

Karluk River Steelhead Mark-Recapture Study 2017



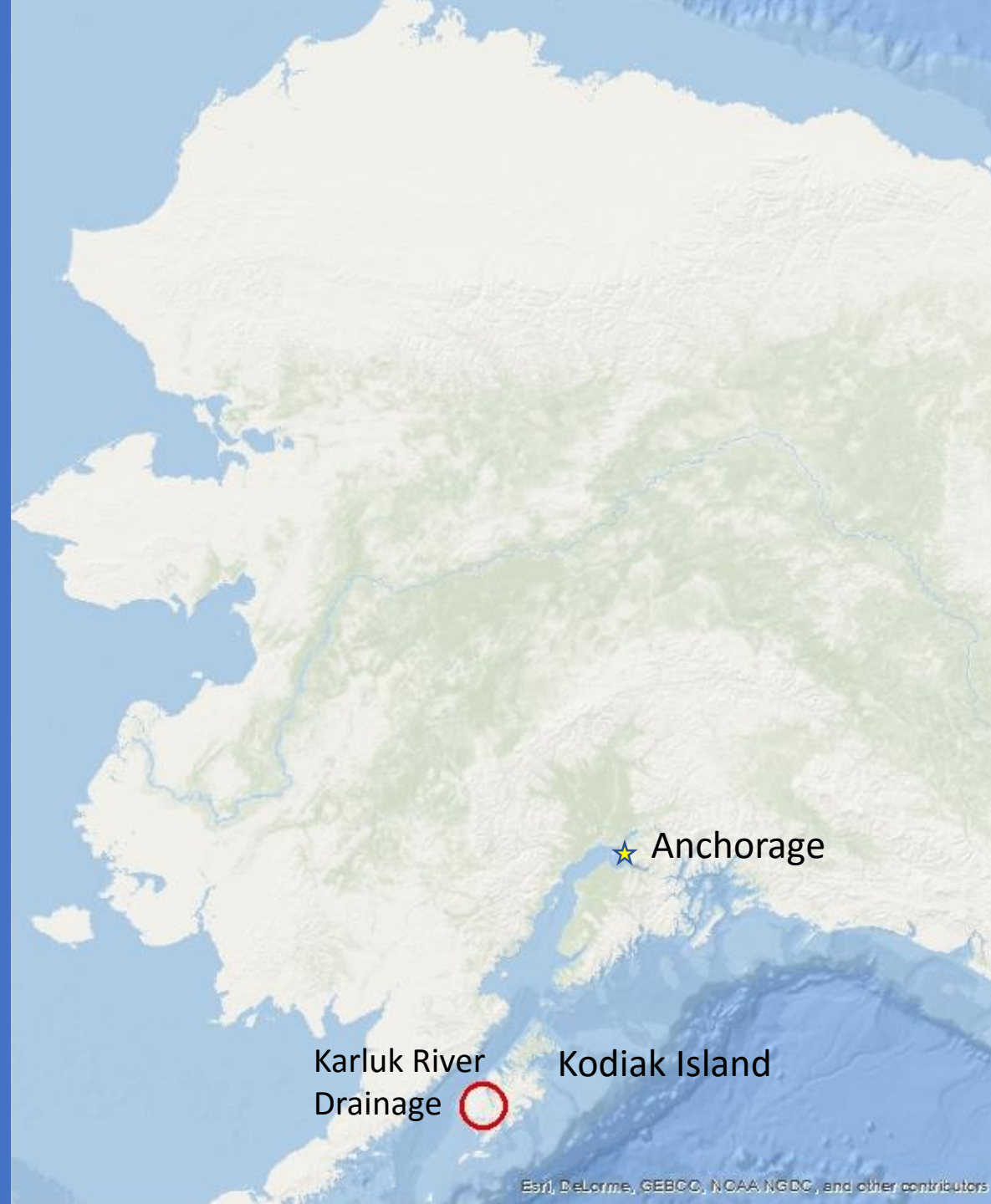
Objectives:

- Estimate the number of spawning steelhead in the Karluk River during the spring of 2017
- Estimate the age, sex, and length composition of the spawning population in the Karluk River during the spring of 2017



Continued-

- Count kelts emigrating through the Karluk River weir from approximately 16 May through 15 July, 2017
- Estimate the age, sex, and length composition of the kelts emigrating through the Karluk River weir in each third of the 2017 emigration



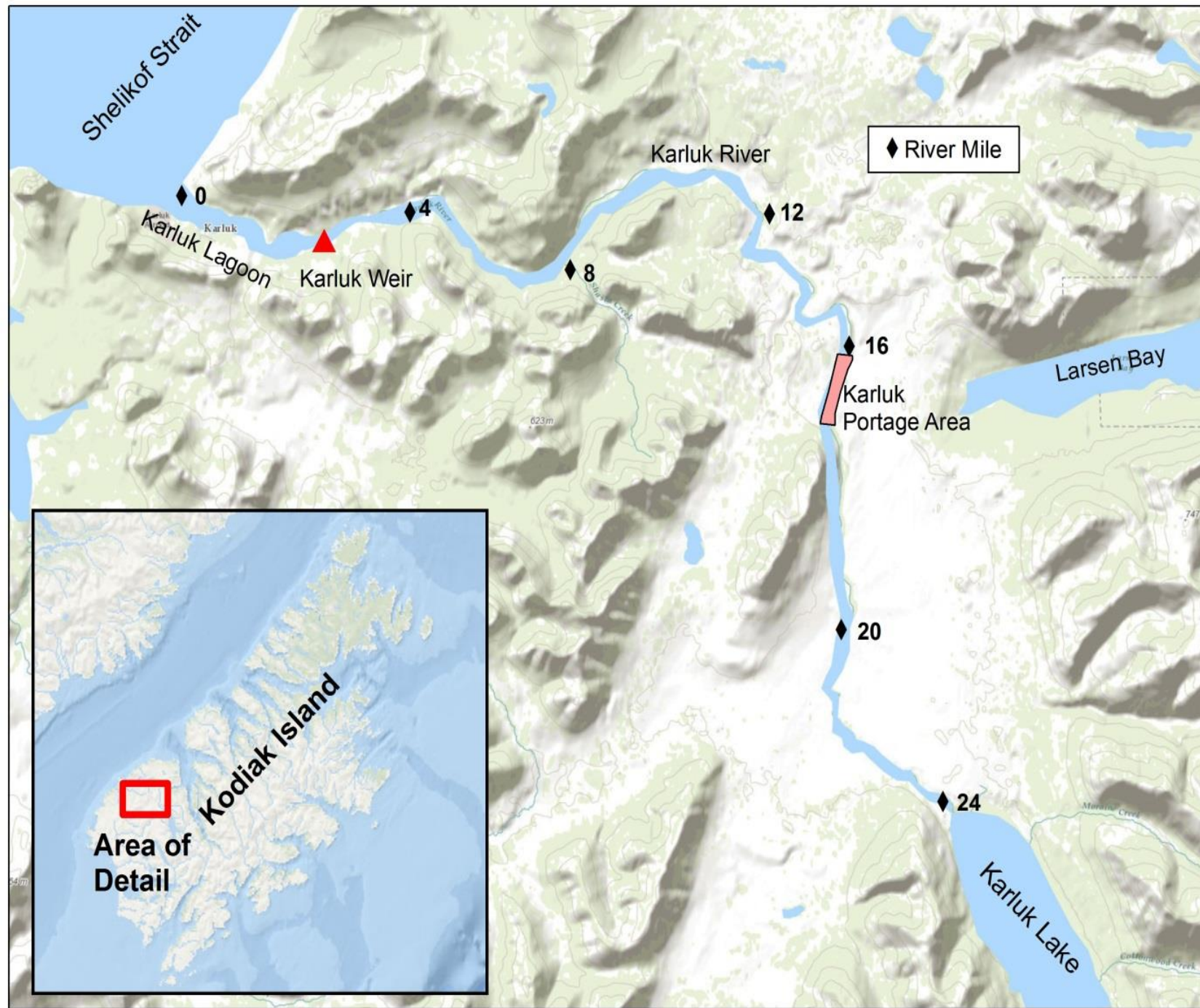
★ Anchorage

Karluk River
Drainage

Kodiak Island

Steelhead Management:

- Steelhead runs:
 - Karluk, Ayakulik, Dog Salmon, Sturgeon, Little River
 - Uganik, Litnik, Buskin, Saltery, Pauls
- Entirely fall run
- Targeted by anglers, subsistence
- Caught incidentally commercially
- Limited harvest, 2 annually over 20", only 1 per day
- Little interest in harvest
- Primarily guided, increasing interest as 'fly-out' fishery
- Only partial counts at weirs
- Incomplete population and run timing assessment
- Most have no information other than anecdotal



Marking Phase Methods:

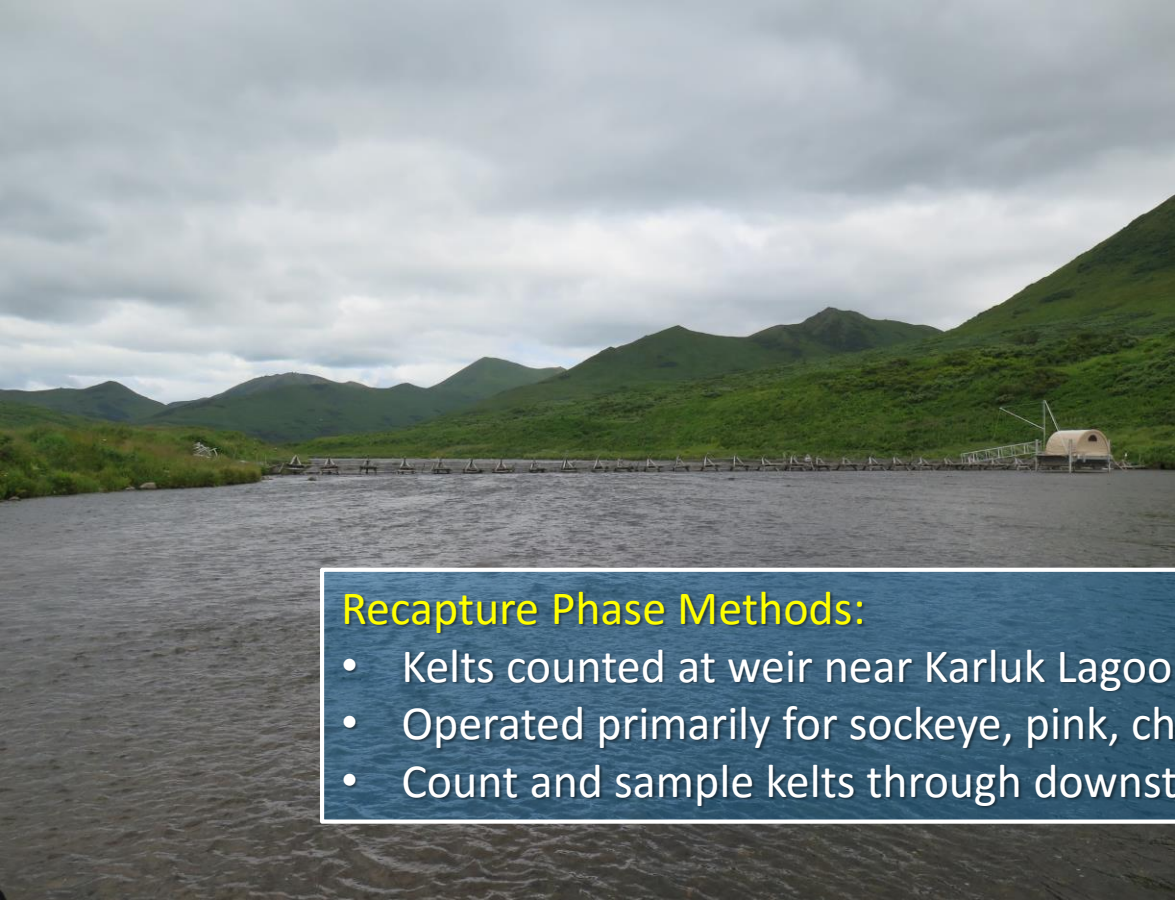
- Tag 130 steelhead with Floy T-anchor tags before or near peak spawning
- Peak spawning April 25-May 15, depending on spring conditions
- Use rod and reel for capture, rubber landing nets, 3 samplers for handling
- Collect ASL from all and genetics to archive
- Target 'Portage' area but explore upper and lower sections of drainage



Marking Phase Results:

- Tagged 75 steelhead over two trips: April 25-27 and May 8-10
 - Secondary mark: pectoral fin clip
- First trip only Portage, second trip pack rafted drainage
- ASL from all and axillary process clip for genetics (archived for now)
- Most fish tagged below portage
- Primary age class 3.2s, 77% 1st spawn, 21% 1st repeat, 2% multirepeat
- Granted full use of Koniag, Inc lands and facilities at Portage





Recapture Phase Methods:

- Kelts counted at weir near Karluk Lagoon
- Operated primarily for sockeye, pink, chinook by Commercial Fisheries Division
- Count and sample kelts through downstream and upstream traps, weir gates



Recapture Phase Results:

- 21 tagged/marked steelhead recovered: 28% recovery rate
 - Only 1 known male recap
- 4,624 steelhead kelts counted May 24 – September 9
 - Near record count
- 410 sampled for ASL, most age 3.2s



Continued-

- 2017 kelt count coincided with record 2016 run
- Angler reports verify
- Spring tagging also verifies

Population Assessment Results:

- Last population assessment 1991-1996, thesis study
- Overwintering habitat use and population assessment 1982-4 by Chatto
- Preliminary estimate of 8,803 (SE = 2,767) spawners
- Caveats: only 1 male recap, assumed low tagging survival
 - 62% (SE = 15) for females, 17% (SE = 12) males
 - Other possibilities, but most likely
- Near upper end of previous estimates and at high end of assumed run size: 4-8,000; similar to estimates by Begich

Management implications:

- Run size nearing some of the larger steelhead runs in AK
 - Unknown how variable
 - No indication of problems with run
 - Run supported winter subsistence fishery and sport harvest
 - Fall runs and spring spawning fall outside of almost all commercial and sport effort
- Mostly guided fishery; ~1,500 C&R annually
 - Likely room for fishery expansion, little interest in harvest now
- Some new interest by anglers
 - Local guides
 - Anglers previously fishing other areas: SEAK





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