

**PACFISH/INFISH FIELD REVIEW
PRINEVILLE, OREGON**

September 30-October 2, 2003

IIT Field Review Team members

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General Field Review Objectives

1. Determine if the Biological Opinions have been implemented in accordance with the mechanisms, terms and conditions.
2. Determine if on-the-ground management decisions are consistent with the Biological Opinions, PACFISH and INFISH Goals and Objectives.
3. Determine if PACFISH and INFISH Standards and Guides have been correctly interpreted and implemented on-the-ground.
4. Determine if grazing implementation monitoring activities have been evaluated to eliminate duplication between the PACFISH/INFISH Grazing Implementation Monitoring Module and other grazing implementation monitoring activities.
5. Improve communication and coordination between agencies. Strengthen interagency commitment to watershed management under the management direction of PACFISH/INFISH.

Specific Local Objectives

Local units conducted a Field Review. A description of the site visits is contained in Appendix 1.

FINDINGS Ochoco NF

Commendations

Ochoco NF: We note that the Forest Supervisor, Rangers, and Staff are supportive of the PACFISH/INFISH program, as evidenced by their participation in the review. There was good preparation on the part of presenters, and obvious understanding of PACFISH standards and guidelines, and a working knowledge of the aquatic strategies. The program to address forest health, fishery, and water quality concerns in the Trout Creek area is impressive. Culvert replacements are well designed. The riparian planting program has been effective, and temperature conditions have been improved. The road management and closure program, along with design of forest treatments has managed to avoid increasing suspended sediments. There has been obvious success resulting from high quality personnel remaining in place over time. We were also impressed with how little ground disturbance there was in the Trout Creek harvest treatments. This implies a good approach to contract administration. The Forest has taken an active, and aggressive approach to implementing grazing standards in PACFISH and INFISH. They have modified cattle grazing to sheep to reduce riparian impacts.

OBSERVATIONS AND PRELIMINARY RECOMMENDATIONS

Ochoco NF:

Observation 1. Dutchman Creek. Culvert replacements, like those on this stream, effectively restore habitat function allowing passage for all life stages of all fish species. There are challenges with maintaining surface flow through the culvert at low flow.



Recommendations: Until natural bed armor is attained, the stream at low flow will likely continue to sub within the culvert. Several options the Level 1 Team and the Forest might consider in the future are: 1). On larger pipes, excavate a low-flow channel within the substrate fill inside the culvert. 2). Place a fine-grained seal beneath the stream surface substrate in the culvert. 3). Add very fine sediment (clay and/or silt) obtained from nearby soils to the culvert substrate to help seal the channel surface. 4). Add bentonite to the substrate material to help seal the channel surface. 5). Let the substrate seal naturally over about a 5-year period.



Observation 2. Catfish Unit: Removing fuel build-up in the outer 100 foot zone of the RHCA and leaving high fuel loading within the inner 200 foot zone does not solve concerns about potential high severity fire associated with continuous fuels, which if it occurs along the stream corridor, could lead to stand replacement, loss of shade, and loss of LWD recruitment for a number of years.

Recommendation: Catastrophic fire has the potential to adversely affect fish habitats in the short-term. However, research has shown that such fires can invigorate shrub growth adjacent

to the stream and recruit large volumes of LWD. The response after 5 to 10 years can be positive for fish habitat, however the short-term effects (1 to 4 years after the fire) can be devastating to the local population, particularly if the local habitat is not well connected to sources of reforestation. We recommend a test or experiment to evaluate breaking up the continuity of fuels along and perpendicular to the stream, using treatments similar to those in the Catfish Unit, but extended across the width of the RHCA. This test would also be used to evaluate meeting riparian management objectives within treated stream reaches. This approach could be effective at preventing high severity wildfire from carrying along the entire length of the stream. If fire/fuel breaks were staggered along the length of the stream, the areas of treatment would decrease in shade, at least until alder and willow shrubs grow to heights sufficient to shade the stream. A simulation using the SSTEMP model indicated that for a small stream, such as Dutchman Creek, fuel breaks totaling 1/10 of the RHCA would increase maximum stream temperature from 26 degrees C, to 27 degrees C. The fuel breaks would also serve to increase large, fire-resistant ponderosa pine, which in the long-term would recruit more LWD to the stream.

Observation 3. Auger Creek: Pre-commercial thinning within the RHCA was inadequate to remove densely stocked pine adjacent to the stream. These small diameter pines prevent the



growth and vigor of native shrubs along the stream. Where conifers dominate, LWD was not observed and pools were lacking. Where shrubs dominate, pools were common and habitat structure was good. Where LWD, particularly large ponderosa pine had entered the channel, large pools were evident. Stream segments lacking pools (dominated by riffles) may present a barrier to upstream migrating juvenile salmonids, at critical time periods when thermal refuge is needed.

Recommendation: Streams like Auger Creek could be surveyed in mid-summer, when thermal refuge is sought by migrating salmonids, to determine if barriers exist according to the length and velocity of continuous riffle habitat. Where rearing habitat is lacking, LWD could be added to the stream to create pools.

Observation 4. Trout Creek area: Much has been done to enhance the health of forests and streams in this drainage. Redd count data suggest overall positive results for steelhead. The monitoring program is tracking results and showing a number of successes.



Recommendation: We recommend that the Forest update the Watershed Analysis, with a narrative of findings to document successes in Trout Creek, and update the environmental baseline to assess progress towards meeting long-term objectives. Such findings should then be prepared for publication, and dissemination

to the public and land managers. This documentation of lessons learned would be a valuable tool for others working in the ponderosa pine ecosystem.

Observation 5. IIT monitoring. The Blevins Creek Designated Monitoring Area (DMA) was included in this year's set of IIT Effectiveness Monitoring (EM) stations. Therefore IIT



Implementation Monitoring is also required at this site this year. We found that the Forest has been monitoring this DMA annually. We conducted a QA/QC audit and found that the sampling was consistent with direction. We also found the report to be complete. Data have not yet been entered into the Database. It was necessary to select a HUC from among this year's sample set because no IIT monitoring, (using the EM HUC sample scheme) was conducted on the Forest last year. The DMA appeared to be selected appropriately, although there

were some questions about whether it adequately represented the mixed shrub-herbaceous reaches that are so common along this stream. The monitoring site was dominated by herbaceous plants with little of the shrub component. Such sites were probably created by historic beaver activity and appear to be limited on Blevins Creek. Wild horse use was also observed along streambanks of mixed herbaceous and shrubs, although at lower levels of intensity. Some mixing of the two riparian types would likely be more reflective of the overall riparian area.

Recommendation: Make sure that monitoring area selection meets the direction in the IM monitoring manual (located on the PACFISH/INFISH website referenced below). DMAs should be representative of grazing use specific to the riparian area being assessed and should reflect what is happening in overall riparian areas as a result of on-the-ground management actions. They should: 1). Be among the most sensitive fish habitat, 2). Contain impacts primarily from livestock grazing, 3). Represent reaches in the pasture actually used by livestock that will reflect on the rest of the riparian area when management changes occur, 4). Are quick to respond to management changes (e.g. not located at rock controlled streambanks or cattle crossings). DMA's should be identified in an interdisciplinary fashion, including specialists knowledgeable in fish habitat requirements, channel processes, riparian vegetation, and livestock grazing management. DMA's do not have to be limited to a single reach within the pasture, but some portion of the DMA must overlap with the section monitored by the Effectiveness Monitoring Team.

Observation 6. IIT monitoring. Overall, the Forest is on the right track with respect to implementing the IIT monitoring module. It was evident, however that some on the review are not familiar with the IIT monitoring module. There were questions on basics contained in the IM Monitoring Manual. The concept of monitoring with adaptive management to achieve riparian management objectives may not be well understood. There was a need to clarify some basic standards and guidelines in PACFISH/INFISH. A better understanding of the overall IIT monitoring strategy, and how it can mesh with Forest monitoring objectives is needed.



Recommendation: The IIT should provide hands-on training in the use and application of the IIT monitoring modules. It is difficult for field units to keep up with the frequent improvements in monitoring. Include in the training recent refinements made by the EM Team on bank alteration and woody stem use. Also include findings and recommendations of the Stubble Height Workgroup.

Observation 7. There was much discussion about the INFISH standard GM-1, which requires modifying grazing practices that “retard attainment of RMOs”. How to interpret this standard has been difficult.

Recommendation: The definition on page A-6 of INFISH defines “retard attainment of RMOs” as slowing the rate of recovery below the near-natural rate of recovery if no additional human disturbance is applied. It goes on to say that this will require professional judgment and should be based on a local watershed analysis. Because watershed analysis compares current status with historic or reference status, the approach to recovery would necessitate comparing rates of change under livestock use with reference rates of change. Commonly this is done by comparing the recovery trend line of the sample reach with that of comparison livestock enclosure. Such comparisons should be done without excluding the influence of wild ungulates. If trend lines are statistically comparable, one can argue that the rates of change are near-natural. If not, and there are no other human-caused disturbances, or differences that can be explained by natural disturbance, a change in management may be needed.

Observation 8. NF Crooked River: It would appear that historically the North Fork contained a stable “C” channel with well developed flood plain and dominance by woody vegetation. Loss



of riparian integrity, channel incision, and reduced aquifer capacity on the Big Summit Prairie upstream, likely altered the flow regimes in this reach of NF Crooked River, resulting in higher flood peaks and lower base flows. This, in combination with historic over-grazing in this reach, allowed extensive erosion of the river terraces resulting in a wide, shallow, bedrock based stream channel. If given a chance to restore the woody vegetation component, the geomorphic structure of the channel can be restored under the current flood regime. Under natural condition, without human intervention, this will likely occur

over a very long period of time. Until vegetative rooting is deep enough to resist ice and flood scour, floodplain development will be restrained.

Recommendation: Although Wild and Scenic river policy may have restrictions on actions with visual impacts, we believe that there are ways to enhance and accelerate floodplain restoration without visually intrusive (or unnatural looking) instream structures. Management should encourage the establishment and vigor of deep-rooted vegetation types, especially woody vegetation (including conifers). Large conifer tree emplacements, including root balls, at strategic locations in the channel margins could protect young woody sprouts from ice scour, and if placed appropriately could accelerate the development of point bars and river terraces. Sediment loads emanating from the Prairie during flood, would be partially retained on-site by adding such roughness to the channel. Using whole native trees from the nearby forests would give a natural appearance to the stream. Restoring natural channel function in the NF Crooked River on-forest may be the most effective way to ameliorate the adverse affects of sediment and thermal pollution in the river. Such channel conditions would form a narrower channel cross-section that transports sediment more efficiently, increases bed energy to remove fines from spawning substrate, and decreases water surface exposure to sunlight. The Forest could also consider working with BLM to address riparian management changes and possible land ownership adjustments within the Big Summit Prairie.

Observation 9. Dispersed recreation use on NF Crooked River, and on areas visited in the Trout Creek drainage, are increasingly affecting scenic and aesthetic values, as well as riparian values within the RHCAs. The Forest is working to control use concentrations adjacent to streams by restricting vehicle access within dispersed sites. Dispersed recreation and OHV use is a growing concern.

Recommendation: Continue to place high priority on controlling dispersed recreation use and vehicle access within RHCAs. The Forest should use the approach to dispersed recreation management required by Standard and Guideline RM-2 in INFISH. This standard requires elimination of dispersed use if education, access controls, increased site maintenance, and site closures or relocations are not effective at achieving the riparian objectives.

Observation 10. Timothy Meadow restoration. Heavy grazing in this area contributed to headcut gully development that encroaches on this wet meadow. Such encroachment has the



potential to dewater the meadow and reduce wetland values. The Forest anchored and keyed large rocks to the headcut face and gully banks downstream. Shrubs and sedges were planted on raw banks, and the area was fenced to allow recovery. So far the enclosure has not been fully effective at preventing livestock access to the meadow. Multiple age classes of livestock feces were observed in the meadow. Livestock entry and utilization has been sufficient to cause browsing on young willow plants, including the plantings. Some new raw banks were observed on the gully

walls. Also, geotextile materials should not be used on stream restoration projects. Alternatively burlap or coir mats will break down naturally.

Recommendation: Livestock appear to enter the enclosure through the downstream fence crossing. Repairing the crossing may solve the problem in the short-term, but maintenance is usually needed to assure long-term integrity of enclosures. Permittees might be willing to help maintain this fence.

Observation 11. Deep Creek Restoration. Restoration of the redband core area appears to have similar silvicultural objectives as Trout Creek.

Recommendation: We would apply the same recommendations for treating RHCA's here, as suggested above for Trout Creek.

Observation 12. Deep Creek Allotment. As stated in the handout, and by the presenter, "there are still areas that receive heavy utilization". This was evidenced by observations made in the stream channel adjacent to the Timothy Meadow enclosure, and as observed in some riparian areas further downstream (near the road).

Recommendation: Assess locations of heavy utilization with respect to critical redband trout habitats and work to reduce grazing pressure. Consider using electric fencing where herding or other measures to discourage livestock concentrations are not meeting INFISH standard GM-1.

Observation 13. Badger Creek Middle Riparian Pasture. Stubble height is measured by the Forest on both hydrophytic and mesic vegetation types. The application of stubble height standards is then applied to both. Observations of vegetation use by cattle adjacent to Badger Creek show greater attraction to mesic types. This leaves little utilization on the hydric types, making it difficult to apply the stubble height standard to those species before streambank disturbance exceeds the forest standard of 10%. In other words, stubble height on hydrics may be much higher than the 4 to 6 inch criteria, yet there is substantial streambank alteration and woody stem use.



Recommendation: This observation is all too common on recovering stream/riparian systems in low-gradient meadows where historic disturbance has caused channel incision. The recovering stream quickly restores the hydric species component along portions of the greenline, and as the channel then seeks to achieve its potential meander wavelength, there is increasing lateral erosion and bank scour in the margins of the incised floodplain. The vegetation on top of these scour banks is mesic, not hydric, and the species dominance is blue grass and forbs, more highly desired by cattle. Yet the Stubble Height standards, 4 to 6 inches are only applicable to hydric species. As stated by Clary and Leininger (2000, page 569): “We anticipate that this criterion will be most meaningful when applied to sites near the stream edge, that is, areas that can be described as streamside, or near-stream areas of hydrophilic or potentially hydrophilic vegetation. We also anticipate residual vegetation criteria will be most effective in protecting “small stream” systems, ones in the approximate range of perhaps a few centimeters to about 5 m in width occurring in meadow settings. Such settings are most often associated with C, D, and E stream types.” Potentially hydrophilic vegetation means streamside areas that are wet yet not currently dominated by hydric species (Clary, personal communication). The authors also suggest that if streambank stability is controlled by rock or woody vegetation or the channel is incised, other criteria should be used. Thus the 4 inch standard on incised channels in Badger Creek, where there is the presence of dry mesic vegetation on the top of cutbanks, may not be appropriate, or at least be difficult to apply. We suggest that in the case of Badger Creek, utilization be measured on both mesic and hydric species adjacent to the stream, and such utilization be compared to both bank disturbance and utilization on young woody stems. Correlate utilization with the Forest’s bank disturbance and woody use standards. Use this correlation to adjust the stubble height criterion, using as key species mesics and other palatable grass-likes along the greenline. Also assess the effectiveness of this criterion for achieving the near-natural rate of RMO attainment. The Forest may want to request the Effectiveness Monitoring Team include Badger Creek in its sample scheme. The Forest may also want to use a more quantitative bank disturbance procedure, such as Cowley (2002), which is available on the PACFISH/INFISH monitoring web page at:

www.fs.fed.us/r6/fish/ - DOCUMENTS

Observation 14: The Badger Creek meadow is wide enough to support an enclosure while maintaining the integrity of the grazing operation. Discussions here and elsewhere on the review suggested that exclosures represent a good method for assessing near natural rates of recovery.



Recommendation. Consider the use of exclosures and temporary electric fence in Badger Creek meadow. This approach may actually increase the potential livestock use in the pasture while allowing protection of habitats and redds.

General Observation: It was unclear whether or not the Forest has established Riparian Management Objectives outside of the interim objectives in PACFISH and INFISH. Answers to the questionnaire suggested that the interim objectives are being carried into application without the benefits of a site-specific or watershed analysis.

Recommendation: Use watershed and site-specific analyses (6-step process) to refine and designate localized riparian management objectives.

BLM - Deschutes Resource Area, Prineville District

Commendations: The Resource Area conducted an interesting review in the form of a river trip along the Wild and Scenic Lower Deschutes River. They provided a good background on the issues that have been addressed in recent years on this river, which supports habitat for listed salmon, steelhead, and bull trout. The unit is doing a good job controlling impacts from recreation, and using recreational improvements to address resource issues. They have also improved grazing management, reducing conflicts with river users, and restoring and improving riparian habitats benefiting fish. Management is maintaining overhanging vegetation along the margins of the stream, which is critical to fall Chinook fry survival in the system, and early rearing for steelhead. Grazing management shifts to winter and early spring grazing have also benefited steelhead spawning in the mouths and lower reaches of tributary streams. There has been pro-active work with ranchers and permittees to adjust seasons of use and to control non-compliance, all of which helps to achieve the riparian management objectives for the river and tributaries.

Observation 1. Rangeland management: The Field Unit used good methods, practices, and strategies to build and maintain riparian standards required by PACFISH and INFISH. Though



fences are used to control cattle use, these were not visually obvious from the river. We did not observe bank alterations along the riverbanks associated with these grazing allotments. Grazing use occurs in winter and early spring when riparian vegetation is not preferred, bottomland temperatures are colder, and cattle are seeking upland grasses. At this time, steelhead are actively spawning in tributary streams. The unit is monitoring cattle use in and around redds to assess trampling. No redd trampling has been observed. Scattered tracts represent a challenge for managing livestock grazing. The unit does not

implement IIT monitoring to assess PACFISH/INFISH compliance in scattered tracts.

Recommendation: The review did not include a tributary stream used by steelhead for spawning, therefore, we were unable to comment specifically about redd trampling potential. The greatest potential for redd trampling typically occurs where cattle concentrate to drink, or where cattle commonly cross the stream. In many cases these positions in the stream channel coincide with locations of redd construction, because they occur at lower gradient depositional micro habitats where spawning gravels are more common, and where topographic conditions favor cattle access to the stream. Assuming that redd construction and cattle concentrations occur together, monitoring should be more intensive in such areas, and if a redd is found here, protection may be needed. If cattle concentrations do occur in conjunction with redd construction, one option is to coarsen the substrate, at such locations with large rock to prevent steelhead from choosing these sites for spawning. With respect to scattered tracts, these areas are exempt from IIT monitoring, with one exception: IIT monitoring is required on “Those for

which greater livestock management opportunities exist and that may affect aquatic resources addressed by PACFISH and INFISH.” (IM Manual, page 71). This means if management opportunities exist on the tract-either because access is available or the surrounding landowner permits it, and the grazing may affect aquatic resources-then PACFISH/INFISH standards and guidelines should be applied and monitoring used to assess compliance.

Observation 2: IIT monitoring. The Resource Area is conducting implementation monitoring of its actions within riparian areas. Recreation use, livestock use, riparian vegetation condition



and trend, redd trampling, redd counting, and noxious weeds were mentioned. The Resource Area submitted IIT Implementation monitoring data in 2002, and copies of those were obtained from the ACCESS database for this assessment. The data indicate that grazing allotments generally comply with PACFISH standards and guidelines. No other information was reported.

Recommendation: There is the perception that the IIT Implementation Monitoring Module is limited to monitoring just PACFISH standards and guidelines compliance and stubble height. This is an incorrect assumption. The IIT Module is actually designed to answer two basic questions: 1). Was the project implemented as planned and specified to follow the direction in PACFISH, INFISH, and the 1998 Biological Opinions? and 2). Was the project implemented as planned and specified to follow other project-specific or otherwise more localized requirements for implementation monitoring, including ESA Section 7 consultation requirements? Thus, in addition to PACFISH standards and guidelines compliance, those local monitoring requirements, such as redd trampling, or riparian vegetation, can and should be reported in the Module. As such, monitoring information becomes readily available for review by all who have access to the database. Canned reports and queries facilitate quick summary assessments. Any findings of non-compliance, or any results that suggest need for action, are automatically documented and the proposed solutions are presented. We strongly suggest that all PACFISH-relevant implementation monitoring be input into the IIT Monitoring ACCESS Database. Implementation monitoring data reported for the Effectiveness Monitoring HUCS, in particular need to be comprehensive. The Implementation Monitoring Module Users Guide contains directions for inputting data and for preparing queries and reports.

Observation 3. Land disposal and acquisition. There was discussion concerning the disposal of scattered tracts of land that are so difficult to manage. Under the BACA bill program, funds collected from the disposal of scattered tracts can be used to acquire lands adjacent to existing blocks of public lands, making them more accessible to management.

Recommendation: PACFISH standard and guideline LH-4 provides that land acquisitions should be used to “meet riparian management objectives and facilitate restoration of fish stocks and other species at risk of extinction.” Acquisition of such lands would contribute to conservation of listed species and the field unit should continue to emphasize disposal of scattered tracts and acquisition of lands that will help meet this standard and guideline.

Observation 4. Tribal lands: Based on observations of bank trampling in some areas, tribal lands on the west bank do not appear to have the same level of riparian protection as those managed by BLM. Tribal and BLM roles and responsibilities with respect to coordinated river management and implementation of the Wild and Scenic Rivers Act were unclear.

Recommendation: Continue to work with the Tribal Council and BIA to affect positive changes in riparian condition on tribal lands in the River corridor.

Observation 5. Recreation: Recreation improvements in the Wild and Scenic River have been beneficial for fish. Weed treatments, sanitation improvements, designated camping sites with occupancy limits, and river access stairways are some examples observed during the review. Streambank stability and vegetative cover was generally good along the stream, but in concentrated recreation use areas these were locally degraded. We also observed a fair amount of alder mortality, which is likely indicative of the effect of the 1996 flood event followed by insect and disease attacks on weakened trees.



Recommendation: Implementation of actions to improve the river, and riparian vegetation response to those actions should be documented and reported. The IIT Implementation Module can be used to accommodate such reporting. PACFISH standards and guidelines require that recreation facilities attain the riparian management objectives (RMOs). RMO's are measurable stream and streamside indicators of good fish habitat and in this river would probably be represented by bank stability and bank vegetation composition and cover. Certainly measures taken to control bank disturbance from recreation contribute to meeting these RMO's. There was much discussion about the INFISH standard GM-1, which requires modifying grazing practices that "retard attainment of RMOs". How to interpret this standard has been difficult.

Appendix I.

FEEDBACK FROM THE UNITS TO THE REVIEW TEAM AND THE IIT

Ochoco NF:

Collaboration: BLM and FS Level 1 Teams coordinate on projects that overlap jurisdictions. The annual environmental baseline update for watersheds in the Deschutes and John Day basins is one example. They are currently collaborating on the Programmatic BA for the Deschutes and John Day Basins, which is updated frequently. The Level 1 Team combines representatives from the FS and BLM and there is consistent implementation of the requirements of the PIBO's.

Watershed Restoration Strategy: The Forest has not used this tool.

IIT Roads Binder: The Forest has not used this tool.

Low Road Density Analysis: The Forest has not used this tool.

Policy issues affecting consultation: One ditch bill easement did not get on the priority list for consultation with NOAA Fisheries, so concurrence was not obtained.

Step-down products: The Forest has used Subbasin Review in conjunction with local prioritization processes (e.g. local watershed council priorities), EAWS, and Subbasin Plans funded by BPA. The Upper Crooked River Subbasin Review was completed previously, and the Deschutes Subbasin Plan (BPA) is underway. They are coordinating with watershed councils, and federal, state, and county entities along with local landowners. These products have not been used to adjust RHCAs, but some RMO's (e.g. LWD) have been adjusted. The new LWD objectives drive restoration project designs, but they are not driving standard when implementing a vegetation management project. Instead they are using the interim standards in PACFISH and INFISH. Conservation actions are coming out of these products, including LWD projects, road closures, riparian plantings, etc.

Monitoring: They use results of stubble height measurements to adjust the next season's annual operating plan – either reduced use, a change in season, or non-use for the pasture. There are additional monitoring requirements that have not been incorporated into the module (but could be). The unit has been coordinating yearly with the EM team and have been receiving data. They are concerned that the database may not be user friendly and they are also concerned about lack of communication on PIBO monitoring changes and requirements. There is general agreement that the IM manual is effective and useful.

Appendix II - Attendees

NAME	AFFILIATION	EMAIL ADDRESS
Tim Burton	BLM – Boise	tburton@blm.gov
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Appendix III - IIT IMPLEMENTATION MONITORING MODULE AUDIT

Field Unit: Ochoco NF **Activity Type:** Rangeland Management
Region/State: R6, USFS **Date:** October 1, 2003 **By:** Tim Burton
HUC6: Upper Ochoco? **Stream:** Blevins Creek **Category:** 2
DMA 1: Blevins Creek

Note: no Category 1 streams occur in the HUC.

Question 1. Was the DMA selected appropriately? The DMA was selected to reflect management within the pasture, therefore, it is located where herbaceous vegetation controls streambank stability and where livestock concentrate adjacent to the stream. However, most of the streams riparian vegetation consists of mixed shrubs and herbaceous grasses and forbs, and livestock do not concentrate in most areas. The DMA should probably be expanded to also include areas used less intensively. The IM Team needs to clarify DMA selection in situations where livestock use is highly variable both spatially and temporally.

Question 2. Were the implementation monitoring parameters selected appropriately? Stubble height along with observations of bank disturbance and shrub use are the annual monitoring indicators. Herbaceous, hydric vegetation controls bank stability on this stream.

Question 3. Were the implementation monitoring criteria (triggers for change in management) appropriate? The stubble height standard is 4 inches. The standard has not been validated for this location, although looking at the annual monitoring results, it appears low (at 5" median stubble height there was less than 10% bank disturbance but there was use on woody stems).

Question 4. Was the report and data adequate for use with the EM module? The hard copy report is adequate. It contains information collected at the site each year, including stubble heights, bank disturbance, woody use, and other observations and photos. The data have not yet been entered into the database.

Question 5. Was there non-compliance (y/n)? N.
If yes, was the non-compliance form completed and reviewed by the manager?

Question 6. Other observations: The unit submitted comments on the monitoring module as follows: They use results of stubble height measurements to adjust the next season's annual operating plan – either reduced use, a change in season, or non-use for the pasture. There are additional monitoring requirements that have not been incorporated into the module (but could be). The unit has been coordinating yearly with the EM team and have been receiving data. They are concerned that the database may not be user friendly and they are also concerned about lack of communication on PIBO monitoring changes and requirements. They recommend an

annual monitoring training session to update the monitoring coordinator on recent changes, and to continually refine their understanding of how to use the database. There is general agreement that the IM manual is effective and useful.

There was much discussion about the INFISH standard GM-1, which requires modifying grazing practices that “retard attainment of RMOs”. How to interpret this standard has been difficult.

Our response was as follows:

The definition on page A-6 of INFISH defines “retard attainment of RMOs” as slowing the rate of recovery below the near-natural rate of recovery if no additional human disturbance is applied. It goes on to say that this will require professional judgment and should be based on a local watershed analysis. Because watershed analysis compares current status with historic or reference status, the approach to recovery would necessitate comparing rates of change under livestock use with reference rates of change. Commonly this is done by comparing the recovery trend line of the sample reach with that of comparison livestock exclosure. Such comparisons should be done without excluding the influence of wild ungulates. If trend lines are statistically comparable, one can argue that the rates of change are near-natural. If not, and there are no other human-caused disturbances, or differences that can be explained by natural disturbance, a change in management may be needed.

It was evident that some on the review are not familiar with the IIT monitoring module. There were questions on basics contained in the IM Monitoring Manual. The concept of monitoring with adaptive management to achieve riparian management objectives may not be well understood. There was a need to clarify some basic standards and guidelines in PACFISH/INFISH. A better understanding of the overall IIT monitoring strategy, and how it can mesh with Forest monitoring objectives is needed.

Our response was as follows:

The IIT should provide hands-on training in the use and application of the IIT monitoring modules. It is difficult for field units to keep up with the frequent improvements in monitoring. Include in the training recent refinements made by the EM Team on bank alteration and woody stem use. Also include findings and recommendations of the Stubble Height Workgroup.