

**FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
August 14, 2008
Ariel, WA**

ACC Participants Present (27)

Jim Bryne, WDFW
 Clifford Cassesekeka, Yakama Nation
 Michelle Day, NMFS
 Jeremiah Doyle, PacifiCorp Energy
 David Geroux, WDFW (via teleconference 9:00am – 11:15am)
 Diana Gritten-MacDonald, Cowlitz PUD
 Bernadette Graham Hudson, LCFRB
 Adam Haspiel, USDA Forest Service
 Eric Holman, WDFW (9:00am – 11:15am)
 LouEllyn Jones, USFWS
 George Lee, Yakama Nation
 Curt Leigh, WDFW (via teleconference 9:45am – 10:45am)
 Erik Lesko, PacifiCorp Energy
 Jim Malinowski, Fish First
 Kimberly McCune, PacifiCorp Energy
 Kathryn Miller, Trout Unlimited (via teleconference 11:00am – 2:15pm)
 Kirk Naylor, PacifiCorp Energy (9:00am – 11:15am)
 Bob Nelson, RMEF (via teleconference 9:00am – 11:15am)
 Todd Olson, PacifiCorp Energy
 Frank Shrier, PacifiCorp Energy
 Neil Turner, WDFW
 Steve Vigg, WDFW
 Shannon Wills, Cowlitz Indian Tribe
 Lindsay Wright, USFWS Intern
 Cherie Kearney, Columbia Land Trust (9:30am – 11:15am)
 Tom Tuchman, US Forest Capital (9:30am – 11:15am)
 Gary Winans, NOAA Fisheries (11:15am – 12:00 pm)
 Mike Hudson, USFWS (12:00pm – 2:15pm)

Calendar:

Sept. 10, 2008	TCC Meeting	Lacey, WA
Sept. 11, 2008	ACC Meeting	Merwin Hydro

Assignments from August 14th Meeting:	Status:
Kearney: George Lee (Yakama Nation) requested CLT background and funding information mailed to his attention.	Complete – 8/26/08
McCune: Email Gary Winans PowerPoint “Genetic Work Relating to the Hatchery & Supplementation (H&S) Plan” to all ACC representatives.	Complete – 8/19/08

Assignments from July 10th Meeting:	Status:
Shrier: Follow up with Bryan Nordlund relative to his requested edits to the 6/12/08 meeting notes prior to finalizing.	Complete – 8/14/08
McCune: Email the ACC a reminder to submit ATE comments in writing and the date we would like to receive these comments.	Complete – 7/15/08
McCune: Email all RMIS data provided to the ACC to date all together in one email.	Complete – 7/28/08

Opening, Review of Agenda and Meeting Notes

Frank Shrier (PacifiCorp Energy) called the meeting to order at 9:10 a.m. Shrier requested a round-table introduction for the benefit of those on the conference call and for the TCC members in attendance, reviewed the agenda for the day, updated assignments and requested any changes to the agenda. LouEllyn Jones (USFWS) indicated that Shelley Spalding has been ill and would like to postpone the Lewis River Bull Trout Action Plan Discussion to the September ACC meeting.

Shrier requested comments and/or changes to the ACC Draft 7/10/08 meeting notes. The meeting notes were approved at 9:15am to include the following changes as submitted by Michelle Day, NMFS:

Add the following text to the top of page 3: *Michelle Day (NMFS) informed the ACC that NMFS would prefer to have water released through the top of the Speelyai Creek Diversion so eventually that whole area could be used by anadromous fish.*

On page 3, third paragraph add the following text: *Day further stated that using today's data is not the same as when there is a new configuration. Another way to look at it is the standard should be set and the trap modified to meet this standard. Not the trap built to meet existing conditions.*

License Issuance Update

Todd Olson (PacifiCorp Energy) informed the ACC attendees that PacifiCorp, Cowlitz PUD, National Marine Fisheries (NMFS), Clark County and WDFW all filed a request for rehearing and clarification on certain license articles. All parties are waiting for the Federal Energy Regulatory Commissions (FERC) response. This does not affect the present FERC submittal time commitments. The Utilities called the FERC at their request to schedule a meeting this Fall with them in Washington, DC to talk over license articles and conditions. The Utilities were requested to present a PowerPoint which illustrates to the FERC how the Utilities will complete all the required tasks over the life of the license.

Both Utilities have the responsibility to implement the license now and not wait for the outcome of the rehearing. PacifiCorp has 90 days to update Exhibit G and is on schedule for this submittal. In addition, PacifiCorp will be submitting a Water Quality Management Plan to the Washington Department of Ecology on or before 9/24/08.

ACC/TCC Combined Meeting – Lands Update (**CONFIDENTIAL**)

Olson informed all ACC & TCC attendees that the conversation to follow is considered confidential and proprietary and not intended for the general public distribution or for members who have not signed a confidentiality agreement. All attendees present have signed a confidentiality agreement.

Olson provided a background to all attendees as to why lands update discussions are considered confidential and requested input from the ACC on any aquatic concerns relating to certain land acquisitions under consideration.

Cherie Kearney (Columbia Land Trust - CLT) and Tom Tuchman (US Forest Capital) presented a PowerPoint presentation to include an overview of the subject site(s), financial investors, objectives and the negotiation progress thus far.

Naylor also provided an update of other interests in certain lands, however, this discussion is considered confidential and proprietary and not for public viewing. Naylor invited those ACC & TCC participants who are interested in visiting the subject site to contact him directly at kirk.naylor@pacificorp.com

George Lee (Yakama Nation) requested CLT background and funding information mailed to his attention.

<Break 11:15am>

<Reconvene 11:30am>

Gary Winans (NOAA Fisheries) – Genetic Work Relating to the Hatchery & Supplementation (H&S) Plan

Winans reviewed a PowerPoint presentation titled, “*Genetic Work Relating to the Hatchery & Supplementation (H&S) Plan*”, August 2008 (**Attachment A**) which can also be located on the Lewis River website at the following link:

<http://www.pacificorp.com/Article/Article78699.html>

Kimberly McCune (PacifiCorp Energy) will also email a PDF of the presentation to all ACC representatives.

Winans presentation was created to address questions concerning the following:

- Resident rainbow vs. steelhead,
- late-winter steelhead @Merwin vs. winter-run hatchery steelhead, and
- late-winter steelhead @ Merwin vs. other Lewis River steelhead stocks

Winans illustrated that rainbow trout (residents and introduced hatchery stocks) are genetically different from steelhead and that resident and introduced hatchery stocks of rainbows are morphologically different from steelhead (juveniles).

In addition, Winans discussed the preliminary parr mark analyses and how they show that resident trout have a more complex coloration pattern, the indicators of adaptation. He also presented genetic data of wild late-winter steelhead vs. hatchery winter-run steelhead. The structure results of Lewis mSATS indications, and the mSAT markers will be used to monitor success of steelhead colonization and rainbow steelhead crosses.

<Working Lunch 12:15pm>

Bull Trout Distribution (BT), Lewis River Subbasin – Mike Hudson (USFWS)

Hudson reviewed a PowerPoint presentation titled, “*Bull Trout Distribution, Lewis River Subbasin*”, August 14, 2008 (**Attachment B**) relating to BT distribution, which can also be located on the Lewis River website at the following link:

<http://www.pacificorp.com/Article/Article78699.html>

Hudson discussed the Patch concept (*the limits or boundaries of environmental conditions that can support a biological response*) which included the background of patch analysis, delineation of patch characteristics, patch model design, approach and results. He discussed the recovery objectives of the Bull Trout Recovery Monitoring & Evaluation Work Group (RMEG) to include distribution, abundance, habitat and connectivity. Hudson discussed the RMEG challenges such as varying amounts of available information and limited resources. The PowerPoint described RMEG’s guidance parameters, habitat parameters, patch delineation (compilation of temperature data), linear regressions by major watersheds, Generalized Random Tessellation Stratified (GRTS) sample design and probability of detection.

Hudson reviewed the biological and physical sample approach and the incorporation of local knowledge such as known distribution, barriers, spawning areas and life history types. Lastly, Hudson discussed the advantages of the patch concept.

The end purpose is to collect empirical data, which later is passed on to USFWS for their use and/or perhaps incorporation into the Bull Trout Recovery Plan.

Continued Review of Aquatic Fund – Strategic Plan and Administrative Procedures (September 2005). *Are changes to the Strategic Plan needed?*

Olson provided a matrix handout (**Attachment C**), which included collective comments received by PacifiCorp thus far as an attempt to help address the list of discussion points indicted below:

Olson suggested we address two questions today and asked each ACC attendee for input.

List of Discussion Points	
<ul style="list-style-type: none">• Should we stop funding projects until fish are reintroduced?	<ul style="list-style-type: none">• How can process become more efficient to meet the schedule?

Should we stop funding projects until fish are reintroduced?

Jim Malinowski (Fish First) – No. Only projects that are truly worthy and that really help fish should get funded. The Fund is not just for reintroduction of anadromous fish, but for the whole basin and mitigation for aquatic habitat inundated by the reservoirs. Fund announcement needs to stress what the ACC is looking for in habitat projects.

Bernadette Graham-Hudson (LCFRB) – No. However, more weight should be give to projects that benefit re-introduction of anadromous fish.

Clifford Casseseka (Yakama Nation) – No. The Settlement Agreement gives direction for the Aquatic Fund. The ACC should respond accordingly in a professional fashion and work through any funding response differences together.

Adam Haspiel (USFS) - No. if we wait until fish are reintroduced to do any work, we may be years behind habitat needs of reintroduced fish, and create an unsuccessful reintroduction effort. He would like to see NOAA and USFWS be more involved in the identification and review of projects. The ACC should consider how proposed projects address issues identified in the 2008 Habitat Synthesis.

Shannon Wills (Cowlitz Indian Tribe) – No. Look at each project on a case by case basis and ask the question does the project benefit anadromous fish reintroduction efforts?

LouEllyn Jones (USFWS) - We should continue funding projects now, and not wait until reintroduction takes place.

Michelle Day (NMFS) – No. The ACC should spend the fund on the appropriate projects while looking to make the anadromous fish reintroduction a success.

Jim Bryne (WDFW) – No. Each project should have strong justification; bull trout projects should be supported by the recovery plans or other levels of support.

Decision - The ACC should not withhold distribution of Aquatic Funds until anadromous fish are reintroduced upstream of Merwin dam. Future funding should only be spent on projects that justifiably benefit the anadromous fish reintroduction, recovery of listed species, and/or fish habitat (per Lewis River Settlement Agreement).

How can process become more efficient to meet the schedule?

Bernadette Graham- Hudson (LCFRB) - A more detailed budget form should be provided in the proposal.

LouEllyn Jones (USFWS) - The project proposals need to include enough information to adequately describe the project and its context within the Lewis River basin.

Michelle Day (NMFS) - The FERC's response to rehearing could affect the funding process.

Jim Bryne (WDFW) - September timeline does not work for WDFW for the initial pre-proposal due to staff needs in the field.

Study Updates

Erik Lesko (PacifiCorp Energy) and Shrier provided the following study updates:

Swift Constructed Channel Concept Design and Swift Upper Release Design – Schedule remains unchanged.

Hatchery Upgrades

Lewis River Pond 15 – Construction is still planned to begin January 2009; permits submitted to the county including the engineer stamped project drawings.

Speelyai Burrows Pond – Construction planned for 2009; permits submitted to the county

Lewis River Ponds 13 & 14 – Completed conceptual design - on schedule.

Hatchery and Supplementation (H&S) Plan – Comments on the Early Winter Steelhead and Summer Steelhead HGMPs due to James Dixon (WDFW) by August 15, 2008.

Acclimation Pond Plan – In process of obtaining engineering services for the projects.

Yale BT Entrainment Reduction Study Plan – The project design of an electrical barrier has exceeded financial expectations for a process that may not work; PacifiCorp is modifying project to construct a fish barrier net instead.

New topics/issues

None

Agenda items for September 11, 2008 (Conference call was suggested)

- Review August 14, 2008 Meeting Notes
- Continued Review of Aquatic Fund – Strategic Plan and Administrative Procedures (September 2005) *Review suggested changes to the Strategic Plan*
- Study/Work Product Updates
- License Issuance Update

Public Comment Opportunity

No public comment was provided.

Next Scheduled Meetings

September 11, 2008 (via conference call - to be confirmed)	October 9, 2008
Merwin Hydro Facility	Merwin Hydro Facility
Ariel, WA	Ariel, WA
9:00am – 3:00pm	9:00am – 3:00pm

Meeting Adjourned at 2:15pm

Handouts

- Final Agenda
- Draft ACC Meeting Notes 7/10/08
- [Attachment A](#) – Genetic Work Relating to the Hatchery & Supplementation (H&S) Plan”, August 2008
- [Attachment B](#) – Bull Trout Distribution, Lewis River Subbasin”, August 14, 2008
- [Attachment C](#) - Review of Aquatic Fund – Strategic Plan and Administrative Procedures (September 2005), with collective comments dated August 14, 2008

We are addressing questions concerning:

Resident rainbow vs. steelhead,

late-winter steelhead @Merwin

vs. winter-run hatchery steelhead,
and

vs. other Lewis River steelhead
stocks.

Gary.winans@noaa.gov

14 Aug 2008

Above

Quartz

Cussed Hollow

Muddy

Eagle Cliff Trap

Siouxon

Below

@ Merwin Dam 05,06, and **07**

Hatchery winters

Hatchery summers

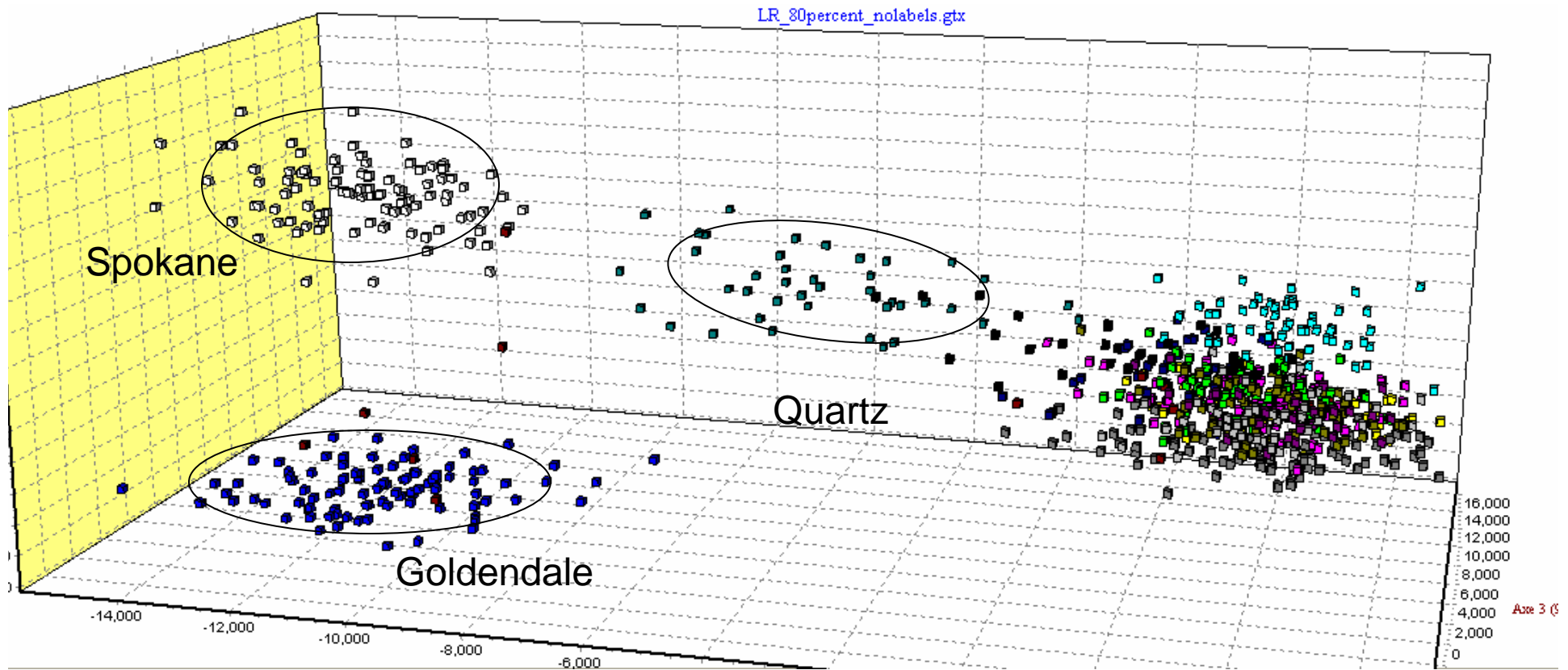
Cedar 96 & 03

EF Lewis

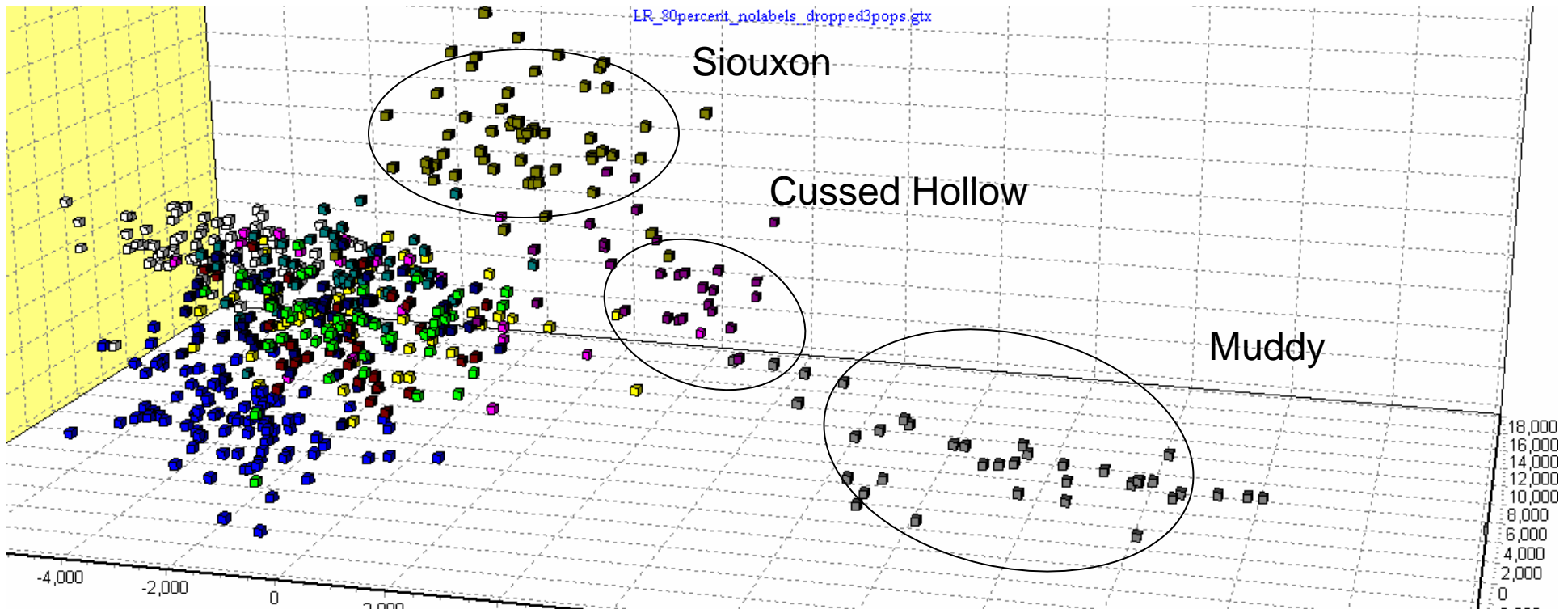
NF Lewis (mix)

Goldendale & Spokane

Rainbow trout (residents and introduced hatchery stocks) are genetically different from steelhead.

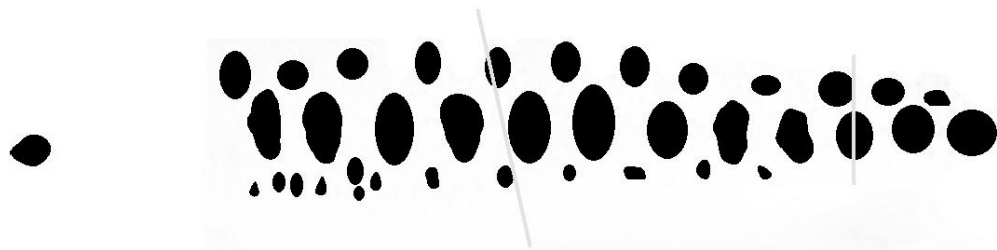


Rainbow trout (residents and introduced hatchery stocks) are genetically different from steelhead: part 2.

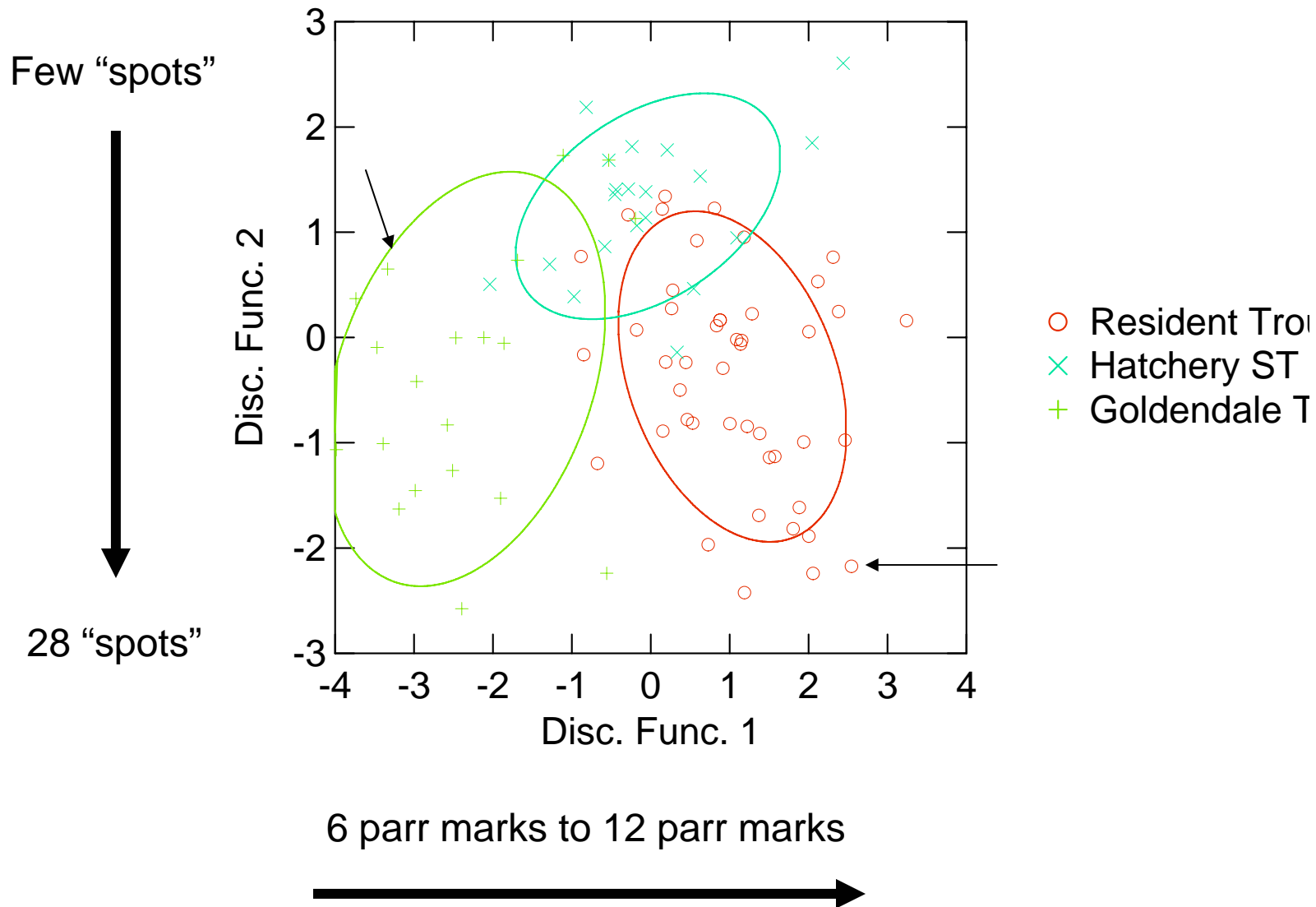


After dropping Quartz, Goldendale, and Spokane collections.

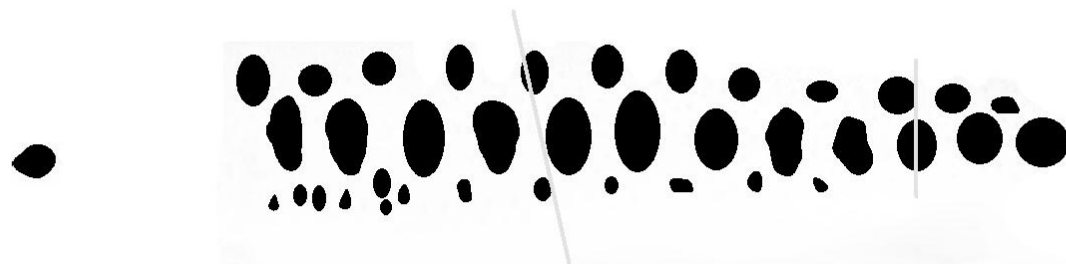
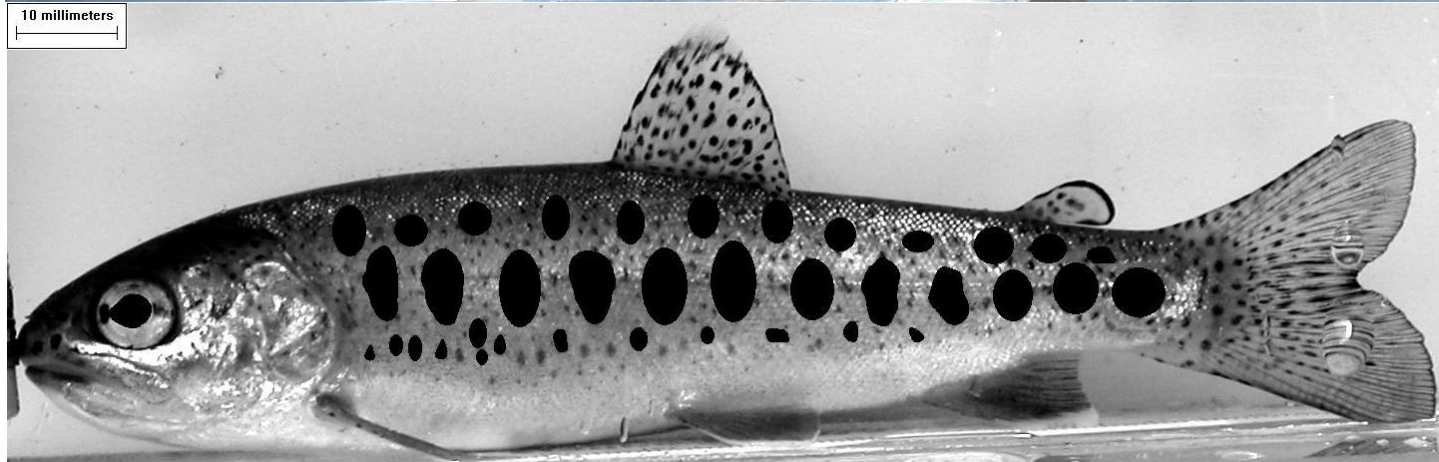
Resident and introduced hatchery stocks of rainbows are morphologically different from steelhead (juveniles).



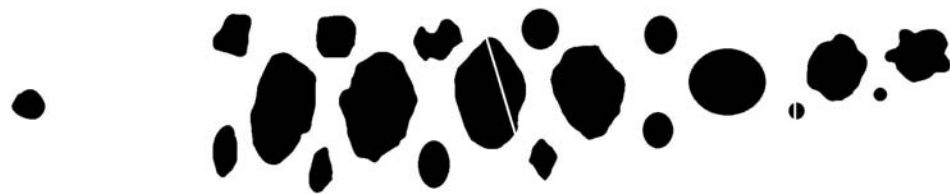
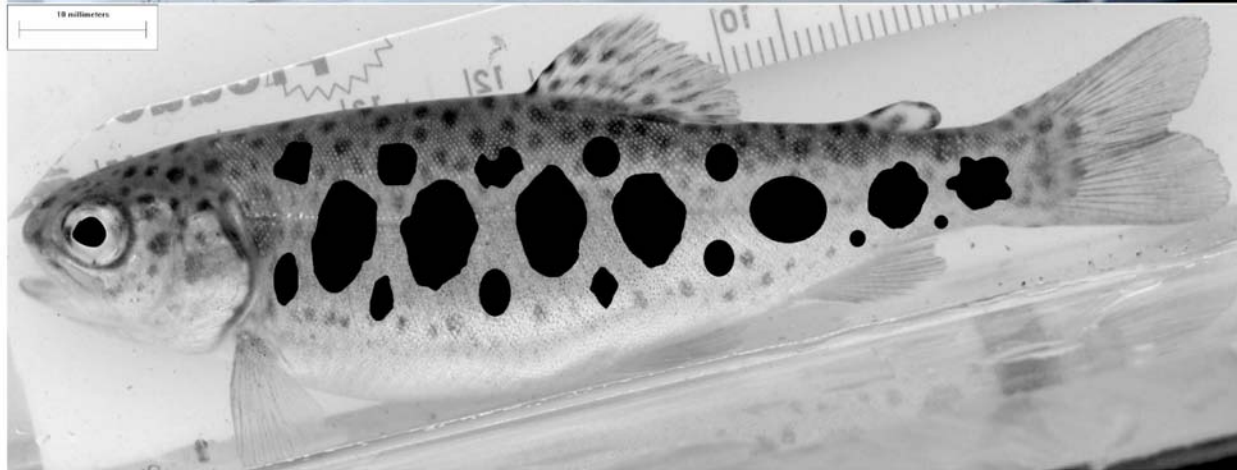
Preliminary parr mark analyses show that resident trout have a more complex coloration pattern.



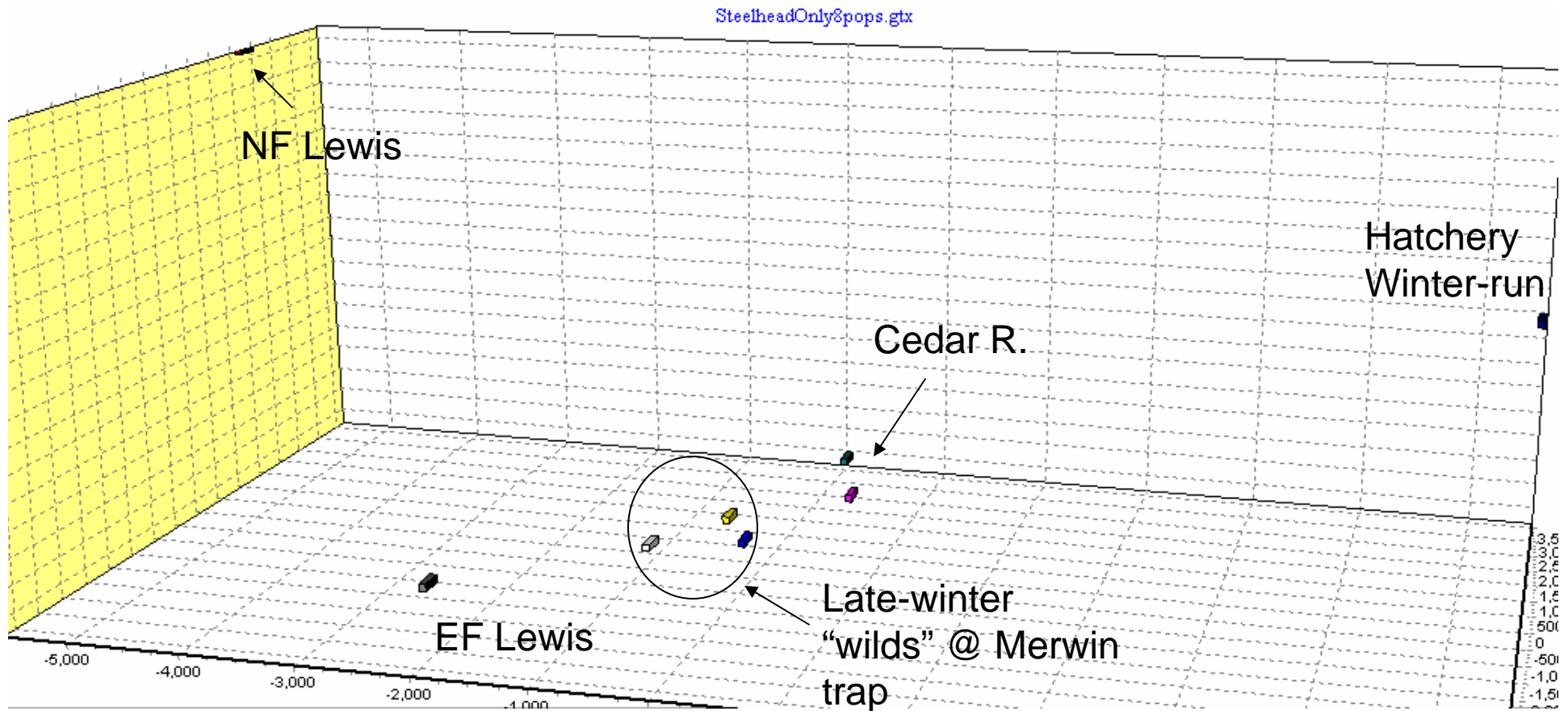
This is an above-dam resident juvenile trout.

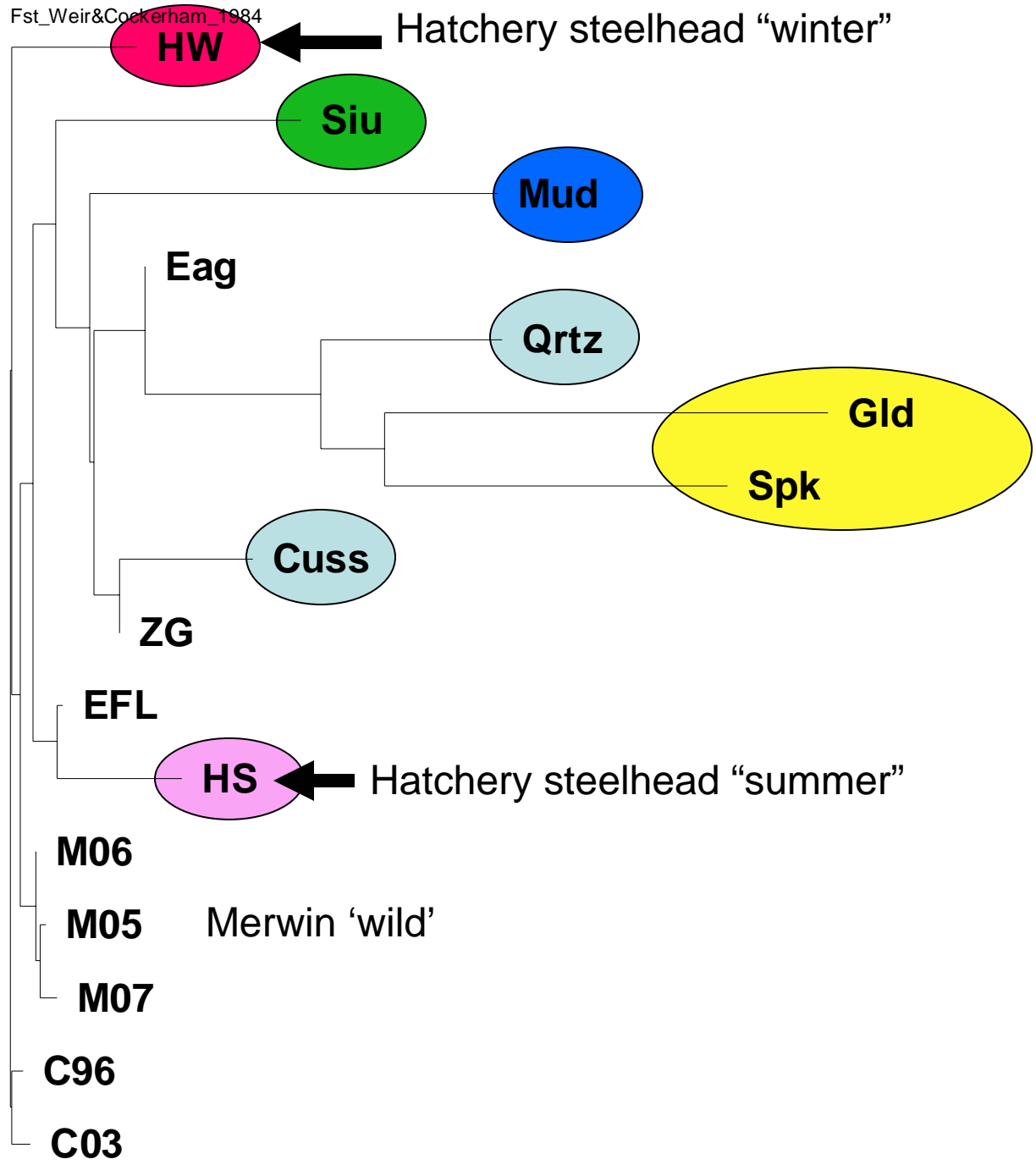


This is a juvenile Goldendale trout.

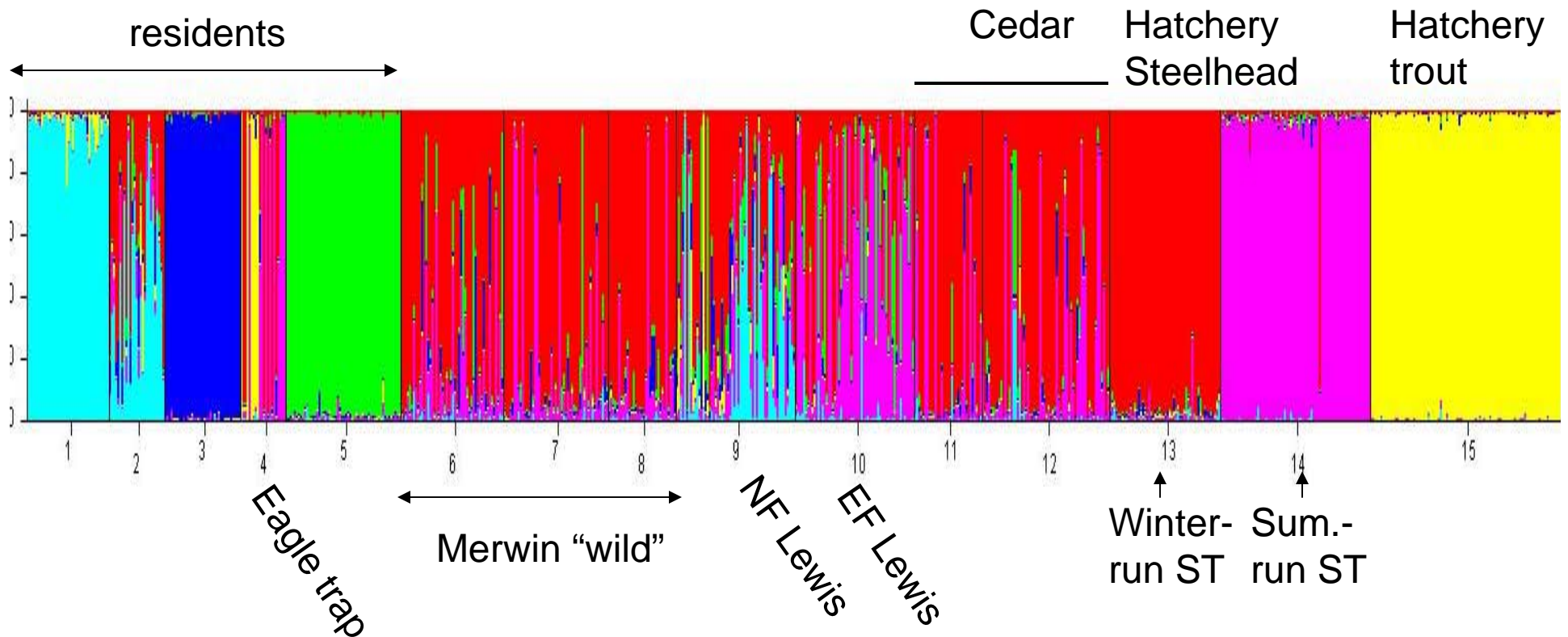


Collections of steelhead are genetically different from the hatchery winter-run steelhead.



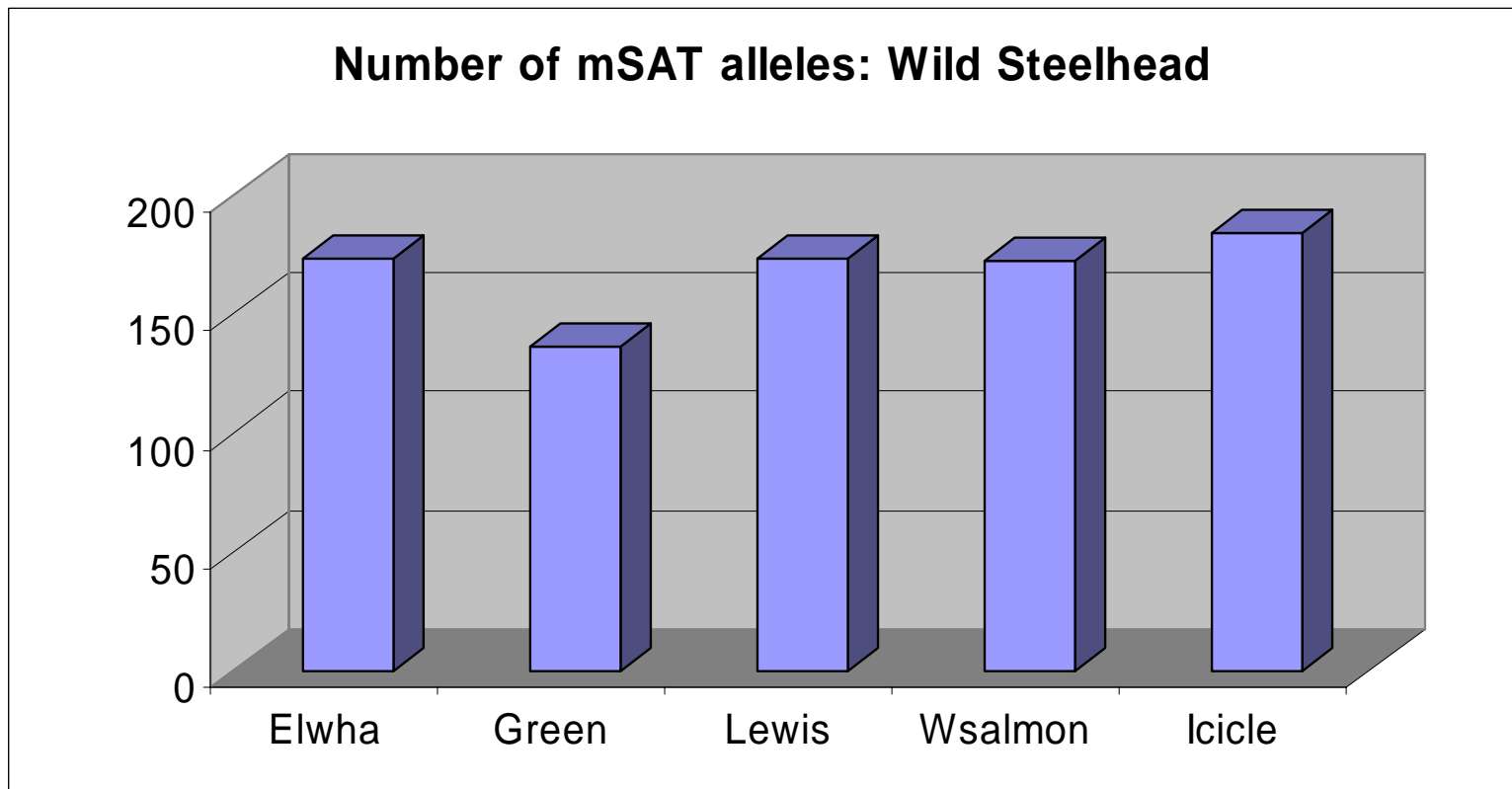


Structure results of Lewis mSATS indicate 6 gene pools.



N=843

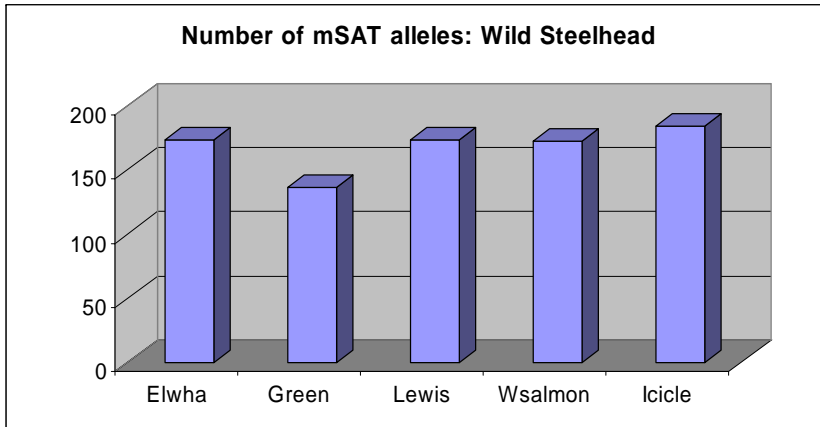
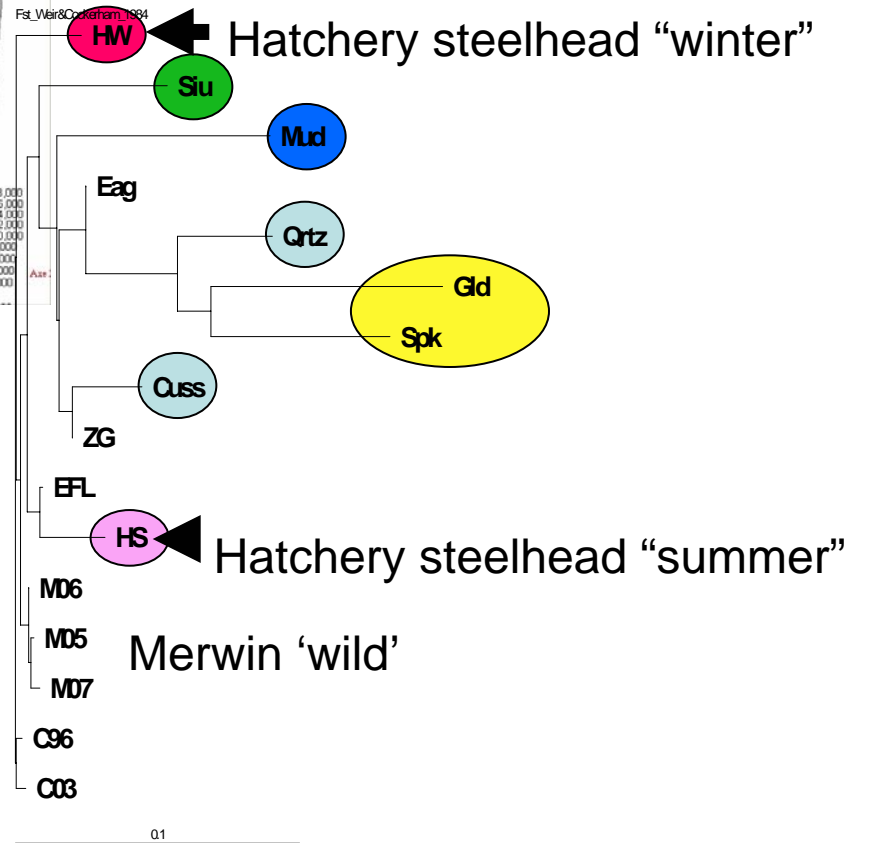
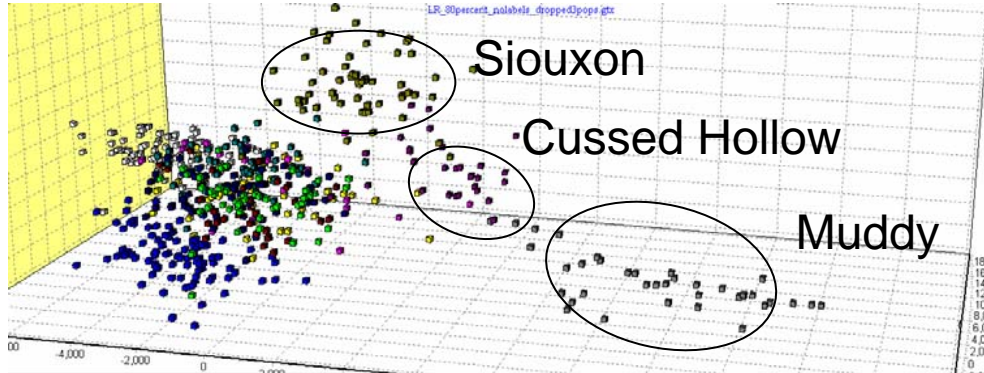
mSAT markers provide a powerful means to monitor the success of recolonization.



168 alleles available to monitor recolonization



mSATs



168 alleles available to monitor recolonization



Bull Trout Distribution

Lewis River Subbasin



*USFWS-CRFPO
Vancouver, WA
August 14, 2008*

Patch concept

- Background
- Patch delineation
- Sample design
- Sample approach
- Results
- Review and adjustment
- Advantages to approach

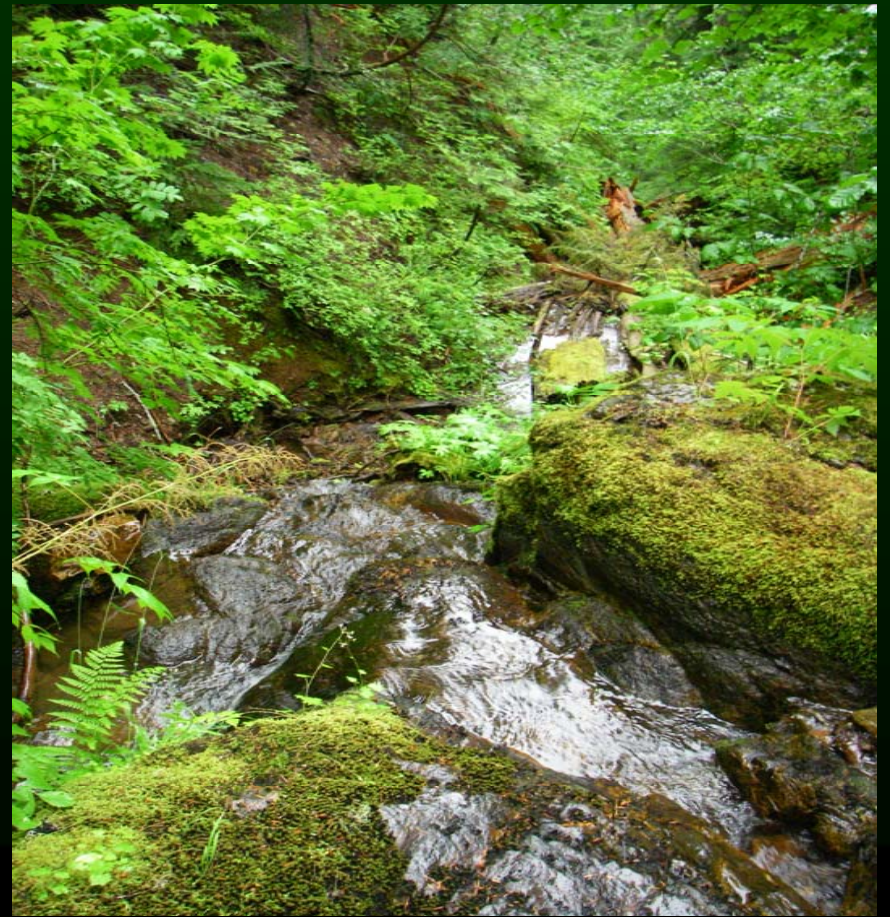


Background - RMEG

- Bull Trout Recovery Monitoring and Evaluation Technical Workgroup (RMEG)
 - A multi-agency body working to overcome challenges so as to provide recommendations toward broad scale monitoring and evaluation strategies essential for evaluating progress towards bull trout recovery objectives/criteria across the region, assessing changing status, and evaluating effectiveness of specific recovery actions.

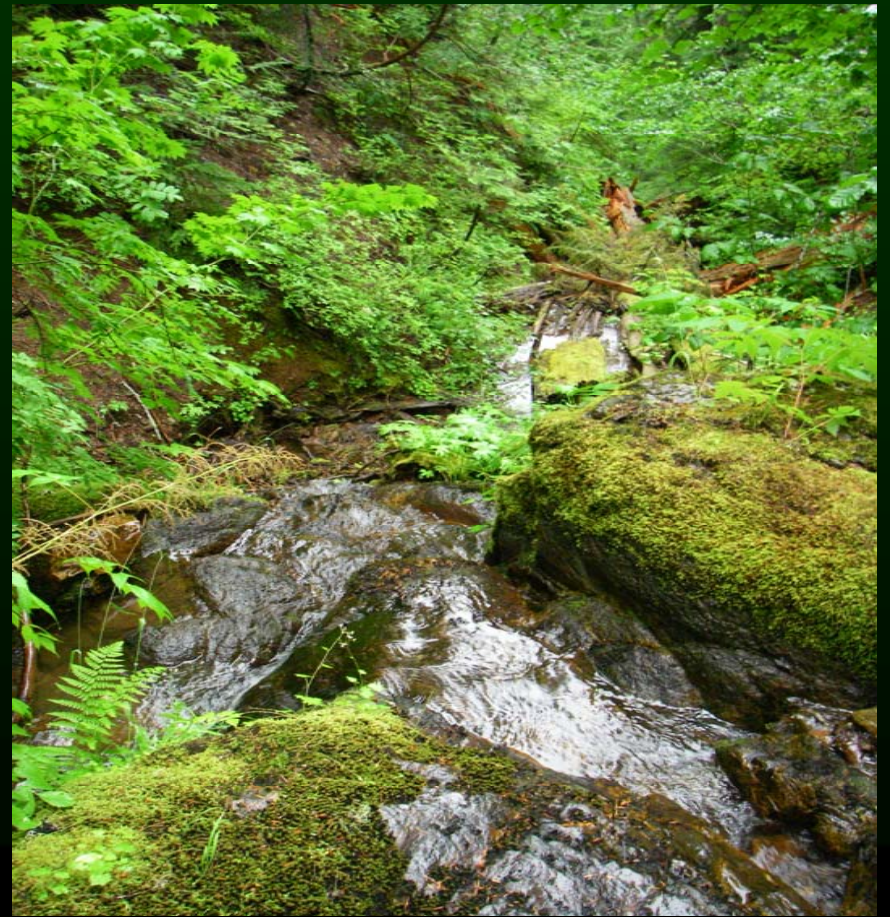
Background – BT Recovery

- Bull Trout “Recovery Objectives”
 - Distribution
 - Abundance
 - Habitat
 - Connectivity



Background – BT Recovery

- Bull Trout “Recovery Objectives”
 - Distribution
 - Abundance
 - Habitat
 - Connectivity



Background – Patch concept

- Patch
 - “the limits or boundaries of environmental conditions that can support a biological response” – Dunham et al. 2002
- Concept rests on the observations that animal populations are not uniformly distributed across the landscape
- Distributions are tied to specific habitat features



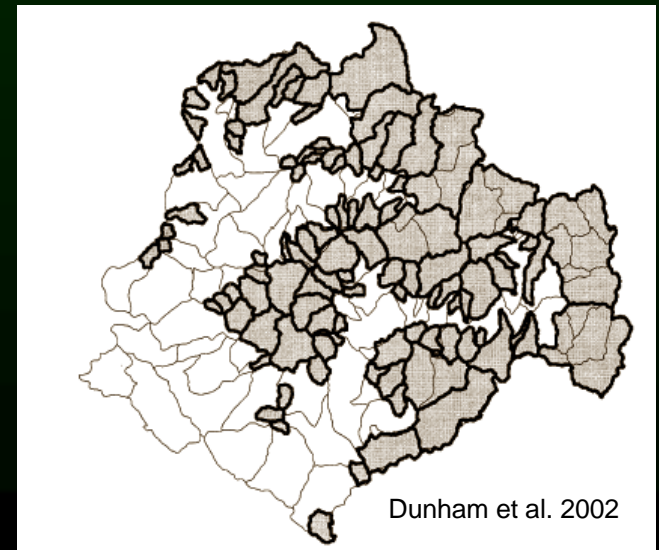
Background – Patch concept

- Temperature/Elevation
- Catchment area
- Stream width
- Gradient
- Barriers
- Nonnative fish
- Solar radiation
- Patch isolation
- Road density
- Geology



Background – Patch concept

- Dunham and Rieman (1999) applied patch concept to Boise River basin
- “Biological Response”
 - Identified potential spawning and early life rearing habitat for bull trout
- Utilized many habitat parameters

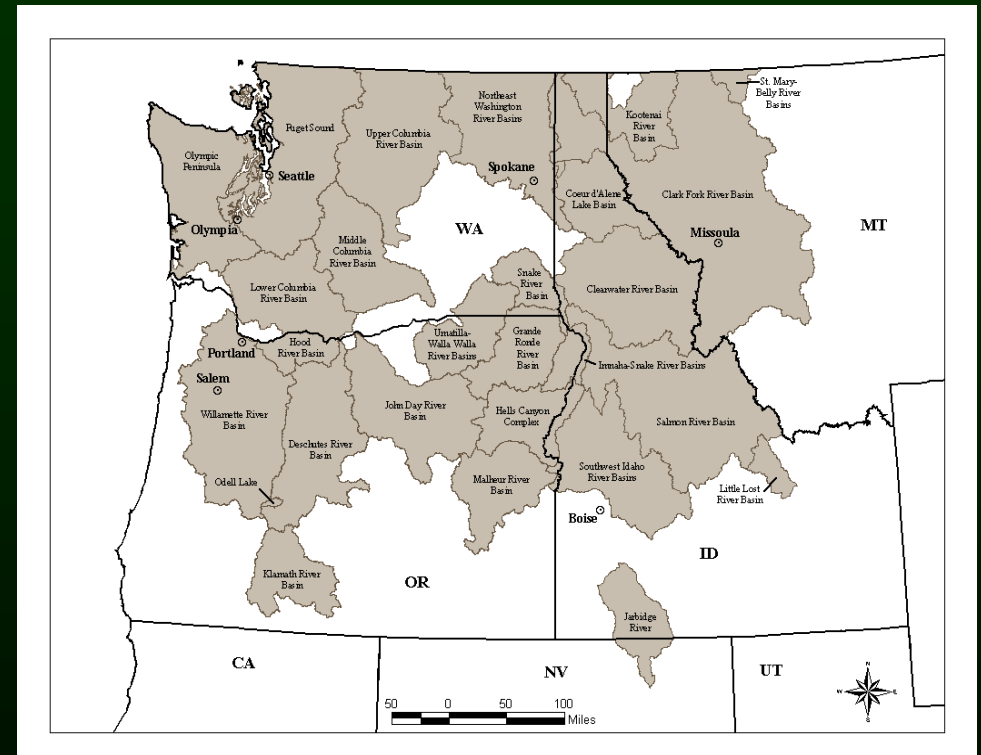


Background – Patch concept

- If patches could be delineated for bull trout in core areas across the range, it potentially provides a sampling template for assessment and monitoring of distribution by modeling potential habitat and becomes a quantifiable unit toward recovery

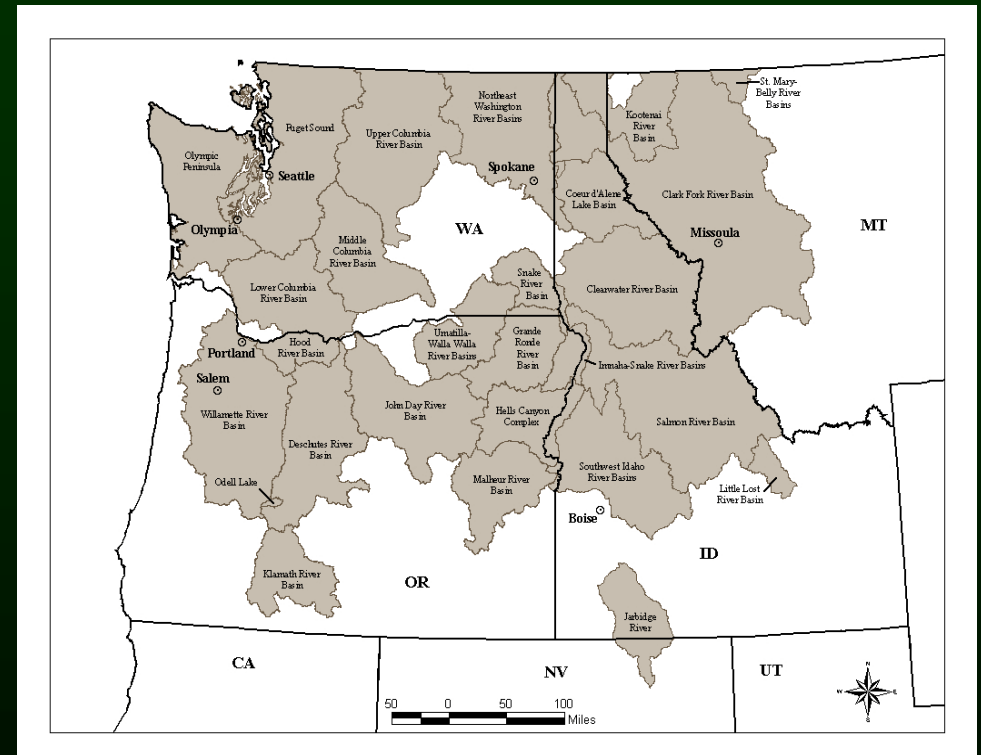
Background – Patch concept

- RMEG challenge
 - Apply patch concept across a broad geographic scale
 - Varying amounts of available information
 - Limited resources



Background – Patch concept

- RMEG challenge
 - Apply patch concept across a broad geographic scale
 - Varying amounts of available information
 - Limited resources
 - Develop sampling design within patch framework that allows a statistically sound and rigorous evaluation of current bull trout distribution among and within patches and changes over time
 - Limited resources



Background – Patch concept

- RMEG guidance

- Bull trout patches should be applied as a consistent spatial template

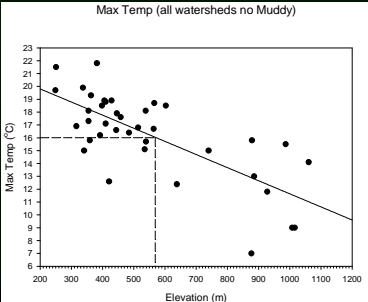
- Water temperature/elevation ($\leq 16^{\circ}$ C maximum temp)
- Catchment area (≥ 400 hectares)
- Stream order (no larger than 3rd order at 1:100k scale)

- Determine the proportion of occupied patches

Patch delineation – Lewis River

- Compile available temperature data
- Develop temperature/elevation model
- Conduct GIS analyses

Creek	Station Number	Location	Watershed	T ₉₀ (°C)	T ₇₀ (°C)	Year	Minimum
Carroll Creek	000001	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2001	15.2
Carroll Creek	000002	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2002	15.2
Carroll Creek	000003	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2003	15.2
Carroll Creek	000004	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2004	15.2
Carroll Creek	000005	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2005	15.2
Carroll Creek	000006	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2006	15.2
Carroll Creek	000007	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2007	15.2
Carroll Creek	000008	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2008	15.2
Carroll Creek	000009	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2009	15.2
Carroll Creek	000010	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2010	15.2
Carroll Creek	000011	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2011	15.2
Carroll Creek	000012	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2012	15.2
Carroll Creek	000013	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2013	15.2
Carroll Creek	000014	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2014	15.2
Carroll Creek	000015	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2015	15.2
Carroll Creek	000016	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2016	15.2
Carroll Creek	000017	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2017	15.2
Carroll Creek	000018	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2018	15.2
Carroll Creek	000019	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2019	15.2
Carroll Creek	000020	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2020	15.2
Carroll Creek	000021	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2021	15.2
Carroll Creek	000022	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2022	15.2
Carroll Creek	000023	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2023	15.2
Carroll Creek	000024	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2024	15.2
Carroll Creek	000025	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2025	15.2
Carroll Creek	000026	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2026	15.2
Carroll Creek	000027	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2027	15.2
Carroll Creek	000028	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2028	15.2
Carroll Creek	000029	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2029	15.2
Carroll Creek	000030	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2030	15.2
Carroll Creek	000031	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2031	15.2
Carroll Creek	000032	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2032	15.2
Carroll Creek	000033	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2033	15.2
Carroll Creek	000034	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2034	15.2
Carroll Creek	000035	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2035	15.2
Carroll Creek	000036	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2036	15.2
Carroll Creek	000037	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2037	15.2
Carroll Creek	000038	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2038	15.2
Carroll Creek	000039	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2039	15.2
Carroll Creek	000040	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2040	15.2
Carroll Creek	000041	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2041	15.2
Carroll Creek	000042	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2042	15.2
Carroll Creek	000043	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2043	15.2
Carroll Creek	000044	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2044	15.2
Carroll Creek	000045	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2045	15.2
Carroll Creek	000046	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2046	15.2
Carroll Creek	000047	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2047	15.2
Carroll Creek	000048	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2048	15.2
Carroll Creek	000049	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2049	15.2
Carroll Creek	000050	Shoals Rd. Fork Creek Dam/Res.	Lewis	19.2	17.2	2050	15.2



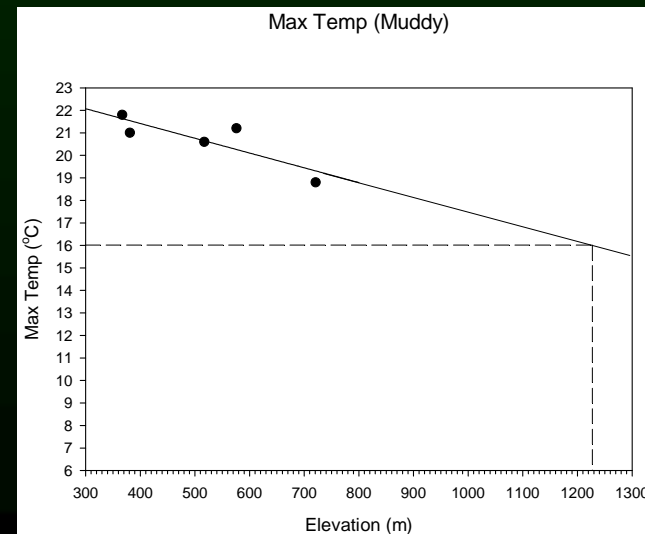
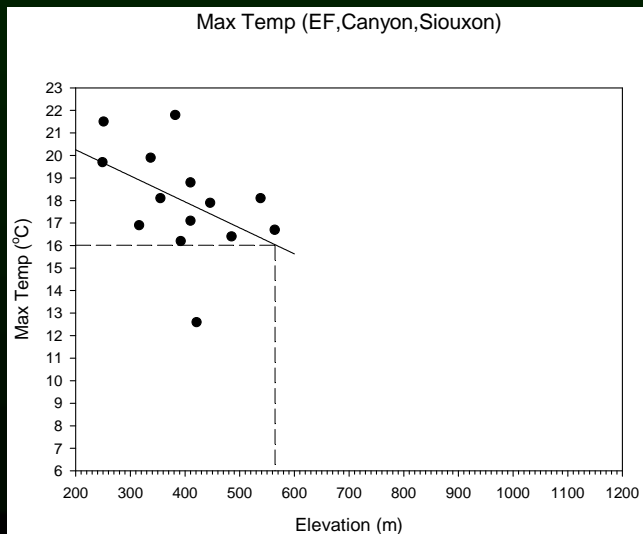
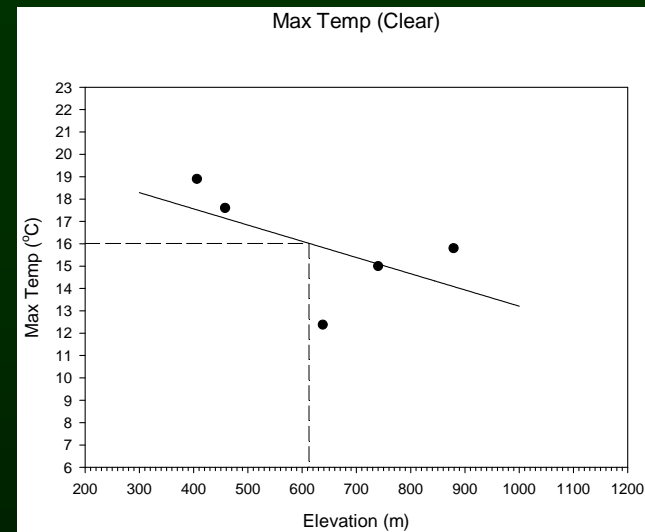
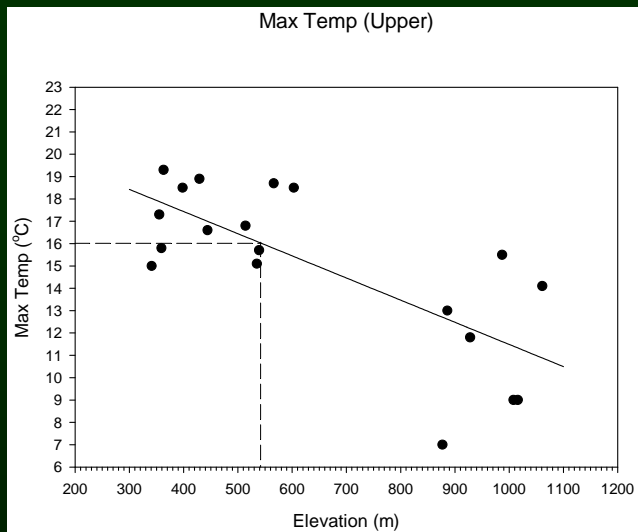
Patch delineation – Temperature

- Central Skill Center/Gifford Pinchot National Forest
 - 1996 Water Quality Monitoring Report
 - 1997 Water Quality Monitoring Report
 - 1998 Water Quality Monitoring Report
- Mt. St. Helens National Volcanic Monument/Gifford Pinchot National Forest
 - 1999 Water Quality Monitoring Report
 - 2000 Water Quality Monitoring Report
 - 2001 Water Quality Monitoring Report
 - 2002 Water Quality Monitoring Report
 - 2003 Water Quality Monitoring Report

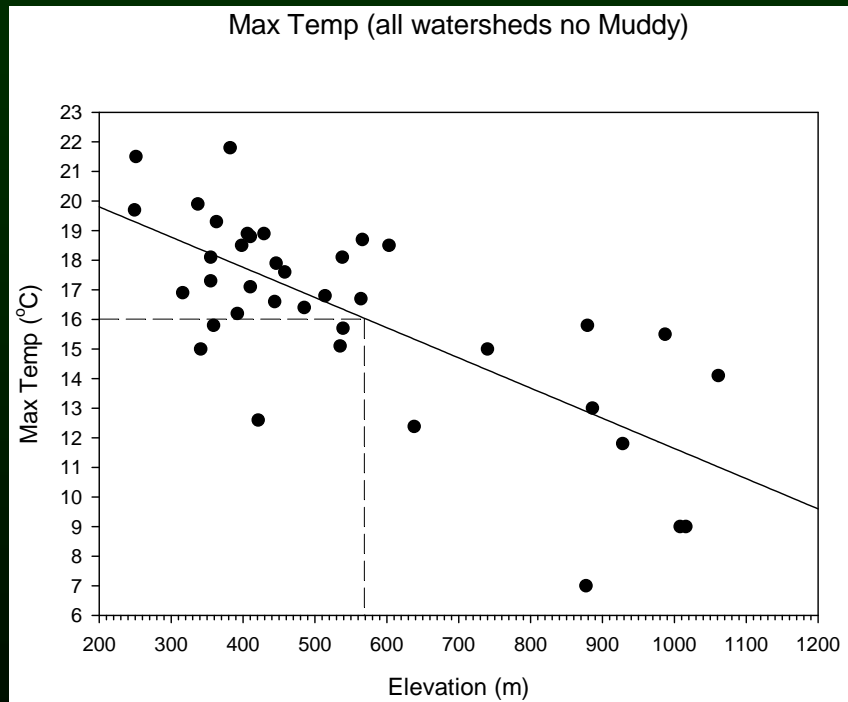
Patch delineation – Temperature

Stream	Station Number	Location	Watershed	UTM-X	UTM-Y	Elevation (m)	Year	Maximum Temperature
Canyon Creek	03080501	above Big Rock Creek (baseline)	Canyon/Siouxon	559232.88	5086279.12	316	1998	16.9
Canyon Creek		above Jake's Creek	Canyon/Siouxon	564724.20	5082796.82	421	2001	12.6
Siouxon Creek	0308052	below West Creek (baseline)	Canyon/Siouxon	563518.79	5088288.13	337	1998	19.9
Clear Creek	03070603	above Elk Creek	Clear Creek	582537.49	5120968.16	740	1998	15.0
Clear Creek	03070605	below Elk Creek	Clear Creek	581426.03	5120040.96	638	1999	12.4
Clear Creek	03070601	nr Muddy River confluence (baseline)	Clear Creek	579083.32	5110930.38	406	1998	18.9
Clear Creek	03070602	below Spencer Butte	Clear Creek	579864.22	5114748.15	458	1997	17.6
Wright Creek	03070604	trib to Clear Creek	Clear Creek	581798.96	5116470.89	879	1998	15.8
Copper Creek	03130501	above Bolin Creek (baseline)	EF Lewis	559366.82	5071546.32	392	2002	21.8
EF Lewis River	03130500	below Copper Creek (baseline)	EF Lewis	554813.04	5073421.40	251	1998	21.5
EF Lewis River	03130506	above Green Fork	EF Lewis	566063.54	5073967.14	538	2003	18.1
EF Lewis River		below Green Fork	EF Lewis	565126.00	5074492.88	485	2002	16.4
EF Lewis River	03130505	below Little Creek	EF Lewis	562849.11	5074492.88	446	2000	17.9
EF Lewis River	03130502	below McKinley Creek	EF Lewis	561241.90	5075162.55	410	1998	18.8
EF Lewis River	03130502	above Slide Creek	EF Lewis	561241.90	5075162.55	410	2001	17.1
EF Lewis River		below Slide Creek	EF Lewis	560170.42	5074760.75	355	2001	18.1
EF Lewis River		below Sunset Falls campground	EF Lewis	554946.98	5073421.40	249	2003	19.7
Green Fork	03130503	trib to EF Lewis River	EF Lewis	566331.41	5075430.42	564	1998	16.7
Slide Creek		.25 mi above EF Lewis	EF Lewis	560036.49	5075698.29	392	2001	16.2
Clearwater Creek	03070707	Middle Bridge	Muddy River	575786.16	5124379.33	721	1998	18.8
Clearwater Creek, Lower	14216300		Muddy River	575872.92	5119173.29	576	1998	21.2
Muddy River	03070509	above Clear Creek (baseline)	Muddy River	576569.84	5107383.01	381	2003	21.0
Muddy River		below Clear Creek	Muddy River	576478.53	5106196.01	367	2003	21.8
Smith Creek	14216200	trib to Muddy River	Muddy River	572894.20	5115075.04	517	1998	20.6
Alec Creek		nr Lewis River confluence	Upper Lewis	588479.42	5114139.77	535	2003	15.1
Big Creek		Big Creek gaging station	Upper Lewis	588059.45	5104900.56	987	2001	15.5
Big Creek Tributary		above Skookum Meadows	Upper Lewis	587723.48	5106244.44	1061	2001	14.1
Big Spring Creek	03060506	trib to Lewis River	Upper Lewis	605361.98	5120187.25	1008	1997	9.0
Lewis River	03060515	below Alec Creek	Upper Lewis	588296.67	5113467.83	514	1998	16.8
Lewis River	03060511	above Big Creek	Upper Lewis	583691.82	5106378.63	398	2003	18.5
Lewis River	03060500	above Curly Creek (baseline)	Upper Lewis	580130.83	5101265.41	355	2003	17.3
Lewis River	03060502	below Crab Creek	Upper Lewis	585244.05	5110396.16	444	1997	16.6
Lewis River	03060513	below Cussed Hollow Creek	Upper Lewis	584787.51	5110122.24	429	2003	18.9
Lewis River	03060512	above Quartz Creek	Upper Lewis	589718.12	5114413.69	539	2001	15.7

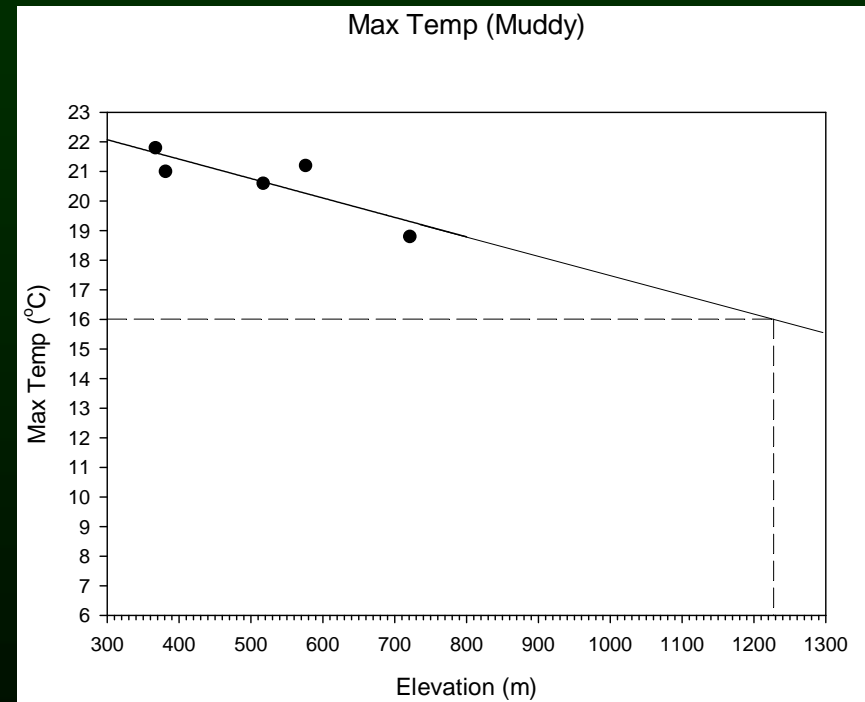
Patch delineation – Temperature



Patch delineation – Temperature

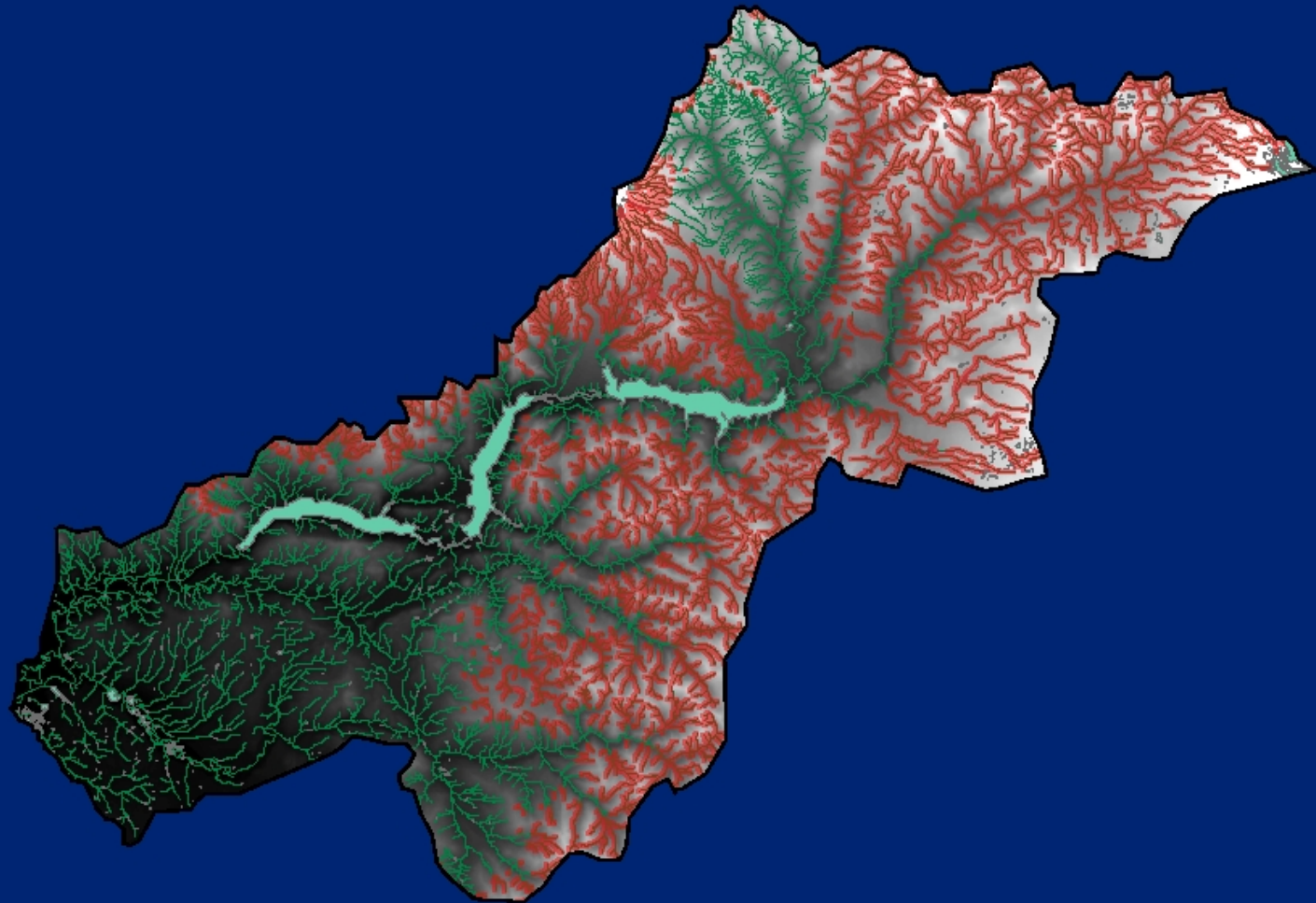


570 m



1230 m

Patch delineation – GIS



570 m

1230 m

Patch delineation – GIS

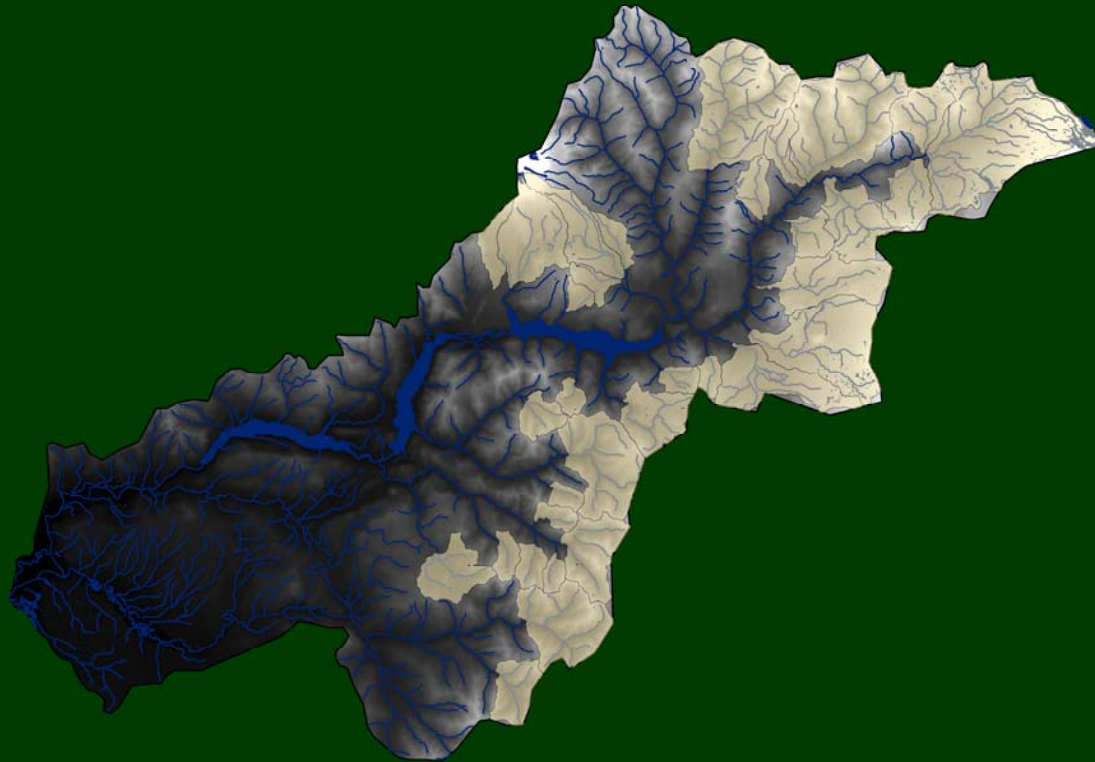


Sample design – GRTS

- Generalized Random-Tessellation Stratified (GRTS) design
 - Developed by EPA Environmental Monitoring and Assessment Program (EMAP)
 - GIS approach that lends itself to relatively broad applications
 - e.g., evaluate status of salmonid stocks in Oregon
 - Random and spatially balanced design
 - Allows one to make a statistical inference about the status and trend of stream attributes (e.g., presence/absence of bull trout) within a predefined stream network (e.g., a patch)

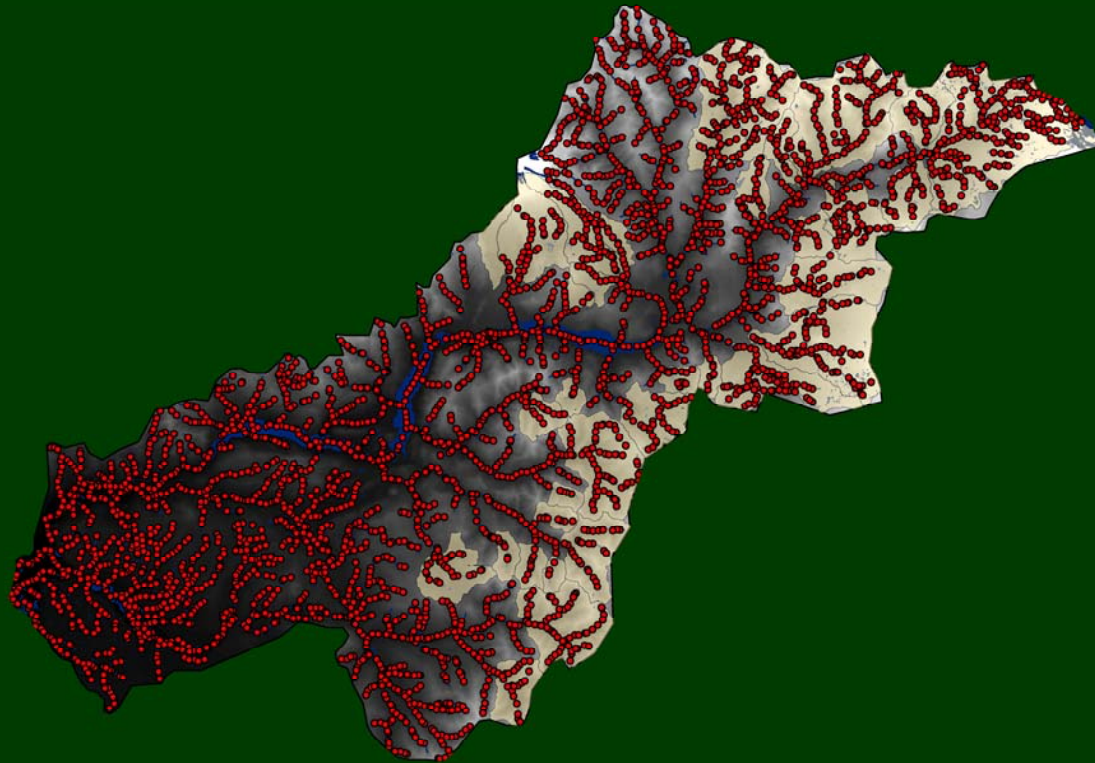
Sample design – GRTS

- One sample site per 500 m (4,056)



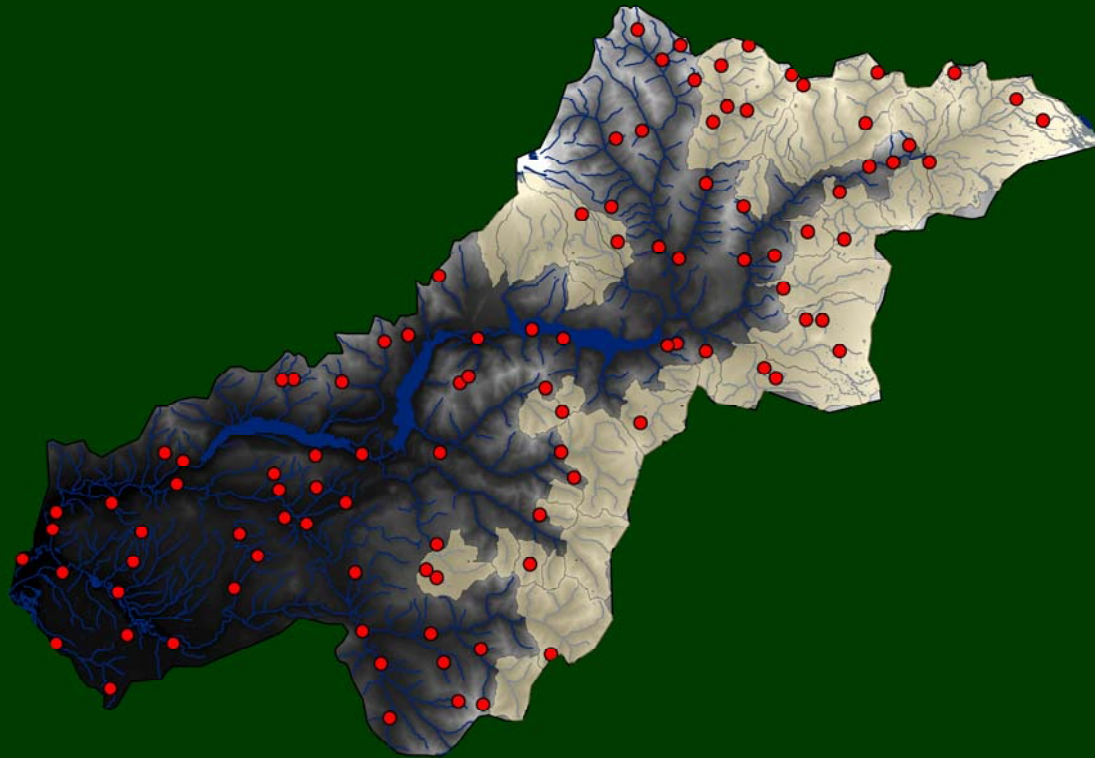
Sample design – GRTS

- One sample site per 500 m (4,056)



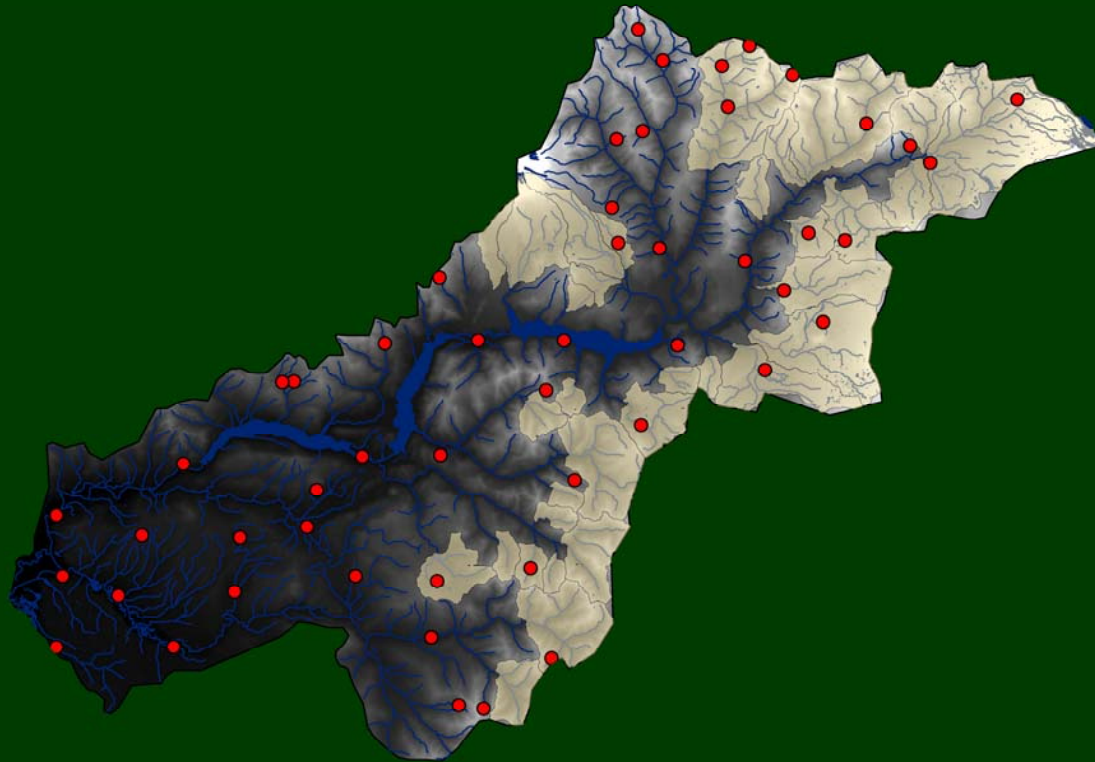
Sample design – GRTS

- 100 sites



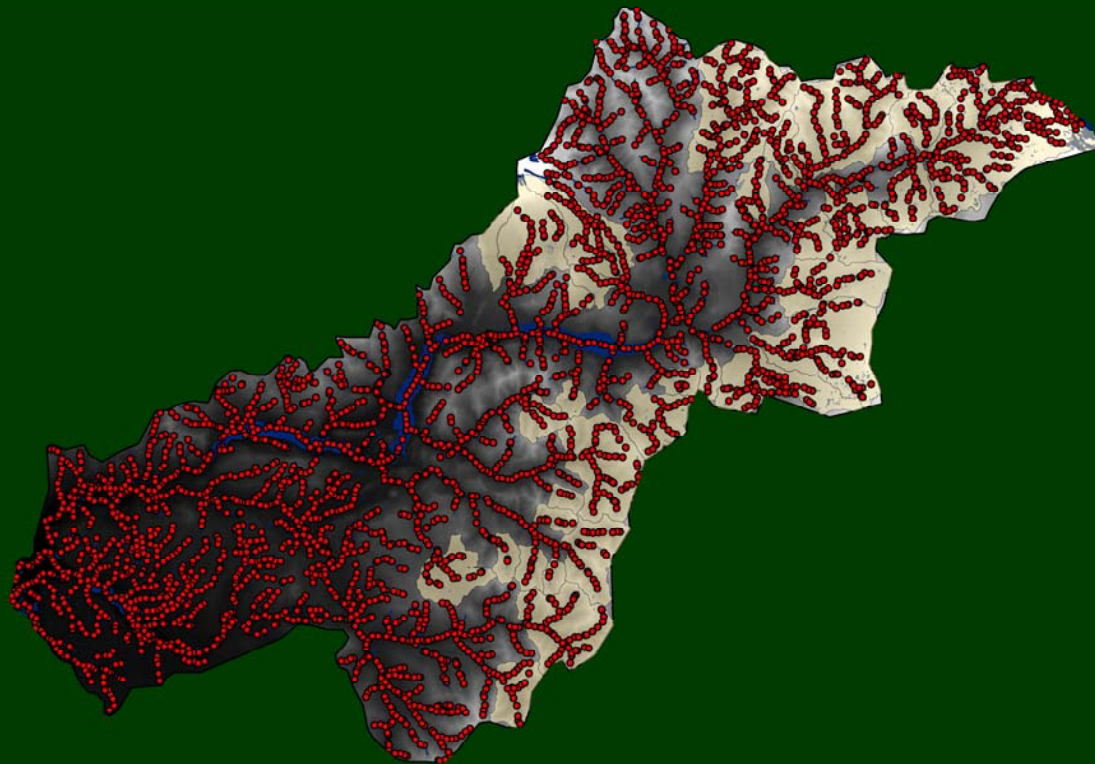
Sample design – GRTS

- 50 sites



Sample design – GRTS

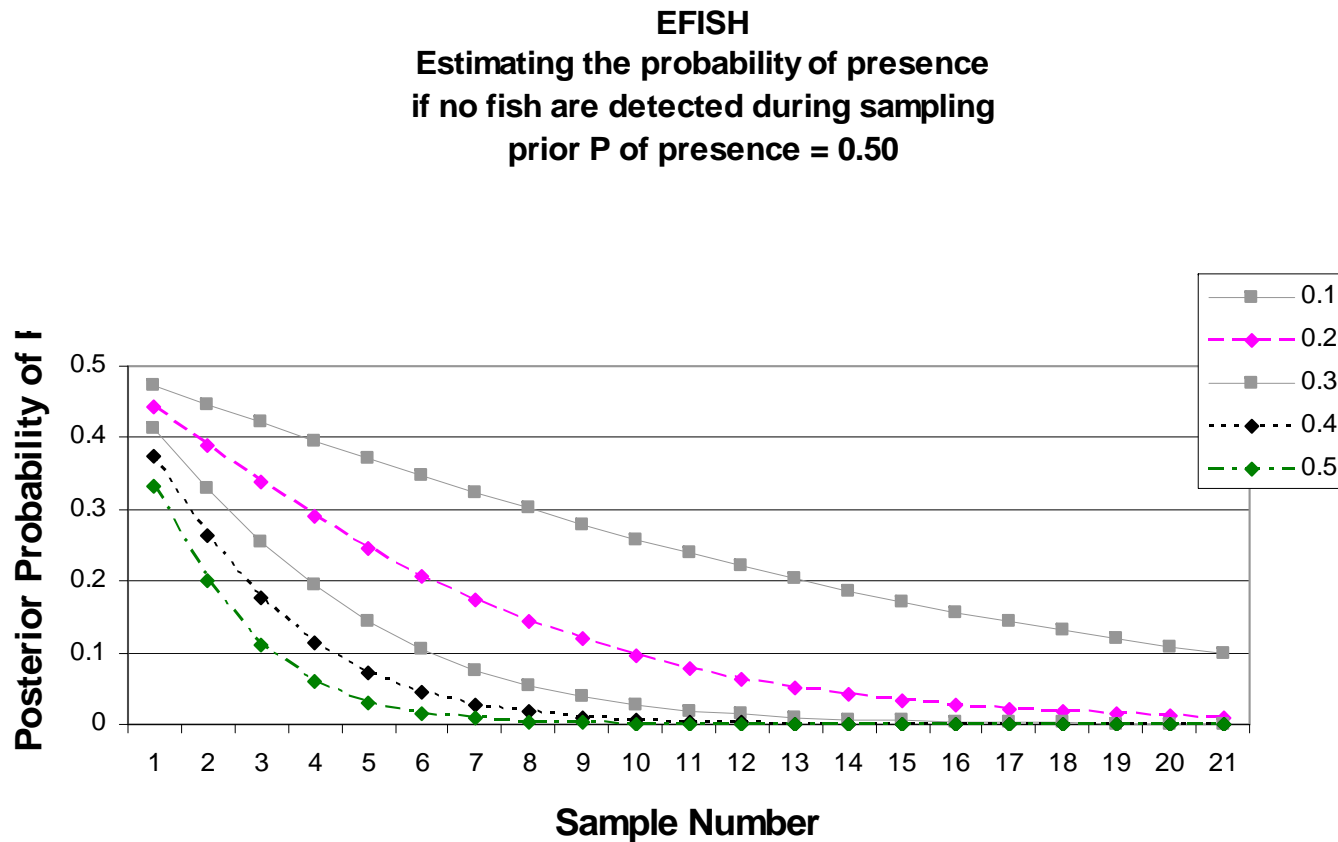
- 4,056 sites



Sample design – Pine Creek



Sample design – Probability of detection?



Sample design – Pine Creek

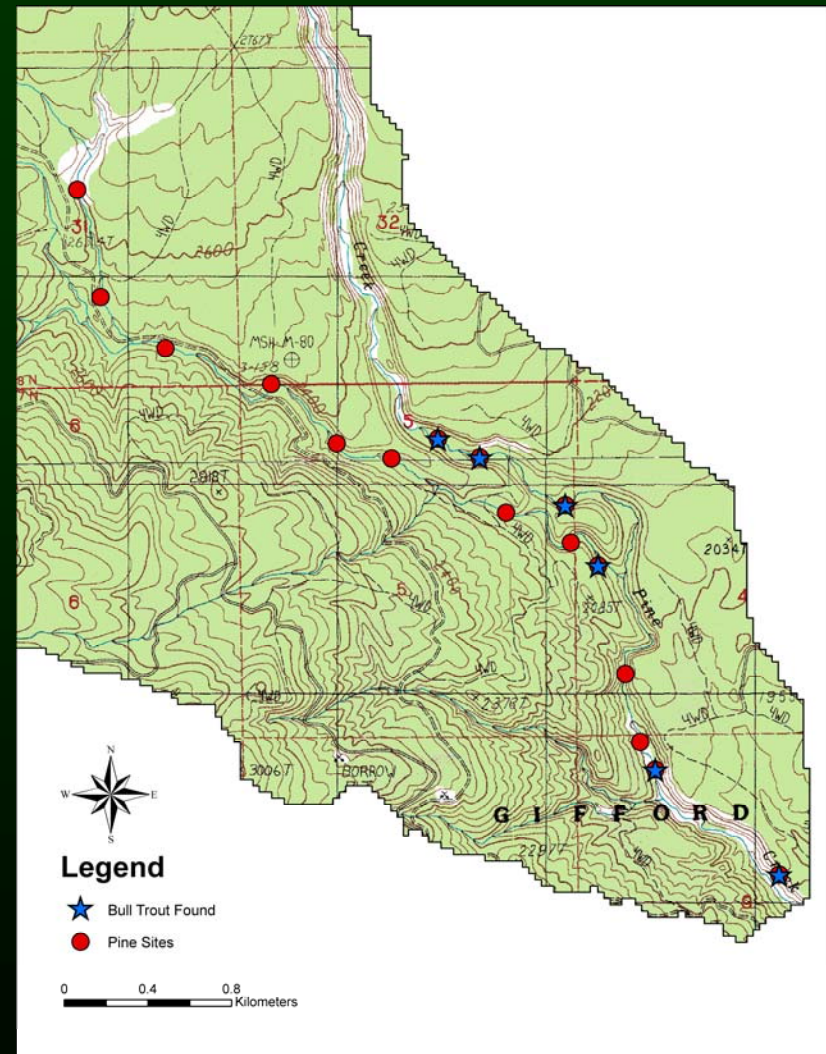


Sample design – Pine Creek

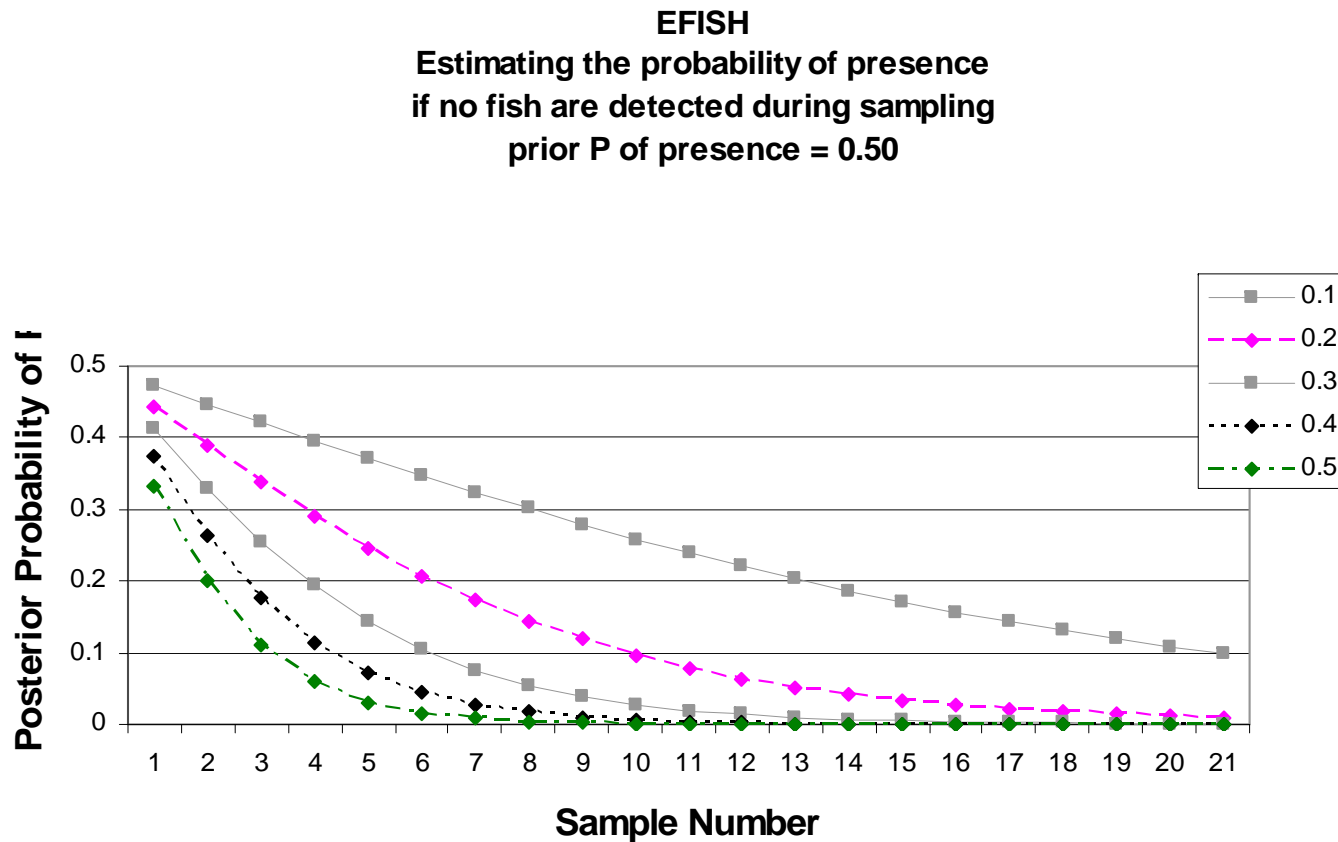


Sample design – Pine Creek

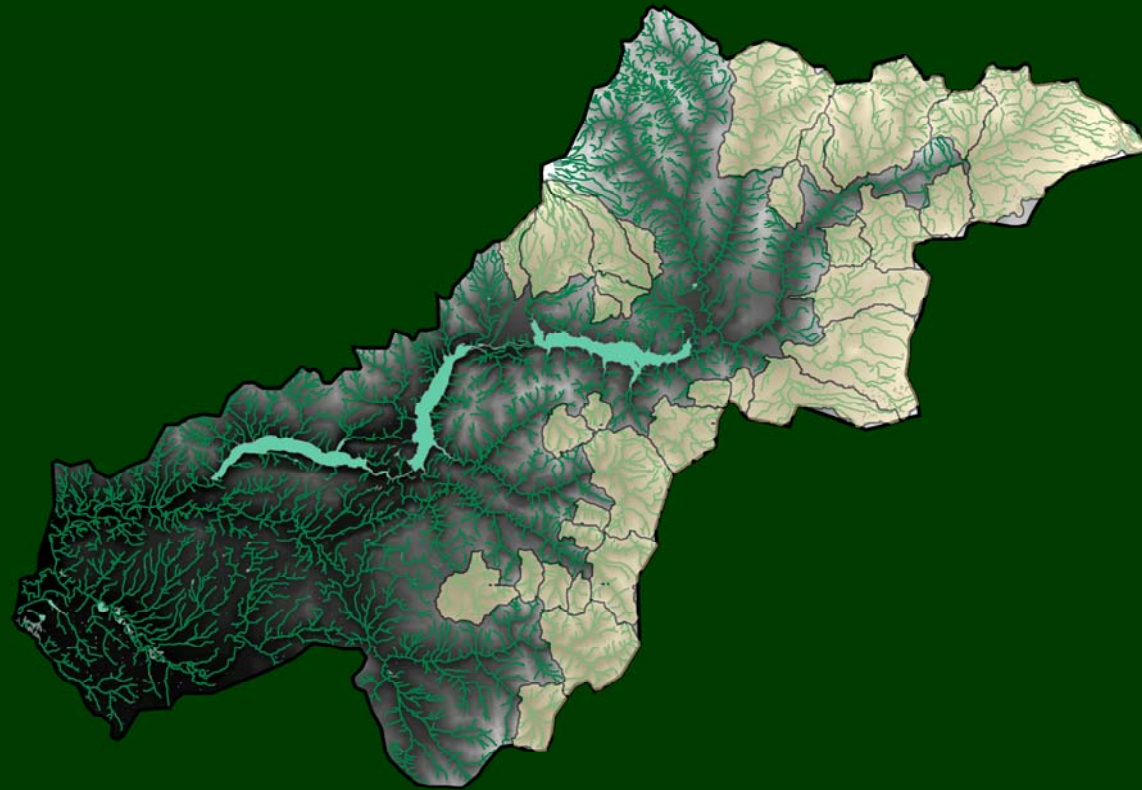
- Bull trout captured in 6 of 16 sites
- Probability of detection = $6/16 = 37.5\%$



Sample design – Probability of detection

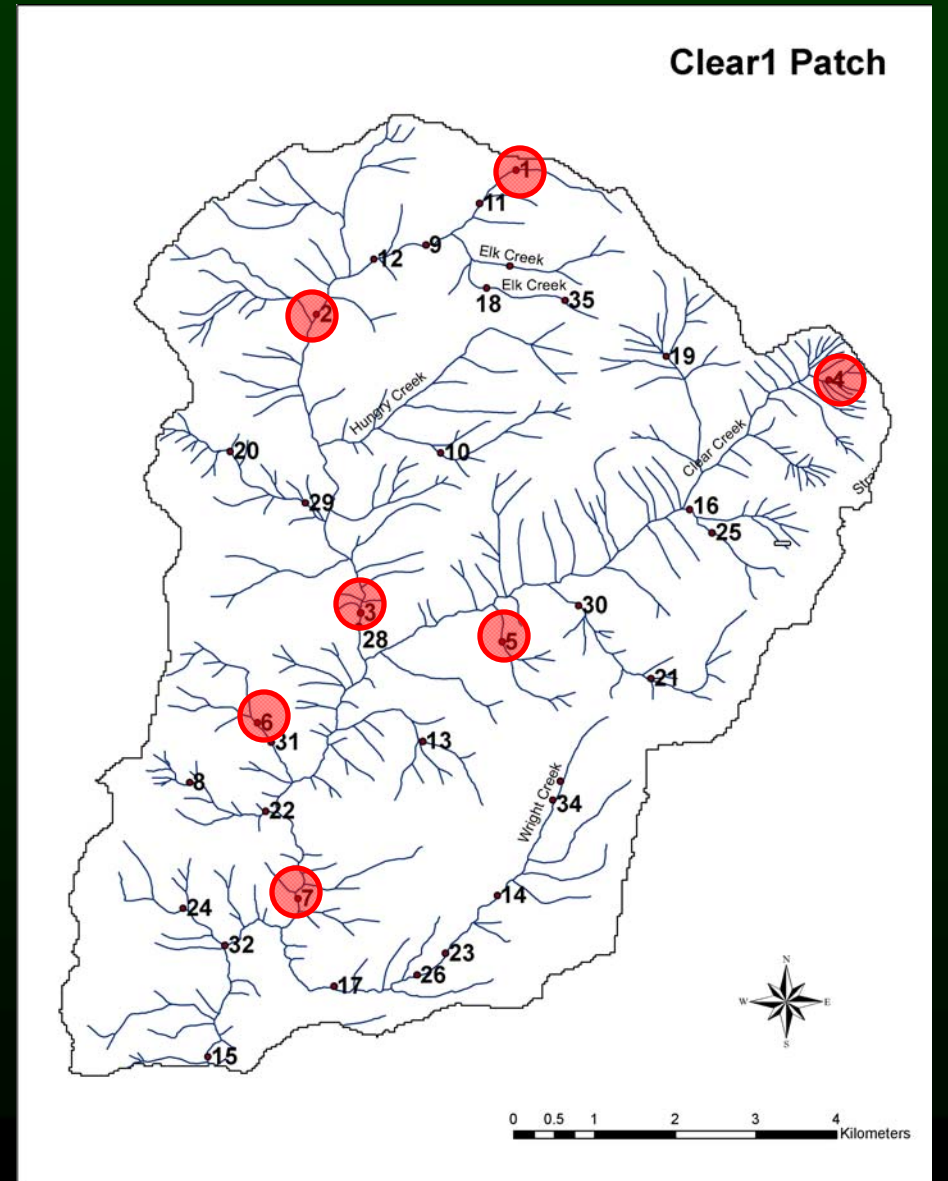


Sample design – Distribution



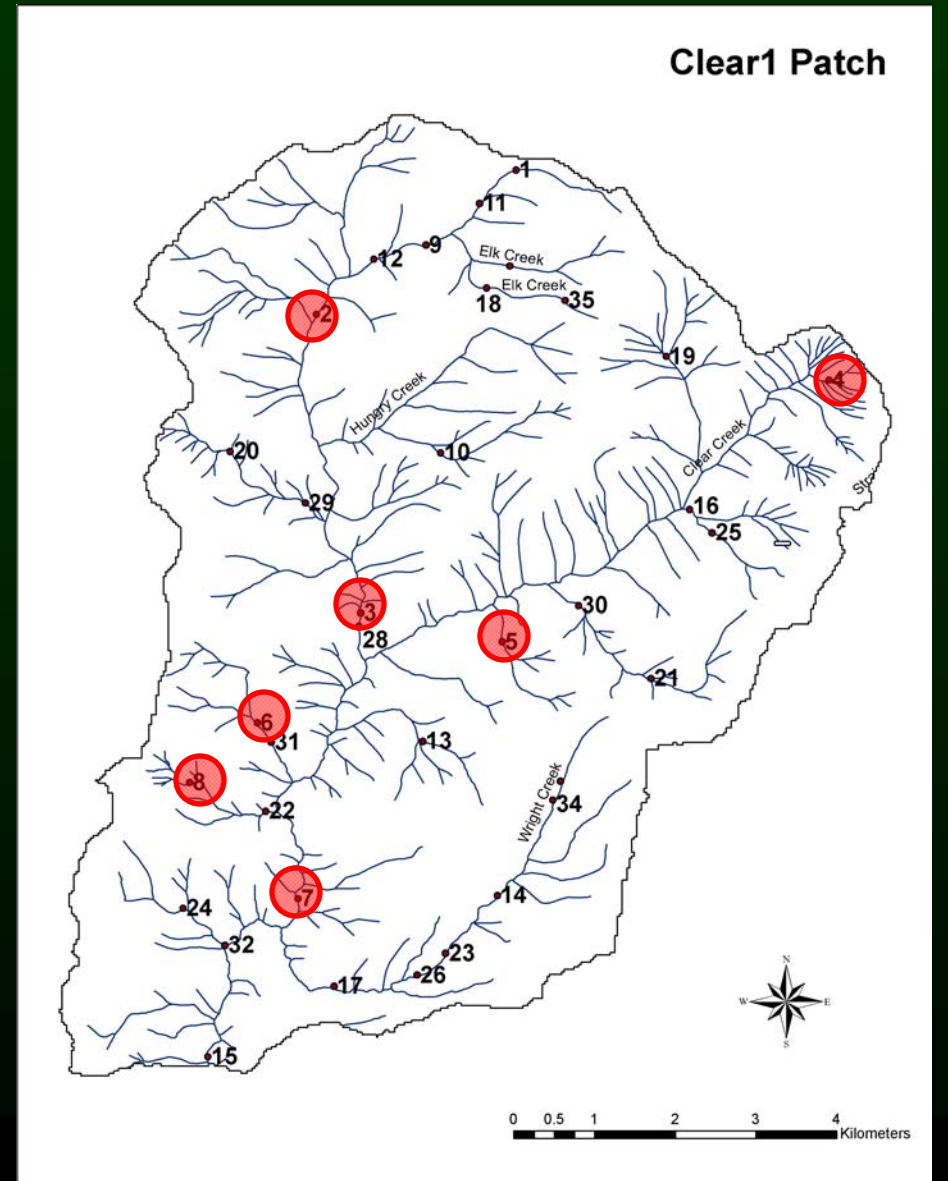
Sample design – Distribution

- Top 35 of 142 sample sites
- Sample the top 7 to determine among patch distribution (i.e., occupancy)
- Once multiple size classes (> 30 mm difference) are detected, patch determined occupied
- If bull trout not detected, 80% confident that the patch is not occupied



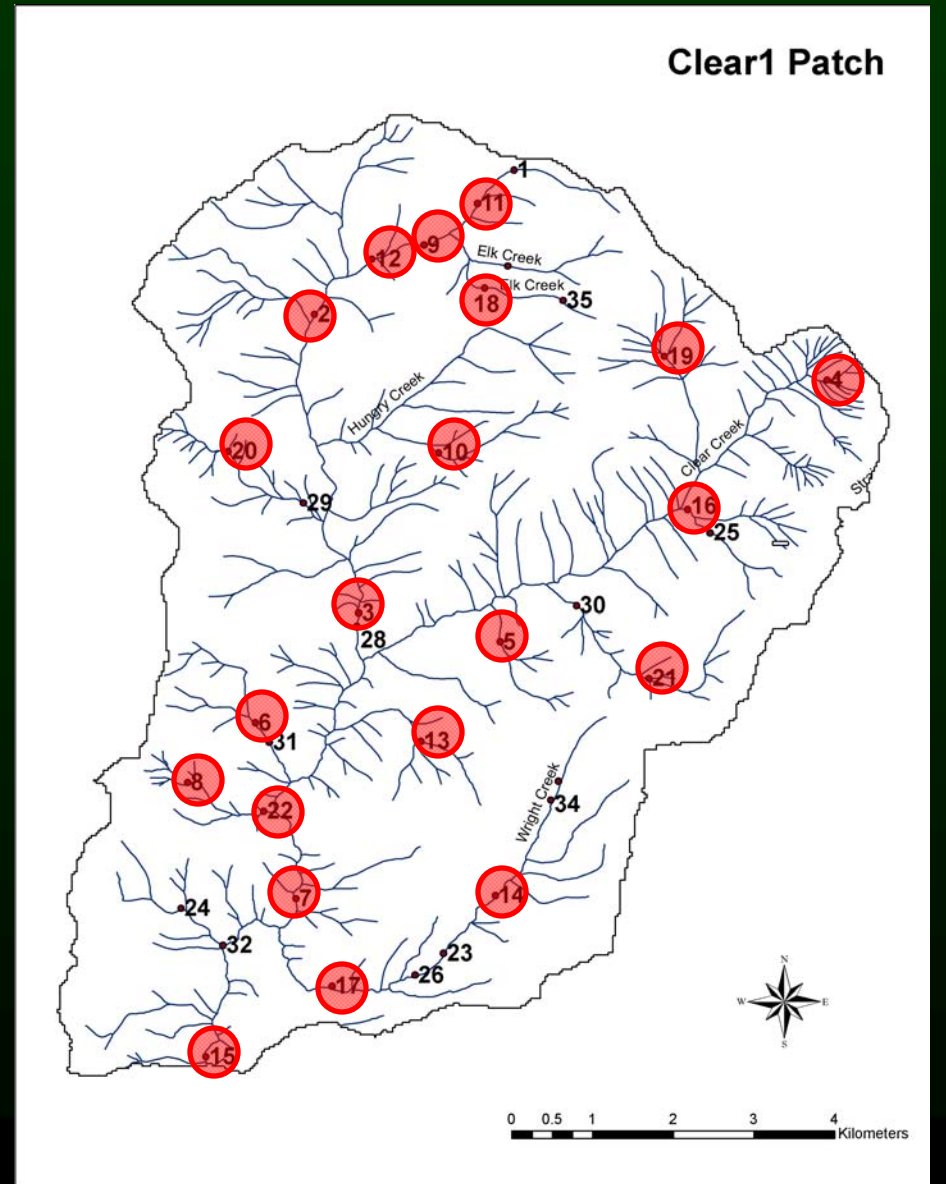
Sample design – Distribution

- Top 35 of 142 sample sites
- Sample the top 7 to determine among patch distribution (i.e., occupancy)
- Once multiple size classes (> 30 mm difference) are detected, patch determined occupied
- If bull trout not detected, 80% confident that the patch is not occupied



Sample design – Distribution

- Determine bull trout distribution within occupied patches
- Expand initial 7 sample sites to the top 21
- These become your standardized sites for monitoring changes in distribution

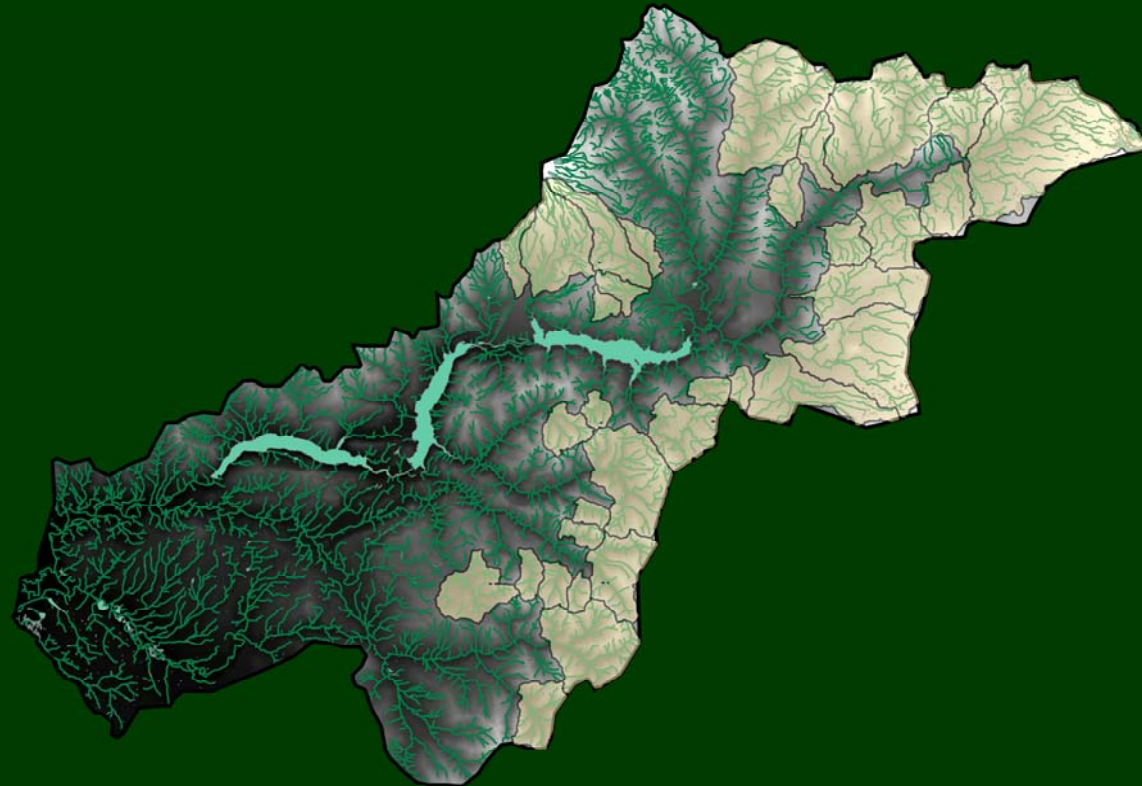


Sample approach

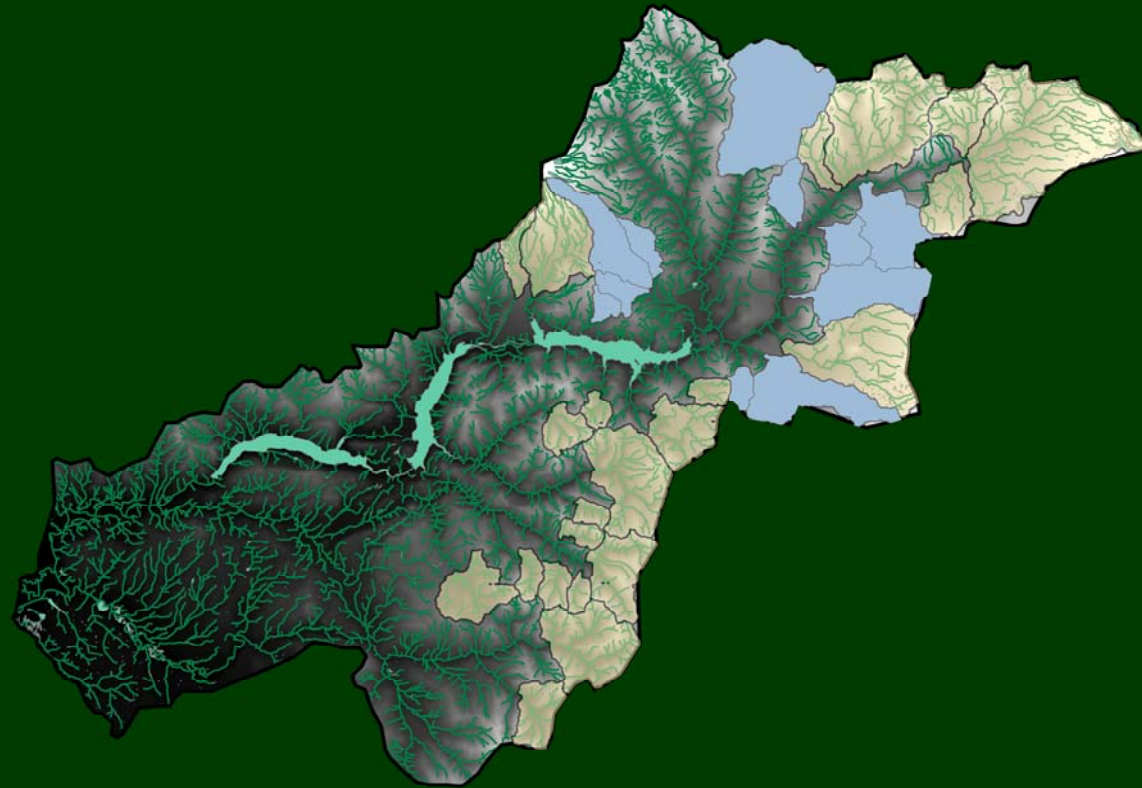
- Biological
 - Electrofish 50 m reach bounding sample site (no block nets)
 - Capture and ID all fish
- Physical
 - Gradient
 - Channel dimensions
 - Woody debris
 - Undercut banks



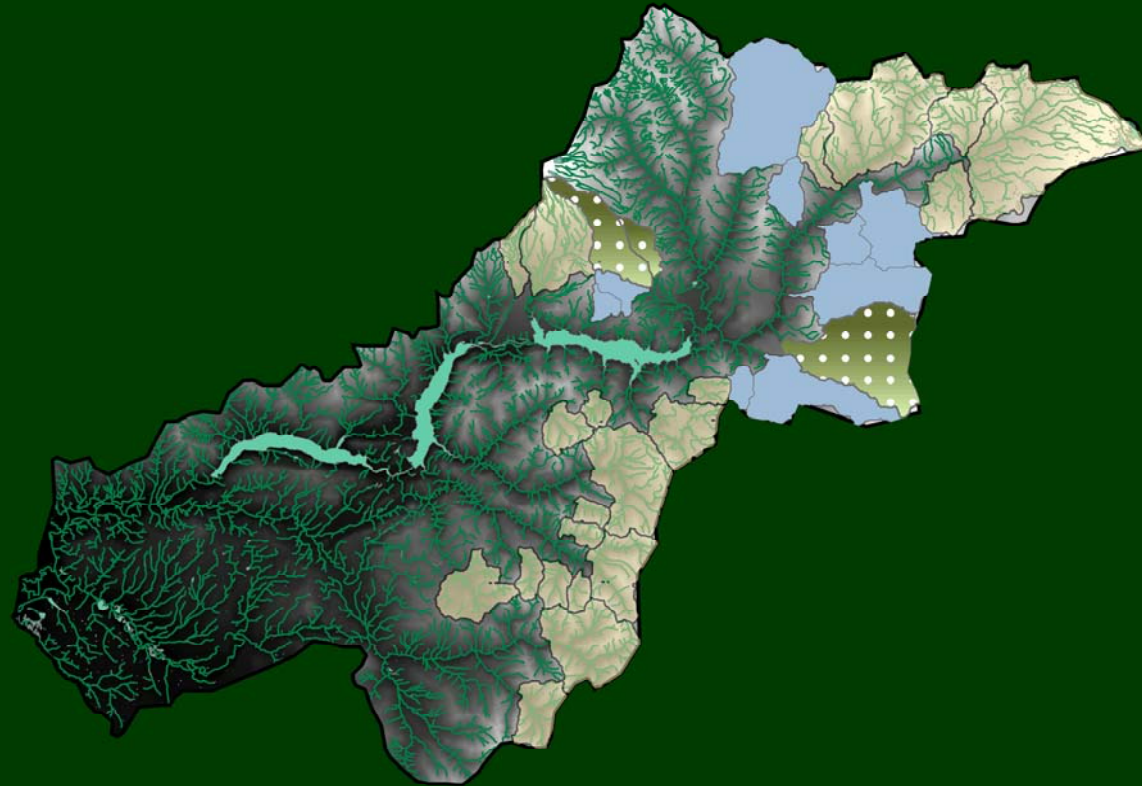
Results



Results



Results

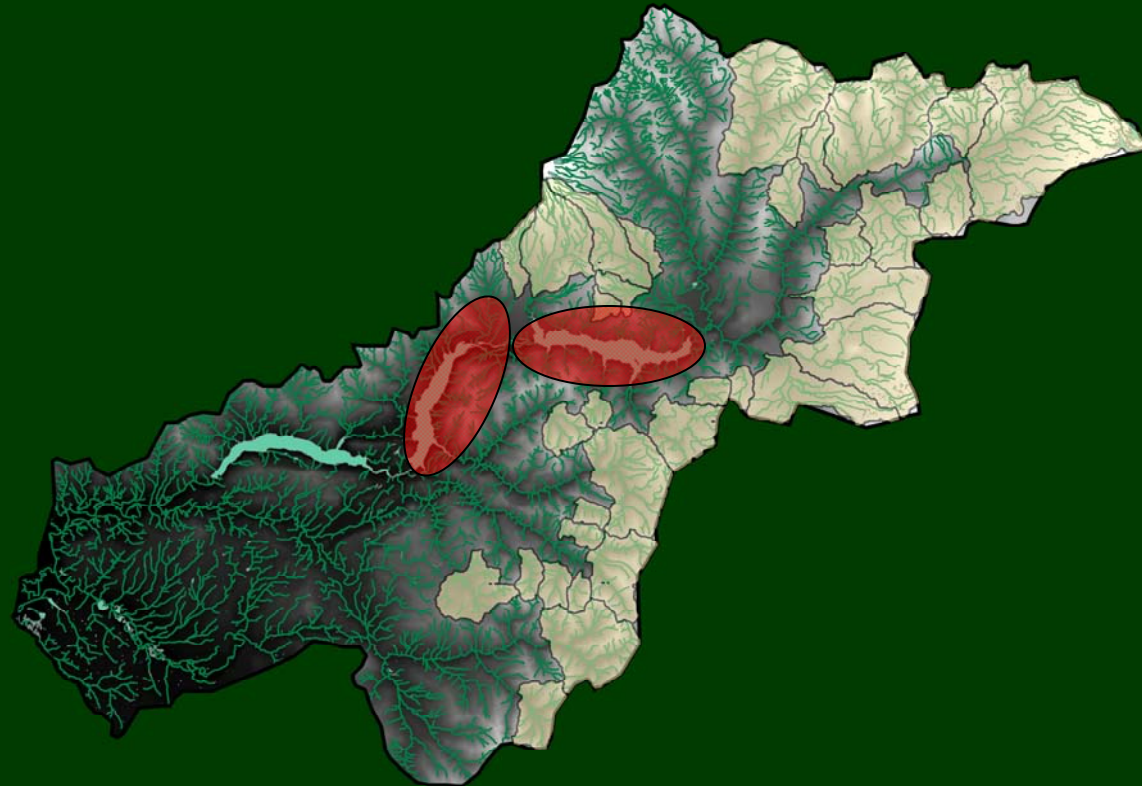


Review and modification

- Local knowledge can be incorporated
 - i.e., barriers, known distribution, known spawning areas, life history types present
- Lewis River subbasin
 - Barriers
 - Reservoirs
 - Adfluvial life history strategy



Review and modification



Advantages of patch concept

- Provides a template for sampling with minimal resources
- Provides a template for assessing current state of distribution among patches within a core area and monitoring changes
- Provides a template for assessing current state of distribution within a patch and monitoring changes
- Provides a statistically sound and rigorous evaluation approach – “scientifically defensible”
- May provide an approach to monitoring trends in abundance

Discussion Point and Questions	Fish First	LCFRB	Yakama Nation	USFS	Cowlitz Indian Tribe	USFWS	Utilities	NMFS	WDFW	Decision
Clarify East Fork Lewis language in the Settlement Agreement Q1 - Should projects in the EF be funded? Q2 - Should EF projects be funded after funding of NF projects?	Concerned about limiting funding to North Fork projects only which violates certain parts of the Settlement Agreement. The emphasis should be on the relative aquatic benefits of the project and not the location. If all things are equal in benefit, priority means you select a North Fork project first. If the benefits are greater on an East Fork project, that project should be selected.	It is clear that there is a strong priority given to the North Fork system for project implementation. We agree with this guidance, and feel that investment should be made in the East Fork only if there are no opportunities in the North Fork, including future opportunities. Any project proposed for the East Fork Lewis should make clear, direct connections to benefits to North Fork Lewis populations. We recognize the importance of the East Fork Lewis for salmon recovery efforts, but the purpose of the Aquatics Fund should remain focused on the North Fork Lewis system.	The Yakama Nation is not opposed to funding projects on the East Fork. Fish can not be programed to react in the way we want. Changing the variable upsets the balance of the fish with scientific ideas. All streams should be included in the enhancement efforts. You cannot cut the arm (the tributaries) off which is why the East Fork is important to the reintroduction process. Different streams change with time. Placing a priority on the basin does not consider how the salmon (different species) are related and what they need to do. The North Fork and the East Fork are equal in importance.	Projects should be funded in the East Fork Lewis River with priority given to projects on the North Fork Lewis River. Projects proposed for the East Fork Lewis should have a clear nexus to benefits to North Fork Lewis populations. Projects downstream of Merwin Dam should also be funded with priority given first to projects above the reservoirs.	East Fork projects are to be determined on a case by case basis. The Tribe does not believe any 'clarification' is needed. A project proponent introduces a project, the ACC discusses it and a decision will be made. The project should have a clear connection to the benefits to the North Fork Lewis.	East Fork projects should be considered for funding (but are a lower priority), and only if a clear link can be established (in the body of the proposal) that the project will benefit NF populations. FERC has made it clear that there has to be a nexus to project operations or to enhance populations affected by the project.	The SA specifically states that the Aquatic Fund should support resource protection measures that, "increase the probability for a successful reintroduction program" (SA 7.5) The SA goes on to state that for the purposes of Section 7.5, North Fork Lewis refers to the portion of the Lewis River from its confluence with the Columbia River upstream to the headwaters, including tributaries except the East Fork of the Lewis River (SA 7.5.3.1). However, the section above this says that one of the objectives is to "enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River"(SA 7.5.3.1(3)). Since East Fork is really the only part of the North Fork Lewis River that is not included in the above definition, that is what 7.5.3.1(3) is referring to. All this really says is that we can fund East Fork projects but they fall behind any other proposed project that fits the North Fork definition.	According to the Settlement Agreement priority is given to the North Fork; however, this does not preclude funding projects in the East Fork. The ACC must provide clear connection of the East Fork projects to the reintroduction efforts.	Agrees with the NMFS that if the FERC is going to approve these project the ACC will need to provide a very clear connection to the North Fork reintroduction effort.	East Fork projects may be funded, but priority of spending should go to North Fork as identified in the Settlement Agreement.
Project effects/nexus definition Q1 - What are the hydroproject effects that AQ Funded projects should address? Q2 - Should any priority be given to certain project types?				Priority should be given to instream habitat restoration projects, next to riparian related projects, and then to road related projects.			Priority should be given to instream projects that will provide a "home" for reintroduced salmon and steelhead.			
Role of Project owner Q1 - What is the appropriate level of engagement in the funding process for an ACC entity that is also a project proponent?	The ACC is too small to exclude any members from discussion (whether a proponent or not). Consensus takes care of any advocating of projects. Agree with position of Cowlitz Indian Tribe.	In Section 3.2, under the Process Considerations, it states that ACC representatives may not champion their own projects. We agree with this guidance and feel that this guidance should be more closely followed. While a member of the sponsoring organization can participate in discussions to provide information, the ACC voting member should not advocate for their organization's project. It is the responsibility of the facilitator to determine when this line is being crossed.		The project proponents are most knowledgeable about the project and should be allowed to participate in discussions about the proposed project as needed. Proponents should not champion their project, just provide clear concise information as needed.	The Tribe agrees with Fish First. The ACC is too small to exclude members from discussion and/or voting. ACC members are educated, intelligent individuals with a good working knowledge of the watershed. They also have professional integrity. The Tribe is not concerned with any member's participation, regardless if their agency is a project proponent. Participation of all ACC members is critical if we are to make the best decisions for the Lewis River Watershed. Let the projects speak for themselves.	Agree with position of the LCFRB. Have the project manager leave the discussion if different from the ACC representative. Do not let project questions be asked at the decision meeting.	An ACC entity proposing a project may participate in ACC discussions on their project, but cannot champion their project nor participate in the consensus selection of their project. If requested, they must excuse themselves from the ACC meeting at the appropriate time.	Do not give ACC members more of an advantage or opportunity than non ACC members. A project owner should step out when decision is being made or show that there is a clear division between ACC representative and project proponent.		No questions should be asked of Project proponent at the Funding Selection meeting. If requested by any ACC representative, a project proponent/entity must remove themselves from the meeting during discussion on their project. Process should strive to give equal consideration to all projects.
Post-implementation monitoring Q1 - What "value" should be given to those projects that include monitoring to assess the success of the project?				A higher value of some sort should be given to projects that include monitoring.		Monitoring above and beyond what is already required may be appropriate in a more "experimental" project, i.e., where the ACC is interested in seeing it go forward, but on a pilot or trial basis.	Projects that include monitoring at the appropriate funding level should get a higher rating. ACC should have the right to eliminate funding of monitoring as needed. Project owners must continue to demonstrate that the project was built according to project plan and is functioning as expected (e.g. photos before and after the project).			
AQ Fund Spending Q1 - Should we stop funding projects until fish are reintroduced?				If we wait until fish are reintroduced to do any work, we may be years behind habitat needs of reintroduced fish, and create an unsuccessful reintroduction effort. Some of the money, perhaps half, should be saved until fish are actually reintroduced. NOAA and USFWS need to play a major role in monitoring reintroduced populations so they can help determine locations for successful projects to be implemented.		We should continue funding projects now, and not wait until reintroduction takes place.	No, projects that will directly enhance the habitat of reintroduced fish should be of priority.			
Project review consistency (fairness) Q1 - What steps can be taken to assure fairness?				All projects from all proponents should be held to the same standard to be fair. Don't ask one proponent to provide information that other proponents aren't also required to provide i.e. detailed budgets.		I wonder if there is a stronger role for the facilitator--i.e., ensuring everyone has the chance to comment, but also not letting the group get bogged down.				

Review of Aquatic Fund - Strategic Plan and Administrative Procedures

Discussion Point	Fish First	LCFRB	Yakama Nation	USFS	Cowlitz Indian Tribe	USFWS	Utilities	NMFS		Decision
Ranking of Projects Q1 - Should prioritization of projects be considered? Q1 - Is additional focus needed on the individual project long-term benefits?		Section 3.1 Aquatics Fund Goals – states in the first paragraph, final sentence, “The purpose of the Aquatic Fund is to fund projects that directly help achieve the Reintroduction Outcome Goal.” Can you clarify if this is an overarching goal of the Aquatic Fund, or if this is one of several goals, including those listed in section 1.0 Introduction in the language from the SA describing Resource Projects?		When projects are rated using established guidelines they should be ranked by priority. Long-term benefits should be addressed in the project proposal for all projects.	The Tribe believes it would not be a good use of time for the Utilities to prioritize projects based on scores. The current method of reviewing projects, which includes a ‘Selected by Utilities for Full-Proposal’ category in the pre-proposal evaluation and the ‘Total Score’ category in the final proposal matrix, is adequate.	It would be useful to make a distinction between long term benefits that restore ecological function (e.g., log jams or restoring riparian habitat), vs. one time action, (e.g., adding spawning gravel that would wash away).	If a request of information is made to a project proponent, that same request goes to all applicants. Discussion of projects by the ACC should be limited to the information on hand, unless all project applicants are participating.			
Funding process Q1 - How can the process become more efficient to meet schedule?		We recommend strengthening the proposal instructions to encourage sponsors to better describe how their projects relate to the Aquatics Fund objectives and recovery plans. Sponsors should be asked to clearly describe biological benefits and expected outcomes of their projects. Sponsors should include metrics to help the reviewers quantify the scope of their project and relate it to their proposed cost. A more detailed budget form should be provided in the proposal.		Time should be set aside for each project proponent to present their projects to the ACC group at an ACC meeting. This could be at the draft proposal stage, but it may make more sense to do it when the final proposal is submitted. It appears that the ACC group expects to see projects begin a short time after final project approval. A shorter review time of projects would speed up the funding process and may allow this to occur under certain circumstances. However, the amount of time it takes for final project approval, collection agreements to be executed, and to get projects on the docket to be evaluated by our NEPA planning team, a start date of the following calendar year is more realistic. Representatives need to attend ACC meetings to participate and discuss potential projects. Representatives should not be allowed to object to projects without participating in the selection process. Rearrange the time line so that the final vote for project approval is the final vote. The 7 day comment period should be prior to the final vote, and Representatives can provide feedback during this 7 period if they are not able to attend the final vote. Either the Representatives should vote for final project approval. If a Representative is not available, Project proponents should be allowed to stay in the room when project	In the past, the ACC has made decisions in a timely fashion. A problem seems to have arisen when an objection was received after the ACC made a funding recommendation. Addressing the seven day objection period timeline should be adequate to address this problem. The Tribe does not want to see the ACC Aquatics Fund process become a huge, bureaucratic, paperwork nightmare for our project proponents. Most other funding sources in the region are not viewed as user friendly by applicants. The ACC spends a meeting or two a year discussing Aquatics Fund projects. To expect an ACC member to invest 8-16 hours of their time to attend these meetings is not unreasonable. Requiring more paperwork from Aquatics Fund proponents will not streamline the ACC decision making process.	From the language of the license, it sounds like FERC wants to approve the suite of projects prior to funds being released. If so, it really throws our schedule of review off. We should discuss, clarify, and decide how best to respond.	Project funding should be prioritized based on evaluation score			
Funding Decision Meeting Q1 - Should it be a requirement that ACC members should attend or an alternate should be in attendance at the meeting or they lose their voting opportunity?			ACC members should attend or an alternate should be in attendance. since we (the ACC) operate on a consensus basis it doesn't mean a project will be approved. He further stated that our group is too small to exclude any members from discussion (whether a proponent or not).	YES. If they don't attend they cannot make an informed decision, and it wastes project proponent's time.	the Tribe agrees with Fish First. The ACC is too small to exclude members from discussion and/or voting. Our ACC members are educated, intelligent individuals with a good working knowledge of the watershed. They also have professional integrity. The Tribe is not concerned with any member's participation, regardless if their agency is a project proponent. Participation of all ACC members is critical if we are to make the best decisions for the Lewis River Watershed.	As a suggestion, voting members or their representative should attend when a decision needs to be made, or assign a proxy who can represent their needs at that meeting. The project proponents are most knowledgeable about the project and should be allowed to participate in discussions about the proposed project as needed. Proponents should not champion their project; just provide clear concise information as needed.	See USFS suggestions. They are good and we should discuss these as a group although there is no real way to assure certainty with timing especially given that FERC now says they need to approve each project.	Giving a proponent more time to argue their own projects is a concern for her; to remove appearance of conflict of interest and bias a project proponent should not champion their proposed project.		
FERC Comment in License - 6/26/08 Section 7.5.3.1 of the Agreement proposes the establishment of an Aquatic Fund. The Agreement explains that this fund may be used for projects that would benefit fish recovery throughout the North Fork Lewis River. In contrast to the In-lieu Fund, the Agreement notes some specific aquatic habitat enhancement objectives that would be implemented with the funds, but provides no nexus to project purposes . The EIS emphasized, however, that the fund should be used only for measures that provide a demonstrated benefit to resources affected by project facilities and operation and that the strategic plan and annual report describing proposed resource measures be filed with the Commission for approval so that our approval can be made on a suite of measures . I concur and require that the annual report be filed for our approval in each of the Lewis River Project licenses.							Yes			