

Mikfik Lake Sockeye and McNeil River Chum Salmon: Stock Status and Mikfik Lake Action Plan, 2023

McNeil Action Plan: SP 16-12

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

Draft Mikfik Action Plan:

RC-3, Tab 2

**Ted Otis, LCI Area Research Biologist
and**

Glenn Hollowell, LCI Area Management Biologist



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*: 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. BOF and Department review situation and determine if SOC status is warranted
4. Department develops Action Plan for BOF
5. BOF can amend or develop FMPs
6. Actions commensurate with concern level

McNeil Action Plan: SP 16-12

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Lower Cook Inlet Management Area

Lower Cook Inlet

Homer

Southern District

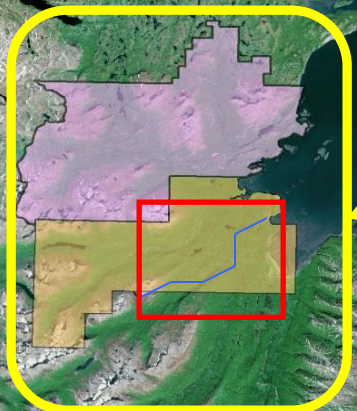
Kamishak Bay District

Barren Islands

Outer District

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.

Kamishak Bay

McNeil River State Game Refuge

Chenik Subdistrict

Paint R Subdistrict

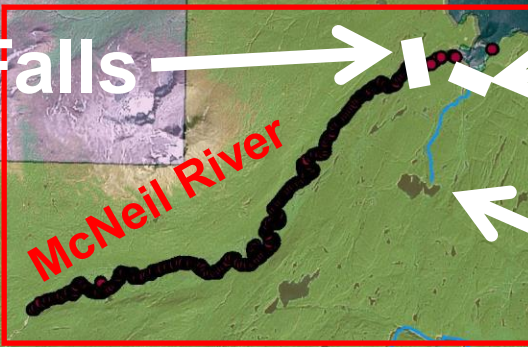
Kamishak Subdistrict

McNeil Subdistrict

Douglas Subdistrict

McNeil Falls

Mikfik Falls

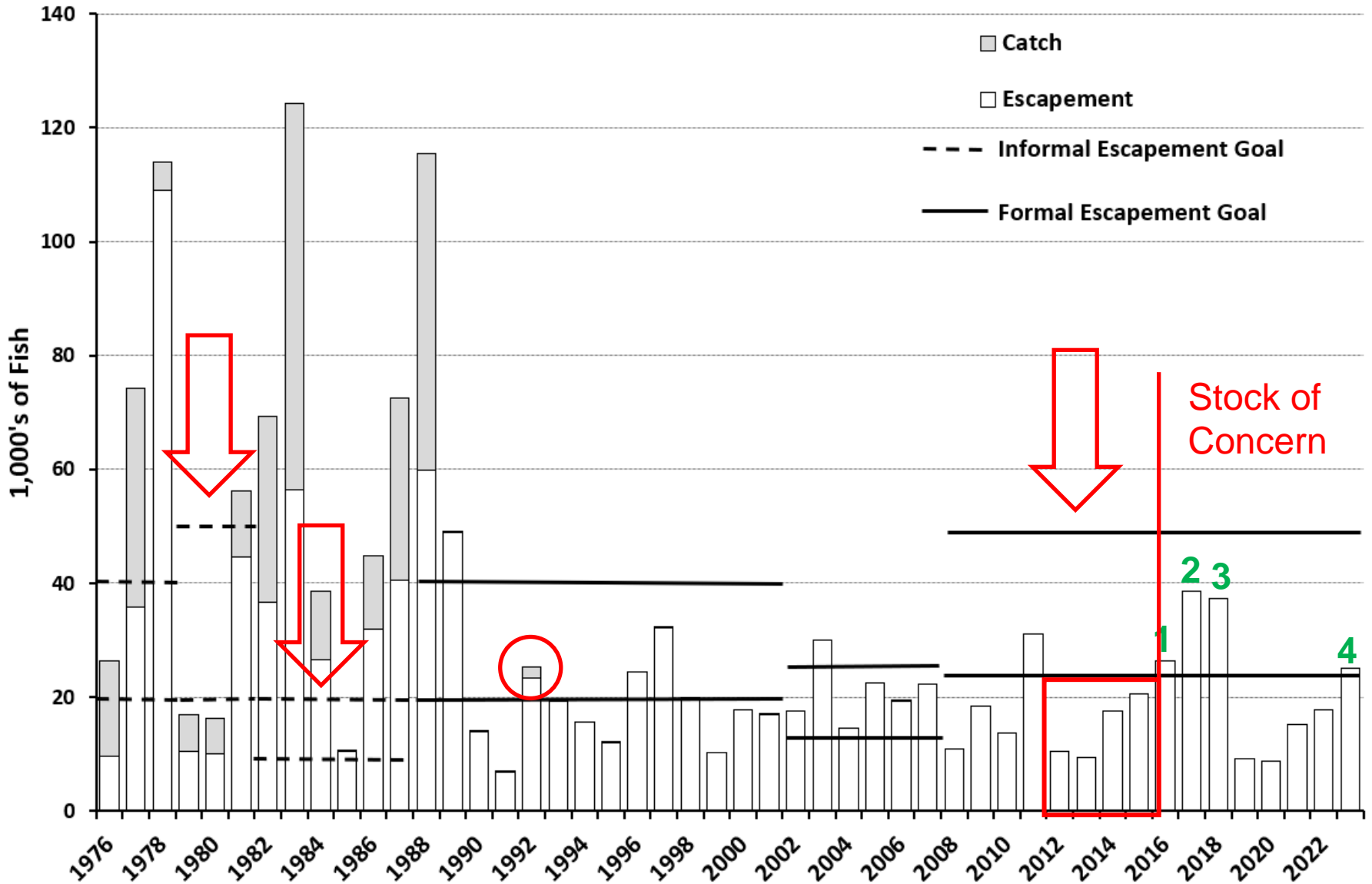


Mikfik Lake

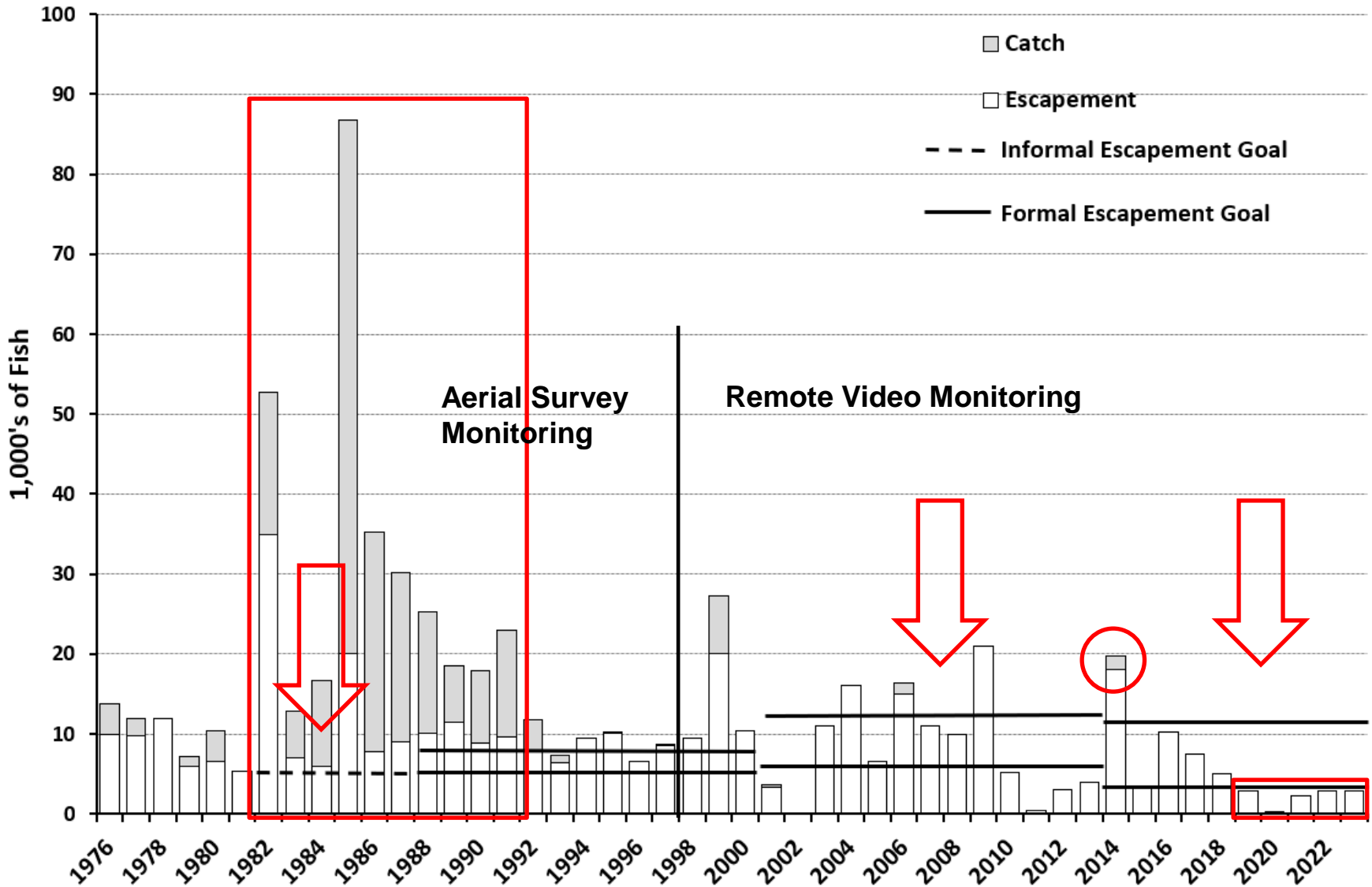
McNeil River State Game Sanctuary



McNeil River Chum



Mikfik Lake Sockeye



Contributing Factors

- McNeil and Mikfik Falls: Physical obstacles
- Bears at both Falls: High predation rates
- Limited/no spawning habitat below falls
- Abundant spawning habitat above falls not consistently used
- Escapement goal set high to encourage use of above-falls spawning areas (McNeil)

McNeil Falls



Photo: Larry Aumiller

2023 LCI SOC Oral
Report: RC-3, Tab 4



Mikfik Falls



Photo: Beth Rosenberg

2023 LCI SOC Oral
Report: RC-3, Tab 4



Mikfik Riffle




Photo: Beth Rosenberg



Spawning Distribution vs. Available Habitat

Legend

-  2005 Tag Recoveries
-  2006 Tag Recoveries



McNeil River

McNeil Falls

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

Upper Braids

Middle Braids



0 0.25 0.5 1 1.5 2 Miles



Lower River Spawning Areas



Mikfik Lake Sockeye

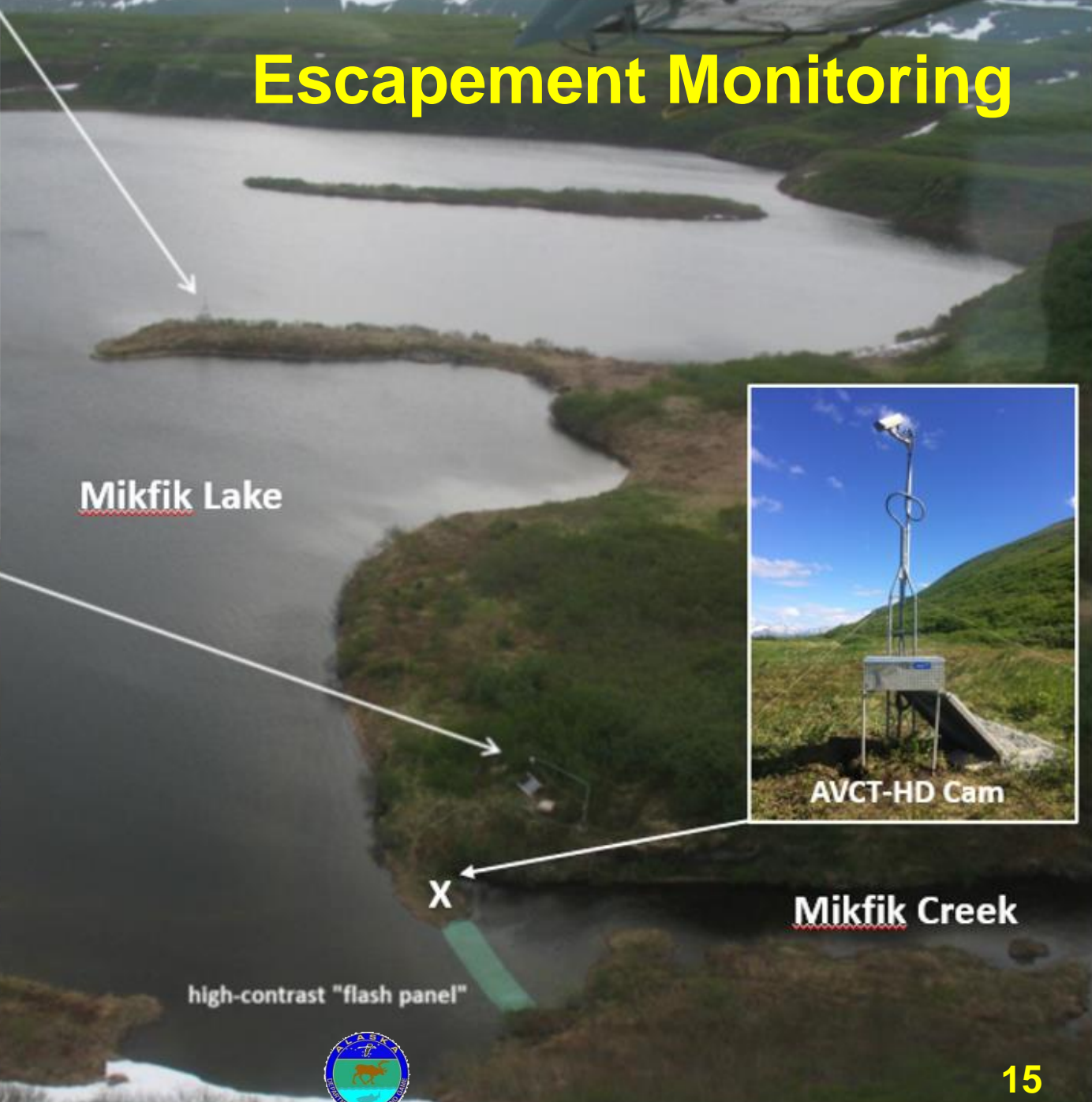


Primary Spawning Areas
Lake shoreline and inlet creek

Image © 2023 CNES / Airbus



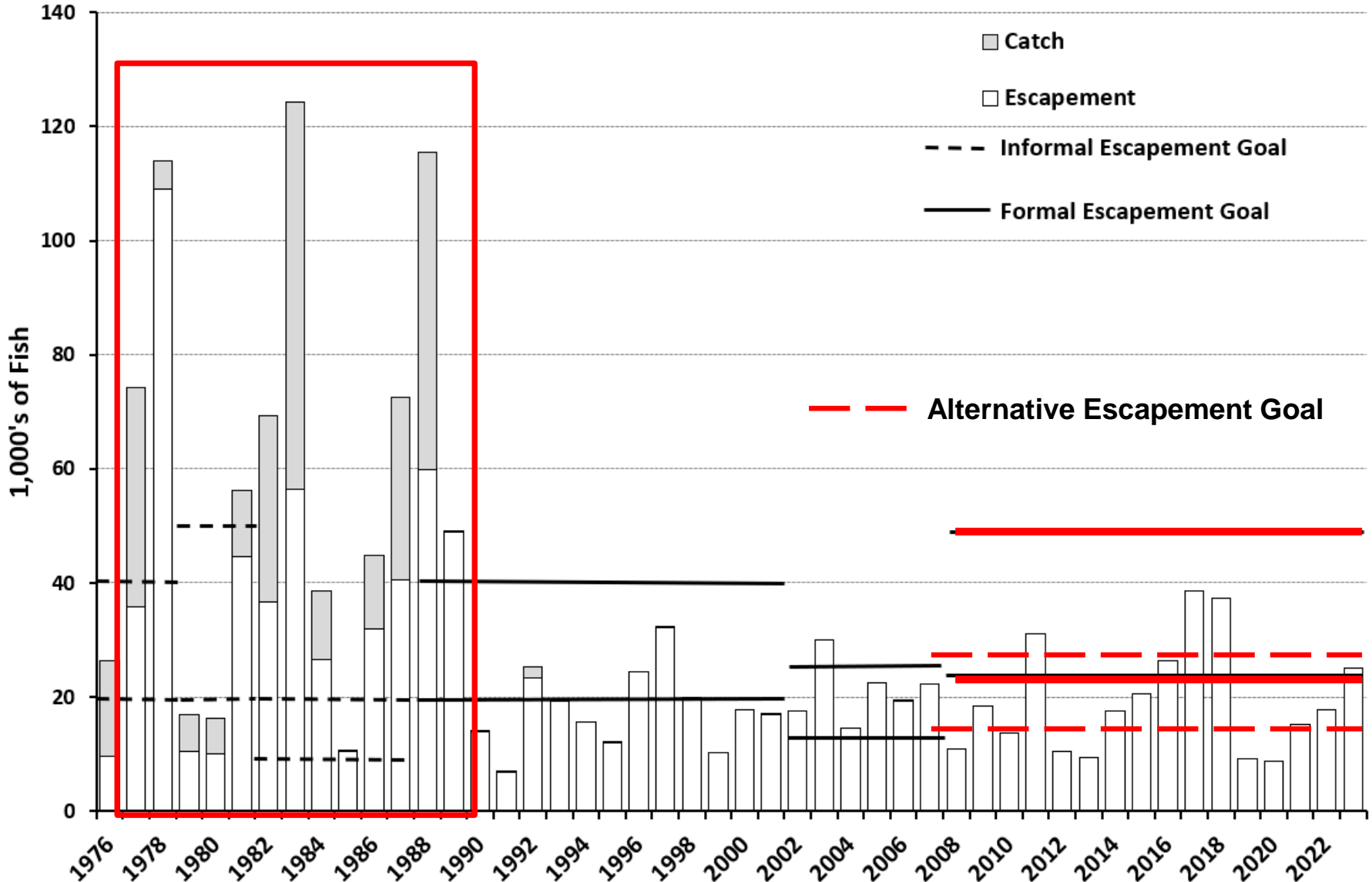
Escapement Monitoring



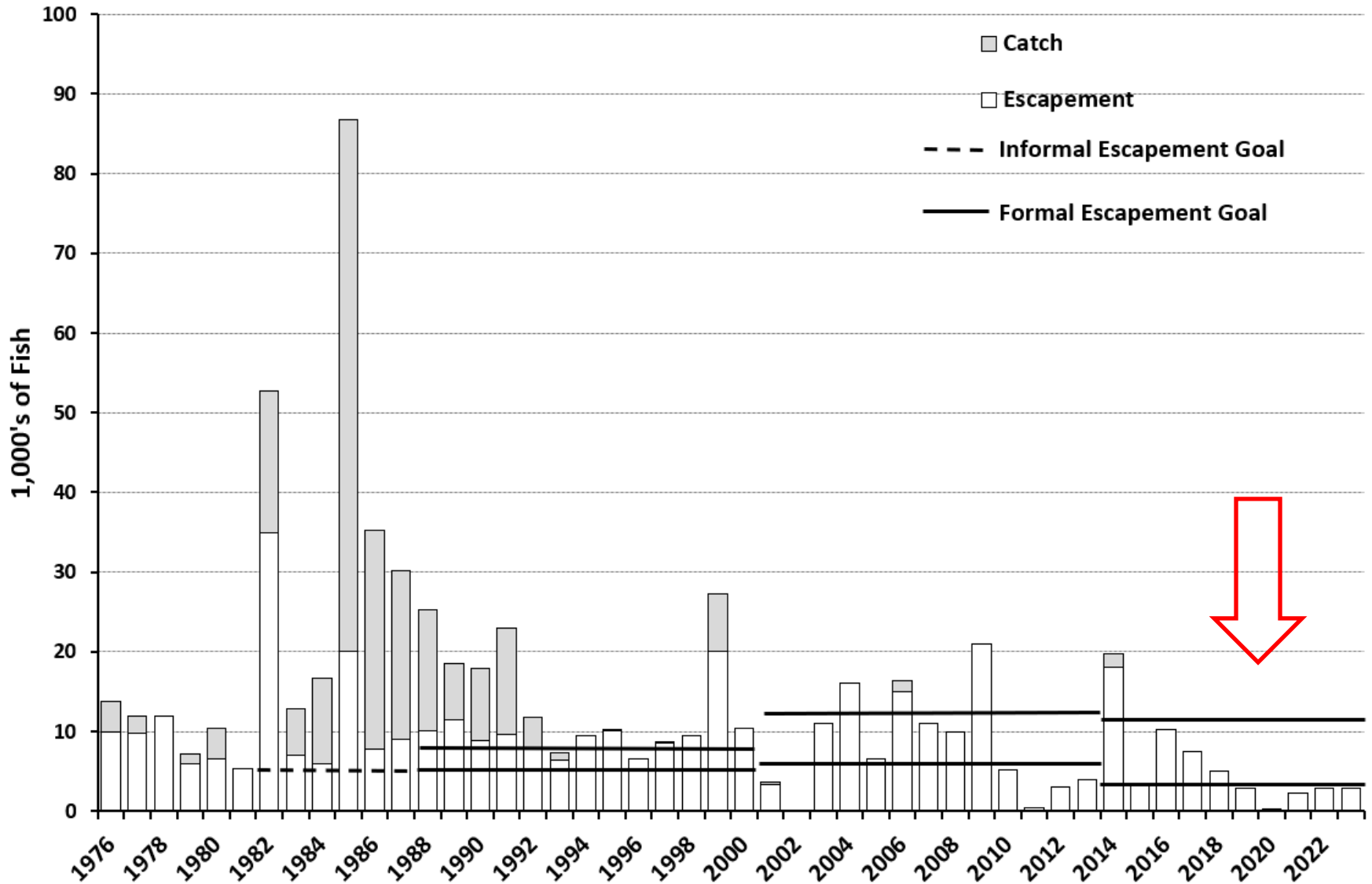
Contributing Factors-Recap

- **Natural Factors (not in our control)**
 - Obstacles: falls, low streamflow, beaver dams
 - Bear predation
 - Limited/no spawning below obstacles
 - Abundant spawning areas available above
- **Human Factors**
 - Targeted or mixed stock harvest? None.
 - Habitat concerns? None.
- **Solutions?**
 - McNeil River and Mikfik Lake Action Plans

Esc. Goal- McNeil



Esc. Goal- Mikfik



Fishery Management Plans (FMPs)

- Mikfik Creek-McNeil Lagoon FMP (1988)
 - Favor openings outside McNeil Lagoon
 - Openings inside Lagoon 2 hrs around high tide

McNeil Camp

McNeil River

McNeil Lagoon

- McNeil River Chum Salmon FMP (1993)
 - Goal: Maintain healthy population to provide fish for bear consumption and commercial harvest

Image © 2016 DigitalGlobe

Mikfik Creek

Google earth

Imagery Date: 6/18/2008 lat 59.118827° lon -154.259876° elev 32 ft eye alt 6554 ft

Mikfik Lake Action Plan

- Background: Sanctuary, Falls, bear predation, low streamflow, beaver dams
- Goal: Rebuild and maintain the run so it achieves SEG, provides fish for bears, and opportunity for fishermen to harvest surplus
- Alternative Management Actions
 - Commercial Fisheries
 - Habitat Modifications
 - Natural Recovery

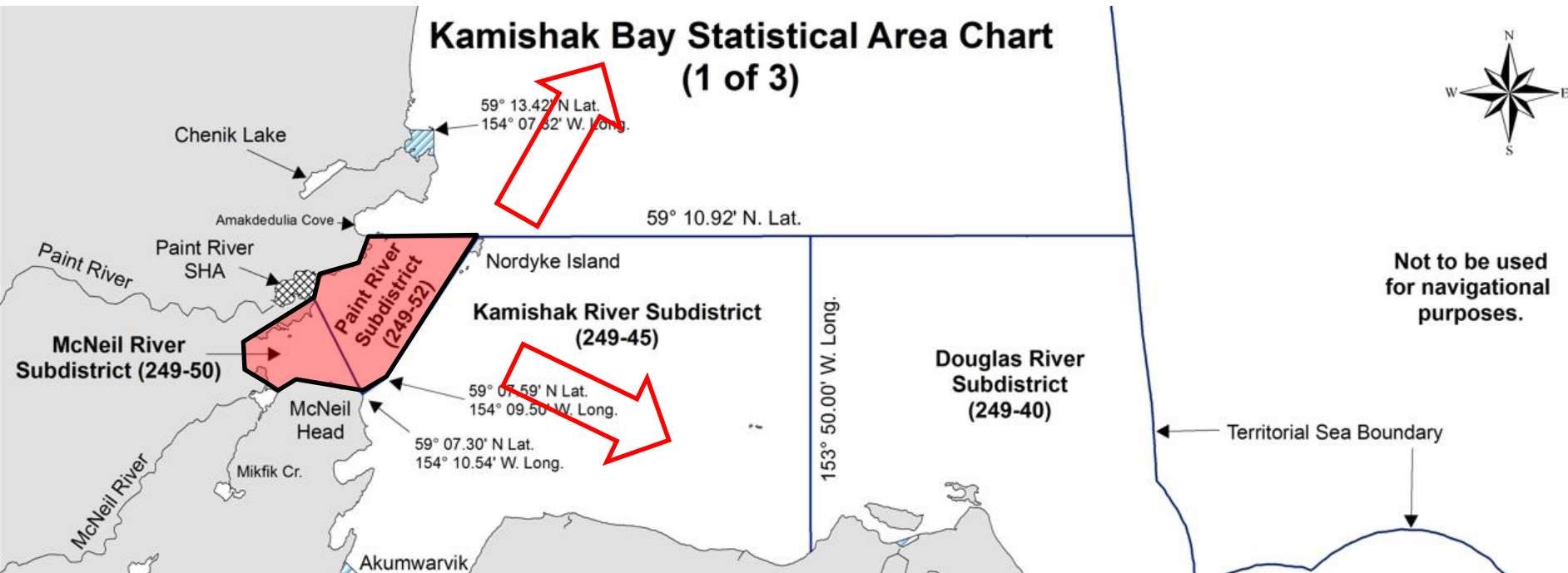
**Draft Mikfik Lake Action
Plan: RC-3, Tab 2**



Action 1: Commercial Fisheries

Objective: Reduce commercial harvest

- A: Use EO authority to close McNeil and Paint R Subdistricts
- B: Close McNeil and Paint River Subdistricts by regulation
- C: Close other nearby subdistricts in the Kamishak District
- D: Close entire Kamishak District to commercial fishing



Action 2: Habitat Modifications

Objective: Remove/manage obstacles to migration

- A: Modify Lower and Upper Mikfik Falls
- B: Manage abundance of bears at Mikfik through hazing or other means
- **Option A**: Expensive, may disrupt bear viewing program
- **Option B**: Most disruptive, may require legislative and BOG approval, directly conflicts with the goals of the MRSGS



Action 3: Natural Recovery

Objective: Allow stock to recover naturally

- **Option A: No further action**

- **Status Quo**: Manage for current SEG

- Close McNeil and Paint River subdistricts by EO

- **Benefits**:

- Predator/prey dynamic at Mikfik plays out naturally
- Consistent with statutory goals of MRSGS and SSFP
 - SSFP: “the role of salmon in ecosystem functioning should be evaluated and considered...”

- **Detriments**:

- Likelihood the SEG won't be met some years
- Potential loss of harvest opportunities

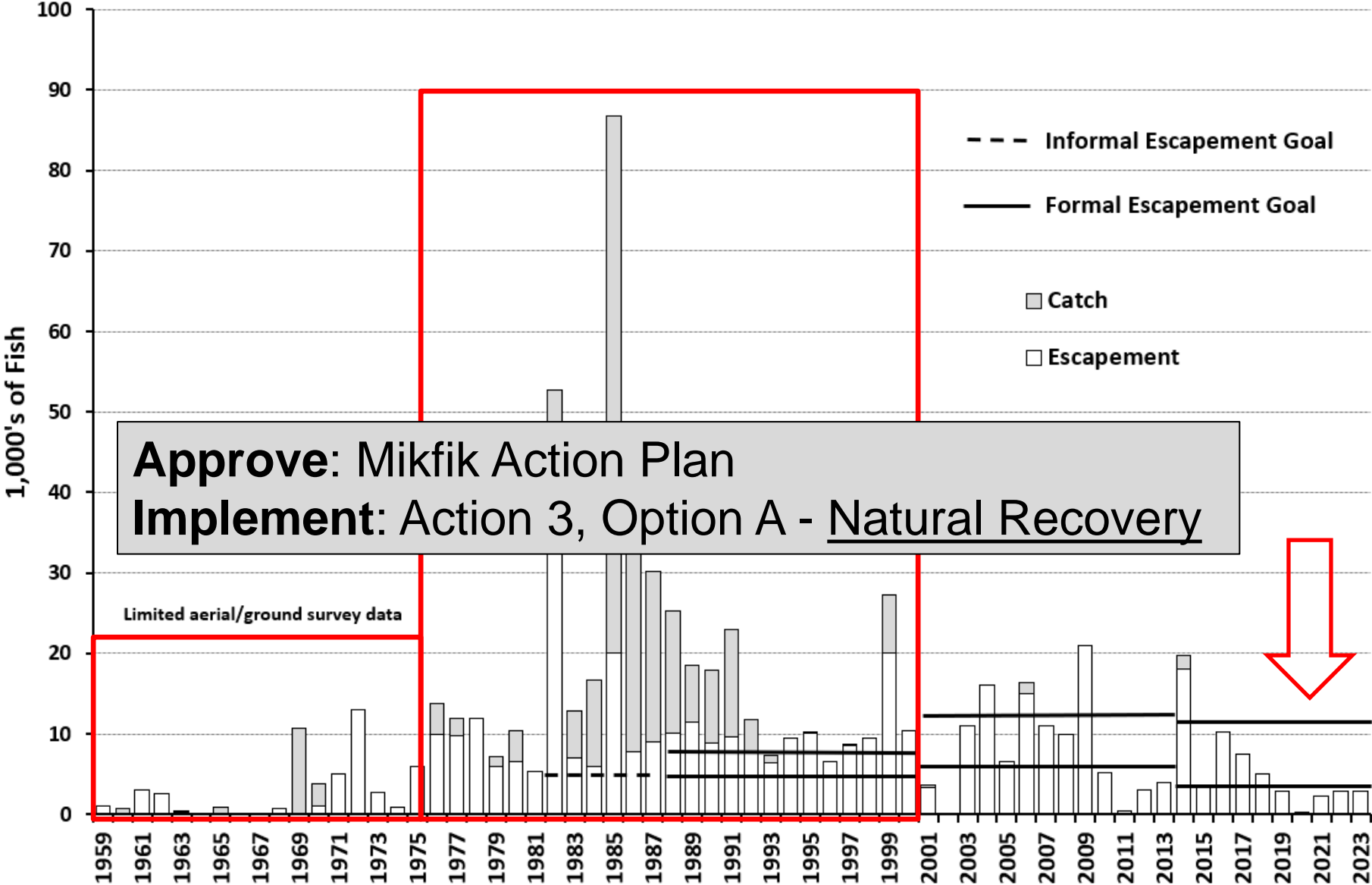


Summary

- Management Actions: 2 approaches
 - Hasten recovery by modifying habitat and/or bear density along Mikfik Creek
 - Restrict commercial harvest and allow the stock to recover naturally over time



Summary



Questions?

Photo: Ted Otis