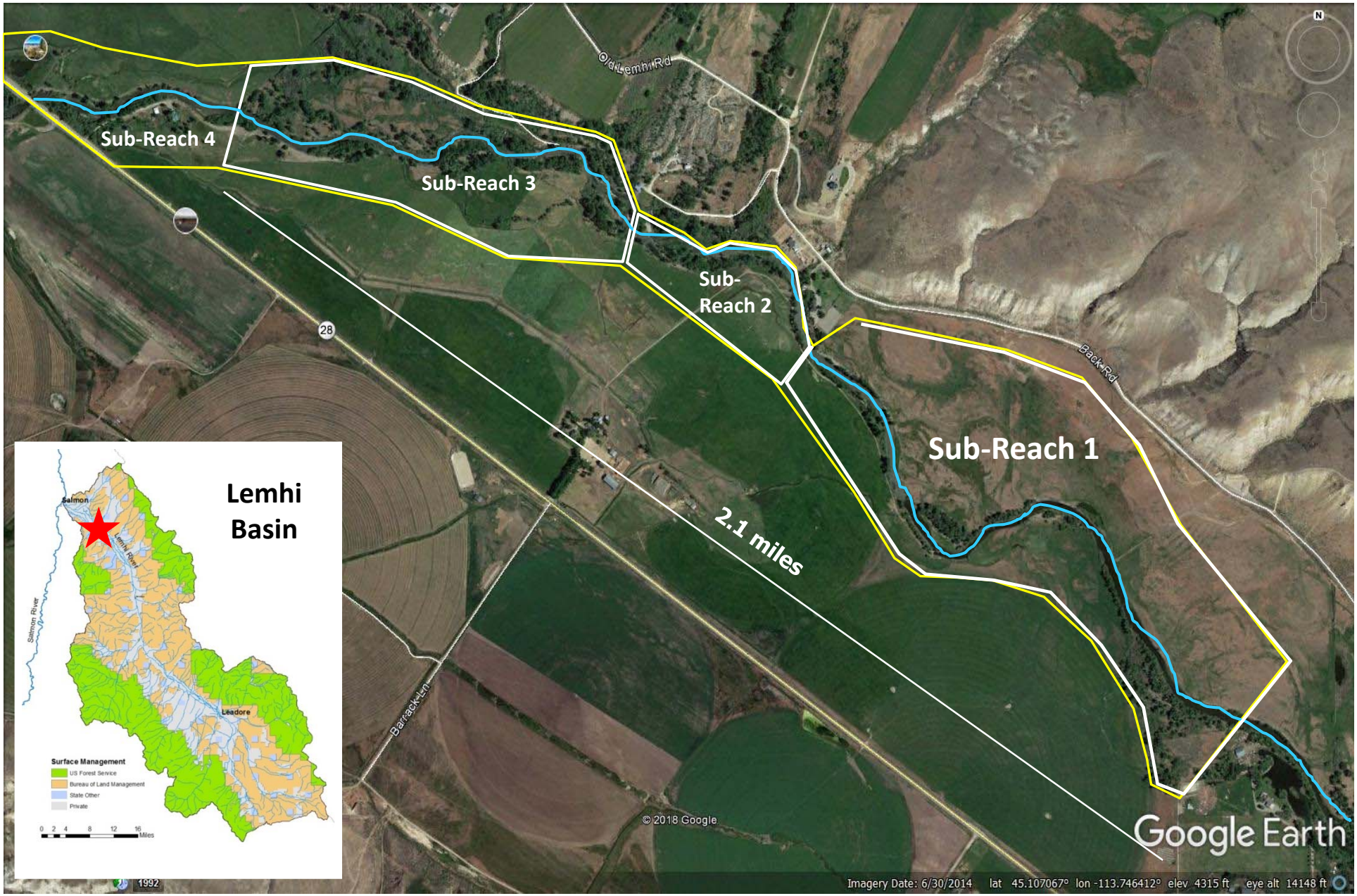
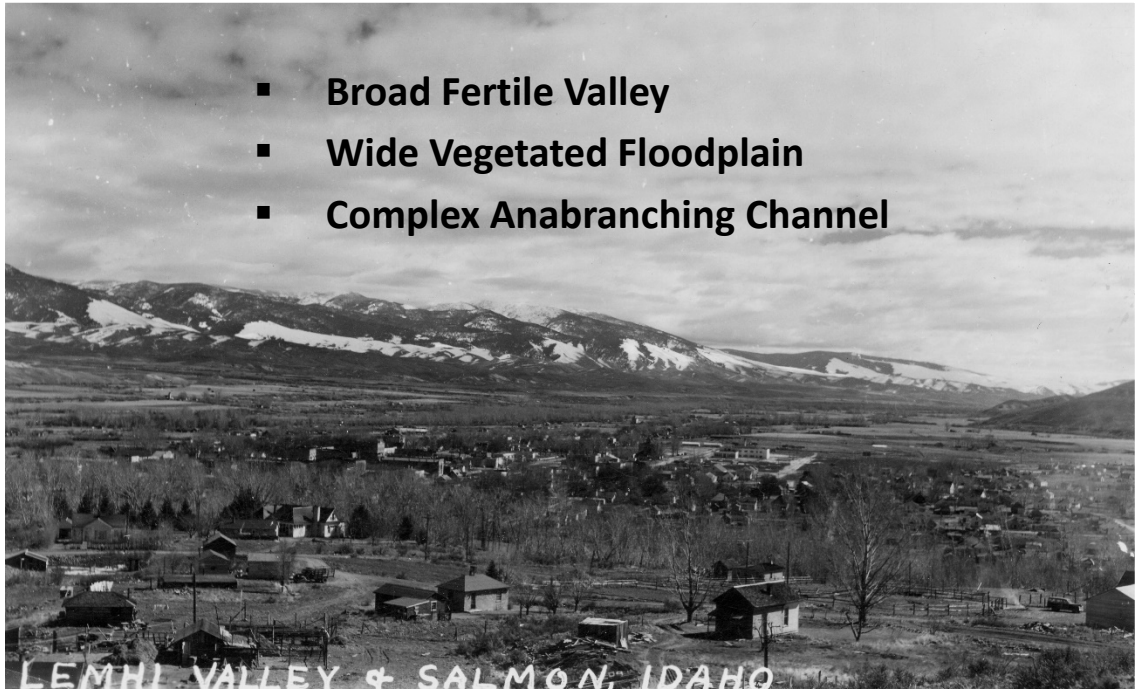
Lower Lemhi River Project Reach





- **Broad Fertile Valley**
- **Wide Vegetated Floodplain**
- **Complex Anabranching Channel**

Historical Perspective

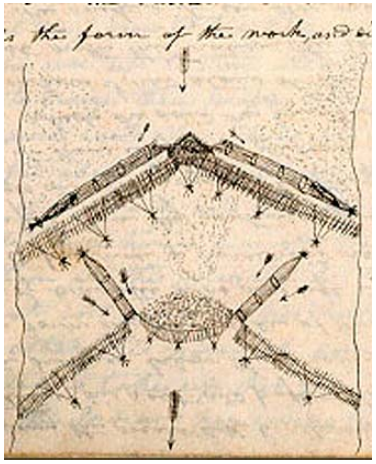
Lemhi River

Reference to Anabranched Watershed

.... he found the weir extended across four channels of the river which was here divided by three small islands.....

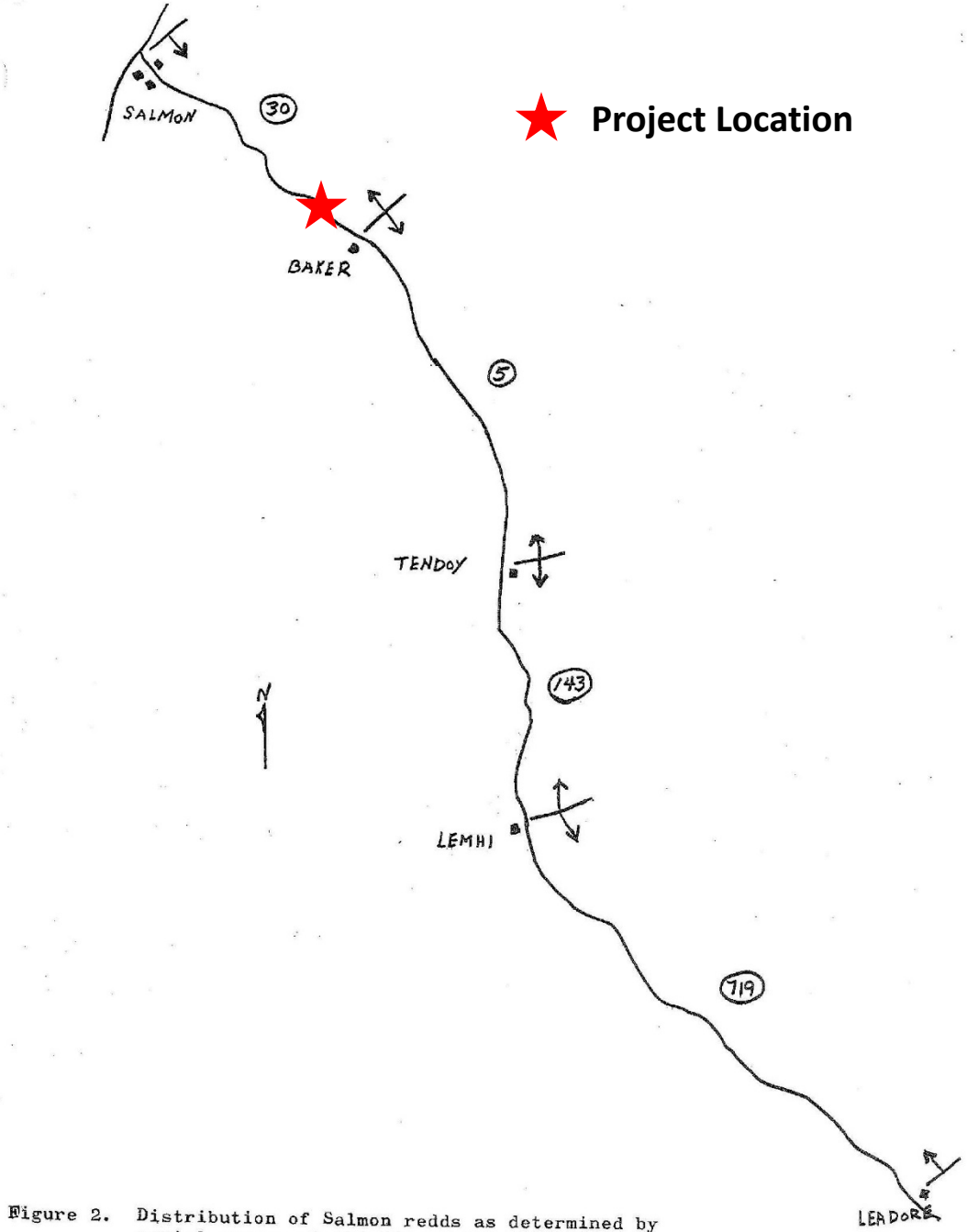
First recorded historical observation of Lemhi Shoshone-Bannock Fishing

(Journals of the Lewis and Clark Expedition, Moultin 1998)



Historical Perspective

Lower Lemhi Mainstem



★ **Project Location**

Figure 2. Distribution of Salmon redds as determined by aerial survey, Lemhi River, September 6, 1957.

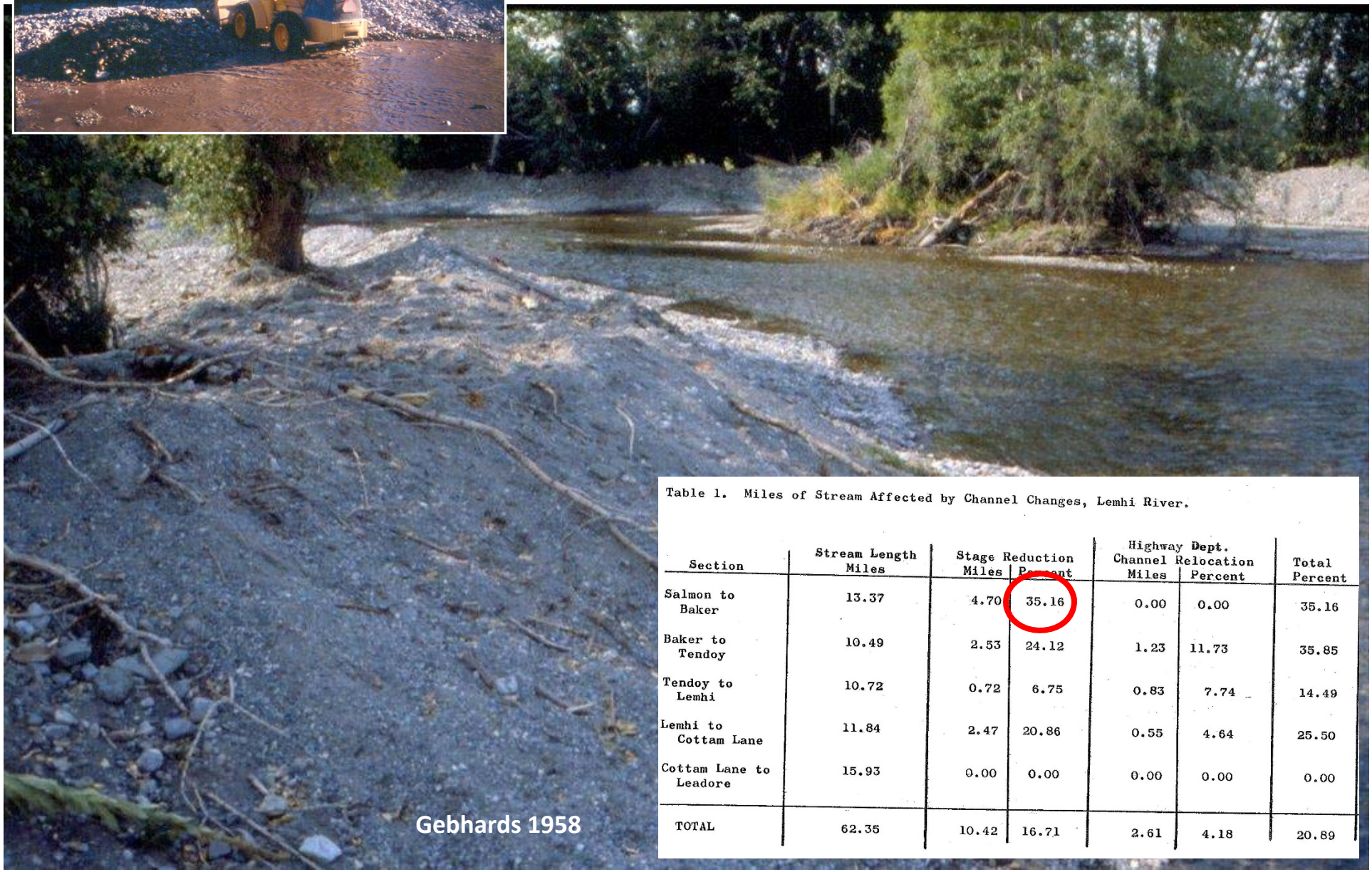
Historical Perspective

Lemhi Channelization

Railroad was removed in 1939, and transferred to the State of Idaho 1952. The highway engineers preferred to "move the river" rather than construct the many bridges required.

Historical Perspective

Lemhi Channelization



Gebhards 1958

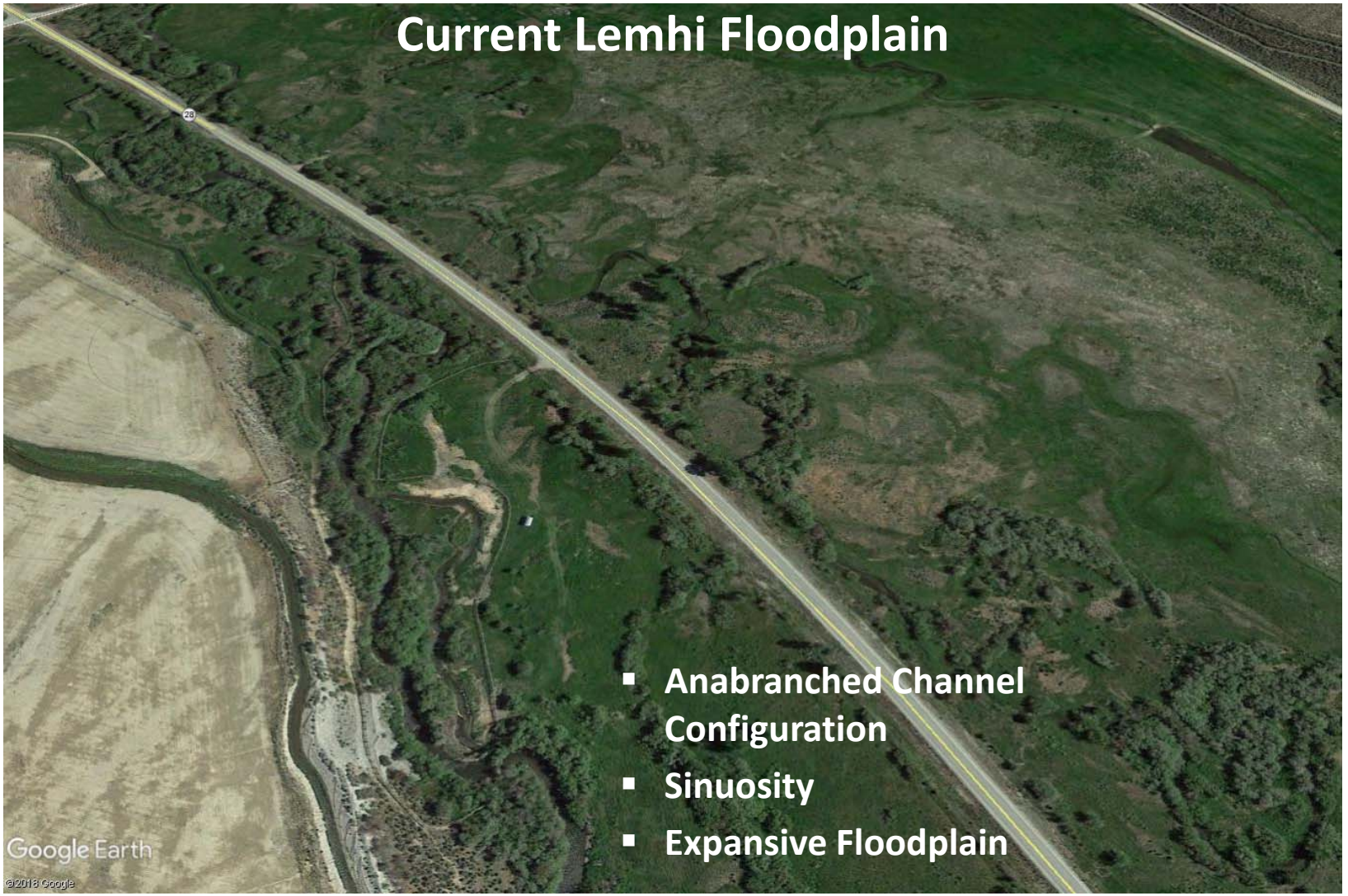
Table 1. Miles of Stream Affected by Channel Changes, Lemhi River.

Section	Stream Length Miles	Stage Reduction Miles	Stage Reduction Percent	Highway Dept. Channel Relocation Miles	Highway Dept. Channel Relocation Percent	Total Percent
Salmon to Baker	13.37	4.70	35.16	0.00	0.00	35.16
Baker to Tendoy	10.49	2.53	24.12	1.23	11.73	35.85
Tendoy to Lemhi	10.72	0.72	6.75	0.83	7.74	14.49
Lemhi to Cottam Lane	11.84	2.47	20.86	0.55	4.64	25.50
Cottam Lane to Leadore	15.93	0.00	0.00	0.00	0.00	0.00
TOTAL	62.35	10.42	16.71	2.61	4.18	20.89

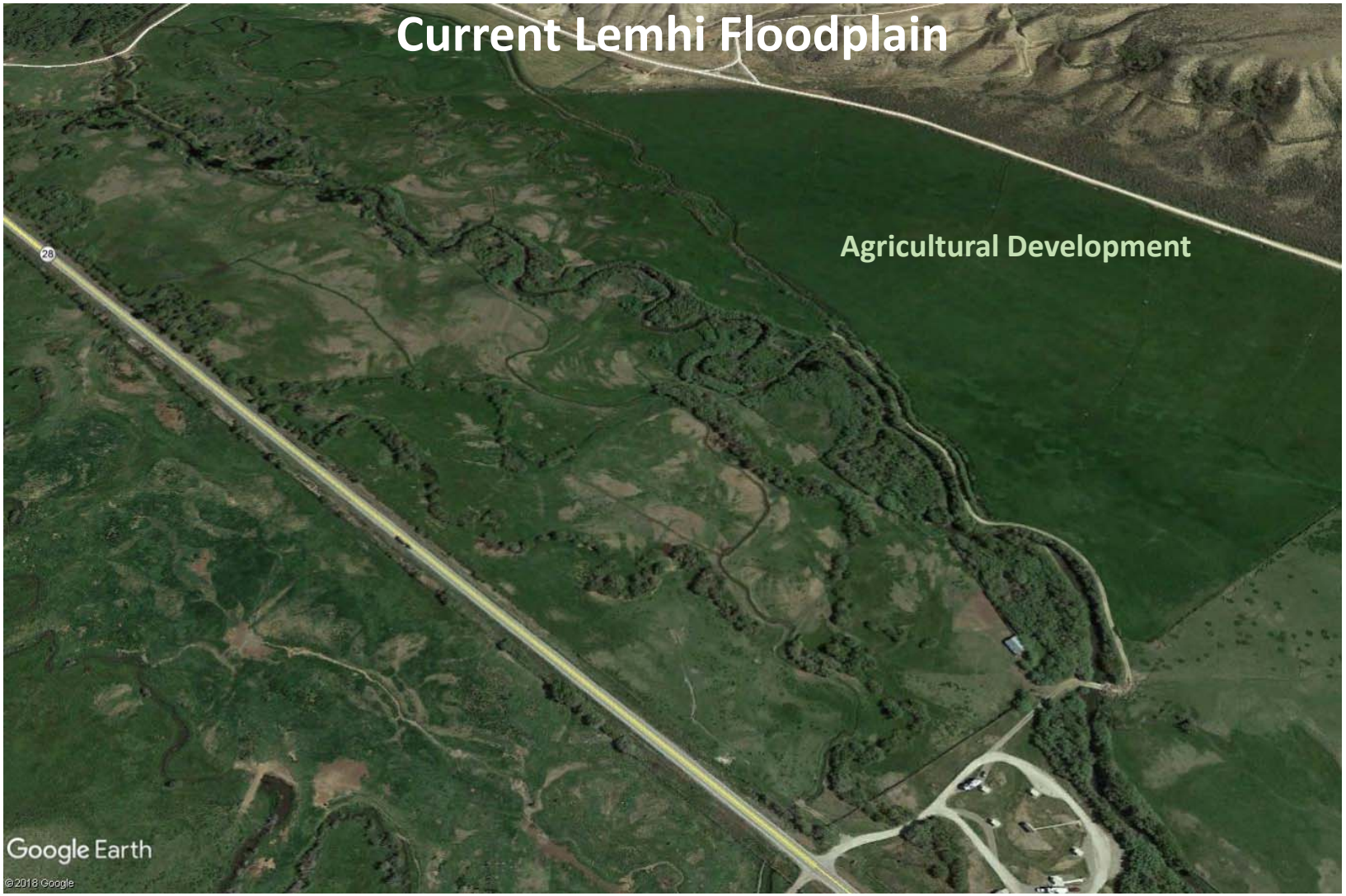
Historical Perspective

Current Lemhi Floodplain

Historical Perspective



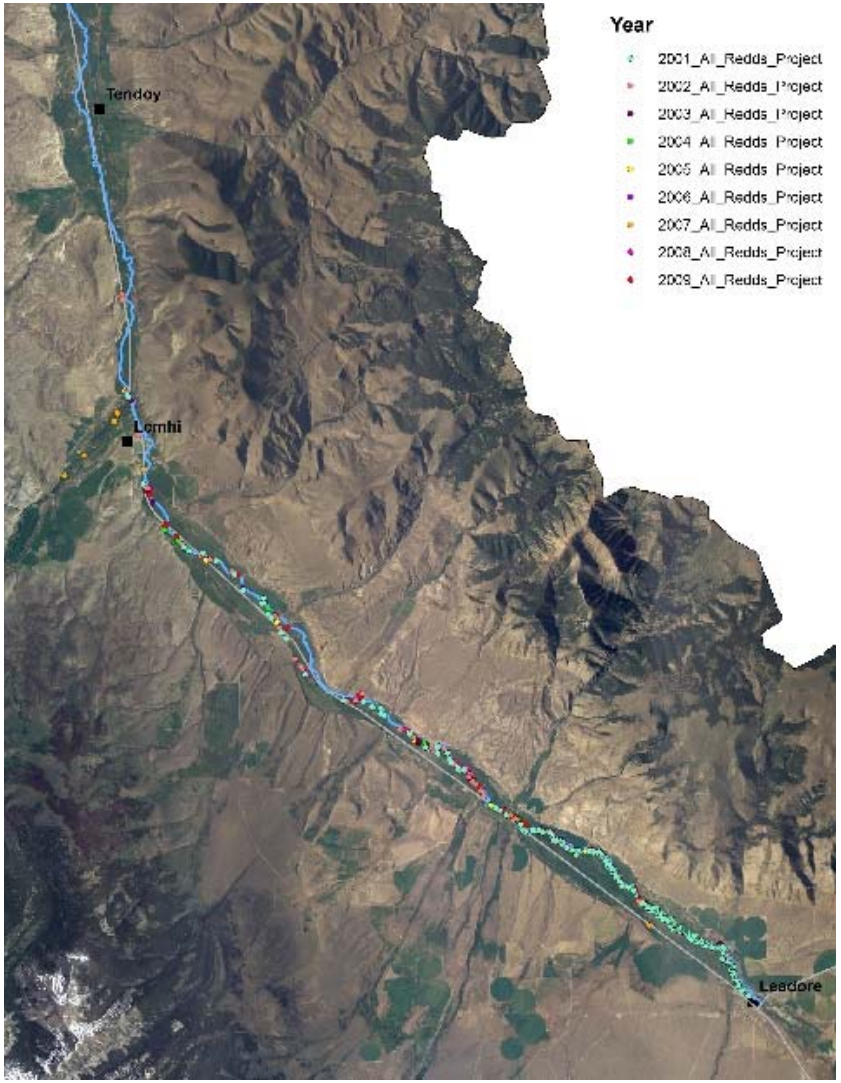
Historical Perspective



Lemhi Chinook Salmon

Life Stage Specific Distribution

Adult Production



Lemhi RST

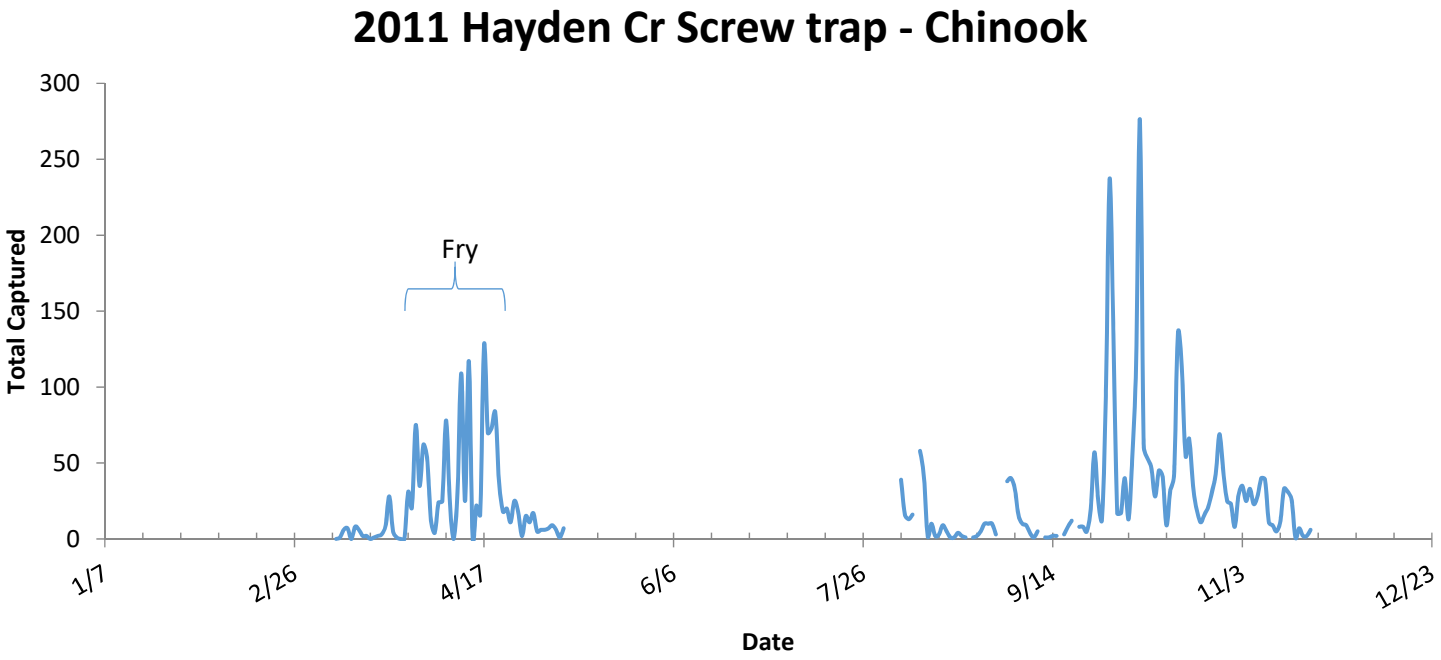
Early Migration

- Spawning Upper River/Hayden
- "Early" Parr
  Fry Displacement (20 – 45k)
  - Hayden Creek
  - Upper Lemhi

Lemhi Chinook Salmon

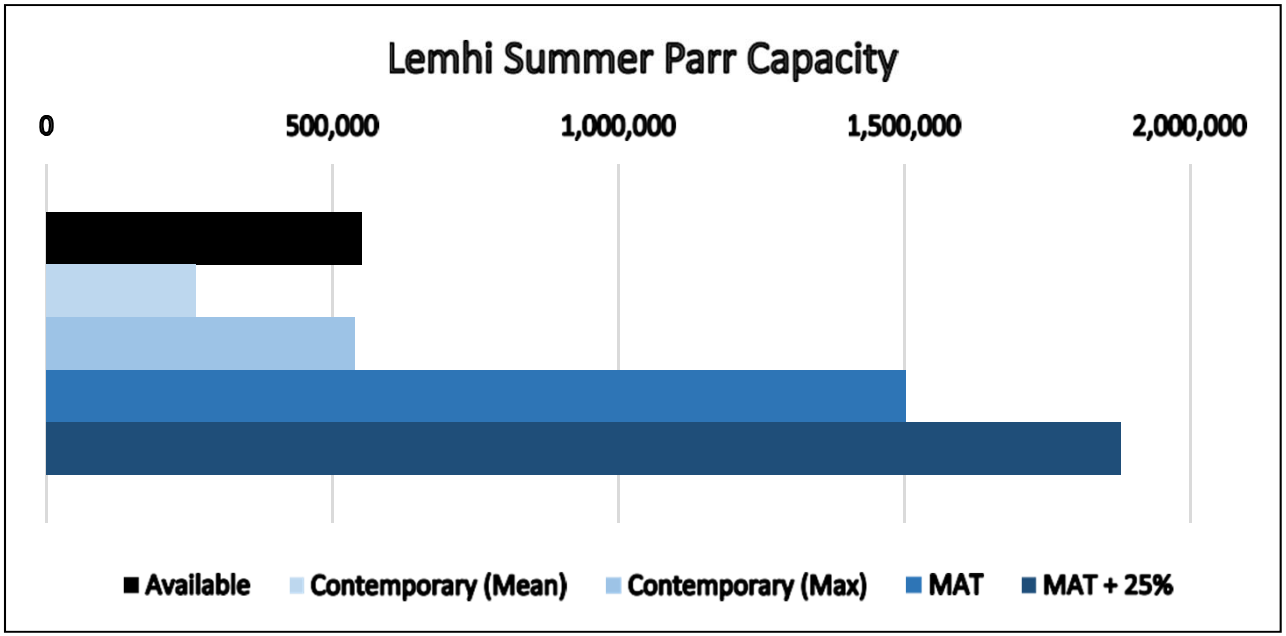
Life Stage Specific Distribution

Juvenile outmigration



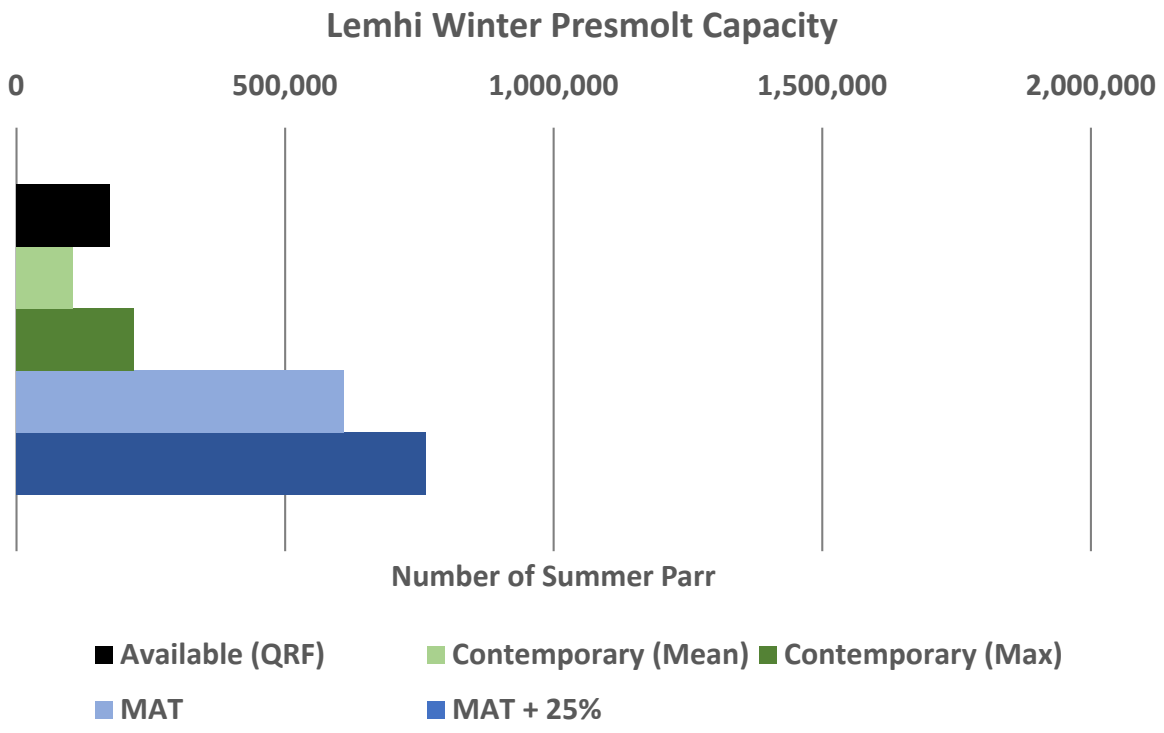
Life Stage Specific Capacity – Lemhi

Summer Parr

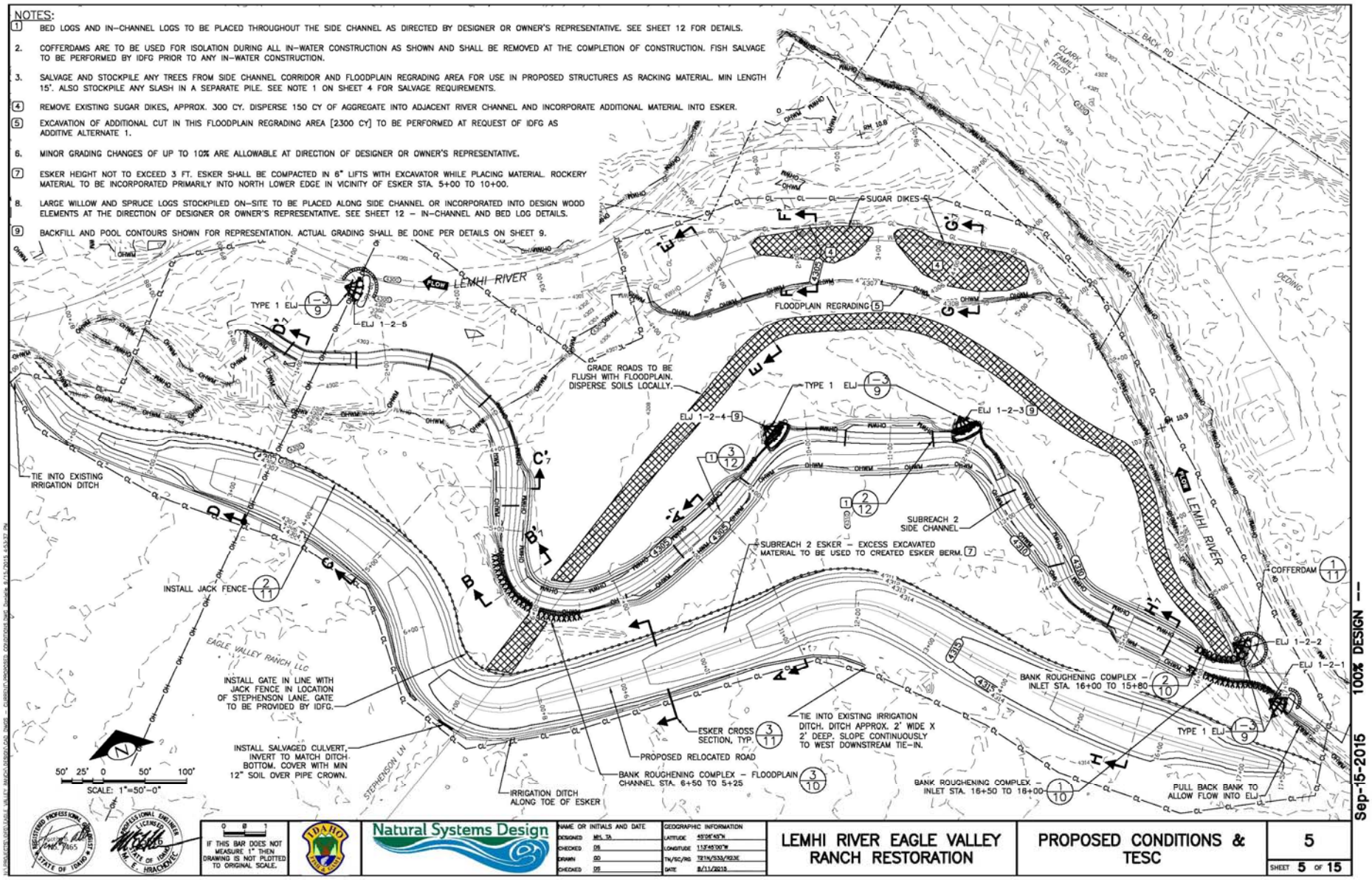


Life Stage Specific Capacity – Lemhi

Summer Parr



Project Updates; **Sub-Reach 2**



Project Updates

Sub-Reach 2

ELJ

Channel Inlet

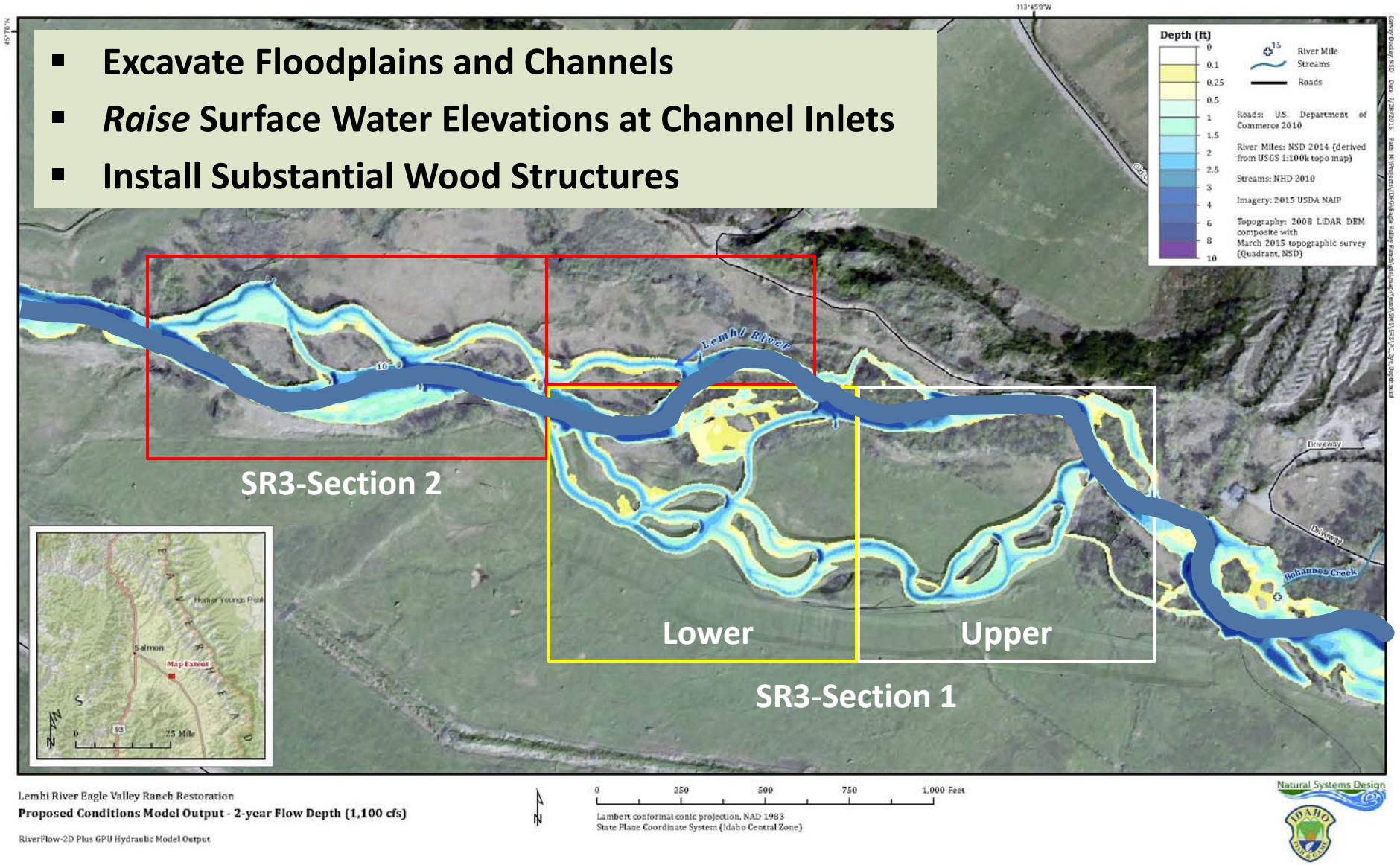
Channel

- Watered 1750’ Side Channel
- 5 Engineered Log Jams
- 375’ Bank Roughening
- 15 Habitat Structures

* 2016 Completion

Project Updates

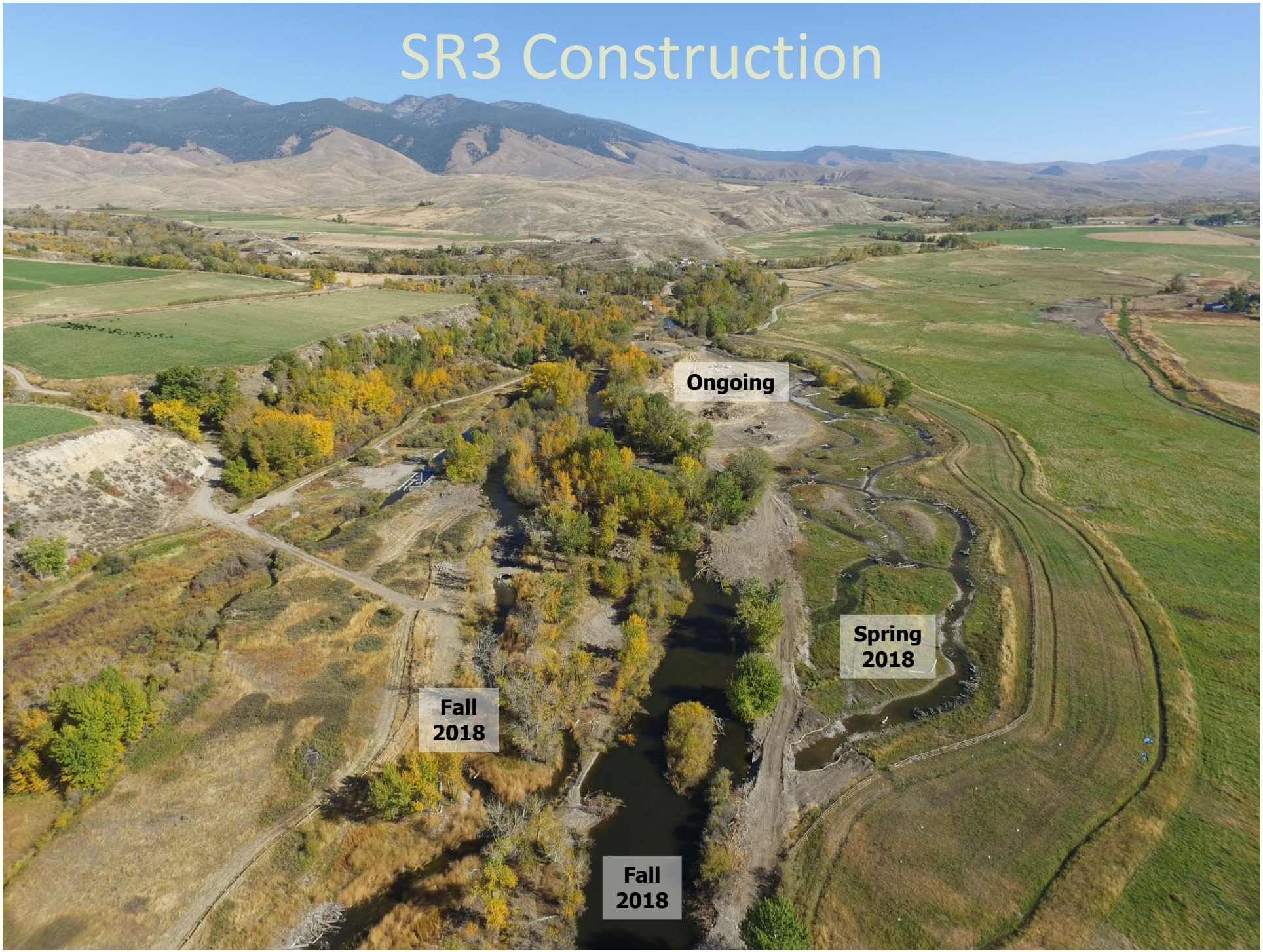
Sub-Reach 3



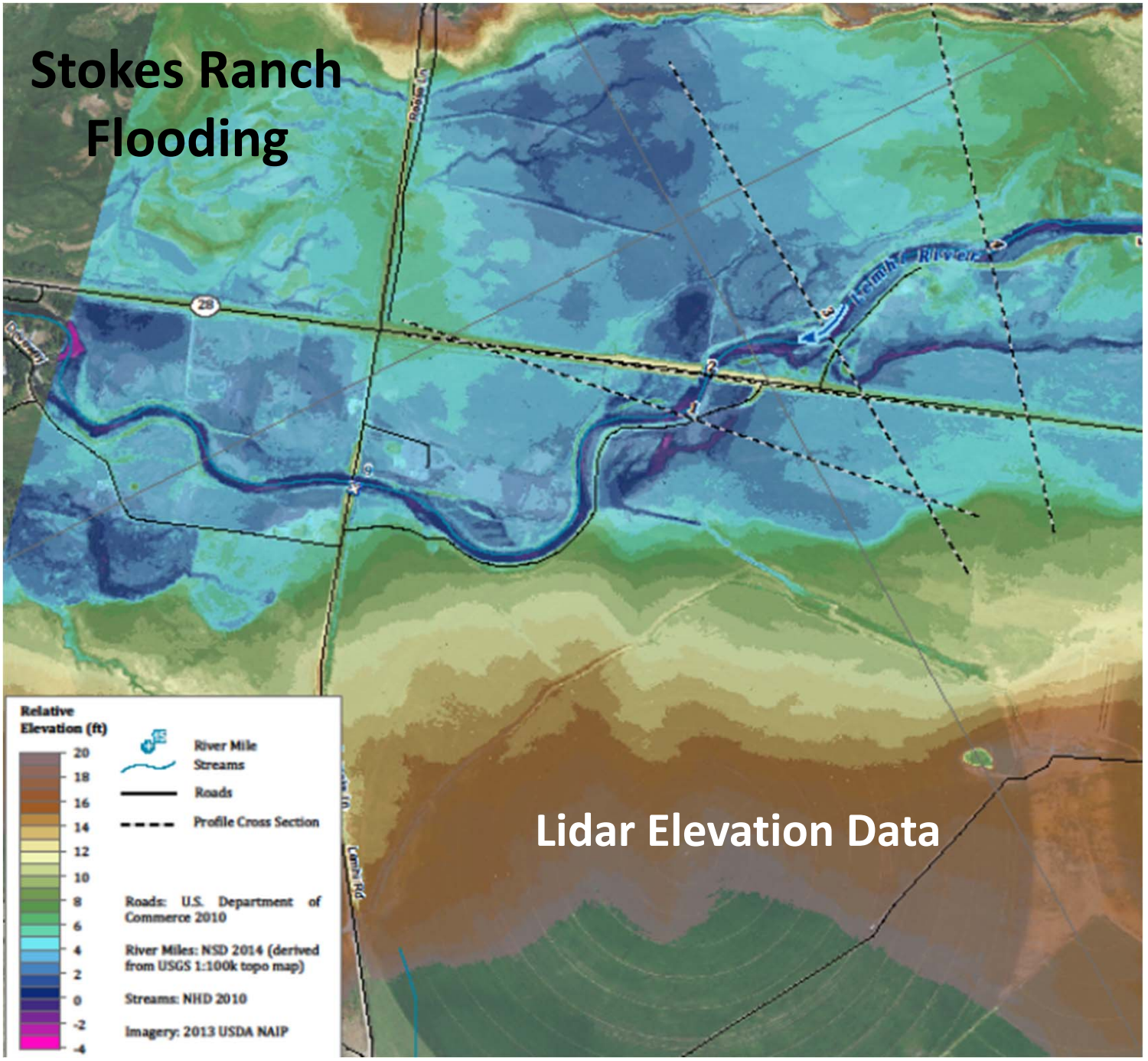
SR3 – Section 1 Pre Construction

SR3 – Section 1 Construction

SR3 Construction



Project Updates


Stokes Ranch Flooding
Lidar Elevation Data
Relative Elevation (ft)
20
18
16
14
12
10
8
6
4
2
0
-2
-4
River Mile
Streams
Roads
Profile Cross Section
Roads: U.S. Department of Commerce 2010
River Miles: NSD 2014 (derived from USGS 1:100k topo map)
Streams: NHD 2010
Imagery: 2013 USDA NAIP

Stokes Ranch

Prior Scour and Erosion *1992*

Stokes Ranch

Prior Scour and Erosion *2014*

Stokes Ranch

IDFG Bank Treatment


Stokes Ranch Flooding
2017
Ranch
Road
Riprap


Flooding 2018
Riprap

Flooding 2018

Flooding 2018

Temporary Flood Control

- IDFG Supported
- Collaborated with Lemhi County
- Reduced Overland Flooding

Temporary Flood Control

Project Goals and Objectives

Habitat Goal – Improve habitat capacity by increasing floodplain interaction and channel complexity

Objectives

Phase I – *May 2019 Implementation*

- **Install bioengineered structures (LWD) to add habitat complexity while stabilize eroding banks - control downstream flooding**
- **Incorporate structures into Phase 2**

Phase 2 – *2020 Implementation*

- **Develop lateral floodplain habitat/anabranched channels**
- **Improve mainstem stream sinuosity**
- **Add complexity (LWD) side channel/mainstem**
- **Develop floodplain interaction**