EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

March 17, 2015

***VIA ELECTRONIC MAIL***

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Re: Administrative Procedure Act Petition to Withdraw the October 11, 2006, Biological Opinion on the Effects of the Rock Creek Mine on Bull Trout and Grizzly Bears and Re-Initiate Consultation under the Endangered Species Act

Pursuant to 5 U.S.C. § 555(b) and 50 C.F.R. § 402.16, Rock Creek Alliance, Earthworks, and the Idaho Council of Trout Unlimited petition the United States Fish and Wildlife Service ("FWS") to immediately withdraw the October 11, 2006, Biological Opinion for the Proposed Actions Associated with Plan of Operations for the Revett RC Resources Incorporated Rock Creek Copper/Silver Mine ("2006 BiOp"), and request re-initiation of formal consultation with the U.S. Forest Service concerning impacts to bull trout and grizzly bears pursuant to section 7 of the Endangered Species Act ("ESA"), 16 U.S.C. § 1536(a)(2). FWS has received new information documenting adverse effects to threatened bull trout that were not considered in the 2006 BiOp, as well as new information indicating that conflict-reduction strategies will be inadequate to offset the mine's mortality risks to grizzly bears. This new information triggers FWS's duty to reinitiate ESA consultation with the Forest Service. 50 C.F.R. § 402.16(b).

Because development of the Rock Creek mine could begin as early as spring 2015, the petitioners request prompt action on this petition.

## I. Petitioners' Interests

The Rock Creek Alliance (Alliance) is a non-profit public advocacy organization with an office in Trout Creek, Montana. The Alliance is dedicated to preventing pollution of the Clark Fork-Pend Oreille Watershed and protecting the Cabinet-Yaak Ecosystem from the deleterious effects of hard-rock mining, especially the Rock Creek mine. This includes work to ensure the continued viability of the threatened species of grizzly bear and bull trout by procuring scientific studies analyzing the impact of the proposed mine on habitat and species; organizing scientific conferences on both bull trout and grizzly bears; and commenting through the NEPA process on forest plan amendments, critical habitat designation, forest planning, and nearly every stage of the NEPA process for the proposed mine.

Earthworks is a national non-profit organization that seeks to protect communities and the environment against the adverse impacts of mineral development. Earthworks' Montana

office, located in Missoula, MT, has invested considerable time in the Rock Creek Mine permitting process, including comments on the Draft Environmental Impact Statement and the Supplemental Draft Environmental Impact Statement. Earthworks members regularly recreate in the Cabinet Mountains Wilderness and enjoy the hiking opportunities, fish and wildlife, beauty and solitude of these magnificent public lands.

Idaho Council of Trout Unlimited ("ITU") is a non-profit conservation organization dedicated to protecting, reconnecting, and restoring naturally sustaining salmonid fisheries and their habitat. ITU has over 2,000 members in the state of Idaho, and is part of the larger network of Trout Unlimited affiliate state councils. ITU has worked on important recovery issues throughout the bull trout's range in Idaho, including an extremely successful collaborative effort to relicense the Avista Power Projects on the Clark Fork River in Idaho and Montana. Further, ITU members in the Panhandle Region of Idaho have worked with Avista, Crown Pacific, state and federal resource agencies, and a private landowner to improve bull trout and westslope cutthroat trout habitat on much of lower Twin Creek, a tributary of the lower Clark Fork River. Protection of Rock Creek and Bull River bull trout is an important component of ITU's watershed-scale efforts to protect bull trout, and is integral to ITU's long-term commitment to native salmonid restoration in the lower Clark Fork River.

## II. FWS Must Reinitiate Consultation to Consider New Information Concerning Adverse Effects to Bull Trout

### A. New data indicate that the Rock Creek mine will affect surface flows in Rock Creek and East Fork Bull River, which was not contemplated in the 2006 BiOp

FWS must withdraw the 2006 BiOp for bull trout and re-initiate consultation because new data reveal that the Rock Creek mine will affect surface flows in Rock Creek and East Fork Bull River, which was not anticipated in the 2006 BiOp.

Groundwater modeling results in the Supplemental Draft EIS for the nearby Montanore mine project proposal reveal that the proposed Rock Creek mine will reduce flows in both Rock Creek and East Fork Bull River. *See* Kootenai Nat'l Forest & Mont. Dep't of Envtl. Quality, Supplemental Draft Environmental Impact Statement for the Montanore Project, Vol. I at 164 (2011) ("Montanore SDEIS") (stating that Rock Creek mine will reduce flows by 0.03 cfs at the mouth of Rock Creek, by 0.03 cfs at the mouth of East Fork Bull River, and by 0.08 cfs in East Fork Bull River at the boundary of the Cabinet Mountains Wilderness).[1] Further, the Montanore SDEIS concludes that the flow reductions attributable to the Rock Creek mine may adversely affect the functioning of the Lower Clark Fork River Core Area bull trout population by excluding migratory bull trout from Rock Creek for longer periods relative to pre-project conditions and exacerbating habitat loss in East Fork Bull River. *Id.*

[1] The Montanore SDEIS is available at http://www.fs.usda.gov/detail/kootenai/landmanagement/resourcemanagement/?cid=stelprdb5290833 (last visited March 13, 2015). The relevant pages are attached as Exhibit A.

These data constitute "new information [that] reveals effects of the action that may affect listed species or critical habitat in a manner ... not previously considered," requiring FWS to re-initiate consultation. 50 C.F.R. § 402.16(b). FWS has not considered the effects on bull trout from stream flow changes attributable to the Rock Creek mine. In the 2006 BiOp, FWS expressed "concern that mining activities may intercept sources of groundwater that could result in changes in surface flows and stream temperatures in Rock Creek." 2006 BiOp at iv. But FWS concluded that stream flow changes were "not anticipated," and therefore omitted from the 2006 BiOp any analysis of the effect such changes would have on bull trout. *Id.*; *see also* email from John Carlson, U.S. Forest Serv., to Eric Klepfer, Klepfer Mining Servs. (Aug. 3, 2012) (attached as Exhibit B) (stating that the 2006 BiOp "never looked at a loss of water from either Rock Creek or the Bull River" as a possible impact of the mine and observing that "any decrease in [Rock Creek] flows could be significant" for bull trout). Instead, the 2006 BiOp considered sediment delivery as the mine's sole expected effect on Rock Creek. *See* 2006 BiOp at B-80 (stating that anticipated project effects on Rock Creek are limited to "sediment delivery during the construction period and two years following"); Carlson email (Exhibit B) (stating that "[s]ediment was the main concern" in the 2006 BiOp).[2]

Critically, the 2006 BiOp stated that, "if new information reveals that the risk to Rock Creek bull trout is anticipated" because stream flow changes are in fact expected to occur, "re-initiation of consultation would be warranted, and the Service would request it." *Id.* at B-80; *see also id.* at iv. Because FWS now has before it evidence that the Rock Creek mine "may affect" threatened bull trout, 50 C.F.R. § 402.16(b), in a manner expressly "not anticipated" in the 2006 BiOp, 2006 BiOp at iv, FWS must re-initiate consultation with the Forest Service. 50 C.F.R. § 402.16(b); *see also* Montanore SDEIS at 164 (stating, based on new data, that reduced flows in Rock Creek from implementation of Rock Creek mine may adversely affect local bull trout populations by producing "longer periods of time with restricted movement, making them more susceptible to environmental changes," and may adversely affect functioning of core area population by extending periods when migratory bull trout cannot access Rock Creek).

The new evidence of stream flow impacts is especially significant because it demonstrates that the Rock Creek mine will degrade not only the Rock Creek drainage but also the important Bull River drainage. FWS repeatedly has recognized the critical importance of the Bull River—particularly its East Fork—for bull trout spawning and rearing. *See, e.g.*, 2006 BiOp at B-54 ("The Bull River supports more spawning bull trout than other tributaries in the Lower Clark Fork Core Area...."), B-64 ("Bull River ... is the most important bull trout stream in the lower Clark Fork River"), B-80 ("the Bull River system is the primary source (about 80-90 percent) of the Cabinet Gorge Reservoir migratory bull trout population") (citation omitted); *see also* U.S. Dep't of Interior, Comments to Forest Service on Montanore Mine SDEIS at 2 (Nov. 15, 2011) (attached as Exhibit C) ("*The East Fork Bull River is the single-most important bull trout spawning and rearing stream in the Lower Clark Fork bull trout core area* .... Currently, 80 percent of observed bull trout redds in the East Fork Bull river occur upstream of the

[2] Importantly, the flow reductions revealed in the Montanore SDEIS are likely to be permanent, whereas the sedimentation impacts analyzed in the 2006 BiOp are expected to be temporary.

wilderness boundary") (emphasis in original). Further, the new evidence of surface flow impacts in East Fork Bull River contradicts FWS's conclusion that the Rock Creek mine will have no effect on the Bull River system, which supported FWS's decision to exclude that system from analysis in the 2006 BiOp. *See* 2006 BiOp at B-18 (stating that Bull River drainage has been excluded from the action area because "no impacts are anticipated in that drainage as a result of the proposed action"); *id.* at B-80 (asserting that "[n]o impacts related to this project are anticipated in the Bull River drainage which is considered to be the principal contributor of the core area because it supports relatively strong numbers of adfluvial, fluvial, and resident bull trout"). For this reason too, the evidence of stream flow impacts in East Fork Bull River constitutes "new information reveal[ing] effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered." 50 C.F.R. § 402.16(b).

### B. Fish passage restoration considered essential in the 2006 BiOp has not occurred

Re-initiation of consultation also is required because new information reveals that fish passage restoration relied upon in the 2006 BiOp has not taken place as FWS expected it would.

The no-jeopardy determination in the 2006 BiOp rests in part on the assumption that fish passage would be restored across the Cabinet Gorge and Noxon Rapids Dams. First, in the 2006 BiOp, FWS hypothesized that imminent re-colonization of Rock Creek by migratory bull trout was likely with the "anticipated attainment of permanent fish passage under the Avista fish passage program." 2006 BiOp at B-86. FWS further emphasized the importance of the fish passage program to the functioning of the Lower Clark Fork Core Area population, stating that

> to ensure the function of the core area for migrating adfluvial bull trout, the Lower Clark Fork Core Area is largely dependent on continued success of artificial passage of adult bull trout over Cabinet Gorge and Noxon dams in order to restore and maintain, at least partially, the historical connectivity that allowed adfluvial migrating adults from Lake Pend Oreille to reach spawning areas in their stream of origin.

*Id.* Critically, FWS's conclusion that the potential extirpation of bull trout in Rock Creek due to the Rock Creek mine would not jeopardize the core area population depended on the establishment of permanent fish passage facilities at the Cabinet Gorge, Noxon Rapids, and Thompson Falls dams. *See id.* at B-86 – B-87 (describing planning for fish passage as being "now underway" and concluding that, as a consequence of the promised connectivity, "the probability of persistence of the species would not be appreciably affected even if the Rock Creek local population were lost when considering this re-connected system ...."); *see also id.* at B-69 ("Habitat fragmentation and isolation because of Cabinet Gorge and Noxon dams are the greatest risk to the persistence of the migratory form [of] bull trout in the Lower Clark Fork Core Area, although this threat is being addressed through the Avista fish passage program") (internal citations omitted); FWS Memo. Re. Consolidation of bull trout core areas on the Lower Clark Fork River (July 14, 2006) (Appendix D to 2006 BiOp) (describing success of trap-and-haul component of Avista fish passage program but stating that realization of full benefits for core area population will require permanent two-way fish passage at Cabinet Gorge, which was anticipated "in the next few years").

However, FWS has since determined that the Avista program has not developed as expected and, as a result, reliable fish passage has not been restored as contemplated in the 2006 BiOp. In March 2014 comments regarding Avista's compliance with FERC licensing requirements for its Clark Fork dams, FWS stated that—despite the passage of 15 years—Avista has not initiated construction of upstream fish passage facilities. *See* Letter from Tim Bodurtha, U.S. Fish & Wildlife Serv. Mgmt. Cmte. Rep., to Tim Swant, Clark Fork License Manager, Re. Comments and Recommendations on draft reports, FERC Project No. 2058 (March 20, 2014) (attached as Exhibit D). FWS noted that, as of March 2014, Avista had not scheduled permitting and construction of permanent fish passage and stated the agency's belief "that construction scheduling is not imminent." *Id.* at 3. FWS also expressed concern over delayed construction of additional downstream fish passage in tributary streams to Avista reservoirs. *Id.*at 4-5. As in the 2006 BiOp, FWS emphasized that "imminent construction of fishways is necessary in order to minimize take of bull trout" and "for bull trout conservation and recovery." *Id.* at 4. Avista's Draft 2014 Annual Report for the Clark Fork Project confirms that construction of essential fish passage facilities is far from imminent. Further multi-agency negotiations, FERC approval, and environmental reviews are required before construction of a permanent fishway at Cabinet Gorge Dam can commence. *See* Avista Corp., Draft 2014 Annual Report for the Clark Fork Project, FERC Project No. 2058, at 6-50 – 6-53 (relevant pages attached as Exhibit E). Fish passage construction at Noxon Rapids Dam has been postponed "indefinitely," with the current proposal before FWS stating that construction will not even be "considered" sooner than five years after the fishway at Cabinet Gorge Dam becomes operational, and will not occur until outstanding pathogen issues are resolved to the satisfaction of the State of Montana. *Id.* at 8-37.

Re-initiation of consultation is required in light of this evidence that fish passage across the Avista dams has not been restored as contemplated in the 2006 BiOp. *See* 50 C.F.R. § 402.16; *Forest Guardians v. Johanns*, 450 F.3d 455, 465-66 (9th Cir. 2006) (holding that re-initiation of consultation was required where land management plan provisions considered necessary to protect listed species were not implemented as contemplated in BiOp). In reaching its no-jeopardy determination in 2006, FWS relied on the prompt construction of permanent fish passage across the Avista dams to maintain the viability of the core area population notwithstanding the potential extirpation of bull trout in Rock Creek and to permit the re-colonization of Rock Creek by migratory bull trout. With the factual foundation for those assumptions now undermined, FWS must revisit its resulting no-jeopardy conclusion.

## III. FWS Must Reinitiate Consultation to Consider New Evidence that the Conflict-Reduction Measures Called for in the 2006 BiOp Will Not Offset the Increased Risk of Human-caused Grizzly Bear Mortality Posed by the Mine

FWS also must reinitiate consultation on the Rock Creek Mine's effects on grizzly bears because new information demonstrates that the conflict-reduction measures required by the 2006 BiOp will not offset the substantially increased risk of human-caused grizzly bear mortality associated with the mine.

In the 2006 BiOp, FWS recognized that "[t]he most prominent direct and indirect effects on grizzly bears from the implementation of the proposed Rock Creek Mine project would stem from the influx of mine employees into this relatively remote area" and the associated increase in

human-caused mortality risks. 2006 BiOp at A-68.[3] As a necessary consequence, the 2006 BiOp places exceptional weight on the efficacy of conflict-reduction measures to support FWS's conclusion that the Rock Creek Mine will not jeopardize the survival and recovery of grizzly bears in the Cabinet-Yaak Ecosystem ("CYE"). Indeed, in 2006 FWS determined that reductions in human-caused mortality were necessary to sustain and recover the CYE grizzly bear population *even in the absence of the Rock Creek Mine*. *Id.* at A-96. Accordingly, the no-jeopardy determination in the 2006 BiOp depends on FWS's conclusion that planned conflict-reduction measures would completely offset the increased risk of human-caused mortality posed by the mine and further reduce that risk below the pre-mine baseline. *See, e.g.*, *id.* at A-76 (stating that, "[w]ith reasonable certainty, we expect that implementation of [the conflict-reduction] measures would result in a net decrease in the potential for conflict and in the actual number of conflicts between grizzly bears and people that would arise in the CYE, with or without the Rock Creek mine project ...."), A-104 ("We reasonably expect that the measures taken to reduce potential for human-caused mortality, within and outside the action area, would result in no net increase, and more likely a net decrease, in overall human-caused grizzly bear mortality rates within the CYE ...."), A-105 (concluding that anticipated take from mine will not jeopardize CYE grizzly bears because "the net reduction in existing and anticipated future grizzly bear mortality rates" from conflict-reduction measures, in conjunction with habitat improvements and population augmentation, will "more than offset" mine's adverse effects).[4]

However, the results of conflict-reduction efforts in the CYE since 2006 reveal that these measures, while positive, are incapable of offsetting the substantial increase in human-caused mortality risk associated with the Rock Creek Mine. Since 2007, Montana Fish, Wildlife and Parks has employed a grizzly bear specialist dedicated to reducing human-caused grizzly bear mortality in the CYE. *See* Selkirk/Cabinet-Yaak Subcommittee of the Interagency Grizzly Bear Committee, May 13, 2014 meeting summary, at 2 (attached as Exhibit F) (describing bear specialist's role and tenure). Based in Libby, Montana, this specialist has implemented many of the conflict-reduction measures identified as essential in the 2006 BiOp, including provision of bear-proof garbage containers to local residents, installation of electric fencing, and extensive education and outreach programs for hunters and the general public. *See* Kim Annis, Mont. Fish,

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[3] This recognition of the unique threat posed by increased human use of grizzly bear habitat accords with research showing that grizzly bear mortality is a function of the frequency of human contact and the lethality of that contact. Mattson, D.J., Herrero S., Wright, R.G., and Craig M. Pease. 1996. Science and Management of Rock Mountain Grizzly Bears. Conservation Biology. Volume 10, No. 4, August 1996.

[4] FWS again emphasized the substantial threat that human-caused mortality poses to the survival and recovery of the CYE grizzly bear population in its 2014 Biological Opinion for the nearby Montanore Mine. For example, FWS discussed the threat of poaching associated with an "influx of workers with diverse social, cultural and economic backgrounds, many of whom may be unfamiliar with or lack interest in wildlife conservation." U.S. Fish & Wildlife Serv., Final Biological Opinion on the Effects to Grizzly Bears From the Implementation of Proposed Actions Associated with Plan of Operations for the Montanore Minerals Corp. Copper/Silver Mine 99 (March 31, 2014). The greatest poaching threat, FWS stressed, is associated with "transient work forces," who are less likely to be reached by the education programs and other conflict-reduction efforts called for in the 2006 BiOp. *Id.*

Wildlife & Parks, Human-Bear Conflict Management & Prevention, Cabinet-Yaak Ecosystem (2014) (attached as Exhibit G). However, contrary to FWS's forecast in the 2006 BiOp, these efforts have failed to reduce human-caused grizzly bear mortality in the CYE—even in the absence of the Rock Creek Mine. During the past eight years of conflict-reduction implementation, there were 13 documented human-caused grizzly bear mortalities in the Cabinet-Yaak recovery area—precisely the same number that occurred in the preceding eight-year period. *See* Kasworm, W.F., T.G. Radant, J.E. Teisberg, M. Proctor, and C. Servheen. 2014. Cabinet-Yaak grizzly bear recovery area 2013 research and monitoring progress report 17-18. U.S. Fish & Wildlife Serv., Missoula, Mont. (relevant pages attached as Exhibit H) (reporting 13 human-caused mortalities in the recovery area from 1999-2006 and 12 human-caused mortalities from 2007-2013); Kasworm et al., 2014 Autumn Cabinet-Yaak and Selkirk Mountains Grizzly Bear Ecosystems Update 2 (attached as Exhibit I) (reporting one human-caused mortality in the recovery area in 2014).[5] The level of human-caused mortality in the Cabinet-Yaak recovery area during 2008-2013 exceeded allowable mortality levels under the grizzly bear recovery plan (USFWS 1993). 2013 Monitoring Report at 20.

These results from a "test run" of the conflict-reduction measures called for in the 2006 BiOp during the 2007-2014 period make clear that the measures are inadequate to offset the substantially increased risks of human-caused mortality associated with the Rock Creek mine. Indeed, these measures have not been successful in reducing grizzly bear mortality levels in the region below baseline levels even in the absence of the major influx of mine employees that would accompany construction and operation of the Rock Creek Mine in a remote, sensitive area of the Cabinet Mountains. This new information undermines FWS's conclusion that such measures would suffice to offset the mine-related risks and further reduce human-caused mortality below the pre-mine baseline, *e.g.* 2006 BiOp at A-79—a conclusion that was integral to FWS's no-jeopardy determination. Accordingly, re-initiation of consultation is required. 50 C.F.R. § 402.16(b).

## IV. Conclusion

For the reasons stated above, Rock Creek Alliance, Earthworks, and the Idaho Council of Trout Unlimited respectfully request that FWS immediately withdraw the 2006 BiOp and re-

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[5] FWS's annual research and monitoring reports for the CYE also document human-caused grizzly bear mortality in the area encompassing the Cabinet-Yaak recovery area plus a 16 km buffer, which includes land in Canada. *See, e.g.*, 2013 Monitoring Report at 31. That data likewise show that conflict-reduction measure in the CYE have not achieved a meaningful reduction in human-caused mortality. Sixteen human-caused mortalities occurred in the recovery area plus buffer from 2007-2013. *Id.* This number, which likely underestimates human-caused mortality, constitutes only a slight improvement over the prior eight-year period in which 19 human-caused mortalities occurred. *Id.* And it is unclear whether even this modest reduction can be attributed to the implementation of conflict-reduction strategies, since it coincided with improved huckleberry production that is associated with reduced human-grizzly conflicts. *See id.* at 32. Moreover, the percentage of total grizzly bear deaths caused by humans in the recovery area plus buffer *increased* during the 2007-2013 period to 76%, compared to a human-caused mortality rate of 68% during the prior eight-year period. *Id.* at 31.

initiate consultation with the Forest Service concerning the impacts of the Rock Creek mine on threatened bull trout and grizzly bears, as required by 50 C.F.R. § 402.16. Because development of the mine could begin within a matter of months, the petitioners request prompt action on this petition.

Sincerely,

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EXHIBIT A

# Supplemental Draft Environmental Impact Statement for the Montanore Project

## Volume 1

**Summary**

**Chapter 1: Purpose and Need**

**Chapter 2: Alternatives, Including Proposed Action**

**Chapter 3: Affected Environment and Environmental Consequences**

**Chapter 4: Consultation and Coordination**

**Other Chapters: Index, Acronyms, Glossary, and References**

*Cabinet Mountains* *Photo by M. Holdeman*


**United States Department of Agriculture**
**Forest Service**
**Northern Region**

**Kootenai National Forest**

**Montana Department of Environmental Quality**

would be in the Fisher River and West Fisher Creek watersheds, which provide occupied bull trout habitat. Measures described for Alternative C-R (section 3.6.4.7.1, *Sediment*), except for the modifications along Miller Creek, would minimize effects.

Alternative E-R would follow West Fisher Creek for about 5 miles; two segments of designated bull trout critical habitat are located in the creek (Figure 55). The existing Libby Creek Road (NFS road #231) would be between the creek, and the transmission line and any newly constructed roads. There may be a potential for increased sedimentation during construction and decommissioning activities, but BMPs would prevent or minimize sediment delivery to streams. Bull trout critical habitat maybe adversely affected during these times. Effects of Alternative E-R on the critical habitat downstream of the Libby Creek and Howard Creek confluence would be the same as Alternative D-R (section 3.6.4.8.3, *Threatened, Endangered, or Sensitive Species*). Fisheries mitigation described for Alternative 3 (section 3.6.4.3.1, *Sediment*) would offset these effects.

### 3.6.4.10 Cumulative Effects

Cumulative effects in the analysis area include past and current actions that are likely to continue in the future and reasonably foreseeable actions that could affect aquatic biota. There are ongoing and planned mine reclamation activities. Other activities that could affect the aquatic biota include timber harvesting, land clearing, home construction, road construction, septic field installation, water well drilling, livestock grazing, and stream channel and bank stabilization or restoration projects. These activities can either have adverse or beneficial effects to the aquatic biota.

The groundwater numerical model was used to predict low flow changes to streams due to implementing both the Montanore and Rock Creek Projects. Effects to streamflow would remain the same for Libby, Poorman and Ramsey creeks.

In Rock Creek, cumulative flow reductions would be 0.03 cfs greater at the mouth with operation of the Rock Creek Project. The functioning of the core area population may be adversely affected due to additional reductions in flow at the mouth of Rock Creek, which may exacerbate the intermittency over what currently exists and would exist under the Montanore Project alone. Therefore, access to Rock Creek by migratory fish may be excluded for longer periods of time. Additionally, resident bull trout populations in Rock Creek would have longer periods of time with restricted movement, making them more susceptible to environmental changes. Recovery efforts are continuing with fish passage and habitat restoration activities addressing the main threats to the core area population. If current efforts to recover the adfluvial component under the Avista program are successful, they may negate the potential loss, and the recovery rate of the core area may not be affected (USFWS 2007a).

In the East Fork Bull River, decreased low flow would be 0.03 cfs greater in the East Fork Bull River at the mouth, and 0.08 cfs greater at EFBR-500 at the CMW boundary. The cumulative decrease at EFBR-500 would be a 16 percent reduction in the $7Q_{10}$ flow. Similar effects would occur in the Bull River below the confluence of the East Fork Bull River. When placed into the context of a likely loss of habitat under Montanore alternatives, the cumulative effects would result in additional habitat loss downstream of St. Paul Lake including the bull trout spawning period. It is difficult to determine with certainty whether a risk to bull trout would exist under project implementation because of the lack of data or pertinent scientific information on the relationship of underground mining effects on aquatic species (USFWS 2007a).

**Table 102. Estimated Cumulative Changes during $7Q_2$ and $7Q_{10}$ Flows, Maximum Baseflow Changes during Post-Closure.**

| Variable | Rock Creek RC-2000 | | East Fork Bull River EFBR-500 | |
|---|---|---|---|---|
| | Without Mitigation | With Mitigation | With Mitigation | Without Mitigation |
| Modeled baseflow change (cfs) | -0.68 | -0.19 | -0.47 | -0.48 |
| Estimated $7Q_2$ flow (cfs) | 10.28 | 10.28 | 4.64 | 4.64 |
| **Percent Change in $7Q_2$ Flow** | -7% | -2% | -10% | -10% |
| Estimated $7Q_{10}$ flow (cfs) | 6.63 | 6.63 | 2.96 | 2.96 |
| **Percent Change in $7Q_{10}$ Flow** | -10% | -3% | -16% | -16% |

Groundwater models were used to predict effects from mine dewatering and the pumpback wells. With the data currently available, the model results provide a potential range of dewatering and pumping rates and streamflow impacts. They are the best currently available estimates of impacts and associated uncertainty that can be obtained using groundwater models. Both 3D groundwater flow models would be refined and rerun after data from the Evaluation Phase were incorporated into the models (see Section C.10.4, Evaluation Phase in Appendix C). Following additional data collection and modeling, the predicted impacts on surface water resources in the project area, including simulation of mitigation measures, would likely change and would have greater certainty. See section 3.10.2.3.1 for more discussion of uncertainty.

The 3D model was used to predict cumulative effects on streamflow and Rock Lake. The maximum effects on Rock Creek and the East Fork Bull River would occur after both mines ceased operations (assumed to be operating and closing simultaneously). Cumulative flow reductions would be 0.03 cfs greater in Rock Creek at the mouth and the East Fork Bull River at the mouth, and 0.08 cfs greater at EFBR-500 at the CMW boundary. The cumulative decrease at EFBR-500 would be a 16 percent reduction in the $7Q_{10}$ flow, which may be measurable. The 3D model predicts that streamflow in the Libby Creek watershed, and Rock Lake levels would not be affected by the Rock Creek mine.

At the mouth of Rock Creek, the predicted reductions in low flows may not be measurable in the stream because the creek is often dry during baseflow periods (the flow reduction would be to subsurface flow in the stream alluvium). With mitigation, the cumulative effect on the East Fork Rock Creek and Rock Creek would be the same as discussed under the Montanore alternatives.

As the mine void filled and groundwater levels above the mines and adits reached steady state conditions, the effects on streamflow would decrease. Cumulative effects at steady state conditions were not quantified.

### 3.11.4.10 Regulatory/Forest Plan Consistency

The proposed activities in Alternatives 2, 3, and 4 would be consistent with the KFP for water resources. Because construction, operation, and closure of the mine and transmission line under all alternatives would be in compliance with all applicable water quality standards and permit requirements, any selected mine and transmission line alternatives would be in compliance with the Montana Water Quality Act.

EXHIBIT B

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On Aug 3, 2012, at 7:07 AM, "Carlson, John W -FS" <jwcarlson01@fs.fed.us> wrote:

> Eric
>
> Maybe I should be more clear. The model used to predict the effects for Montanore shows a loss of water. The projection for Rock Creek used in the last decision showed a net gain to surface water. I would call that conflict. Bottom line is the BA for RC and subsequent BO upheld in the 9th circuit court of appeals never looked at a loss of water from either Rock Creek or the Bull River. Sediment was the main concern. Other thing to keep in mind is surface flow in Rock Creek goes to zero most years from just below the confluence of the E & W forks to the mouth so any decrease in RC flows could be significant.
>
> John
>
> ---
>
> **From:** Eric Klepfer [mailto:eric@klepfermining.com]
> **Sent:** Thursday, August 02, 2012 11:42 PM
> **To:** Carlson, John W -FS; Larry_Lockard@fws.gov; 'Ed Kline'
> **Cc:** Tim_Bodurtha@fws.gov; Hagarty, Lynn -FS
> **Subject:** RE: Comments on Draft Aquatic BA for Montanore
>
> Gentlemen, I thought it best to "weigh" in on the model discussion. MMC submitted a model to the agencies several years ago; however, the model that is included in the SEIS was the agency developed "adjustment" to the model. MMC's model is not in "conflict" with Rock Creek. This is the agencies best guess at the hydrogeological assessment of the hydrological conditions which are assumed to be connected with surface waters.
>
> I assume that the RC model, just as MMC had a model will be "adjusted" by the agencies as appropriate to be representative of their specific hydrologic conditions. Larry, it is important to note that MMC has data collected in the lower portion of the decline which indicates that geologic structures intercepted in the Libby Decline that have a surface exposure in the headwaters of the EF Bull River did not contain water or had little water (less than 2 gpm). The depth relationship of the fault plays a major role. Data collected by Noranda and MMC, which supports what Noranda collected, shows the vast majority of water that was encountered in the decline occurs in the first 6,000 feet of the 13,000 foot decline. This water is not associated with "headwater" areas and the lower portion of the decline had little water. Head measurements indicate that water does not enter the fracture system "vertically" from headwater areas but rather much lower in the stream reaches (Libby Creek). This information supports that the model is conservative and very likely over-predicts projected flow impacts.
>
> Also, remember that model values are percentages of groundwater flow

EXHIBIT C

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 67, Room 118
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

November 15, 2011

9043.1
ER 11/917

Mr. Paul Bradford, Forest Supervisor
Kootenai National Forest
31374 U.S. Hwy 2
Libby, MT 59923-3022

Dear Mr. Bradford:

The U.S. Department of Interior (DOI) has reviewed the *Supplemental Draft Environmental Impact Statement for the Montanore Project* (SDEIS), jointly submitted by the Kootenai National Forest (Forest) and the Montana Department of Environmental Quality (MDEQ), and offers the following comments.

Our comments are focused on the impacts of the proposed action on Endangered Species Act (ESA) listed species, including: grizzly bears, Canada lynx, and bull trout. We also reiterate our comments submitted (letter dated May 8, 2009) on the Draft Environmental Impact Statement that remain relevant.

Bull Trout

We appreciate that the SDEIS includes results from modeling groundwater and surface hydrologic effects. Most of our new comments pertain to the documentation of those modeling studies. We recognize that much uncertainty still exists in the analysis of these impacts, but we nonetheless commend the agencies for undertaking such analyses.

- We agree with substituting Alternative 3 (Agency Mitigated Poorman Impoundment Alternative) as the agency preferred alternative in place of Alternative 2. Treating all waste water in a treatment plant instead of by land application is expected to reduce the potential for negative impacts on water resources in general and bull trout in particular in the Libby Creek drainage. However, we still have concerns for effects to bull trout and bull trout critical habitat from rapidly fluctuating stream flows in Libby Creek that will alter the natural hydrologic regime. More detail regarding the effects is needed to adequately assess the impacts to bull trout.

- Substituting the Poorman tailings impoundment site for the site on Little Cherry Creek is expected to reduce direct impacts to perennial surface waters and indirect effects to downstream bull trout and critical habitat.

- Regarding detailed impacts that are newly documented in the SDEIS, our greatest concern is with indirect effects of mining on groundwater drawdown and the reduction in base flows that are predicted to occur in East Fork Bull River and East Fork Rock Creek, the extent of which will be unknown until many years after mining is completed.

  **The East Fork Bull River is the single-most important bull trout spawning and rearing stream in the Lower Clark Fork bull trout core area.** The modeling analysis projects base flows to be reduced by 11 percent at the Cabinet Mountains Wilderness boundary and by 97 percent within the wilderness at Year 52, and to potentially persist for more than 1000 years. When combined with expected climate change impacts of higher stream temperatures, earlier spring run-off, and the increased frequency of rain-on-snow events, such impacts would adversely impact the value of the upper East Fork Bull River for spawning and rearing habitat, including the possibility of serious population reductions or even extirpation of bull trout from the East Fork Bull River. Currently, 80 percent of observed bull trout redds in the East Fork Bull river occur upstream of the wilderness boundary. The potential impacts upon the Lower Clark Fork core area and implications for range-wide recovery of bull trout will need to be carefully evaluated in the Forest Service/Fish and Wildlife Service Section 7 (ESA) analysis.

  The analysis for East Fork Rock Creek is similar to East Fork Bull River, with base flows projected to be reduced by 59 percent at the wilderness boundary and by 100 percent within the wilderness. Although flows in the lower end of this stream (near its confluence with the Clark Fork River) go subsurface for part of the year creating a seasonal barrier to fish passage, it is an important drainage for bull trout recovery in the Clark Fork River basin.

- Our comments of May 8, 2009 regarding adequacy of the fisheries mitigation plan still apply and are reiterated below. We further emphasize that, as described in the SDEIS, significant potential impacts to bull trout and bull trout critical habitat are reasonably expected. Mitigation for direct impacts from the mine operation are not clearly specified as commitments regarding what projects will be implemented. We found no mention of mitigation for the expected groundwater table draw down or reductions in base stream flows and potential related impacts to bull trout populations and critical habitat. We recommend that proposed mitigation commitments be clearly specified in the final EIS.

- In many different areas (e.g., waste rock management, tailings management, mining, water use and management, etc.) the SDEIS specifies final design and monitoring that would occur during the evaluation and operation phases of mining. Sometimes a potential response to non-attainment of standards or indication of the need for additional mitigation is suggested, but the technical feasibility and effectiveness of such responses appears uncertain, at best. In light of specifications and uncertainties contained in *Section 2.5.3.5.2 Final Design Process*, complete ESA consultation on effects to bull trout and bull trout critical habitat may not be

possible until numerous studies mentioned in the SDEIS are completed and the final design approved.

- A statement is made in *Section 3.6.4.3.6 Threatened and Endangered Species* under Effects to Critical Habitat that "reduced flows would affect designated bull trout critical habitat with direct effects to springs, seeps, groundwater sources, and subsurface water connectivity… such that normal reproduction, growth, and survival are **not** inhibited" [emphasis added], citing the Kootenai National Forests *Biological Assessment for Threatened and Endangered Aquatic Species on the Montanore Minerals Corp. Montanore Project*. The biological assessment does not support this statement as written and, in fact, contradicts the statement. This discrepancy should be corrected.

The following comments from our letter of May 8, 2009, also still apply:

- While the DEIS provides a comprehensive analysis of the potential impacts from the proposed action to the aquatic and fisheries resources, it was difficult to get an overall understanding of the how much impact would occur under each alternative and how adverse impacts would be mitigated. We suggest a summary table be provided to display the anticipated primary impacts to bull trout (sediment, habitat loss, water quantity, water quality, temperature, passage, etc.) and the corresponding offsetting mitigation, for each alternative and primary bull trout drainage (i.e., Libby Creek drainage or Bull River drainage).

- The proposed action, regardless of alternative, may have significant adverse effects to bull trout in both the Libby Creek and the Bull River drainages. We encourage the Forest to ensure that all potential impacts to listed species and aquatic resources are adequately addressed through minimization and mitigation. The DEIS describes adverse impacts (e.g., reductions in stream base flows [corresponding to a loss of aquatic habitat and impacts to altered hydrology], direct loss of aquatic habitat [e.g., Little Cherry Creek], reduction in Riparian Habitat Conservation Area function, etc.) without mention of the corresponding mitigation. Finally, mitigation plans should be sufficient to address adverse effects to listed species, as well as the Forest Section 7(a)(1) responsibilities to conserve ESA listed species.

- The fisheries mitigation plans presented in the alternatives section of the DEIS (section 2.4.6.2, section 2.5.7.2, and section 2.6.6.2) are ambiguous in terms of how much mitigation work will actually be completed under the plans. To adequately assess the environmental consequences of the proposed action relative to the reported benefits of the mitigation plan, the final EIS should present the level of mitigation that is expected to be implemented (e.g., number of acres/tons of sediment reduction work, number or miles of habitat restoration projects, fix all identified sediment sources, bring all habitat features up to Riparian Management Objective standards within the action area, etc.).

- The environmental consequences section of the DEIS (Section 3.6.4) suggests that the proposed action may increase water temperatures. Water temperature is already functioning near, or at unacceptable risk in Libby Creek Drainage and stream temperatures may increasingly become a limiting factor for the bull trout local population. We recommend this

issue receive more attention in the analysis section for each alternative and be adequately addressed in the mitigation and monitoring plans for this project.

- The environmental consequences section of the DEIS (Section 3.6.4) suggests that the proposed action may increase the competitive advantage of brook trout in the action area stream systems. Impacts from non-native species are becoming the preeminent threat to bull trout survival and recovery in these Montana stream systems. We recommend you review Dunnigan et al 2007, which provides data on the expansion of the brook trout population relative to bull trout in the Libby Creek drainage. We recommend the analysis section for each alternative address this issue in greater detail and be adequately addressed in the mitigation and monitoring plans for this project. The Avista Utilities Corporation is implementing an innovative and comprehensive non-native suppression project in the East Fork Bull River drainage and a similar approach should be considered for addressing the impacts from the proposed action. The U.S. Fish and Wildlife Service (USFWS) can provide more information on this approach at your request.

- A primary component of the mitigation plan in the Libby Creek drainage appears to be habitat surveys and implementation of in-stream habitat improvement projects. Section 3.6.3.1.1 describes several habitat restoration projects that were implemented in Libby Creek and destroyed in subsequent rain-on-snow events. The DEIS describes a habitat restoration project in the East Fork Bull River that also seems to have been unsuccessful. Preliminary data from the AC (Horn and Tholl 2008) shows that non-native fish appear to be benefitting more than native salmonids from their habitat restoration projects. Data from MTFWP efforts in Libby Creek (Dunnigan et al 2007) could suggest similar conclusions from the Libby Creek restoration projects. The final EIS should consider the adequacy of the proposed mitigation plan and anticipated outcomes in the context of this information. Perhaps a mitigation strategy that includes habitat projects in concert with non-native suppression efforts (e.g., partnering with the existing Avista Utilities Corporation nonnative fish suppression effort) should be considered.

- We suggest more analysis of the potential impacts of increased vehicle use along Libby Creek, what activities and impacts will occur under the road maintenance program (e.g., snow plowing, sanding, blading, road narrowing/widening, etc.), and what the minimization and mitigation plans would include for all road related impacts. Sufficient information should be available on the proposed road closures/obliterations, road use, existing road condition, and culverts, to provide some level of quantitative sediment analysis. Analysis results should be used to determine/justify adequate sediment mitigation levels. The final EIS should include a list and description for any BMPs that are cited as minimization measures for the proposed action.

- The aquatic and fisheries related mitigation and monitoring plans for all alternatives should include an adaptive management commitment whereby if monitoring shows the initial level of project mitigation are insufficient in accomplishing the specified objectives, additional corrective actions would be developed and implemented.

Grizzly bear

The mitigation plan for grizzly bears is an improvement over the DEIS. We appreciate the specificity provided in the SDEIS version. The USFWS will analyze the mitigation plan in detail during the preparation of their biological opinion for grizzly bears.

Most of our May 8, 2009 comments on the DEIS still apply and are reiterated below.

The mine would occur within occupied grizzly bear habitat within the Cabinet-Yaak Ecosystem (CYE). We are concerned that the proposed alternative may adversely affect grizzly bears in a manner that could rise to the level of "take" (DEIS, page 880). We recognize that this conclusion is based on a draft proposal and could change when the project details are finalized.

The grizzly bear population in the Cabinet-Yaak Ecosystem (CYE) is one of six populations essential to the conservation of the grizzly bear in the United States. Its geographic location is key for providing connectivity between other grizzly bear populations and Canada. As you are aware, the grizzly population in the CYE is threatened by small population size and increasing human demands on its habitat (FR 64:26725-26733). An estimated 45 bears occurred within the CYE recovery zone in 2007 (*Kasworm et al, 2008*). The population trend has been variable during the history of grizzly bear monitoring in the CYE. Earlier grizzly bear population estimates (between 1999 and 2006) indicated a high probability of decline (*Kasworm et al. 1999 through 2008*) due to relatively high levels of human-caused mortality. However, this trend has moderated somewhat in recent years and since 2006, has shown some slight improvement. The CYE population of bears is vulnerable to shocks however, just because of the low overall numbers of bears that exist there, causing small perturbations to have large impacts.

The previous comments pertained to the population status and trend of the CYE grizzly bear population. The subsequent comments concerning grizzly bears focus on the content of the DEIS and the preliminary mitigation package.

- The opening sentence of the grizzly bear section (DEIS 3.24.5.3.1) incorporates a body of information by reference. We caution that additional scientific information is available to inform your decision (and in fact the DEIS goes on to reference some of that material). Focusing on specific conclusions or important facts from the reference material is more useful than blanket citations that do not focus on specific issues.

- With regards to the term "cumulative effects," we recommend the Forest and the USFWS work together to reconcile the differences in the treatment of the term under the National Environmental Protection Act versus the Endangered Species Act as it pertains to the analysis of the effects of this project.

- In general, the grizzly bear analysis focuses on the traditional methods of examining Open Motorized Route Density (OMRD), Total Motorized Route Density (TMRD), Core, Habitat Effectiveness, and other measures. The USFWS and the Forest have a long history of relying on these measures. However, the typical project examined using these measures is a timber sale and associated road system. The timber harvest portion of such a project usually has

temporary effects on grizzly bears, with the negative effects to grizzly bears diminishing within a decade. Road effects can, of course, be more chronic. The Montanore project would last for decades, affecting two to three generations of grizzly bears, and could result in the permanent adverse conversion (e.g., from forest to tailings impoundments) of significant quantities of habitat (varies with the alternatives analyzed in the SDEIS) currently used by grizzly bears. Therefore, we recommend a more comprehensive examination of the underlying habitat effects.

- Specifically, rather than reporting only the raw percentages of BMUs affected by OMRD, TMRD, etc., it would be useful to understand how much seasonal habitat is affected by baseline conditions; how this would change under the alternatives; and what the implications are in terms of landscape-level effects among BMUs. We recommend that the amount of spring range that has been compromised by baseline conditions be quantified, and the additional amount, if any, that would be affected by the proposed action. We also recommend an analysis of the impacts to other seasonally important habitats and important areas for movement or linkage. An analysis that examines the specific habitat effects will be useful in disclosing the baseline conditions and the direct, indirect, and cumulative effects associated with the project.

Canada lynx

The Montanore Mine project may result in the permanent conversion of suitable Canada lynx habitat to non-suitable. We recommend the Forest and the USFWS work together during interagency consultation to address the habitat changes that would occur and how those changes affect the status and availability of suitable lynx habitat in the affected Lynx Analysis Units. The mitigation plan for the permanent conversion of suitable lynx habitat appears to adequately address the habitat ratios required by the Northern Rockies Lynx Management Direction in the affected area.

We appreciate the opportunity to review and comment on this SDEIS. In addition to your customary distribution, please send both an electronic and hard copy of the final EIS and signed Record of Decision to the USFWS office in Helena, MT. They look forward to working with the Forest through the ESA consultation process once a final alternative has been selected. If you have any questions, please contact Tim Bodurtha (406) 758-6882 or Anne Vandehey (406) 449-5225, ext. 212.

Sincerely,

Robert F. Stewart

Robert F. Stewart
Regional Environmental Officer

cc: Lynn Hagarty

EXHIBIT D

# United States Department of the Interior
## Fish and Wildlife Service

Creston Fish and Wildlife Center
780 Creston Hatchery Road
Kalispell, MT 59901
(406) 758-6882

March 20, 2014

Mr. Tim Swant
Clark Fork License Manager
PO Box 1469
Noxon, Montana 59853

RE: Comments and Recommendations on draft reports, FERC Project No. 2058

Dear Mr. Swant:

As requested, these comments and recommendations pertain to the U.S. Fish and Wildlife Service's (Service) review of four draft reports, the first three of which are contained within the 2013 Annual Report: 1) Threatened and Endangered Species Plan (T & E Plan) and Annual Report; 2) 2013 Annual Report on Implementation of PM & E Measures for Avista's Clark Fork Project (FERC Project No. 2058); 3) Fishway Plan and Annual Report (Fishway Plan), and 4) in a separate document; the 2014 Annual Implementation Plans (AIP). All were approved by the Management Committee (MC) at their March 11, 2014, meeting. The latter is included because the T & E Plan and Fishway Plan call for review and FERC approval of proposed actions (2014 Implementation Plans) to satisfy Avista compliance requirements for License Articles 432 and 433.

In overview, the Service has two major concerns, that will be discussed in more detail below, with the activities conducted in 2013 and planned for 2014 (and beyond) reported by Avista in the subject reports. First was the physical "taking" of adult bull trout in 2013 by Avista (and failure to report details of the "takings" to FERC in the Annual Reports). Secondly, is the delay in construction of permanent upstream fish passage facilities at the dams and in construction of permanent downstream fish passage facilities in reservoir tributary streams. Regarding the taking of bull trout, the Service collaborated with other Settlement Agreement signatories to reach a mutually agreeable resolution for bull trout transport to Montana for 2013. However, the taking of bull trout (failure to transport captured adult bull trout) in 2013 represented a potential non-compliance situation with FERC license conditions and Terms and Conditions of the Service's Biological Opinion, Incidental Take Statement. The Service notes that in contrast to the 2013 take incident, Avista reported that in 2014 it plans to transport bull trout captured downstream of Cabinet Gorge Dam to upstream release sites as indicated by genetic

assignments. In the future (2014 and beyond), the Service will not accept the taking of bull trout in this manner or for other related activities. Regarding delays in fishway construction, in 1999 the Service signed the Clark Fork Settlement Agreement (SA) in anticipation that development of safe, timely and effective fish passage facilities would be forthcoming in a reasonable amount of time. At this point, 1/3 of Avista's FERC License period has gone by (15 years of the 45 year license term) and construction of an upstream fishway has not been initiated (as reported by Avista). Based on development time lines of other fishways on Clark Fork River dams, the Service feels this has been more than a reasonable amount of time to develop and construct fishways at the Avista dams. The Service reserved (in the FERC License and SA) authority pursuant to § 18 of the Federal Power Act (FERC License, Appendix C) to prescribe construction of fishways. In light of continued delays in construction reported in the subject Plans and Annual Reports by Avista, the Service anticipates it will be necessary to initiate this alternative process in conjunction with the SA process.

**1)The Service recommends that Avista notify FERC that several adult bull trout were captured but not transported upstream of Cabinet Gorge Dam in 2013. Technically, this resulted in a non-compliance situation with FERC license and ESA conditions for minimizing take of bull trout.**

In this case, take constituted significant disruption of normal breeding behavior patterns, that is, failure to transport the fish upstream of the dam prevented the fish from continuing upstream spawning migrations. The following information was omitted from the T&E Species Plan and Annual Report, where it should have been reported, on page 8-11, under the topic: Fish Transport. Three adult bull trout (552 mm, 497 mm, and 696 mm in length) genetically assigned to Montana tributaries Rock Creek, East Fork Bull River, and Meadow Creek, respectively, were captured in the Lower Clark Fork River in Idaho between 4/18/13 and 5/9/13. These fish were intentionally released back into the river and not transported to these Montana streams by Avista due to an impasse with the State of Montana over fish import permitting. The largest of these Montana–bound fish was a female previously captured outmigrating from Prospect Creek in Montana on 9/8/11 (the fish originated in Montana and after migrating downstream past two Avista dams was attempting to return upstream when captured by Avista staff downstream of Cabinet Gorge dam). None of the three fish captured and released without being transported were subsequently recaptured or transported. Failure to implement upstream transport of these fish represents a situation of non-compliance with conditions of the FERC License (Appendix D) and Term and Condition 1d of the 1999 Service's Biological Opinion, Incidental Take Statement. Non-compliance with Terms and Conditions intended to implement the Reasonable and Prudent Measures, is a prohibited taking of bull trout, and if the situation is repeated in the future could result in FERC losing its "exemption" because of failure to retain oversight to ensure compliance with these terms and conditions. In that case, the protective coverage of section 7(o)(2) of the ESA against taking of a threatened species may lapse.

**2) The Service recommends that Avista notify FERC that an inability of the SA process to approve steps necessary to construct a fishway at Cabinet Gorge Dam**

**may result in FERC's and the Licensee's failing to meet their responsibilities under the Endangered Species Act. The Service recommends that Avista report this issue in Section 10 of the 2013 Annual Report to FERC by Avista, under *Items Requiring FERC Action*.**

The previous year's (2013) Annual Report on Implementation of PM &E Measures for Avista's Clark Fork Project (FERC Project No. 2058) described actions that were implemented by Avista in 2012 (FERC License Article 402). These actions were described on page 6-51, stating: "The current schedule calls for completion of the fishway design and commencement of the FERC license amendment and permitting process in early 2013." In the 2013 Annual Report on Implementation of PM&E Measures for Avista's Clark Fork Project (page 6-37), approved by the MC on March 11, 2014, Avista minimizes progress by simply stating: "Initiate construction permitting and required ESA consultation required for Cabinet Gorge Dam permanent production fishway", with no scheduled dates for progress or completion implicit in the revised statement. Despite acknowledging over a year ago that: "Final designs for Cabinet Gorge Dam permanent production fishway and fish holding facilities are now scheduled to be completed (were completed) by February 28, 2013" (see FERC Order, issued October 16, 2013, item 6). Avista also filed with FERC (April 9, 2013) a revised construction commencement date of May 2014 (see FERC Order, issued October 16, 2013, item 10). Further, Avista stated at the March 11, 2014 MC Meeting that failure to reach consensus on this issue by June, 2014 would further delay construction of the Fishway to 2016 or beyond. This implies continued delay in construction of the Cabinet Gorge Dam Fishway and the Noxon Rapids Dam Fishway. Based on the conflicting statements about dates of construction commencement in Avista's 2014 submittals to FERC, the Service believes that construction scheduling is not imminent.

Avista has described the current impasse resulting in inaction toward fishway construction in pages 8-8 through 8-11 of the Fishway Plan in the 2013 draft annual report. The Service maintains that Avista has incorrectly taken the position that (page 8-10): ".....the pathogen/import permit issue needs to be resolved prior to construction of the CGFPF. Avista needs assurance that if built the CGFPF will be used for its intended purpose through the term of Avista's FERC License." Avista's argument is that it cannot comply with FERC license and ESA conditions to conserve bull trout or minimize take of bull trout because of a state permitting issue. FERC has previously ruled (FERC Order dated July 21, 2011 regarding transport of bull trout from Cooper Gulch) that ESA Reasonable and Prudent Measures and associated Terms and Conditions must be complied with by the Licensee despite MC (SA process) interpretation of state regulations to the contrary.

Failure by the MC (SA process) to approve fishway construction is also in direct conflict with its own approved Five Year Plan (2011-2015), approved by the MC in March, 2010 (and subsequently approved by FERC) and appended to the NSRP by the MC at their March, 2012 meeting (see the T&E Species Plan and Annual Report, page 8-7) which calls for: 1) beginning in 2014, utilize a new fish capturing facility at Cabinet Gorge Dam to capture adult bull trout for transport to Montana, and 2) beginning in 2015, utilize

a new fish capturing facility at Noxon Rapids Dam to capture adult bull trout for transport and release in Noxon Reservoir tributaries.

The Service has determined that further inaction by the MC (SA process) may result in FERC's and the Licensee's failure to meet their responsibilities under the "Reasonable and Prudent Measure" No. 1, (FERC License, pp 12 and Appendix D, and Article 406) intended to minimize incidental take of the bull trout, a threatened species under the ESA). Non-compliance with Terms and Conditions of the 1999 Service's Biological Opinion Incidental Take Statement and FERC License (Appendix D), intended to implement the Reasonable and Prudent Measures, is a prohibited taking of bull trout, and may result in FERC losing its "exemption" because it failed to retain oversight to ensure compliance with these terms and conditions. Therefore, the protective coverage of section 7(o)(2) of the ESA against taking of a threatened species may lapse.

In addition to the Service concluding imminent construction of fishways is necessary in order to minimize take of adult bull trout, it is also necessary for bull trout conservation and recovery to expedite the safe, timely and efficient capture and upstream transport of adult bull trout from the base of Cabinet Gorge Dam to waters to which these fish are genetically assigned (streams of natal origin) in Montana. The Service's approach to bull trout recovery is consistent with the goal of Appendix C of the Draft 2014 Implementation Plan which is "to mitigate the continuing effects of the project as obstructions to fish passage, and to achieve the goal of increasing the long term population viability of native salmonids in the Lake Pend Oreille – lower Clark Fork River system" (License Article 406). Under Section 7 (a)(1) of ESA, in addition to minimizing the take of bull trout by their actions, Federal agencies (FERC) have a responsibility to use their authorities to carry out programs for the conservation of threatened species like bull trout and their designated critical habitat. The goal of the Bull Trout Draft Recovery Plan (recovery = conservation) is to describe actions needed to achieve recovery of bull trout, that is, to ensure the long-term persistence of self-sustaining, complex interacting groups of bull trout distributed across the species' native range. Because isolation and habitat fragmentation from migratory barriers (such as dams and reservoirs) have negatively affected bull trout in a variety of ways, including reducing reproductive capability by eliminating the larger, more fecund migratory form from many local populations, the Service has concluded that restoring connectivity and restoring the frequency of occurrence of the migratory form will be an important factor in providing for the recovery of bull trout.

Related to the delay in construction of upstream fishways, review of the 2013 Annual Report and 2014 Annual Implementation Plans indicates that little substantive progress has been made or is planned for development of additional downstream fishways in tributary streams to the Avista reservoirs. This apparent delay in progress in downstream fishway development is also of concern to the Service. The Service reserved authority pursuant to § 18 of the Federal Power Act (FERC License, Appendix C) to prescribe construction, operation, and maintenance of fishways. In light of continued delays in construction of upstream and downstream fishways reported in the subject Plans and

Annual Reports by Avista, the Service is evaluating the administrative processes needed to initiate this more timely alternative process in conjunction with the SA process.

In conclusion, the Service requests copies of Avista's response to these recommendations upon their delivery to FERC (April 15) and we request copies of other Management Committee representative comments and recommendations on these reports, and Avista's response to them upon their delivery to FERC (April 15).

Thank you for the opportunity to comment on the draft reports and for your efforts to conserve our nation's fish and wildlife resources.

Sincerely,

Tim Bodurtha

Tim Bodurtha
U.S. Fish and Wildlife Service
Management Committee Representative

Copy to: FERC, Washington D.C. (Hydropower Licensing and Compliance)
FWS (Attn: Jodi Bush, Helena, MT)
FWS (Attn: Dave Carlson, Denver, CO)

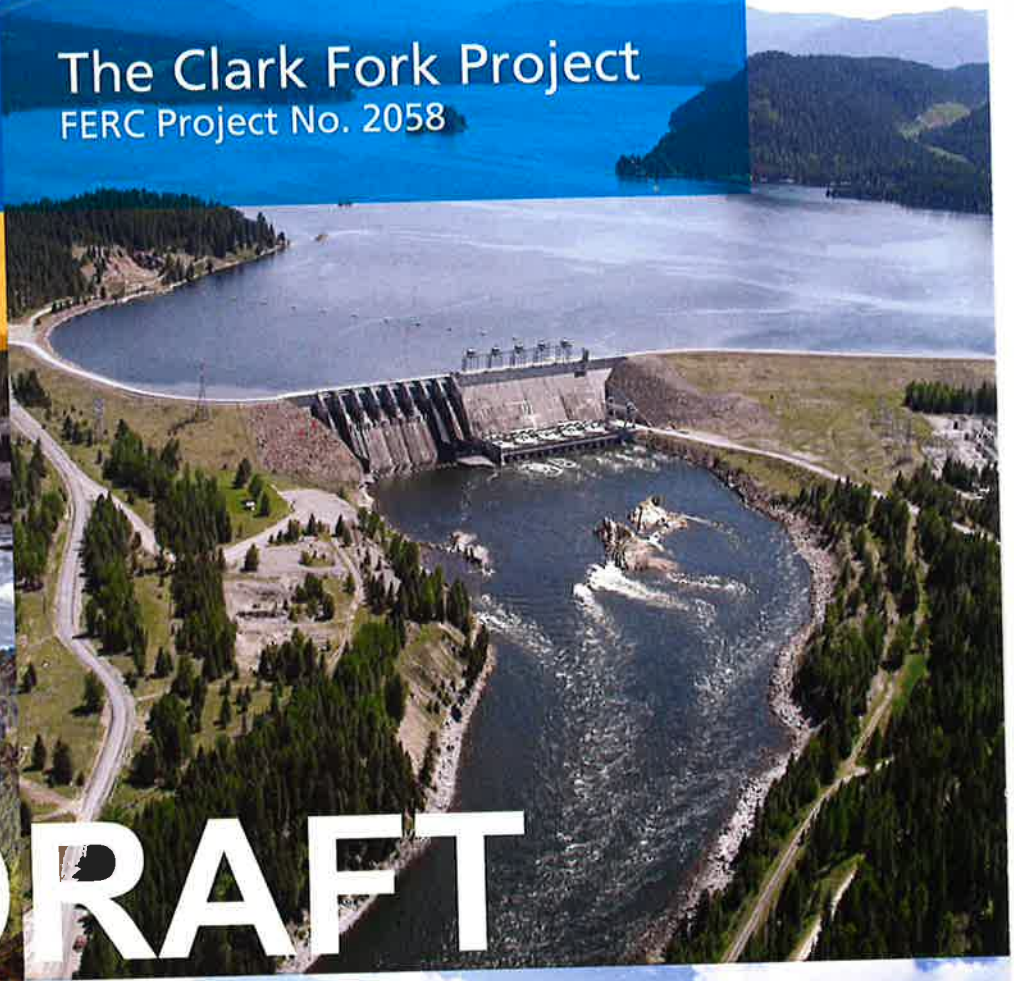
EXHIBIT E

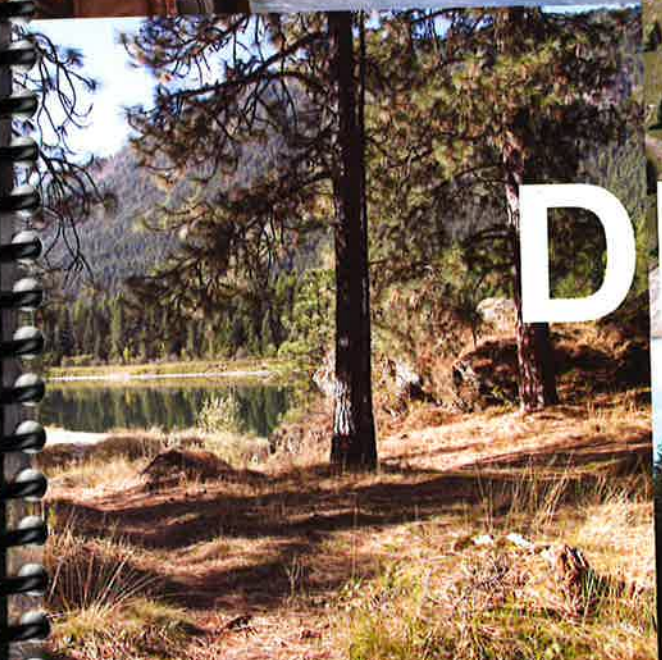
AVISTA

# The Clark Fork Project

FERC Project No. 2058

## 2014 Annual Report





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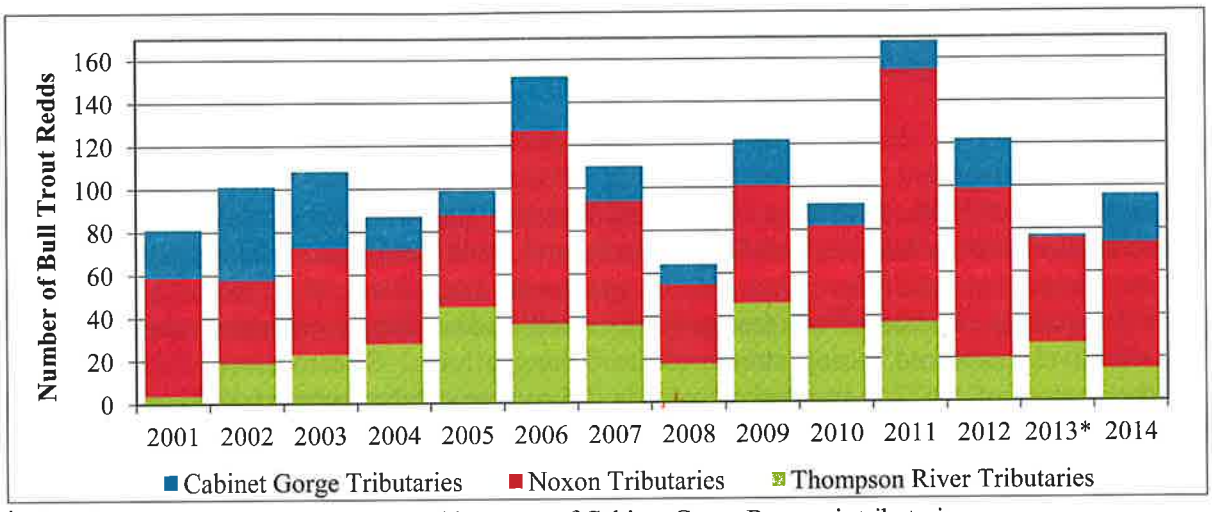


*High streamflow precluded accurate redd surveys of Cabinet Gorge Reservoir tributaries.

**Figure 4-C.** Total number of bull trout redds observed in Montana tributaries from 2001-2014.

Brown trout redd surveys were conducted on many of these same tributaries in early-December. The total number of observed brown trout redds in 2014 was 51; however, this total does not include the Thompson River, which was not surveyed. Brown trout redd numbers for those surveyed tributaries were all lower than the long-term average. This trend was most pronounced in the EFBR, which averaged over 25 redds from 2001 through 2013; however, only one brown trout redd was observed in 2014. Severe cold weather with extensive ice formation in early-November may have limited brown trout access and therefore redd totals. There were no instances of superimposition of brown trout redds on existing bull trout redds observed in 2014. An annual bull and brown trout redd survey report for 2014 data will be finalized in early 2015. The 2013 Annual Bull and Brown Trout Redd Survey Report was finalized in early 2014.

### 6.3.3.5 Fish Capturing Facilities Operation, Development and Testing

#### *Cabinet Gorge HED Permanent Fishway*

At the beginning of 2014, there were still several issues that needed to be resolved associated with the proposed construction and operation of a Cabinet Gorge HED Permanent Fishway (Fishway). Through a variety of e-mail, phone and conference calls during the first quarter of 2014, Avista and the USFWS continued discussions as to the funding for operations of the Fishway. At the March 2014 Management Committee (MC) meeting, Avista reported that they were very close to reaching agreement on this issue. However, MC members decided to work toward resolving the fish pathogen concerns first. Representatives from MFWP, Idaho Department of Fish and Game (IDFG), USFWS, Trout Unlimited (TU), and Avista agreed to hold three separate meetings to review draft changes to Montana Code Annotated (MCA) § 87-3-221 [Montana Administrative Rule (ARM)], to reach agreement on the pathogen/policy issue. The other unresolved issues include: Appendix C funding for annual operations of the

Fishway, overall approval language, Cabinet Gorge Dam minimum flow, timing of Noxon Rapids HED Fishway construction, and assurances that Avista's construction and willingness to operate the facility satisfies its mitigation obligations with regard to upstream migration blockage.

Representatives from MFWP, IDFG, USFWS, TU, and Avista met on May 2 to discuss potential revisions to the Montana ARM Rule including: the use of surrogate species, periodicity of pathogen sampling, categorizing pathogens by risk, and MFWP decision processes concerning import permits. The group also discussed procedures to address investigative pathogen sampling within the Clark Fork River Basin, how passage could be reauthorized following pathogen detection, and the potential reclassification of pathogens.

The group again met on May 14, to discuss pathogen sampling for bull and westslope cutthroat trout. In particular, the parties discussed who can collect pathogen samples, potential procedures following a Class A pathogen detection, potential management flexibility associated with the detection of Class B pathogens, and the future involvement of this now *ad-hoc* technical committee.

The third and final meeting of the group was held on June 11. The group discussed draft language pertaining to sampling protocols, for both bull and westslope cutthroat trout pathogen evaluation techniques, protocols associated with the detection of both class A and B pathogens, the use of surrogate species, and the cessation and/or re-initiation of upstream fish passage based upon pathogen results.

On June 12, MFWP submitted the revised ARM Rule to the Secretary of State and posted those revisions for public comment on the MFWP website. The revisions were based on the groups' previous discussions, discussions among their attorneys, and give MFWP the flexibility to negotiate creative solutions to pathogen concerns as part of the parties' ongoing Fishway discussions. Avista submitted comments to MFWP in support of the ARM Rule revisions on July 8. On August 22, the Secretary of State adopted the revised ARM Rule.

As per MC direction and concurrently with revising the ARM Rule, group representatives and their attorneys also worked on drafting a Clark Fork Settlement Agreement amendment (settlement amendment). This settlement amendment would memorialize the groups' agreement as to the outstanding issues related to Fishway construction and operation, including Cabinet Gorge Dam's minimum flow, funding for operations of the Fishway, timing of Noxon Fishway construction, long-term resolution of the pathogen and Montana import permit issue, assurances regarding the satisfaction of Avista's mitigation obligations, and overall approval language for Fishway construction and design. The settlement amendment would form the basis for Avista's FERC license amendment application for Fishway construction.

After three months of work by the staff and attorneys for MFWP, IDFG, USFWS, and Avista on several drafts of the settlement amendment language, a comprehensive draft was distributed by email for review on August 11. On August 14, attorneys for MFWP, IDFG, and Avista participated in a conference call to discuss and edit the draft settlement

amendment language. The USFWS legal counsel was invited to participate, but indicated that the USFWS was not prepared to comment yet and the other attorneys should carry on. This call resolved outstanding settlement amendment language issues, including the funding language and mitigation assurances, among Avista, MFWP, and IDFG. The final draft settlement amendment was submitted to the USFWS on August 14.

At the September 29 MC meeting, Avista provided an update on the unresolved Cabinet Gorge Dam Fishway issues and the August 14, 2014 nine-page draft settlement amendment language. At the MC meeting, the USFWS representative stated the draft settlement amendment language was under internal review by regional office management and legal counsel. The USFWS representative was unable to provide an anticipated timeline for completion of the internal review process at that time, but offered to keep the parties apprised on progress. Per requests at the MC meeting, the draft settlement amendment was provided to the USFS, and the Kalispel and Confederated Salish and Kootenai tribes.

As of December 31, the parties were still awaiting USFWS's responsive comments and edits. Once the USFWS provides these comments, Avista anticipates that the USFWS, Avista, MFWP, IDFG, and TU representatives and their respective legal counsel will reconvene to review and incorporate any agreed upon changes or negotiate further to reach agreement. The revised draft settlement amendment will then be forwarded to all MC Representatives for their review and a special meeting will be held to review and approve the settlement amendment.

In the meantime, Avista continued to implement actions in support of the proposed Cabinet Fishway project including installation of a power supply and a telecommunications fiber line and installation of a railroad crossing with flashing lights and mechanical arms to safely accommodate increased site traffic. Approximately one-quarter mile of trench and conduit were installed in August 2013 on the north side of the dam for the power and fiber lines. In the fall 2014, most of the remainder of this work was completed from the terminus of the trench on the north side of the Cabinet Gorge Dam forebay. The power and fiber lines were routed across the forebay overhead to the south side of the forebay. From there the lines continue in two directions, one heading east to serve the new railroad crossing and one heading west to serve the future Fishway site. The railroad crossing was installed and made operable in 2014, by Montana Rail Link.

An amended easement application in association with the Fishway project was submitted to Idaho Department of Lands in 2013 and an amended easement was received in May 2014. In November 2012, Avista requested that FERC designate Avista as the non-federal representative to conduct consultation under Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act (ESA). FERC issued that designation in July 2014.

Avista staff continued to refine existing documentation pertaining to the FERC license amendment application and draft NEPA analysis for the project. Completion of these documents is dependent on the parties' agreement on various outstanding issues related to the proposed Fishway, as detailed above. Once agreement is reached, Avista can complete these

documents and submit them to FERC, which will facilitate initiation of the Section 7 ESA consultation with the USFWS, and other state and federal reviews and approvals necessary to construct and operate the Fishway.

### *Cabinet Gorge Fish Handling and Holding Facility*

The Cabinet Gorge Fish Handling and Holding Facility (CGFHF) construction was taken to the 90 percent completion level at the end of 2014, and final construction is scheduled to be completed in early 2015. The CGFHF consists of receiving, sorting and holding tanks, and associated piping housed under a covered structure at the existing Cabinet Gorge Fish Hatchery. There are existing holding pool raceways which were enhanced to incorporate the design features described above. Other features include a new river water supply pipe for auxiliary water needs, a fish return pipe to return all fish, other than bull trout (for now), back to the river, additional tanks for temporary and long-term fish holding and tempering of water, associated piping to supply these tanks, a fish sorting table, an operation controls system, an electrical system including a backup generator, and an extension of the existing steel roof. A new access road was constructed in 2014 to accommodate increased traffic to the site without impacting IDFG and to avoid any possible spread of disease to Cabinet Gorge Fish Hatchery during fish transport. The fish return pipe and river water supply pipe extend into the lower Clark Fork River. To accommodate design of these pipes, survey and bathymetry work was completed during the spring and summer of 2013. Routing of these pipes required some in-water work that required permitting from the Army Corps of Engineers, Idaho Department of Water Resources, Idaho Department of Lands, NHPA Section 106 consultation with Idaho SHPO, and Bonner County Planning Department. The process of acquiring these permits was initiated in February and the permits were all approved and in place by August 2013.

Due to the difficulty with the construction approach presented in the initial design, no bids were received for the in-water work referenced above. Therefore, the decision was made to move forward and award the project for all work except the river water supply and the fish return pipes in the fall of 2013. The contract was in place in early-October 2013 and the contractor started work later in the month. Concurrently, work continued with the river water supply and the fish return pipes re-design between the contractor, the design consultant and Avista. The redesign work was completed in early 2014. The in-water work was bid, evaluated, accepted, and the contract was in place in March of 2014. The in-water permits were subsequently amended and re-issued and the work commenced. The fish return piping work consisted of burying a pipe from the CGFHF to the Clark Fork River, where it would transition into a half-pipe embedded in concrete, anchored to the river bank and river bottom, and armored with rip rap. Work on the fish return piping commenced in April 2014, the half-pipe in-water portion was completed in September and the remaining buried pipe back to the CGFHF was completed in October. Work on the river water supply pipe began in August and was finished in November. The river water supply system consists of an intake with a screen, a pump system, and a pipe housed inside a steel casing from the Clark Fork River buried into the river bank back to the river access road to a concrete valve platform. At the valve platform, the casing ends and the pipe continues underground in a trench back up to the CGFHF.

*Cabinet Gorge Fish Handling and Holding Facility:*

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*Noxon Rapids HED Permanent Fishway:*

The permanent production fishway and fish handling facility project to be located at the Noxon Rapids Dam is currently at the completed preliminary engineering design phase at the 30 percent Basis of Design Report and accompanying drawing level. In August 2013,

representatives from MFWP, USFWS, IDFG, and Avista met to discuss the ongoing unresolved issues associated with the Cabinet Gorge Dam Fishway. All parties agreed to postponing further work on Noxon Rapids Dam Fishway indefinitely until such time that real-time pathogen testing techniques are available or pathogens are no longer an issue in the drainage.

As part of drafting the settlement amendment, discussed above, group representatives and their attorneys also worked on memorializing this August 2014 agreement. Clarity on when a fishway at Noxon Rapids Dam would be constructed is critical to provide both financial and biological certainty to the parties. The draft settlement amendment currently under review by USFWS includes language developed by Avista, IDFG, and MFWP based on previous discussions and agreements among those parties and USFWS. That language states that construction of a fishway at Noxon Rapids Dam will be considered no sooner than five years after commencement of operation of the Cabinet Fishway and on the condition that each bull and westslope cutthroat trout captured below Noxon Rapids Dam can be safely passed upstream without posing a significant pathogen risk to the fisheries of the State of Montana. The draft settlement amendment also states that the MC will review the status of Noxon upstream fish passage and whether the condition in the preceding sentence has been met at five-year intervals. Therefore, no new work associated with the Noxon Fishway and fish handling facility project occurred in 2014.

*Adult Bull Trout Collections:*

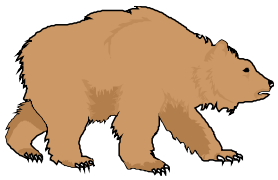
It should be noted that all adult bull trout capture efforts in the lower Clark Fork River including electrofishing, hook-and-line, a weir trap in lower Twin Creek, and continued use of the Cabinet Gorge Fish Hatchery Ladder were included in this program in 2014. Disposition of the adult bull trout captured in the lower Clark Fork River and Twin Creek is presented in Section 6.3.3.1 of this report.

From April through October, a total of 75 unique (not including within year recaptures) adult bull trout were captured downstream of Cabinet Gorge Dam; 41 were captured by electrofishing, 2 were captured by hook-and-line, 31 were captured in the Cabinet Gorge Fish Hatchery Ladder, and 1 was captured in the Twin Creek weir trap. Based on genetic assignment or juvenile capture history, 63 of these adult bull trout were transported to Montana to either: Cabinet Gorge Reservoir or its tributaries (25), Noxon Reservoir or its tributaries (26), or upstream of Thompson Falls Dam (12).

Night electrofishing efforts were conducted on 52 occasions from April 15 through August 31 and resulted in the capture of over 900 fish, comprised of 12 species. There were a total of 41 adult bull trout captured (not including two sub-adult bull trout) with the shortest 451 mm and the longest 762 mm in total length.

Hook-and-line sampling efforts targeting bull trout were generally less than two-hours in duration and were conducted over the course of 36 days from April 20 through September 26. These efforts resulted in the capture of 79 fish, including two adult bull trout (523 mm and 645 mm in total length).

EXHIBIT F



# Selkirk/Cabinet-Yaak Subcommittee

## Interagency Grizzly Bear Committee

**S/C-Y CHAIR**
**Randy Hojem**
Lolo National Forest

**S/C-Y VICE-CHAIR**
Mary Farnsworth
Idaho Panhandle NFs

**S/C-Y MEMBERS**
**Highlighted=present**
Eric Besaw (Pat Seymour)
Idaho Dept. of Lands

Jodi Bush
US Fish & Wildlife Service
Montana Field Office

Aaron Rasmussen
Bureau of Land Mgmt.

Ben Conard
US Fish & Wildlife Service
Northern Idaho Field Office

Chip Corsi
State of Idaho

Dan Dinning
County Commissioners

Garth Mowat
BC Parks & Environment

Steve Pozzanghera
WA Dept. of Fish & Wildlife

Chris Savage
Kootenai National Forest

Laura Jo West
Colville National Forest

Jim Williams
Montana Fish, Wildlife & Parks

**I&E TASKFORCE CHAIR**
Kim Annis
Montana Fish, Wildlife & Parks

John Gubel
Kootenai National Forest

**SCIENCE ADVISORS**
Wayne Kasworm
US Fish & Wildlife Service

Wayne Wakkinen
Idaho Dept. of Fish & Game

**AGENDA**
**Kootenai National Wildlife Refuge**
**Bonners Ferry, ID**
**9:00 am (PDT), 10:00 am (MDT) May 13, 2014**

**9:00- 9:15**
*Welcome/Introductions* *Randy Hojem*
Notes- Randy H. introduces purpose of SCY subcommittee, introductions around the room. Public involvement welcome throughout meeting.

**9:15-10:15**
*Research Update – Both Ecosystems* *Wayne Kasworm/Wayne Wakkinen*
Notes- Wakkinen (ID), New job as Regional Wildlife Manager (IDFG) in CDA. Will still be working on grizzly bears, but covering many more responsibilities. His research position will likely not be refilled. Some duties will go to Wayne K. Field activities in Selkirks, trapping (USFWS crew), Some trapping will be done in Canada. IDFG has a wildlife tech that will run remote cameras and DNA corrals. Document presence of bears, detection of recovery criteria (females w/ cubs etc), info on bear distribution in and out of RZ. Camera stuff is primary and DNA is ancillary and will run all season. Bear "Ethel" 18 yr old female was up near McGee airstrip fall 2013, N of interstate, moved into St Joe Drainage, May 2014, S and west of St Regis MT in Gold Creek Drainage, Idaho – Don't know if she has cubs.

Kasworm – see written research update in files. Wayne discussed bear that traveled back and forth from Cabinets and Waterton Park. Questions about where collar dropped, and why not move more bears. Why tell about travels of one bear. Interesting biologically (mgmt. implications?), also want to see if bears stay in Cabinets after release. That bear has not reproduced yet. Wayne explained rationale for augmentation program. Large proportion of bears in Cabinets are related to an augmentation bear from the 1990s. Have been moving some males as well for genetic diversity. Questions to Wayne: *how Wayne's pop trend data relates to Kendall's data, and what factors are changing during time periods where bears are increasing and decreasing. Concern over the fact that population goals are changing over time and that population is not increasing and forest is still closed because of bears.* Population is currently stable according to best data. Wayne strongly supports reducing human caused mortality as a good potential solution to increasing the population. *Have bears been augmented into the Yaak?* Some earlier bears with problems, but none recently. Releases in Cabinets because there has been a greater need for bears. Plenty of dispersal after release. *Question about planting huckleberries or other berries.*

**10:15-10:30** **Break**

**10:30-11:30**

*Information and Education update & Bear Specialists* *Kim Annis*

Notes- Kim Annis (MT) – Reduce mortality is the main goal of her position. No conflicts during 2013. 8th year here, she has had 7 conflict bears and moved 4 bears. 4 conflict bears are now dead. Lots of black bear conflicts (1-2 bear/$mi^2$). Reducing open garbage transfer sites. Loaner garbage cans. Electric fencing.

Brian Johnson (ID) – Contacts about 2000 people per year. Emphasizing a patrol effort during late May bear season because that's where many Grizzly bears can be killed. Funding stable currently for Brian's work.

Colleen Matt (Wildlife Management Institute) – IGBC budget cuts expected in 2015. Plan for Information, Education, and Outreach (I,E&O) from the subcommittee a few years ago set some priorities. IGBC should be helping with the places we need help and can't fund ourselves. 2 grants funded by IGBC each year recently have been ID FG bear work (B. Johnson) and Eureka FS Bear Ranger. Bear spray brochure on IGBC website can be downloaded and printed for free. Bear spray video also available. What are the 3 most important I,E&O things to do that would reduce conflicts? Questions/comments to Colleen: *Can we afford grizzly recovery? Public is on the verge of revolt and agencies need to start listening – we can't afford this work. Question about where educational efforts are to educate adults about ESA?* Randy will write letter to IGBC about I+E needs in SCY area.

**11:30-11:45**

*Cabinet-Yaak DNA study update* *Tabitha Graves*

Notes- Final report to coauthors for review. Submitted to MTFWP later this spring. Kate reported to IGBC, KVRI. FOIA request about DNA study, Kate's powerpoint and population study was sent. A Notice of Intent to file a lawsuit over uplisting (from threatened to endangered) has been received by USFWS. Question over best science, *should we look at a Selkirk DNA study?*

**11:45-12:00**

*Update on recovery and delisting in NCDE and Yellowstone* *Wayne Kasworm*

Notes- Conservation strategy underway and draft is out for comment. Discussion about genetic connectivity among recovery zones. Delisting CYE as part of NCDE discussed by Randy H. DPS or not? Randy is expecting some level of revision of recovery plan to begin in the next few years. Discussion – IDFG want to join the 2 ecosystems (consider delisting S-CY bears concurrently with NCDE & YE. Public concern raised on disparity on how USFWS is pushing delisting of wolves and grizzlies. Randy expects that if YE and NCDE are recovered, more funds could come to CYE and SE. Question about *how more $ will help recovery. Paul Fielder, legislators and commissioners are formally suggesting the subcommittee ask the IGBC to immediately update the recovery plan and allocate resources as needed to do so.* Randy thinks USFWS plans to work on this in 2015/2016. Randy will forward the recovery plan letter to IGBC. Discussion of the lawsuit for uplisting the CYE and assigning critical habitat. CYE, SE, NCE all determined as warranted but precluded from uplisting.

**12:00-1:00** **Lunch**

**1:00-2:00**

*NFWF Funding priorities* *Randy Hojem*

Notes- What would the subcommittee fund if they had only partial funding – what are the priorities? (see previous document on listed items sent to NFWF in 2013) Priorities 1) continue funding for MT and ID bear specialists, consider adding a WA specialist – additional seasonal bear technicians. 2) Augmentation. 3) Bear collaring work and equipment. Randy will be writing a letter to NFWF to explain the subcommittee's priority choices. Randy will specifically mention reimbursing a portion of Lincoln county's contribution to the DNA and ask that to be a high priority.

**2:00-2:30**

*2014 Program of Work* *Subcommittee*

Notes- Tabled

**2:30-3:00**

*Public Comments/Questions* *All*

Notes- Black bear densities – 1.4-1.9/mile$^2$. Do Black and Grizzly bears compete? Are we short on forage? Would reducing black bear numbers improve grizzly bear survival? Support for using GPS data to redo Wayne's report and refine road density information/standards. Selkirk DNA analysis could provide excellent linkage info. DNA study in CYE was possible because it had a champion to support it. Support for federal funding of recovery efforts because local support is more limited and broader support is present. Suggestion of combination of the 2 study types (DNA and GPS collar). Would DNA work in SE help delisting efforts by showing where DPSs start and stop? Support for timber sales, grizzlies need open areas for forage – population trend of grizzlies is more based on habitat than anything. Local communities are dying – no people left – need to change management quickly to get some forestry work done. Desire to see the subcommittee work toward more active forest management. Public need to be involved in their govt. and we get the govt we deserve. How can best science be brought to bear on some of these larger ESA issues and questions? We don't know if habitat is a limiting factor in the CYE and SE, biological data points to healthy bears (similar litter sizes, body conditions, etc as other areas). Never heard environmental groups say they want to use the ESA to stop active mgmt.

Winter meeting = 12/3/2014

EXHIBIT G

# Human-Bear Conflict Management & Prevention
# Cabinet-Yaak Ecosystem
# 2014

Kim Annis
Bear Management Specialist
Montana Fish, Wildlife & Parks
Libby, MT

Montana Fish, Wildlife & Parks

# The Big Picture:

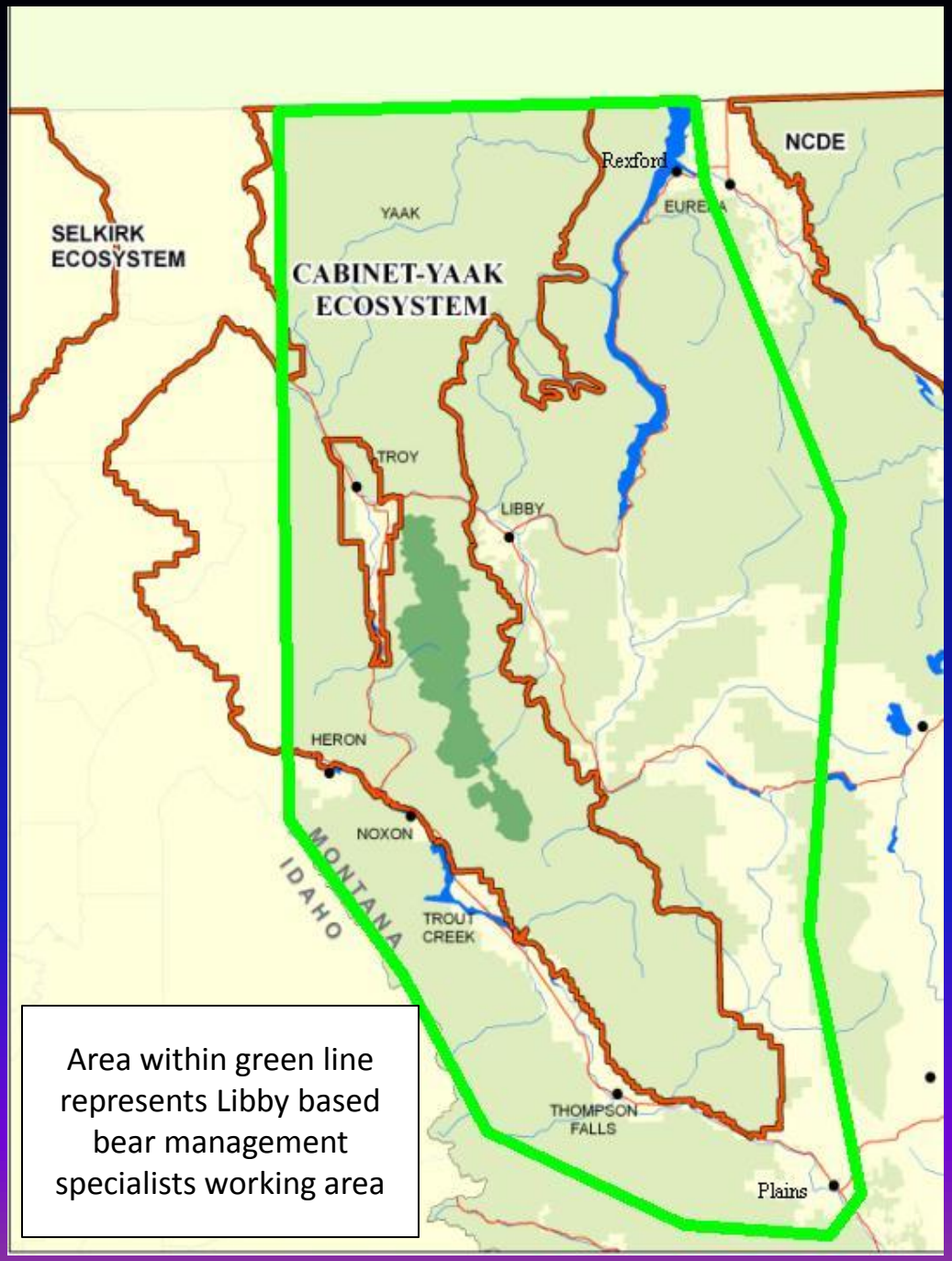
- Find effective ways to stop/prevent human-bear conflicts

- Increase understanding of grizzly bear biology and behavior

Ultimately:

- Decrease all types of human-bear conflicts

- Decrease the *unnecessary* mortality of grizzly bears



# Proactive: Preventing human-bear conflicts

- Helping residents prevent a conflict at home
- Education and outreach
- Working with local government and community leaders
- Free loan programs
- Promote the use of electric fencing
- Presentations and workshops

# Reactive: Responding to human-bear conflicts

- Resolve on-going conflicts in an effective manner
- Determine why bear is present and work with resident on securing attractants
- Trap, relocate or kill bears as necessary

# Education and Outreach

- West Kootenai Community
- Bow Hunter Education classes
- STEM
- Eureka Rendezvous
- Electric Fencing Workshop
- Libby High School
- Troy Mine employees
- Yaak Wilderness Festival
- Lincoln County Libraries
- Libby Elementary
- Girl Scout/Brownie Troops
- Montana Wilderness Association
- Friends of Scotchman Peaks

# Human Bear Conflicts

- Conflicts were low again this year; another amazing berry crop

- 13 traps set for black bears with 5 captures; 2 non-targets

4 Relocated, 1 released on-site

Garbage
Fruit trees
Chicken coops
Hives
Outdoor freezers
Cat food
Compost
Hummingbird feeders

No specific grizzly bear conflicts in 2014

I set a trap for a non-conflict grizzly bear outside of Libby that was feeding on a rotten fruit pile on edge of private property

- Temporary electric fences used at 23 locations to resolve or prevent conflicts
- 20 bear-resistant garbage containers loaned to resolve conflicts

# Loan Programs

## Bear resistant garbage containers: 25 out on permanent loan

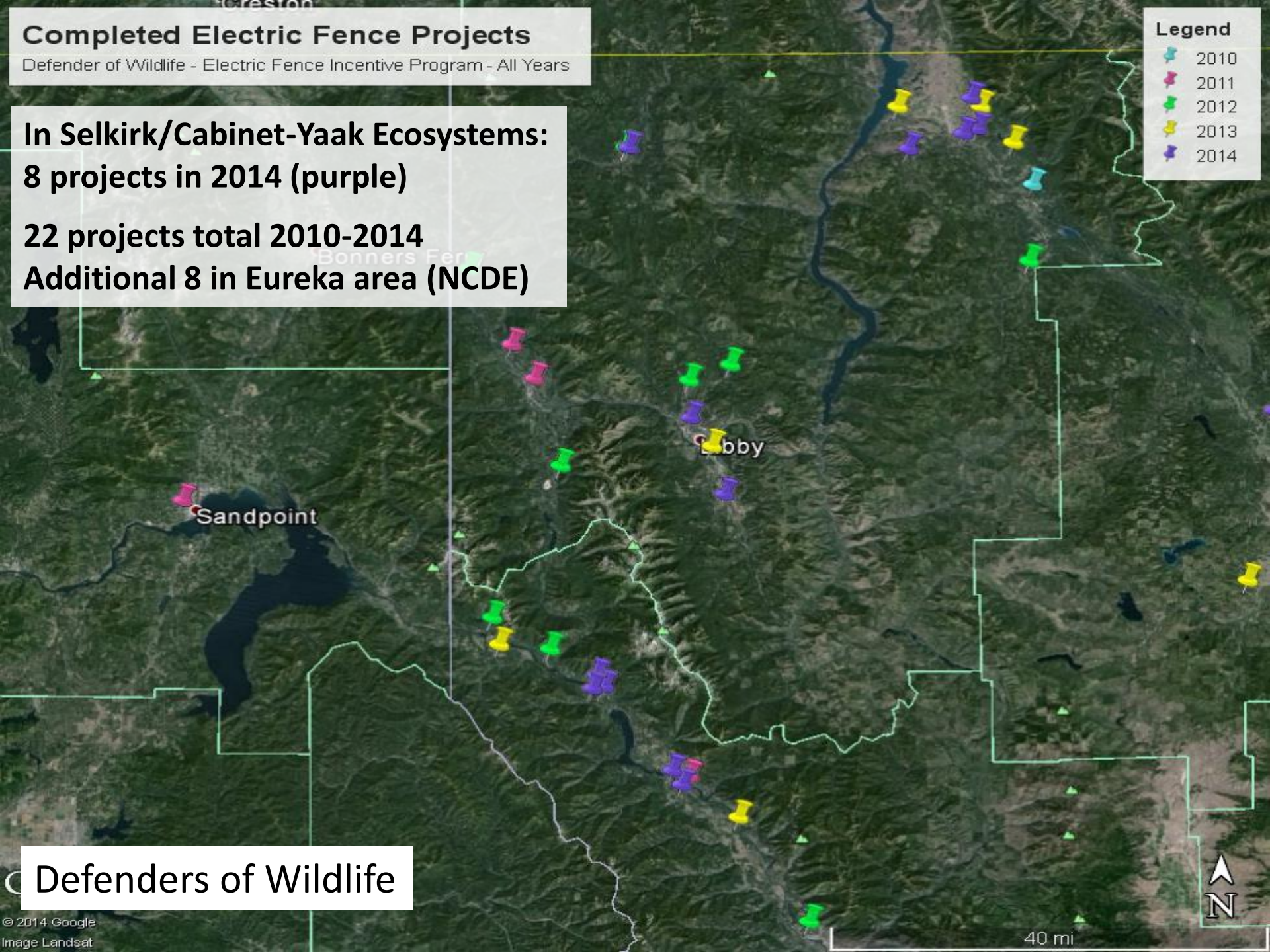
- Will only have 10 containers available for loan next year
- Unbearable Bins are getting old and damaged
- Bearicuda Bins holding up better, but have more difficult latches
- Residents like the new Kodiak containers
- *CYE is in need of more containers to loan to residents*

# Loan Programs

## Electrified fencing

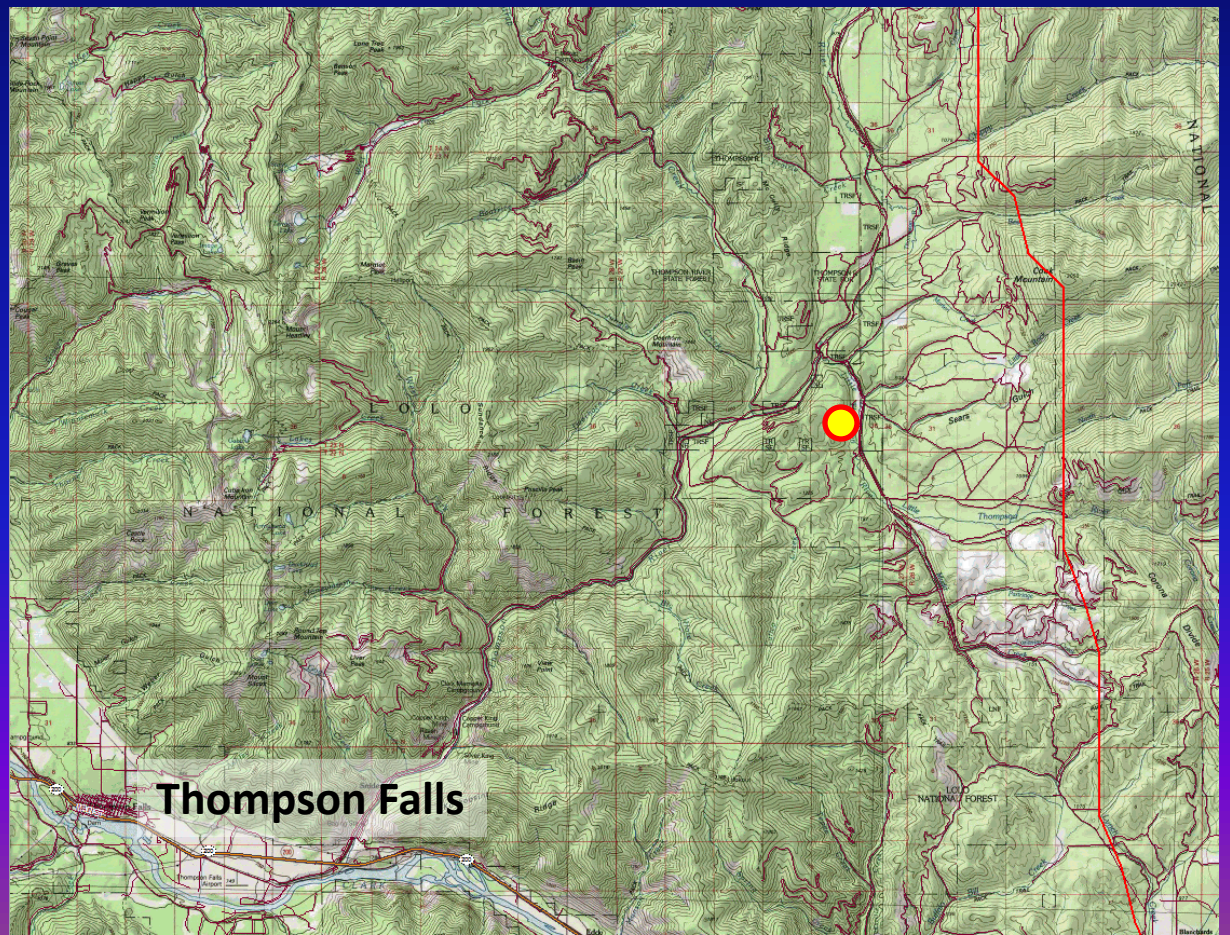
Temporary fences placed at 23 residents to resolve/prevent conflicts

- 8 in Sanders County; 15 in Lincoln County
- Assisted 7 residents in creating permanent electric fences
    - Kudos to the volunteers that run the Noxon Community Garden. DoW and FWP assisted the volunteers in creating a permanent electric fence to protect the whole garden


Completed Electric Fence Projects
Defender of Wildlife - Electric Fence Incentive Program - All Years
Legend
2010
2011
2012
2013
2014
In Selkirk/Cabinet-Yaak Ecosystems:
8 projects in 2014 (purple)
22 projects total 2010-2014
Additional 8 in Eureka area (NCDE)
Sandpoint
Libby
Defenders of Wildlife
© 2014 Google
Image Landsat
40 mi
N

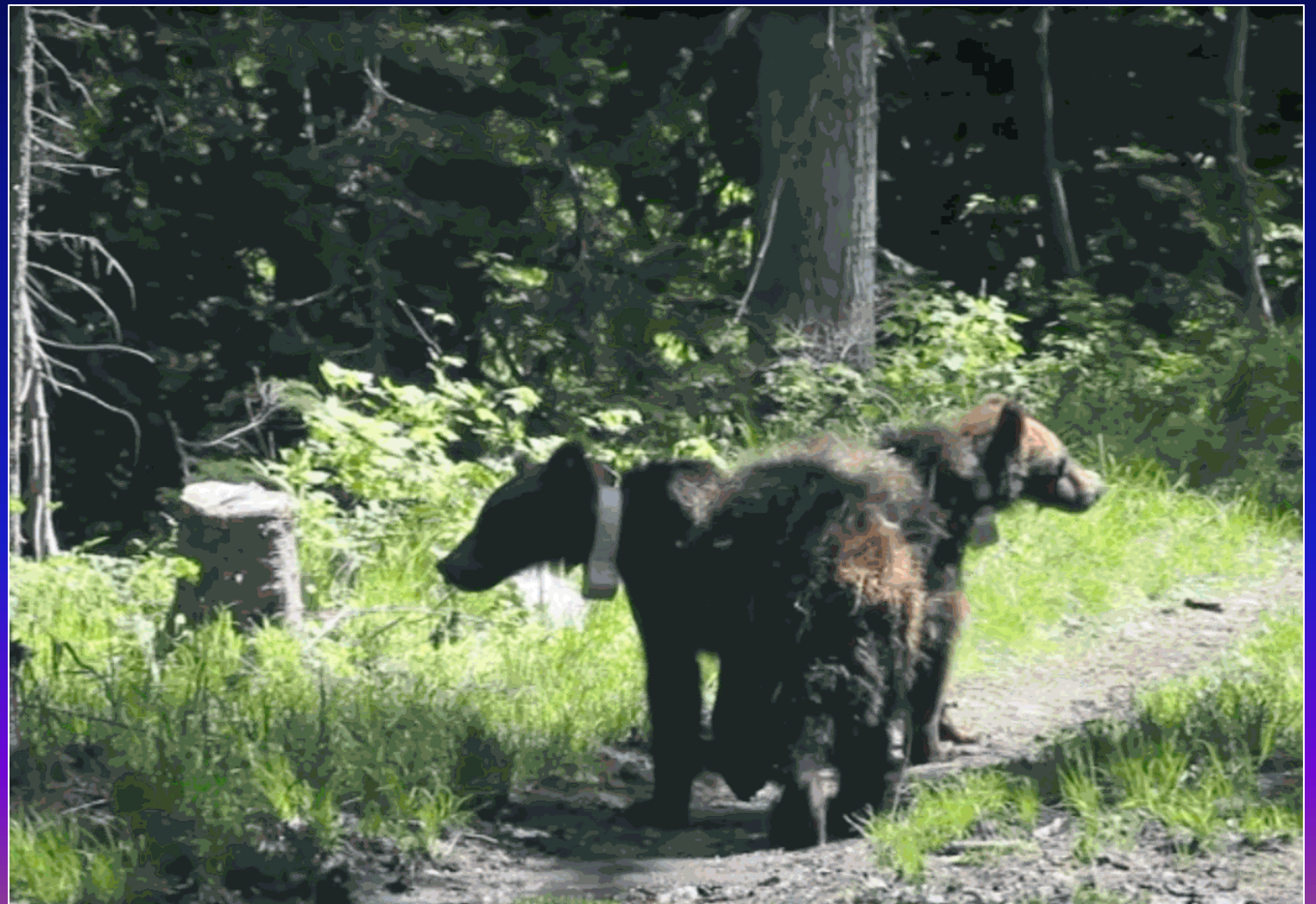
# Grizzly Bear Mortalities

- 1 known mortality; 6 yr old male; killed by hunter in self defense in late October; bear approached hunter sitting under a tree
- First captured in BC; captured near Eureka this spring at possible calf depredation site; relocated to GNP;  last located near GNP in June



# Cabinet Mountain Grizzly Bear Augmentation Program

June 18, 2014; female 2 yr old siblings from the Whitefish Range; released in the west Cabinets above Spar Lake



# Misc

## Quarterly meetings with Sanders County Commissioners

Fencing project at the public waste transfer site at Rock Creek will be completed in spring of 2015

## Monthly meetings with Lincoln County Commissioners

No public waste transfer sites have been secured since 2012. Bears have historically accessed garbage at least 7 sites that remain unsecured (Fisher River, McGinnis Meadows, Bull Lake, West Kootenai, Troy (3 locations)

## Worked with USFWS to have new Grizzly Bear Country portal signs made for public lands in ID and WA

# IGBC 2014 I&E Grant Proposals Submitted

$36,000 available for I&E across all ecosystems

## Selkirk/Cabinet-Yaak Ecosystems:
## 7 projects submitted requesting $31,100

- IDF&G Bear Education
- LNF CYE/NCDE Bear Ranger
- KNF CYE/NCDE Bear Ranger
- Grizzly Bear Country Portal signs
- Sanders County Noxon Refuse site signs
- WDFW Grizzly Patrol
- YVFC Troy area apple gleaning project

# Help Wanted!

We need to form a functional I&E group that can help us work towards our identified I&E needs and goals for BOTH the Selkirks and the Cabinet-Yaak

We need at least several people that can represent the needs for the Selkirks in Washington and northern Idaho, and federal and state agencies in both

EXHIBIT H

# CABINET-YAAK GRIZZLY BEAR RECOVERY AREA 2013 RESEARCH AND MONITORING PROGRESS REPORT

**PREPARED BY**
**WAYNE F. KASWORM, THOMAS G. RADANDT, JUSTIN E. TEISBERG, MICHAEL PROCTOR, AND CHRISTOPHER SERVHEEN**
**2014**

**UNITED STATES FISH AND WILDLIFE SERVICE**
**GRIZZLY BEAR RECOVERY COORDINATOR'S OFFICE**
**UNIVERSITY OF MONTANA, MAIN HALL ROOM 309**
**MISSOULA, MONTANA 59812**
**(406) 243-4903**

**Information contained in this report is preliminary and subject to change. Please obtain permission prior to citation. Please cite this report as following: Kasworm, W. F., T. G. Radandt, J.E. Teisberg, M. Proctor, and C. Servheen. 2014. Cabinet-Yaak grizzly bear recovery area 2013 research and monitoring progress report. U.S. Fish and Wildlife Service, Missoula, Montana. 110 pp.**

**Abstract**:

Grizzly bear research in the Cabinet Mountains indicated that only a small population remained as of 1988. Concern over persistence of grizzly bear populations within this area resulted in a pilot program in 1990 that tested population augmentation techniques. Four subadult female bears with no history of conflicts with humans were captured in southeast British Columbia and moved to the Cabinet Mountains for release during 1990–94. Three of four transplanted bears remained within the target area for at least one year. Hair snag sampling and DNA analysis during 2002–12 identified one of the original transplanted bears. The animal was a 2 year-old female when released in 1993. Genetic analysis also identified at least 9 first generation offspring and 8 second generation offspring from this individual. The success of the augmentation test program prompted additional augmentation in cooperation with Montana Fish Wildlife and Parks. Seven female bears and 4 male bears were moved from the Flathead River to the Cabinet Mountains during 2005–13. Two of these individuals died during their first year from human related causes. One was illegally shot and one was struck by a train. Four bears left the target area for the augmentation effort. Research and monitoring in the Yaak River began in 1986 with the capture and collaring of 2 grizzly bears. Including those captures, 43 bears have been captured and monitored through telemetry, 1986–2013.

Numbers of females with cubs in the Cabinet-Yaak grizzly bear recovery zone (CYGBRZ) varied from 1–4 per year and averaged 2.5 per year from 2008–13. Human caused mortality averaged 1.5 bears per year and 0.3 females per year. Nine known or probable human caused mortalities have occurred in or within 10 miles of the CYGBRZ in the U.S. during 2008–13. Human caused mortalities during 2008-13 were two adult females (one self-defense and one under investigation), 3 adult males (two illegal under investigation and a black bear mistaken identity), 2 subadult males (black bear mistaken identity and self-defense), and one subadult bear and a cub, both of unknown sex and under investigation. Twelve of 22 bear management units had sightings of females with young during 2008–13.

A minimum of 37 bears were identified in the CYGBRZ during 2007–12 after known mortality was subtracted. This minimum was based on captures, genetic information, mortality, and sightings of unique individuals. Sixty-five known and probable grizzly bear mortalities from all causes were documented inside or within 16 km of the CYGBRZ (including Canada) during 1982–2013. Mortality causes, timing, and locations were analyzed for 1983–13. Sex and age specific survival and reproductive rates were updated and reported. Trend monitoring of population vital rates indicated a finite rate of increase ($\lambda$) for 1983–2013 of 1.000 (95% C.I. 0.907–1.076). For 1983–2013, the population experienced a mean annual finite rate of change of 0.0%. Subadult female survival and adult female survival accounted for most of the uncertainty in $\lambda$. The probability that the population was declining was 50%. However data from the last 6 years suggest recent positive population growth rates.

Capture, monitoring, and habitat use data were updated and reported for 1983–2013. Berry counts indicated greater than average production for huckleberry and lower than average serviceberry, buffaloberry and mountain ash production in 2013.

Table 1. Known and probable grizzly bear mortality in the Cabinet-Yaak recovery area and British Columbia, 1982–2013.

| Mortality Date | Tag # | Sex | Age | Mortality Cause | Location | Open Road <500 m | Public Reported | Owner[1] |
|---|---|---|---|---|---|---|---|---|
| October, 1982 | None | M | AD | Human, Poaching | Grouse Creek, ID | No | Yes | USFS |
| October, 1984 | None | Unk | Unk | Human, Mistaken Identity, Black bear | Harvey Creek, ID | Yes | Yes | USFS |
| 9/21/1985 | 14 | M | AD | Human, Self Defense | Lyons Gulch, MT | No | Yes | USFS |
| 7/14/1986 | 106 cub | Unk | Cub | Natural | Burnt Creek, MT | Unk | No | USFS |
| 10/25/1987 | None | F | Cub | Human, Mistaken Identity, Elk | Flattail Creek, MT | No | Yes | USFS |
| 5/29/1988[1] | 134 | M | AD | Human, Legal Hunter kill | Moyie River, BC | Yes | Yes | BC |
| 10/31/1988 | None | F | AD | Human, Self Defense | Seventeen Mile Creek, MT | No | Yes | USFS |
| 7/6/1989 | 129 | F | 3 | Human, Research | Burnt Creek, MT | Yes | No | USFS |
| 1990 | 192 | M | 2 | Human, Poaching | Poverty Creek, MT | Yes | Yes | USFS |
| 1992 | 678 | F | 37 | Unknown | Trail Creek, MT | No | Yes | USFS |
| 7/22/1993 | 258[2] | F | 7 | Natural | Libby Creek, MT | No | No | USFS |
| 7/22/1993 | 258-cub | Unk | Cub | Natural | Libby Creek, MT | No | No | USFS |
| 10/4/1995[1] | None | M | AD | Human, Management | Ryan Creek, BC | Yes | Yes | PRIV |
| 5/6/1996 | 302 | M | 3 | Human, Under Investigation | Dodge Creek, MT | Yes | No | USFS |
| October, 1996[1] | 355 | M | AD | Human, Under Investigation | Gold Creek, BC | Yes | No | BC |
| June? 1997 | None | M | AD | Human, Poaching | Libby Creek, MT | Unk | Yes | PRIV |
| 6/4/1999 | 106 | F | 21 | Natural, Conspecific | Seventeen Mile Creek, MT | No | No | USFS |
| 6/4/1999 | 106-cub | M | Cub | Natural, Conspecific | Seventeen Mile Creek, MT | No | No | USFS |
| 6/4/1999 | 106-cub | F | Cub | Natural, Conspecific | Seventeen Mile Creek, MT | No | No | USFS |
| 10/12/1999[1] | 596 | F | 2 | Human, Self Defense | Hart Creek, BC | Yes | Yes | BC |
| 11/15/1999 | 358 | M | 15 | Human, Management | Yaak River, MT | Yes | Yes | PRIV |
| 6/1/2000[1] | 538-cub | Unk | Cub | Natural | Hawkins Creek, BC | Unk | No | BC |
| 6/1/2000[1] | 538-cub | Unk | Cub | Natural | Hawkins Creek, BC | Unk | No | BC |
| 7/1/2000 | 303-cub | Unk | Cub | Natural | Fowler Creek, MT | Unk | No | USFS |
| 11/15/2000 | 592 | F | 3 | Human, Under Investigation | Pete Creek MT | Yes | No | USFS |
| 5/5/2001 | None | F | 1 | Human, Mistaken Identity, Black Bear | Spread Creek, MT | Yes | Yes | USFS |
| 6/18/2001[1] | 538-cub | Unk | Cub | Natural | Cold Creek, BC | Unk | No | BC |
| 6/18/2001[1] | 538-cub | Unk | Cub | Natural | Cold Creek, BC | Unk | No | BC |
| October, 2001 | None | F | AD | Human, Train collision | Elk Creek, MT | Yes | Yes | MRL |
| 6/24/2002[1] | None | Unk | Unk | Human, Mistaken Identity, Hounds | Bloom Creek, BC | Yes | Yes | BC |
| 7/1/2002 | 577 | F | 1 | Natural | Marten Creek, MT | Yes | No | USFS |
| 10/28/2002 | None | F | 4 | Human, Under Investigation | Porcupine Creek, MT | Yes | Yes | USFS |
| 11/18/2002 | 353/584 | F | 7 | Human, Poaching | Yaak River, MT | Yes | Yes | PRIV |
| 11/18/2002 | None | F | Cub | Human, Poaching | Yaak River, MT | Yes | Yes | PRIV |
| 11/18/2002 | None | Unk | Cub | Human, Poaching | Yaak River, MT | Yes | No | PRIV |
| 11/18/2002 | None | Unk | Cub | Human, Poaching | Yaak River, MT | Yes | No | PRIV |
| 10/15/2004[1] | None | F | AD | Human, Management | Newgate, BC | Yes | Yes | PRIV |
| 2005? | 363 | M | 14 | Human, Under Investigation | Curley Creek, MT | Yes | Yes | PRIV |
| 5/15/2005[1] | 31 | M | AD | Human, Legal Hunter Kill | Russell Creek, BC | Yes | Yes | BC |
| 10/9/2005 | 694 | F | 2 | Human, Under Investigation | Pipe Creek, MT | Yes | No | PCT |
| 10/9/2005 | None | F | 2 | Human, Train collision | Government Creek, MT | Yes | Yes | MRL |
| 10/19/2005 | 668 | M | 3 | Human, Mistaken Identity, Black bear | Yaak River, MT | Yes | Yes | PRIV |
| 5/28/2006[1] | None | F | 4 | Human, Research | Cold Creek, BC | Yes | No | BC |
| 6/1/2006[1] | 292 | F | 5 | Human, Management | Moyie River, BC | Yes | Yes | PRIV |
| 9/22/2007 | 354 | F | 11 | Human, Self Defense | Canuck Creek, MT | Yes | Yes | USFS |
| 9/24/2008 | ? | Unk | 3 | Human, Under Investigation | Fishtrap Creek, MT | Yes | Yes | PCT |
| 10/20/2008 | 790[2] | F | 3 | Human, Poaching | Clark Fork River. MT | Yes | Yes | PRIV |
| 10/20/2008 | 635[2] | F | 4 | Human, Train collision | Clark Fork River. MT | Yes | Yes | MRL |
| 11/15/2008[1] | 651 | M | 13 | Human, Mistaken Identity, Wolf Trap | NF Yahk River, BC | Yes | Yes | BC |
| 6/5/2009 | 675-cub | Unk | Cub | Natural | Copper Creek, ID | Unk | No | USFS |
| 6/5/2009 | 675-cub | Unk | Cub | Natural | Copper Creek, ID | Unk | No | USFS |
| 6/7/2009[3] | None | M | 3-4 | Human, Mistaken Identity, Black bear | Bentley Creek, ID[3] | Yes | Yes | PRIV |
| 11/1/2009 | 286 | F | Adult | Human, Self Defense | EF Bull River, MT | No | Yes | USFS |

| Mortality Date | Tag # | Sex | Age | Mortality Cause | Location | Open Road <500 m | Public Reported | Owner[1] |
|---|---|---|---|---|---|---|---|---|
| 6/25/2010 | 675-cub | Unk | Cub | Natural | American Creek, MT | Unk | No | USFS |
| 9/6/2010[1] | 1374 | M | 2 | Human, Under Investigation | Hawkins Creek, BC | Yes | No | BC |
| 9/24/2010[1] | None | M | 2 | Human, Wolf Trap, Selkirk Relocation | Cold Creek, BC | Yes | Yes | BC |
| 10/11/2010 | None | M | AD | Human, Under Investigation | Pine Creek, MT | No | Yes | USFS |
| 2011 | None | F | 1 | Unknown | EF Rock Creek, MT | No | Yes | USFS |
| 9/16/2011 | None | M | AD | Human, Mistaken Identity | Faro Creek, MT | No | Yes | USFS |
| 11/13/2011 | 799 | M | 4 | Human, Mistaken Identity | Cherry Creek, MT | Yes | Yes | USFS |
| 11/24/2011 | 732 | M | 3 | Human, Defense of life | Pipe Creek, MT | Yes | Yes | PRIV |
| November 2011? | 342 | M | 19 | Human, Under Investigation | Little Creek, MT | Yes | Yes | PRIV |
| 5/18/2012 | None | F | AD | Human, Under Investigation | Mission Creek, ID | Yes | Yes | USFS |
| 5/18/ 2012 | None | ? | Cub | Human, Under Investigation | Mission Creek, ID | Yes | Yes | USFS |
| October 2012[1] | 5381 | M | 8 | Human, Management | Duck Creek, BC | Yes | Yes | BC |

[1]The recovery plan (USFWS 1993) specifies that human-caused mortality or female with young sightings from Canada will not be counted toward recovery goals in this recovery zone. BC – British Columbia, MRL – Montana Rail Link, PRIV – Individual Private, PCT – Plum Creek Timber Company, and USFS – U.S. Forest Service.
[2]Bears transplanted to the Cabinet Mountains under the population augmentation program were counted as mortalities in their place of origin and are not counted toward recovery goals in this recovery zone.
[3]Bear Killed more than 10 miles outside recovery zone in the US and not counted in recovery calculations.

Table 2. Credible grizzly bear sightings, credible female with young sightings, and known human caused mortality by bear management unit (BMU) or area, 2013.

| BMU OR AREA | 2013 Credible[1] Grizzly Bear Sightings | 2013 Sightings of Females with Cubs (Total) | 2013 Sightings of Females with Cubs (Unduplicated[2]) | 2013 Sightings of Females with Yearlings or 2-year-olds (Total) | 2013 Sightings of Females with Yearlings or 2-year-olds (unduplicated[2]) | 2013 Total Human Caused Mortality |
|---|---|---|---|---|---|---|
| 2 | 3 | 0 | 0 | 0 | 0 | 0 |
| 4 | 1 | 0 | 0 | 0 | 0 | 0 |
| 5 | 2 | 0 | 0 | 2 | 2 | 0 |
| 9 | 1 | 0 | 0 | 0 | 0 | 0 |
| 11 | 1 | 0 | 0 | 1 | 0 | 0 |
| 12 | 2 | 0 | 0 | 0 | 0 | 0 |
| 13 | 4 | 0 | 0 | 0 | 0 | 0 |
| 14 | 2 | 0 | 0 | 1 | 1 | 0 |
| 15 | 2 | 1 | 1 | 0 | 0 | 0 |
| 16 | 2 | 0 | 0 | 0 | 0 | 0 |
| 17 | 7 | 0 | 0 | 1 | 1 | 0 |
| British Columbia[3] | 2 | 0 | 0 | 0 | 0 | 1[3] |
| Cabinet Face | 4 | 0 | 0 | 0 | 0 | 0 |
| Libby | 1 | 1 | 1 | 0 | 0 | 0 |
| Tobacco[4] | 12 | 3 | 2 | 1 | 1 | 0 |
| West Kootenai | 5 | 0 | 0 | 2 | 1 | 0 |
| 2013 TOTAL | 39 | 2 | 2 | 7 | 5 | 1[3] |

[1]Credible sightings are those rated 4 or 5 on a 5 point scale (see methods).
[2]Sightings may duplicate the same animal in different locations. Only the first sighting of a duplicated female with cubs is counted toward total females (Table 3), however subsequent sighting contribute toward occupancy (Table 8).
[3]Areas in Canada outside of Cabinet-Yaak recovery zone that do not count toward recovery goals.
[4]Areas with portions <16 km outside the Cabinet-Yaak recovery zone that do not count toward recovery goals.

Table 3. Status of the Cabinet-Yaak recovery zone during 2008–2013 in relation to the demographic recovery targets from the grizzly bear recovery plan (USFWS 1993).

| Recovery Criteria | Target | 2013 |
|---|---|---|
| Females w/cubs (6-yr avg) | 6 | 2.5 (15/6) |
| Human Caused Mortality limit (4% of minimum estimate) | 1.2 | 1.5 (6 yr avg) |
| Female Human Caused mortality limit (30% of total mortality) | 0.4 | 0.3 (6 yr avg) |
| Distribution of females w/young | 18 of 22 | 12 of 22 |

Table 4. Annual Cabinet-Yaak recovery zone (excluding Canada) grizzly bear unduplicated counts of females with cubs (FWC's) and known human-caused mortality, 1988–2013.

| YEAR | ANNUAL FWC'S | ANNUAL HUMAN CAUSED ADULT FEMALE MORTALITY | ANNUAL HUMAN CAUSED ALL FEMALE MORTALITY | ANNUAL HUMAN CAUSED TOTAL MORTALITY | 4% TOTAL HUMAN CAUSED MORTALITY LIMIT[1] | 30% ALL FEMALE HUMAN CAUSED MORTALITY LIMIT[1] | TOTAL HUMAN CAUSED MORTALITY 6 YEAR AVERAGE | FEMALE HUMAN CAUSED MORTALITY 6 YEAR AVERAGE |
|---|---|---|---|---|---|---|---|---|
| 1988 | 1 | 1 | 1 | 1 | 0 | 0 | | |
| 1989 | 0 | 0 | 1 | 1 | 0 | 0 | | |
| 1990 | 1 | 0 | 0 | 1 | 0 | 0 | | |
| 1991 | 1 | 0 | 0 | 0 | 0 | 0 | | |
| 1992 | 1 | 0 | 0 | 0 | 0 | 0 | | |
| 1993 | 2 | 0 | 0 | 0 | 0.9 | 0.3 | 0.5 | 0.3 |
| 1994 | 1 | 0 | 0 | 0 | 0.9 | 0.3 | 0.3 | 0.2 |
| 1995 | 1 | 0 | 0 | 0 | 0.9 | 0.3 | 0.2 | 0 |
| 1996 | 1 | 0 | 0 | 1 | 0.7 | 0.2 | 0.2 | 0 |
| 1997 | 3 | 0 | 0 | 1 | 1.2 | 0.4 | 0.3 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0.9 | 0.3 | 0.3 | 0 |
| 1999 | 0 | 0 | 0 | 1 | 0.7 | 0.2 | 0.5 | 0 |
| 2000 | 2 | 0 | 1 | 1 | 0.5 | 0.1 | 0.7 | 0.2 |
| 2001 | 1 | 1 | 2 | 2 | 0.5 | 0.1 | 1.0 | 0.5 |
| 2002 | 4 | 1 | 4 | 5 | 1.2 | 0.4 | 1.7 | 1.2 |
| 2003 | 2 | 0 | 0 | 0 | 1.2 | 0.4 | 1.5 | 1.2 |
| 2004 | 1 | 0 | 0 | 0 | 1.4 | 0.4 | 1.5 | 1.2 |
| 2005 | 1 | 0 | 2 | 4 | 0.9 | 0.3 | 2.0 | 1.5 |
| 2006 | 1 | 0 | 0 | 0 | 0.7 | 0.2 | 1.8 | 1.3 |
| 2007 | 4 | 1 | 1 | 1 | 1.2 | 0.4 | 1.7 | 1.2 |
| 2008 | 3 | 0 | 0 | 1[2] | 1.6 | 0.5 | 1.0 | 0.5 |
| 2009 | 2 | 1 | 1 | 1 | 1.6 | 0.5 | 1.2 | 0.7 |
| 2010 | 4 | 0 | 0 | 1 | 1.9 | 0.6 | 1.3 | 0.7 |
| 2011 | 1 | 0 | 0 | 4 | 1.4 | 0.4 | 1.3 | 0.3 |
| 2012 | 3 | 1 | 1 | 2[2] | 1.6 | 0.5 | 1.7 | 0.5 |
| 2013 | 2 | 0 | 0 | 0 | 1.2 | 0.4 | 1.5 | 0.3 |

[1] Presently grizzly bear numbers are so small in this ecosystem that the mortality goal shall be zero known human-caused mortality.
[2] The sex of this mortality was not known at the time of this report.

(50) and emigration (2) would leave at least 44 animals. It is unlikely that all identified animals have survived the entire 25 year period. However choosing a time period for counting the minimum number of animals may lead to biases in the estimate. A long time period may count bears that have not survived. A short time frame may miss some bears that have survived. A six year period was calculated because it is the same as that used in the Grizzly Bear Recovery Plan (USFWS 1993). Using only animals identified during 2007–2012 (32) less known mortality and emigration (14) suggests a population of at least 18. These estimates may be liberal because they assume all other bears not known to be dead have survived the entire period. These estimates may also be conservative because study personnel observations alone would not likely sample all bears in the area, some sightings classified as the same animal may represent different animals, and the study has received several credible public reports of additional bears not included in this analysis. Since 2003 there have been credible sightings of bears in all 8 BMUs that make up the Yaak portion of the recovery area, with sightings of females with young in 6 BMUs.

Similar observations, captures, and genetic information from the Cabinet Mountains were collected and summarized for 1983–2012 (Appendix 2). Using the same calculations as with the Yaak study area, total animals identified between 1983 and 2012 (44), less known mortality and emigration (19) would leave at least 25 animals. Using only animals identified during the 2007–2012 time period (30) less known mortality (7) and bears that left the recovery area (4) suggests a population of at least 19. The same limitations identified with the Yaak study area minimum estimates also apply to these numbers. The population was augmented with 11 females since 1990, credible sightings of individual bears have occurred in 13 of 14 BMUs in the Cabinet Mountains since 2003, and sightings of females with young occurred in 6 of 14 BMUs since 2003.

The amount of effort expended to collect these estimates has varied from year to year. Numbers of corral and camera stations, capture success, field observations, or the collection of opportunistic hair samples in a given year has been quite variable. Therefore, use of these estimates from multiple years to infer a population trend would be inappropriate.

The Cabinet Mountains population was estimated to be 15 bears or fewer in 1988 (Kasworm and Manley 1988). However the lack of native bears identified since 1989 suggests that the population may have been well below the level of 15 individuals. Twenty-eight of 35 bears genotyped since 1997 are known to be augmentation bears or their offspring. Only 7 genotyped bears not known to be augmentation bears or their offspring have been identified in the Cabinet Mountains since 1989. Of these 7, 3 are known to be dead. The augmentation effort appears to be the primary reason that grizzly bears remain in the Cabinet Mountains.

**Known Grizzly Bear Mortality**

Sixty-five instances of known and probable grizzly bear mortality from all causes were detected inside or within 16 km of the CYGBRZ (including Canada) during 1982–2013 (Tables 1 and 9, Fig. 8). There were no known grizzly bear mortalities detected inside or within 16 km of the CYGBRZ (including Canada) during 2013. This summary included radio-collared bears regardless of where they died. Seasons were defined as follows: April 1 to May 31 (spring), June 1 to August 31 (summer), and September 1 to November 30 (autumn).

Forty-five individuals were of known sex and age (Table 9). Eleven were adult females, 14 adult males, 9 subadult females, 7 subadult males, 2 yearling females, and 2 female cubs. Mortality causes (and frequency) were natural (16), unknown but human-caused (12), poaching (8), mistaken identity (7), management removal (6), defense of life (6), train collision (3), trap predation (2), legal hunting in Canada (2), black bear hunting with hounds in Canada(1), and unknown (2). Nine mortalities were known to have occurred during spring, 19 during summer,

33 during autumn, and 4 at unknown time of year. All 16 natural mortalities occurred during summer. One unknown but human-caused mortality occurred during spring, 8 occurred during autumn, and 1 was unknown. Three poaching mortalities occurred during spring, 8 occurred during autumn, and one was unknown. One mistaken identity mortality occurred during spring and 6 occurred in autumn. All defense of life and train collisions occurred during autumn. One management removal occurred during spring, one during summer, and 4 occurred during autumn. Legal hunting mortalities in Canada occurred during spring and one trap predation death occurred during spring and one occurred during summer. The black bear hound hunting mortality occurred in British Columbia and occurred during summer.

Table 9. Cause, timing, and location of known and probable grizzly bear mortality in or within 16 km of the Cabinet-Yaak recovery zone (including Canada) and radio collared bears, 1982–2013.

| | Mortality cause | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age / sex / season / ownership | Defense of life | Legal Hunt | Hound hunting | Management removal | Mistaken identity | Natural | Poaching | Trap predation | Train Collision | Unknown, human | Unknown | Total |
| Adult female | 3 | | | 2 | | 2 | 1 | | 1 | 1 | 1 | 11 |
| Subadult female | 1 | | | | | | 1 | 2 | 2 | 3 | | 9 |
| Adult male | 1 | 2 | | 3 | 2 | | 2 | | | 4 | | 14 |
| Subadult male | 1 | | | 1 | 2 | | 1 | | | 2 | | 7 |
| Yearling | | | | | 1 | 1 | | | | | | 2 |
| Cub | | | | | 1 | 13 | 3 | | | 1 | | 18 |
| Unknown | | | 1 | | 1 | | | | | 1 | 1 | 4 |
| Total | 6 | 2 | 1 | 6 | 7 | 16 | 8 | 2 | 3 | 12 | 2 | 65 |
| Season[1] | | | | | | | | | | | | |
| Spring | | 2 | | 1 | 1 | | 1 | 1 | | 3 | | 9 |
| Summer | | | 1 | 1 | | 16 | | 1 | | | | 19 |
| Autumn | 6 | | | 4 | 6 | | 6 | | 3 | 8 | | 33 |
| Unknown | | | | | | | 1 | | | 1 | 2 | 4 |
| Ownership | | | | | | | | | | | | |
| BC Private | | 1 | | 4 | | | | | | | | 5 |
| BC Public | 1 | 1 | 1 | 1 | 1 | 4 | | 1 | | 2 | | 12 |
| US Private | 1 | | | 1 | 1 | | 6 | | 3 | 3 | | 15 |
| US Public | 4 | | | | 5 | 12 | 2 | 1 | | 7 | 2 | 33 |

[1]Spring = April 1 – May 31, Summer = June 1 – August 31, Autumn = September 1 – November 30

Sixty-three percent (12 of 19) of known human-caused mortalities occurring on the National Forests were <500m of an open road and 37% were >500m from an open road (7 of 19). Thirty-seven percent of known human caused mortalities occurring on the National Forests were located within core habitat (7 of 19). Sixteen instances of known mortality occurred during the 17-year period from 1982–1998 with 12 (75%) of these mortalities being human-caused. During this time of a high rate of population increase (pages 37–38 and Fig. 9), the annual rate of known mortality was 0.71 mortalities per year. Twenty-eight instances of known mortality occurred during the 8 year period from 1999–2006 with 19 (68%) of these mortalities human-caused. Annual rate of known human-caused mortality was 2.38 per year from 1999–2006. This was a time of population decrease because of the high mortality (pages 38-39 and Fig. 9). Twenty-one instances of known mortality occurred during the 7 year period from 2007–2013 with 16 (76%) of these mortalities human-caused. Annual rate of known human-caused

mortality was 2.29 per year from 2007–2013. This was a time of improving rate of increase in the population (pages 38–39 and Fig. 9). Though the rate of known human caused mortality dropped only slightly between the two most recent time periods, it is important to consider the rate of female mortality. The loss of females is the most critical factor affecting the trend because of their reproductive contribution to current and future growth. Total known female mortality rate decreased from 1.88 during 1999–2006 to 0.86 during 2007–2013 and known human caused female mortality rate decreased from 1.50 to 0.71. This decline of female mortality is largely responsible for the improving population trend from 2007–2013.

The increase in total known mortality beginning in 1999 may be linked to poor food production during 1998–04 (Fig. 8). Huckleberry production during these years was about half the 20-year average (see pages 70-72). Poor berry production years can be expected at various times, but in this case there were several successive years of poor production. Huckleberries are the major source of late summer food that enables bears to accumulate sufficient fat to survive the denning period and females to produce and nurture cubs. Poor nutrition often causes females to not produce cubs in the following year. Poor food production may also cause females to travel further for food, which may expose young to greater risk of mortality from conflicts with humans, predators, or accidental deaths. Four cub mortalities were from one female bear that lost litters of 2 cubs each during spring of 2000 and 2001. Another mortality incident involved a female with 2 cubs that appeared to have been killed by another bear in 1999. The effect of cub mortality may be greatest in succeeding years when some of these animals might have been recruited to the reproductive segment of the population.

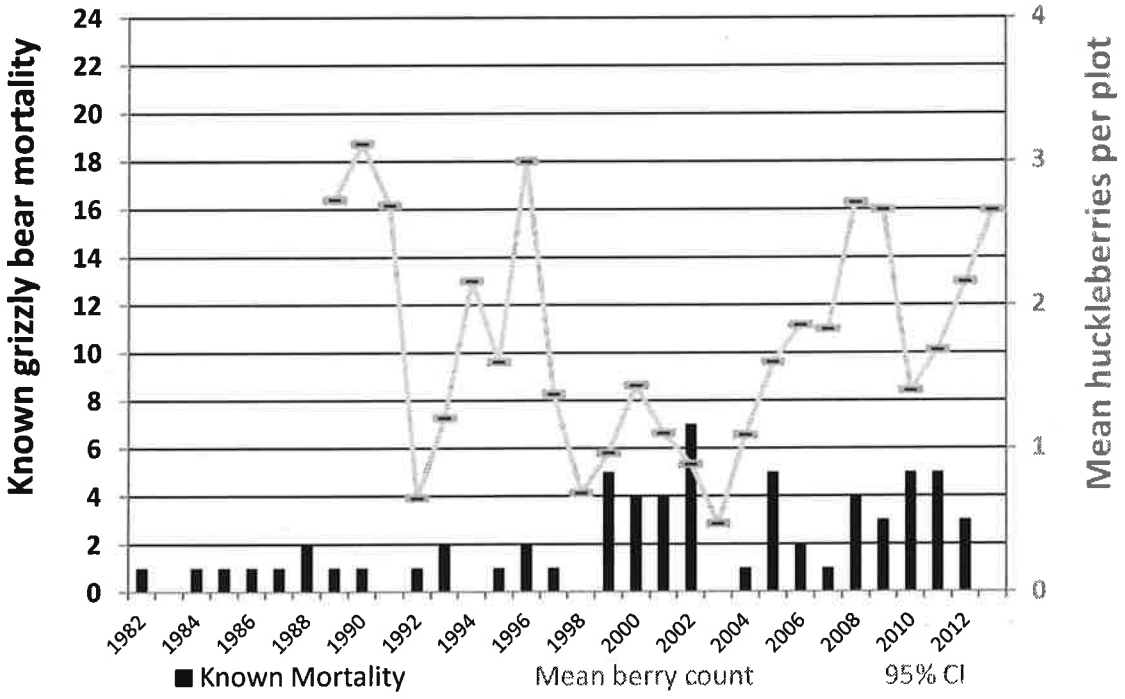



Figure 8. Known grizzly bear annual mortality from all causes in or within 16 km of the Cabinet-Yaak recovery zone (including Canada) and all radio collared bears by cause, 1982–2013 and huckleberry production counts, 1989–2013.

Use of known human-caused mortality counts probably results in under estimates of total human-caused mortality. Numerous mortalities identified by this study were reported only because animals wore a radio collar at the time of death. The public reporting rate of bears wearing radio-collars can be used to develop a correction factor to estimate unreported mortality (Cherry et al. 2002). The correction factor was not applied to natural mortality, management removals, mortality of radio collared bears or bears that died of unknown causes. All radioed bears used to develop the correction were >2 years-old and died from human related causes. factor to estimate unreported mortality (Cherry et al. 2002). Fourteen radio-collared bears died from human causes during 1982–2013. Seven of these were reported by the public and 7 were unreported. The Bayesian statistical analysis described by Cherry et al. (2002) was used to calculate unreported mortality (Table 10). The unreported estimate added 33 mortalities to the 65 known mortalities from 1982–2013.

Table 10. Annual grizzly bear mortality in or within 16 km of the Cabinet-Yaak recovery zone (including Canada) and estimates of unreported mortality, 1982–2013.

| Year | Management or research | Radio monitored | Unknown cause | Public reported | Unreported estimate | Total |
|---|---|---|---|---|---|---|
| 1982 | 0 | 0 | 0 | 1 | 1 | 2 |
| 1983 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1984 | 0 | 0 | 0 | 1 | 1 | 2 |
| 1985 | 0 | 1 | 0 | 0 | 1 | 2 |
| 1986 | 0 | 1 | 0 | 0 | 1 | 2 |
| 1987 | 0 | 0 | 0 | 1 | 1 | 2 |
| 1988 | 0 | 1 | 0 | 1 | 1 | 3 |
| 1989 | 1 | 0 | 0 | 0 | 1 | 2 |
| 1990 | 0 | 0 | 0 | 1 | 1 | 2 |
| 1991 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1992 | 0 | 0 | 1 | 0 | 1 | 2 |
| 1993 | 0 | 2 | 0 | 0 | 1 | 3 |
| 1994 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1995 | 1 | 0 | 0 | 0 | 1 | 2 |
| 1996 | 0 | 2 | 0 | 0 | 1 | 3 |
| 1997 | 0 | 0 | 0 | 1 | 1 | 2 |
| 1998 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1999 | 1 | 4 | 0 | 0 | 1 | 6 |
| 2000 | 0 | 4 | 0 | 0 | 1 | 5 |
| 2001 | 0 | 2 | 0 | 2 | 1 | 5 |
| 2002 | 0 | 5 | 0 | 2 | 1 | 8 |
| 2003 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2004 | 1 | 0 | 0 | 0 | 1 | 2 |
| 2005 | 0 | 2 | 0 | 3 | 2 | 7 |
| 2006 | 2 | 0 | 0 | 0 | 1 | 3 |
| 2007 | 0 | 0 | 0 | 1 | 1 | 2 |
| 2008 | 0 | 2 | 0 | 2 | 1 | 5 |
| 2009 | 0 | 2 | 0 | 1 | 1 | 4 |
| 2010 | 0 | 3 | 0 | 2 | 1 | 6 |
| 2011 | 0 | 2 | 1 | 2 | 1 | 6 |
| 2012 | 1 | 0 | 0 | 2 | 1 | 4 |
| 2013 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 7 | 33 | 2 | 23 | 33 | 98 |

EXHIBIT I

**2014 Autumn Cabinet-Yaak and Selkirk Mountains Grizzly Bear Ecosystems Update**

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**Reports:**
**http://www.fws.gov/mountain-prairie/species/mammals/grizzly/cabinetarchive.html**

**Augmentation**

We released two sibling females in the Cabinet Mountains on June 19 west of Spar Lake. The bears were 2-year-olds weighing 95 and 110 pounds and had no history of human conflicts. The bears were captured by Montana Fish, Wildlife, and Parks personnel in the North Fork of the Flathead River approximately 25 miles north of Columbia Falls. While we expected both bears to remain together for a while, the pair separated with one bear moving to the main Cabinet Mountains in the wilderness and the other moving south into Ross Creek. Both individuals denned in mid-November.

We monitored two other augmentation bears for much of 2014. One is a 4-year-old male released in 2012. He spent most of the summer and fall in the main Cabinet Mountains between East Fork of the Bull River to the south and Camp Creek to the North. His radio collar detached in early October and was retrieved. The other bear was a 4-year-old male released in 2013. He spent most of his time in the West Cabinet Mountains and his collar was retrieved in upper Lightning Creek in early September after the collar spacer rotted away.

Seventeen bears have been added to the Cabinet Mountains population since 1990 (13 females and 4 males) through the augmentation effort. Three female bears and one male have left the target area and 4 bears are known to be dead. Captures, mortality, and genetically analyzed hair snags have identified 35 individual grizzly bears during 1997–2012 in the Cabinet Mountains. Twenty of these bears are offspring or fathers of offspring produced by the 1993 augmentation bear 286 (died in 2009). Ten were augmentation bears released in the Cabinet Mountains other than bear 286. The remaining five include a family group of unknown ancestry in which the mother was killed leaving 3 orphaned yearlings. One of the yearlings is known to be dead. The last bear was a male captured after a livestock conflict. In total, nine of the 35 are known to be dead.

The small number of captures and hair snags of native bears in the Cabinet Mountains since the beginning of the augmentation program in 1990 suggests that the population was much smaller than the original estimate of 15 bears. The information also suggests that the Cabinet Mountains grizzly population would probably have disappeared without augmentation. The population estimate from the USGS effort in 2012 is 22–24 bears in the Cabinet Mountains with another 22–24 bears in the Yaak River.

**Captures**

We trap bears every year to maintain a radio collared sample. This sample is the basis for population trend monitoring and also provides cause of mortality. Trapping is typically conducted from May through August or September.

Seven bears were captured in the Cabinet-Yaak (1 in the Cabinet Mountains and 6 in the Yaak area). The bear from the Cabinet Mountains was an adult female accompanied by 3 yearlings or two-year-olds. She was captured in Libby Creek during mid-June. Her young were not captured, but instead detected with trail cameras at the capture site. Two subadult male grizzly bears were captured in Idaho near the Montana-BC border during late June. Three adult males and a yearling female were captured in Hellroaring Creek during late August and

September. The yearling was accompanied by her mother and a sibling who were not captured, but identified by a trail camera at the capture site.

Nine grizzly bears were captured in the Selkirk Mountains. One capture occurred in the US and 8 captures occurred in British Columbia, Canada (BC). An adult male grizzly bear was captured near Hughes Meadows during late June in the US. The US trap team operated between May and August. An adult female, 3 adult males and 4 subadult males were captured in the Selkirk Mountains in BC. BC trapping occurred during May and June and was located near and east of highway 6 between Nelson and Salmo.

**Monitoring**

We monitored thirty grizzly bears for portions of 2014 with 13 in the Cabinet-Yaak and 17 in the Selkirk Mountains. An adult female, two subadult males, and two subadult females were monitored in the Cabinet Mountains. Two adult females, three adult males, two subadult males and one subadult female were monitored in the Yaak. Selkirk Mountains grizzly bear monitoring in the US portion had three adult females, one adult male, and 3 subadult females. In the BC portion there were three adult females, three adult males, and four subadult males.

**Hair Snagging and DNA Analysis**

Laboratory DNA analysis from 2013 is not complete. During 2014 we made substantial effort to collect hair in both the Cabinet-Yaak and Selkirk Mountains through placement of hair snag corrals with cameras and collections at rub trees. Forty-two corrals and 16 cameras sites were operated in the Selkirk Mountains. Twelve corrals and two camera sites yielded pictures of grizzly bears. Seven rubs were established for collections. Five or six family groups were identified from all sources of information including radio-collared bears.

In the Cabinet-Yaak, we operated forty corrals with cameras. This effort yielded pictures of grizzly bears at 5 sites. In combination with all other sources of information, we identified five family groups in the Cabinet-Yaak. A subset of the rub trees established by the USGS effort in 2012 was visited again in 2014. We attempted to collect hair on a monthly basis from May through September. We collected 1,889 hair samples at 582 of the USGS sites. We are examining these hairs to eliminate obvious black hairs before sending the remaining samples to the lab for analysis

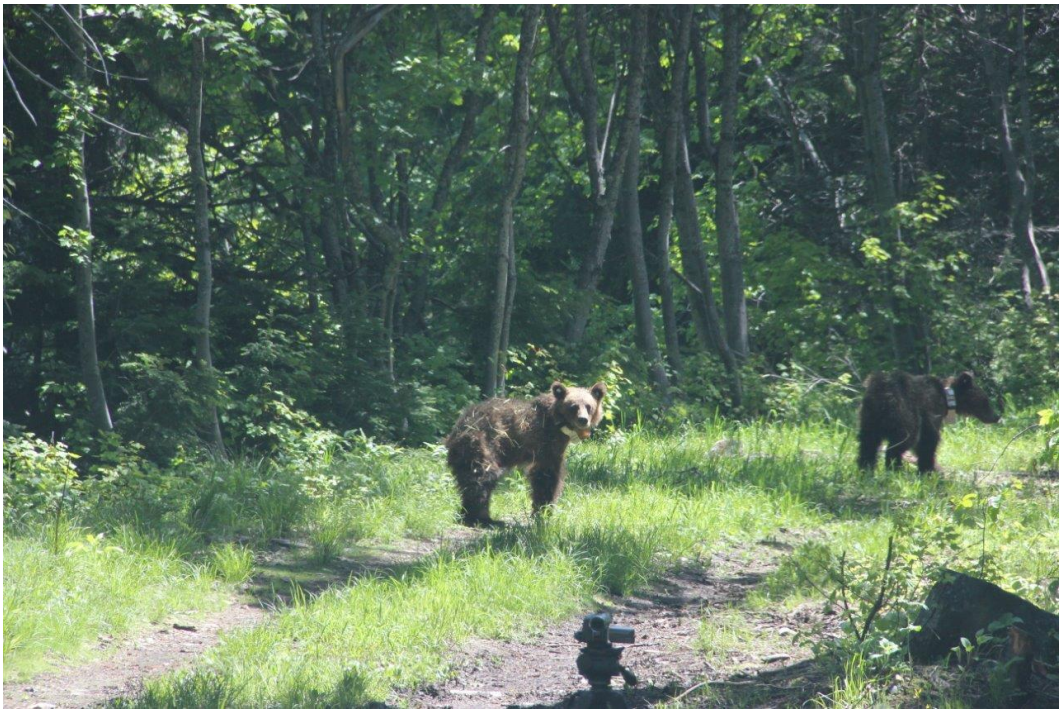
**Known Mortality**

There was one known mortality of an adult male grizzly bear in the Cabinet-Yaak recovery area. The bear was killed by a hunter in self-defense along the Little Thompson River on 26 October 2014. The bear was originally captured in British Columbia as a part of a research project in 2007. It was captured again southeast of Eureka in a management capture in the spring of 2014. Lower mortality rates of female bears in the last several years have resulted in a long term stable population trend. We will recalculate trend numbers based on 2014 data this winter and expect to document an increasing trend estimate based on this low female mortality.

There was one known mortality of a subadult female in the Selkirk Mountains recovery area. The bear was found shot in British Columbia on the north side of Boundary Creek. The bear was radio-collared and the incident is under investigation by British Columbia conservation officers.

**Berry Production Measurements**

Berry production measurements during 2014 indicated an exceptional crop. Production during 2014 was the highest recorded in the last 25 years.



Augmentation grizzly bears released in the Cabinet Mountains 19 June 2014.


Adult female grizzly bear with young captured 21 June 2014 in the Cabinet Mountains.

Adult male grizzly bear being fitted for radio collar by Alex Welander on 21 June 2014 in the Selkirk Mountains.


Grizzly bear and rub tree in the Yaak River 2014.