PETITION FOR ADOPTION, AMENDMENT, OR REPEAL OF A STATE ADMINISTRATIVE RULE

Print Form

In accordance with RCW 34.05.330, the Office of Financial Management (OFM) created this form for individuals or groups who wish to petition a state agency or institution of higher education to adopt, amend, or repeal an administrative rule. You may use this form to submit your request. You also may contact agencies using other formats, such as a letter or email.

The agency or institution will give full consideration to your petition and will respond to you within 60 days of receiving your petition. For more information on the rule petition process, see Chapter 82-05 of the Washington Administrative Code (WAC) at http://apps.leg.wa.gov/wac/default.aspx?cite=82-05.

CONTACT INFORMATION *(please type or print)*

Petitioner's Name Randall Friedlander

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COMPLETING AND SENDING PETITION FORM

- Check all of the boxes that apply.
- Provide relevant examples.
- Include suggested language for a rule, if possible.
- Attach additional pages, if needed.
- Send your petition to the agency with authority to adopt or administer the rule. Here is a list of agencies and their rules coordinators: http://www.leg.wa.gov/CodeReviser/Documents/RClist.htm.

INFORMATION ON RULE PETITION

Agency responsible for adopting or administering the rule: WDFW

☐ **1. NEW RULE - I am requesting the agency to adopt a new rule.**

☐ The subject (or purpose) of this rule is: _____

☐ The rule is needed because: _____

☐ The new rule would affect the following people or groups: _____

☒ **2. AMEND RULE - I am requesting the agency to change an existing rule.**

List rule number (WAC), if known: WAC 220-130-195

☒ I am requesting the following change: Lake Roosevelt Rainbow Trout Harvest Regulation Change to: Daily limit of 10 adipose absent trout, no size limit; Daily limit of 1 adipose present trout 18" or greater; Sanpoil River Arm: Closed to trout fishing February 1 to May 30.

☒ This change is needed because: To ensure long term sustainability of wild Redband Rainbow Trout genetics. Move harvest pressure off native fishes and towards mitigation fishery (hatchery triploids). Protect staging and spawning native Redband Rainbow Trout during spring. See attach

☒ The effect of this rule change will be: Increased angler harvest on the mitigation fishery (750,000 released annually) while protecting native Redband Rainbow Trout. See attachment.

☐ The rule is not clearly or simply stated: _____

☐ **3. REPEAL RULE - I am requesting the agency to eliminate an existing rule.**

List rule number (WAC), if known: _____

(Check one or more boxes)

☐ It does not do what it was intended to do.

☐ It is no longer needed because: _____

☐ It imposes unreasonable costs: _____

☐ The agency has no authority to make this rule: _____

☐ It is applied differently to public and private parties: _____

☐ It conflicts with another federal, state, or local law or rule. List conflicting law or rule, if known: _____

☐ It duplicates another federal, state or local law or rule. List duplicate law or rule, if known: _____

☐ Other (please explain): _____

Lake Roosevelt Redband and Hatchery Rainbow Trout Harvest Regulation Change Justification

September 14, 2015

To All Interested Parties:

This paper summarizes the current data on Redband Trout in Lake Roosevelt that I have access to. I used the data to run the FAMS model and suggest a new harvest regulation.

The Columbia River Redband Trout, *Onchorynchus mykiss gairdneri*, is a sub-species of Rainbow Trout that is found east of the Cascade Mountains in the Columbia River and its tributaries in Montana, Oregon, Washington, and Idaho.

In Eastern Washington, May et al. (2012; Redband Trout Status Update 2012) estimated resident Redband Trout currently occupy 27% of their historical range (circa 1800). Redband Trout continue to persist in the Columbia River and its tributaries above Grand Coulee Dam (Lake Roosevelt) despite substantial negative anthropogenic influences.

The current Washington Department of Fish and Wildlife (WDFW) harvest regulation in Lake Roosevelt (including the Spokane River below Little Falls Dam) does not distinguish between Redband Trout and hatchery reared coastal Rainbow Trout (hatchery program = release 750,000 adipose fin clipped triploid yearlings annually). The current regulation reads:

> No minimum size, daily limit 5, up to 2 over 20 inches.
>
> Special closures include:
>
> 2010: Closed: March 1 – May 30 mouth of Onion Creek
>
> 2010 Closed: March 1 May 30: mouth of Big Sheep/Deep creeks
>
> 2011: Added protections for Sanpoil: Sanpoil River Arm (B-C): closed. Sanpoil River Arm (A-B): No min. size, daily limit 5. Up to 2 over 20 inches may be retained. Release all rainbow trout with intact adipose fins.

The original trout harvest regulation was set in the late 1980's, almost 25 years ago. Since the early 2000's the Lake Roosevelt Co-Managers (WDFW, Colville Confederated Tribes, and the Spokane Tribe of Indians) recognized the importance of conserving Redband Trout in the Upper Columbia River. In response to the risk of negative genetic impacts on Redband Trout, the Co-Managers agreed that the Lake Roosevelt hatchery Rainbow Trout program would be solely comprised of sterile (triploid) coastal-strain Rainbow Trout beginning in 2006. At the same time, the Co-Managers directed that all hatchery origin Rainbow Trout destined for Lake Roosevelt receive an adipose fin clip to allow anglers to distinguish wild from hatchery trout. In addition, researchers that operated weir traps could prevent hatchery trout from entering tributaries and mixing with native fish.

In 2010 WDFW implemented spring "bubble" closures for three tributaries to the Columbia River near the town of Northport to protect staging pre-spawn Redband Trout (Onion, Big Sheep, and Deep

creeks). In 2011, the Sanpoil River Arm (inundated section) was closed to all wild trout harvest (release all adipose present fish) all year, and allowed hatchery trout harvest in the downstream (southern) four mile portion of the Arm (upper 3.5 miles closed to trout fishing).

To further protect Redband Trout spawning in the Sanpoil River, in 2005 the CCT closed all tributaries that flow into the Sanpoil River to angling for both Members and Non-Members between January 1 and May 31. The closure includes the West Fork Sanpoil River, which is one of the primary Redband Trout spawning locations.

The Co-Managers of Lake Roosevelt have developed separate goals in the Lake Roosevelt Guiding Document for Redband Trout (wild Rainbow Trout) and hatchery Rainbow Trout. Conservation goals have been specifically set to ensure long-term persistence of Redband Trout and to increase angler harvest on hatchery Rainbow Trout.

These goals are identified in the Lake Roosevelt Guiding Document:

> *Wild Rainbow Trout Management Goal*: Conserve, enhance, and restore native fish populations in the blocked area and its tributaries, and where appropriate provide opportunities for subsistence harvest by Native American Tribes and recreational harvest.
>
> *Hatchery Rainbow Trout Management Goal*: Provide a recreational and subsistence rainbow fishery in Lake Roosevelt and the Upper Columbia River. Operate a rainbow trout artificial production program that does not negatively impact key fishes and aquatic organisms.

The current regulation does not allow the Co-Managers to achieve the goals because there is no distinction in the harvest regulation between wild and hatchery Rainbow Trout.

Redband Stock Assessment Summary

The regional Co-Management agencies have been implementing a Redband Stock Assessment Project within the Lake Roosevelt watershed since 2010. To date (spring 2015), key findings include:

Genetic Research: Little evidence of coastal-lineage hatchery rainbow trout introgression within native Redband Trout populations. Genetic diversity is partitioned strongly at the regional level. The analysis indicated at least seven distinct gene pools continue to persist within the Lake Roosevelt basin. Additional distinct gene pools likely exist in areas that have not been tested (Small et al. 2015).

Escapement Research: Redband Trout spawning runs have been observed in at least 20 tributaries to Lake Roosevelt. The largest run observed to date occurs in the Sanpoil River, located in the lower portion of Lake Roosevelt. Preliminary estimates indicate between 3,000-5,000 fish return to the river and its tributaries, this includes a smaller run that enters the river in the fall and appears to overwinter prior to spawning in the spring (McLellan et al. 2015, Jones et al. 2015).

Run sizes in those middle reservoir tributaries that have been sampled were small (<50 fish) and concerning to managers (Spokane Tribe, unpublished data). Run sizes for upper reservoir tributaries sampled were estimated to be between 200-300 fish (C. Lee, personal communication). Shoreline spawning throughout most of Lake Roosevelt is unlikely, due to poor habitat and to the spring drawdowns that would desiccate any redds within the upper 50 ft. Mainstem Columbia River spawning near the Canadian border is likely limited as no redds were observed in the US portion of the Columbia River during flight surveys conducted in the late 1990's (Larry Hildebrand, Golder and Associates, personal communication).

Life History Notes: The Sanpoil River appears to have a fall run that overwinters then spawns in the spring, similar to a steelhead life history. A small portion (2%) of juvenile Redband Trout from multiple tributaries appeared to be smolting and migrating downstream, based on tagging data. These fish may be attempting to express an anadromous life-history.

Entrainment: PIT and acoustic tagged (Vemco) Redband Trout collected throughout the reservoir have been documented to entrain past Grand Coulee and Chief Joseph dams. Marked fish have been observed at fish passage facilities (Rocky Reach, Rock Island, McNary and John Day dams), as well as tern colonies throughout the basin (Banks Lake, Potholes Reservoir, Crescent Island, Little Miller Island, and East Sand Island at the mouth of the Columbia River) (Jones et al. 2015; STI unpublished data, WDFW unpublished data).

Harvest Research: The Lake Roosevelt creel survey study is managed by the STI and covers approximately 240 km (150 mi) of the reservoir, from Grand Coulee Dam to China Bend boat launch (including the Spokane River to Little Falls Dam). The reservoir is divided into three sections (lower, middle and upper), each section is surveyed for 117 days a year (57 weekdays and 60 weekends) for a total of 351 surveys a year in the study area.

Creel survey data was combined from the 2012, 13, and 14 to analyze harvest trends. Redband Trout are harvested all year long; however the majority (60%) of the harvest occurs between January and May (Figure 1). The majority of the fish (84%) are less than 20 inches (508 mm) (Figure 2). Redband Trout begin to recruit to the fishery at approximately 300 mm (12 inches), with the largest Redband Trout measured at 580 mm (22.8 in). Of the anglers that harvest wild trout, the majority of them are only able to harvest 1 (49%) despite being allowed to keep five total trout (Figure 3).

The data indicated 91% of the Redband Trout harvest occurred in the lower 48.3 km (30 miles) of Lake Roosevelt between Grand Coulee Dam and Whitestone Rock. A presumably smaller Redband Trout fishery also exists in the upper free flowing section of Lake Roosevelt, near the Canadian border; however, no harvest or catch data exists for this area. Hatchery Trout harvest is more dispersed and occurs in all three sections, with the majority of hatchery trout harvest occurring in the middle and lower sections (Spokane Tribe Annual Reports 2000-2012, and 2013-14 unpublished data).

Redband Trout harvest and hatchery trout harvest has increased almost three fold since 2012. Mild reservoir conditions reduced entrainment of hatchery fish and resulted in an increase in trout anglers (Table1; STI unpublished data).

Creel clerks collected 216 tissue samples from Redband Trout for genetic analysis in the lower section during the 2013 creel survey, and no samples in the middle and uppers sections due to the lack of observed fish. The genetic assignment test indicated that the majority of fish harvested in the lower section originated in the Sanpoil River (70-75%), with the rest of the fish being a mixture of upriver stocks [Kettle River (8-9%), Big Sheep Creek (3%), Spokane River (1-2%) and Colville River (1%)] (Small et al. 2015).

WDFW Pelagic Survey (2014)

The WDFW Large Lakes Team also found a higher density of Redband Trout in the lower section during their 2014 Lake Roosevelt Limnetic Survey in which 94% (15 out of 16 Redband Trout) were captured in the lower section, with only one in the upper section. Hydroacoustic surveys estimated the abundance of Redband Trout (over 100 mm TL) to be 3,148 ± 772 (Polacek et al. *in press*). Proportional estimates would be 2,959 in the lower section and 189 in the upper section during the August survey.

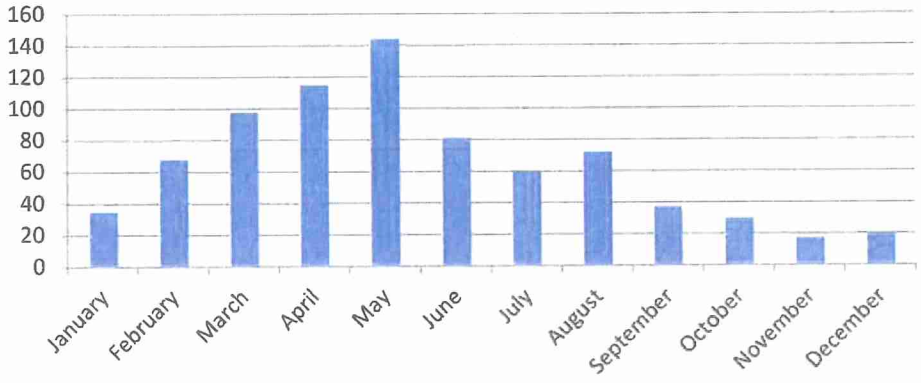


Figure 1. Number of Redband Trout observed by clerks in the lower reservoir creel by month (2012-2014 combined data).

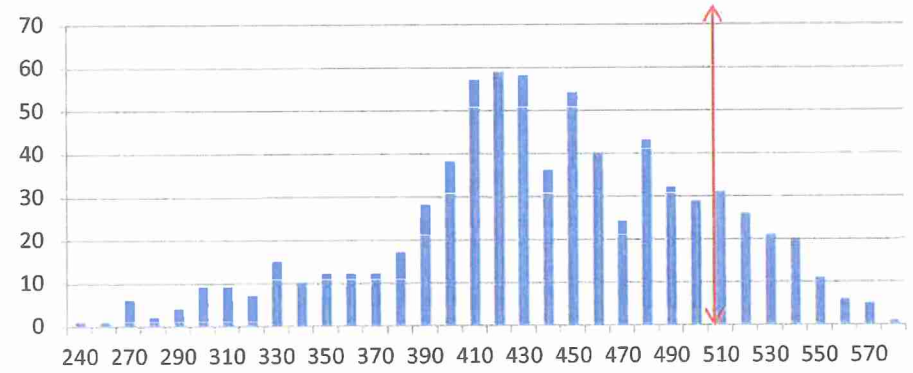


Figure 2. Length frequency distribution of Redband Trout harvested in Lake Roosevelt (2012-14 combined data). Red line indicates 508 mm or 20 inches.

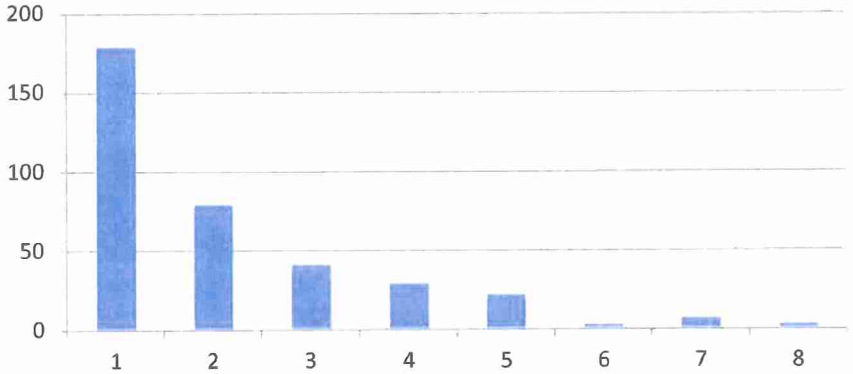


Figure 3. The majority of anglers that harvested wild trout were only able to capture one (combined data 2012-2014).

Table 1 Estimated angler hours (all species) and estimated harvest on Redband Trout and hatchery Rainbow Trout, 2012-14 (STI unpublished data).

Year	Section	Total Angler Effort (hrs)	Spp. Harvested	No. Harvested
2012	1 (Upper)	11,214	Wild RBT	25
			Hatchery RBT	201
			Unknown Origin RBT	0
	2 (Middle)	17,506	Wild RBT	70
			Hatchery RBT	1,304
			Unknown Origin RBT	59
	3 (Lower)	25,086	Wild RBT	675
			Hatchery RBT	3,617
			Unknown Origin RBT	114
	Total	53,806		6,065

Year	Section	Total Angler Effort (hrs)	Spp. Harvested	No. Harvested
2013	1 (Upper)	10,788	Wild RBT	10
			Hatchery RBT	2,055
			Unknown Origin RBT	13
	2 (Middle)	25,408	Wild RBT	9
			Hatchery RBT	2,303
			Unknown Origin RBT	2
	3 (Lower)	31,635	Wild RBT	941
			Hatchery RBT	5,753
			Unknown Origin RBT	614
	Total	67,831		11,700

Year	Section	Total Angler Effort (hrs)	Spp. Harvested	No. Harvested
2014	1 (Upper)	12,280	Wild RBT	15
			Hatchery RBT	1,678
			Unknown Origin RBT	0
	2 (Middle)	23,468		
			Wild RBT	98
			Hatchery RBT	9,363
			Unknown Origin RBT	295
	3 (Lower)	30,165	Wild RBT	1,892
			Hatchery RBT	9,018
			Unknown Origin RBT	110
	Total	65,913		22,469

*Harvest estimates generated without sub-setting target species (tar.species=All species)
*Data compiled by Elliott Kittel, Spokane Tribe of Indians, 07.01.2015
*Unknown origin are a result of anglers filleting the fish prior to being surveyed

FAMS Modeling Results

Creel: Combined lower reservoir data (2012-14)

Population Parameters:

Proportional size distribution indices are quantitative descriptors of length-frequency data. These indices include preferred, memorable, and trophy sizes. The incremental size structure analysis includes stock, quality, preferred, memorable, and trophy size ratios.

Table 1. Summary of Redband Trout population parameter results from three years of combined creel data from lower Lake Roosevelt (2012-14).

Age	Mean TL	Number
2	277.19	16
3	354.42	110
4	422.7	262
5	476.15	147
6	524.54	98
7	562.5	8

Traditional Size Structure Indices			
PSD	PSD-P	PSD-M	PSD-T
78.28	18.59	0	0

95% Confidence Intervals					
PSD		PSD-P		PSD-M	PSD-T
75.09 -	81.48	15.58 -	21.61	0 - 0	0 - 0

Incremental Size Structure Indices			
PSD S-Q	PSD Q-P	PSD P-M	PSD M-T
21.72	59.69	18.59	0

Mean Relative Weights					
Sub-stock	Stock	Quality	Preferred	Memorable	Trophy
167.29	92.9	82.78	76.32	0	0

Growth:

The von Bertalanffy growth model predicts the maximum length a fish will reach (length ∞ = 768.91 mm or 30.3 inches) (Figure 4). Length ∞ can also be held constant to get a better understanding of growth over time (Figure 5).

In addition, the von Bertalanffy equation can be used to predict the average length fish are at each age, and be inverted to predict the time it takes a fish to reach a certain length. Therefore, using the values obtained for holding L_∞ constant it will take a fish 4.43 years to reach 457 mm (18 in) years, and 5.69 years to reach 508 mm (20 inches).:

$$L_t = L_\infty (1 - e^{-k(t-t_o)}$$

Where:

L_∞ = maximum theoretical length that can be obtained.

L = growth coefficient

T = time or age in years

T_o = time in years when length would theoretically equal zero

e = exponent for natural logarithms

von Bertalanffy Solver Results

Convergence Criteria Met with 6 Iterations: Optimal Solution Found

R-squared =	0.999926	Prob > F	0.0001

Parameter	Estimate
Linf	768.91
K	0.174
to	-0.563

von Bertalanffy Solver Results

Convergence Criteria Met with 7 Iterations: Optimal Solution Found

R-squared =	0.983603	Prob > F	0.0001

Parameter	Estimate
Linf	600
K	0.348
to	0.304

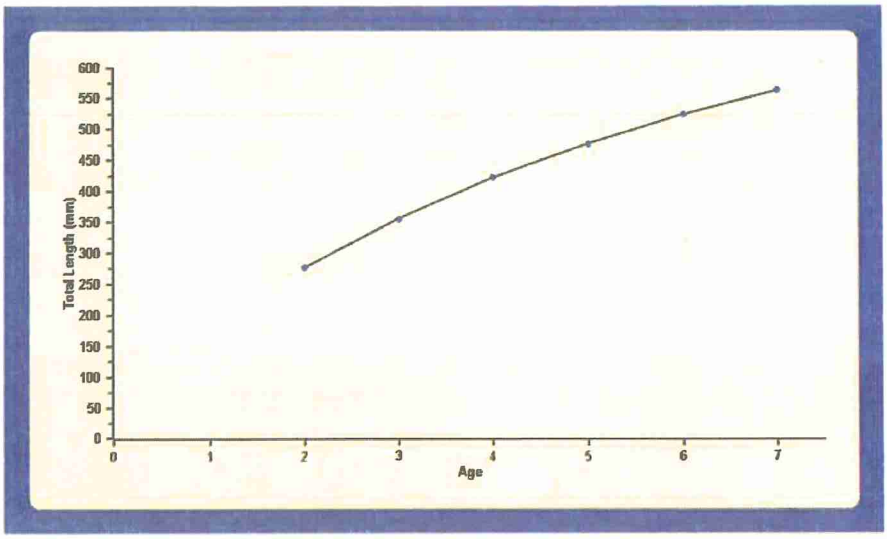


Figure 4. von Bertalanffy growth estimated with length set as infinity.

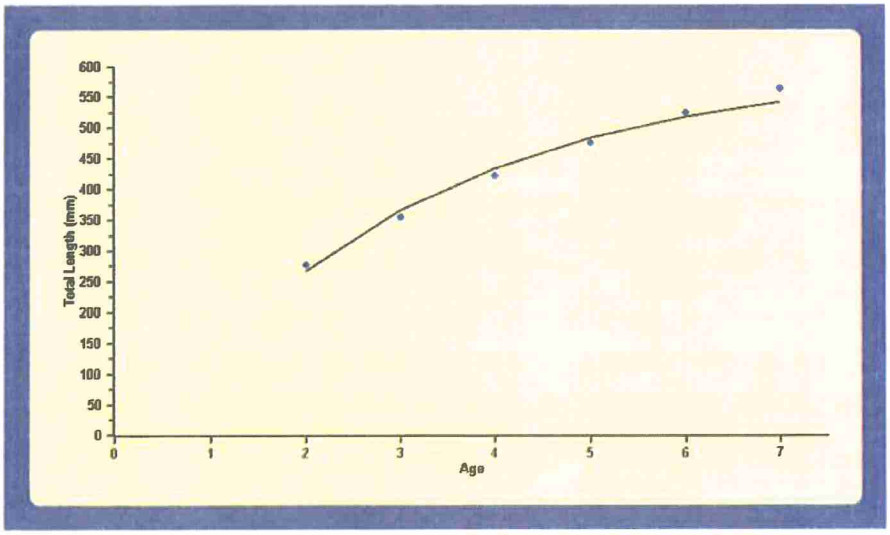


Figure 5. von Bertalanffy growth estimated with length set to 600 mm TL.

Weight-Length Regression Results

To predict the yield in weight and the mean weight of harvest the relation between weight and length are computed. In the majority of populations *b* (slope) ranges from about 2.7 and 3.5. For most commercial and sport fish *b* is greater than 3.0. The *b* for Redband Trout in Roosevelt is 2.5, and therefore slightly under most sport fisheries (Figure 6).

Analysis Of Variance Table

Source	DF	Sums of Squares	Mean Square	F-value	Prob > F
Model	1	17.8902	17.8902	3961.2092	0.0001
Error	639	2.886	0.0045		
Total	640	20.7762			

R-squared = 0.8611

Variable	Estimate
Intercept	-3.8074
Slope	2.5448

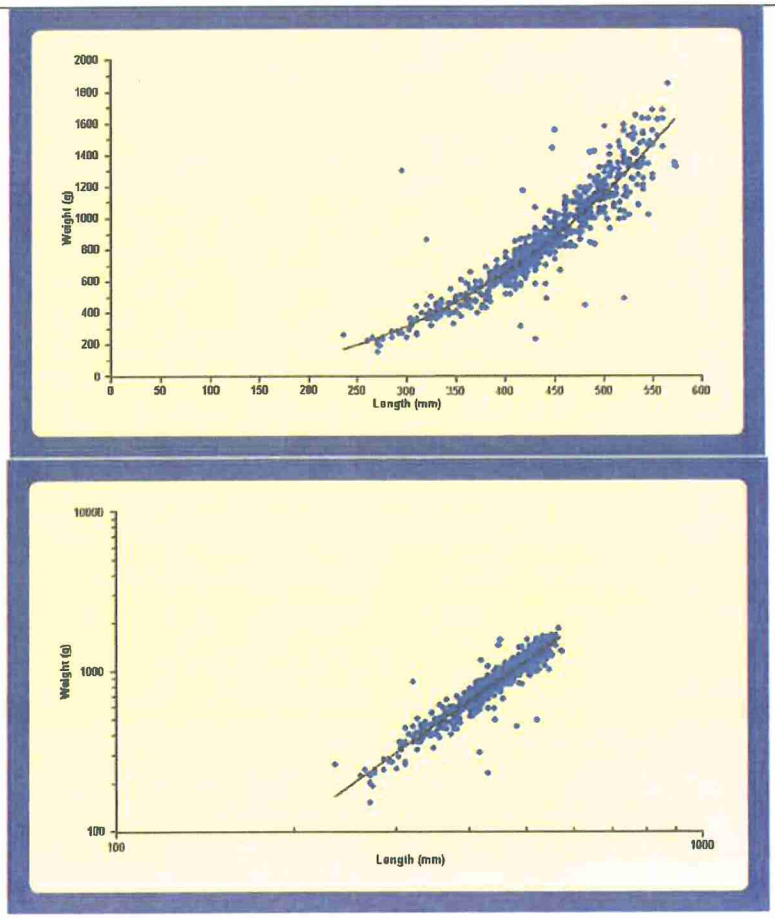


Figure 6. Length weight regressions (linear and Log_{10}) for Redband Trout fishery (2012-14).

Mortality

Total mortality was estimated using an unweighted catch-curve regression. The slope of the regression line is the instantaneous rate of total annual mortality (Z) and survival (S) is also defined $S = e^{-Z}$.

Lake Roosevelt Redband Trout were estimated to have a total annual mortality rate of 66% and a total annual survival rate of 34% (Figure 7).

Un-weighted Catch-Curve Regression Results
Analysis Of Variance Table

Source	DF	Sums of Squares	Mean Square	F-value	Prob > F
Model	1	5.9102	5.9102	9.9571	0.0001
Error	2	1.1871	0.5936		
Total	3	7.0973			

R-squared
0.8327

Variable	Estimate		
Intercept	10.2855	Total Annual Mortality (AM)	0.663
Slope	-1.0872	Total Annual Survival (S)	0.337
		Theoretical Maximum Age	9.5

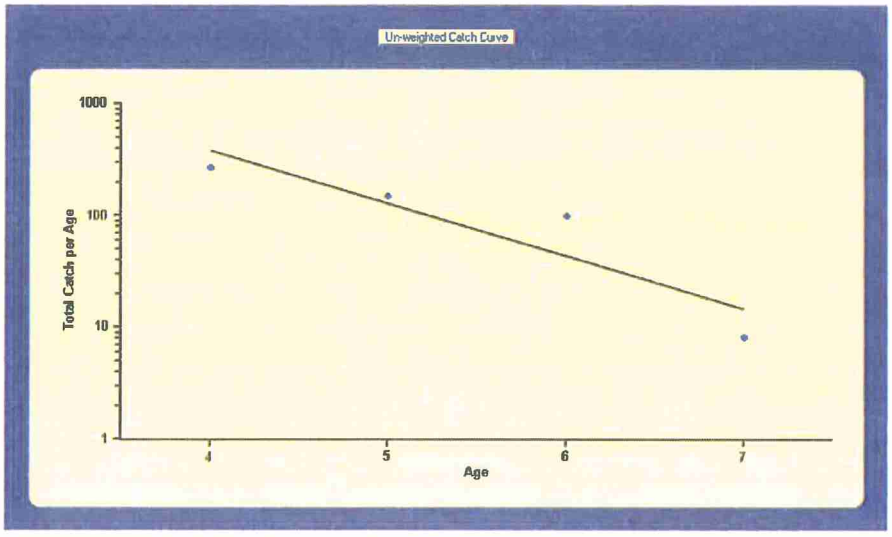


Figure 7. Unweighted catch-curve analysis for combined creel data (2012-14).

The FAMS model provides six computational methods to estimate instantaneous natural mortality (M) and the corresponding conditional natural mortality rate (cm). Using independent variables estimated on previous pages, the Redband Trout M was 0.52 and cm was 0.4 (Figure 7).

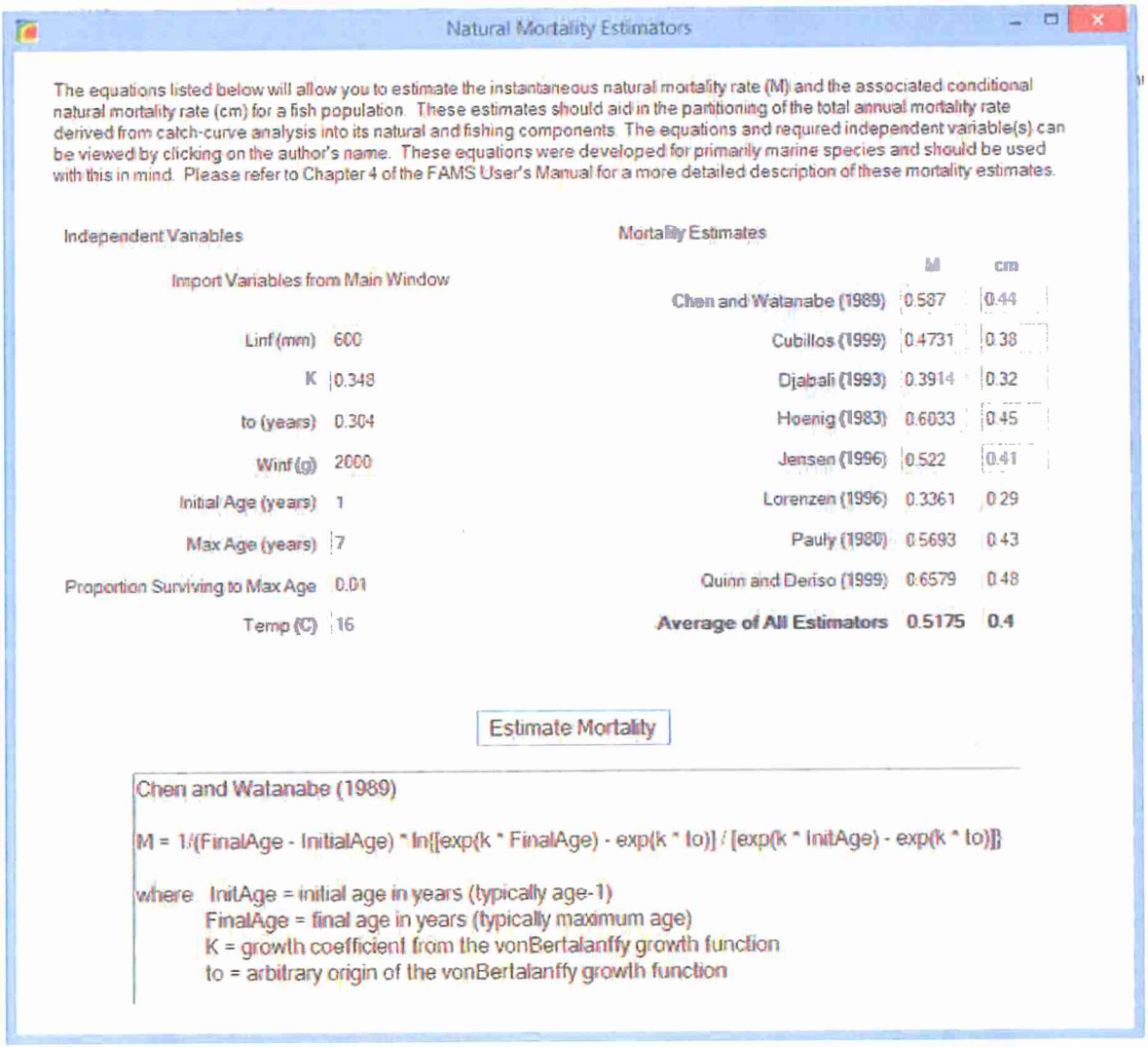


Figure 8. Instantaneous and conditional natural mortality estimates for Redband Trout using combined creel data (2012-14).

Fishing Mortality (Exploitation; u)

After computing Z in an exploited fishery, this rate needs to be divided into fishing mortality (F) and natural mortality (M); where Z = F +M.

Utilizing the STI harvest estimate for 2014 (2,005) and the abundance estimate from WDFW (3,148), exploitation was estimated at u = (2,005/3,148) = 0.64 or 64%.

Recruitment

In the 1980's, marine fishery scientists attempted to quantitatively address the problem of recruitment over fishing and developed a simple index termed the spawning potential ratio.

Spawning Potential Ratio

The Spawning Potential Ratio (SPR) targets can be achieved by protecting mature females with either length or bag limits or with the use of protective slots, or with closed seasons or closed fishing grounds. The SPR is used as a management criteria to maintain adequate females in the population to prevent recruitment over fishing. The linear relationship used to describe fecundity was

y = 116.68x+899.86

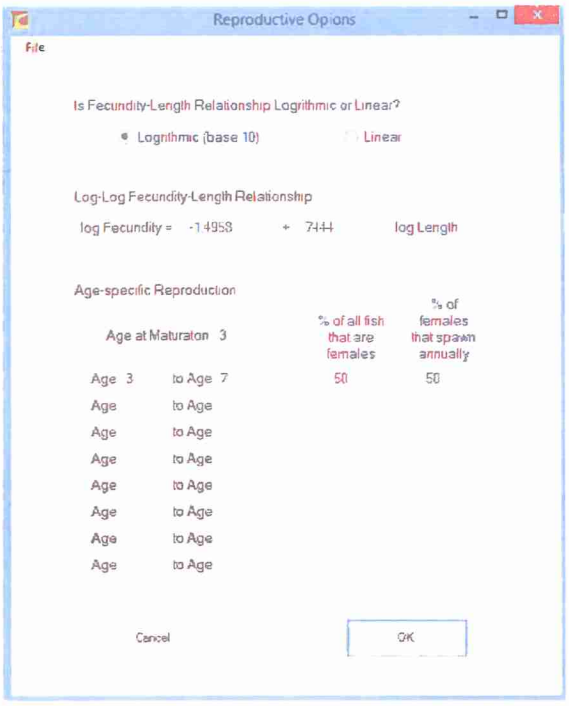
The values used in this model are summarized below:

Log10(Length)-Log10(Fecundity) Regression Results
Analysis Of Variance Table

Source	DF	Sums of Squares	Mean Square	F-value	Prob > F
Model	1	0.0223	0.0223	36172.99	0.0001
Error	9	0	0		
Total	10	0.0223			

R-squared
0.9998

Variable	Estimate
Intercept	1.4958
Slope	0.7444


Reproductive Options
File
Is Fecundity-Length Relationship Logrithmic or Linear?
Logrithmic (base 10)
Linear
Log-Log Fecundity-Length Relationship
log Fecundity = -1.4958 + 7.44 log Length
Age-specific Reproduction
Age at Maturation 3
% of all fish that are females
% of females that spawn annually
Age 3 to Age 7
50
50
Age to Age
Age to Age
Age to Age
Age to Age
Age to Age
Age to Age
Age to Age
Cancel
OK

Yield Per Recruitment Model

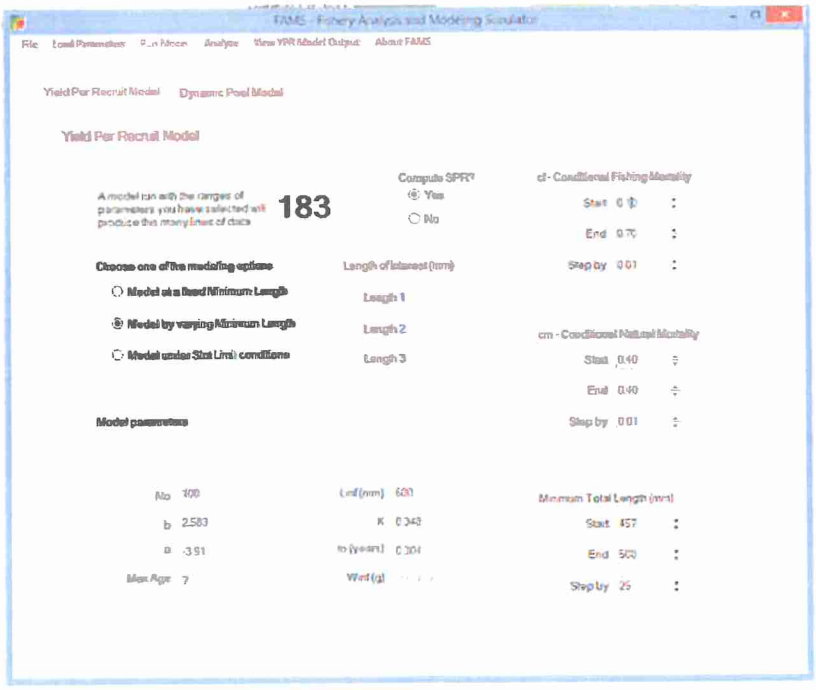
Using the above estimated parameters, the Yield Per Recruitment Model was used to explore harvest regulations for Redband Trout using varying minimum lengths (457, 18 in to 508, 20 in) (see model inputs below). Conditional fishing mortality was set at 0.10-0.70 and conditional natural mortality was set at 0.40.

The model predicts an increase harvest and yield as exploitation estimates increase. With the current exploitaation rate of 60%, the difference in harvest and yield is three fold between a minimum length of 18 and 20 inches (Figure 8, Figure 9).

As exploitation increases, the Spawning Potential Ratio and the number of eggs produced drastically reduces. The SPR drops below 80% (at 60% exploitation) for all fish less than 400 mm TL, which is likely our current situation (Figure 10). Ideally, SPR should be above 80% (for conservation stocks), therefore to do that exploitation must be held near 1% and a minimum length of 300 must be employed.

Exploitation can be as high as 30% if a minimum harvest limit of 20 inches is established.

Effects related to the number of eggs produced in the population decreases with increased exploitation, especially with the 18 inch length limit (Figure 11).



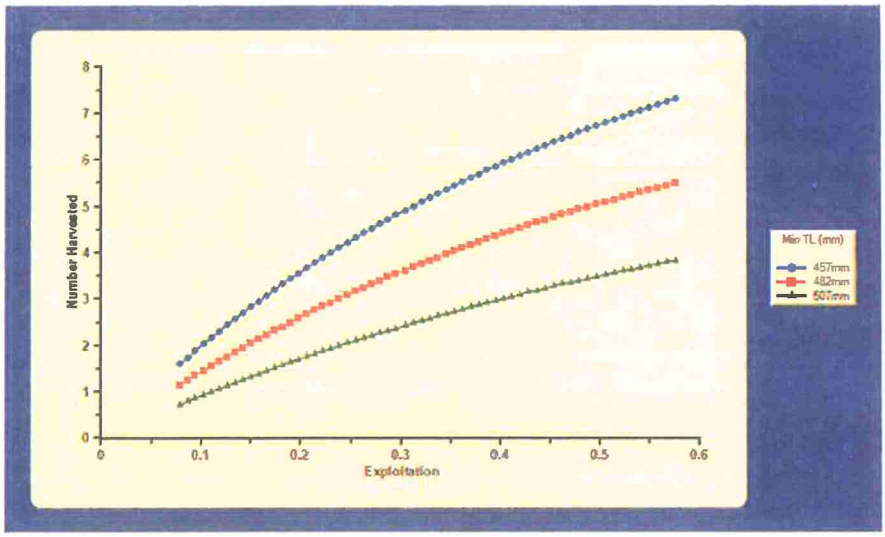


Figure 9. Exploitation vs number of fish harvested for three size classes (457 mm (18 in), 482 mm (19 in), 507 mm (20 in; TL).

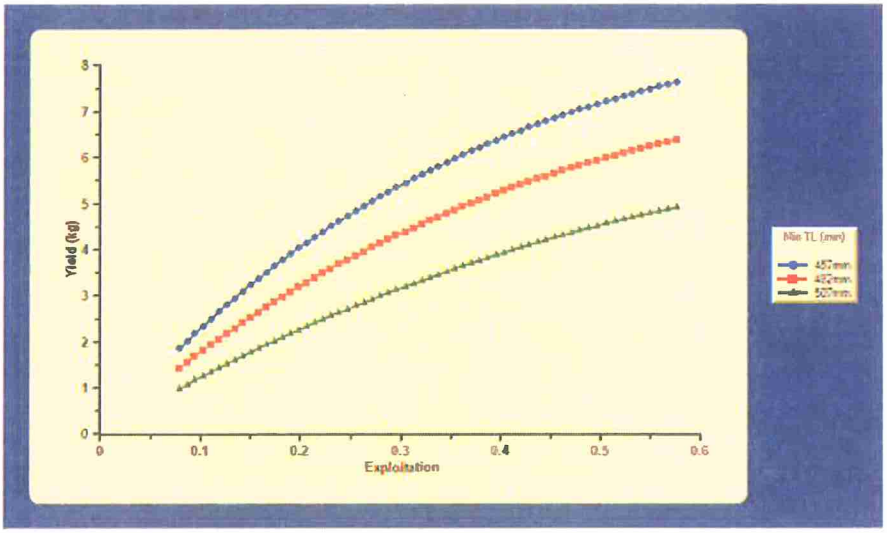


Figure 10. Exploitation vs yield of fish harvested for three size classes (457 mm (18 in), 482 mm (19 in), 507 mm (20 in; TL).

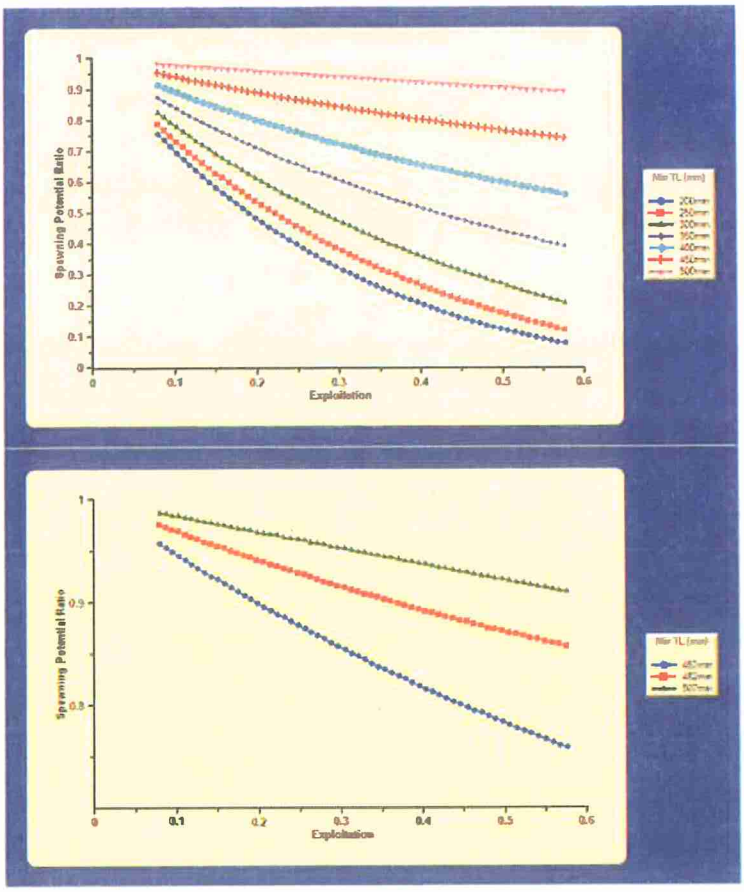


Figure 11. Exploitation vs spawning potential ratio of fish harvested for all size classes (200-500 mm TL) and for three specific size classes (457 mm;18 in), (482 mm;19 in), (507 mm; 20 in) TL.

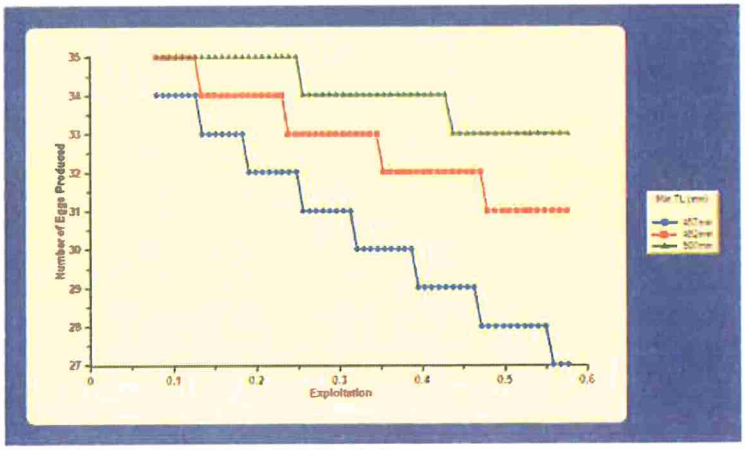


Figure 12. Exploitation vs number of eggs (thousands) produced for three size classes (457 mm;18 in), (482 mm;19 in), (507 mm; 20 in) TL

Isopleth graphs were also run to look at optional lengths and expected exploitation rates. Therefore, if a 30% exploitation rate is expected, then a minimum length limit of 425 is need to keep SPR near 0.98, and a minimum length limit slightly over 400 is needs to keep SPR near 0.88.

Similarly, if a one fish limit was imposed, with an estimated exploitation of 30%, then a length limit of 450 is required. If the expected exploitation is higher, then the minimum length would be higher as well (Figure 13).

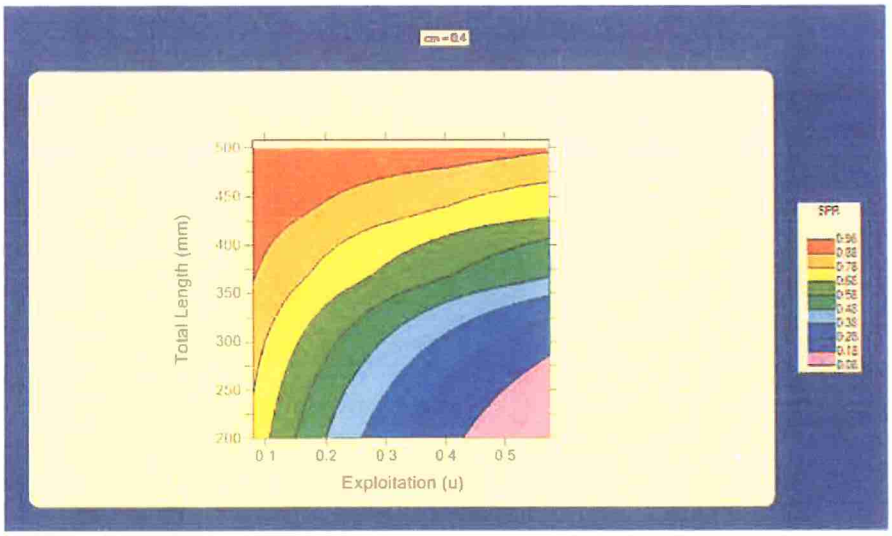


Figure 13. Isopleth of exploitation and total length related to spawning potential ratio.

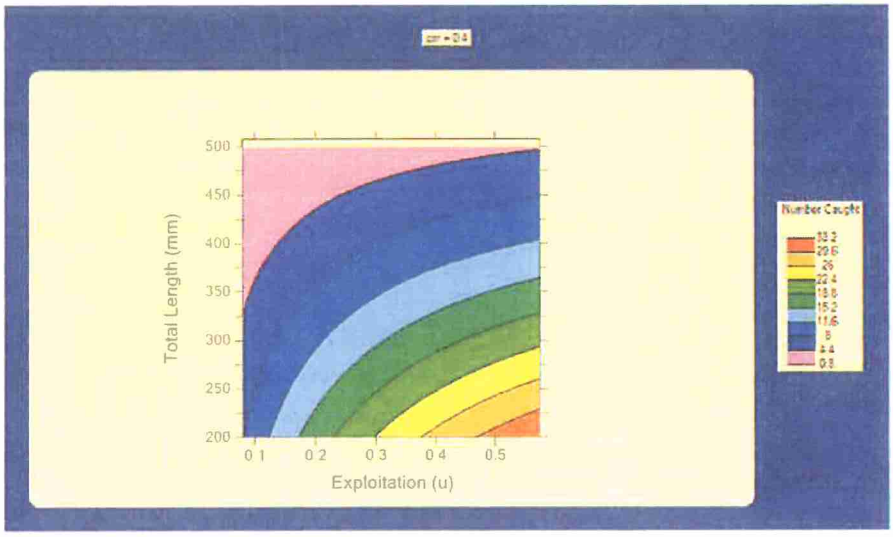


Figure 14. Isopleth of exploitation and total length related to the number of fish captured.

Hooking Mortality Concerns:

Hooking mortality has been extensively studied on resident trout species, often with confounding results (Manson and Hunt 1967, Klein 1965, Schisler and Bergersen 1996, and Taylor and White 1992).

Taylor reviewed 18 papers published on hooking mortality. In general, the consensus was: fish captured with bait have a much higher rate of hooking mortality than those caught with either artificial flies or lures. Mortality increases dramatically when fish are foul hooked (in the gill arches, esophagus, or vital organ). There was some inconsistency's related to barbed or barbless hooks, with three studies that indicated no difference in mortality and two studies that indicated a difference in mortality (2.6% for barbless hooks vs. 4.8% for barbed hooks). However, the overall mortality was low for both hooks. One study suggested hatchery fish suffered lower hooking mortality than wild fish; however hatchery conditions may have increased stress and mortality for the wild fish during these studies. The majority of studies found no difference between hook size and the number of hooks (single or treble).

The overall average mortality rate in 18 studies that used all types of gear was 12%. Under the best conditions, with barbless flies or lures, the percentage dropped to 3% (Taylor et al. 2011).

A 12% hooking mortality estimate could be used for Redband Trout on Lake Roosevelt, which would be considered high, however it is needed to support conservation goals.

Scenario:

Between 2012-14, 3,825 Redband Trout were harvested in Lake Roosevelt

Closure: If a full closure was instituted, a 12% hooking mortality would reduce angler mortality by 88% from 3,825 to 459 fish.

Allowed one over 20 inches: If anglers were allowed to only keep one trout over 20 inches, the angler mortality would be reduced by 84% (612 fish), plus 12% hooking mortality (N=73 fish) for a total angler mortality of 685 fish (overall 82% reduction).

Allowed one over 18 inches: If anglers were allowed to only keep one trout over 18 inches, mortality would be reduced by 61% (1,492 fish), plus 12% hooking mortality (179 fish) for a total angler mortality of 1,671 fish (overall 56% reduction).

Effect of increasing the hatchery Rainbow Trout bag limit

If the bag limit for hatchery rainbow trout is increased,

1. Anglers will keep more hatchery trout during high catch rate periods and not necessarily fish longer, and/or
2. Anglers will fish longer during slow catch rate periods and encounter more Redband Trout. These fish would likely be released and be subject to potential hooking mortality.

New Lake Roosevelt Proposed Regulation:

The goal of the new regulation is to

1. Ensure long-term sustainability of all genetic gene pools within Lake Roosevelt,
2. Protect staging and spawning adults during the spring,
3. Move the harvest pressure off of the Redband Trout populations and move the pressure to the hatchery triploid Rainbow Trout population,

Area includes Lake Roosevelt from Grand Coulee Dam upstream to China Bend boat launch, includes the Sanpoil River to Keller Campground (buoy line), Spokane River to Little Falls Dam, Kettle River to Barstow Bridge:

Daily limit of 10 adipose *absent* trout (clipped), no size limit

Catch and release only adipose present (unclipped)

Sanpoil River Arm: Closed February 1 to May 30.

China Bend Boat launch upstream to the Canadian border

Daily limit of 10 adipose *absent* trout (clipped), no size limit

Daily limit 2 adipose *present* trout (unclipped) with a minimum length of 18"

Mouth of Onion Creek: Closed March 1 to May 30

Mouth of Big Sheep/Deep creeks: Closed March 1 to May 30

A visual mark (adipose fin clip) is already present on all hatchery release fish, thereby enabling co-managers to implement a mark-selective fishery to promote the conservation of Redband Trout in Lake Roosevelt.

Literature

Jones, B., H. McLellan, and E. Simonsen. 2015. Colville Confederated Tribes Resident Fish RM&E 2013 Annual Report, BPA Project # 2008-109-00.

Klein, W.D. 1965. Mortality of rainbow trout caught on single and treble hooks and released. The Progressive Fish Culturist. 27:3, 171-172.

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Schisler, G.J and E. P Bergersen. 1996. Post release hooking mortality of rainbow trout caught on scented artificial baits. NAJFM 16:570-578.

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Taylor, M.J., and K. R. White. 1992. A meta-analysis of hooking mortality of nonanadromous trout. NAJFM 12:4, 760-767.

RESOLUTION
Spokane Tribal Resolution 2016-062

SUPPORT FOR THE COLVILLE CONFEDERATED TRIBE SUBMITAL OF A LAKE ROOSEVELT RAINBOW TROUT HARVEST REGULATION CHANGE TO THE STATE OF WASHINGTON

WHEREAS, the Spokane Tribal Council is the duly constituted governing body of the Spokane Tribe by authority of the Constitution of the Spokane Tribe; and

WHEREAS, under the Constitution of the Tribe, the Spokane Tribal Council is charged with the duty of protecting the health, security and general welfare of the Spokane Tribe and all reservation residents; and

WHEREAS, the Spokane Tribal Business Council has discussed and approved the recommendation of the Department of Natural Resources to support the Petition for Adoption, Amendment, or Repeal of a State Administrative Rule submitted by the Colville Confederated Tribes to the State of Washington requesting a change in Lake Roosevelt Rainbow Trout Harvest Regulations; and

NOW, THEREFORE, BE IT HEREBY RESOLVED by the Spokane Tribal Business Council meeting in Special Session this 10th day of December, 2015, that the Tribal Council does hereby approve and authorize signature authority to the Tribal Council Chairman or his designated representative on approving the above recommendation of the Department of Natural Resources.

Certification

The foregoing was duly enacted by the Spokane Tribal Business Council on the 10th day of December, 2015, by the vote of 3 for 0 against and 0 abstain under authority contained in Article VIII of the Constitution of the Spokane Indians ratified by the Spokane Tribe on November 22, 1980.

For **Chairwoman**
Spokane Tribal Business Council

	Yes	No	Abstain	Absent
CE				x
DB				x
GA	x			
GF	x			
DK	x			