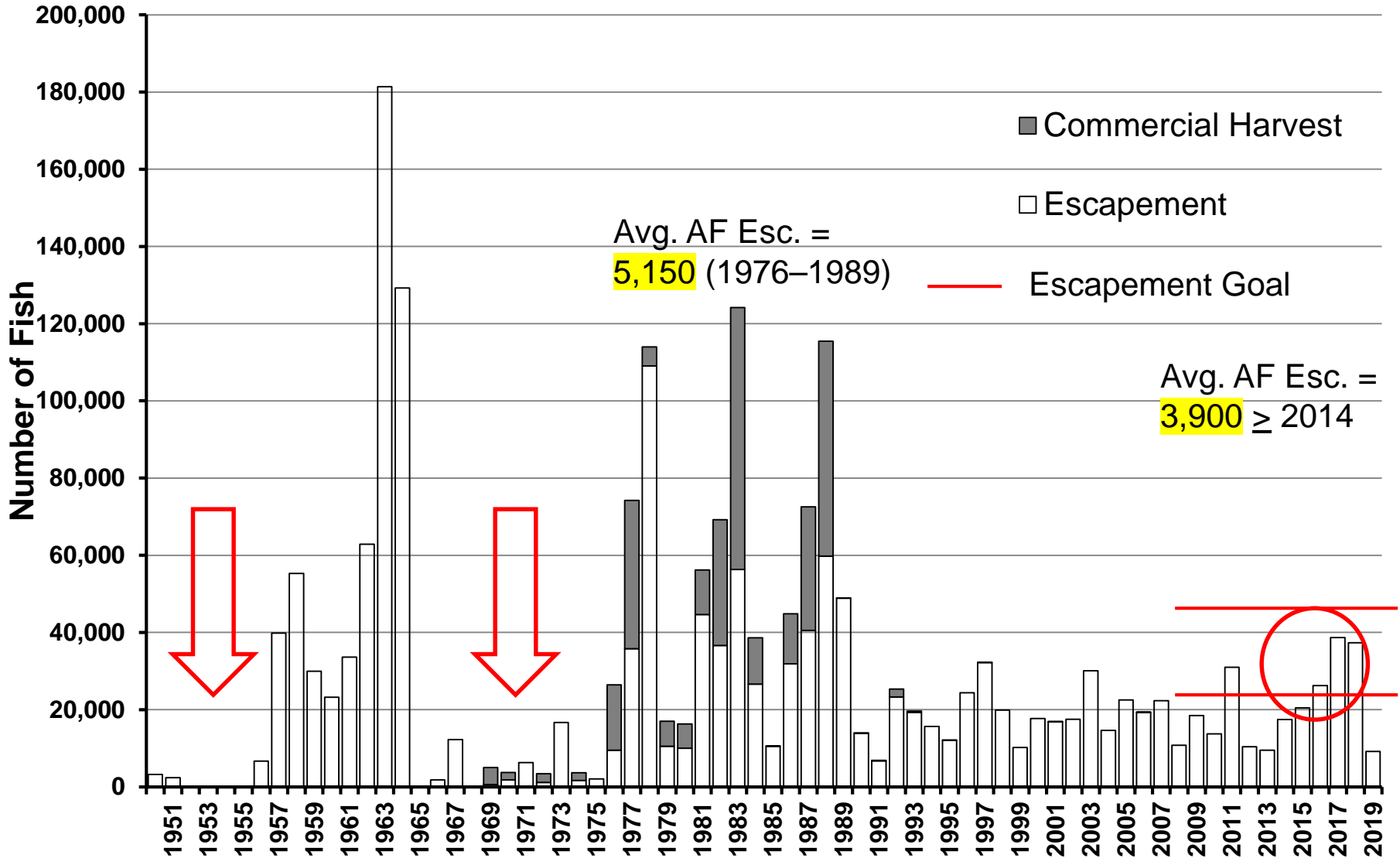
Upriver Spawning Areas



Lower River Spawning Areas



Natural Predator-Prey Cycle



Retain SOC Status

- 2019 escapement well below SEG range
- SEG achieved previous 3 years due to fishery restrictions
- Would like to see a full generation (5-6 years) of improved escapement and production before removing SOC status

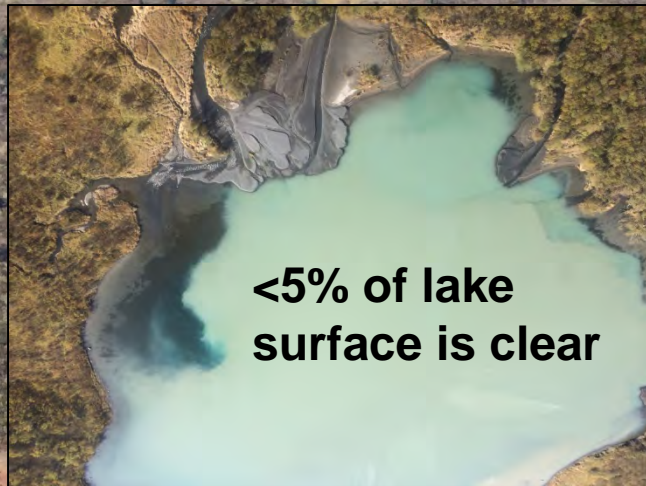


LCI Stocks Reviewed for SOC Status in 2019

- Aialik Lake sockeye salmon
- South Nuka Island Creek pink salmon
- China Poot Creek pink salmon



Aialik Lake- Sockeye



- Lake has become more turbid in recent years
- Only able to see fish near clear inlet streams
- Limited funding precludes using weir or video

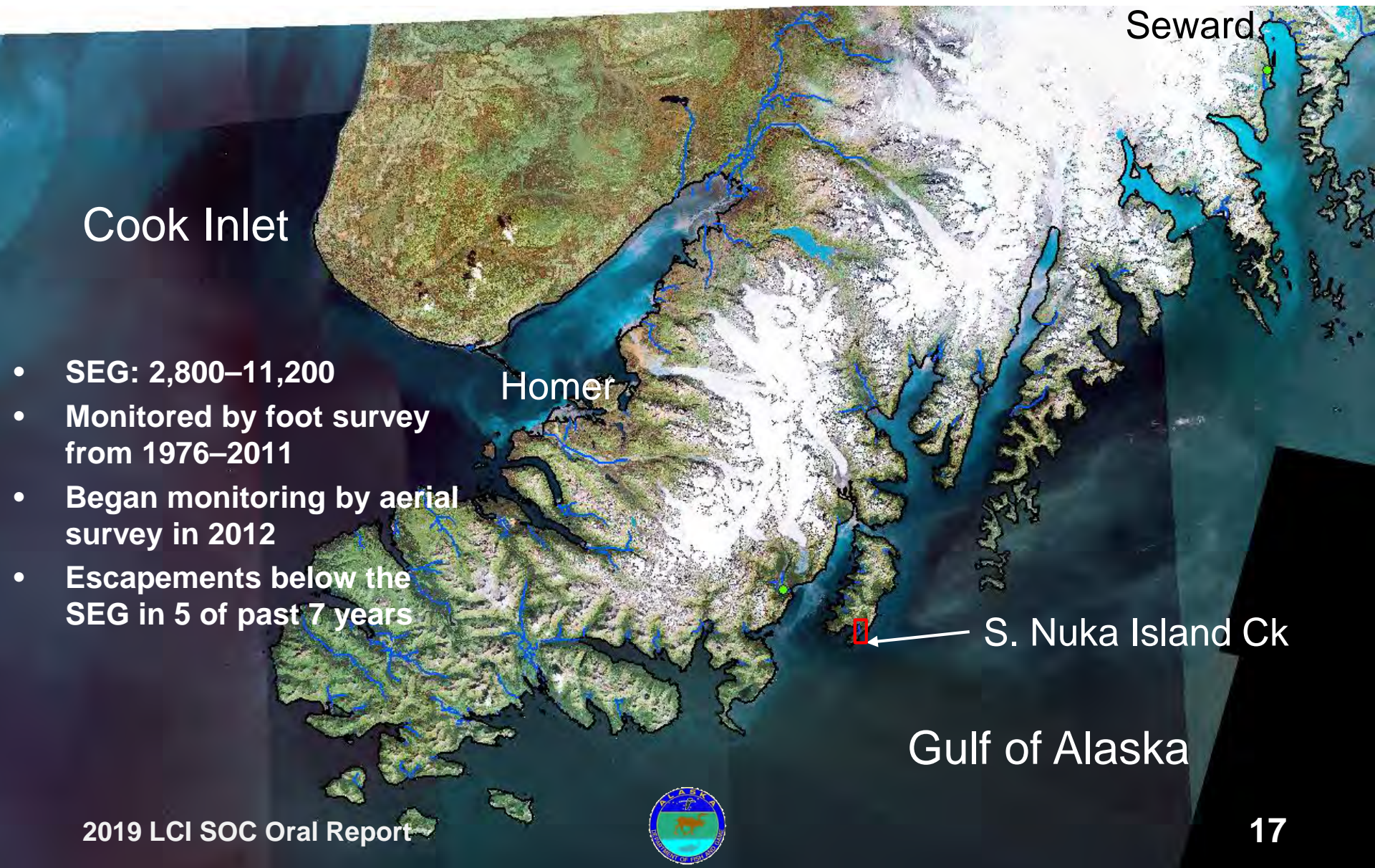
Aialik Lake Sockeye

SEG: 3,700–8,000

Year	No. of Surveys	Survey Rating	Esc. Index	Survey Comments
2010	9	Good	5,315	Good conditions most surveys
2011	7	Good	3,480	Good conditions on 5 of 7 surveys
2012	4	Fair	2,410	Poor water clarity
2013	3	Good	3,530	Good conditions all 3 surveys
2014	3	Fair	450	Poor water clarity
2015	3	Fair-Poor	3,182	Poor water clarity
2016	4	Fair-Poor	400	Poor water clarity
2017	6	Good	4,900	Good conditions on 4 of 6 surveys
2018	5	Good	2,620	Good conditions on 4 of 5 surveys
2019	7	Fair-Poor	5,000	1 outstanding survey during peak



South Nuka Island Pink Salmon



South Nuka Island Creek
SEG = 2,800–11,200

Stream

Intertidal

- **SEG based mainly on foot surveys from 1976–2011 (Avg. Esc. = 11,000)**
- **Aerial surveys 2012–2019 (Avg. Esc. = 4,100)**
- **Re-calibrate SEG to aerial survey methods**



China Poot Creek Pink Salmon (SEG=2,500–6,300)

- SEG based on foot surveys from 1976–2016 (Avg. Esc. = 5,500 fish)
- Waterfall ~300 m from tidewater

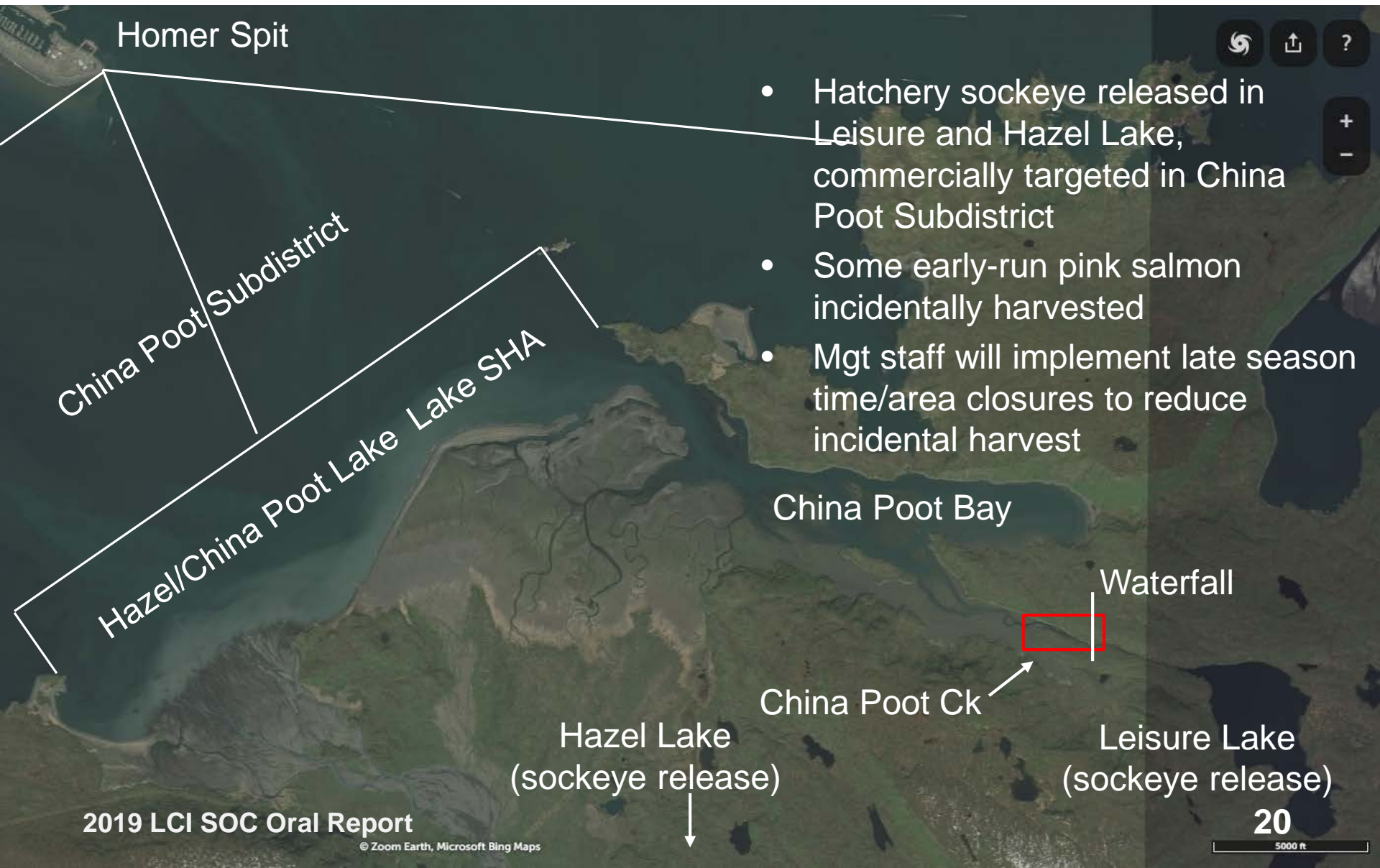
Intertidal

~300 m

Waterfall

China Poot Creek Pink Salmon

(SEG=2,500–6,300)



- Hatchery sockeye released in Leisure and Hazel Lake, commercially targeted in China Poot Subdistrict
- Some early-run pink salmon incidentally harvested
- Mgt staff will implement late season time/area closures to reduce incidental harvest

Questions?

Photo: Ted Otis

