




Minimum Habitat Methodology

Restoration Goal Technical Feedback Meeting
July 19, 2012

Preliminary draft – subject to change



Minimum Habitat Methodology

- ESHE**
 - Minimum bookend amount (area) of suitable habitat for juvenile Chinook
- SRH-2D**
 - Estimate the amount of suitable habitat available currently
- Overall**
 - Estimate the differences between 1 and 2 to identify a deficit or surplus of available suitable habitat.



How do we define habitat?

- Quantity
- Quality
- For each life stage and population (time and space)
- Fish accessibility

Habitat Terms

Total Inundated Area: Amount of land water covers

Suitable Habitat: Inundated land that meets fish criteria (i.e. depth, velocity, cover, etc.)

Available Suitable Habitat:
Inundated land that meets fish criteria currently existing in the SJRRP area



Simplified ESHE Process

- Calculate Number of Fish in Reach I
- Determine fish timing in each downstream reach
- Use survivals to determine fish populations in downstream reaches
- Use a growth function to determine fish size in each reach
- Combine fish size with the number of fish and a territory size relationship to determine required suitable habitat



Inputs

- Juvenile population numbers
- Survivals
- Juvenile timing, migration speed, and entry date
- Relationships between juvenile size, time, habitat amount and habitat quality
- Depth Criteria
- Velocity Criteria
- Cover Delineation
- Flow scenarios





Available Habitat and Integration Process

- 2D hydraulic modeling to determine currently available suitable habitat given criteria
- Combine available suitable habitat by water year type
- Subtract available suitable habitat from needed suitable habitat to determine habitat deficit



Today's Results

of Scenarios

- Results for today will be ranges of suitable habitat

12

- ESHE scenarios

6

- Hydraulic modeling

Ranges

- Habitat deficit results



Your Input

- Additional input data to use
 - Fisheries Biology
 - Available habitat criteria
 - Cover data
- Assumptions and Limitations