

## An international fishery



King Salmon



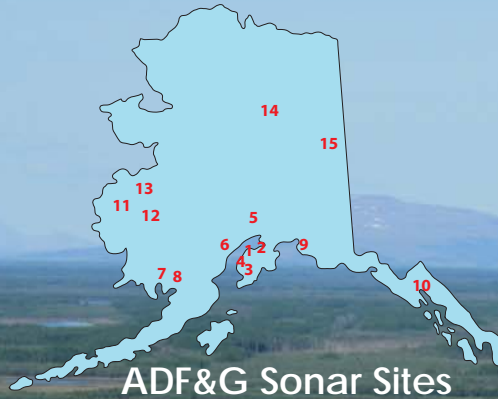
Chum Salmon

Many Yukon River king and fall chum salmon come from Canadian-origin stocks. These salmon are managed under an agreement between the US and Canada to ensure enough of them cross the border to spawn and to provide fishing opportunities on both sides of the border. Yukon River salmon are important to native heritage in both countries supporting 12,000 Alaskan subsistence fishermen and 4,000 Canadian First Nation fishermen.



At a fish camp between the sonar site and the community of Pilot Station natives dry and smoke strips of chum salmon (bottom) and other subsistence-harvested species such as sheefish (upper left).

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



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) |



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To learn more about the Yukon River Pilot Station salmon sonar site and other ADF&G sonar sites visit our website:

[www.AlaskaFisheriesSonar.org](http://www.AlaskaFisheriesSonar.org)

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## Yukon River Pilot Station Sonar Project

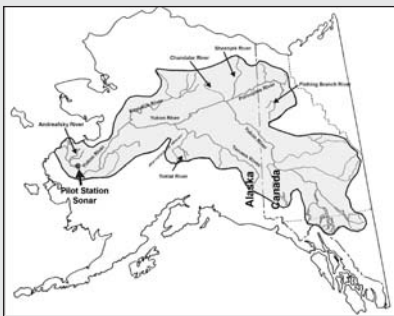
How biologists use sonar to generate Yukon River chum, king and coho salmon estimates



Estimating Yukon River salmon passage at the Pilot Station sonar site is a formidable challenge. The site is in a section of the river that is more than a half-mile wide, where large runs of multiple fish species arrive at the same time and where spring breakup flushes rafts of trees and heavy silt downstream. The Alaska Department of Fish and Game operates the site despite these challenges to provide fisheries managers with timely data on king, chum and coho salmon abundance. Managers also rely on other sources of information including test fisheries, reports from fishermen and other sonar sites in the Yukon drainage.

## Where the site is located

The Pilot Station sonar site is located approximately 121 miles upstream of the mouth of Yukon River and near the community of Pilot Station.



Sonar site operations generally begin June 1 and continue until September 7, but ice, flooding and debris during spring breakup sometimes delay the site's start date.



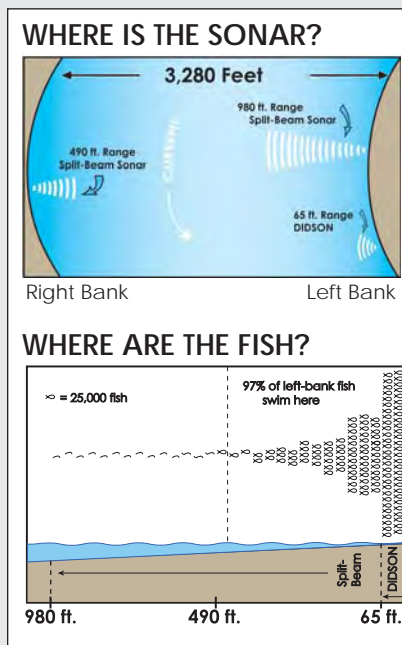
## Pilot Station sonar operations



The Pilot Station sonar site deploys two types of sonar transducers into the river to detect fish—a DIDSON transducer and two split-beam sonar transducers. Both use sound waves to detect fish, but at different frequencies.

## Looking where the fish swim...

Sonar only covers areas of the river where heavy fish migration occurs. Along the shallow left bank, 97 percent of fish swim within 490 feet of shore. And fish swim even closer to the deeper right bank. Biologists using gillnets and boat-mounted sonar in the middle of the river have found fish are almost entirely absent beyond the range of the sonar.



## Sonar site gillnet project

Sonar cannot identify fish by species. To separate sonar-detected fish by species, the Pilot Station sonar site relies on gillnets. Throughout the field season, sonar site crew complete 18 drifts per day. Fisheries biologists then examine the proportion of each species in the gillnet catches to determine how many of the sonar-detected fish should be counted as king, chum and coho salmon.

The crew drift the gillnets just downstream of the sonar so the catches closely represent the fish passing through the sonar beam. The goal of the sonar site gillnets is to catch a representative sample of the fish being detected by the sonar—not to catch as many fish as possible.



Gillnetting crew release fish quickly to minimize the number of fish that die after being caught in the net. Fish that do not survive are donated to the nearby community of Pilot Station for subsistence use.

