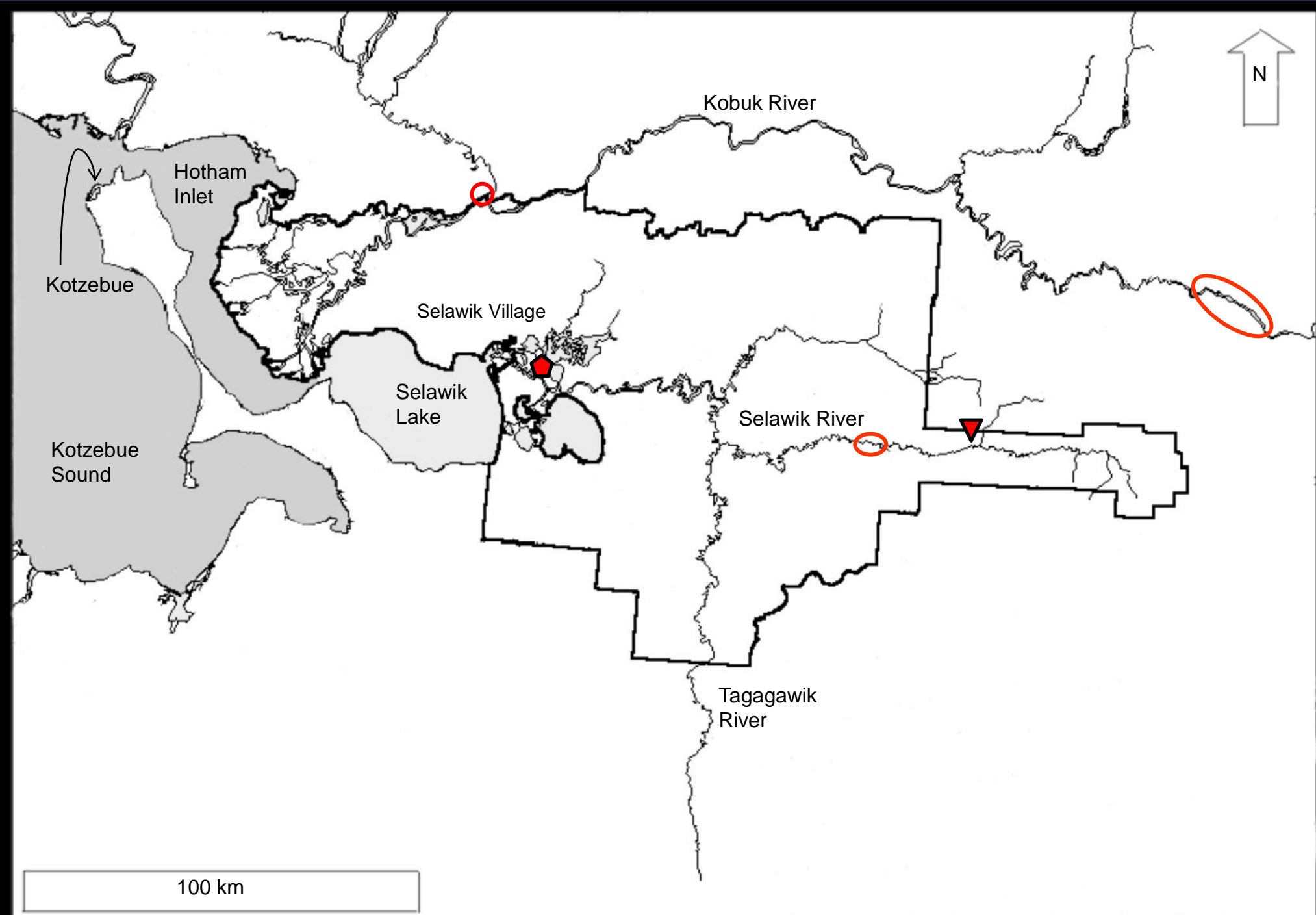


The Selawik River Sheefish Age and Population Project



USFWS 28 July 2004



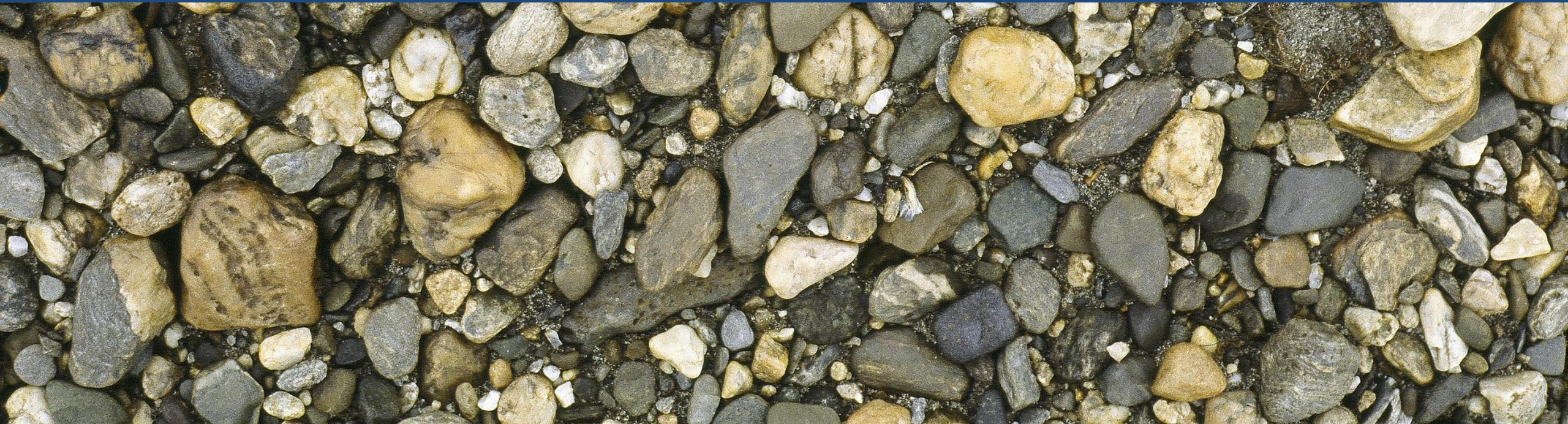


2006 – Second fork, 95 miles down river from slump



So why do we care about silt in the water?

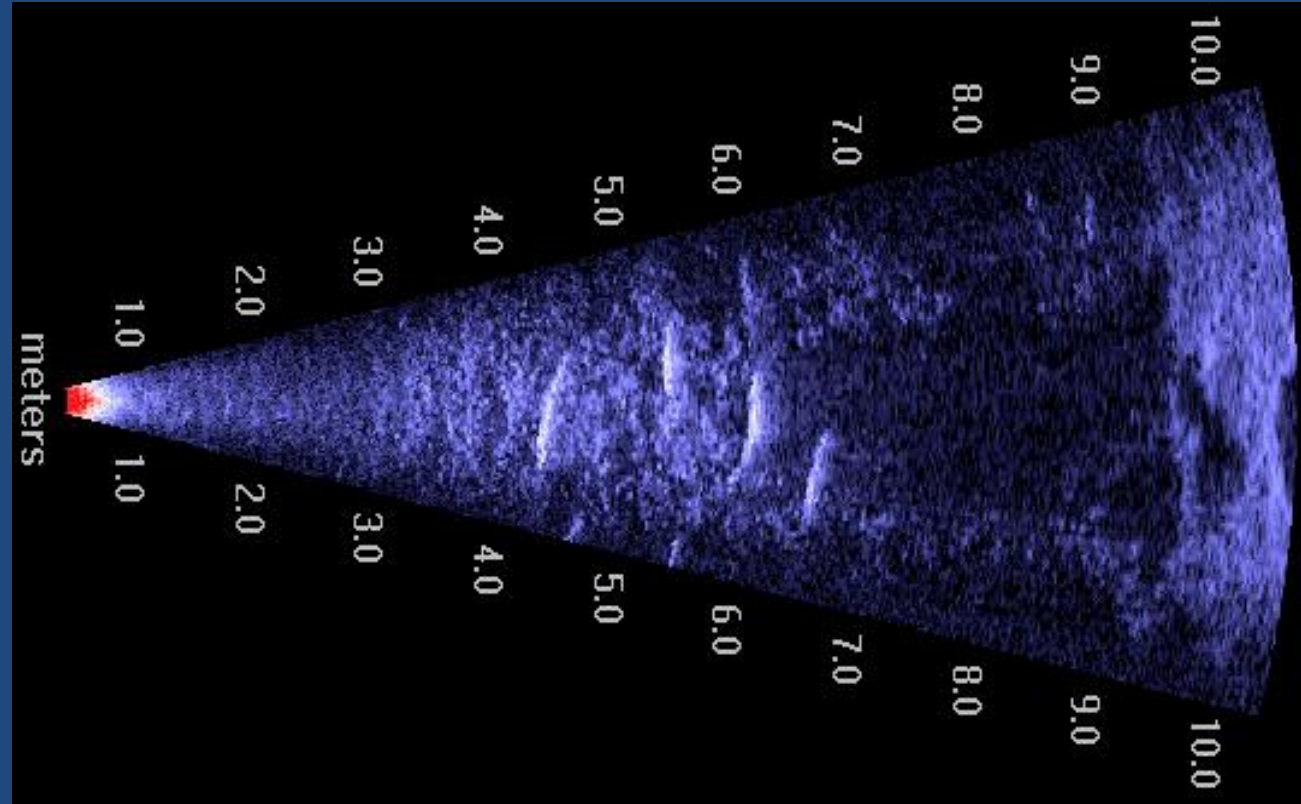
- Silt can cover the gravel, which can smooth surface or bury eggs
- Silt fills the spaces between the gravel, reducing oxygen getting to fish eggs
- Increased cloudiness (turbidity), impacts ability of sight-feeding fish to find food



How do we detect an impact of the slump on spawning success?

Our approach was to combine:

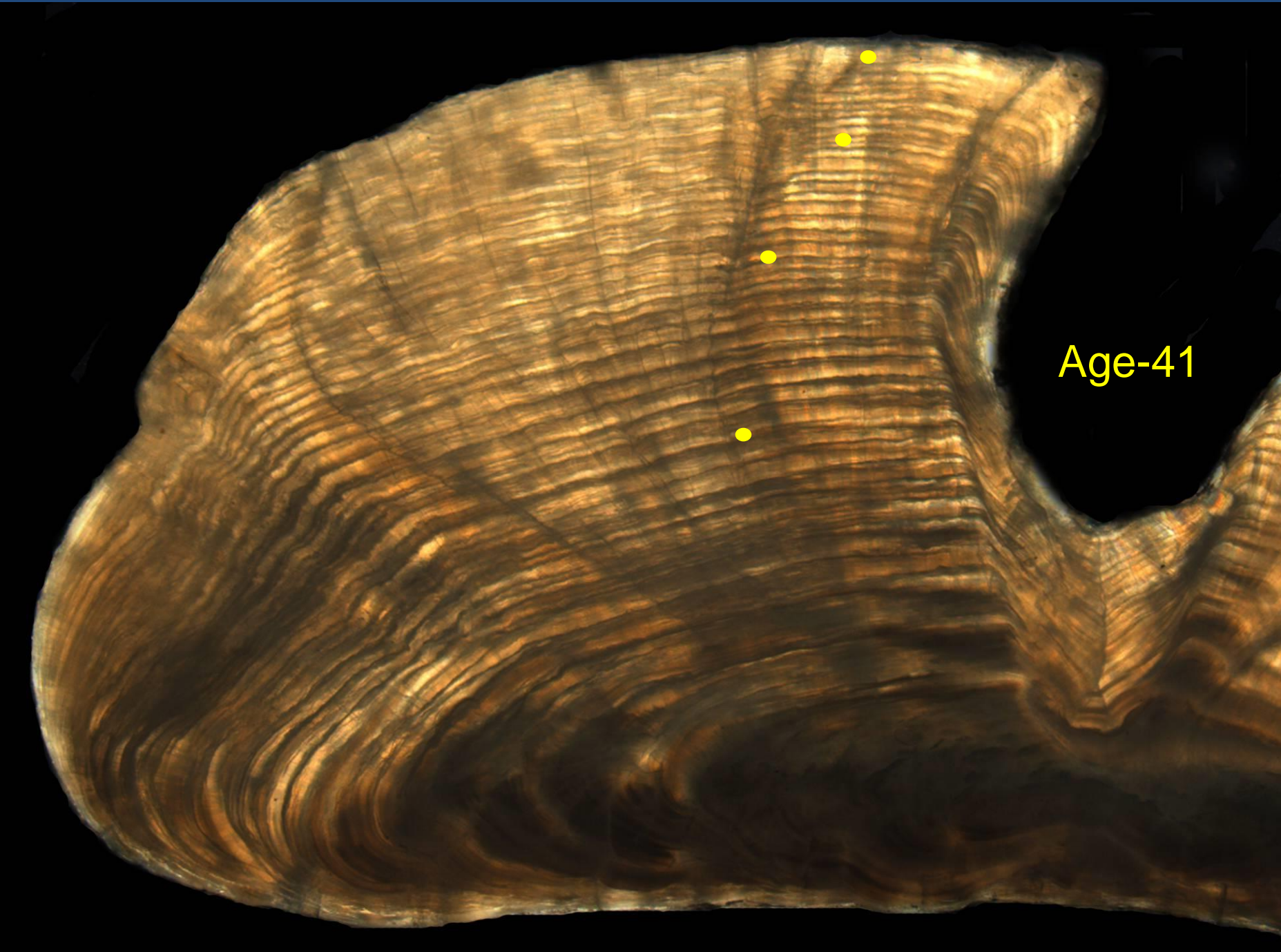
- age analysis – are post-slump hatched fish showing up in the spawning population
- spawning population data – numbers of fish coming back to spawn
- Additionally, we included age analysis from the Kobuk River population as a way of telling if age class declines were region-wide or Selawik River specific



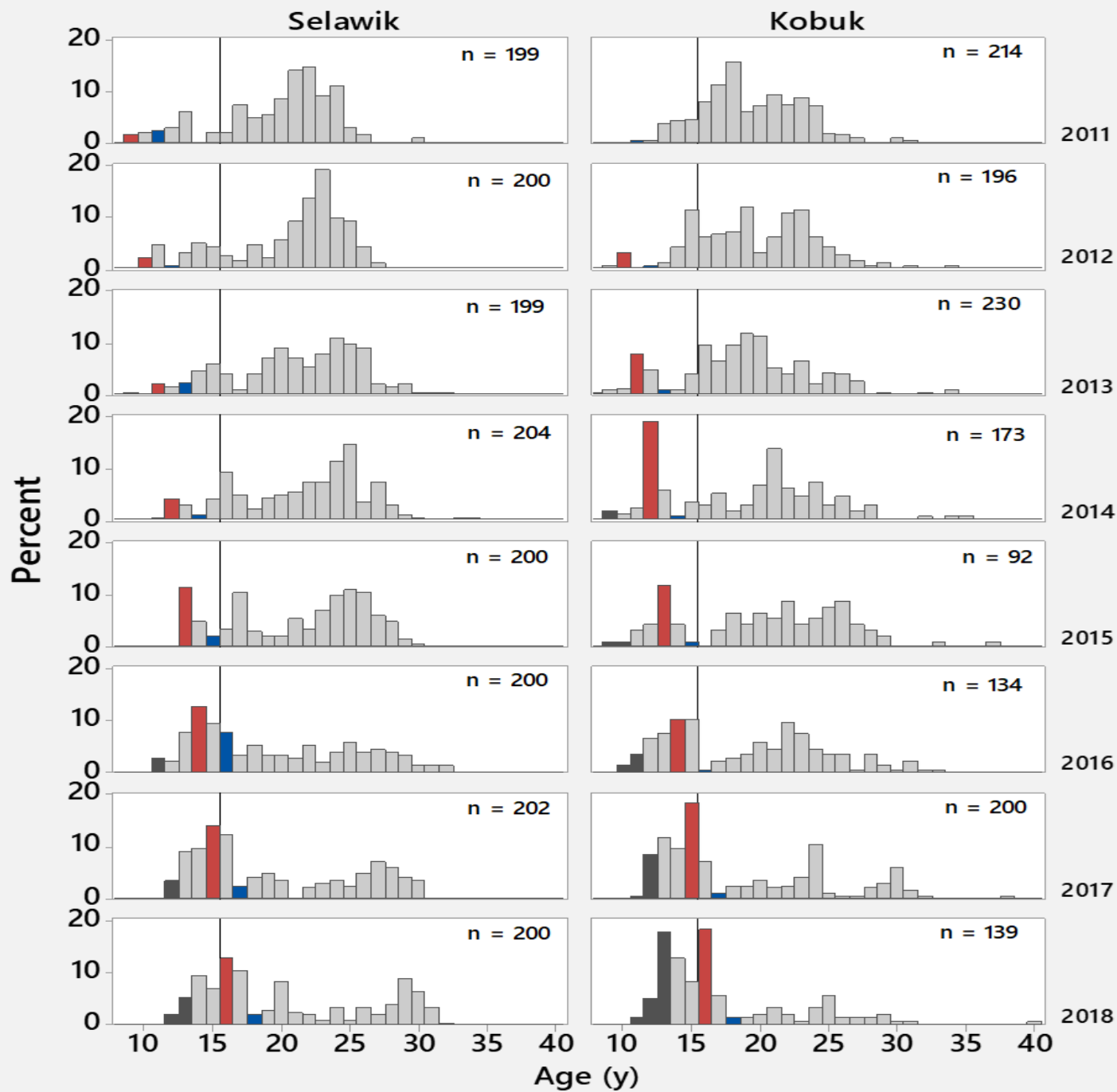
To analyze age, each year we harvest 200 male sheefish from the upper Selawik River to collect otoliths







Age-41



Eight years of Selawik and Kobuk river age distributions, 2011-2018

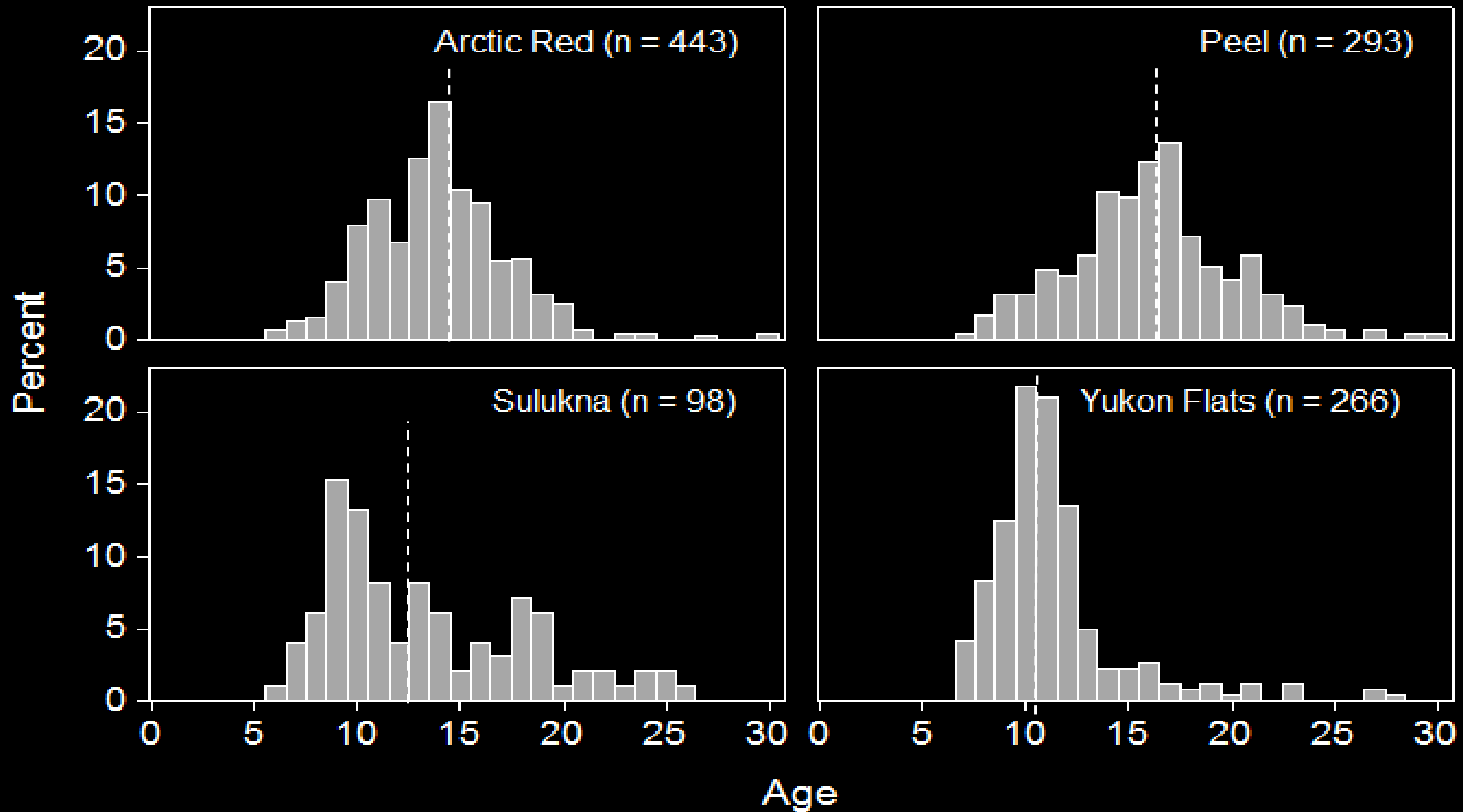
In 2018:

Selawik- a small number of age 13 fish (from 2004) fewer age 12 fish, and no age 10 or 11.

Kobuk – strong age 13, small numbers of age 11, and 12 fish, and no age 10

Periodic recruitment events track through the years

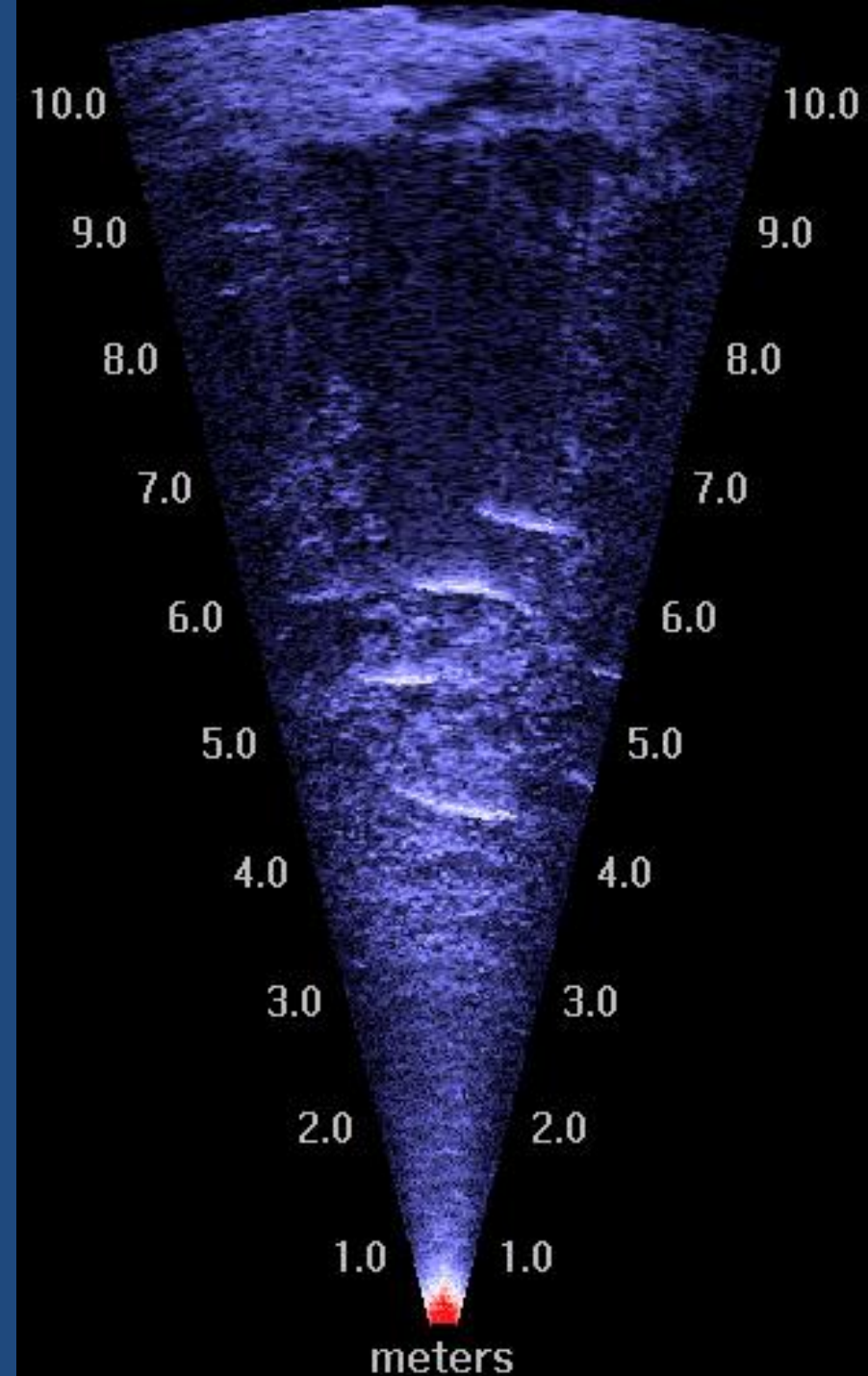
Four comparison populations



1995, 2004, and 2005 population estimates were based on mark-recapture methods with a higher degree of uncertainty

Year	Estimate	95% CI
1995	6,000	4,000-7,800
2004	24,000	13,000-33,900
2005	46,000	25,000-67,500
2011	20,800	Count
2012	16,600	Count
2013	25,000	Count
2015	18,710	Count
2017	19,237	Count
2018	24,472	Count

Sonar is not without its drawbacks. In 2014 early icing cut counting days short and 2016 high water levels created poor fish counting conditions



What have we discovered?

- Sheefish can live a long time, many into their 30's
- Male sheefish spawn for the first at about 10 years old, and females a little later around 12 years old
- Sheefish enter the river between late July and September and leave the spawning grounds just as the river starts to freeze
- Sheefish move quickly down river to Selawik Lake, mostly at night
- Both the Selawik and Kobuk river populations are healthy and stable
- Sheefish spawn many times during their life and may not spawn every year. This is an advantage when looking at possible effects of the Slump



The Team

USFWS Northern Alaska Fish & Wildlife Field Office and Selawik NWR started a pilot project in 2011

Office of Subsistence Management funding for the project 2012-2019 and 2023-2025

Selawik members Sonny Berry, Ingram Clark, Charlie Riley and Patrick Foster Sr.

Native Village of Selawik and the Selawik NWR provided logistical and material support

ADF&G provided Sheefish otoliths and data from the Kobuk River



A. Redden, USFWS 2013

Team Effort





Questions?