

COMMENTS RECEIVED ON THE 3/24/04 YAKIMA STEELHEAD RECOVERY PLAN REVIEW DRAFT

Prepared by Alex Conley, August 5th, 2008

Here is a log of comments on the March 24th Review Draft of the Yakima Steelhead Recovery Plan that were received between March 24, 2008 and July 31, 2008. All page numbers referenced in this document refer to the March 24 Review Draft. Responses to the comments are included in the table below; edits in response to comments are included in the August 18th Review Draft of the Yakima Steelhead Recovery Plan. Comments made during a May 24th meeting with WDFW Region 5 staff are also included in the table below. A meeting was also held with the Bureau of Reclamation to discuss the review draft of the Yakima Steelhead Recovery Plan on May 23rd; participants subsequently submitted written comments which are included in this document. All changes made in the draft in response to comments are visible in the accompanying redline copy of the plan; changes to action descriptions do not show up in the red line. A guide to unmarked changes in the action descriptions is included at the end of this document.

Table: Public Review Draft – Yakima Steelhead Recovery Plan : Public Comments / Draft Response			
#	Page	Comment	Response
John McKern Fish Passage Solutions, on behalf of Yakima Basin Joint Board <i>Written comments</i>			
#1	ii	The term “lamprey eel” is incorrect.	“eel” deleted
#2	9	Recommending barging spring migrants from McNary dam to below Bonneville	No change made; mainstem Columbia issues will be addressed in NOAA Mid-Columbia Plan
#3	38	Note tribal fisheries in Zone 6 result in 1.8 to 10% mortality (4.5% avg)	Reference added to text; mainstem Columbia issues will be addressed in NOAA Mid-Columbia Plan
#4	101	Sculpins prey on eggs as well as juveniles	Predation on eggs noted in text
#5	101	Note steelhead predation at Crescent Island	No change made; topic already addressed on p 119
#6	103	Impacts of transferring fish between basins has cause significant problems; few “true” strains of steelhead remain	No change made; we agree the issue is widespread, but note that the Yakima Basin retains unique genetics that are distinct from hatchery stocks.
#7	105	There is potential to improve screening at Roza Wasteway	Reclamation is currently addressing this issue; reference to these efforts has been added to Lower Mainstem Action #8
#8	105	Need to better understand and address water quality impacts on steelhead, including the impact of estrogens	Title and text of 7.5.5 changed to include other contaminants including hormones
#9	106	Bag and size limits should be removed on all introduced species and anglers should be encouraged to remove all they catch	No change made; already addressed as Basinwide Action #16
#10	106	Calls for cooperation between gravel mining operations and fisheries managers	Cooperative efforts are underway; Lower Mainstem Action #6 text edited to indicate cooperative work with Central Pre-mix
#11	113	It may be possible to improve passage at Roza Dam through installation of a overflow bypass for juveniles and improvements to the adult ladder	No change made; already addressed as Upper Yakima Action #1
#12	117	Mortality at Columbia River dams has been minimized; there are more opportunities for reducing mortality in the ocean, and current efforts to change management at Columbia River dams may actually be reducing survival rates	No change made; mainstem Columbia issues will be addressed in NOAA Mid-Columbia Plan
#13	118	Acoustic tagging would improve knowledge of geographic distribution of juvenile steelhead in the ocean, which would help guide forage fish management	No change made; ocean issues will be addressed in NOAA Mid-Columbia Plan
#14	118	“Double-crested” cormorant is the correct name; rates of predation	Correction made

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		are increasing	
#15	119	Sea lions have generally left the Columbia before summer steelhead return	Reference to fact that sea lions are generally not present below Bonneville during the passage window for summer steelhead added on p. 119
#16	119	Juvenile shad may be an important source of food for some salmon (e.g. fall Chinook)	No change made; shad are not present in the Yakima Basin, and most outmigration of Yakima origin steelhead occurs in April through mid-June when juvenile shad are not present
#17	129	Bag and size limits should be removed on all introduced species and anglers should be encouraged to remove all they catch	Reference to use of regulations to reduce impacts of introduced species added on p 129; also see Basinwide Action #16
#18	130	Offers to provide input on storage dam passage designs	No change made. Reclamation has recently released preliminary design concepts; see Naches Action #9 and Upper Yakima #8
#19	131	Offers to provide information on Amon Wasteway	We look forward to receiving your information
#20	143	Zero left off cost figure	Error corrected
#21	144	Discusses incidence of “headburn” in migrating adult steelhead on the Columbia River	No change made; mainstem Columbia issues will be addressed in NOAA Mid-Columbia Plan
#22	146	Calls for encouraging/requiring local governments to implement zoning that protects fish habitat	No change made; existing text encompasses concept of working with local governments to ensure adequate protection for habitat
#23	148	Using fisheries regulations to reduce impacts of introduced fish species is more promising than calls to operate reservoirs at minimum operating pool	No change made; Basinwide Action #16 addressed introduced species issue; mainstem Columbia issues will be addressed in NOAA Mid-Columbia Plan
#24	149	Strongly supports nutrient enhancement; use analogues and sterilized carcasses	No change made; action is already included as Basinwide Action #15
#25	149	Same as #23	No change made; Basinwide Action #16 addressed introduced species issue
#26	150	Zero left off cost figure	Error corrected
#27	151	Need to explore structural options to reduce predation at outfall; water cannon might help deter bird predation	Reference to bird deterrents added to action description
#28	151	To avoid impacts on homing by salmon and steelhead, any Columbia River water transferred to the Yakima Basin should be used for irrigation and not put directly instream to avoid false-attraction issues	Added text noting this issue to action description
#29	152	Calls for use of setback levees to allow for improving floodplain function while maintaining flood protection and notes potential Corps	No change made; action description notes plans for levee setback and Corps is identified as a key partner

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		of Engineers support for such efforts	
#30	154	Proposes possibility of using velocity barrier on Sulphur Creek	No change made; barrier structure was installed in spring 2008
#31	162	Providing up and downstream passage at Bumping Lake will be technically challenging, but is feasible	No change made; Reclamation is currently developing feasibility-level designs
#32	168	Rocky Mountain Elk Foundation is a possible partner and funding source for riparian habitat acquisition	No change made. RMEF has been an active participant in habitat protection in the basin; they would fall into the category of “land conservancies” noted as key partners in the action description.
#33	173	Corps of Engineers Flood Control Center should be noted as a partner in Naches Action #30	No change made; proposed action would be undertaken by Bureau of Reclamation
#34	176	Encourage removal of unused irrigation dam	No change made; action calls for removal (which is scheduled for 2008)
#35	184	Overflow juvenile fish bypass could be very effective at Roza Dam	No change made; as noted in action Reclamation is currently developing designs for improving juvenile passage
#36	184	Since Yakima steelhead are endangered, Reclamation should seek to replace power forgone to improve passage at Roza with power from other sources, including reduced spill at FCRPS dams	No change made; comment consistent with existing action description. mainstem Columbia issues will be addressed in NOAA Mid-Columbia Plan.
#37	186	Passage at diversion dams should be feasible; design will need to be done on a case by case basis	No change made; there are numerous examples of successful efforts to provide passage at small dams in the basin.
#38	187	Juvenile bypass and adult trap and haul facilities should be feasible at Cle Elum dam	No change made; Reclamation is currently developing designs
#39	210	Acoustic tagging could be used to track juvenile and adult steelhead	No change made; existing text references potential use of acoustic tags. This will be evaluated in more detail during development of a more detailed steelhead monitoring plan for the Yakima Basin.
#40	212	Acoustic tagging may have significant benefits over PIT tagging	No change made; existing text references potential use of acoustic tags. This will be evaluated in more detail during development of a more detailed steelhead monitoring plan for the Yakima Basin.
#41	213	Acoustic tags placed in smolts may also be able to be used to track movements 1-2 years later as they return as adults	No change made; existing text references potential use of acoustic tags. This will be evaluated in more detail during development of a more detailed steelhead monitoring plan for the Yakima Basin.
#42	213	Acoustic tagging would allow for tracking of fish in and out of refugia	No change made; existing text references potential use of

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		along the Columbia River	acoustic tags. This will be evaluated in more detail during development of a more detailed steelhead monitoring plan for the Yakima Basin.
#43	213	Acoustic tagging would allow identification of locations where adult steelhead hold in the McNary Pool and the lower Yakima. Releases from Yakima storage reservoirs should be used to cool lower Yakima and McNary pool temperatures.	No change made; existing text references potential use of acoustic tags. This will be evaluated in more detail during development of a more detailed steelhead monitoring plan for the Yakima Basin. Flows released from the Upper Yakima generally reach equilibrium with air temperatures prior to reaching the mouth of the Yakima.
#44	215	Efforts to study bird predation in the Yakima should be coordinated with Corps of Engineers studies; acoustic tagging of Chinook in the Yakima indicates high mortality between Chandler and McNary	No change made; bird predation studies in the basin are done by the Yakima/Klickitat Fisheries Project using BPA funding. Understanding survival rates in the lower Yakima is noted as a key information need in the text.
#45	216	Understanding and implementing nutrient enhancement programs should be a high priority	No change made; Basinwide Action #15 and text in section 7.5.3 emphasize this
#46	217	Studies should address more than just pesticides; other toxins including estrogens and other hormones also need to be addressed through additional research	Title and text of 7.5.5 changed to include other contaminants including hormones
#47	218	Coordinate monitoring efforts with the Corps of Engineers and BPA	Text calling for coordination of in-basin and out of basin monitoring added to Section 7.7.2
#48	219	Acoustic tagging could be used to track juvenile and adult steelhead	No change made; existing text references potential use of acoustic tags. This will be evaluated in more detail during development of a more detailed steelhead monitoring plan for the Yakima Basin.
#49	221	Highlights importance of public information programs.	No change made; Chapter 8 already emphasizes these efforts
#50	223	Highlights importance of public information programs.	No change made; Chapter 8 already emphasizes these efforts

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<p>Angie Begosh Yakima Basin Fish & Wildlife Recovery Board <i>Email</i></p>			
#1	128	On p 128 the habitat strategies refer to protecting “high-value” habitats while the action descriptions refer to protecting “functional” habitat	Reference on p. 128 changed from “high-value” to “functional”

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Gabriel Temple Washington Department of Fish & Wildlife <i>email</i>			
#1	N/A	Determining if habitat actions are having desired results in terms of fish production is challenging; prioritizing intense local work and effectiveness monitoring could help evaluate actions and direct future efforts.	No change made; we do look forward to working with you and others to address exactly these questions as we develop a steelhead monitoring plan in 2008-9.
#2	48	Resident-resident pairings can produce anadromous offspring. See Thrower et al 2004 and Anne Marshall's work on the Cedar River. Resident/resident pairings may be a useful way to rebuild anadromous runs in isolated extirpated populations.	Thrower citation added to discussion; plan already notes potential role of residents in reestablishing anadromous populations.
#3	101	Fritts and Pearson used several years of data to show that small mouthed bass probably do not consume many yearling sized fish; catfish enter the Yakima after the bulk of the smolt outmigration is complete	Citations and reference to findings added to text on p 101

#	Page	Comment	Response
James Cummins Washington Department of Fish & Wildlife <i>email</i>			
#1	N/A	The draft is an improvement over the previous version and in general is well done	Thank you; we hope that it can be a useful document
#2	N/A	Skeptical that habitat improvements in the Yakima Basin alone can attain recovery goals; efforts must address harvest and hydro in the Columbia and/or rely on supplementation	No change made; mainstem Columbia issues will be addressed in NOAA Mid-Columbia Plan
#3	22	What are units in Table 2.2?	Units are m ² and have been added to column headings
#4	29	Fig 2.6 is labeled # of spawners when in fact it indicates Prosser Dam counts, which may not all become spawners	Table Caption changed to “# of Adult Steelhead passing Prosser”
#5	36	Are ages in tables 2.10 and 2.11 based on scale analysis or length? What are the sample sizes?	Ages are from scale analysis; sample sizes have been added to tables
#6	43	Why isn't February labeled in table 2.9	February label added to table
#7	45	Add the number of kelts reconditioned and released, and the release locations, to table 2.16	Table has been updated accordingly
#8	45	What information do we have to indicate that kelts are successfully spawning, and in the numbers estimated?	The need to evaluate the reproductive success of kelts is highlighted on p 45 and in Basinwide Action #6
#9	50	In Table 2.17, add post-2004 data. Are ages based on scale analysis or length? What are the sample sizes?	Ages based on scale analysis; we will update table with sample sizes at a latter date
#10	54	Please better explain Table 2.2 in the text	Clarifying text added
#11	100	Starting in 2008, the Yakima below Granger is closed from Nov 1 to the end of April; there is no longer a legal winter whitefish fishery near the mouths of Satus & Toppenish Creeks	Change in regulations noted in text
#12	125	Meeting recovery goals will be impossible without significant and unlikely changes in hydro operations in the Columbia River and harvest regimes; recent efforts to curtail fishing, screen diversions and improve passage in the Yakima Basin have had disappointing results. A large scale supplementation program might compensate for lack of progress in other areas and help meet short-term recovery goals.	No change made. We note that steelhead abundances in the Yakima Basin have improved significantly since 1990, and we remain optimistic that active habitat improvement in the Basin will combine with ongoing efforts to address out-of-basin issues to allow for further recovery.

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<p>Pat Monk US Fish & Wildlife Service <i>email</i></p>			
#1	N/A	<p>The entire planning team deserves recognition for a job well done. Many improvements have been made to the plan. In particular, Alex Conley has worked hard at outreach and communication, and that really shows in this draft of the plan. The plan discusses many difficult and contentious issues, whether they are management or scientific, in a clear and unbiased manner. The plan will be an asset to Yakima Basin steelhead recovery efforts.</p>	<p>Thank you for your support</p>
#2	N/A	<p>In my review the weakest sections of the report are the places that try to explain the ICTRT analyses. It appears the ICTRT has developed a great deal of information, and at times this report struggles to clearly explain those efforts.</p>	<p>We are currently reviewing the most recent draft of the ICTRT stock status assessments for the Yakima MPG to ensure that it is clearly and accurately represented in this plan. We will continue to work with the ICTRT to ensure that the final version of this plan addresses these issues.</p>
#3	N/A	<p>My comments are mostly concerned with trying to get planners to simplify some of the analyses and criteria for recovery. While it may be interesting or useful to fish managers to know everything about all of the steelhead in each stream reach of the basin, I think goals and criteria could be measured at Prosser Dam with the ability to monitor adult and smolt migrants.</p>	<p>NOAA and the ICTRT have built their viability framework around population level assessments, and we have incorporated that population-level approach into this plan. As you note, implementing population-level management will require detailed monitoring data that is not currently available. We need to assess what data can be feasibly collected, and develop a strategy that uses that to answer viability questions. Conducting analyses at a composite MPG level is a viable option that should be explored. We anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008, and we look forward to your participation in that process. Results of that process will be incorporated into future versions of this plan.</p>
#4	N/A	<p>As a general comment, in a number of places in the report Caribou Creek is identified as a priority watershed...I would just suggest you include Coleman, Caribou, Cooke and Parke creeks whenever you identify these east side tributaries, unless there is a strong reason to exclude or choose one over the other.</p>	<p>The Caribou Creek MSA as defined by the ICTRT includes all the Ellensburg area tributaries east of Naneum Creek, including Coleman, Caribou, Cooke and Parke creeks (see Figure 2.5 and page 135). We understand the confusion and will propose a name-change for the MSA to the ICTRT. Clarification has been on p. 139</p>

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#5	iii	Remove word 'caught' is redundant in 3 rd paragraph	Word removed
#6	17	Cooke Creek is the proper spelling for the Kittitas County tributary	Corrected
#7	31	It's not clear that managers have justified the need to allocate Prosser adults in such detail for the purpose of evaluating the viability of the Yakima steelhead populations. With current data, expansions of Prosser counts to population-level abundance estimate are confusing and problematic.	See response to question #3; re expansion of Prosser counts, a new table has been added (2.7) to clarify how the ICTRT calculated its population level estimates. We agree that the methods and underlying data can be improved significantly, and we anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008.
#8	47	It's not clear what is meant by "...the intermediate form is dominant in the Naches population." Individual fish are either resident or anadromous, not intermediate	Text changed to state that "In the Naches population, both anadromous and resident forms are geographically widespread"
#9	48	The discussion implies that the anadromous form is reproductively isolated from the resident form; this is not generally the case. The ICTRT seems to assume that expression of the resident life history increases extinction risk; in fact it may instead promote the long term viability of the population.	Paragraph 2 has been edited to clarify that it refers to the anadromous portion of the population. We recognize that the question of how the relationship between resident and anadromous life histories affects viability is a key one; indeed the issues you raise are addressed in subsequent paragraphs. We will be addressing this question as part of development of the research & monitoring plan described under comment #3, and also look forward to working with the NOAA and Cramer Fish Sciences, both of whom are proposing to further study this issue.
#10	53	The population level abundance estimates are not independent estimates; the viability analysis would have a stronger empirical basis if based on abundance levels at the MPG level.	We are working with the ICTRT to clarify how population-level abundance is estimated, and are hopeful that improved population level estimates can be developed in the future; also see response to Comment #3.
#11	120	The proposed recovery criteria would have a stronger empirical basis if based on abundance levels at the MPG level; spatial distribution criteria require a level of both accuracy and precision that may not be realistic for fish management agencies to achieve.	See response to Comment #3; language describing the mainstem block has been revised to reduce confusion. Language describing spatial distribution criteria has been changed from "will" to "should".
#12	129	The plan takes an optimistic view of supplementation as a recovery tool where some skepticism is warranted.	At this time supplementation has been identified as a possible recovery action focused primarily on reintroducing steelhead to drainages where they are not currently present. A detailed master planning process that addresses potential positive and negative consequences would need to be completed before any supplementation efforts could be implemented. Basinwide Action #7 describes this process in more detail.

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#13	147	In addition to the flow regulation issues identified, it should be noted that floodplain reaches have been heavily grazed, and cottonwood regeneration has occurred in places where grazing pressure is relaxed, even though river management has remained unaltered.	Text added to Basinwide Action #12: "Many floodplain reaches have been heavily grazed, and cottonwood regeneration has occurred in places where grazing pressure is relaxed, even under current flow regimes. This highlights the value of ongoing efforts to improve grazing management in riparian areas and floodplains."
#14	150	It's unclear why water velocity would increase in the river above the dam by diverting less in the canal. At low flows Prosser Dam is clearly a barrier to downstream smolt migration due to the shallow depth of water over the crest, an observation reinforced by studies showing the rate of fish entrainment in the canal as a percent of the water diverted. I think your item is intended to improve fish passage conditions over Prosser Dam and decrease entrainment in the canal. There may be other means of doing this besides reducing the diversion, such as creating a fish passage weir in the dam with depth and velocity conditions that attract migrating smolts.	Text of Lower Mainstem Action #1 revised to avoid confusion over role of water velocity and instead focus on improved passage conditions, both at dam in in bypass reach downstream. Text of Lower Mainstem Action #3 revised to clarify need to reconfigure infrastructure to improve survival past dams, and not just address predation issues
#15	188	Reclamation will not close the Easton ladder in the future; even if closed the timing is such that it would not impact steelhead.	We have clarified the text of Upper Yakima Action #9. While we understand that Reclamation has committed to keeping the Easton ladder open, operating plans still allow for its potential closure in late spring, during the tail end of the spawning migration. We look forward to being able to indicate that this action has been formally committed to.
#16	200	SOAC was created by court order, and not the YRBWEP legislation	Text has been corrected
#17	213	7.2.3: Expand this to include facilities as well as flows. Studies have shown that under some circumstances very high mortality is associated with passage the Chandler Canal and bypass facilities. Researchers have speculated that high mortality may occur at other facilities, but this hasn't been well investigated.	Title and text of 7.2.3 have been edited to include efforts to improve understanding of the impacts of diversion facilities on out-migrant survival.

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Dawn Wiedmeier US Bureau of Reclamation <i>email</i>			
#1	N/A	Suggest changing reference of “Bureau” to “Reclamation”.	Change made throughout document
#2	N/A	The correct name of YRBWEP is the Yakima River Basin Water Enhancement Project. This is not correctly cited throughout the document	Corrected throughout document
#3	BW1	For clarification, frequently, the water is not available in the spring to be able to spill it. We currently are operating the project and will continue to do so to take more risk in terms of flood control curves. However, if we guess wrong or take too much risk, there is the danger of impacting TWSA.	No change; need to balance risks taken in managing flood control curves against potential impacts to flood risk and water supply already noted in action description.
#4	BW3	YRBWEP works predominantly with the districts on their distribution systems; they in turn may work with the on-farm users; YRBWEP does not work directly on on-farm conservation. We use the figure of 474,000 irrigated acres in the basin and I’d have to double check the numbers, but I believe most of the conservation projects are running about \$3-4,000/ac ft.	Acreage and cost estimate updated; no other change made. We understand that Reclamation is not directly engaged in on farm irrigation efficiency programs, but do note that Reclamation may have a role to play in working with irrigation districts to support changes in infrastructure and water management that in turn allow improved on farm water management (e.g. piping laterals that provide pressurized water for conversions to sprinkler systems.
#5	BW 12	There are other partners who would play an important role for this action; Reclamation’s role is secondary. More work needs to be done to see how much the hydrograph can be modified without impacting deliveries.	Additional partners added to Basinwide Action #12’s description; need for additional analysis of ability to modify the hydrograph noted.
#6	N1	We acquired the plant in 2002 instead of 2003; we deliver 50 cfs of irrigation water and use 80 cfs of conveyance water for a total of 130 cfs instead of the 200 cfs; also the water right is for 300-450 cfs	Corrected in Naches Action #1 Description
#7	S4	Not sure where the \$18 million cost figure came from. The YRBWEP legislation authorized \$23 million, which we are now proposing to change to \$49 million and index. Congress still needs to appropriate these funds each year.	The \$18 million is specific to the WIP Priority Water Conservation Measures Plan for the Yakima Reservation
#8	UY1	Suggest changing “rolled” to “tucked”. In the third sentence, suggest adding the work ‘could’ or ‘likely’ unless we know for a fact that travel times are increased, exposure is prolonged, etc.	Changes made in Upper Yakima Action #1 description
#9	UY2	SOAC provides advice to the Yakima Project Manager but are not	Language changed to avoid specific mention to SOAC

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		part of Reclamation. I don't believe they have ever formally recommended higher flows below the dam.	
#10	UY8	Cost of \$18,500,000 is very low based on the current construction estimate of \$96,000,000.	Cost estimate updated

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<p>Brent Lister D.B. Lister & Associates, for the Yakima Basin Joint Board <i>email</i></p>			
#1	N/A	The difference between current abundance and the recovery targets for the Upper Yakima is striking; evaluating how realistic this target is requires understanding the relationship between resident and anadromous forms of <i>O. mykiss</i>	No change; this need is already specifically noted in the plan
#2	N/A	The plan hypothesizes that adult passage constraints at Roza dam prior to 1988 severely reduced abundance of Upper Yakima steelhead. The modest (3.4%/yr) increase in abundance at Roza since 1992 tracks basinwide abundance and would suggest that the Upper Yakima population is not operating well below the capacity of ostensibly underutilized spawning and nursery habitats.	No change made. Rapid increases in abundance following improvement of passage at Roza Dam would only be expected if poor passage had been the only significant limiting factor for the population. As detailed in the plan, many other limiting factors affect the Upper Yakima population, including reduced access to and habitat quality in spawning areas, low numbers creating demographic challenges, and the interplay between resident and anadromous forms. The need to understand these factors is highlighted in the plan and will be further developed in the upcoming steelhead research and monitoring plan developed.
#3	N/A	The allocation of the adult count at Prosser to individual populations is problematic, as it depends on old radiotracking data and incomplete redd count data, and does not produce results that correlate well with counts at Prosser or in other Mid-C populations. The TRT has established complexity in steelhead population structure and its analytical framework that isn't adequately supported by the population abundance data available for Yakima steelhead. Such strict adherence to a standardized approach necessitates a large number of analytical assumptions that do not appear to be publicly documented, and may not be appreciated by those who undertake to update data sets and analyses in the future. This should be of concern to fisheries agencies and others who have a long-term interest in Yakima steelhead recovery.	No change made. As you note, the weaknesses of current population-level abundance estimates are highlighted in the plan, and section 7.1.1 identifies improving these estimates as a high priority monitoring need. We are currently working with the ICTRT to clarify how current abundance estimates were calculated. We will continue to work with NOAA to identify, implement and utilize improved methods in the future (this includes current research into using genetic samples at Prosser to apportion fish to distinct populations). We anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008, and we look forward to your participation in that process. Results of that process will be incorporated into future versions of this plan.

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<p>Ian Courter Cramer Fish Sciences, for the Yakima Basin Joint Board <i>email</i></p>			
No #	N/A	The plan presents a good overview of available data for steelhead in the Yakima Basin. As a first step towards recovery, the plan provides a compilation of information from a variety of sources that can be used to evaluate biological data gaps. It also has a thorough list of management and restoration activities that are likely to increase the number of steelhead and/or resident rainbow trout in the Yakima Basin.	Thank you for your comment
#1	N/A	Managers should recognize that the biological basis for setting the recovery goals in the Yakima Basin was extremely limited, and the goals are likely to change in the near future (See comment 7 below for more detail). Fisheries biologists, including NOAA scientists, are currently working to understand how environmental conditions, survival trade-offs and genetic inheritance influence the abundance of anadromous individuals in <i>O. mykiss</i> populations. Because of these current research efforts, significant changes in recovery goals and strategies are likely to occur over the next several years. For these reasons, the plan it is not a reliable source for biologically justified adult steelhead recovery goals.	No change made. We believe that this plan and the NOAA ICTRT analyses make the best use possible of existing data, that the existing data sets in the Yakima Basin are stronger than in many other parts of the Columbia Basin, and that these steelhead recovery goals have a stronger empirical basis than previous proposed recovery goals. Not setting any goals because there are lingering uncertainties is not a valid option. We do recognize that there are still significant questions to resolve, and we are actively working to address them. We will adjust recovery goals over time in response to improved information. NOAA Fisheries is also committed to an adaptive management approach, and goals will be reviewed as part of annual updates and five year status reviews of the Middle Columbia River Steelhead listing.
#2	N/A	Quantitative estimates of the benefits to fish from specific restoration activities are not provided; without these it is not possible to measure the success of the restoration plan and adjust course when necessary. How will we know if we are implementing the most cost-effective approach to recovery, and how will we know if we are off-course?	No change made. Ecological systems are complex, and we do not have the empirical research results and robust quantitative models that would be needed to accurately predict the specific response of steelhead populations to each individual recovery action. We are committed to taking an adaptive management approach to implementing this plan that integrates recovery actions, research, and monitoring so that we can test assumptions underlying proposed recovery actions over time, and use that information to adjust course. This plan provides a clear

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			description of specific goals, actions and underlying assumptions and uncertainties that was not previously available, and provides a key step towards implementing a rigorous adaptive management program. We anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008, and we look forward to your participation in that process. Results of that process will be incorporated into future versions of this plan.
#3	N/A	The recovery plan provides delisting, short term and long term recovery goals but does not appear to partition the scope of actions necessary to achieve the various levels of recovery. Instead, the plan provides the entire list of recommended actions, and focuses on likelihood of implementation, duration and cost. I would prefer to see a list of prioritized actions and the expected short term and long term benefits of each action to the population. I noted that the recovery board intends to maintain an implementation schedule, but it was unclear whether that entails further prioritization of specific actions.	No change made. As noted above, we do not currently have the tools required to specifically determine which recovery actions are needed to meet each of the recovery thresholds. Prioritization of specific recovery actions and further quantification of expected outcomes will be incorporated into the Board's implementation schedule for this plan. The implementation schedule will describe the specific actions required to implement the more general actions identified in this plan. We encourage your participation in the development and annual review of implementation schedules.
#4	N/A	A carrying capacity approach may be preferable to the ICTRT Intrinsic Potential approach, which does not include natural migration barriers or flow conditions. On-the-ground habitat and juvenile surveys should be conducted in areas identified as having high intrinsic potential. Shorter travel times and low summer flows in the Satus and Toppenish populations make these areas more likely to support viable populations of steelhead.	<p>No change made. The ICTRT Intrinsic Potential Model incorporates perhaps the best compilation of natural barrier data available; it relied on both available GIS data and extensive review by biologists with field knowledge, as detailed in Appendix A of the Plan. While the current model does not do a fully adequate job of incorporating flow conditions (it tends to overestimate perennial flow in arid watersheds), local review was used to adjust the model results, and NOAA is considering revisions to the model to better predict streamflows (again, see Appendix A). The adjusted model results correspond well with the experience of numerous field biologists and with existing empirical distribution data (see Section 2.3 and Figure 2.4)</p> <p>The ICTRT Intrinsic Potential Model has performed well as a tool for estimating the overall extent and physical quantity of habitat available at a population level. It was never intended to provide fine-scale information about the</p>

#	Page	Comment	Response
			<p>relative productivity of specific stream reaches and micro-habitats. Carrying capacity models may be a promising approach for developing finer scale models that allow more detailed predictions of potential production of juveniles to be made. We anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008, and we look forward to your participation in that process. Note that the ICTRT viability approach does not base the abundance thresholds on a linear extrapolation that presumes use of all identified habitat area (see the ICTRT's documentation of its methods for more information).</p> <p>You also state that shorter travel times and low summer flows favor anadromy in the Satus and Toppenish population areas; note that travel distances to lower elevation tributaries in the Naches and even some Upper Yakima population areas are not significantly different from distances to the headwaters of the Satus and Toppenish systems, and that low, warm summer flows are common in tributaries throughout the basin (including areas in the upper reaches of the basin like Big Creek, Swauk Creek and the Teanaway River system).</p>
#5	N/A	It will be important to add information from new genetic analyses of adult steelhead passing Prosser to future updates of the recovery plan.	No change made. The new genetic profiles developed by WDFW are currently being used to assign 2007 steelhead samples from Prosser to population. While the preliminary results are promising, more work is needed to confirm the effectiveness of this approach. We anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008, and we look forward to your participation in that process.
#6	N/A	Data on the Upper Yakima population is lacking. The plan should recommend studies to monitor abundance and distribution of juveniles and adults in the Upper Yakima and Naches population areas.	No change made. It is inaccurate to say that data is lacking for the Upper Yakima. Roza dam counts, the YKFP species interaction study and 3 years of radiotracking data by Karp et al have provided detailed information about steelhead use in the Upper Yakima

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			(see Chapter 2). Ensuring that appropriate levels of monitoring continue into the future is identified as a priority in Chapter 7. We anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008, and we look forward to your participation in that process.
#7	Ch4	Though the recovery goals in Chapter 4 give managers a target, their biological relevance is uncertain. The ICTRT approach does not quantifiably justify the abundance goals. My understanding is that the goals were determined via committee deliberation. The Yakima Recovery Plan should provide the various ICTRT recovery thresholds for ESA purposes, but ultimately focus on recovery goals specific to the Yakima Basin, perhaps by setting independent goals based on local knowledge, current recovery efforts and known steelhead abundance and distribution. As mentioned above, delisting benchmarks are likely to change or become obsolete in the near future because of advancements in our understanding of <i>O. mykiss</i> life-history variability.	See the response to comment #1.
#8	48	Thrower et al show that the anadromous trait can persist in populations of non-anadromous <i>O. mykiss</i> even after many generations of reproductive isolation.	Text and reference to Thrower citation added; note that 70 years is not long in an evolutionary context.
#9	53	The current Cramer Fish Sciences <i>O. mykiss</i> modeling project will likely address many of the information gaps identified in paragraph 3	We look forward to reviewing this new information when it becomes available.
#10	121	The recovery board followed ICTRT guidelines when setting delisting goals, but the choice to strive for a “maintenance standard” for the Toppenish population and a “viable standard” for the Naches populations appears to be out of sink with known steelhead performance in these populations. For example, the Toppenish subbasin is one of largest producers of steelhead relative to its watershed area and likely houses some of the best opportunities to develop a highly viable population. Recovery planners should use the ICTRT approach as a starting point, but focus on reasonable goals tailored specifically for the Yakima Basin.	No change made. The choice to identify the goal for the Toppenish population as maintenance status and the Naches population goal as viable status reflects the ICTRT delisting criteria’s requirement that at least one of the 2 large populations in the basin be at a viable level. We agree that this may underestimate the potential of the Toppenish population, and we note that the Board and its partners have identified the short-term recovery goal as a feasible and preferable alternative to the ICTRT delisting framework. This short-term goal requires additional production from the Toppenish and Upper Yakima populations (but acknowledges the uncertainty about whether 1500 spawners is an appropriate goal for the Upper Yakima population). The set of three goals has generally been seen as appropriate by local reviewers.

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#11	128	<p>The Recovery Strategies section uses a lot of subjective terms such as restore, improve and enhance. Use of these terms may be problematic. For example, “improving” flow conditions is confusing because changing flows to benefit one species could harm other species. There is also ongoing discussion and debate about how flows could be changed in the Yakima to benefit steelhead. More detailed descriptions of the specific restoration actions are provided later, but I recommend avoiding or explicitly defining potentially subjective terminology. In general, the Recovery Plan should not assume that everyone is like-minded about the strategies necessary to “recover” steelhead in the basin. The available biological information is limited and allows substantial room for expert judgment and experimentation. The recovery plan provides an essential road map for managers, but it only works if the road map to recovery is clearly defined.</p>	<p>No change made. This plan is by definition focused on steelhead, and references to ‘improving’ conditions should be read as applying specifically to steelhead. We repeatedly acknowledge that there is ongoing discussion and debate about how flows could be changed in the Yakima to benefit steelhead; we hope that the plan helps encourage and focus those discussions and enable subsequent action. We have tried to highlight areas where there are differences of opinion about what would benefit steelhead in order to encourage resolution of those issues. We believe that the recovery plan provides an appropriate high-level roadmap (e.g. a state highway map). Much detail remains to be worked out as we develop specific implementation and adaptive management plans (consider these the detailed topographic maps that are great on the ground, but can only show part of the picture at any one time).</p>
#12	129	<p>Provision of passage at Reclamation storage dams will have little benefit to anadromous O. mykiss because reservoirs provide habitat conditions that favor a resident life history. More supporting science is needed.</p>	<p>No change made. Whether or not steelhead will use tributaries above lakes is uncertain, as noted in your comments and on p 130 of plans. In coastal systems (e.g. Lake Washington, Lake Ozette and others) it is common. In inland systems no conclusive evidence exists to support either position. While there is some uncertainty regarding the degree of benefit passage would offer to steelhead in specific, current efforts to provide passage are driven by anticipated benefits to other species (sockeye, Chinook, bull trout, etc). Even if steelhead did not use areas above dams, the changes in nutrient cycling associated with increased abundance of other species would benefit steelhead spawning downstream.</p>

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Joel Hubble Bureau of Reclamation <i>email</i>			
#1	ii	<p>Species Status, par 1, 2nd & 4th sentences. I realize this is a NMFS call, but it seems inappropriate to include in the Satus population the lower Yakima mainstem and tributaries; especially given this population has adapted to an intermittent flow/warm environment. Similarly, inclusion of the Yakima mainstem downstream of the Naches to Toppenish Cr. seems to far downstream (I can see to Parker dam).</p> <p>Note- Since reading information in Section 4.1.1, see that the Board and NMFS have come to terms on less restrictive application of this mainstem population.</p>	Clarifying text added
#2	v	<p>Abundance and Productivity Criteria table. Again I realize this is a NMFS call, but a 500 fish abundance criteria for the Satus mainstem block seems inappropriate (and may have been historically). Note- same corrective comment as above.</p>	Clarifying text added to table
#3	6	<p>3rd bullet. Is the word "Planning" the correct word choice? Do you mean to say that the planning effort is voluntary or implementation of the actions resulting from the planning effort?</p>	"And implementation" added to text
#4	18	<p>Identification of Populations, 2nd par, 3rd sentence. I agree with your statement of uncertainty of steelhead spawning/use (present and historic) in the Yakima mainstem for Satus steelhead as defined by the ICTRT. As you know, most of this mainstem reach is very low gradient, with a fine sediment substrate.</p>	Clarification added to text
#5	20	<p>Fig 2.3. Was Marion Drain included? There is steelhead spawning in the drain, which are likely Toppenish fish.</p>	No change. Marion drain was not included in the ICTRT Intrinsic Potential Model because it is not a natural drainage way, and so does not show up in Figure 2.3. It is indicated as a currently occupied area in Fugure 2.4
#6	23	<p>Fig 2.4. Because of the Surveyed Redd Locations layer (dots and the yellow line) it is more difficult to discern the ICTRT Modeled Habitat layer. Could the later layer be made wider to extend beyond the boundary of the Surveyed Redd Locations layer?</p>	Requested change made (further widening turns some streams into blobs)
#7	24	<p>Fig 2.5. Does this depict the intrinsic distribution or current? (was somewhat unclear to me).</p>	Figure legend edited to indicate that the blue line represents current distribution

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#8	25	2 nd complete par. I agree with the local review team for the management side. As stated earlier 500 fish seems high for the mainstem and trib portion of the ICTRT defined population. Also Spring, Corral and Amon tributaries today are influenced by Project return flows; thus flows are probably higher than historically. So even though they are defined as minor populations, they may have been not used historically.	Thank you for your support; reference to section 4.3.9, which discusses these points was added to text on p 25.
#9	30	1 st par after Table 2.5. Do you know if the 11% loss was applied equally across the 4 populations?	Our understanding is that it was; we are working with the ICTRT to clarify the methods used in their final stock status reports, and will update the plan accordingly.
#10	31	2 nd par, 2 nd sentence. It states that NMFS applied the annual ratio of Satus to Toppenish expanded redd counts to partition the estimated (by subtraction) number of adults entering both subbasins. Given the uncertainty in the redd counts, do you think an annual application is reasonable? In Table 2.5 there are 6 years total that were classified as complete counts for both basins. The text states that "expanded" redd counts were used. Did this attempt to dealing with incomplete/or no redd survey data depending on the year and subbasin?	See response to question #3; re expansion of Prosser counts, a new table has been added (2.7) to clarify how the ICTRT calculated its population level estimates. They did use interpolated redd data to give some weight to an apparent resurgence of Toppenish Creek steelhead relative to the Satus Creek population since the NMFS radiotracking study; the interpolated estimates have been added to table 2.5 for reference. We agree that the methods and underlying data can be improved significantly, and we anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008.
#11	34	2 nd par, 1 st sentence. It would be helpful to the reader to perhaps define in parenthesis more specifically what is meant by the "lower river", is it at Prosser or some place lower yet.	Text edited to indicate that temperature referenced was at Kiona
#12	38	2 nd complete par, 1 st sentence. Should not harvest (legal and non-legal) be included as a possible source of loss between Mc Nary and Prosser dams?	Reference to harvest added to text
#13	41	Table 2.14. Similar to the Satus/Toppenish redd count table, you may want to footnote the completeness of the surveys.	Footnote added
#14	42	Table 2.15. Is it possible to further breakout the spawn locations for the upper Yakima? i.e. roza to Taneum Cr.; Taneum Cr. to Teanaway R.; Teanaway R. to Cle Elum R.; and Cle Elum R to Easton dam.	No change made. Data are not readily broken out from existing reports; this would be a valuable exercise in the future.
#15	48	5 th par. I agree with this data gap need. We need to know ideally quantitatively the portion of smolts produced by various cross types and what are their SARs.	No change made. Thanks for your support. We anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008, and we look forward to your

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			participation in that process.
#16	67	3 rd par, 3 rd sentence. The phrase, "Current levels of access to historical areas..." is somewhat unclear to me.	Text clarified
#17	69	2 nd par, last sentence. In general hatcheries were historically used to replace populations lost or diminished through blockages or loss of habitat, and not so much operated for true supplementation (at least as we define it today).	Text changed in response.
#18	73	Table 3.1., column 1. For clarification it would be helpful to state verbatim the NFMS' named threat (i.e. # 1-12) in addition to the Yakima stated threat.	These are listed in the NOAA limiting factors column; numbers added to ease crosswalk to list of #1-12 on previous page
#19	77	Table 3.3, 1 st Threat. Is this a serious issue on Satus Creek?	No change. Threat was identified by Yakama Nation staff as associated with delivery of return flows associated with the North drain and East and West Laterals
#20	77	Table 3.3, Satus- Add loss of beaver.	See limiting factor #10 in the Basinwide Table (Table 3.1)
#21	79	Table 3.4, Toppenish- Add loss of beaver; Marion Drain pulls flow from Toppenish Creek.	See limiting factor #10 in the Basinwide Table (Table 3.1) and Table 3.4, #7
#22	82	Table 3.5, Naches- Add loss of beaver.	See limiting factor #10 in the Basinwide Table (Table 3.1)
#23	76	Table 3.6, upper Yakima- Add loss of beaver.	See limiting factor #10 in the Basinwide Table (Table 3.1)
#24	94	Increased Flows, 2 nd par, 3 rd sentence. Compared to pre-flip flop spring/summer flows are currently operated lower, with a spike in September flow due to flip/flop. It seems debatable if the habitat impacts due to flow changes are any worse (or better). The comparison is between higher sustained flows with the pre flip flop operation vs. current operations with lower flows in the spring summer, with the flip flop spike in September. Do we have some evidence to better support this point?	Text qualified as "posited to"; note key uncertainty 7.2.3 which calls for further research into this topic.
#25	106	Impaired Fish Passage, 2 nd sentence. What evidence is there to support this statement? Hockersmith's report may have something to say on this point.	Text revised for clarity.
#26	107	Altered Streamflows. As a side note, lingering effects of the 1971 (or 72) flood have contributed to the summer dewatering issue.	Reference to floods added to text
#27	109	Floodplain Alteration. A typo mid way thru the 1 st sentence.	Corrected
#28	110	Grazing Impacts. As you probably are aware; there was extensive sheep grazing in the late 19 th and early 20 th centuries that has contributed to this impact.	Reference to historic sheep grazing added to text
#29	114	2 nd par. Arango's (2001) thesis is also discusses the effects of flip flop on aquatic insects for one of the Ellensburg reaches.	Citation added to text
#30	116	1 st par, 2 nd sentence. I believe that WDFW has evidence through	Text edited to indicate migration is known

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		mark/recapture that adult spawning bass move into the lower Yakima to spawn annually from the McNary pool/Hanford reach.	
#31	125	Table 4.2, upper Yakima values. It appears these steelhead values did not consider the presence of rainbow trout. I know that the EDT value of 6,533 was not adjusted downward to take into account the presence of rainbow trout. I see that there is a qualifier sentence in the last paragraph on pg 125. However it may be clear to state this in the title of Table 4.2 or footnote it- that these numbers do not take into account any interaction with resident rainbow.	Footnote added to table 4.2
#32	146	Basinwide Action 10. Is this action inclusive of County land use designation/zoning and Critical Areas and enforcement?	Yes; clarification added to text; also see 6.1.6
#33	198	6.1.1., 2 nd par, 1 st sentence. Is this topic then broadly covered under Basinwide Action 10? At some point County/City leadership is needed to address better long term planning with respect to land use/zoning (I later see that section 6.1.6 speaks to this issue.).	No change made, as noted, see 6.1.6
#34	205	Section 6.5.1. I concur (having had 1 st hand experience). You should add to Corps of Engineers to the list permit hoops to hop through.	Reference added
#35	214	Section 7.2.6. Also there is a need to understand (if possible) the contribution resident O. mykiss play in maintaining (or not) the anadromous populations in these two subbasins.	New bullet added to list
#36	214	Section 7.4. It may be worth checking out the Oregon coastal coho monitoring program that is designed to track long term population/habitat status.	No change made. We look forward to looking at this example as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008.
#37	227	Pt. #4. Comment- The ICTRT's exclusive use of spawning habitat to define historic abundance may not apply to the lower Yakima (even though it meets their criteria); perhaps a different steelhead life stage (e.g. over winter) utilized this reach.	Text clarified
#38	237	1 st par, 1 st sentence. You might consider footnoting that Restoration Potential under EDT is a comparison of Historical condition minus Current condition, and that in many instances (depending on the problem) it is not feasible to realize the full restoration potential.	Footnote added.
#39	259	C.3.3, bullet 2. The Wymer Reservoir proposal. Add to the end of the sentence- "and by the winter release of Cle Elum Reservoir irrigation water."	Change made
#40	259	C.3.3, bullet 3. This alternative also includes the same Wymer fill criteria as described for bullet 2.	Referred reader to description added to previous bullet

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WDFW staff (Jim Cummins, Eric Bartrand, Richard Visser, Perry Harvester, William Meyer, Gabe Temple, John Easterbrook) <i>Meeting on May 23rd, 2008</i>			
#1	N/A	Need to add action that identifies the need to study, and if warranted, address mortality rates in bypass reaches associated with major irrigation diversions	Addressed through changes to Lower Mainstem Action #3
#2	N/A	Update tables to include 2005-7 data when possible	We have updated some tables, and will continue to do so in preparation for the release of the final plan in 2009.
#3	N/A	Revise screening action to highlight that existing screens need to be operated in criteria, and that where fish are present in canals, salvage operations should continue	Addressed through changes to Basinwide Action #
#4	Fig 2.3 & 2.4	Burbank Creek has sufficient flow to support <i>O. mykiss</i> and should not have been identified as lacking perennial flow; in contract Roza Creek rarely connects to the mainstem Yakima and is appropriately excluded	Local adjustment to Burbank Creek removed from maps; original ICTRT Intrinsic Productivity ratings shown
#5	N/A	Plan confused fish management and fisheries management; fisheries management should only be used when referring to management of fishing activities.	Change made throughout document

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Elizabeth Garr NOAA Fisheries <i>Fax & email</i>			
#1	N/A	Numerous markups provided on faxed pages of plan	Thank you for your edits; many incorporated into the plan
#2	N/A	Thanks for the opportunity to look at the March 24, 2008 draft plan. It is excellent; user friendly and just the right amount of detail. I really like, in particular, your format for the actions	Thanks for your comments.
#3		Additional comments regarding correspondence between this draft and the NOAA Middle Columbia Steelhead Recovery Plan	These issues will be addressed in the Mid-Columbia roll-up process.
#4	iii	A map would be useful in the executive summary	We are open to adding a map at a later date
#5	iii	Aren't the uncertainties related to resident/anadromous issues relevant all populations in the MPG?	While some interchange is possible, there is little evidence that resident/anadromous matings are common in the Satus and Toppenish populations
#6	iv	Need to explain that Yakima MPG is one of 4 MPGs in the DPS, and that delisting of the DPS requires all four to be viable	Text edited to clarify relationship between Yakima MPG and DPS as a whole
#7	vii	The RM & E section focuses on research to address key uncertainties; it needs to reference implementation and effectiveness monitoring too	Implementation monitoring is described in the preceding section on plan implementation; effectiveness monitoring is described in this section; see Chapter 7 for more detail.
#8	9	This would be a good place to describe the MPG context	Text has been added to describe the MPG context
#9	13	Would be helpful to add USBR storage dam locations to figure 2.1	New map added (2.3) to show irrigated areas and associated dams
#10	53	Would be good to confirm that "migration timing constraints" is a theme throughout and then assure that it is addressed by recovery strategies	We believe that the recovery strategies presented would adequately address the migration timing constraints identified by the plan and the ICTRT.
#11	120	There is no mention of threats criteria, which are needed for delisting	We are counting on threats criteria to be identified in the NOAA Mid-Columbia Steelhead plan; we intent to discuss how these can be measured in the Yakima Basin in the monitoring plan that will be developed in late 2008.
#12	120	Change language from 'guidelines' to 'guidance'	Changes made
#13	120	Comment unclear	
#14	121	As described scenario lacks context and places emphasis on maintenance standard by mentioning it first. Adding ICTRT DPS delisting scenario tables could provide context.	Scenario reordered to avoid emphasis on maintenance standard. ICTRT DPS delisting scenario tables not added to avoid confusion for those not already conversant in the ICTRT framework.
#15	121	Description of the Satus mainstem block muddies the description of	Portion of discussion moved to Section 2.2; remainder

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		the delisting threshold; move to Chapter 2	essential to explaining how the viability criteria would apply to the Satus population
#16	122	No one wants to “keep” populations at a maintained status; change text to state “reach at least” maintained status	Change made
#17	123	The viability criteria do not call for populations to be kept at maintained standard; they call for at least half to reach viable status and any remaining to be meet or exceed maintained status	Changes made to clarify application of ICTRT standard
#18	126	Can tables 4.3 and 4.2 be combined? Also include or reference viability curves	No changes made. Tables have been kept separate for clarity’s sake. Viability curves are referenced in associated text
#19	128	Add summary paragraphs describing MPG and population level recovery scenarios (examples provided)	While summaries of this sort will be useful in the NOAA Middle Columbia Plan text, we believe that they would be redundant within this plan. We plan to work with you on incorporation of population level summaries into the NOAA draft.
#20	BW #1	Is this a study or an action?	Action description edited to indicate that it is a combination of current and proposed actions and additional study

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<p>Tom Cooney NOAA Fisheries <i>Telephone call, 5/6/08</i></p>			
#1	132-133	Need to restore floodplain function and flows in mainstem Naches is emphasized in text on p. 132 and in individual actions in Ch 5, but is not noted on p. 133 as a key strategy. Perhaps a 5 th bullet should be added there that focuses on improving conditions in the mainstem Naches.	New strategy added to list.

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		<p>Lisa Pelley Washington Rivers Conservancy <i>email</i></p>	
#1	N/A	Washington Rivers Conservancy is quite active in using market based programs to acquire water for instream flow in the Yakima area. We would like to be included in strategies for improving instream flow in Cowiche Creek, Manastash and the Upper Yakima.	Water Trusts & Conservancies identified as partner for actions BW5, N21, UY5, UY4 & UY11

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<p>Adam Fyall Benton County Email of 5/9/08</p>			
#1	N/A	<p>1. Bull Trout... I guess my thoughts are simplistic, but if it is a steelhead plan, then it's probably not the place to address bull trout. Clarification of the separation of issues fully and in one place would to me seem appropriate. I don't know how much "more explanation" is needed, but after a thorough explanation is provided, the discussion should be finished.</p>	<p>References have been removed; bull trout issues will be addressed in a separate document updating the bull trout portion of the 2005 Yakima Subbasin Salmon Recovery Plan</p>
#2		<p>"Catastrophic Fire"... I like [USFS] comments on this. Words like "disaster" and "catastrophic" imply human value, and generally in a negative slant. I tend to use terms like "transformative", "macro-scale", or "landscape scale" for the adjective in this sort of description. I'd like to see such a term chosen to globally replace "catastrophic fire" throughout the text.</p>	<p>Term "landscape-scale" used to replace catastrophic throughout the document</p>
#3	25, 41, 131	<p>Amon Creek... The footnote on Page 25 (repeated on p. 41 and p. 131) gives a carefully-crafted recitation of the use of the term "Amon Wasteway", a term which a lot of us find offensive, pejorative, and prejudicial since this is a year-round stream. Understanding the needs of this document, the bridge I would request would be a brief explanation of the hydrologic conditions of Amon, and specific recitation that the term "Amon Creek" is alternatively, interchangeably, and preferably used by a lot of people at this end of the watershed. It may seem like a small, nuanced, and semantic thing to folks upstream, but this is a delicate and important point to a lot of people down here.</p> <p>Aside from this, I think the Amon discussion on pages 131 and 132 is appropriate, and I appreciate that the text mentions that yes, what is now a permanent stream was more ephemeral in the past (per KID), but that now there are significant conservation efforts in motion</p>	<p>Clarification added to the three footnotes</p>

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		and that there is indeed permanence in the flow, which is supported by upper basin springs. I also appreciate that the Tapteal Greenway Association is mentioned by name.	

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<p>USFS Wenatchee National Forest Staff <i>Email of 5/6/08</i></p>			
#1	N/A	<p>Overall, we believe this is a much improved document compared to previous plans and drafts. It is very clear and readable, and presents the information in an organized and concise way. We understand that it is complicated to address bull trout in this document. Bull trout are only mentioned in one place (pg 9, 1.3.3). We suggest more explanation on this subject be added.</p>	<p>Thank you for your comments.</p> <p>Bull trout issues will be addressed in a separate document updating the bull trout portion of the 2005 Yakima Subbasin Salmon Recovery Plan; we look forward to your ongoing participation in the development of that document.</p>
#2	iii	<p>First paragraph. Manastash Creek is listed as one of the Yakima tributaries not currently accessible to steelhead. This may change because of a new agreement signed off by state, local agencies, Yakama Nation and land owners to increase and maintain flows in Manastash Creek though the summer irrigation season. The benefit of these flows at still unknown as this will be the first year it is implemented. Washington Dept of Fish and Wildlife and the Yakama Nation are still attempting to obtain additional water rights on Manastash Creek.</p>	<p>No change made; these efforts to restore passage noted repeatedly in the plan itself.</p>
#3	v	<p>Achieving recovery goals for the Naches Population will require implementing these strategies. Consider adding floodplain connectivity, and strategies to increasing instream LWD densities. Recommend including unimpeded passage of steelhead on the Bumping River at Bumping Dam if feasible. (This dam is second on the BOR's priority list after Cle Elum Dam for addressing passage issues and is most likely less expensive when considering costs for other facilities in the Yakima Basin.)</p>	<p>Reference to floodplain restoration and instream habitat improvement added to list; passage at Bumping Dam already included as action in plan, Bumping added as location for passage improvements in recovery strategy lists.</p>
#4	v	<p>Long term recovery for the Upper Yakama is listed at 7,700. It is difficult to track thru the document how this number could be realistically achieved.</p>	<p>We agree, and note on p. 125 that "Both methods assume that the entire Upper Yakima population area is dominated by the anadromous form of <i>O. mykiss</i>. Reviewing this assumption is identified as a key research need in Chapter 7. These long-term abundance targets should not be interpreted as definitive goals. They are meant to encourage discussion and ongoing research about the potential size of fully-recovery steelhead populations in the Yakima Basin."</p>
#5	viii	<p>Plan Implementation: Include USFWS and NMFS as key recovery</p>	<p>USFWS added to list; NMFS already included as NOAA</p>

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		partners. (grant and restoration funding opportunities, monitoring)	Fisheries
#6	11	Section 1.4.2. Include USDA Forest Service's habitat restoration efforts on the Cle Elum and Naches Ranger Districts in the list of agencies having provided funding for restoration efforts.	Reference to Wenatchee National Forest restoration projects added to text
#7	17	Upper Yakima River. Add Teanaway River to the listing of major tributaries.	Reference to Teanaway added to text
#8	22	Table 2.2. There is no indication of the value for the numbers, do they indicate square miles, square kilometer, etc. or something else entirely?	All values are in m ² ; units have been added to the table heading
#9	23	Figure 2.4: Appears that spawning data is missing from Bumping River. Perhaps all years of data not used. The USFS Naches Ranger District has additional data available. Contact Gary Torretta: 509-653-1433	All redd data data provided by USFS were included on the map; this includes 7 redds in the Bumping River (overlapping symbols mean all 7 are not visible)
#10	23	A redd survey (raft float) was conducted on the mainstem Naches River in 2005 (Pat Monk +1) from RM 38 to RM 27 on April 20. No redds were observed.	Reference to this survey added as a footnote to text
#11	24	Figure 2.5: "upper Naches" spawning area should more aptly be labeled "Little Naches"	We agree; however we have used the names assigned by the ICTRT for the sake of consistency
#12	30	Table 2.5: Should be updated with 2006-2007 data, which is available on YKFP website.	Table has been updated
#13	41	Table 2.14: Update with 2007 data: Rattlesnake, Bumping, American, Cowiche all No Survey. Little Naches 16 redds, Oak 15 redds, Nile 13 redds. Contact Gary Torretta: 509-653-1433	Thanks you; data have been added to table
#14	73	Table 3.1. #4. Would recommend not using the phrase "catastrophic fire", rather use "landscape scale, drainage wide or watershed wide stand replacing fire".	Landscape-scale fire used in place of catastrophic fire throughout document
#15	90	Table 3.6. #25. Add temperature to Level 3 EDT survival factors. Increased sediment loads also result in wider, shallow streams that increase water temperatures.	Reference to temperature added to table
#16	98	Increased Forest Disease, Pests and Catastrophic Fire. Include Swauk, Teanaway and Cle Elum drainages along with Naches. These drainages are currently experiencing heavy infestations of spruce budworm. Recommend changing "catastrophic" to something like landscape scale or drainage wide.	References added
#17	121	Footnote 32 appears to be incomplete.	Formatting error has been corrected so that footnote text reads correctly
#18	145	Consider including the Bumping River with passage as a potential to be restored.	Reference to Bumping River added to action description

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#19	161	Costs of 10,000 per mile are an estimate. In some locations, this amount may be more than adequate to cover planning and actual road treatments. In other locations, this amount may be insufficient. Its important to note that on Forest Service lands, a public scoping process, analysis, and a NEPA decision must be completed before a road can removed from the system.	Reference to USFS process added to action description; cost is meant as a rough estimate only; more specific cost estimates will be developed as part of plan implementation
#20	163	Naches Action #11 and #12: "After floods in the 1970s and 1980s, the main road accessing the Little Naches drainage was reconstructed as a levee. Over time, this has led to aggradation of the main channel and isolation of the main channel from side channel and wetland habitats. Restoration of the Little Naches floodplain and reconfiguration of the road/levee system is a major undertaking and will require significant funding and technical support from the US Forest Service and/or the Federal Highway Administration to implement." Insert "and degradation" after aggradation in the above paragraph. This project will likely not be a federal highways project, as this is a Forest Service Road. Remove "/or the Federal Highway Administration to implement." and add "Yakama Nation, and other partners as interested.' Note that large scale removal of instream LWD (6000 tons) occurred on National Forest in late 1970's after flooding.	"and degradation" added to N11 text; references to past woody debris removal added both N11 & N12 descriptions; Yakama Nation and Kittitas County added as potential partners for action #11; reference to FHA assistance clarified to indicate that this would be via Kittitas County's road programs on non-USFS portions of the road
#21	164	Naches Action #13: include Nile and Rattlesnake Creek drainages.	Rattlesnake and Middle Naches (includes Nile) major spawning areas added to action description
#22	164	Naches Action #14: There is much more than 960 acres that could be acquired into public management in Little Naches drainage. At least 9 sections (5760 acres) of Plum Creek lands have fish bearing streams and steelhead occupied reaches.	The 960 acre figure reflects parcels that contain portions of the Little Naches; reference to integrating efforts to protect those parcels with larger landscape-scale efforts to protect private timberlands in the watershed
#23	169	Note that Oak Creek is only <i>confirmed</i> steelhead spawning in Tieton drainage.	"confirmed" added to N23 action description
#24	192	Upper Yakima Action #14: Consider including Forest Service as a potential partner in this action. This action should more explicitly describe the confinement to Swauk Creek from Hwy 97. Although this would be a costly project, it should be identified. There are numerous actions that could be completed even if highway location were not addressed. The upper reaches of Swauk Creek from Durst Creek to Pipe Creek are good candidates for restoring floodplain connectivity. There are also passage barriers that should to be addressed on Swauk Creek just downstream of Swauk Campground	Action description revised in response to comments

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		as it goes under Hwy 97, Blue Creek and Iron Creek at Hwy 97. Also, the US Forest Service could be a potential partner in the engineered log jam project on the lower Cle Elum River to provide access needs and stage areas.	
#25	194	Upper Yakima Action #18: Add relocation and decompaction of dispersed campsites to the list of actions for the Teanaway.	Reference added to action description
#26	248	B.3.1 Naches: typo in 3 rd sentence should read “Little” Naches above Salmon Falls, not Lower Naches.	Correction made
#27	254	Appendix C, Recovery Programs Overview: Recovery Actions/Programs on the Okanogan/Wenatchee NF could be included here. The Respect the River education and restoration program has been occurring on the Cle Elum and Naches Ranger Districts annually since 2002. Typically Naches has expended \$10-50k per year on education and on the ground restoration of recreation impacted stream reaches. Cle Elum Ranger District has spent similar or greater amounts. A portion of the money spent was grant and partnership funding generated through RCO, USFWS, Plum Creek, RIDGE, Mid-Columbia Fisheries Enhancement Group, Conservation Northwest, Forest Service Challenge Cost Share Program, and Rural Development Act Title II funds. While the USFS does not have a separate "program" in the way BOR and others do, we suggest it would be useful to include a short paragraph describing USFS projects such as Respect the River, relocation of dispersed campsites in the riparian, culvert removals, in-channel restoration etc. Esp. since this document will be frequently referenced in terms of identifying priority projects. Recognizing these efforts would help support USFS grant applications.	The following text has been added to Appendix C “The Cle Elum and Naches Ranger Districts of the Wenatchee National Forest encompass significant portions of the Upper Yakima and Naches population areas. Since 2002, both Districts have implemented the Respect the River education and restoration program, with each District expending at least \$10-50,000 per year on education and on-the-ground restoration of recreation-impacted stream reaches. Cost-share partners in these projects include RCO, USFWS, Plum Creek, RIDGE, Mid-Columbia Fisheries Enhancement Group, Conservation Northwest, the Forest Service’s Challenge Cost Share Program and Rural Development Act Title II funds. The USFS has also been actively replacing known fish-passage barriers, improving riparian grazing management on Forest Service allotments, and reducing risk of landscape-scale fire.”

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Dave Kaumheimer <i>Written submission</i>			
#1	7	First two bullets Independent pops are not synonymys with DPS and McElhaney's approach works on populations not DPS's. The citation for ICTRT should be updated. The 2003 draft document was updated in a 2005 memo (McClure et al. 2005). That memo provided guidance that where resident rainbow and steelhead overlap they should generally both be included in the delineated population.	This plan is not a DPS-level plan; it assesses each of the four Yakima populations using McElhaney's VSP framework, and then assesses status and desired conditions at the MPG-level based on the criteria developed by the ICTRT to synthesize the population-level analyses at the MPG and DPS level. This approach is detailed in Chapters 2 & 4 of the plan. Citation to 2005 update has been added; while that memo makes some general statements about inclusion of residents, the ICTRT did not make corresponding changes in its population delineations. We have used the ICTRT delineations while noting that we must address concerns about interactions with resident O. mykiss as we refine viability assessments and recovery goals and strategies.
#2	17	Discussion in second paragraph about historic use should include citation. If this is based on intrinsic potential analysis then it should be qualified as such.	Statement edited in plan to state "are likely to have historically supported steelhead"
#3	20	Unclear what the basis is for figure - Text on previous page calls it the SalmonScape map but figure title indicates its from Intrinsic Potential analysis. If SalmonScape, what do the local adjustments represent?	Text edited to clarify that Salmonscape data are on Fig 2.4, not 2.3.
#4	21	The qualifier "potential" should be added before historic in 6th line	Text edited accordingly
#5	24	The spatial distribution thing is tricky. The historic distribution is habitat based but the current is observational. Consequently you are using two different kinds of data to make this comparison.	Comment unclear; no change made. We have compared current known distribution to an estimate of historic distribution, and believe that this is a valid way to make a preliminary identification in areas that were potentially utilized by steelhead in the past that are not currently utilized.
#6	25	If there is but a single Satus Creek population shouldn't it be treated as intermediate and the 1000 fish be a combined total of all areas. Why treat the mainstem as if it is a separate population which apparently has little currently useable habitat, perhaps less historically, and certainly far less then Satus Creek itself. Certainly	The YBFWRB made a policy decision that the Satus population is best managed in two parts, the tributary block, which would be managed to the same criteria as a basic population as defined by the ICTRT, and the mainstem block, whose past and current status is more

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		the amount of high and medium quality habitat in the Satus Creek basin far exceeds the amount on the mainstem segment. Why biologically would you expect the same population from an area where much less habitat is available?	uncertain, and which would be managed based on a basic abundance threshold which can also be mitigated by production elsewhere in the basin. Clarifying text has been added to the plan to better explain this division, also see p 121. Biologically, we expect the Satus watershed to have to potential to support significantly higher abundances that the 500 spawner viability threshold.
#7	27	On page 243 there is a brief discussion about the current ability for the EDT model to segregate population performance parameters for steelhead and rainbow were they overlap and this contributes to an overestimate of steelhead numbers by the model compared to actual data. This problem should be mentioned here since it likely affects the estimates in the table for 1 or more of the populations.	Mention of resident/anadromous uncertainties added to text
#8	27	Should footnote Upper Yakima problem and talk about resident/anadromous problem in EDT. This is important since the upper Yakima is about 46% of the total and in all likelihood its wrong.	See previous response
#9	28	In this calculation is there any adjustment made for production potential used by rainbow?	No; text to this effect added to plan
#10	28	Why 25,000 to 75,000? The 25K figure is the low end of the calculated range but 75K is outside any of the calculations by 50%. If there is a reason for taking the high estimate * 1.5 then maybe you should use the low / 1.5 (18,000), Seems like the range is more likely 20K-50K.	Both EDT and IPA-based estimates are based on Yakima Basin habitat conditions and are not adjusted for changes in Columbia River and ocean conditions. If we assume improved smolt to adult returns through the Columbia and ocean under historic conditions, the higher outside estimate seems appropriate as an upper bound to an admittedly uncertain estimate
#11	30	The basic conclusion here is that except for above Roza there aren't good estimates. The Satus estimates look OK maybe except the data from tables 2.5 and 2.6 suggest 4.2 fish/redd in 2002 and 0.7 in 1998.	We repeatedly note in the plan that improving the basis for population-specific abundance estimates is a high priority; we do believe that the ICTRT estimates provide a useful preliminary estimate. We anticipate addressing this issue in detail as part of developing a steelhead recovery research & monitoring plan in the fall/winter of 2008, and we look forward to your participation in that process.
#12	32	Estimates for intrinsic production for upper Yak can't be made. The presence of large numbers of competing rainbow trout mean density dependence is likely at play in all years. Same likely true for Naches	Description of ICTRT calculation methods updated and clarified; note that current productivities are above ranges expected for intrinsic productivities even in face of interactions with resident <i>O. mykiss</i>
#13	46	Bullets depend on temperature and spawn timing. What	These estimates were drawn from the Yakima Subbasin

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		temperature data was used? The previous discussion suggests that very little is known about spawn timing so these bullets seem pretty speculative.	Plan and are meant as general indicators. For corresponding spawning timing info see Figure 2.10.
#14	46	The TRT has suggested that where rainbow and steelhead are present together they should assume to interbreed unless there is data to suggest that they don't. McElhaneey suggests that where steelhead form a sub-population the VSP analysis of extinction risk using abundance and productivity can be modified to reflect the risk to the sub-population. Has this been done? If rainbow x rainbow and rainbow x steelhead can produce steelhead might the QET be different?	At this time the ICTRT has not modified their population viability analyses to address impacts of resident/anadromous interactions on extinction risk except at a very preliminary qualitative level. The ICTRT is aware of the issue and we look forward to working with them to improve the viability analyses over time
#15	51	How do you know that PIT tagged fish that did not get to Prosser died and didn't residualise and "become" rainbow.	The Toppenish and Satus smolt traps, from which nearly all PIT tags originate, are located downstream from residency areas, mainly because of summer temperature. Satus Creek has very few fish that could be categorized as resident rainbow. All fish captured in the Satus, Toppenish and Ahtanum smolt traps are scanned, and the Yakama Nation has never recaptured a PIT tag (except for efficiency releases). The PIT tags from these releases that are identified at Prosser juvenile detectors in years after the release year are believed to be kelts (they don't pass from the separator to the sample room).
#16	53	Spatial structure and diversity statements are made about moving conditions back toward historical but historical conditions are not definitively known. These should be altered to reflect that we are using presumed historical conditions. Might also be noted that there are some populations of fish, Yakima spring chinook, that are not listed but don't meet presumed historic spatial distribution or diversity criteria.	These sections are summaries of the ICTRT stock status reports; if you provide more specific comments we can relay those to the ICTRT
#17	63	The paragraph following the table should include some citations to support the conclusions being reached. They relate to habitat availability and use so should be supported by empirical data or identified as assumptions.	These sections are summaries of the ICTRT stock status reports; if you provide more specific comments we can relay those to the ICTRT
#18	65	The plotted viability curve is in error as it fails to account for the fact that steelhead do not form an independent population in the upper Yakima but are rather a sub-population in a larger <i>O. mykiss</i> population.	These curves are a product of NOAA's ICTRT. At this time the ICTRT has not modified their population viability analyses to address impacts of resident/anadromous interactions on extinction risk except at a very preliminary qualitative level. The ICTRT is aware of the issue and we

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			look forward to working with them to improve the viability analyses over time
#19	65	As outlined above there are presumptions made without reference to data.	These sections are summaries of the ICTRT stock status reports; if you provide more specific comments we can relay those to the ICTRT
#20	69	A citation for the statement on sockeye would be helpful but I don't think one actually exists that is more than speculation. While it appears reasonable it is worth noting that flows in the Yakima River would have created impassable conditions in some reaches during the summer months prior to storage dam construction, in the case of Cle Elum, well before. There doesn't seem to be a lot of anecdotal evidence that the sockeye runs at the natural lakes persisted until the dams were built, no well documented reports of fisheries at Cle Elum prior to dam construction in the early 30's. It does not seem unlikely that low to no flows in reaches of the Yakima during July-September eliminated sockeye before the dams were built.	Most published sources, including documents prepared by the Bureau of Reclamation's Storage Dam Passage Study, attribute loss of sockeye to timber crib dams constructed to enlarge the existing natural glacial lakes (Keechelus, Kachess, Cle Elum, and Bumping) in 1904-1906. Limited flows and high temperatures in the mainstem Yakima below Sunnyside would also certainly have been significant factors acting in concert with passage issues at the lakes. Text to that effect has been added to plan.
#21	92	At the time Reclamation law provided that the Secretary of the Interior authorized Reclamation projects.	Text changed from Congress to "Federal Government"
#22	93	The WIP diversion dam is a project feature as well.	Text edited accordingly
#23	94	In the second paragraph the discussion of impacts in the bypass reaches seems largely speculative and should be identified as such or citations should be provided.	"are hypothesized to" added as qualifier to text
#24	94	Ditto above for the discussion in the next paragraph. Certainly rearing by steelhead in the mainstem down to at least Parker is viable.	"Are no longer viable" changed to "hypothesized to be less viable"; Mainstem changed to "mainstem below Parker"
#25	94	The conclusion about the affects of flip flop on steelhead habitat in the Tieton doesn't seem to be supported by an analysis. Flows pre-flip flop were highly regulated and it isn't clear that they provided a lot of steelhead habitat. IFIM data from the Tieton suggests that habitat for rearing peaks at relatively low flows, around 100 - 200 cfs and then declines as flows increase. Pre-flip flop winter flows were very low and winter flows under flip flop have increased habitat marginally. Summer flows are lower with flip flop until September when they rise significantly. As a result more rearing habitat is available during the summer until September with flip flop but declines during September and October.	When compared to normative flows, both pre and post-flip-flop irrigation water deliveries have created significant changes to the hydrograph. While increased rearing habitat may be available at some times of the year, conditions in other season may create stronger limitations on steelhead use. Discussion qualified with "are posited to"; clarification added to indicate that high flow operations are a product of water deliveries in general, and are not unique to flip-flop alone.
#26	95	Power plant operations and maintenance of screens at Roza and Chandler would affect relatively short stretches of river. Screen	Section edited to indicate that it refers to all sources of rapid changes in flow, not just those associated with power

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		maintenance at Roza occurs from mid-October to mid-November and at Chandler in late November till mid December. Flows rise in the bypasses reaches when maintenance begins and drop when power operations start up again. Significant impacts to steelhead have not been noted at either location at these times. Power operations are relatively constant. Outages do occur for a variety of reasons but ramping rates are followed when possible.	plant and screen maintenance.
#27	95	Pearson et al. also indicated that growth rates in the tributaries to the mainstem were also lower although these would not experience the high flows seen in the mainstem. Pearson and Leider (1994) (in Pearson et. al. 1994) reported that the difference in rainbow trout densities between the Yakima River and the other Northwest streams and rivers may be explained by the relatively low productivity in the Yakima River. They reported total dissolved solid levels, to which productivity is directly related, were higher in the other river basins by a factor of 2 to 6 times in comparison to the Yakima. This may also be a factor with respect to growth rates.	Understanding the relationship between flows, rearing conditions and productivity for steelhead is identified in Section 7.2.4 as a key uncertainty that needs further investigation
#28	95	Sub-surface return flows can reduce temperatures.	Corresponding text added
#29	96	It appears unlikely that flip flop flows on the lower Naches drowns seedlings that would otherwise establish. Flip flop flows are well below the natural high flows that occur on the lower Naches that would scour areas above and beyond those affected by flip flop.	Cottonwood seedling establishment typically occurs on the receding limb of the spring hydrograph; under natural flow regimes sustained bank-full flows would typically not occur until the following winter/spring. Flip-flop flows occur earlier in the seedling's life cycle.
#30	99	Citations for the conclusions about global climate change would be useful, particularly anything related to impacts projected regionally.	7.6.1 identifies further research on the potential impacts of climate change as a key uncertainty to be addressed; we anticipate compiling relevant citations and assessments of potential impacts at a future date.
#31	103	The gap issue is complicated since it is based on a genetic concern and gene flow occurs through both the resident and anadromous portions of the <i>O. mykiss</i> populations. To understand how big the gaps are we need to understand this gene flow.	We agree on the long-term need to better understand resident/anadromous gene flow. However, gaps based on the distance between steelhead spawning locations are likely to persist even in the face of significant genetic exchange with residents, as the anadromous life history is far more likely to stray between spawning areas than the relatively sedentary resident forms.
#32	104	Data or analysis should be provided to support the conclusion that hatchery rainbow reduced anadromous steelhead in the Upper Yakima.	We will seek to strengthen this section in future revisions
#33	104	As noted the non-native genes are just not in the rainbow population	If the non-native genetic inputs increase the risk of

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		but in the listed steelhead population itself. This population though was determined to be listable so its not clear if the listed DPS threatens itself. What is the basis for the conclusion that the presence of non-native genes in the existing wild population presents a genetic risk to recovery?	extinction for existing populations, reducing extinction risk may require ensuring that ongoing input of non-native genes is reduced and that selective pressures on existing gene compositions result in changes that enhance future survival rates
#34	104	The basis for the impacts associated with the change in the flow regime should be explicitly identified. It appears that most is based on inference or supposition.	Other sections of the plan address the truncated smolt out-migration (2.5.7) and the delay of adult in-migration (2.5.1) in more detail
#35	106	The basis for the determination of impacts to adult steelhead passage should be explicitly identified. We are not aware of extensive data on impairment of steelhead passage at the identified structures.	This section has been edited for clarity
#36	113	There is a reference to streams that historically supported steelhead yet no citation is provided. Need to be careful to distinguish between the historic intrinsic potential analysis which identified where habitat for steelhead was likely present from a historical analysis based on records, of where steelhead have been documented to have been present.	Statement edited in plan to state “are likely to have historically supported steelhead”
#37	113	The basis for the statements about effects at Roza Dam should be explicitly identified. We are not aware of any data available concerning steelhead smolt passage at Roza Dam that supports the conclusions reached. If the conclusions are based on inference or supposition this should be stated. The same is true for historic winter passage conditions from 1939-1958. What little data is available indicates that at least in some years and for some portions of the fall the ladder was operable during that period. The Roza pool is usually not filled in March to facilitate irrigation as it is usually full at that time to make diversions for power production.	We would appreciate receiving any information you have on passage conditions at Roza from 1939-58. Reference to March filling removed from description of current operations; additional information on smolt delays added. Note that Roza is identified as a “potential” bottleneck for juvenile outmigrants; while existing discussions have focused on the impacts on spring Chinook smolts, we feel that any impacts would also affect larger steelhead smolts
#38	122	The biological justification for the modifications to the mainstem Satus sub-population is unclear. Based on genetic data it appears that fish in the mainstem from the mouth of the Naches to Ahtanum Creek should be considered part of the Naches independent population and that fish in the other populations can not substitute for fish in the mainstem Satus sub-population with respect to the VSP assessment of the Satus Creek independent population. It would perhaps be more appropriate to revisit the issue of the size of the Satus Creek population if the habitat in the mainstem did not and can not support its own sub-population.	See answer to your 6 th comment

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#39	125	Reference is made to the EDT results from the sub-basin planning which very clearly indicated that they were based on all O. mykiss. Some explanation should be provided to indicate why those numbers are now being used as steelhead numbers. Similarly some explanation should be provided as to how rainbow trout production was factored into the intrinsic potential analysis, that is how much of the production potential was assigned to the two life history forms. What is meant by dominated, 51%?	There is some confusion over the subbasin planning results; we have used Appendix O as included in the final plan as the reference for EDT restoration scenarios. The analyses presented there are specific to anadromous steelhead, but do not incorporate competitive interactions with resident O. mykiss. Revisions to address these interactions are in progress. Re the intrinsic potential analysis, see the response to your 18 th comment
#40	126	For the Naches and Upper Yakima populations measuring intrinsic productivity may not be possible. Because of the presence of large numbers of the resident life form it may not be possible to determine intrinsic productivity unless both life forms decline to levels where density dependence is not an issue for the juveniles.	See response to your 12 th comment
#41	127	Since steelhead can be produced by rainbow trout the language used here is a bit confusing. It talks about naturally produced steelhead and then uses steelhead redds as an indicator.	Since this plan is based around assessing the status of adult steelhead spawners, use of redds is appropriate. While a resident-resident cross would not count as a steelhead redd, any resulting steelhead offspring would produce such redds. Hence contributions of residents to anadromous numbers should be reflected in redd counts in the following generation. Not that the presence of redds is used as a standard for occupancy of specific areas, but are not the primary source of abundance estimates at a population level.
#42	131	The reference to section 4.3.2 is wrong	Corrected to read 4.3.6 for all four populations
#43	143	Basin Wide Action #3 There may be a water rights side to this one to consider. Can't establish an instream flow right to conserved non-consumptive use, as such the benefits on reaches below storage may be limited.	We understand the limitations of transferring on-farm water savings to instream use, but believe that it can still play an important part, both in specific settings where those limitations do not apply, and cumulatively insofar as reduced total demand can increase options for water management
#44	149	Basin Wide Action #16 Research to date hasn't suggested that piscivorous predation on steelhead smolts is a significant issue in the lower Yakima basin. Perhaps research to first determine the effects of predation on smolts would be in order.	The need for research to better understand in-basin predation is highlighted in section 7.5.1. Actions in some areas may have only marginal benefit for steelhead, but will have broad benefits for other anadromous species (e.g. fall Chinook); actions in other areas (e.g. known predation hotspots associated with diversion structures) may potentially have significant benefits for steelhead
#45	150	Lower River Action #1 The 1000 cfs is a subordination target not a	Text changed to "subordination target"; lack of impact

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		minimum flow level. In drought years when the power plant is fully subordinated changing the subordination target would have no affects on actual flows.	under low flow conditions is understood
#46	151	Lower Mainstem Action #3 Need to nail down affect of predation on steelhead smolts before this is undertaken to assist with recovery.	The need for research to better understand in-basin predation is highlighted in section 7.5.1. Past assessments show high mortalities in the Chandler by-pass system at lower flows and late in the outmigration; identifying options to reduce predation has been identified as a need by Reclamation's Yakima Office staff
#47	154	Lower Mainstem Action #8 Sulphur Creek WW or provide disclaimer.	Action description edited to address your comment
#48	160	Naches Action #6 Not clear what BR's role would be as none of the mentioned structures belong to BR.	Sedimentation issues affect operations of BOR-managed fish ladder and screens at Nelson Dam
#49	162	Naches Action #9 Time to implement may be too short. Likely Cle Elum would go first in the 2016-2018 range but then there would be an evaluation period before Bumping. Since the bulk of the habitat is in Deep Creek, a bull trout spawning stream, an assessment of habitat suitability for steelhead/rainbow would be in order.	At this time, whether the two projects are to be implemented in series or in parallel has not been determined. Impacts on bull trout will be addressed in different venues; providing passage at the storage dams is seen as a critical recovery action for bull trout
#50	184	Upper Yakima Action #2 There is little or no data suggesting that this action would benefit steelhead smolts. The reach in question is 11 miles long and there are no survival estimates for steelhead in that reach nor is there data to develop a flow/survival relationship. The costs depend upon the level of subordination. Costs to date have been to subordinate to provide passage not flows. Its implementation likelihood should be changed to medium.	Fish habitat managers in the basin have placed significant emphasis on flow in this reach, but empirical evidence regarding the impacts on survival is currently limited. Section 7.2.3 highlights the need for additional investigation to better understand flow-survival relationships.
#51	187	Upper Yakima Action #8 The costs for Cle Elum fish passage are now estimated at \$93 million.	Cost updated to \$96 million based on comment from BOR Yakima Project staff
#52	188	Upper Yakima Action # 9 The ladder is closed when mini-flip flop can't be performed. It hasn't been closed since 1996 when the outlet at Kachess was improved so that it was no longer a bottleneck. In most cases when the ladder was closed it occurred near or after the end up steelhead migration. During the BR/YN radio tracking studies no steelhead ever used the ladder even though it was continuous open.	Text edited to address your comment
#53	200	YRBWEP did not set up SOAC, the Yakima basin Water Master did back in 1981 as part of the resolution of a suit regarding Project operations and tribal trust rights. NOAA is not on SOAC.	Text corrected
#54	209	The interactions between rainbow and steelhead should also be	Statement added to section 7.2.6

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		investigated to determine how they affect the likelihood of extinction of each sub-population.	

ADDITIONAL EDITS WERE MADE TO ENSURE CORRESPONDANCE WITH MOST RECENT DRAFT OF ICTRT STOCK STATUS REPORTS

INCOMPLETE LIST OF EDITS TO ACTIONS DESCRIPTIONS (THESE DO NOT SHOW UP IN TRACKED CHANGES); OTHER EDITS TO ACTIONS DESCRIBED IN RESPONSE COLUMN ABOVE.

BW #2: WDFW added as partner

BW #3: Edited to add call for existing screens to meet criteria, and to continue fish salvage where appropriate

BW #7: Reference to Bumping River added to action description

BW #12: Additional partners added to description; need for additional analysis of ability to modify the hydrograph noted. Also text added "Many floodplain reaches have been heavily grazed, and cottonwood regeneration has occurred in places where grazing pressure is relaxed, even under current flow regimes. This highlights the value of ongoing efforts to improve grazing mangement in riparian areas and floodplains."

LM #1: "instream flow" changed to "subordination target"

LM #3: added bird deterrents; title and text revised to broaden from just predation to overall impacts of bypass reaches; also specific mention of SVID and WIP added

LM #5: Added "Any efforts to use water from outside the basin will need to ensure that imported water does not negatively affect homing of salmon and steelhead."

LM #6 text edited to indicate cooperative work with Central Pre-mix

Changes to description of UY #8; UY #9

LM #8: added reference to Roza wasteway attraction issues; made reference consistent to Sulfur Creek Wasteway

N #1: date and cfigs figures corrected based on BOR input

N#11 & 12: "and degradation" added to N11 text; references to past woody debris removal added both N11 & N12 descriptions;

Yakama Nation and Kittitas County added as potential partners for action #11; reference to FHA assistance clarified to indicate that this would be via Kittitas County's road programs on non-USFS portions of the road

UY #1: Suggest changing "rolled" to "tucked". In the third sentence, suggest adding the work 'could' or 'likely' unless we know for a fact that travel times are increased, exposure is prolonged, etc.