Bull Trout Recovery Plan Implementation

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Overview:

- History
- Maps
- Recovery Strategy
- Recovery Criteria
- Plan Scales
- Comparison of ESA & Recovery
- Implementation
- ScCS
- Video/Cookies

History: Listing/Recovery

- **<u>1994</u>: <u>Warranted but Precluded</u>** - Service identifies bull trout within the coterminous United States as a Distinct Population Segment (DPS).

- **<u>1998</u>: <u>Listing of 5 Potential DPS's</u>** - Service identifies DPS's using "new" 1996 DPS policy and lists Columbia, Klamath, and Jarbridge as Threatened under ESA.

- **<u>1999</u>: <u>Re-listing One DPS</u>** - Service relists bull trout as one DPS throughout the coterminous United States adding the St. Mary River and Coastal Puget Sound, and old DPS's = Interim Recovery Units.

- **<u>2002/2004</u>: <u>Draft Recovery Plans Prepared</u>** - Service prepared draft recovery plans for the Klamath River, Columbia River, and Saint Mary-Belly Recovery Units in 2002; and Jarbidge and Coastal-Puget Sound Recovery Units in 2004.

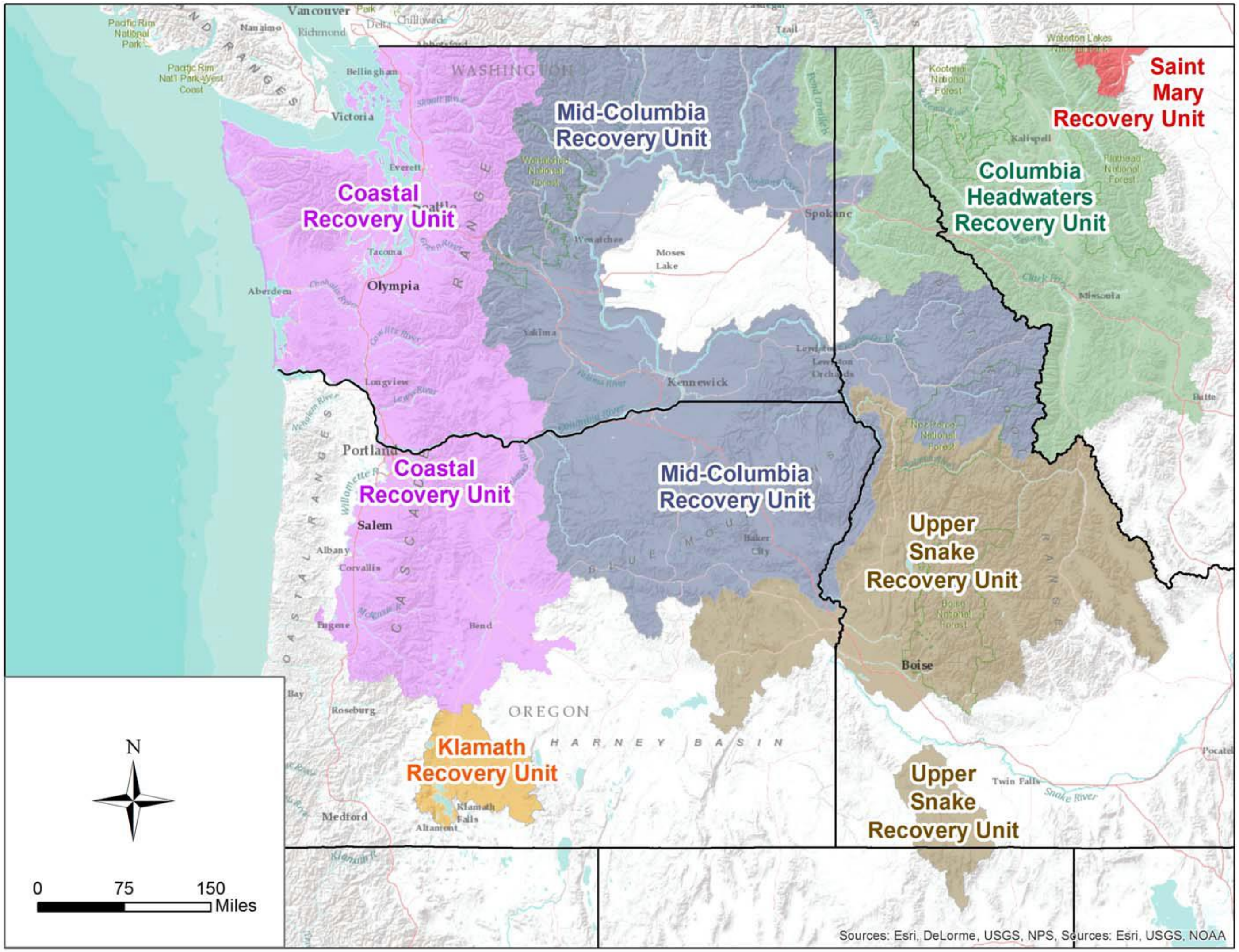
History Continued

- **<u>2008</u>: <u>5-Year Status Review</u>** - Service published 5-Year Review and determines bull trout listing still warrants threatened status and reconsiders defining multiple DPS's in the coterminous U.S. (updated in 2015).

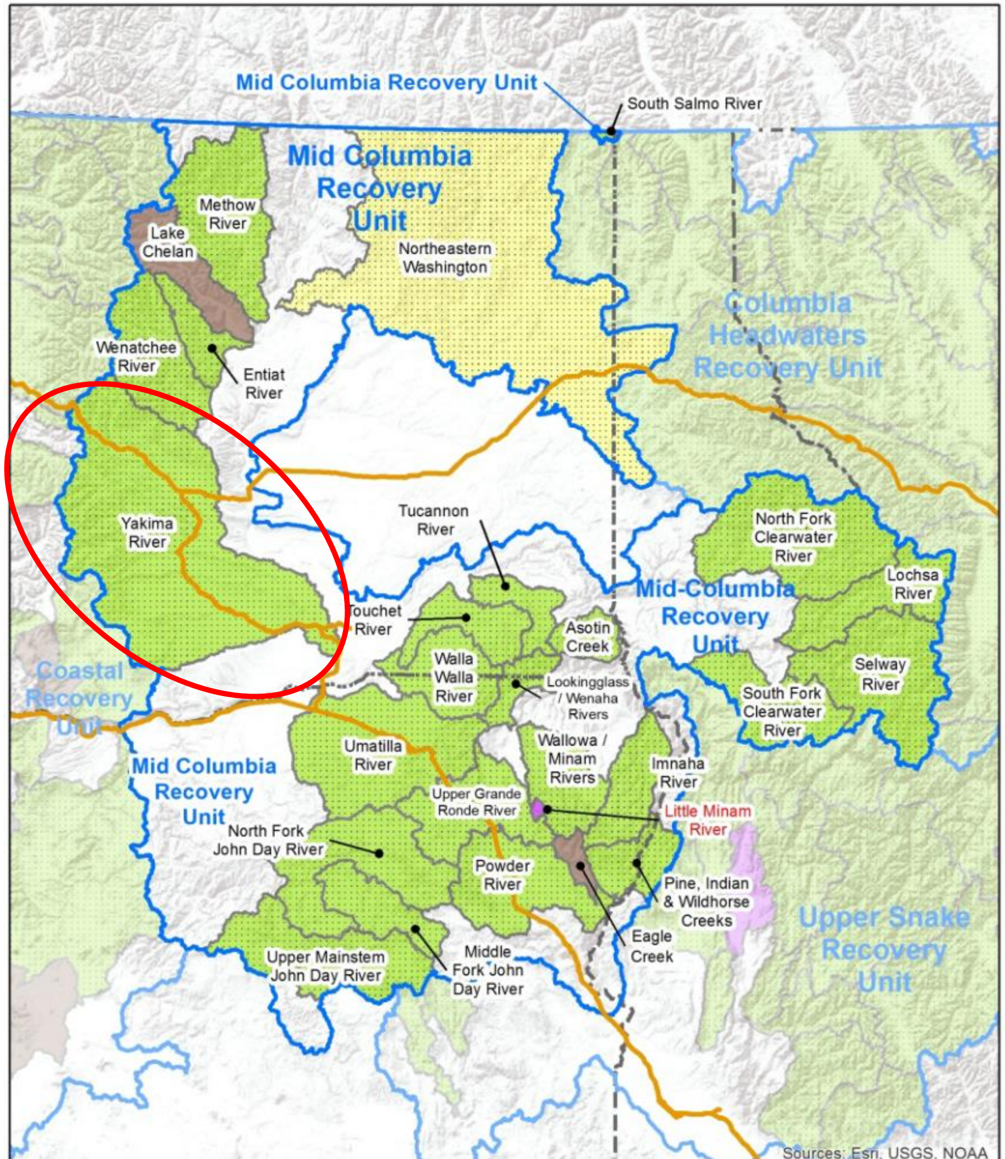
- **<u>2004-2010</u>: <u>Designated Critical Habitat</u>** - Service designates critical habitat in 2010 with both occupied /unoccupied habitat and identifies 6 potential new recovery units within the coterminous DPS (Reduction from 27).

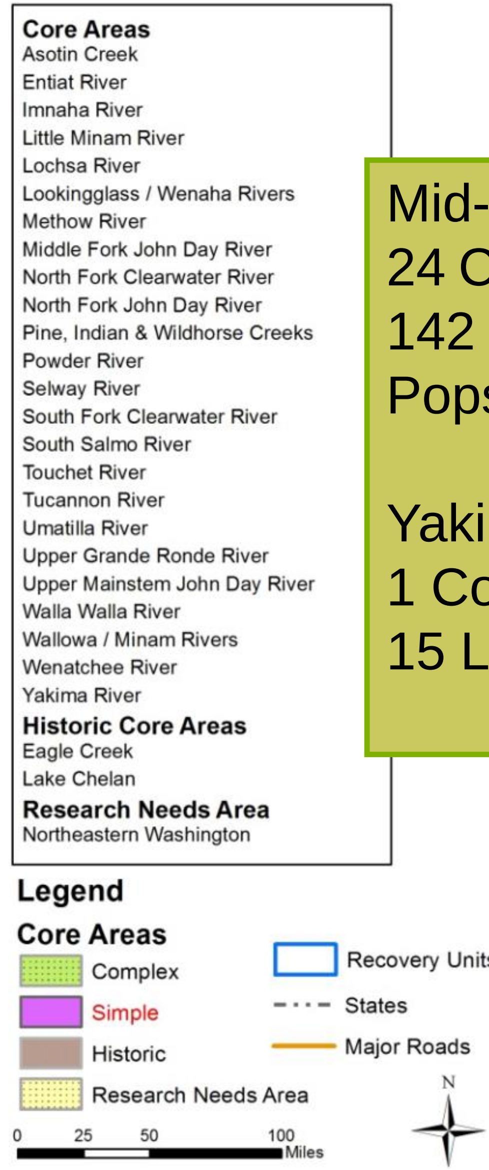
  - **<u>2015 New Final Recovery Plan Released</u> - Service published a Final Recovery Plan in September, incorporating 6 RUs, new information, and RU Implementation Plans** (17 years post-listing).

Maps: 1 Distinct Population Segment with 6 Recovery Units



Maps: Mid-Columbia Recovery Unit

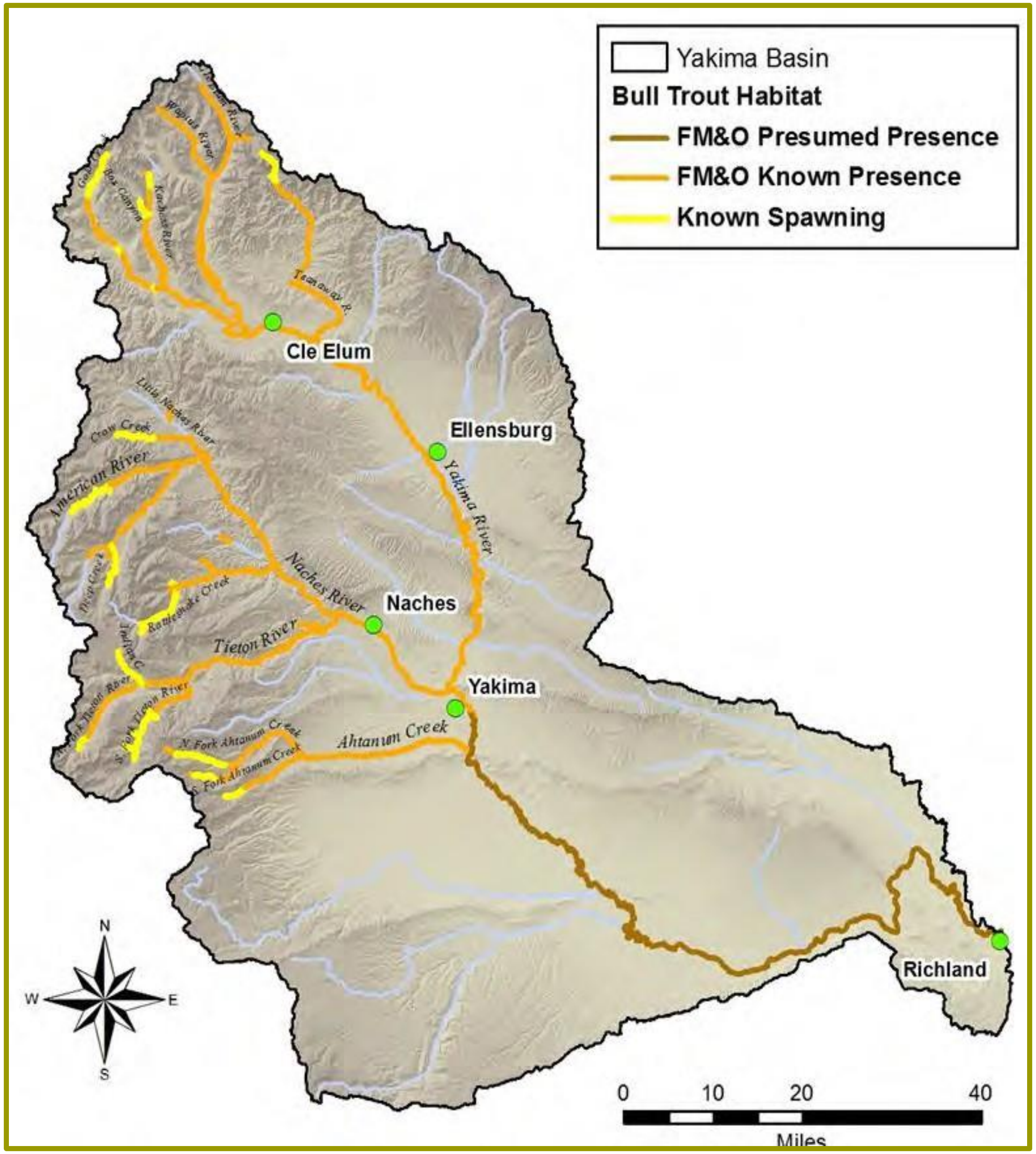




Mid-Col RU:
24 Core Areas
142 Local Pops

Yakima:
1 Core Area
15 Local Pops

Maps: Yakima Core Area



Recovery Strategy

Overall Goal:

<u>Manage threats and ensure sufficient distribution and abundance to improve the status</u> of bull trout throughout their extant range in the coterminous United States so that protection under the Act is no longer necessary.

When this is achieved, we expect that:

- ✓ **Bull trout will be <u>geographically widespread</u> across representative habitats and <u>demographically stable</u>**;**
- ✓ **The <u>genetic diversity and diverse life history forms</u> of bull trout will be conserved; and**
- ✓ **<u>Cold water habitats</u> essential to bull trout will be <u>conserved and connected</u>.**

** *<u>Demographically stable</u> implies that populations, at the Local Population, Core Area, or Recovery Unit scale, interact with their surrounding environment so that their population status is stable or increasing based on various population metrics (e.g., size, density, age structure)*

Recovery Strategy (Continued)

The Recovery Plan provides guidance to:

- Effectively manage and ameliorate primary threats.
- Work cooperatively with partners to develop and implement bull trout recovery actions (Recovery Unit Implementation Plans / Action Plans/Watershed Plans).
- Adaptively manage the bull trout recovery program.

Recovery Criteria

Effective management of primary threats thresholds for determining whether recovery has been achieved and delisting may be warranted at the recovery unit level would involve*:*

- ✓ **For the Coastal, Mid-Columbia, Upper Snake, and Columbia Headwaters RUs:**
  - ✓ Primary **threats** are **effectively managed** in <u>at least 75 percent </u>of all **core areas** and **local populations**…..This includes threats in **supporting FMO** within the core area…..
- ✓ **In FMO habitat outside core areas :**
  - ✓ **Connectivity and habitat in shared FMO** areas should be **maintained** in a condition sufficient **for regular bull trout use and successful dispersal** among the connecting core areas.

Scale of Plans

Tier 1 - Recovery Plan

Large Scale - “Rangewide” Listed Entity

Recovery Unit (RU) identified , broad-scale Recovery Criteria and Threats

Tier 2 –Recovery Unit Implementation Plan (RUIPs)

Mid-Scale - RU represents Biological Significance

General Core Area Information and Recovery Criteria, Threats Assessments, and Actions

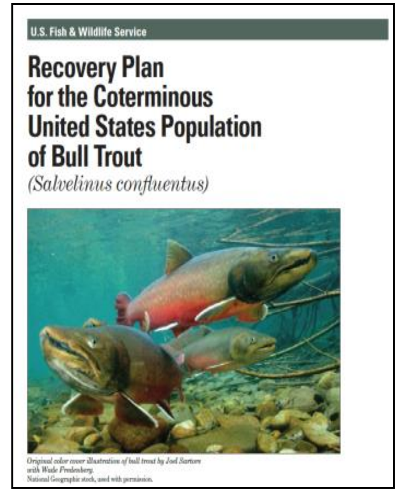
Tier 3 - Local Action/Watershed Plan: Yakima Action Plan

Local Scale - Core Area/Local Populations

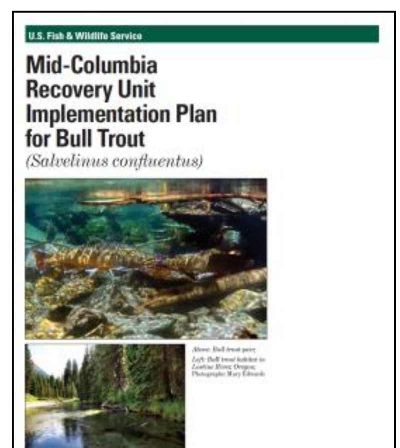
Easy to Update - Local Science and Threat Prioritization, and Specific Actions

Yakima Bull Trout Recovery Implementation

- USFWS Recovery Plan
  - Rangewide Criteria
  - Rangewide Threats

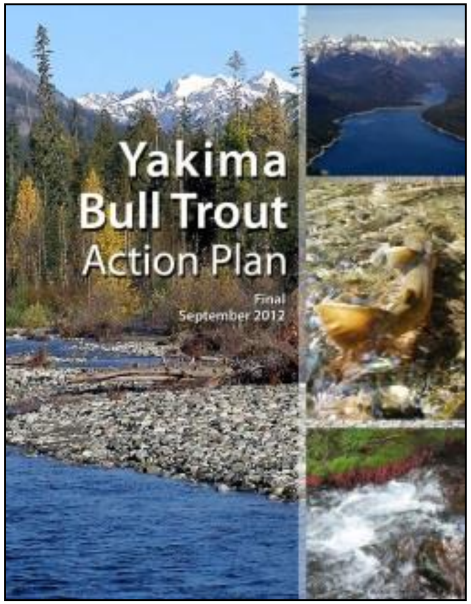


- Mid-Columbia Recovery Unit Implementation Plan
  - RU Threats Table – Core area/Local Population
  - Recovery Measure Narrative - Core Area/Local Population
  - Implementation Schedule



Yakima Bull Trout Recovery Implementation (Continued)

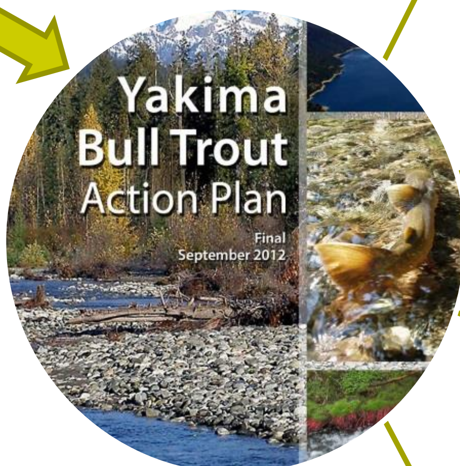
- Yakima Basin Bull Trout Action Plan
  - Yakima Basin Fish and Wildlife Recovery Board recovery actions
  - USFWS 5-year Action Plan
  - Local Threat Analysis, Actions, and Priorities
  - Local Science
  - Easy Updates



Yakima Bull Trout Recovery Implementation (Continued)

Yakima Bull Trout Recovery Work Group

*Since 1998



Population Maintenance/ Enhancement

Studies– Food web, Migration patterns

Habitat Restoration Actions – Gold Creek, Off channel habitats

Monitoring– Redd surveys, Genetics, etc.

BOR Operations/ Yakima Integrated Plan

Land Mgmt: USFS/DNR/ WDFW, Tribal Land Plans

WDFW/USFWS/NOAA Tribal Fish Mgmt

Scientific Studies: CWU, UofW, USGS, USFS Research,DOE

RUIP - Yakima Threats Table

Geographic Region Core Area (Complex) *Core Area (Simple)*	Number of Local Populations	PRIMARY THREATS[1]		
		Habitat	*Demographic*	*Nonnative*
Yakima River Pg.C-15	**15**	**Upland/Riparian Land Management** (1.1) Agriculture/Livestock Grazing/Forest Management Practices. Legacy and current practices, including forest roads, have resulted in a lack of habitat complexity (*i.e.*, wood, primary pools, functioning floodplains). Agriculture practices have channelized streams, altered floodplains, and reduced riparian vegetation. Development/Transportation Networks. Legacy and current structures and features impact both spawning and rearing and FMO habitat. Recreation. Legacy and new recreational developments impact spawning and rearing habitat with rock dam building, reduced riparian areas, and compacted stream banks, and reduced habitat complexity. **Instream Impacts** (1.2) Agriculture/Forest Management Practices/Grazing/Development/Transportation Networks/ Recreation. Legacy and current management actions have degraded habitat, impacted stream channels, altered fish passage, reduced water flows, and constricted floodplains. Legacy	**Connectivity Impairment** (2.1) Agriculture. The Yakima basin has impassable dams built as part of irrigation. Many 303d listed reaches occur across the basin. Stream temperature and agriculture chemicals have legacy and current impacts that reduce quality of FMO and degrade connectivity for bull trout populations. Forest Management/ Grazing/Recreation/ Transportation Networks. Legacy and current forest roads/highways/county roads continue to impair connectivity for migration. Grazing in spawning areas disrupts and causes trampling of redds. Recreation areas have user built rock dams blocking passage. Forest Management and Transportation Networks have blocked and impeded passage. Dewatering. Stream reaches naturally dewater in several spawning and rearing and FMO areas during times of low snowpack/rain and maybe further impacted with climate change or additional management impacts. Entrainment (hydropower and diversions)/Fish Passage/Altered Flows. Entrainment and altered flows from federal and private diversion/dams affect connectivity within FMO and spawning and rearing areas. Within tributaries, water withdrawals can also affect connectivity. Altered flows and Climate change have/will have caused reduced or	**Nonnative Fishes** (3.1) Introduced Species/Fish management. Brook, lake, and brown trout are non-native predators in the basin and impact recovery. Salmon recovery involves output of high numbers of smolts, with some residualization and species competition which may have impacts to preybase or small populations of bull trout. Genetic analysis has identified F2 (brook x bull trout) hybrids within the basin. Climate Change. Predatory non-native species (lake and brown trout, spiny-ray fishes) occur within FMO habitats and risk potential spread esp. as waters warm with climate change.

RUIP - Yakima Recovery Measures

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Core Area	Threat Factor	Recovery Action Priority	Recovery Action Number	Recovery Action Description	Recovery Action Duration	Responsible Parties	Comments	Estimated Costs (x $1,000)					
								Total Cost	FY 16	FY 17	FY 18	FY 19	FY 20
Yakima	A	2	1.1.3	Reduce grazing impacts.	O	USFS, WDNR, Counties, Cons Dist		1,000					
Yakima	A	2	1.1.4	Reduce impacts to riparian areas and stream banks.	O	WDFW, DOE, USCOE, Counties, Cities, Cons Dist,	Combined with salmon recovery	10,000					
Yakima	A	1	1.1.5	Reduce habitat and floodplain impacts.	O	WSDOT, Fed Hwys, Counties	Combined w/ salmon recovery	10,000					
Yakima	A	2	1.1.6	Reduce impacts from recreation to riparian areas.	C	USFS, WDNR, WDFW, Parks and Rec, Pvt Rec Groups, BT Task Force		5,000					
Yakima	A	2	1.2.1	Protect and improve riparian areas and floodplains.	O	WDFW, NRCS, Cons Dist, Counties	Combined with salmon recovery	10,000					
Yakima	A	2	1.2.2	Implement stream restoration in degraded stream reaches.	O	USFS, WDNR, PTC, Yakama, BOR		15,000					
Yakima	A	3	1.2.3	Reduce cumulative impacts in FMO to populations that are impacted during natural dewatering of spawning and rearing areas.	C	BOR, USFS, WSDOT, Ahtanum Irrig Dist, WDNR		*					
Yakima	A	2	1.2.4	Reduce impacts to riparian areas in spawning reaches.	O	USFS, WDNR, Cons Dist, NRCS,		1,000					
Yakima	A	1	1.2.5	Develop adequate passage to connect FMO to spawning and rearing areas	5-20	BOR, WDFW, Yakama, USFWS, NOAA, BPA		166,000					
Yakima	A	1	1.2.6	Connect FMO and spawning and rearing habitat.	5-20	BOR, WDFW, Yakama, USFWS, NOAA, BPA	See 1.2.5	TBD					

Action Plan: Actions Details

Gold Action #2: Implement Lower Gold Floodplain Restoration Plan

Action Type: Recovery

Life stage(s) affected: Spawning/egg incubation, Pre/post spawning migrations, Juvenile Rearing

Threat addressed: Dewatering

Severity: Significant

Associated RUIP Actions: 1.15, 1.21, 1.22, 1.24

Link to Threats Table: G1,G2,G3,G4,G10,G11,G12,G19,G25, G26

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Action Description

Gold Creek Floodplain Restoration (USFS) which would include the removal of legacy dikes and road fill from the gravel pit operation, relocation of ADA accessible trail away from Gold Creek, relocation of the footbridge out of floodplain, restoration of hydraulic connectivity through the parking area, installation of an engineered logjam in Gold Creek and replacement of the current Forest Service road bridge.

Justification/Background

The US Forest Service, in the process of completing a large-scale scoping NEPA document, included this project as a placeholder for restoration actions suggested by the results the a hydrological study (Gold #1).

Key Partners

USFS, USFWS, BOR, YBFWRB, KCT

Time to Implement: 3-5 years

Time to Benefit: 5+ years

Cost Estimate: $1 million

Cost Derivation

Cost estimate is based on Forest Service initial estimate for project implementation.

Endangered Species Act & Recovery Planning

- ESA Sec. 7 Conservation ⟺ Recovery Actions

- Both implement measures and procedures to promote **Survival and Recovery** so ESA protections are no longer necessary

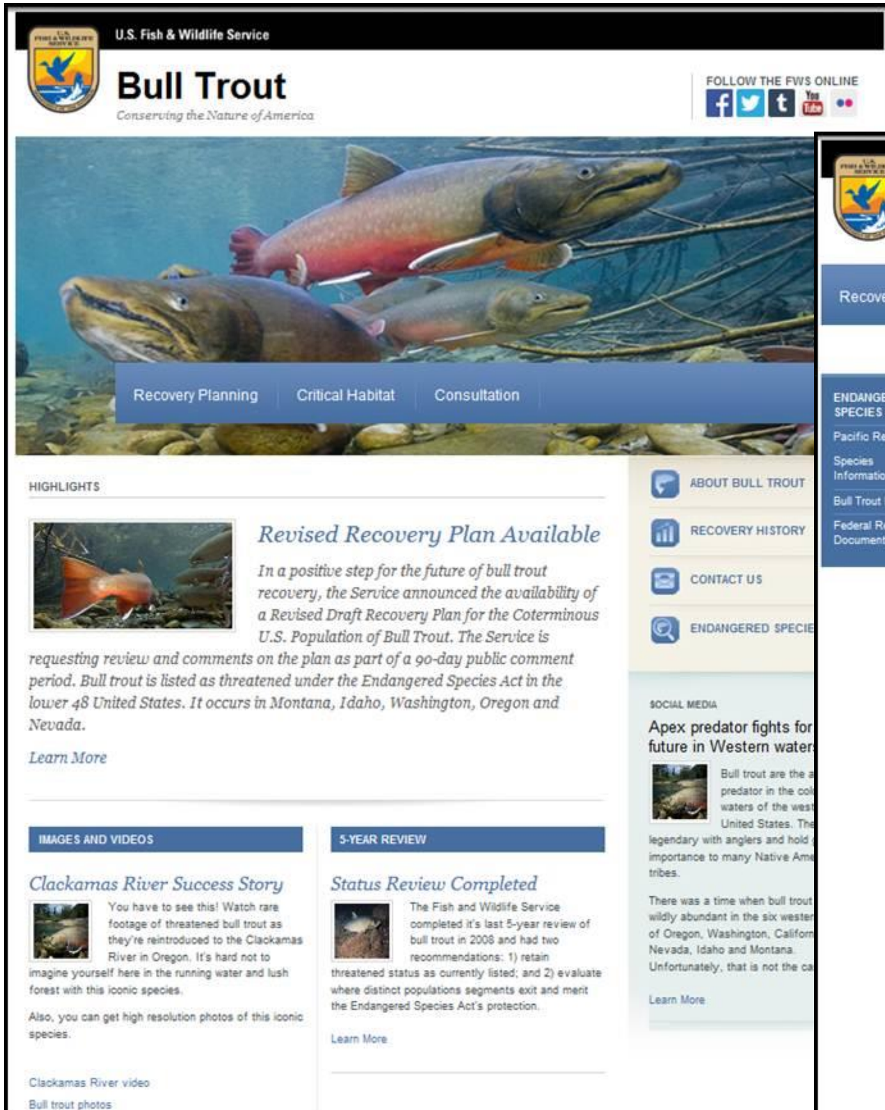
- Section 7(a)(1) Federal agencies utilize their authorities to carry out conservation programs for Listed species and Critical Habitat
  - Use your affirmative obligations to implement Recovery Actions (e.g., USFS - Deep Creek)

- Section 7(a)(2) Federal agencies in consultation must insure that actions authorized, funded, or carried out are not likely to result in jeopardize (species) or adverse modification (critical habitat).
  - Management Actions undergo consultation; Biological Opinion and its Jeopardy analysis determines outcome
  - Maintain or improve populations and habitat with conservation measures

- Other Sections of the ESA used in concert
  - **Section 6** – Cooperation & Agreements with the States
  - **Section 10** – Recovery Permits - good science for bull trout

- **Recovery Plans** establish the necessary structure and guidance for implementing Actions that move a species towards **Survival and Recovery**.

http://www.fws.gov/pacific/bulltrout/



2015 Salvelinus confluentus Curiosity Society Meeting Overview

Thanks to Eric Anderson, Cassandra Weeks, Jeff Thomas, Pat Monk, Alex Conley, William Meyer, Paul James, Ashton Bunce, and Garrett Brenden for being part of our magnificent planning team!

2015 ScCS Meeting (Continued)

- **Location:** Camp Dudley, Clear Lake
- **Attendance:** 100+ Bull Trout Specialists from PNW and Canada
- **Scientific Presentations:** 22 presentations and a poster session
  - Intro by Nick Zentner and Paul James (CWU) – Yakima Biogeology, and Alex Conley (YBFWRB) recovery planning
  - Science across the range - Species interactions, Thermal regimes, Elwha Dam, Genetics, Incidental catch, Limnology, Recruitment, Reintroduction/Translocation/Supplementation Panel
- **Field Work Accomplished**:
  - Redd surveys in Index Areas and exploratory surveys;
  - Overview or Upper Yakima bull trout habitat and Gold Creek restoration projects

2015 ScCS Meeting (Continued)

- Education: *Leave something behind.*

- We are using some leftover money for bull trout interpretation signs at Camp Dudley around Clear Lake

2016 Annual Salvelinus confluentus Curiosity Society (ScCS) Meeting

<u>When</u>: August 30th – September 1st
<u>Time</u>: 12:00pm to 12:00pm
<u>Where</u>: Sula, Montana - Sula Community Clubhouse, East Fork Guard Station
<u>Cost:</u> $90.00 (Most meals are included with registration)

****For More Information Please go to - https://www.cvent.com/d/8fqg1g**

Cookie Time!

- Video for 2015 ScCS made by Ashton Bunce

  Photographs from many biologists!

  E:\ScCS\SCCS Video.mp4

Extra Slides

Recovery Criteria (Continued)

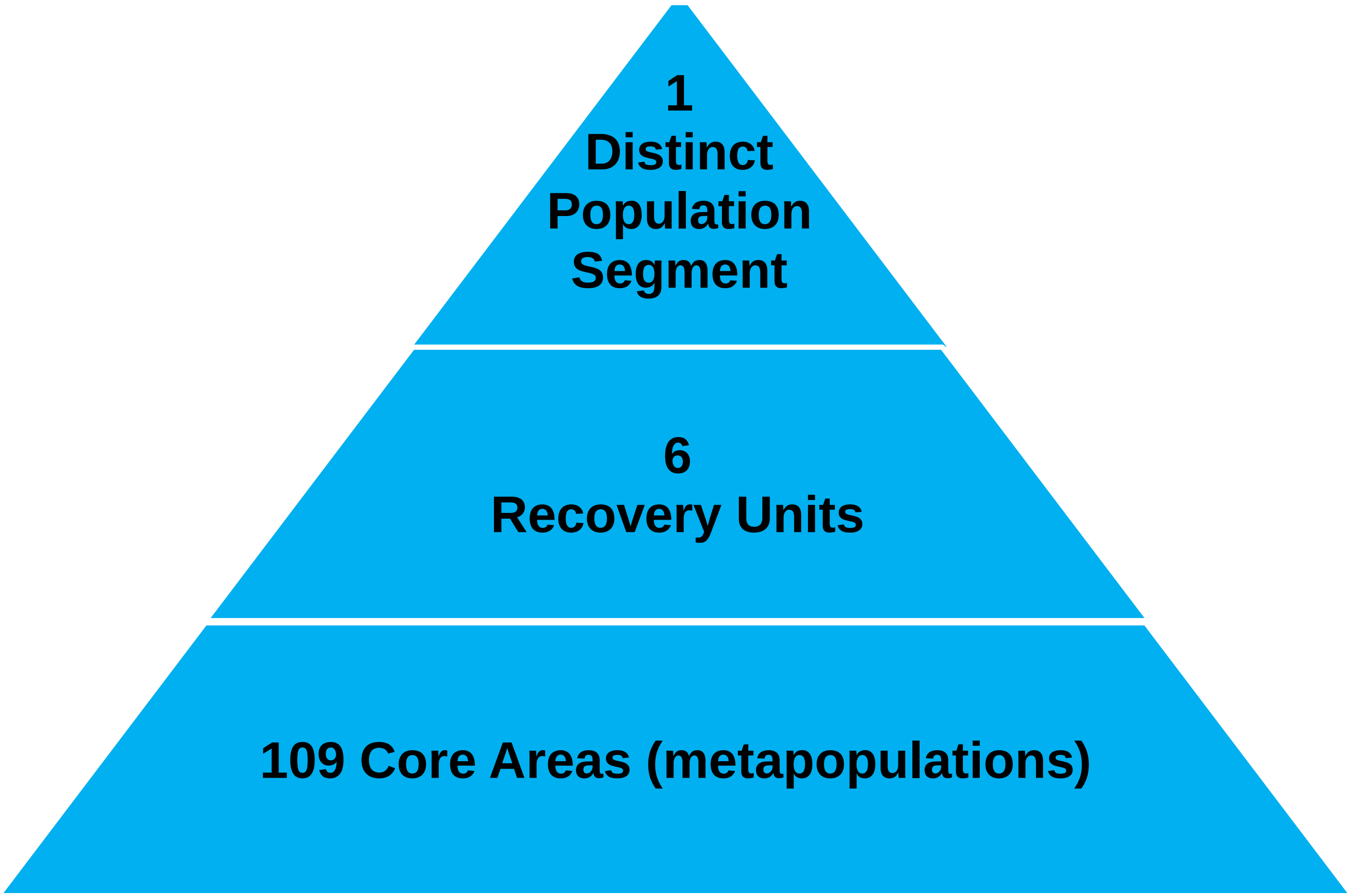
	Existing		Threshold	
Recovery Unit	Total Number of Extant Core Areas	Total Number of Local Populations within Extant Core Areas	Minimum Number (75%) of Core Areas with Threats Effectively Managed	Minimum Number (75%) of Local Populations within Effectively Managed Core Areas
Coastal RU	20	84	15	63
Mid-Columbia RU	24	142	18	107
Upper Snake RU	22	207	15	15
Columbia Headwaters RU	15/20	143/20	12/15	108/15
Klamath RU	3	8	3	8
Saint Mary RU	4	7	4	7

Why 75%?

- Acknowledgement that bull trout may not be "recoverable" in all places. But recovery still achieved by ensuring redundancy, representation, and resiliency across RUs

- No formal exercise to come up with the 75%
  - 75% is the minimum
  - a small number of extirpations might occur
    - small populations, isolation, climate change.

Hierarchical Relationship of Bull Trout Geographic Classification Units



“Old” 2002/2004 vs. “New” 2015

- Reduction in Recovery Units (RUs) 27 **to** 6
- Single Distinct Population Segment (DPS) **to** the potential to reclassify the 6 RUs into separate DPSs
- Recovery Criteria that focused on demographic (i.e., abundance/distribution) and threats **to** “Threats based” strategy (i.e. recovery relies on effectively managing threats with criteria by core area and RU)
- Additional new information
- 121 core areas **to** 109 due to new information not extirpation
- Not reliant on recovering BT everywhere (i.e., 75% concept for 4 of the 6 RUs) See Page 113 in our reponse to commentst.

Can a Recovery Unit be Delisted?

"*If recovery criteria are met in a RU, the Service may initiate an assessment of whether recovery has been achieved and if designation as a separate DPS and delisting is warranted*"

Current draft RUs are consistent with DPS policy thus FWS could propose (or be petitioned) to designate an RU as a DPS and delist simultaneously