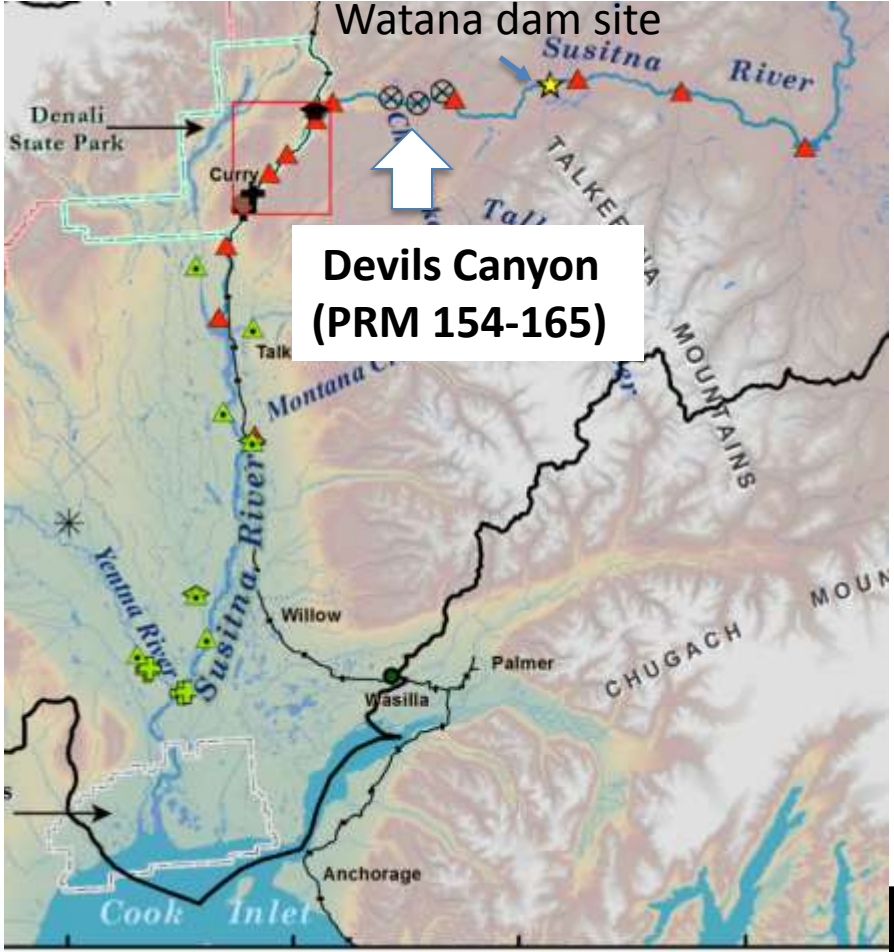


# Estimating the abundance of salmon above Devils Canyon and Watana on the Susitna River



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# Introduction

- **Purpose of presentation:**
  - Overview of the methods and results for determining distribution and relative abundance of salmon above DC and Watana
- **Why Relevant:**
  - Interdependent studies of AEA's baseline program need this information to support the assessment of potential impacts of the proposed facility.

## Background

- Salmon escapement studies conducted in 2012, 2013, & 2014.
- Primary objectives are to determine spawner distribution and abundance.
- Above DC, a large basin and relatively low abundance of salmon creates a substantial challenge for achieving the objectives of the study plan.
- Variety of fish sampling techniques used to assess passage in and above DC.



# Approaches to estimating Distribution & Abundance

## 1. Multi-beam Sonar Counts.

- Continuously monitor passage at Watana over the migration period

## 2. Aerial Survey Visual Counts.

- Systematic, iterative surveys of tributaries over the migration period

## 3. Application of tags for Destinations & Mark Rate.

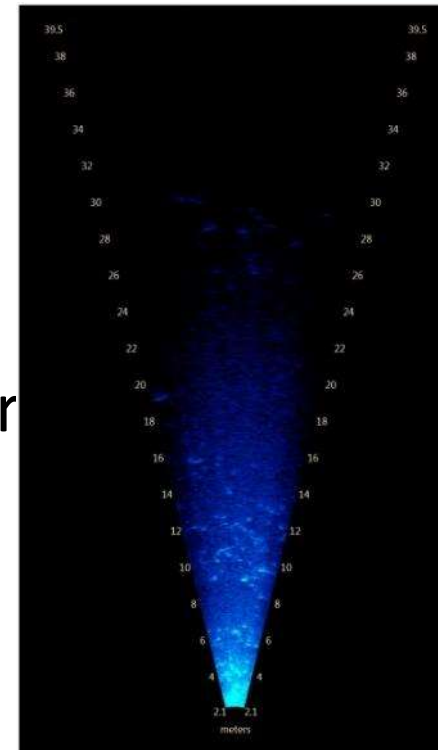
- Tag fish, Examine at destination, Calculate

# Approaches to estimating Distribution & Abundance

- Each method has some level of uncertainty; assumptions must be made about their representativeness of the population at large.
- The combination of these methods allows us to describe the distribution of spawners and gauge the relative magnitude of abundance.
- AEA's assessment is that this level of information is sufficient for the purpose of informing analyses of potential impact.

## Results / Observations

- 1,792 and 1,578 radio-tagged Chinook released at Lower and Middle River fishwheels, respectively.
- 17 tags pass DC, and 7 pass Watana.
- For 2013 and 2014 combined, aerial spawner surveys counted a total of 100 Chinook above DC, with 5 of those above Watana.
- Sonar at Watana provides a net upstream count of 24 salmon-sized targets (2014).



## Questions & Discussion

