State of Alaska
Department of Fish and Game
Division of Sport Fish

Nomination Form
Anadromous Waters Catalog

M C

57

Region: Southcentral

USGS Quad(s): Seward B-7

AWC Number of Water Body: 244-30-10010-2225-0010

Name of Water body: Lower Trail Lake ☒ USGS Name ☐ Local Name

☒ Addition ☐ Deletion ☐ Correction ☐ Backup Information

For Office Use

Nomination # 140318	James J Hasbrouck	Fisheries Scientist	10/3/2014 Date
Revision Year: 2015		Habitat Operations Manager	10/3/14 Date
Revision to: Atlas ____ Catalog ____ Both ✓		AWC Project Biologist	9/12/14 Date
Revision Code: B-2	TA	GIS Analyst	10/15/14 Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
(5) Sockeye	July 2013		✓		☒
(180) Chinook	July 2013		✓		☒
(5C) Coho	July 2013		✓		☒
					☐
					☐

IMPORTANT: Provide all supporting documentation that this water body is important for the spawning, rearing or migration of anadromous fish, including: number of fish and life stages observed; sampling methods, sampling duration and area sampled; copies of field notes; etc. Attach a copy of a map showing location of mouth and observed upper extent of each species, as well as other information such as: specific stream reaches observed as spawning or rearing habitat; locations, types, and heights of any barriers; etc.

Comments Sampling was conducted using minnow traps and beach seining.

Add Chinook, Coho, & Sockeye salmon REARing to lake.

Name of Observer (please print): John R. Stevenson

Signature: John R. Stevenson

Agency: BioAnalysts, Inc.

Address: 16541 Redmond Way, #332
Redmond WA 98052

Date: 9/12/14

ALASKA DEPT. OF FISH & GAME
SEP 05 2014

This certifies that in my best professional judgment and belief the above information is evidence that this waterbody should be included in or deleted from the Anadromous Waters Catalog.

Signature of Area Biologist: _____ Date: _____

Name of Area Biologist (please print):

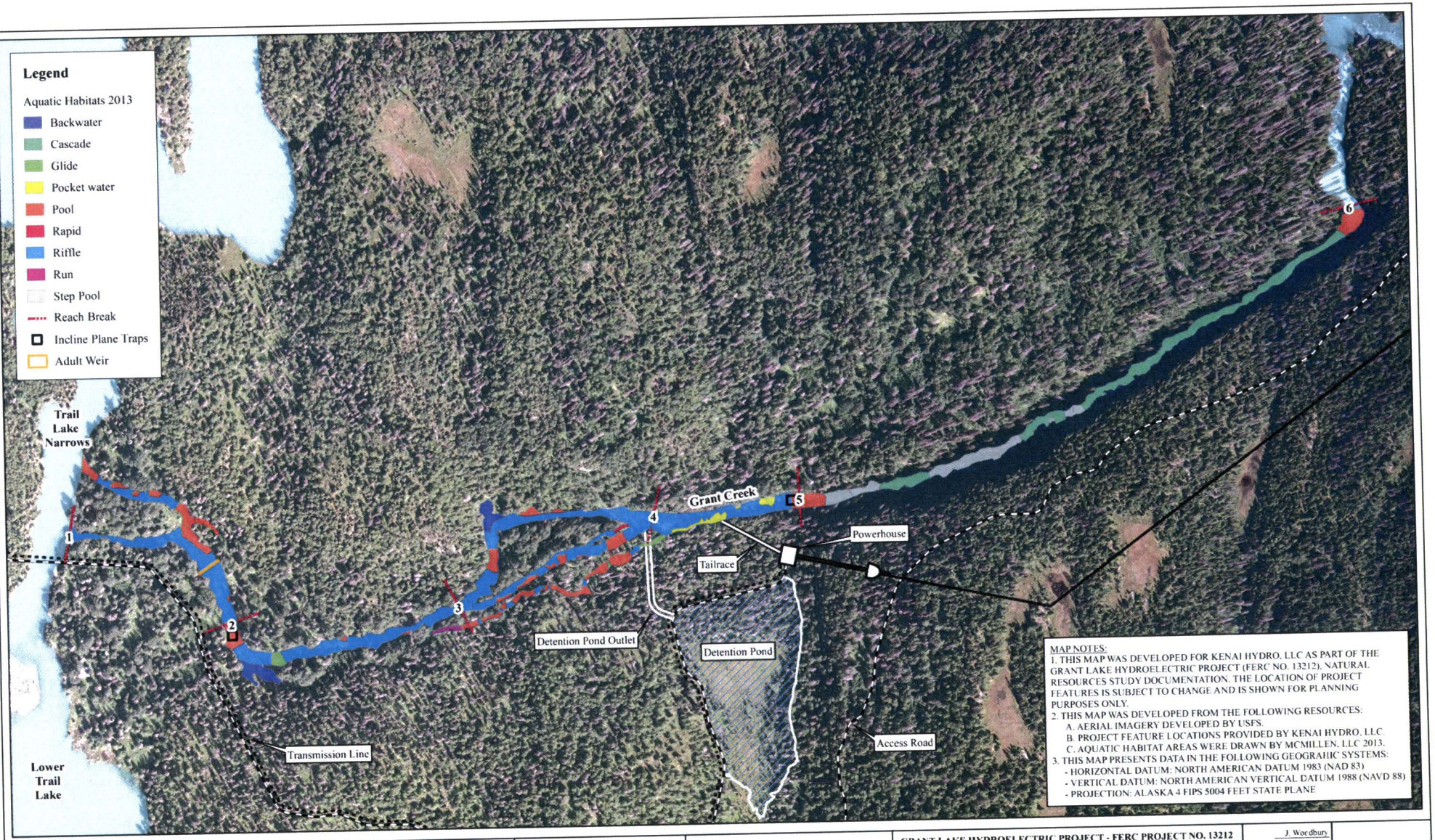
Revision 11/13

Additional Notes for the sampling of Grant Creek (244-30-10010-2225-3004) and Lower Trail Lake (244-30-10010-2225-0010) by BioAnalysts, Inc. in 2013.

In Grant Creek, adult salmon were captured and handled at a weir located approximately 200 meters upstream of the confluence. Adult Chinook, sockeye, coho and pink were captured, and a portion of the Chinook, sockeye and coho populations were radio- and floy-tagged. Telemetry, carcass, and visual surveys were conducted once per week until the end of the spawning period for each species. Overall abundance was estimated using the Area-Under-the-Curve method.

Juvenile abundance and distribution was assessed using 24 hour minnow sets (April-October), nighttime snorkeling (April and May), beach seining (April and May), and the use of two inclined plane traps.

All fish captured during the study have been entered into the ADFG FRP database, which is being provided along with the AWC nomination forms, as is maps of spawning locations, visual and telemetry locations of adults, and sample locations.



N

0 150 300 600 Feet

McMillen, LLC

Homer Electric Association, Inc.
A Touchstone Energy® Cooperative

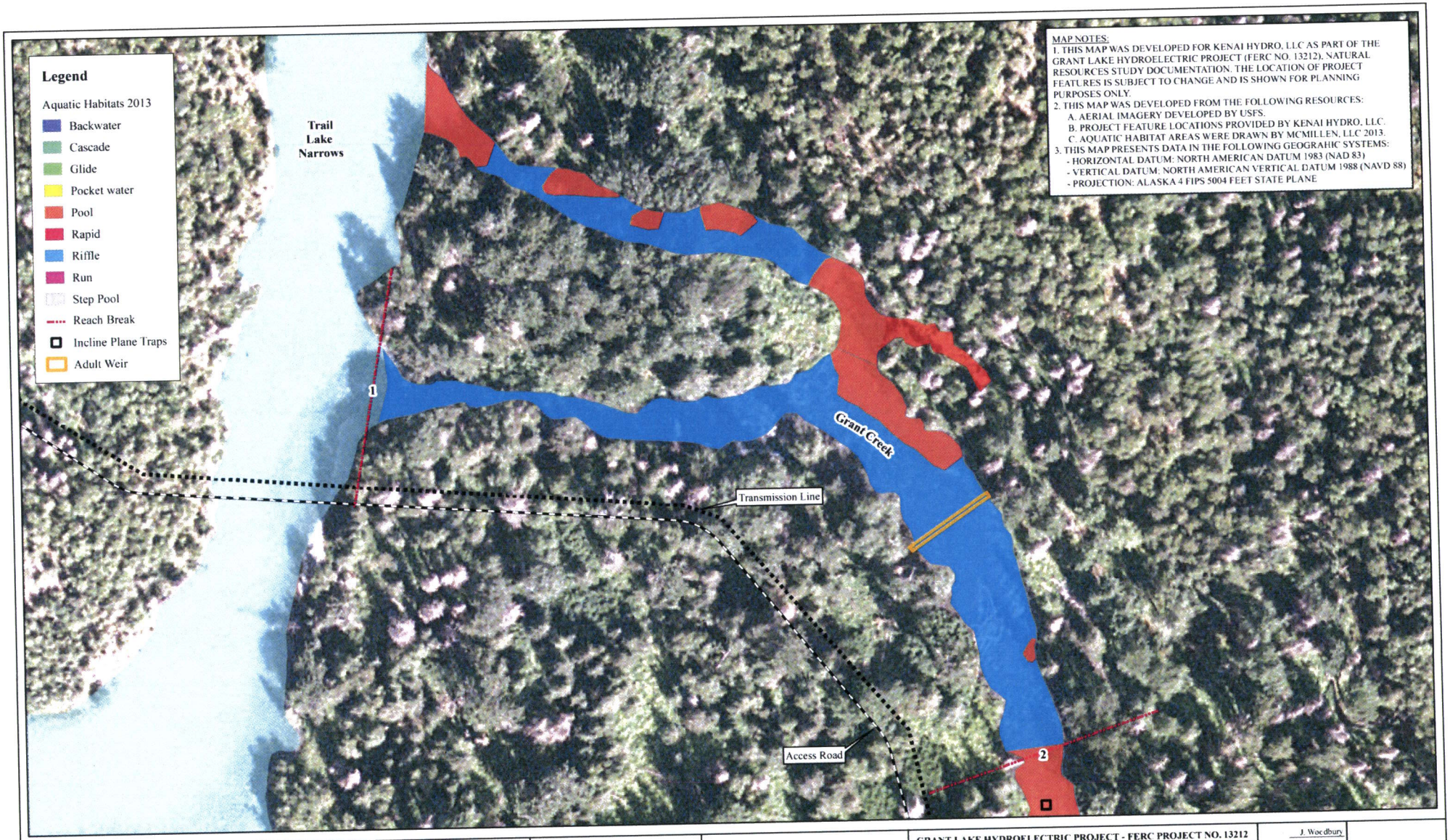
GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO. 13212

GRANT LAKE NATURAL RESOURCES STUDY

Figure 3.1-1
Grant Creek Aquatic Habitats
Reaches 1 - 5

J. Woodbury
J. Woodbury
M. Miller
2-18-2014

1:3,300



N

0 25 50 100 Feet

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A Touchstone Energy® Cooperative

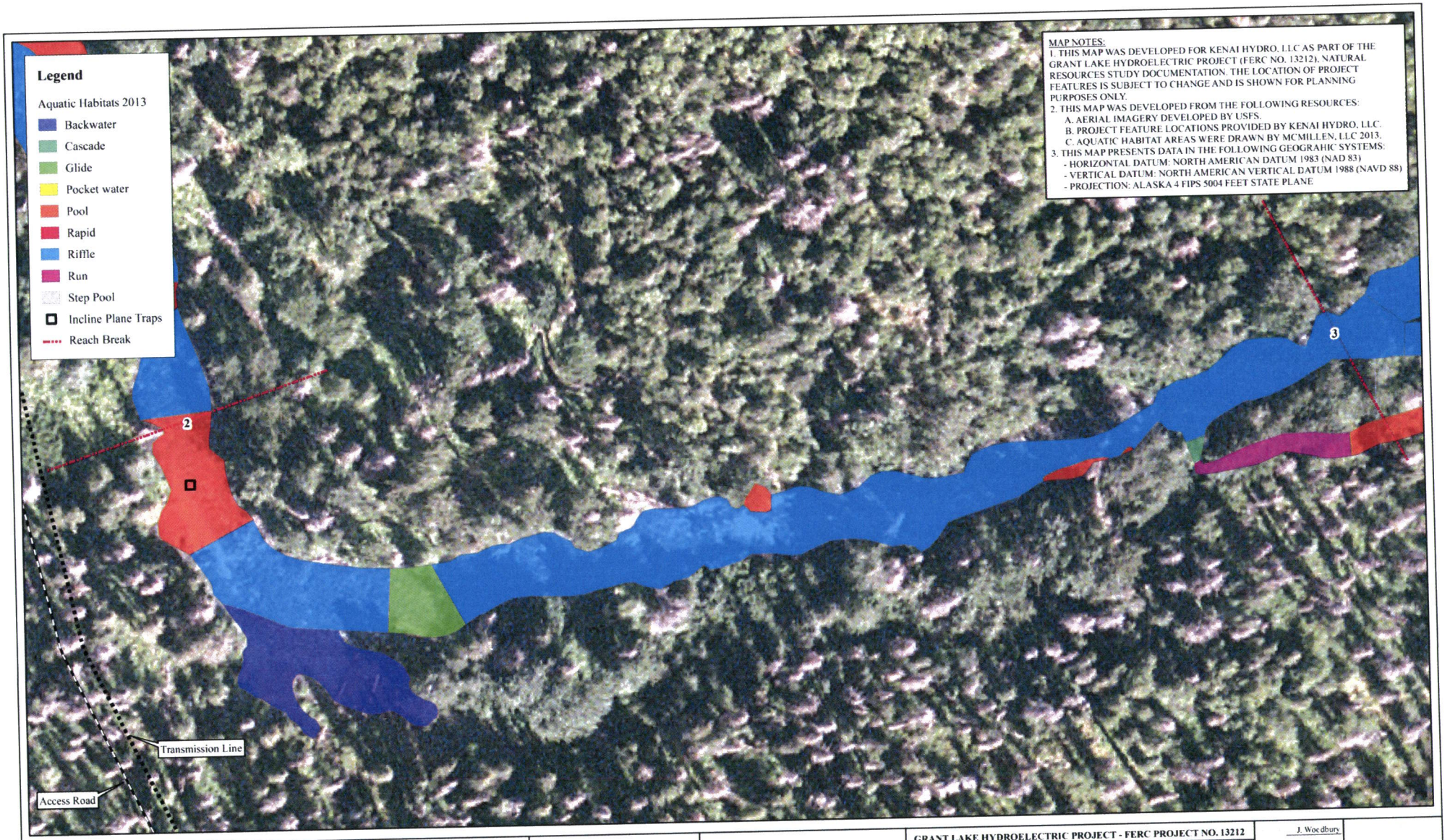
GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO. 13212

GRANT LAKE NATURAL RESOURCES STUDY

Figure 3.1-1
Grant Creek Aquatic Habitats
Reach 1

J. Woodbury
J. Woodbury
M. Miller
2/18/2014

1:800



N

0 25 50 100 Feet

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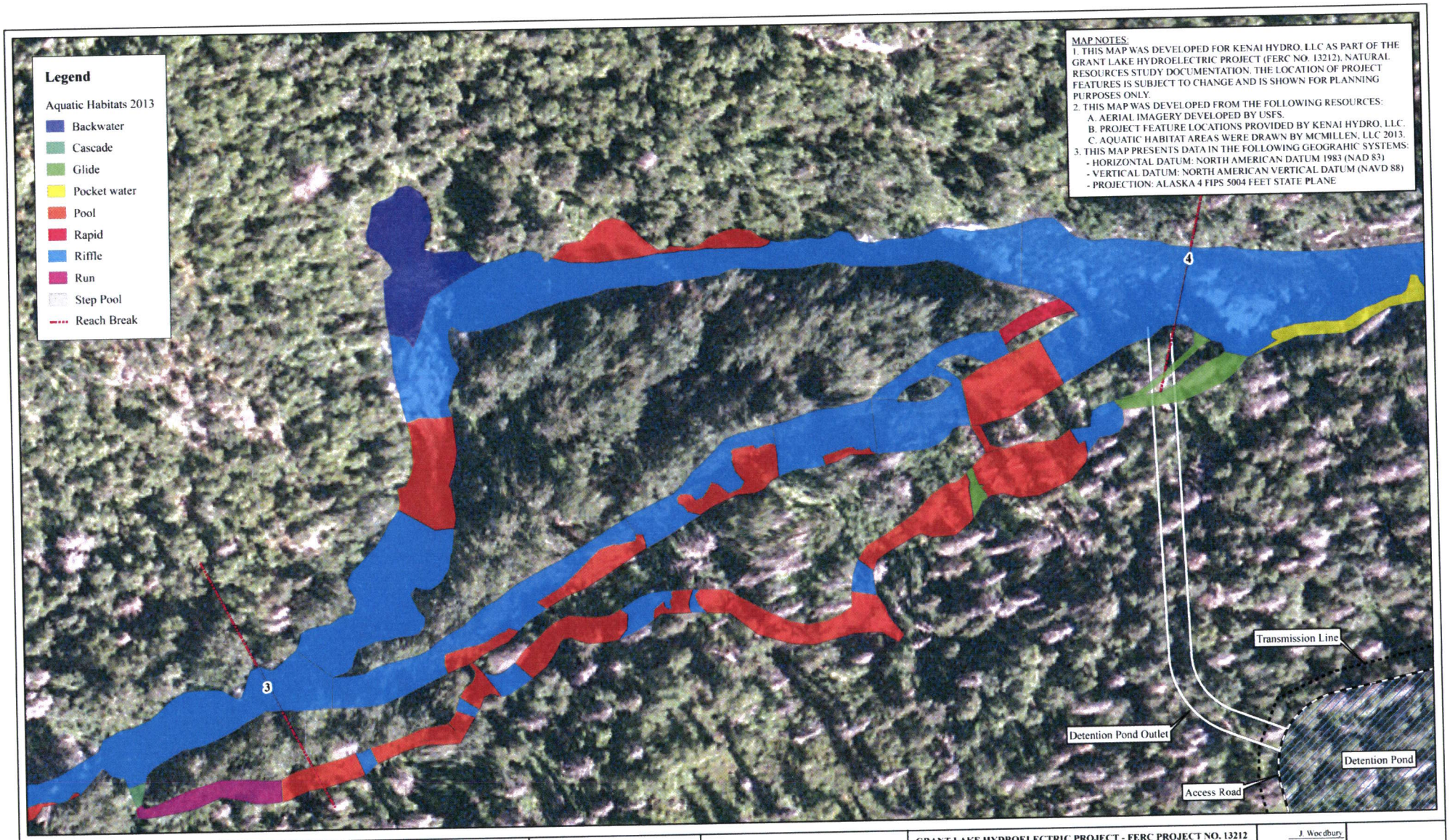
GRANT LAKE NATURAL RESOURCES STUDY

Figure 3.1-1
Grant Creek Aquatic Habitats
Reach 2

J. Woodbury
J. Woodbury
M. Miller
2/18/2014

1:650



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0 25 50 100 Feet

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GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO. 13212

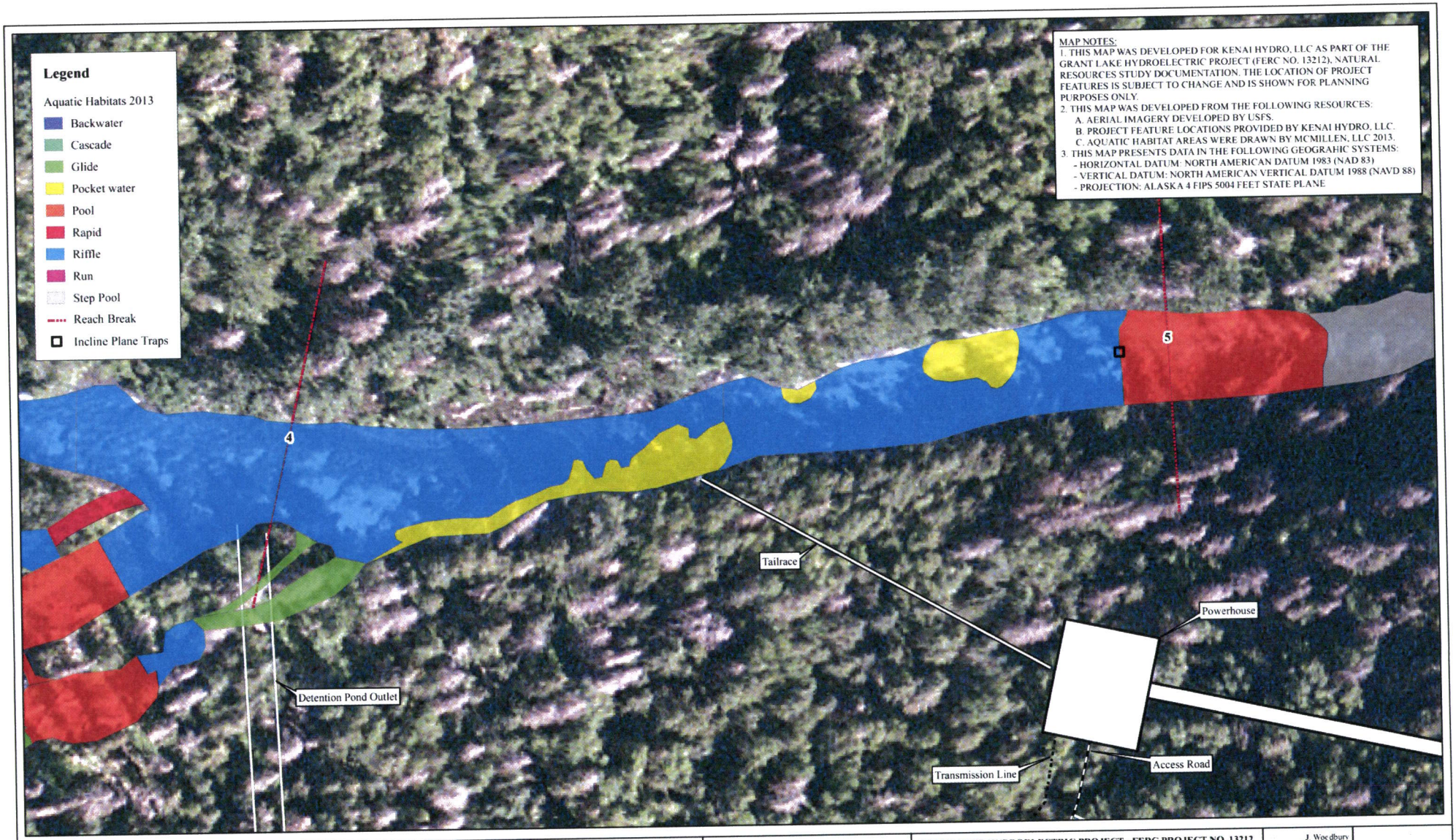
GRANT LAKE NATURAL RESOURCES STUDY

Figure 3.1-1
Grant Creek Aquatic Habitats
Reach 3

J. Woodbury
J. Woodbury
M. Miller
2/18/2014

4 of 6

1:700



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0 25 50 100 Feet

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GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO. 13212

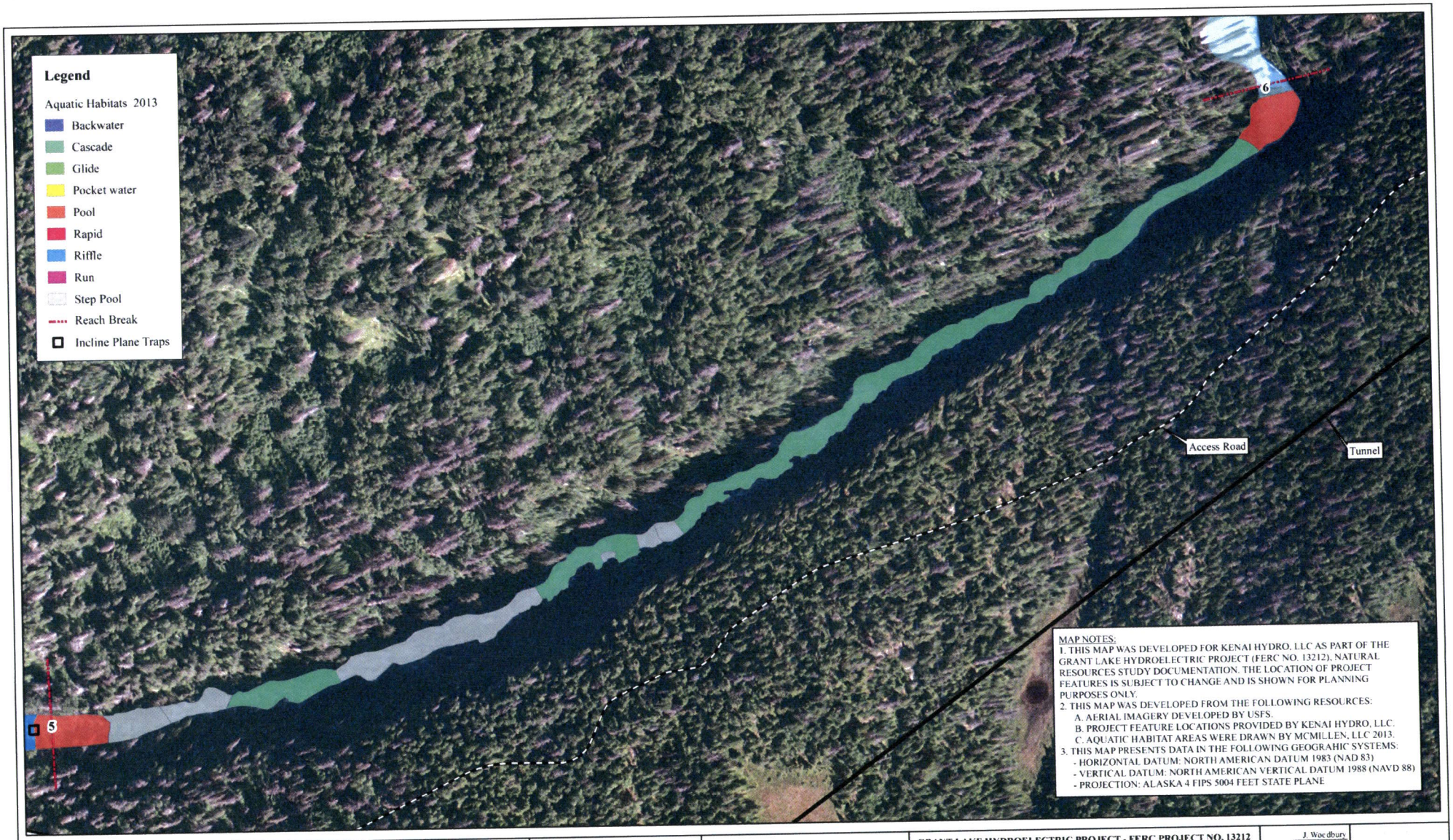
GRANT LAKE NATURAL RESOURCES STUDY

Figure 3.1-1
Grant Creek Aquatic Habitats
Reach 4

J. Woodbury
J. Woodbury
M. Miller
2/18/2014

5 of 6

1:550



N

0 50 100 200 Feet

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GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO. 13212

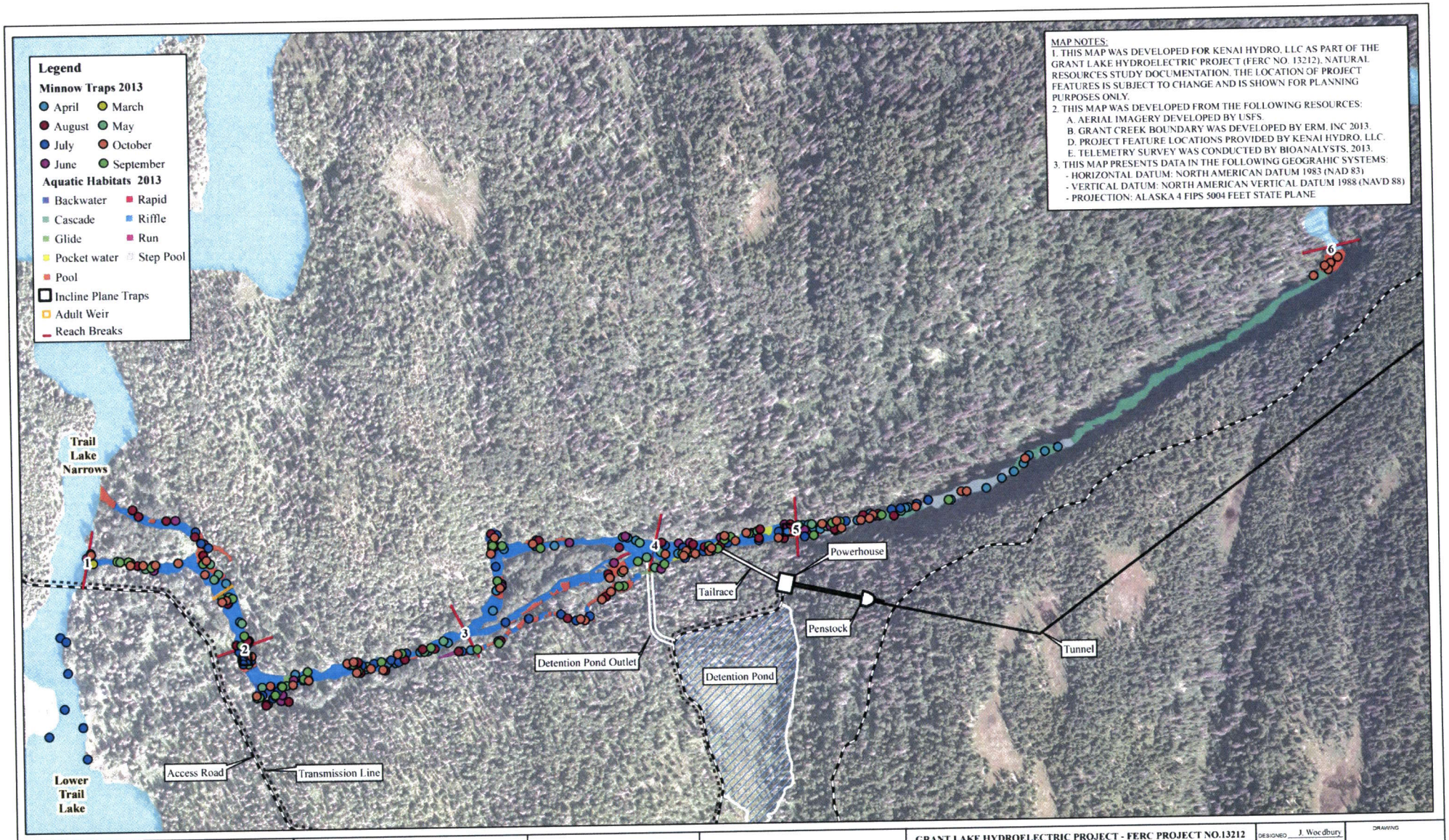
GRANT LAKE NATURAL RESOURCES STUDY

Figure 3.1-1
Grant Creek Aquatic Habitats
Reach 5

J. Woodbury
J. Woodbury
M. Miller
2/18/2014

6 of 6

1:1,500



REV	DATE	BY	DESCRIPTION

N

Drawing Scale
0 150 300 600 Feet

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1801 SHORELINE DRIVE
BOISE, ID 83702
OFFICE 208.342.4214
FAX 208.342.4216

Developed For
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GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO.13212

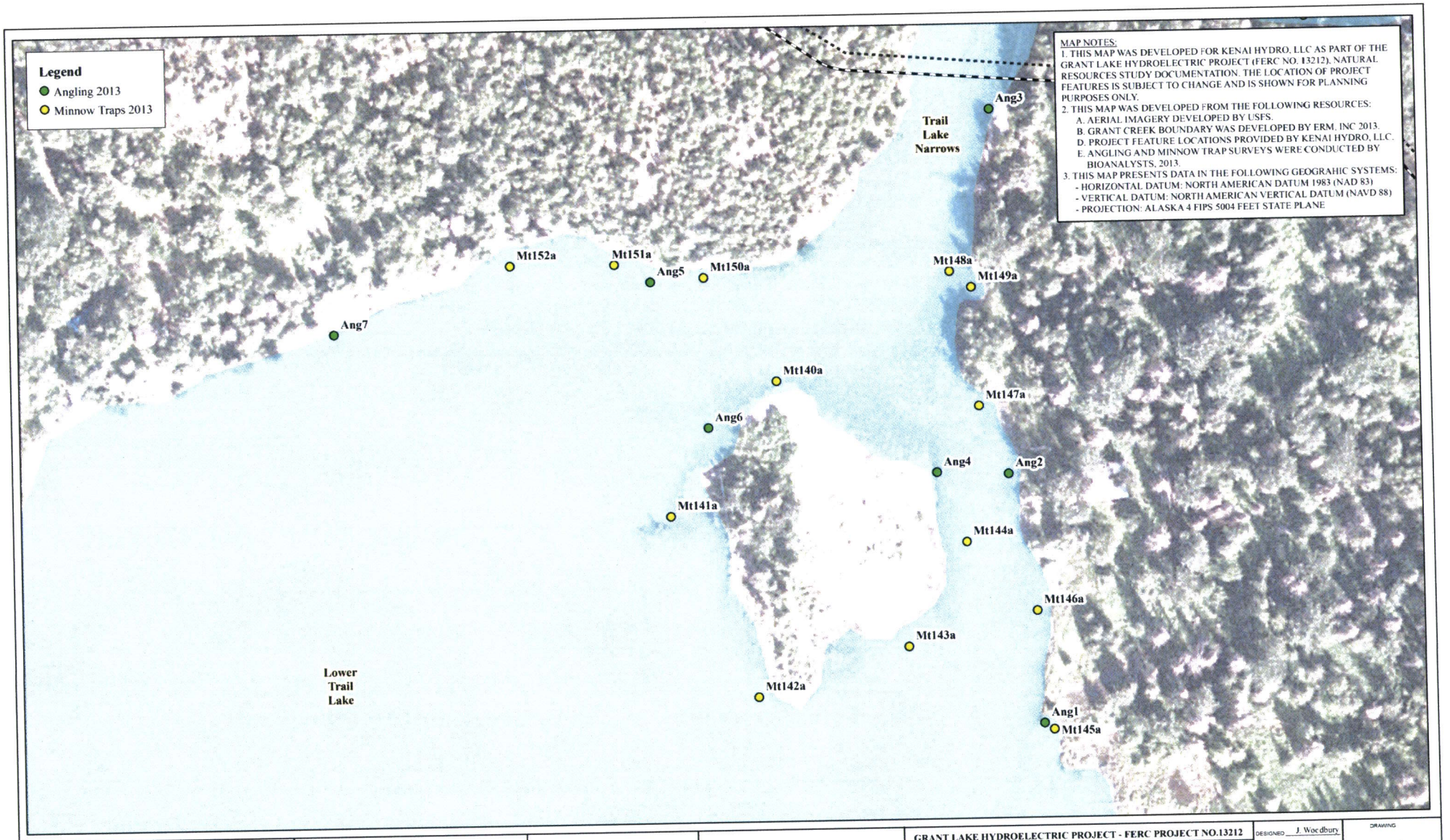
GRANT LAKE NATURAL RESOURCES STUDY

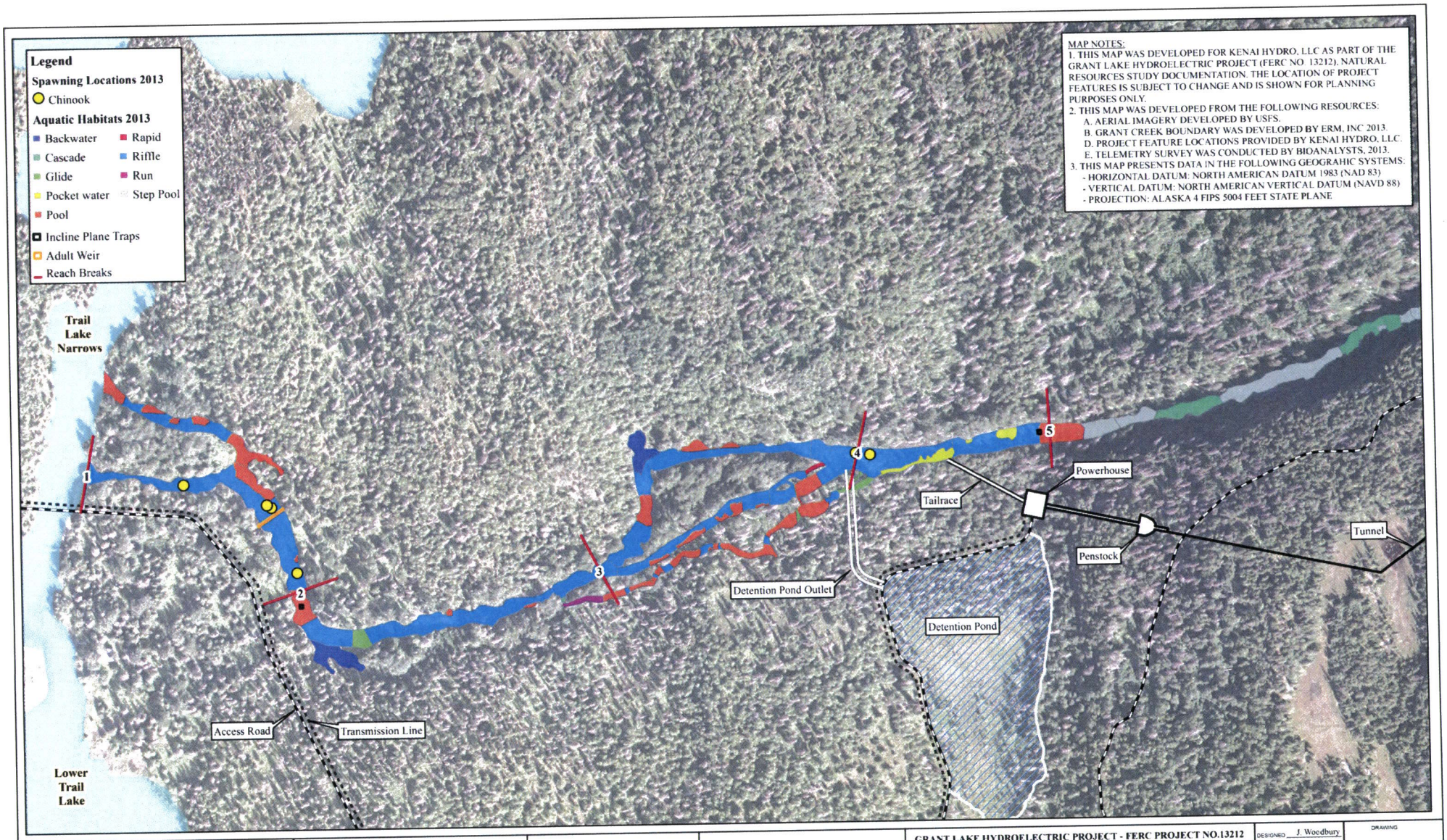
Figure 5.2-2
Minnow Trap Observations
By Month

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED M. Miller
ISSUED DATE 2/18/2014

DRAWING
1 of 1

SCALE: 1:3,400


Legend
Angling 2013
Minnow Traps 2013
MAP NOTES:
1. THIS MAP WAS DEVELOPED FOR KENAI HYDRO, LLC AS PART OF THE GRANT LAKE HYDROELECTRIC PROJECT (FERC NO. 13212), NATURAL RESOURCES STUDY DOCUMENTATION. THE LOCATION OF PROJECT FEATURES IS SUBJECT TO CHANGE AND IS SHOWN FOR PLANNING PURPOSES ONLY.
2. THIS MAP WAS DEVELOPED FROM THE FOLLOWING RESOURCES:
A. AERIAL IMAGERY DEVELOPED BY USFS.
B. GRANT CREEK BOUNDARY WAS DEVELOPED BY ERM, INC 2013.
D. PROJECT FEATURE LOCATIONS PROVIDED BY KENAI HYDRO, LLC.
E. ANGLING AND MINNOW TRAP SURVEYS WERE CONDUCTED BY BIOANALYSTS, 2013.
3. THIS MAP PRESENTS DATA IN THE FOLLOWING GEOGRAHIC SYSTEMS:
- HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 (NAD 83)
- VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD 88)
- PROJECTION: ALASKA 4 FIPS 5004 FEET STATE PLANE
Ang3
Trail Lake Narrows
Mt152a
Mt151a
Ang5
Mt150a
Mt148a
Mt149a
Ang7
Mt140a
Mt147a
Ang6
Ang4
Ang2
Mt141a
Mt144a
Mt146a
Mt143a
Lower Trail Lake
Mt142a
Ang1
Mt145a
N
Drawing Scale
0 25 50 100
Feet
McMILLEN, LLC
Developed For
HEA
Homer Electric Association, Inc.
A Touchstone Energy® Cooperative
GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO.13212
GRANT LAKE NATURAL RESOURCES STUDY
Figure 5.3-1
Minnow Traps &
Angling Locations
DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED M. Miller
ISSUED DATE 2/18/2014
DRAWING
1 of 1
SCALE: 1:900
REV
DATE
BY
DESCRIPTION



REV	DATE	BY	DESCRIPTION

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GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO.13212

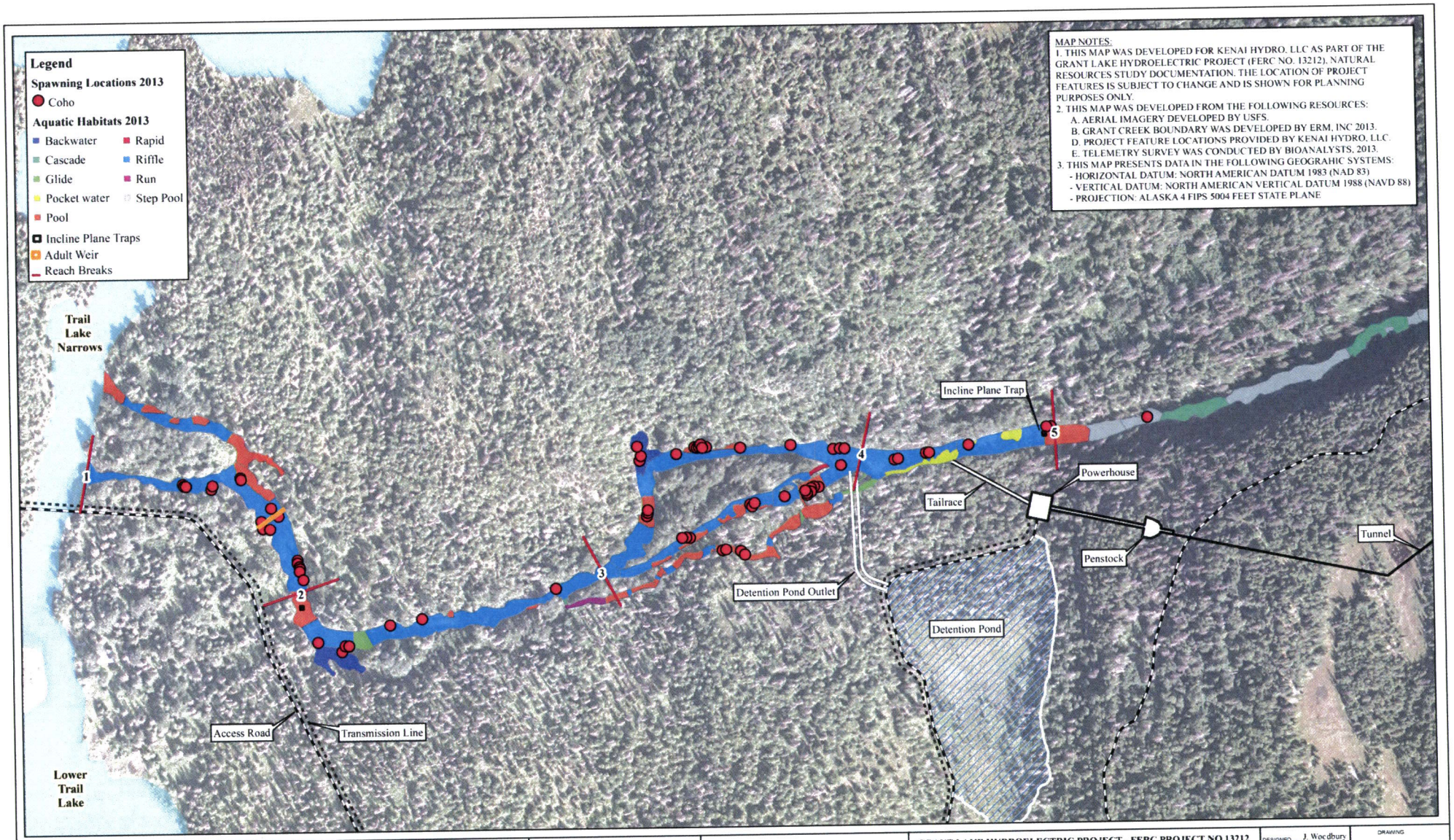
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.1-6
Spawning Locations
Chinook Salmon

DESIGNED	J. Woodbury
DRAWN	J. Woodbury
CHECKED	M. Miller
ISSUED DATE	2/25/2014

DRAWING 1 of 1

SCALE: 1:2,500



REV	DATE	BY	DESCRIPTION

N

Drawing Scale
0 100 200 400
Feet

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OFFICE 208 342 4214
FAX 208 342 4216

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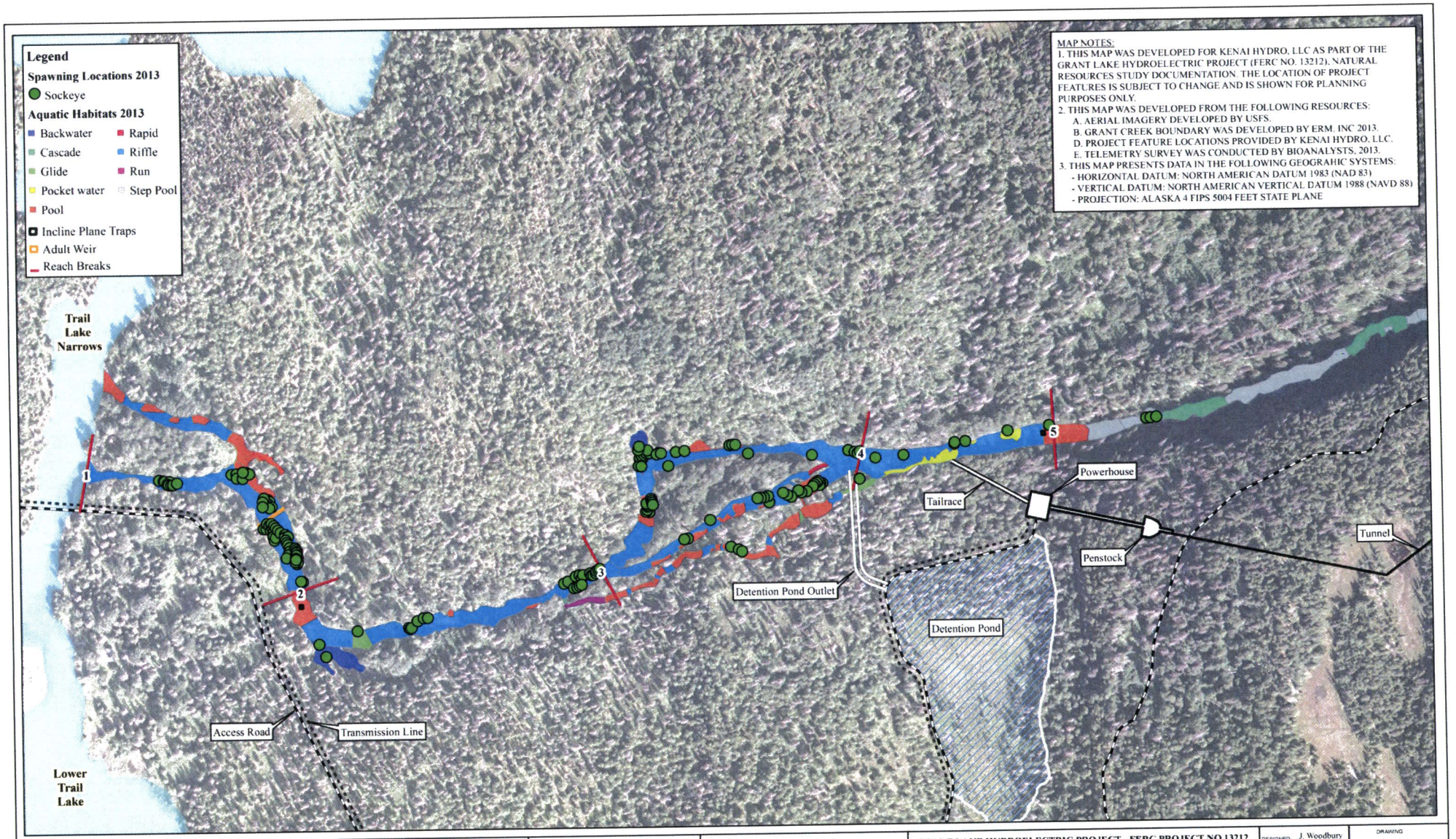
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.1-7
Spawning Locations
Coho Salmon

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED M. Miller
ISSUED DATE 2/25/2014

DRAWING
1 of 1

SCALE: 1:2,500



REV	DATE	BY	DESCRIPTION

N

Drawing Scale
0 100 200 400 Feet

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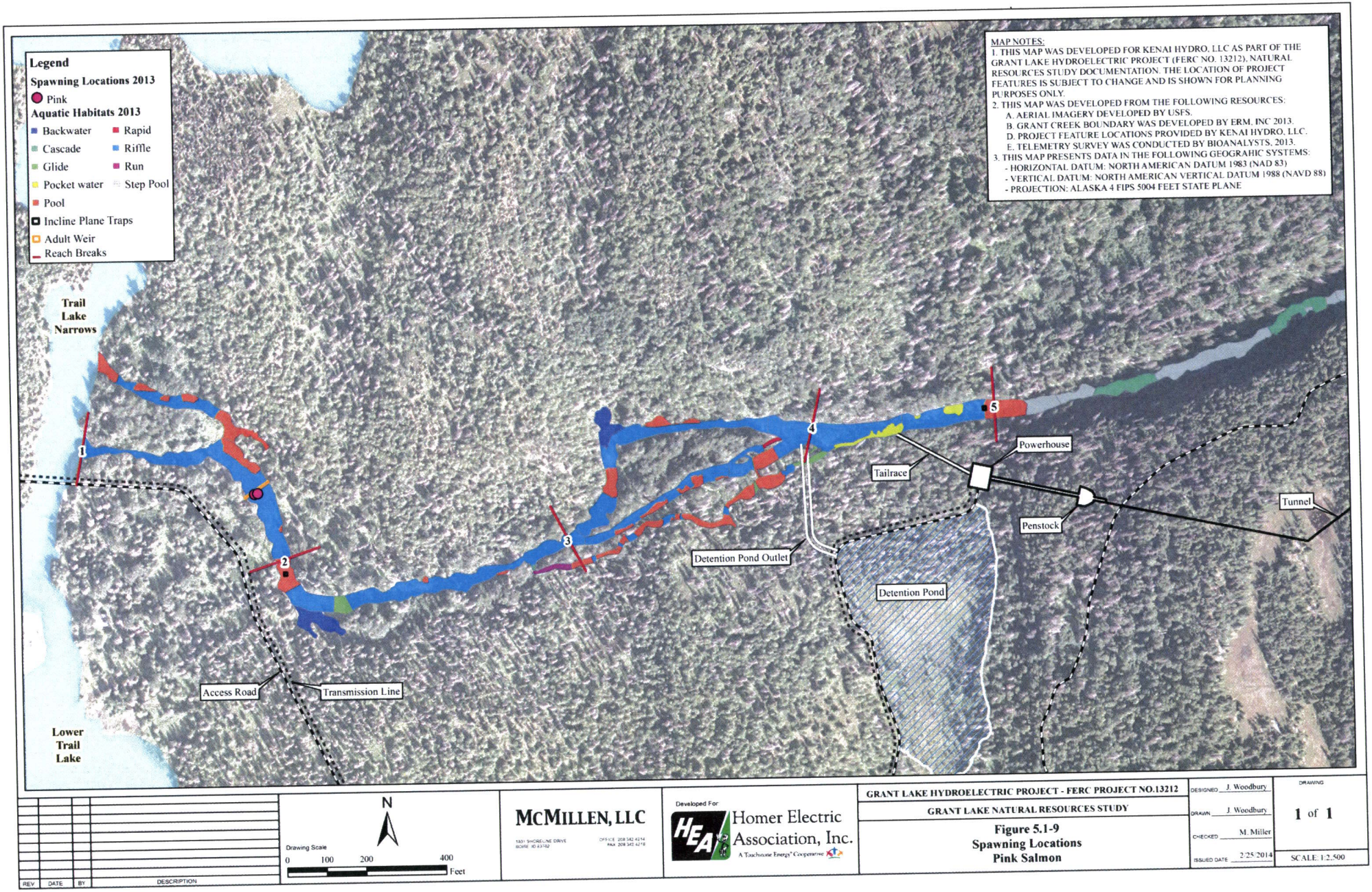
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.1-8
Spawning Locations
Sockeye Salmon

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED M. Miller
ISSUED DATE 2/25/2014

DRAWING
1 of 1

SCALE: 1:2,500



REV	DATE	BY	DESCRIPTION

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Drawing Scale
0 100 200 400 Feet

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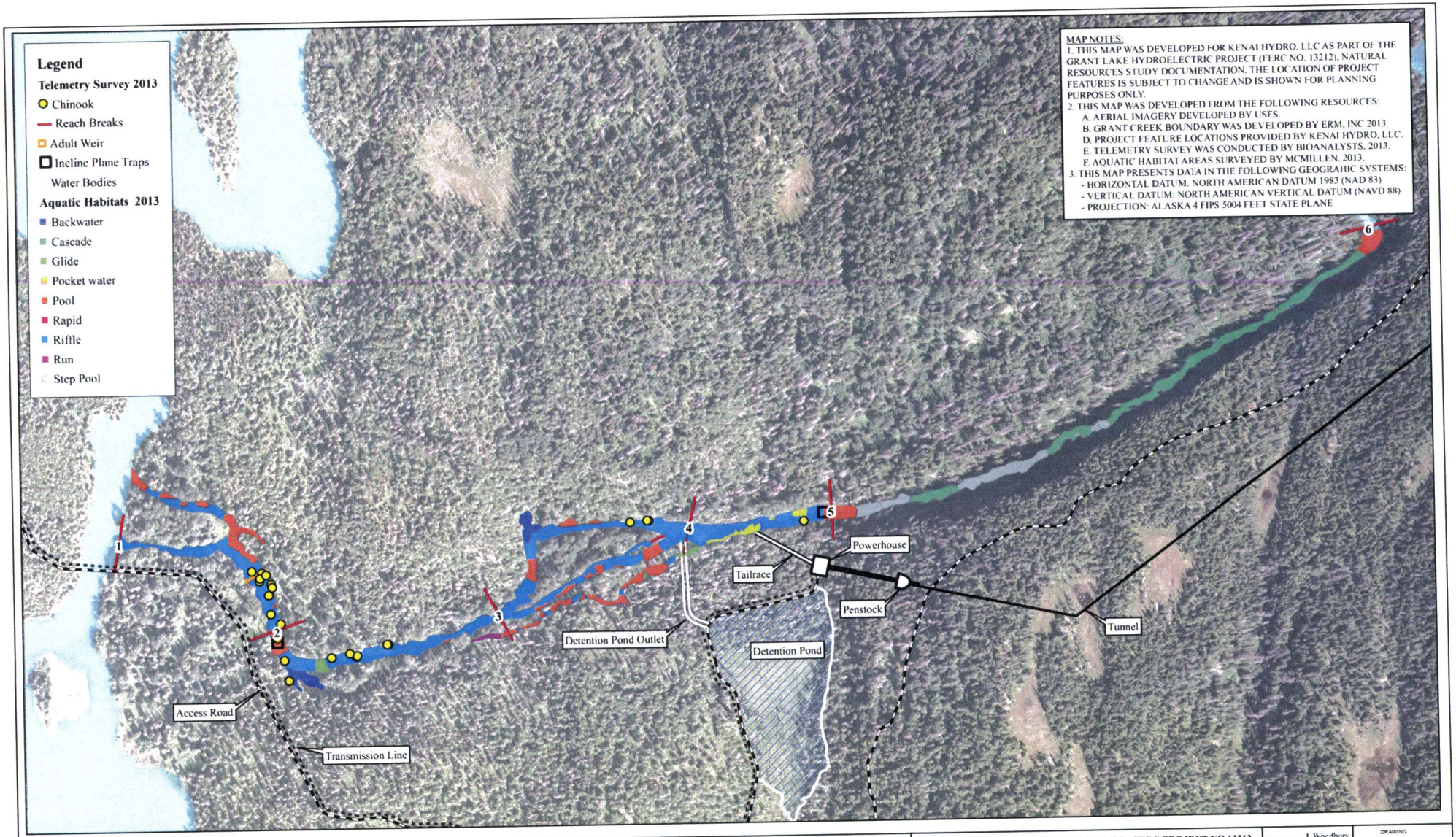
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.1-9
Spawning Locations
Pink Salmon

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED M. Miller
ISSUED DATE 2/25/2014

DRAWING
1 of 1

SCALE: 1:2,500



REV	DATE	BY	DESCRIPTION

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Drawing Scale
0 150 300 600
Feet

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FAX 208.342.4216

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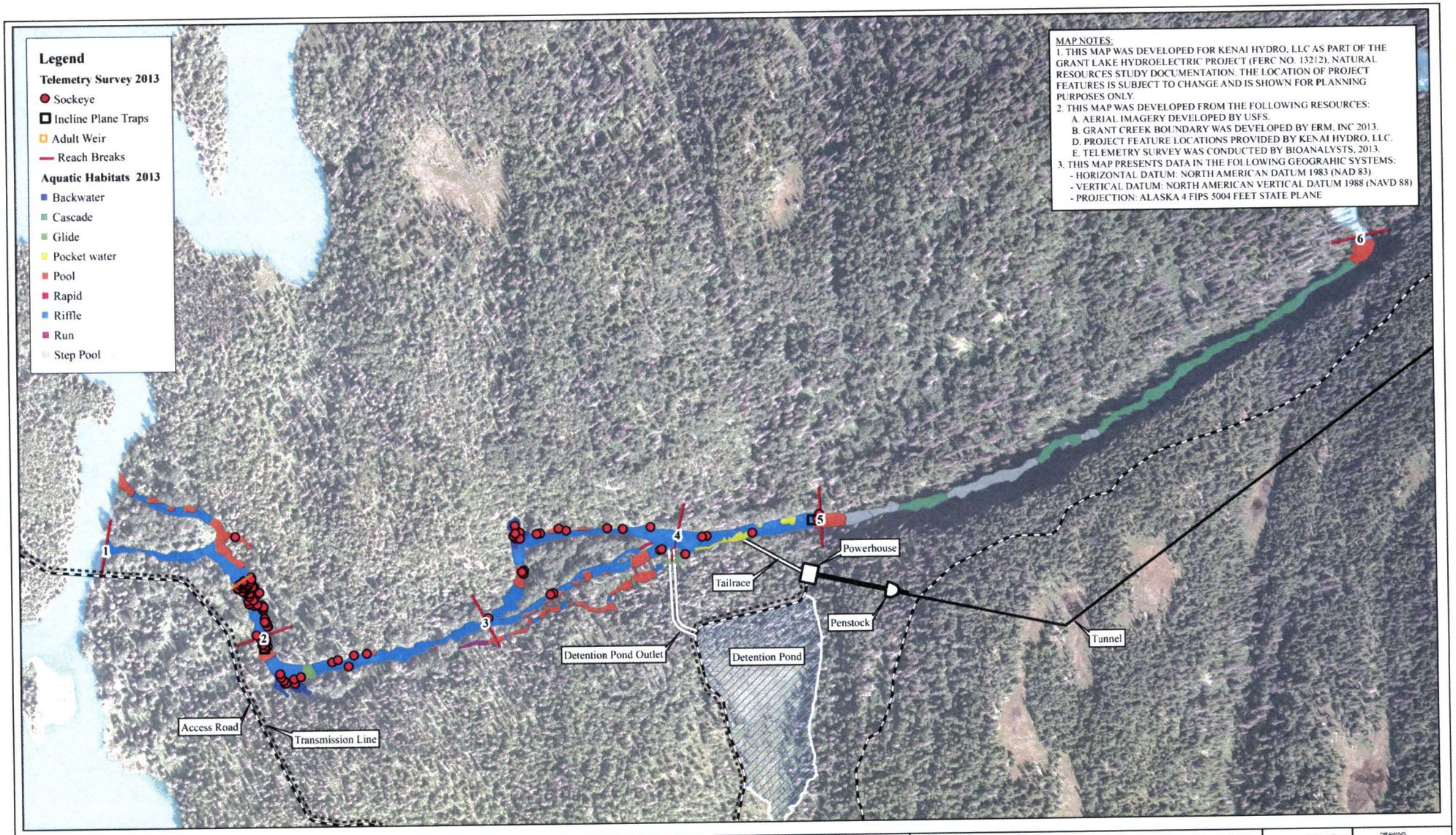
GRANT LAKE NATURAL RESOURCES STUDY

Figures 5.1-10
Telemetry Survey Data
Chinook Salmon

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED J. Stevenson
ISSUED DATE 2/25/2014

DRAWING
1 of 1

SCALE: 1:3,400



REV	DATE	BY	DESCRIPTION

N

Drawing Scale
0 150 300 600
Feet

McMILLEN, LLC
1631 SHORELINE DRIVE
BOISE, ID 83702
OFFICE 208.342.4214
FAX 208.342.4216

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GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO.13212

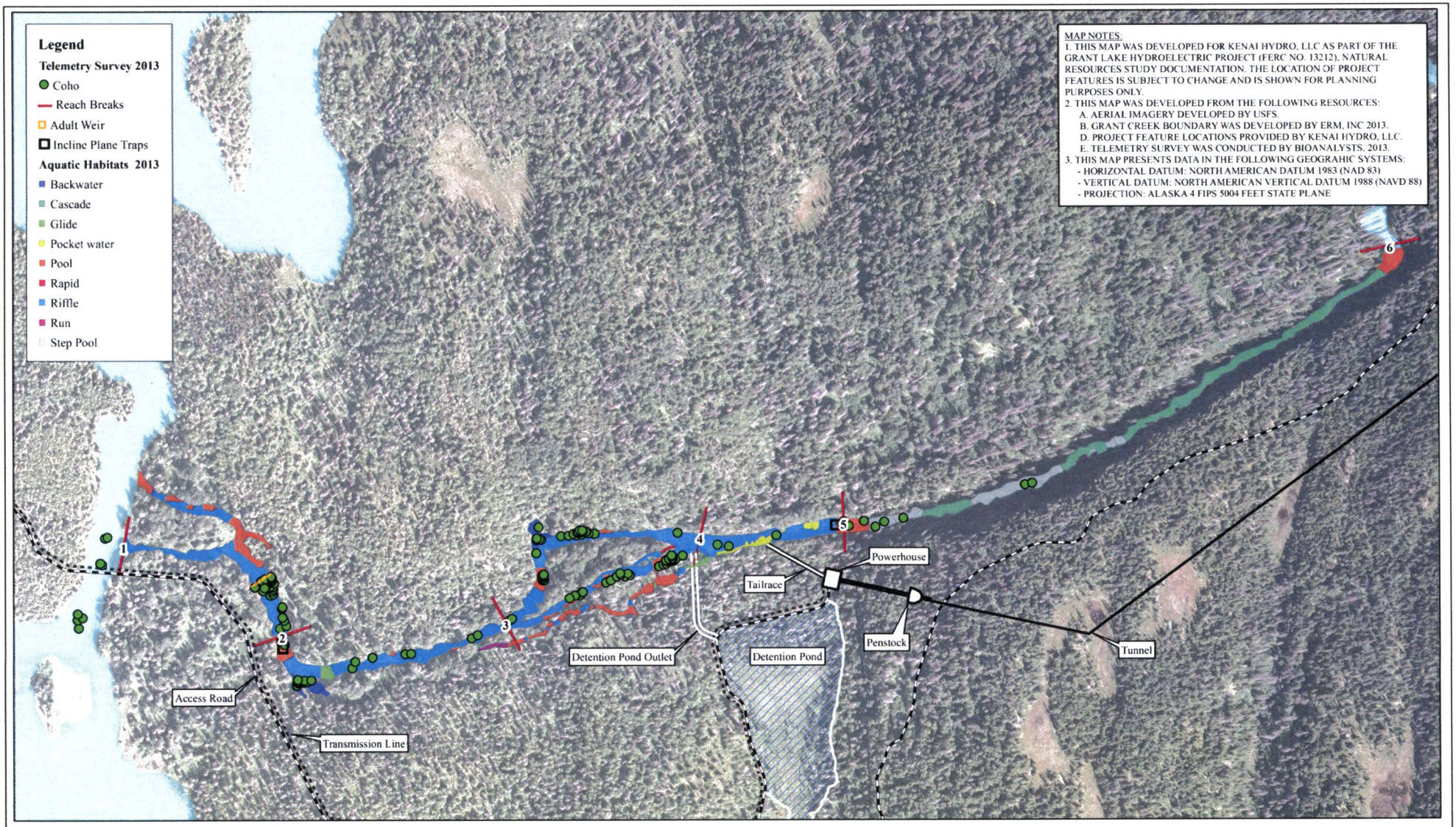
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.1-11
Telemetry Survey Data
Sockeye Salmon

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED J. Stevenson
ISSUED DATE 2/25/2014

DRAWING
1 of 1

SCALE: 1:3,400



REV	DATE	BY	DESCRIPTION

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Drawing Scale
0 150 300 600
Feet

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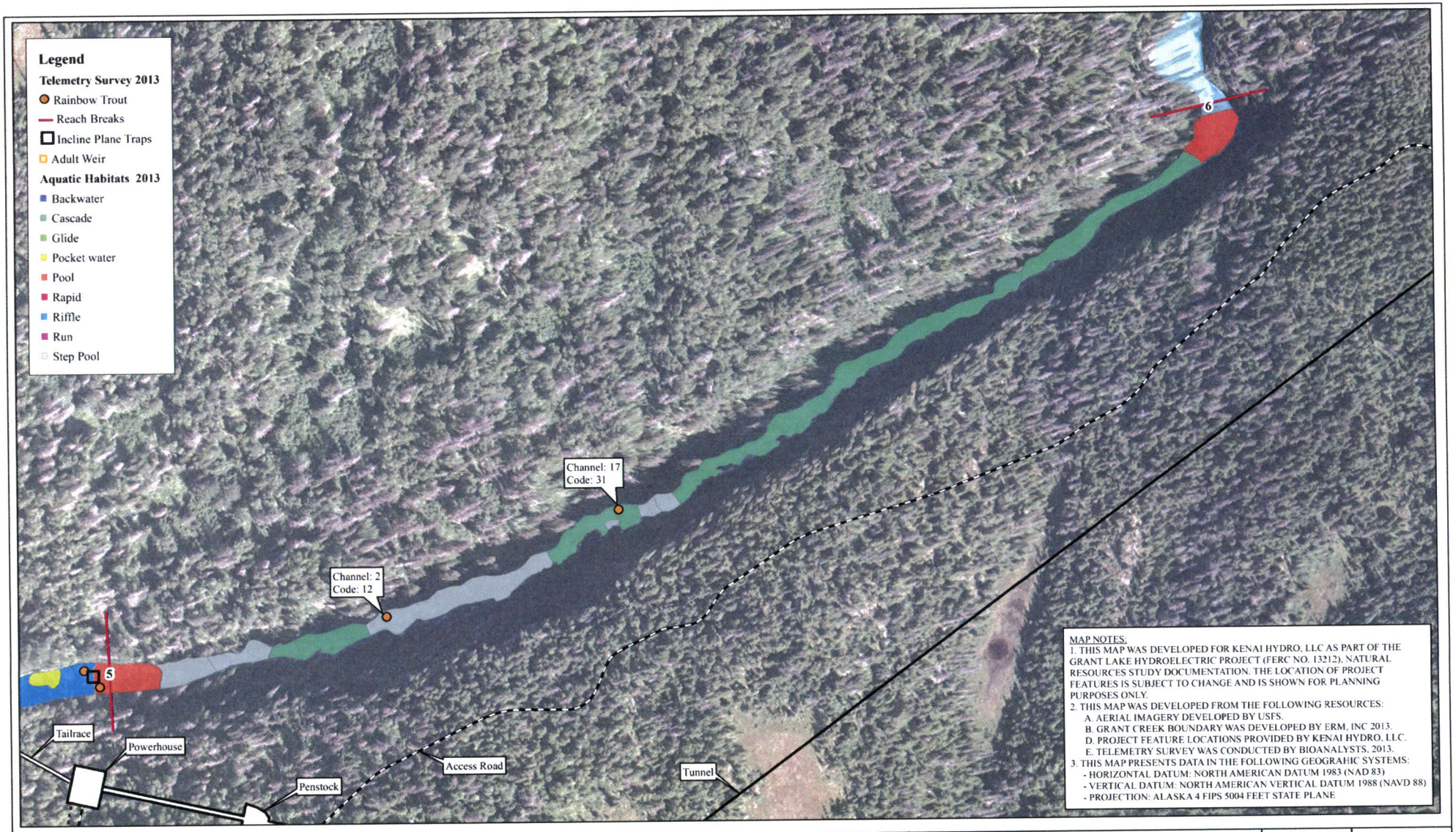
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.1-12
Telemetry Survey Data
Coho Salmon

DESIGNED J. Wocdbury
DRAWN J. Wocdbury
CHECKED J. Stevenson
ISSUED DATE 2/25/2014

DRAWING
1 of 1

SCALE: 1:3,400



REV	DATE	BY	DESCRIPTION

N

Drawing Scale
0 50 100 200
Feet

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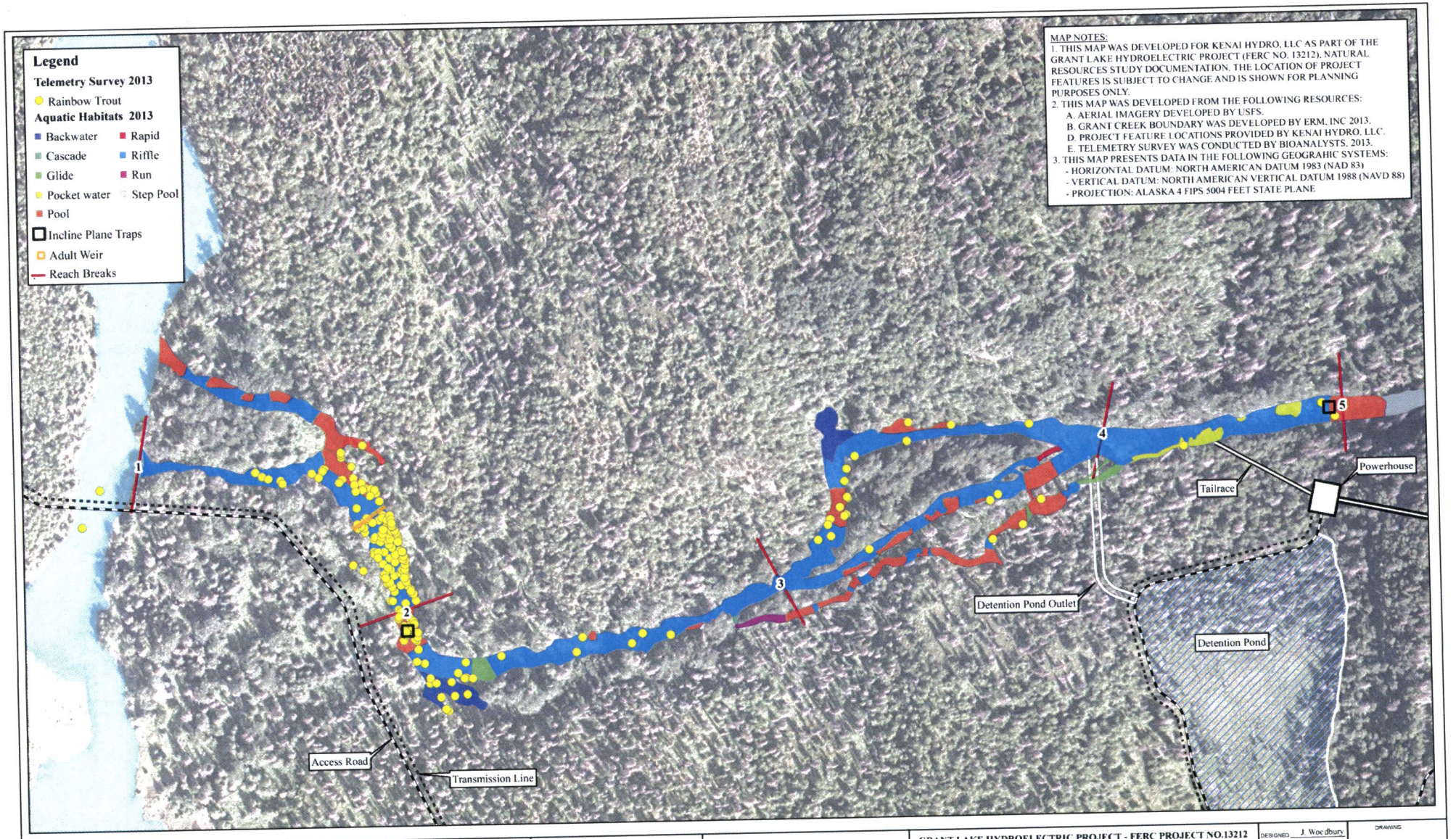
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.2-1
Telemetry Survey Data
Rainbow Trout - Reach 5

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED J. Stevenson
ISSUED DATE 2/25/2014

DRAWING
1 of 1

SCALE: 1:1,675



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Drawing Scale
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Feet

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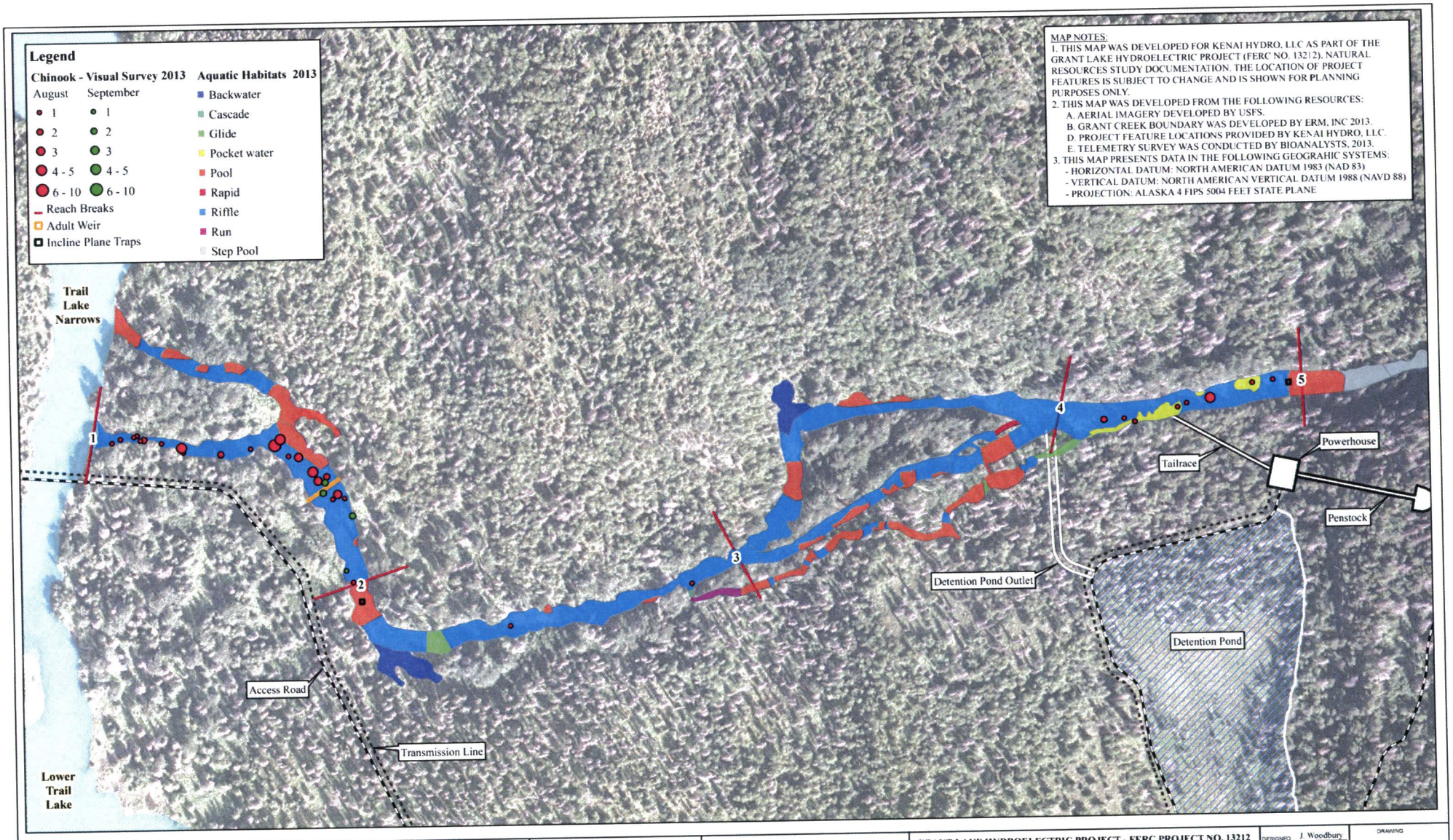
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.2-5
Telemetry Survey Data
Rainbow Trout Reaches 1 - 4

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED J. Stevenson
ISSUED DATE 2/25/2014

DRAWING
1 of 1

SCALE: 1:2,000



REV	DATE	BY	DESCRIPTION

N

Drawing Scale
0 100 200 400
Feet

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1601 SHORELINE DRIVE
BOISE, ID 83702
OFFICE 208.342.4214
FAX 208.342.4218

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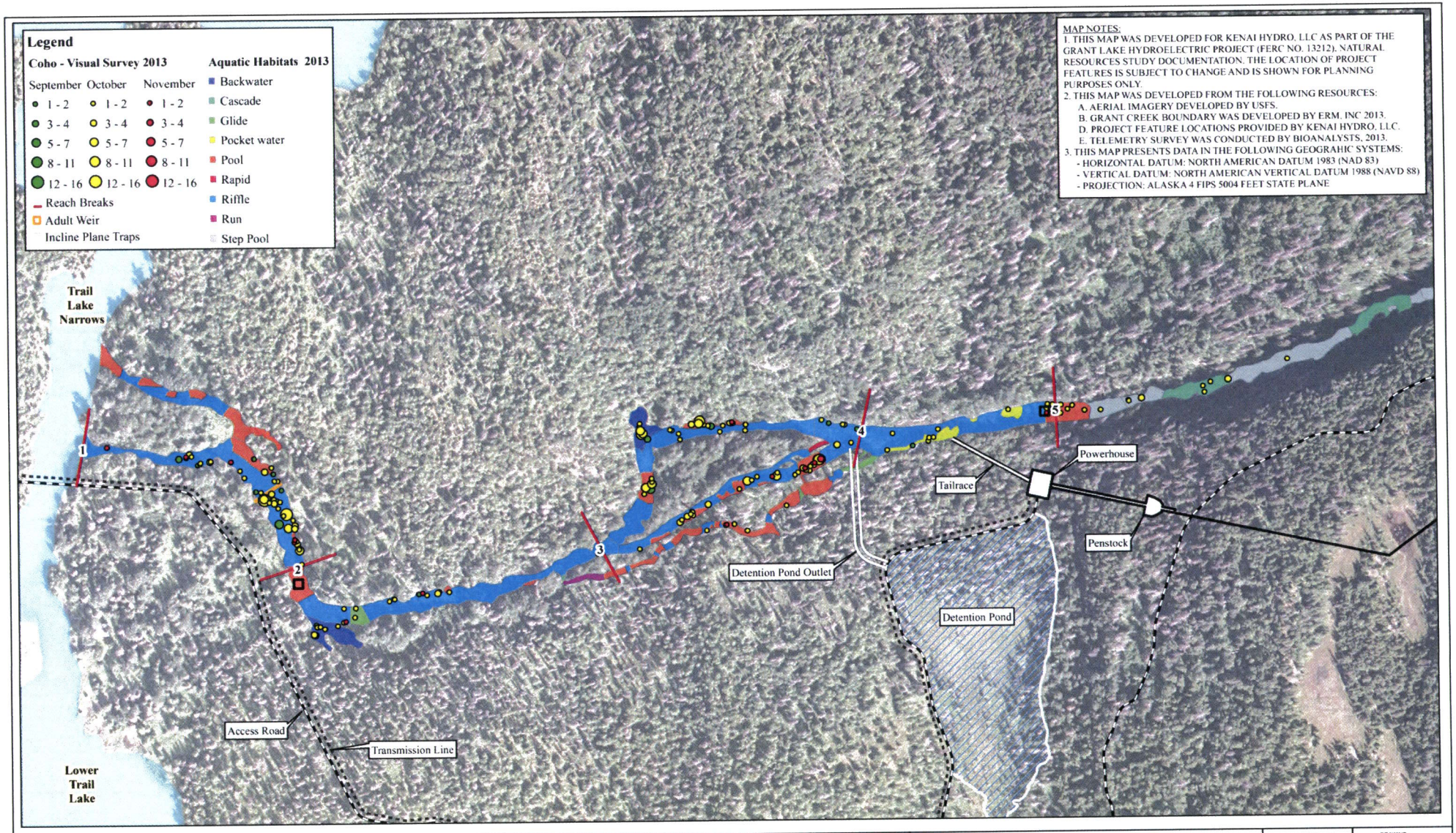
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.1-2
Visual Surveys
Chinook Salmon

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED M. Miller
ISSUED DATE 2/18/2014

DRAWING
1 of 1

SCALE: 1:2,000



REV	DATE	BY	DESCRIPTION

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Drawing Scale
0 100 200 400
Feet

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GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO.13212

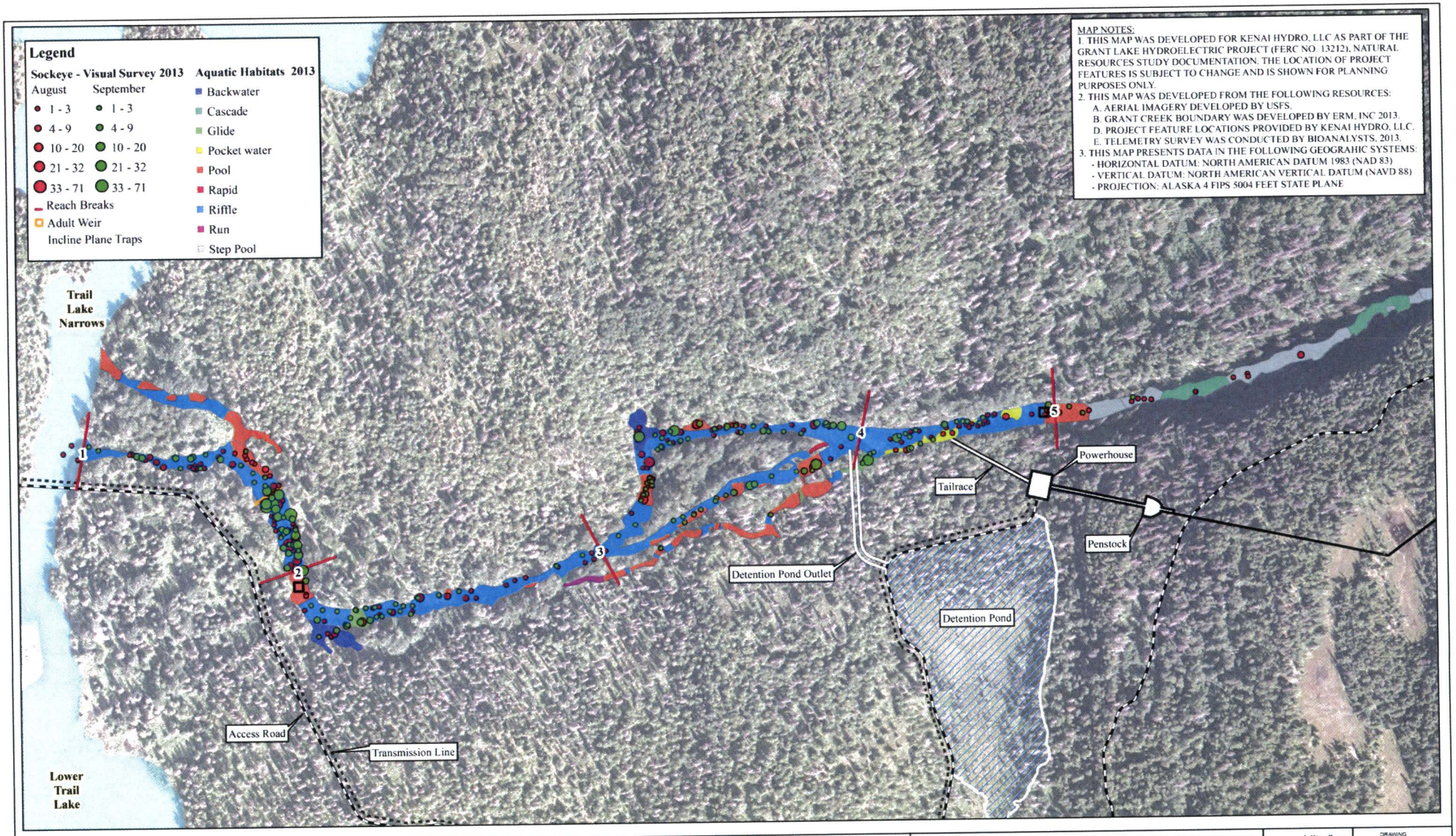
GRANT LAKE NATURAL RESOURCES STUDY

Figure 5.1-3
Visual Surveys
Coho Salmon

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED M. Miller
ISSUED DATE 2/18/2014

DRAWING
1 of 1

SCALE: 1:2,500



REV	DATE	BY	DESCRIPTION

N

Drawing Scale
0 100 200 400
Feet

McMILLEN, LLC
1801 SHORELINE DRIVE
BOISE, ID 83702
OFFICE 208 342 4214
FAX 208 342 4218

Developed For
HEA Homer Electric Association, Inc.
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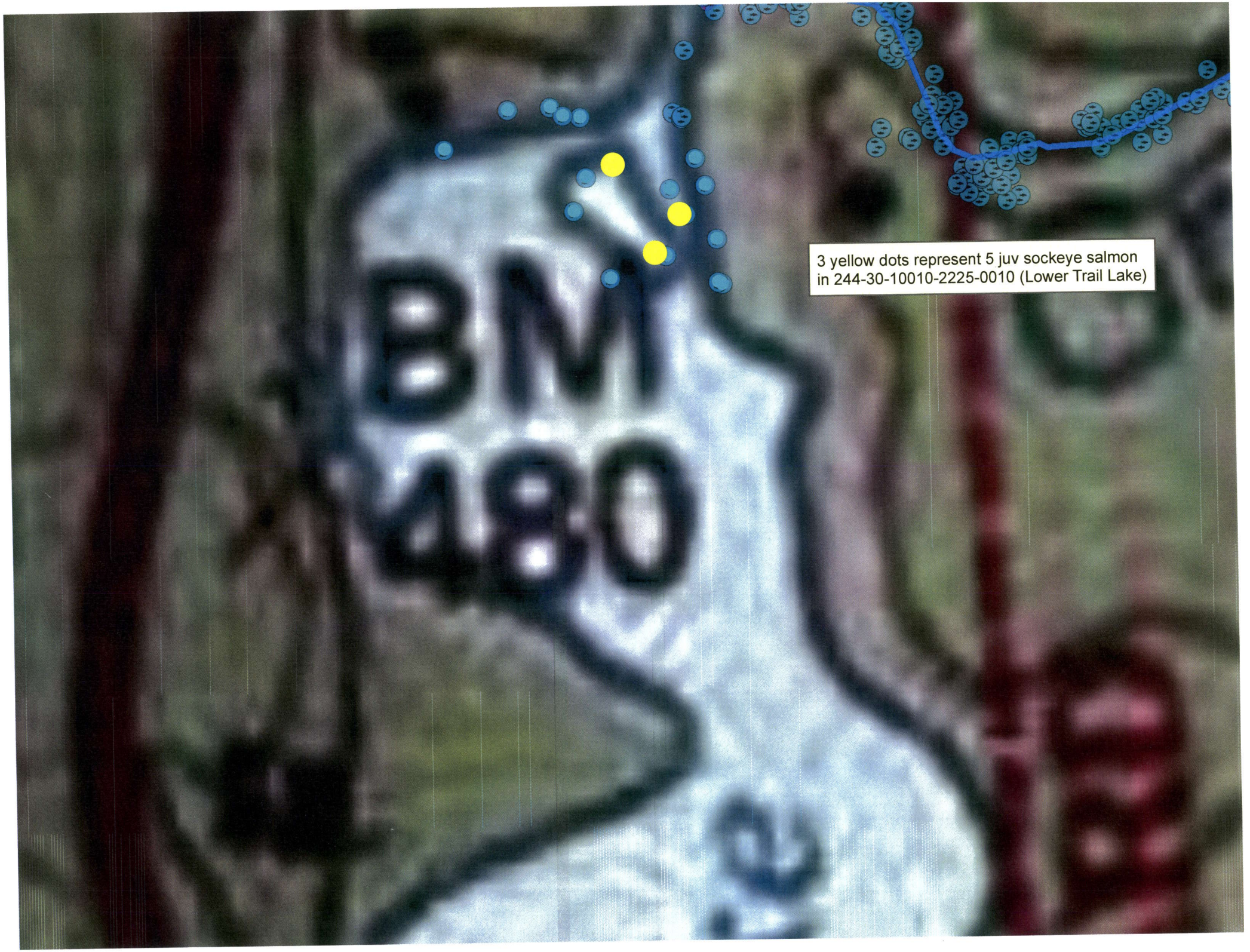
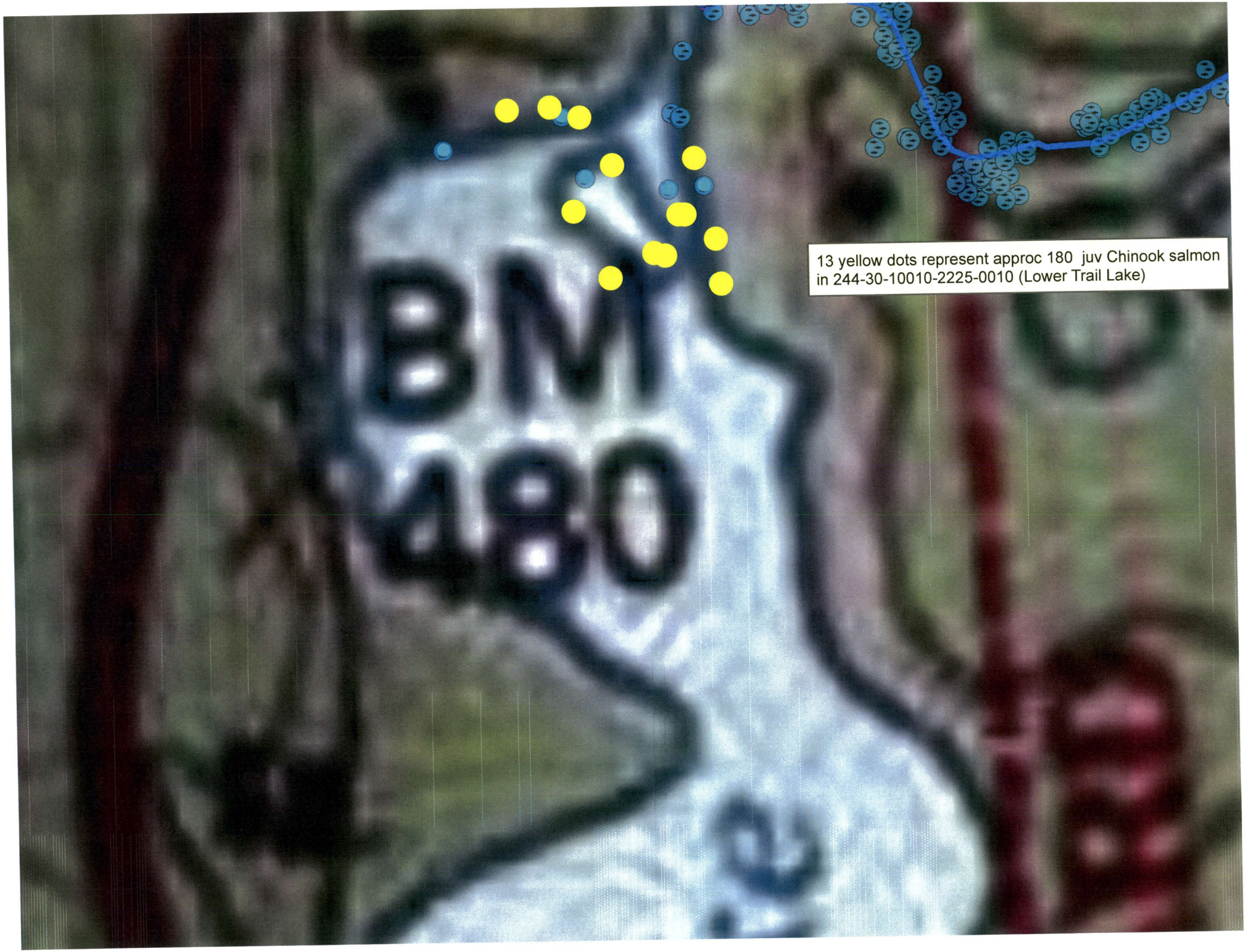
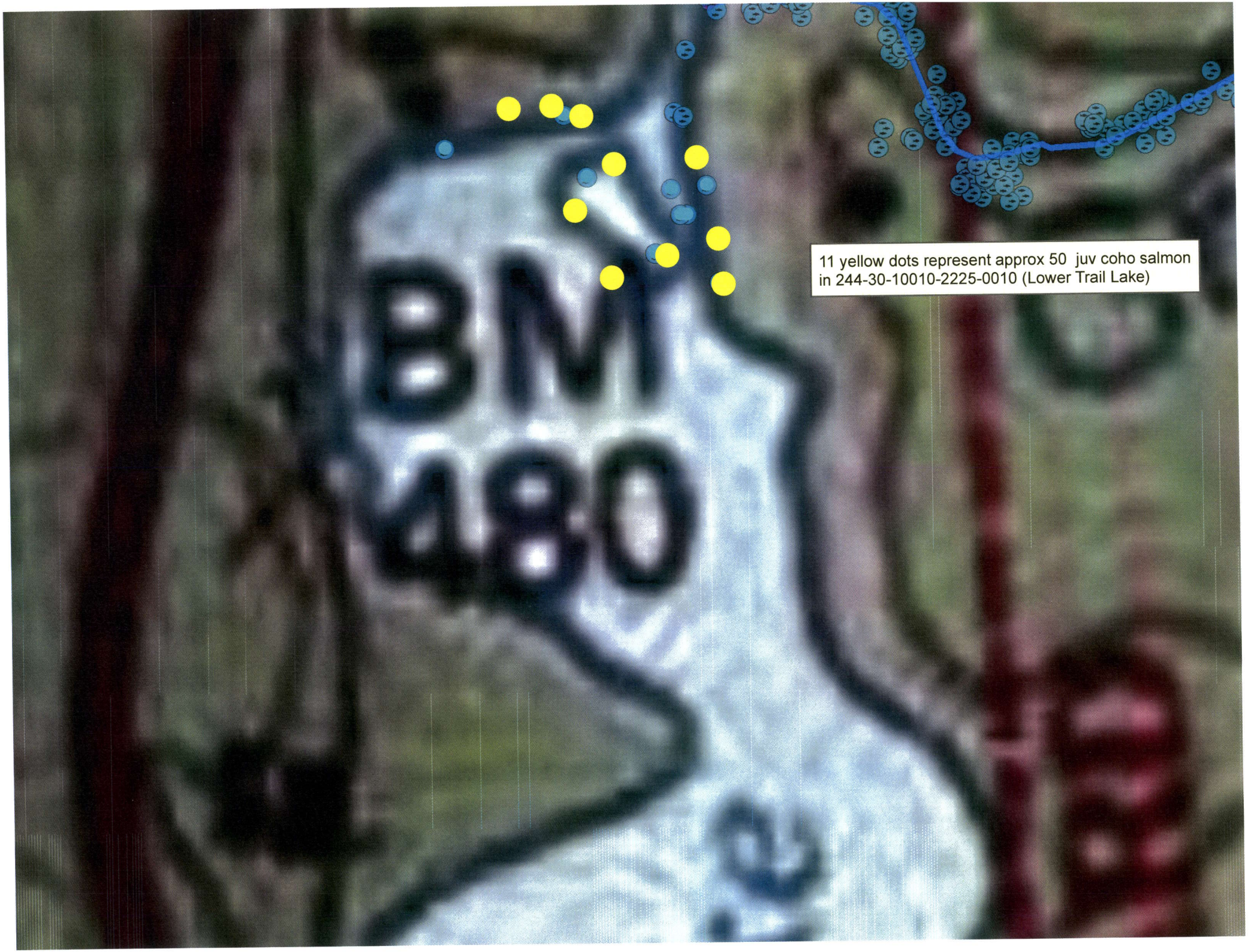
GRANT LAKE HYDROELECTRIC PROJECT - FERC PROJECT NO.13212
GRANT LAKE NATURAL RESOURCES STUDY
Figure 5.1-4
Visual Surveys
Sockeye Salmon

DESIGNED J. Woodbury
DRAWN J. Woodbury
CHECKED M. Miller
ISSUED DATE 2/18/2014

DRAWING
1 of 1
SCALE: 1:2,500


3 yellow dots represent 5 juv sockeye salmon
in 244-30-10010-2225-0010 (Lower Trail Lake)
BM
480


13 yellow dots represent approc 180 juv Chinook salmon
in 244-30-10010-2225-0010 (Lower Trail Lake)


11 yellow dots represent approx 50 juv coho salmon
in 244-30-10010-2225-0010 (Lower Trail Lake)

add Chinook, coho, & sockeye salmon rearing to 244-30-10010-2225-0010
COsr,Ks,Sp
Ss
Sp
COsr,Ks,Ss
COp,Kp,Pp,Sp
Kp,Pp,Sp
Solars Sawmill (Abandd)
Grant Creek
Vogt Lake
SEWARD
Lower Trail
Wolf Trail
BM 480
472
468
Gaging Sta
Falls
Base Link