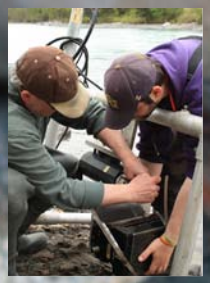
Species monitored

Sockeye Salmon

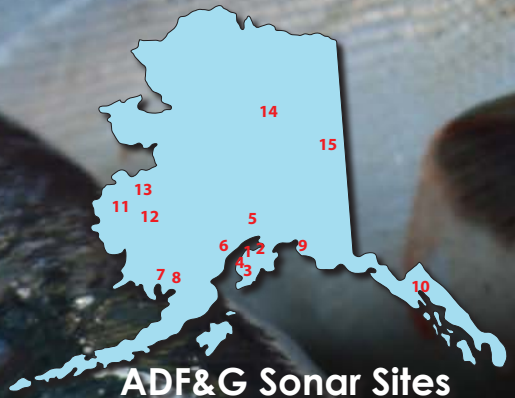
Upper Cook Inlet sockeye salmon spend one to two years in freshwater as juveniles and two to three years in the ocean before returning to the river to spawn. Fish lengths vary between rivers, but generally Upper Cook Inlet sockeye salmon that spend two years in the ocean grow 18 to 22 inches long and those that spend three years in the ocean grow 20 to 24 inches long.



ADF&G technicians deploy a sonar transducer along the north bank of the Kasilof River. At the Kenai and Kasilof sites a sonar transducer is deployed along each bank and aimed perpendicular to the current.

Sockeye salmon sonar operations begin on June 15 on the Kasilof River and on July 1 on the Kenai River and continue until after commercial fishing ends in mid August. On the Kenai River, sonar is only used to monitor late-run sockeye salmon.

Have a question, comment or suggestion? Contact us by phone, e-mail or snail mail.



ADF&G Sonar Sites

1. Kenai (RM 8.6)
2. Kenai (RM 19)
3. Anchor
4. Kasilof
5. Yentna
6. Crescent
7. Nushagak
8. Kvichak
9. Copper
10. Chilkat
11. Yukon (Pilot)
12. Aniak
13. Anvik
14. Sheenjek
15. Yukon (Eagle)

Alaska Department of Fish and Game
Division of Commercial Fisheries
43961 Kalifornsky Beach Rd., Suite B,
Soldotna, AK 99669

Upper Cook Inlet commercial fisheries sonar project leader, Dave Westerman:
(907) 260-2915
david.westerman@alaska.gov

To learn more about the Kenai and Kasilof River sockeye salmon sonar sites and other ADF&G sonar sites visit our website:
www.AlaskaFisheriesSonar.org

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Alaska Fisheries Sonar

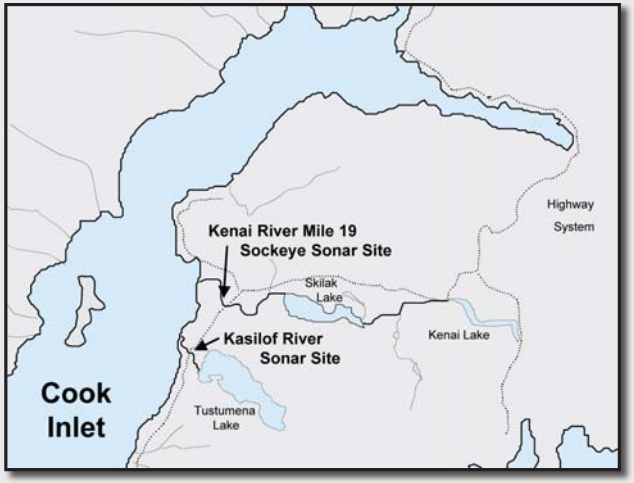
Sockeye Sonar in the Kenai and Kasilof Rivers

How biologists use sonar to generate sockeye salmon estimates on the Kenai Peninsula

The Kenai and Kasilof rivers are the most productive sockeye salmon rivers in Upper Cook Inlet. Droves of fishermen flock to harvest their share of the bounty from these Kenai Peninsula rivers and the marine waters around them. In the mean time, the Alaska Department of Fish and Game relies heavily on in-river sonar to monitor and manage these valuable salmon stocks. Fortunately, conditions for detecting sockeye salmon with sonar at the Kenai and Kasilof sockeye sonar sites are very good.

Where the sites are located

ADF&G sockeye sonar sites are located at Kasilof River Mile 8 and Kenai River Mile 19.



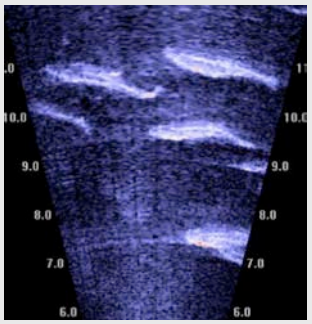
The Kenai RM 19 sockeye site is sometimes confused with a second sonar site on the Kenai at River Mile 8.6. The two Kenai River sites use different sonar detection methods and produce estimates for separate salmon species. The RM 19 site only produces estimates for sockeye salmon, while the RM 8.6 site only produces estimates for king salmon.

Where sonar detects fish

At the Kasilof and Kenai sockeye sites, sonar does not cover the middle of the river, but thoroughly covers sockeye migration areas. In swift rivers like the Kasilof and Kenai, sockeye salmon migrate close to shore. At the Kenai site, for example, sonar detection ranges extend 66 to 98 feet from each bank, while sockeye salmon migrate mostly within 16 feet of the bank.

Sonar operations

The Kenai and Kasilof sockeye sites use Dual frequency IDentification SONar (DIDSON). DIDSON detects fish using sound waves and produces ultra-sound like video images.



Technicians install a partial weir extending from the submerged sonar transducer to shore to prevent fish from swimming behind the transducer where they cannot be detected.

Sonar site fish wheels

Sonar cannot identify fish by species. To separate sonar-detected fish by species, the Kenai and Kasilof sockeye sites rely on fish wheels. A fish wheel scoops fish out of the river with large baskets and deposits them into a live box. Biologists examine the relative proportion of sockeye salmon to other species caught by the fish wheel to determine how many of the sonar-detected fish should be counted as sockeye salmon.

Most of the time, more than 95 percent of the fish migrating into the Kenai and Kasilof Rivers are sockeye salmon and sonar-detected fish can all be counted as sockeye without using the fish wheel to separate them by species. The sites do not separate sonar-detected fish by species until large numbers of pink salmon arrive, which is in early or mid August on even-numbered years.

Even when the sockeye sites do not need to separate sonar-detected fish by species, ADF&G runs the fish wheels every day to collect sockeye salmon sex and length data, and scale samples to determine age. ADF&G biologists use the sex, length and age data to identify long-term trends in sockeye salmon runs.