



Eel River Recovery Project

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February 3, 2017

Bureau of Land Management
6640 Lockheed Drive
Redding, California 96002

Re: Comments on Bureau of Land Management Northwest California Integrated Resource Management Plan (NCIP) 2017 Revision

To Whom It May Concern,

The Eel River Recovery Project (ERRP) is a grassroots non-profit (IRS #47-4811332) organization with a five year history of assisting citizen monitors and performing outreach and education enabled us to win the trust and cooperation of people, Tribes and agencies all over the Eel River basin. We are very happy to be providing these comments on the Bureau of Land Management (BLM) Northwest California Integrated Resource Management Plan (NCIP). Our group has been very happy with the current management plan (BLM 1992, 1995); with its emphasis on healthy watersheds and protection of old growth forest and we hope that this revision will follow on the same path.

ERRP was formed in 2011 as a result of concern over decline of fish runs, diminishing flows, and toxic algae blooms. We have been working together with the Arcata BLM Office since 2013 on cartel marijuana grow clean ups (Roush 2014), trail improvements and maintenance, and on issues related to potential expansion of BLM holdings in key areas within the Eel River watershed (Higgins and Hilbach-Barger 2015, Pace 2016). While BLM holdings within the Eel River watershed are not vast, they are of critical importance for production of clean water, preservation of biodiversity and fostering recreational opportunities.

Key Areas for Protection

ERRP (2016) has conducted Eel River basinwide assessments of water temperature and flow since 2012 and discovered that many tributaries are being depleted of flow and even becoming seasonally dry or disconnected, when there were formerly perennial. There is an apparent connection to cannabis cultivation and related rural development and depleted flows. However, another major causal mechanism of decreased base-flow appears to be altered hydrology related to forest health (see Forest Health/Fire). The Eel River ecosystem is showing signs of advanced cumulative effects, which makes maintaining BLM wildlands and streams more critical now than ever. ERRP has discovered that many streams flowing from BLM holdings serves as coldwater refugia that need to be protected, if coho salmon and steelhead trout are to be restored (Bradbury et al. 1995). These streams can provide a source of colonists as more beleaguered nearby streams are restored.

ERRP would like to highlight the following areas as priorities for protection and management compatible with improving hydrologic conditions, forest health and fish and wildlife.

South Fork Eel River BLM Wilderness Complex: The Red Mountain, Elkhorn Ridge and Cahto Peak Wilderness Area compartments are of extraordinary importance for maintaining sources of cold water and terrestrial wildlife biodiversity. These include Red Mountain, Cedar, and Elder creeks as well as some of the headwaters of Ten Mile Creek and portions of the upper the East Branch South Fork Eel River. Stream segments on BLM land all serves as refugia for steelhead (Figure 1).



Figure 1. Steelhead yearling feeding in lower Red Mountain Creek just above the SF Eel. 8/1/16.

ERRP has been working with private land owners, BLM, conservation organizations and land trusts to try and acquire key tracts of private land with extraordinary wildland resource values and have them converted to BLM holdings. Toward that end, ERRP is also working with the California Wilderness Coalition to have the East Branch SF Eel designated as Wild and Scenic to facilitate such transfers. It is our hope that we these key parcels can ultimately be enfolded into the Red Mountain Wilderness Area (Pace 2016). ERRP would also like to acquire key parcels near entry points to Wilderness Areas to make access easier and more inviting.

The BLM Cahto Peak and Elkhorn Ridge Wilderness compartments surround the University of California Angelo Reserve. BLM holdings in the headwaters of Elder Creek were invaded by a large trespass grow that has now been cleaned up. ERRP would like to team up with BLM and UCB to bring volunteer energy to improve forest health. Although Elder Creek has late seral forest conditions, the lack of fire has allowed Douglas fir to encroach in oak woodlands. Stands of oaks are being over-topped by fir and action is needed in the next decade to halt this unwanted succession (Jeff Hedin, personal communication).

Elk Creek – Middle Fork Eel – Black Butte : The Middle Fork Eel and lower Black Butte River has extremely high intrinsic potential for the production of Chinook salmon according to the National Marine Fisheries Service (Agrawal et al. 2005). The upper Middle Fork within the Yolla Bolla Wilderness also has one of the last viable populations of summer steelhead. BLM has extensive land ownership in the Elk Creek watershed, including its tributaries Eden Valley Creek and Deep Hole Creek. The prior RMP (BLM 1995) noted that:

“Bald eagles are known to concentrate within this river segment. A significant number of cultural sites are concentrated within the area. Suitable spawning and/or rearing habitat exists for migrating steelhead and salmon.”

Since the main Middle Fork Eel River and Black Butte River are very high energy stream channels, they may experience bedload movement similar to the observations of Montgomery and Buffington (1993), that can lead to the mortality of rearing eggs and alevin (Nawa et al. 1990). Therefore, it is highly desirable to maintain smaller order tributaries like Elk Creek as suitable for spawning Chinook and steelhead because they have somewhat less risk of bedload movement. Also, the water temperatures of the Middle Fork and Black Butte exceed suitability for salmonids and maintaining connectivity to Elk Creek tributary refugia is essential for summer and winter steelhead juvenile survival. ERRP would like to see BLM expand holdings within this watershed, including acquisition of stream side parcels. The Elk Creek watershed should be added as an Area of Critical Environmental Concern (ACEC) and it should be considered for status as a Key Watershed under the Northwest Forest Plan.

Butte Creek and South Fork Van Duzen River – BLM has extensive holdings in the Butte Creek and SF Van Duzen watersheds and both are extremely important for steelhead spawning and rearing. Other Van Duzen River tributaries like Little Larabee Creek are suffering from flow depletion (Higgins 2014) and some reaches of the main Van Duzen River have water temperatures that are so elevated in the summer that they become stressful for steelhead juveniles. Consequently, it is imperative that BLM maintain holdings in the Butte Creek watershed and upper SF Van Duzen as wildlands. We further recommend that forest health measures such as thinning from below and reducing road networks be considered to reduce risk of fire and flood damage and help restore watershed hydrology.

Chemise Creek – This watershed is east of Garberville near the old town of Harris and near Island Mountain. ERRP has been monitoring Chemise Creek below Island Mountain Road since 2012, and the flow of the creek has gone sub-surface in the driest summers of 2013 and 2014. Even in years when surface flow is disrupted, stratified isolated pools allow survival of steelhead juveniles. Steelhead runs appear to be robust and there are no invasive pikeminnow in most of Chemise Creek because of the steep gradient. Having intact headwater areas on BLM supplies copious clean water and provides a steelhead refugia. Similar to Van Duzen tributaries above, ERRP recommends improving forest health and hydrology and could possibly supply some volunteer energy to achieve those objectives.

North Fork Eel River – This sub-basin is designated as a Key Watershed and also has a substantial amount of designated Wilderness managed by the Six Rivers and Mendocino National Forests. Keter (1989) pointed out that oak woodlands had declined in extent from 36% of the landscape to 9% because of cessation of Native American controlled burns. This sub-basin also has traditionally had a snow-melt driven hydrology and climate change may diminish snowfall; therefore, trends in flow and ecological health need to be monitored. Grassland health has also been compromised in the North Fork due to introduction of European short-rooted, annual grasses that have caused the decline or disappearance of native grasses (Keter 1989). ERRP hopes to promote a partnership between the USFS and the Round Valley Indian Tribes (RVIT) to co-manage areas in and adjacent to Wilderness in the North Fork for the purpose of re-introducing fire as a landscape management tool. This project is patterned after the successful partnership between the Karuk Tribe and the USFS that is resulting in co-management using traditional ecological knowledge and local man-power. BLM should consider a similar arrangement for its holdings in the North Fork, including Hulls Creek and especially areas adjacent to the RVIT Reservation.

Monitoring for Adaptive Management

ERRP favors maintaining the Northwest Forest Plan (FEMAT 1993) monitoring objectives (Miller et al. 2014), particularly those in the Aquatic and Riparian Effectiveness Monitoring Program (AREMP) that helps evaluate the success of the aquatic conservation strategy (ACS) (FEMAT 1993). ERRP is collecting data Eel River basin wide to be able to trend monitor that in aggregate help watershed residents, agencies and Tribes gauge ecosystem function, similar to ACS and AREMP objectives. ERRP (2016) currently monitors water temperature and levels of cyanotoxins, and photo documents flow problems like stream desiccation. ERRP (Higgins 2014b) has plans to monitor sediment flux and, although no sediment data have been collected. We welcome BLM as a monitoring partner and encourage the agency to use our data for trend monitoring and adaptive management.

Water Temperature: Water temperature is one of the best surrogates for understanding suitability for salmonids (McCullough 1999) and ERRP (2016) uses trend data to assess flow depletion, based on the assumption that reduction in flow will diminish volume and increase transit time resulting in stream warming (Pool and Berman 2000). Since 2012, ERRP (2016) has captured water temperature data at hundreds of locations in cooperation with volunteers totaling 350 site-years. As part of a State Water Resources Control Board grant, we also able to accumulate all baseline and trend water temperature data from all sources since 1980, or 2,766 site years (Asarian et al. 2016). These data show clearly that some sub-basins within the Eel River watershed are warming as a result of flow reduction related to land use and legacy issues related to watershed hydrology. Data collected on streams that flow from BLM owned watersheds indicate that Red Mountain and Cedar creeks are functioning as salmonid refugia and of extreme importance to steelhead production in the South Fork Eel River watershed. In the Van Duzen River watershed, Butte Creek and the South Fork Van Duzen River temperature data show they are also functioning as coldwater refugia. There are no recent data from Elk Creek in the Middle Fork Eel River watershed where BLM has extensive holdings, but collecting data there would be highly desirable.

ERRP (2016) shares all water temperature data accumulated with the U.S. Forest Service (USFS) NorWeST project, which is a research collaborative effort studying climate change scenarios for western North American streams (www.fs.fed.us/rm/boise/AWAE/projects/NorWeST.html). NorWeST used Eel River data accumulated by ERRP to re-run models in the fall of 2016. NorWeST objectives are to deploy water temperature gauges 365 days a year to be able to determine cooling trends in winter as well as warming stream trends in summer. ERRP also wishes to establish water temperature gauges that operate year-around at roughly 250 locations similar to Friedrichsen et al. (1998). Any assistance in setting up such monitoring sites in ecological important streams on BLM land would be appreciated.

Flow: Asarian (2015) note that flow trends at USGS gauging stations on the South Fork Eel and main Eel River at Ft Seward had changed from being in gaining stream reaches to losing ones, likely due to tributary flow depletion. He also found that flows in Bull Creek in Humboldt Redwoods State Park had diminished by 50% in flow since 1950. Since no cannabis is cultivated in this watershed, the decrease in baseflows are likely the result of increased evapotranspiration (see Forest Health/Fire). While ERRP has not engaged in flow measurement, we have photo documented stream reaches that dried up or became disconnected and published maps showing the extent of the problem in reports (ERRP 2016) and on the internet. In 2017 ERRP is planning to obtain grants that would allow contracting for flow data collection in tributaries that are high value conservation targets like Tenmile Creek. There are inexpensive flow gauges that are inexpensive and easy to install on some kinds of culverts that BLM might consider employing. Water extraction by water trucks from streams flowing from BLM owned watersheds is a concern and there may be a need to assess this problem.

Cyanobacteria: ERRP has monitored cyanotoxins in cooperation with UCB since 2013 (Bouma-Gregson and Higgins 2015), including the upper South Fork on the Angelo Reserve. Although cyanotoxins are not known to be a pressing problem on BLM managed stream segments, future sampling may be desirable on the upper South Fork above the Hermitage and Camp St Michael.

Sediment Monitoring: An extremely cost effective monitoring tool for determining sediment flux in wadeable streams is V^* (Hilton and Lisle 1993), which is a ratio of the amount of fine sediment relative to the volume of water and fine sediment combined. Baseline data were collected on 60 North Coast streams (Knopp 1992), including some that flow from BLM lands. ERRP wishes to establish V^* baseline and trend data to demonstrate the reduction in fine sediment in response to road improvements and decommissioning on public and private lands. Any support for this monitoring through contributions of staff time or in any other form would be welcomed.

Massive quantities of sediment are coming from some tributaries within the South Fork Eel River basin and ERRP wishes to collect maximum pool depth baseline and trend data to gauge how sediment pulses move through the river channel (ERRP 2014b). Grant (1988) recommended using aerial photos from varying time periods to measure the widths of deltas at creek mouths to gauge sediment over-supply and cumulative watershed effects. Such a study needs to be conducted for South Fork Eel River tributaries using photos from 1942 to the present and ERRP will try to arrange technical assistance to watershed residents about abating sediment pollution.

Aquatic Macroinvertebrates: The diversity of stream insects and other macroinvertebrates is widely used in California to rank aquatic health (Harrington), collectively referred to as benthic macroinvertebrates (BMI). Friedrichsen (1998) collected macroinvertebrate samples from 24 locations throughout the Eel River watershed and used the EPT Index (Ephemeroptera, Plecoptera and Trichoptera), richness (number of taxa), and the percent dominance index where higher scores indicate recent disturbance. BLM should consider using BMI studies to monitor trends of aquatic health and work collaboratively with Utah State University and the regional USFS monitoring, both supplying data and utilizing their regional data for results from all federal lands.

Marijuana Grows and Clean Ups

ERRP assisted BLM with clean up of 10 abandoned trespass, cartel marijuana grow sites in and adjacent to the Red Mountain Wilderness Area. Because of potential exposure to hazardous substances and concerns about liability, use of volunteers for such activities was curtailed. ERRP and local residents are not satisfied with leaving grow garbage on BLM lands and we want to reinvigorate removal efforts, even if it means more rigorous training for volunteers and or acquiring more protective equipment.

Expanding Recreational Opportunities in the Eel River Watershed

The Arcata Field Office has been exemplary in developing recreational facilities while managing a recovering landscape. The Kings Range Wilderness and the Headwaters Forest in Humboldt Bay draw tourists to our area and provide recreational opportunities for local residents. ERRP wishes to help to work with BLM to improve access and trails to create more such destinations in the Eel River watershed and to use our volunteer corps to help protect and manage some of your more remote parcels. When ERRP first met with BLM staff in 2013, we planned to first help with clean up of trespass grows so that areas were safe for normal Wilderness use. We have completed a wave of clean-up activities (Hillbach-Barger 2015) and the use of BLM lands for such grows seems to have substantially diminished or disappeared.

The second step we envisioned was to improve access to Wilderness Areas and trail systems within them to encourage appropriate use (Pace 2016). We have done pilot projects in the Red Mountain Wilderness compartment and also trail work and erosion control after the Lodge Fire in the Cahto Creek compartment. The later was in cooperation with the Cahto Indian Tribe of Laytonville that has since established government to government communication with BLM to insure respect for their ancestral territories. BLM is encouraged to consider a trail from Big Bend Lodge up Low Gap Creek into the Elkhorn Ridge Wilderness.

ERRP would like to seek grant funds from private foundations and other sources for trail maintenance and expansion and possibly work with BLM on an Assistance Agreement so that we can fund volunteer coordination and increase our capacity to use volunteer energy substantially.

Forest Health/Fire

The widespread alteration of stand conditions in the Eel River watershed by the Post WW II logging boom and more recent waves of private industrial logging have left a legacy that profoundly alters watershed hydrology, fire risk and availability of merchantable timber. Jones et al. (2000) showed that there were increases in peak flows and decreased baseflow associated with widespread logging and high road densities. Stubblefield et al (2012) found that 40-60 year old over-stocked forests in the upper Mattole River watershed had a very high evapotranspiration rate and that water yield and streams flows were substantially less than from streams flowing from old growth forests. Over-stocked forests can experience mortality during prolonged drought or may become weak and more susceptible to insect infestation that can also cause mortality. Although there has been very little logging on most BLM lands in the Eel River for decades, legacy problems such as deteriorating road networks, altered hydrology, poor forest health and increased fire risk remain. Therefore, BLM should consider thinning from below, road decommissioning and other measures to decrease sediment yield, decrease flood flows and increase baseflows, and decrease the risk of catastrophic fire. Watersheds where these activities take place should be prioritized using the methods described by Bradbury et al. (1995).

Grassland Restoration

Keter (1989) chronicled the rapid loss of native grasslands in the 1850s to 1880s and how non-native European grasses became dominant. Since native grasses were more deeply rooted, they stored much more water in hillslopes historically versus the present. Consequently it would be good to partially or fully recover native grasslands or at least hydrologic function of grasslands using a mix of native and non-native species (Michael Evenson personal communication). Since not much of BLM holdings in the Eel River watershed are in grasslands, opportunities for partnership in restoring them may be limited (Jennifer Wheeler personal communication).

Conclusion

ERRP appreciates the effort BLM has made to include the public in the NCIP process with plenty of well-noticed meetings and excellent prepared materials. We hope that the comments we have prepared here and those of our members are useful and that they lead to many partnerships and projects. ERRP can bring volunteer resources that benefits your agency, but BLM also provides wildlands where our members can get in touch with nature and get inspired. Our recent Wilderness Plan (Pace 2016) described this synergy:

“We believe an effective strategy to protect and expand wildlands in the Eel River Basin must be based on a strong foundation of citizen support, which itself is based on direct citizen involvement with and in wildlands stewardship and protection.”

Please feel free to call if you have questions. We look forward to working with BLM for years to come.

Sincerely,

A handwritten signature in black ink, appearing to read 'Patrick Higgins', with a large, sweeping flourish extending to the right.

Patrick Higgins
ERRP Managing Director

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