

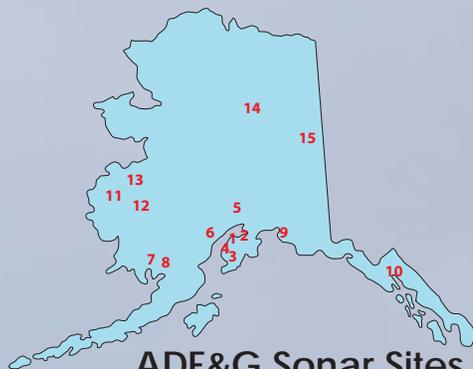
Sockeye, but not kings

Sonar can tell us when it sees a fish, but not whether that fish is a sockeye salmon or a king salmon. Because more than 95 percent of the salmon that migrate past the site are sockeye we can generate useful estimate data while counting all sonar-detected fish as sockeye. This is not the case for king, which trickle into the river in very small numbers alongside droves of sockeye.



When we operate

Sonar site operations begin about the middle of May and usually end July 31. Sonar site crew begin operations as soon as possible, sometimes snowmachining equipment to the site and chipping through shore ice to deploy the sonar transducers.



ADF&G Sonar Sites

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

Copper River Sonar Site—Miles Lake



Alaska Department of Fish and Game
Division of Commercial Fisheries

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For more information on the Copper River sonar site and other Alaska Department of Fish and Game fisheries sonar sites visit:
www.AlaskaFisheriesSonar.org

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

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Alaska Fisheries Sonar



Copper River Sonar Site — Miles Lake —

How Biologists Use Sonar to
Generate Sockeye Salmon
Estimates

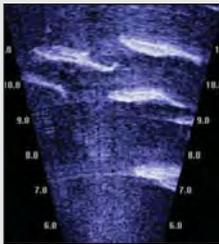


Why doesn't the sonar site...

Sockeye salmon runs pulse into the Copper River cloaked behind turbid glacial melt water. To gauge sockeye runs we can't see we have taken a lesson from one of Mother Nature's fish-finding experts. Many toothed whales find fish by emitting high-pitched calls and listening for returning echoes. Similarly, we have adopted sonar as a tool to detect Copper River sockeye not by sight, but by sound.

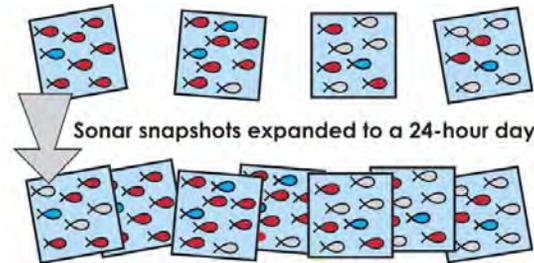
Site sonar technology

At the Copper River site we detect fish using a type of sonar technology known as DIDSON. DIDSON is the latest generation in fisheries sonar and records video of migrating salmon similar to images produced with ultrasound in hospitals.



Run sonar continually?

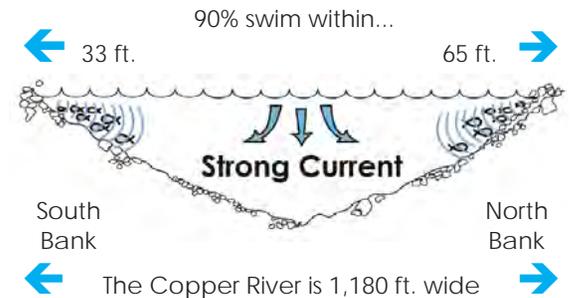
The difference in estimates generated while operating sonar continually and estimates generated by sampling is very small. But the difference in operational costs is huge! Instead of operating sonar continually, we record 10-minute snapshots hourly, which we then expand to represent a full 24-hour period.



Ensonify the middle of the river?

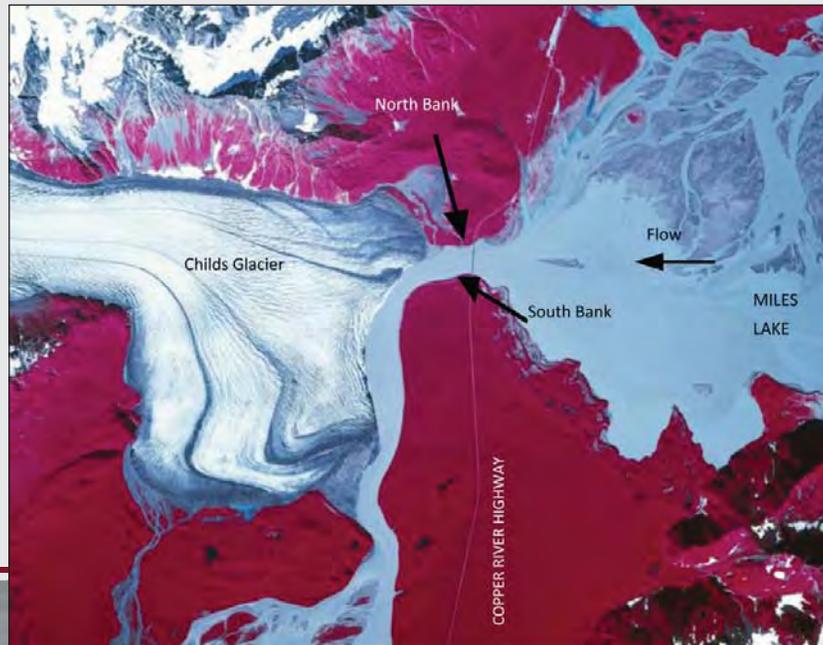
At the Copper River site, sockeye salmon don't swim up the middle of the river. The river's exceptionally strong currents push sockeye close to shore, where it takes less energy to swim upstream.

How close to the banks do fish swim?



Where the site is located

The sonar site is located below the Million Dollar Bridge between the Childs and Miles Lake Glaciers and approximately 33 miles upstream of the mouth of the Copper River.



A boat-mounted survey of the middle of the river found fish were all but entirely absent beyond the range of the DIDSON transducers.

