



NATIVE ECOSYSTEMS COUNCIL



Attn: NMM EMD Comments
Brian Deeken
USDA Forest Service
4350 Cliffs Drive
Pocatello, ID 83204



**WILDLANDS
DEFENSE**



Re: Comments Proposed Plan North Maybe Mine East Mill Dump

VIA: Certified Mail Return Receipt and Email To: brian.deeken@usda.gov; Email To: comments-intermtn-caribou-targhee@fs.fed.us ; mel.bolling@usda.gov

To All Concerned:

Yellowstone to Uintas Connection, Alliance for the Wild Rockies, Native Ecosystems Council, Snake River Waterkeeper and Wildlands Defense are submitting these comments on the Proposed Plan North Maybe Mine East Mill Dump.

Yellowstone to Uintas Connection (Y2U) is a 501c3 public interest organization whose staff and members have and will continue to work to protect the integrity of habitat for fish and wildlife as well as recreate in this region. We are concerned about the loss of integrity of the Regionally Significant Wildlife Corridor (Corridor) that connects the Greater Yellowstone Ecosystem and Northern Rockies to the Uinta Wilderness and Southern Rockies. Y2U has been addressing the damage to the SE Idaho ecosystem due to phosphate mining for many years. Yellowstone to Uintas Connection is headquartered in Paris, Idaho with a satellite office in Bondurant, Wyoming.

Alliance for the Wild Rockies (AWR) is a 501c3 public interest organization whose mission is to secure the ecological integrity of the Wild Rockies Bioregion through citizen empowerment and the application of conservation biology, sustainable economic models, and environmental law. Alliance for the Wild Rockies is headquartered in Helena, Montana.

Native Ecosystems Council (NEC) is a 501c3 public interest organization whose staff reviews Forest Service National Environmental Policy Act (NEPA) assessments of Forest Service impacts on wildlife in the Northern Rockies. NEC is headquartered in Willow Creek, Montana.

Snake River Waterkeeper (SRW) is a 501c3 public interest organization applying science and law to protect, restore and sustain the waters of the Snake River Basin. SRW is a member of the Waterkeeper Alliance, composed of more than 350 on-the-water advocates who patrol and

protect more than 100,000 miles of rivers, lakes, and coastlines on 6 continents. SRW is headquartered in Boise, Idaho.

Wildlands Defense (WLD) is a 501c3 public interest organization dedicated to protecting and improving the ecological and aesthetic qualities of the wildlands and wildlife communities of the western United States for present and future generations. WLD does so by fostering the natural enjoyment and appreciation for wildlands habitats and wildlife by means of legal and administrative advocacy, wildland and wildlife monitoring and scientific research, and by supporting and empowering active public engagement. Wildlands Defense has offices in Boise and Hailey, Idaho.

As advocates for clean water, clean air, and wildlife, we are deeply disturbed by this Proposed Plan. The phosphate industry came to this area, has been mining the phosphate ore while bringing in billions of dollars in revenue, then offers an Alternative 7 to leave the problem in place while only spending an estimated \$14,698,600 for reclamation. With this proposed reclamation, the industry is leaving pollution and damaged or destroyed habitat that will not recover for decades to centuries, if ever. The public is expected to accept this pollution, loss of access and wildlife habitat that is not only occurring at the Maybe Mine but at over a dozen other SE Idaho mines that are now CERCLA sites due to this chemical pollution. How is this acceptable? Yet the Caribou Targhee NF, Bureau of Land Management and the State of Idaho continue to allow this ongoing disaster to proceed by permitting new mines, one after the other.

The Proposed Plan is inadequate at the most basic level. It provides no information or mapping of the nature and extent of the pollution to groundwater, surface water, soils, vegetation, and wildlife. Instead, it refers the reader to the Remedial Investigation and Focused Feasibility Study (RI/FFS) which are available for viewing at the Soda Springs Ranger District. There is no link on the Forest Service website to project documents such as this where one can access and view the information without a trip to Soda Springs. A FOIA request for the documents could not be addressed within the time frame allowed for commenting.

It is unclear how the Caribou Targhee Forest Plan, BLM Resource Management Plan, NEPA, NFMA, APA and other laws and regulations apply here. This is a decision to be issued by the Forest Service based on analysis by the mining company consultants. While CERCLA is cited, there must be other mandates to be met. The public needs to fully understand the legal environment applicable here and it is the duty of the agency to provide that context and additional opportunities for input. Since this is a Forest Service current action, all the rules of NEPA, NFMA, FLPMA, CWA, ESA apply. The public must be given a comprehensive analysis under these laws in addition to that provided under CERCLA.

This entire Plan needs to be withdrawn and a new plan provided that addresses the true nature of the problem, does not allow continued pollution exceeding background levels in any environmental medium, restores wildlife habitat and connectivity, streams and springs and pays the piper to do what is right. As the old saying goes, "You broke it, you fix it!"

1. What is the Extent of the Problem?

The Plan (p3) describes that "There are many historical mines within the mining district, three active mines, and some future or proposed mines." A current [Fact Sheet](#) by EPA, IDEQ and the Forest Service shows 14 phosphate mine contaminated sites in SE Idaho undergoing some level of investigation and remedial action. The North and South Maybe Mines are included. Also included are currently operating mines such as the Smoky Canyon Mine. One must ask if we have not learned anything over the decades and yet, even with current modeling, BMPs, EMPs, cover and overburden pile designs, the recently permitted Smoky Canyon mine has generated a CERCLA site in Pole Canyon Creek where the Creek was covered with an overburden pile and ended up being polluted with selenium.

There appears to be great uncertainty in dealing with the mining process, storage of overburden, and the outcomes for the environment. We reviewed and commented on the EIS for [Rasmussen Valley](#), [Dairy Syncline](#), [Smoky Canyon](#) and [Caldwell](#) Mines to permit additional mining. (Hyperlinks to our comments). In each case we were assured BMPs, EMPs, models and containment will control the pollution. Then we are also told that pollution will be allowed up to and exceeding the EPA and State Criteria, not background concentrations. This is even to the extent of setting up Points of Compliance (POC) at which the criteria are to be met. But those POCs can be miles from the mine itself, meaning that the area within the radius of that POC will exceed the criteria and do so for centuries while natural attenuation is assumed to resolve it. The EIS for the Rasmussen Valley Mine clearly demonstrated this in its POC for the Wells Aquifer and a timeframe of centuries of pollution.

The [Preassessment Screen](#) (PAS) for the Southeast Idaho Phosphate Mine Site, Idaho is a report prepared by the Southeast Idaho Phosphate Mine Site Trustee Council. Trustees are the US Department of Interior, US Fish and Wildlife Service, US Bureau of Land Management, Bureau of Indian Affairs, US Department of Agriculture (Forest Service) and Shoshone Bannock Tribes. The PAS report describes the history of phosphate mining in the area, the lack of adequate reclamation which lead to selenium contamination in the region's soils, vegetation, surface, and groundwater. In 1996, reported livestock deaths associated with selenium uptake stimulated concerns about ecological and human health impacts from past mining operations. At the time of the Assessment in 2015, there were 17 major open pit mines. This PAS has been used to evaluate the need to conduct a Natural Resource Damage Assessment under CERCLA. The following paragraphs are taken from the PAS with our comment at the end of each.

According to the PAS, 18 mines were reviewed. One was excluded from consideration as no surface disturbance had occurred. Of the 17 remaining mines, 4 were active, including 3 recently undergoing permitting for expansion. Of the 17, selenium contamination was found at all mines and livestock deaths occurred at 6 of these. At the time of the PAS, 16,527 acres had been disturbed. (PAS p3). This extent of mining disturbance has increased in the six years since.

As Trustees, the Tribes have developed a Waste Management Act and Standards for lands within Fort Hall reservation boundaries. They believe "resources must be essentially clean and free of contaminants" as the presence of contamination may "decrease and degrade traditional foods and may preclude the use of the streams/rivers in the Mine Site for fishing, swimming, and other recreational uses." (PAS p5). This Proposed Plan does nothing of this nature as contamination and threats to people and ecosystems will continue indefinitely.

Due to the open spaces and accompanying air currents, wind erosion and subsequent deposition also serves as a mechanism of chemical transport at the Mine Site (IDEQ 2002). Wind erosion of surface soils may transport and deposit selenium contaminated soils some distance from its source, dependent on wind speed and other factors. These wind-deposited soils may be directly taken up by vegetation, may be deposited in aquatic or riparian systems, and/or may be incidentally ingested by wildlife feeding in the depositional areas. Other pathways include infiltration of water thru waste dumps and pits, erosion from waste rock dumps to surface soils, runoff from spring snowmelt and snow events, uptake of selenium in soil placed as caps on waste rock dumps. (PAS p28). Was this addressed across the potential area affected by NMM? There was no evidence of this in the Proposed Plan.

Animals feeding or grazing on vegetation, animals living in or on waste rock dumps, aquatic organisms are affected. Selenium and other hazardous substances have been documented in surface water, ground water, soils, sediment, vegetation, and animal tissues in the Mine Site resulting in fish consumption advisory, elk liver consumption advisory. (PAS p29). The Proposed Plan did not report on the species using these features nor did it provide results of testing in each of these ecosystem components across the region of potential contamination from NMM.

Surface water concentrations documented at the Mine Site for selenium for streams exceeding the aquatic life chronic criteria of 0.005 mg/l for 16 locations in the Blackfoot River and various other streams ranged from the standard up to 6.89 mg/l or over 1000 times the standard. (Table 3 PAS p33). The Proposed Plan did not provide results for the suite of COPCs in all streams and springs potentially affected by its operation, meaning all waste dumps and the open pit and secondary sources from wind deposition of contaminants. There was no data for water quality in the NMM open pit lake shown in the Proposed Plan.

Example groundwater selenium concentrations for 11 locations in the Mine Site that were above the 0.05 mg/l criterion ranged up to 12 mg/l or 240 times the criterion. (Table 4 PAS p34). The Proposed Plan did not provide results of ground water monitoring across the potential area affected and from all primary and secondary source areas generated by NMM.

Example sediment concentrations compared to the removal action level of 2.6 mg/kg or the screening benchmark of 2.0 mg/kg in 8 locations representing the most contaminated sites ranged up to 1300 mg/kg or 500 times the removal action level for Idaho. (Table 5 PAS p36). The Proposed Plan did not provide sediment results for the potential area affected by NMM.

Soils and vegetation concentrations compared to action levels at locations with most elevated concentrations were provided. The soils removal action level for Idaho is 5.2 mg/kg dry wt. and the EPA screening level is 0.52 mg/kg dw. Soils ranged up to 318 mg/kg. The vegetation removal action level in Idaho is 5 mg/kg dw. Concentrations ranged up to 1010 mg/kg. (Tables 6 and 7 PAS p38). The Proposed Plan did not provide results of sampling in soil and vegetation across the potential area of effect from NMM.

Response actions were unknown as of the PAS, but "given the geographic extent of the Mine Site, it is unlikely that the remedial actions will sufficiently remedy injury to trust resources (including past injury from historic mining activities), and it is expected that additional restoration actions will be required." (PAS 48). As expected, there is no intent to ever return environmental media or aquatic and terrestrial habitats to background levels. What is the future cost of this philosophy across the Mine Site for all mines and for the NMM itself?

2. BMPs and the Current State of Affairs

Each mine, as it is undergoing NEPA analysis and pursuing various permits, plans to use BMPs and Environmental Protection Measures (EPM) to avoid environmental pollution. These are detailed in each EIS and associated documents and used as a basis by agencies to dismiss impacts as not significant under NEPA. These mechanisms are assumed to be effective and relied upon. However, a fundamental aspect of NEPA is to take a "Hard Look" at current management, conditions, assumptions, and implementation.

What is the history of this project area? What Forest actions or permitted activities play a role in the current state of aspen, wildlife habitat, watershed health and other ecosystem attributes? What is the current nature and extent of contamination across the entire Mine Site? What was promised in permitting documents? How do current conditions compare to those commitments? Or were all commitments hedged to avoid future accountability? There should be an analysis of:

- Validity of assumptions from previous decisions, permit requirements, and NEPA processes;
- Accuracy of predictions from these same processes;
- Adequacy of Forest Service, BLM, and mining company implementation of previous decisions; and,
- Effectiveness of actions taken in previous decisions, including an analysis of the design criteria, BMPs, EMPs, and models.

The above items are critical for effective decisions and outcomes and for the public to be informed. After all, there have been assurances to the public regarding controlling pollution, doing reclamation, and not damaging habitats to a significant degree. We return to the example of the Smoky Canyon mine and its Pole Canyon Creek pollution issue. This is not a

seventy-year-old mine constructed and operated before NEPA and other current environmental laws, yet it is a CERCLA site for selenium contamination. A full and robust explanation of this situation is needed otherwise how can current designs be trusted? This must be done across all the remediation and reclamation projects to date.

Without this analysis the validity of the current assumptions cannot be determined. Without analyzing the accuracy and validity of the assumptions used in previous NEPA processes and projects, one has no way to judge the accuracy and effectiveness of the current analysis and proposals. The predictions made in previous NEPA and permitting processes also need to be disclosed and analyzed because if these were not accurate, and the agency is making similar decisions, then the process will lead to failure.

For instance, if in previous processes the agency or permittee said they were going to perform a certain monitoring plan or implement a certain type of management, meet certain goals and objectives, and these were never effectively implemented or attained, it is important for the reader and the decision maker to know. If there have been problems with implementation in the past, it is not logical to assume that implementation will now be appropriate. If prior projects have not been monitored to document and compare post project initiation conditions to baseline data, then there is no proof that models, design criteria, BMPs, and EPMS are accurate, effective, or can be relied upon. What commitments have been made in the Forest Plan and subsequent project plans? Have these been realized?

The reliance on BMPs (and EPMS) is a flawed approach that assumes they work. There are no reliable data showing that BMP's are cumulatively effective in protecting aquatic, or other resources.¹ Case histories from Idaho showed that BMP's thoroughly failed to cumulatively protect salmonid habitats and streams from severe damage from roads and logging.² In analyses of case histories of resource degradation by stereotypical land management (logging, grazing, mining, and roads) several researchers have concluded that BMP's increased watershed and stream damage because they encourage heavy levels of resource extraction under the false premise that resources can be protected by BMP's.^{3 4} This phenomenon is called the "*illusion of technique*."⁵

¹ Ziemer, R.R., and T.E. Lisle. 1993. Evaluating sediment production by activities related to forest uses--A Northwest Perspective. Proceedings: Technical Workshop on Sediments, Feb. 1992, Corvallis, Oregon. pp. 71-74.

² Espinosa, F.A., Rhodes, J.J. and D.A. McCullough. 1997. The failure of existing plans to protect salmon habitat on the Clearwater National Forest in Idaho. *J. Env. Management* 49(2):205-230.

³ Stanford, J.A., and J.V. Ward., 1992. Management of aquatic resources in large catchments: Recognizing interactions between ecosystem connectivity and environmental disturbance. *Watershed Management: Balancing Sustainability and Environmental Change*, pp. 91-124, Springer Verlag, New York.

⁴ Rhodes, J.J., Espinosa, F.A., and C. Huntington. 1994. Watershed and Aquatic Habitat Response to the 95-96 Storm and Flood in the Tucannon Basin, Washington and the Lochsa Basin, Idaho. Final Report to Bonneville Power Administration, Portland, Or.

⁵ Stanford and Ward. Op. cit.

The Proposed Plan outlines that waste rock, surface water, sediment, groundwater, soil, vegetation, and beef were potentially contaminated. It is uncertain whether this was based on the review of Site information (Plan p4) or actual sampling and analysis throughout the region of contamination.

"The following metals were identified as contaminants of potential concern (COPC) at the NMM EMD:

- Surface water – arsenic, hexavalent chromium, molybdenum, selenium, thallium, uranium, and vanadium;
- Groundwater – aluminum, antimony, arsenic, cadmium, chromium, cobalt, iron, lead, manganese, molybdenum, nickel, selenium, thallium, uranium, and vanadium;
- Sediment – aluminum, arsenic, cadmium, cobalt, iron, selenium, thallium, and vanadium; and,
- Soil, vegetation, and beef – aluminum, antimony, arsenic, cadmium, cobalt, iron, manganese, nickel, selenium, thallium, uranium, and vanadium.

In addition, the calculated concentrations of uranium-238 and radium-226 exceed screening levels in soil and sediment." (Plan p5).

What is needed is a description/analysis of the regional and local scale contamination resulting from the North Maybe Mine and in combination with the other mines for cumulative effects. This should describe the extent of contamination from deposition by wind and water. The position of the EMD and mine on top of a ridge means that regional winds can carry the particulates and associated contaminants long distances in each direction. The deposited particulates and associated contaminants can then move downgradient throughout the watershed with surface flows. They will be carried downgradient in ground water after leaching or percolating into lower soil layers and can re-emerge in streams long distances from the source.⁶ It is not clear from the Proposed Plan what the extent of actual sampling was, or if a sampling and analysis plan was designed and carried out, or whether these "potential contaminants of concern" were arrived at from knowledge of the characteristics of the overburden or mined material.

Our personal experience from working on the first Natural Resource Damage Assessments in the nation in the 1980's in Colorado showed that wind deposited metals and radiological elements traveled miles from the point of origin, that they moved in the surface and ground water and could also be documented in soils, vegetation, fish, invertebrate, and sediment components of the system. The question is whether the Forest Service and Nu-West completed an adequate sampling and analysis program to document the extent of the contamination in all

⁶ Dr. John Carter now with Yellowstone to Uintas Connection directed the surface media investigations at the Uravan Uranium Mill, ASARCO Globe Smelter, Cotter Uranium Mill and Idarado Mine and Mill facilities in Colorado. This work was done under contract with the Colorado Attorney General's office. The comments describe the global results found at these sites.

ecosystem components. The Proposed Plan does not describe the monitoring or its results and does not illustrate these results using maps, analysis, and interpretations. This leaves the public in the dark about the nature and extent of the contamination and the effects on the ecosystem.

3. Summary of Site Risks

The Proposed Plan presents an overview of human health and ecological risks. (Plan p6 - 8). These were presented as non-Radiological and Radiological risk estimates using modeled or "screening level" scenarios at the NMM EMD. It is not clear if all the subunits of NMM were included or only the EMD was considered. It is not clear over what area or extent from the EMD the analysis was conducted or if it was based on actual data collected from the different environmental media.

The metals, non-metals and radionuclides listed above all exceeded their respective human health screening values for all media listed. Risk estimates were "calculated" for the most plausible ecological exposure pathways. The areas evaluated included the EMD Upland Area and the EMD Sediment Control Structure. Apparently, no actual sampling or measurement of the actual levels of contaminants in environmental media downgradient from the Source Areas (including these two subunits plus the open pit and other subunits) was used to make this determination or validate model results. The Proposed Plan does not present the actual concentrations throughout the region affected by these sources, so the public has no idea of what, where and how much. These risks were evaluated in the Screening Level Ecological Risk Assessment (SLERA) which concluded:

EMD Upland Area, "The SLERA concluded that ecological risk for terrestrial plants and soil invertebrates and amphibians in the EMD upland area cannot be excluded. Further, the SLERA also concludes that risk to amphibians and wildlife receptors (terrestrial and aquatic birds and mammals) in the EMD upland area cannot be excluded. Risk to receptors at the EMD upland area is due to 17 soil COPECs: antimony, arsenic, boron, cadmium, chromium (total), copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, thallium, uranium, vanadium, and zinc."

EMD Sediment Control Structure, "The SLERA concludes that ecological risk for small to moderate ranging aquatic-feeding wildlife receptors using the Sediment Control Structure for food and water cannot be excluded. Risks to receptors in the aquatic environment are possible from exposure to 10 surface water COPECs: aluminum, barium, boron, cadmium, chromium (total and hexavalent), selenium, silver, uranium, and vanadium. Risks to receptors in the aquatic environment are possible from exposure to 14 sediment COPECs: aluminum, arsenic, barium, cadmium, chromium (total), copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc."

"As described above, the SLERA for the Site identified several COPECs in surface soil, sediment, and surface water. Therefore, the possibility of adverse risks for ecological receptors cannot be excluded under current conditions and remediation may be warranted."

It appears these models were not validated by actual sampling of all media at and downgradient of the Site. As discussed above in Section 2 of these comments, BMPs and agency EPMs need validation so that the assumptions used in making these determinations and their outcomes can be proven. In addition, the meaning of reclamation and remediation is not made clear for either contaminated media or habitats.

4. Reclamation

The Proposed Plan briefly describes the habitat of the EMD Upland area as being limited "relative to undisturbed native habitat in nearby areas" and having undergone reclamation. It is sloping terrain with grasses, herbaceous plants, and low shrubs. There was no mention of surveys of wildlife in the area documenting what species are present in the EMD and in these "nearby areas" of native habitat. Nor is the native habitat described. The aquatic habitat in the Sediment Control Structure is limited, but an aquatic community has been observed. Fish are absent due to the separation of the SCS from East Mill Creek. No discussion of the aquatic community or contamination levels in the open pit pond or East Mill Creek, or other aquatic environments (springs, seeps, ponds, streams) was presented.

In our comments on the mines mentioned earlier, we have cited Forest Plan and Pocatello ARMP goals and objectives. A summary of these is provided in Attachments 1 and 2 to these comments. Commitments by the Forest Service in its Vision, DFCs and Goals for fish and wildlife rely on prescriptions, standards, and objectives for their attainment. We have included some of these in the following paragraphs. The page numbers refer to pages in the Caribou NF RFP. We have noted brief comments with each.

"Watershed protection and ecological restoration have been given a high priority in the Forest Service in decision-making processes, including budget and program planning, land management planning, project implementation, and watershed assessments for forest and interagency plans." (p2-1). Other than reclamation of the mine footprint to some early seral plant community, habitat structure and ecological restoration were not addressed. The Proposed Plan merely posits, but does not commit to remediation for contamination, let alone the full extent of contamination in all media, nor does it commit to watershed and habitat restoration.

"The Revised Forest Plan addresses minerals operations, reclamation and hazardous substance management by requiring the mine operators to use the most current science and

research as it becomes available." (p2-11). We saw no studies of successful reclamation or covers, and no data from other projects in the mining area to validate the practices proposed or models used. This also applies to BMPs or EPMs.

"Sustain site productivity by providing the following minimum amounts of woody residue = 3 inches in diameter dispersed on the site as outlined in Table 3.1." (p3-7). The Proposed Plan did not discuss the actual habitat needs of the wildlife potentially present, which would include woody residue.

"Adequate bonds or other security instruments shall be required for special use authorizations if it is determined that the use has potential for disturbance that may require rehabilitation or when needed to ensure other performance." (p3-10). The reclamation bond and its provisions were not discussed in the Proposed Plan. What we have seen is the bond is for the actual mine footprint with nothing provided to ensure that long term damage is corrected, pollution eliminated, or habitats restored.

"Mineral resources are available for development, consistent with other resource uses. Paleontological resources are properly managed to provide for preservation and use of these resources for current and future generations. Drastically disturbed sites are reclaimed so that natural recovery to pre-disturbed conditions is most likely. Reclamation emphasizes: 1) suitable topsoil preservation; 2) use of native plant species; and 3) stabilizing lands to a topographic relief (landform) that conforms to natural surroundings. Drastically disturbed lands are reclaimed to prescribed post-disturbance land uses as soon after disturbance as is practical. On mined lands and other drastically disturbed lands, maintain or reestablish hydrologic function, integrity, quality, and other surface resource values within the capability of affected lands. Provide for mineral resource development using state of the art practices for surface resource protection and reclamation, and with consideration of social and economic resources. Mining activities are administered to prevent the release of hazardous substances in excess of established state and/or federal standards. Reclamation is designed to eliminate or minimize wildlife, livestock, and/or human exposure to hazardous substances." (p3-11). This sums it up in a nutshell. We see no evidence in the Proposed Plan that the intent of this RFP passage has been met. In fact, the presence of such massive contamination by such a long list of dangerous pollutants is prima facie evidence this provision was ignored. Likewise, there is no restoration of the streams, springs, topography, hydrology, and other natural attributes. No science or studies from other mines or reclaimed areas was provided to show the success of reclaiming these areas, the plant communities and wildlife populations developed over time, the status of COPCs in soils, vegetation, fish, and wildlife.

"Conduct annual reviews of Best Management Practices (BMPs) and make appropriate adjustments to ensure that hazardous substance releases do not exceed state and/or federal standards." (p3-12). The Proposed Plan did not provide any summary of these reviews or any studies documenting the effectiveness of BMPs or EPMs. Apparently, at NMM given the list of contaminants expected in the ecosystem, they were not effective.

"Lessee/ operator shall conduct pre-mining, concurrent, and/or post-mining water quality and aquatic habitat monitoring (both surface and groundwater) on all phosphate-mining sites where bond release has not occurred, using most current sampling procedures and protocols." (p3-12). The Proposed Plan did not present the results of sampling and analysis of all media throughout the extent of the contaminated region. Were there baseline studies? Was ongoing monitoring conducted? Was monitoring conducted for the Proposed Plan? What are the results and how do they compare?

"Reclamation vegetation shall be monitored for bio-accumulation of hazardous substances prior to release for multiple use management." (p3-13). We have seen no studies or summaries of past projects' reclamation or affected areas other than the PAS. Are mining companies collecting data on reclamation areas and soils adjacent to the mine footprint and haul roads to ascertain the concentration of COPCs in soils and vegetation? What has been done on the North Maybe Mine and its subunits?

"The lessee/operator shall monitor reclamation work annually and report to the Forest Service until reclamation is accepted and the bond released." (p3-13). There was no summary of this annual monitoring provided. According to the PAS, some reclamation covers remain very sparse and the PAS reported high concentrations of contaminants in soil and vegetation.

"Loss of available surface water sources for uses such as wildlife or grazing, as a consequence of mining operations shall be replaced or mitigated by the mine operator. This includes the loss of water quality sufficient to maintain post-mining uses." (p3-13). The Proposed Plan did not provide for any monitoring, mitigation or restoration of water sources for post mining water quality and habitat.

"Ground cover should be assessed prior to release of the reclamation bond to assure: 1) minimum ground cover exists to attain long-term soil productivity requirements; 2) ground cover should persist at minimum cover needs without artificial assistance (e.g. watering, fertilizers, etc.); and 3) meet or trend towards post-mining land use goals." (p3-14). Same comments as above. There is no reported data for the various mines showing the status of revegetation.

"In reclaimed areas, vegetation should include species that meet wildlife habitat needs. Wildlife structures (slash piles, logs, rock piles) using native vegetation and materials are designed to provide cover for wildlife movements in created openings." (p3-14). There was no provision for these features in the Proposed Plan.

"Maintain the dead and down woody material guidelines for wildlife. (See Wildlife Standards and Guidelines for Dead and Down material)." (p3-19). There was no mention of how this is to be achieved in the Proposed Plan for Source Areas (all subunits and haul roads) or in areas outside the mine footprint.

"Not more than 30 percent of any of the principal watershed and/or their sub-watersheds (6th order HUC) should be in a hydrologically disturbed condition at any one time." (p3-16). Note hydrologically disturbed applies to changes in natural canopy and surface soil characteristics that may alter natural streamflow quantities and character. It is presumed that 30% of a watershed can be dug up and destroyed by mining alone, yet other activities also hydrologically disturb watersheds. These include timber harvest or sagebrush treatment, roads and other activities which also remove canopy, and livestock grazing that denudes and compacts soils and accelerates erosion

We have included a summary of Forest Service RFP goals and objectives in Attachment 1. These all must be addressed in the context of this Proposed Plan and further, must be addressed by evaluating the cumulative effects of all the subunits of the North Maybe Mine and other mines in a defined cumulative effects area.

It is not made clear in the Proposed Plan whether the mineral rights for North Maybe Mine were under BLM authority or other ownership or whether BLM participated in the decision-making process that authorized the mining. BLM, however, is a Trustee. We have addressed the provisions of the Pocatello ARMP in comments referenced above for other mines. BLM and Forest Service plans must be consistent. (ARMP p19). A summation of some of the provisions from the Pocatello ARMP is provided in Attachment 2 to these comments. A few of the provisions follow.

"ME-1 reclamation plans for minerals development operations will be designed to meet applicable Idaho Standards for Rangeland Health (BLM 1997), reclamation complete when these standards have been met." The Proposed Plan made no reference to these RH standards and whether these were met or how reclamation is to be monitored.

"ME-2 Final reclamation will meet applicable standards for watersheds, riparian areas and wetlands, stream channels and floodplains, seedings, exotic plant communities, and water quality with future site management directed towards attaining standards for native plant communities and threatened and endangered plants and animals (BLM 1997).

- The lessee/operator will monitor reclamation and report to the Authorized Officer annually until reclamation is accepted as adequate.
- Mineral operations will replace or mitigate any loss of available surface water sources for uses such as wildlife or grazing.
- Plan selection for reclamation will reflect the surrounding ecosystem and post development land use.
- Site specific mitigation measures will be developed through the NEPA process and applied to ensure that operations comply with applicable laws, land use plan guidance and do not result in unnecessary degradation."

There was no mention of these attributes or how the Proposed Plan intends to address them. No mitigation or replacement of contaminated water sources for wildlife was included.

"GE-1 use inventories and surveys to document the condition and extent of resources/uses to monitor and respond to changes in conditions. Mitigate potential adverse effects." The Proposed Plan only addresses contamination, not habitat and mitigating the adverse effects on habitat.

"GE-2 consistent with multiple use and sustained yield, achieve desired conditions while providing an ecologically healthy environment. Reduce impacts from management actions and maintain or improve resource conditions." The Proposed Plan leaves a polluted and degraded landscape without the attributes or contours that existed prior to mining and does not propose restoration.

"GE-3 provide proper nutrient cycling, hydrological cycling, restore or improve public lands adversely affected by major surface disturbance. Employ Idaho Standards for Rangeland Health (1997) to determine success of reclamation, rehabilitation, or restoration activities." The Proposed Plan did not report on the conditions of prior reclamation activities on the NMM or other mines in the affected area and did not propose any restoration.

"SW-2 manage activities to maintain or contribute to the long-term improvement of surface and ground water quality; prioritize stream management and restoration by presence of sensitive species, amount of stream on BLM lands, condition, and importance for achieving multiple use objectives." Instead of improving water quality, the Proposed Plan intends to leave polluted groundwater and surface water, soils, and vegetation, and consequently, poisoned wildlife, pollinators, and other insects/invertebrates, and destroyed habitats, all to the detriment of their populations.

"FW-2 maintain connectivity among habitats, use opportunities to improve habitat connectivity and reduce fragmentation of upland and riparian habitats by land actions, habitat improvement projects, wildlife, fire ES&R and restoration projects." The Proposed Plan omits any reference to wildlife connectivity and how this mine and the proposed reclamation does not destroy connectivity, or how connectivity is to be restored.

These excerpts illustrate the nature of the problem. The phosphate industry is creating pollution and environmental damage that will never be corrected under the current philosophy represented by the Proposed Plan. The Fact Sheet and PAS have described numerous mines with these issues. The public does not have a clue as to the extent of the problem in SE Idaho and it is incumbent on the Trustees to provide an analysis of all the mines and the current nature and extent of this contamination and habitat loss. This should be done under a NEPA process with an EIS that addresses the full extent of not only the contamination problem, but the alterations and fragmentation of habitats and the resulting effects on special status and other species. The analysis should not be fragmented into over a dozen RI/FS and other

voluminous documents for up to 18 or more mines that the public can't access or easily understand. The analysis should also show the intent of the reclamation and remedial actions, the extent of pollution to remain, the extent to which Institutional Controls are to be applied and thereby the extent of the public and private lands that will be off limits or dangerous (exceeding background and all criteria) to people and wildlife.

The State of Idaho statutes include relevant provisions. These are Title 47 Mines and Mining Chapter 15 Mined Land Reclamation and Title 39 Health and Safety Chapter 36 Water Quality. There are numerous provisions in these Statutes that must be addressed. Some of these are:

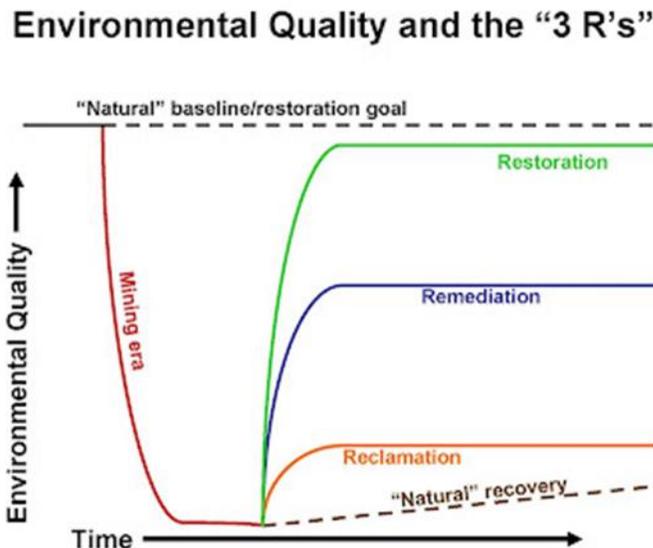
- 47-1509 (4). Manage water as necessary to meet the requirements authorized under chapter 1, title 39, Idaho Code. (This includes meeting water quality criteria, antidegradation and beneficial use intent.)
- 47-1510. VEGETATION PLANTING. (a) Except as otherwise provided in this act, an operator shall plant on affected lands, vegetation species that can be expected to result in vegetation comparable to the vegetation that was growing on the area occupied by the affected lands prior to the exploration and mining operations.
- 47-1511. RECLAMATION ACTIVITIES — TIME LIMITATIONS. (a) All reclamation activities required to be conducted under this act shall be performed in a good and workmanlike manner, with all reasonable diligence, and as to a given exploration drill hole, road, or trench, within one (1) year after abandonment thereof.
 - (b) The reclamation activity as to a given mine panel shall be commenced within one (1) year after mining operations have permanently ceased as to such mine panel, provided, however, that in the event that during the course of mining operations on a given mine panel, the operator permanently ceases disposing of overburden on a given overburden pile, or permanently ceases removing minerals from a given pit, or permanently ceases using a given road or other affected land, then the reclamation activities to be conducted hereunder as to such pit, road, overburden pile, or other affected land shall be commenced within one (1) year after such termination, despite the fact that all operations as to the mine panel, which includes such pit, road, overburden pile, or other affected land, have not permanently ceased.
- 47-1512. FINANCIAL ASSURANCE — REQUISITES. (a) Prior to conducting any mining operations on a mine panel covered by an approved reclamation plan or operating a cyanidation facility covered by an approved permanent closure plan, an operator shall submit to the board financial assurance meeting the requirements of this section. (1) The initial reclamation financial assurance filed prior to conducting any mining operations on a mine panel shall be in an amount determined by the board to be the estimated reasonable costs of reclamation required in this chapter

The Proposed Plan does not propose to meet these criteria. Nothing is revealed regarding the amount of the reclamation bond set aside for the NMM and whether any of that bond has been released or what remains and whether it is adequate for reclamation of the entire NMM. If not, the Bond should be increased to cover restoration to original contours, filling the open pit and restoring habitat that existed prior to mining.

The terms remediation and reclamation are used in the Proposed Plan, but the distinction is not made clear. The Proposed Plan made no mention of restoration. Yet the intent of the Forest Plan and ARMP includes restoration. The Forest Service should clearly distinguish these from each other and demonstrate where its Proposed Plan outcome fits in a continuum to total restoration of background conditions prior to mining. We found an example in a website that provides information on the remediation and restoration taking place in the Clarks Fork River Basin.⁷ That site provides this narrative describing the relationship between reclamation, remediation, and restoration.

Reclamation is a blanket term often used, for example, by mining engineers when they rehabilitate a disturbed site for some useful purpose. Remediation is a legally and technically specific term for treating hazardous material to reduce or eliminate harm to human or environmental health. And restoration is a legally and technically specific term for returning a disturbed site to a more-or-less natural condition.

A diagram illustrating the distinctions is also provided and reproduced below:



⁷ <http://ecover.blogspot.com/2007/04/three-rs-reclamation-remediation-and.html>

According to this diagram, the reclamation described in the Proposed Plan is at the bottom when compared to the other "R's" and far below baseline conditions pre-mining. We argue that the intent of the laws, regulations and land use plans are for restoration.

5. The Preferred Alternative

The Proposed Plan presents 8 alternatives from No Action to Removal and Disposal of the overburden material from the EMD. The Preferred Alternative 7 would consist of an "infiltration-limiting and direct contact-limiting engineered geosynthetic cap system applied to the North Area, excavation of sediment from the SCS and placement within the North Area prior to cap construction, access and use restrictions, informational signage, and monitored natural attenuation (MNA) of residual COPCs in groundwater." (Plan p13). This is expected to take 3 years to construct and cost \$14,698,600 with the resulting decline in contamination taking place over an undefined period or space.

A "reduction in erosion and transport of COPCs to East Mill Creek is to be achieved by capping the North Area. Potential remedies for contaminants that exceed acceptable risks in East Mill Creek beyond the SCS will be evaluated after implementation of the selected EMD remedial alternative." (Plan p17). (This is a clear demonstration that this reclamation Plan is trial and error using the natural environment and wildlife as guinea pigs.)

The Remedial Action Objectives (RAOs) are to prevent direct contact, erosion, and transport of EMD materials or exposure to vegetation on the EMD to human and ecological receptors that would present an "unacceptable risk". (Plan p.8). Groundwater and surface water RAOs are to "minimize" COPC loading from surface and groundwater discharging to East Mill Creek, "minimize" infiltration and COPC loading to groundwater, "minimize" ingestion, direct contact, or food-chain exposure of EMD impacted surface water by ecological receptors. (Plan p9).

"This remedial action at the EMD represents an interim measure of the North Maybe Mine Site as a whole. As such, waivers of chemical Applicable or Relevant and Appropriate Requirements (ARARs) for groundwater and surface water will be necessary until remedial actions are undertaken and compliance points are established for the North Maybe Mine Site." (Plan p9).

Since the Proposed Plan did not provide any overall context for this action, we rely on the PAS and its description of the North Maybe Mine. The PAS also described other Nu-West mines in the area including the South Maybe Canyon, Champ, Mountain Fuel, North, South and Central Rasmussen, Georgetown Canyon, and Dry Valley. Nu-West and its associates have adversely affected the environment on a much larger scale than is revealed in the Proposed Plan.

North Maybe Mine operated from 1965 through 1967, was idle from 1968 to 1971, operated from 1972 to 1984, then sat idle again until the final ore was removed in 1993 (AECOM 2009). During the life of the Mine, approximately 15 million tons of ore and 52 MCY of waste were mined. Major drainages from North Maybe

Mine include East Mill Creek and Kendall Creek. East Mill Creek flows into Spring Creek, which ultimately flows to the Blackfoot River. Kendall Creek flows east to Diamond Creek, which joins with Lanes Creek to form the Blackfoot River. Two additional small drainages at the Mine include an ephemeral stream that flows out of the base of Big Draw Dump and a small spring at the south end of the Mine that flows into Maybe Creek. The Mine pit, which is approximately 2.5 miles long, is surrounded by 12 external waste rock dumps, with approximately 612 acres of disturbance because of mining activities (AECOM 2009).

It is difficult to even know where to start on this situation. As the PAS shows, this mine has likely been sending COPCs into the environment since the early 1960's and that is added to the numerous other Nu-West mines in the area along with mines under other ownerships. This Proposed Plan addresses only one of the "subunits" at the NMM. According to the PAS there is the 2.5-mile-long open pit surrounded by 12 external rock dumps. Now, this Proposed Plan addresses only one of these features and will admittedly allow continued contamination of environmental media. There is no schedule or analysis of the pit or these remaining rock dumps, no schedule for remediation to meet the intent of the Forest Plan, ARMP, or water quality criteria. This Plan merely kicks the can down the road with an indefinite outcome.

As the Plan describes, the ARARs are to be waived for an indefinite period and then when any further remediation occurs, these will be evaluated at points of compliance (POCs). As we have pointed out earlier in these comments, those POCs are at the standard or criteria levels, not background. In addition, this will allow those criteria to be exceeded in the region upgradient of the POC which can be many miles and with MNA, this process can proceed indefinitely. We have seen estimates of hundreds of years for other mines such as Rasmussen Valley. We know from our reviews of these other mine EIS that cutthroat trout in the Blackfoot River system are declining with some streams lacking reports of their presence in recent years and with levels of selenium greatly exceeding levels that allow reproduction. It is not documented what the combined effects of the entire suite of metals, non-metals and radiological isotopes released in this Blackfoot watershed are on cutthroat trout and other species, especially when combined with the effects of the other environmentally degrading activities such as roads, livestock grazing and timber harvest.

"The selected remedy is expected to reduce selenium loads downstream of the North Slope toe to less than 5 pounds per day." (Plan p9). We calculated what this means relative to the chronic threshold for selenium as presented in the PAS. This threshold for aquatic life is 0.005 mg/l. We calculated the streamflow necessary to dilute 5 lbs/day to the threshold. Five pounds per day of selenium would contaminate 185 cubic feet per second to that threshold. That is equivalent to a stream of the order of the Blackfoot River.

Protections include Institutional Controls which basically prohibits access over an area considered to be contaminated to some modeled risk level. For this Proposed Plan that is

unknown. For the entire NMM the extent of contamination is unknown, therefore a wide area of water, soil, vegetation, and wildlife contamination could exist. Then combine this with the other mines. Is the entirety of SE Idaho to become off-limits as mine after mine continues to be approved in the face of this overwhelming evidence of contamination and failures of BMPs and EPMs, and even remediation, to control the contamination?

Then we come to the issue of stability of the Proposed Remedy. As described in the Plan, erosion is to be minimized. The Plan (p10) notes that sloughing of the waste material into the open pit can occur. Even if moved away from the open pit, the EMD remains in a hilltop or ridge position and as we have pointed out in our referenced comments above, SE Idaho is in a seismically active area. This has not been analyzed and the Plan (p10) indicates that "it may be necessary to move overburden away from the rim of the open pit to address highwall stability issues. Collection of additional geotechnical stability data in support of the remedial design may be necessary and would be undertaken in conjunction with pre-design data collection activities. Details for any potential reconfigured rim and associated grading and/or removal of overburden, as well as any necessary road reconstruction or repair, will be developed in the remedial design." This implies many years and a speculated scenario that might or might not occur at just one of 13 subunits at NMM. In the meantime, COPCs will continue to be released and habitat lost.

Monitored Natural Attenuation is another problem. Despite the Tribes' dedication to no contamination as suggested in the PAS, and the CTNF RFP objectives cited, we have ongoing contamination with no end in sight. As we write these comments other mines such as Husky are undergoing environmental analysis as if all this past contamination is somehow not expected or never occurred and once again, promises of BMPs, EPMs and flawed models will be used to explain away the problems.

EPA published guidance on MNA in April 1999, "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites". A look at that guidance document is instructive. In the Purpose, EPA states, "EPA remains fully committed to its goals of protecting human health and the environment by remediating contaminated soils, restoring contaminated groundwaters to their beneficial uses, preventing migration of contaminant plumes, and protecting groundwaters and other environmental resources." EPA goes on to qualify the use of MNA as to whether it is the most "appropriate" technology; will meet site remediation objectives within a timeframe that, "is reasonable compared to that offered by other methods"; incorporate "contingency measures" into the remedy; and "EPA expects that source control and long-term performance monitoring will be fundamental components of any MNA remedy."

In the Background section, EPA states, "When relying on natural attenuation processes for site remediation, EPA prefers those processes that degrade or destroy contaminants. Also, EPA generally expects that MNA will only be appropriate for sites that have a low potential for

contaminant migration.” In the first statement, we have seen that a cover and limiting infiltration is the principal mechanism at work to control and retain pollutants in the Source Area indefinitely, but it will continue to allow contaminant migration - recall the 5 pounds of selenium per day. The contaminants will not be destroyed. Regarding the second statement, NMM has extreme topographic relief with its Source Areas on top of the ridge. The potential for migration to Non-Source Areas is great and as we have seen, continues despite any (not known) remedial or control measures taken to date.

The Directive discusses MNA applied to inorganics as well. Since the Proposed Plan Preferred Alternative is to leave the current contamination in place where it will gradually leak outward and downward across the region, it is important to see what EPA has to say. “Changes in a contaminant’s concentration, pH, redox potential, and chemical speciation may reduce a contaminant’s stability at a site and release it into the environment. Determining the existence, and demonstrating the irreversibility, of these mechanisms is important to show that a MNA remedy is sufficiently protective.” EPA further summarizes by saying, “Therefore, natural attenuation of inorganic contaminants is most applicable to sites where immobilization or radioactive decay is demonstrated to be in effect and the process/mechanism is irreversible.

If the Forest Service and Nu-West determine to leave in place the COPCs they have the burden of showing that the COPCs currently at and surrounding the site will remain there and not, through physical, chemical, or biological means, migrate further, change states, or become accessible for human or animal consumption or exposure. On this steep slope, which has stability and seismic risks, where animals or insects, or plant roots can access the contaminated material there can be no assurance the Preferred Alternative will provide long term protection and as we point out, it is a leaky system by design.

Based on the magnitude of the problem, i.e. the legacy these phosphate mines are leaving, the only appropriate alternative is to remove the contaminated materials in efforts similar to that which occurred in other places, such as the Atlas Uranium Mill in Moab, Utah. While expensive, it must be balanced against the centuries long or longer time until MNA documents contamination has returned to background levels, not just ARARs which can exceed toxic and chronic thresholds for people, fish and other wildlife, vegetation, insects, and microorganisms. Much of this is not addressed in the Proposed Plan.

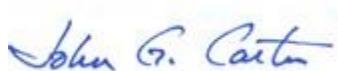
Why has this happened? The NMM has been around since the early 1960's, but as the PAS describes has gone thru several active phases up until 1993 when the final ore was removed. Environmental laws such as the Federal Water Pollution Control Act (1948 and 1972), Clean Water Act (1972), Multiple Use and Sustained Yield Act (1960), National Forest Management Act (1976), Federal Land Policy and Management Act (1976), Comprehensive Environmental Response, Compensation, and Liability Act (1980) have been in place during this process. Either the Acts themselves are inadequate, or the agencies tasked with implementing these laws have failed to implement their intent such as in the case of the SE Idaho phosphate industry.

Costs of remediation of NMM are raised as a concern, but there is no analysis of the costs of lost ecosystem values, polluted water, wildlife, and human health effects. It is especially troubling that the CTNF and BLM continue to approve these mines in an area deemed a Superfund Site subject to Natural Resource Damages from past and/or ongoing mining pollution. In past comments we have questioned whether the economic benefit outweighs the environmental costs of mining phosphate in this region. According to the recent Smoky Canyon DEIS, this region produces 15% of the phosphate rock in the US while Florida and North Carolina produce 85%. There is no evaluation of the value of the Public Lands to present and future generations for its inherent benefits of water supply, fish and wildlife and recreation. The American People are left with a permanent burden of water pollution, degraded water supplies, polluted and destroyed fish and wildlife habitat, reduced productivity of ecosystems, and reduced or eliminated species.

Groundwater impacts are minimally described at best. Models used depend on numerous parameters, each of which has a wide range of variability. Cover systems and reclamation are described, but no test plot data for revegetation, lysimeter tests for leachates have been provided, or perhaps they have not been conducted. We conclude that these mining projects are an experiment but with universal outcomes of destroyed habitat and polluted environments.

That the Smoky Canyon mine became a Superfund Site discredits the permitting and analysis process. What models and BMPs were used? What did they predict? What was or were the outcomes? How can the public be assured that Dairy Syncline, Caldwell, Husky, or other mines undergoing NEPA review or recently permitted will not suffer the same or similar outcome, leaving the public burdened with cleanup, restoration, and loss of public resources for many generations, effectively permanently? Reclamation Bonds appear to be only for reclamation. When does it expire? What tools or resources are available to correct ongoing pollution and habitat loss extending past the Mine life or past the Bonding period?

Sincerely,



July 28, 2021

John Carter, Ecologist
Yellowstone to Uintas Connection
PO Box 363
Paris, ID 83261

Michael Garrity – Executive Director
Alliance for the Wild Rockies
P.O. Box 505
Helena, MT 59624

Sara Johnson – Executive Director
Native Ecosystems Council
P.O. Box 125
Willow Creek, MT 59760

Buck Ryan
Snake River Waterkeeper
2123 N. 16th St.
Boise, ID 83702

Katie Fite - Public Lands Director
WildLands Defense
P.O. Box 665
Boise, ID 83701

Attachment 1. Forest Plan Guidance

Chapters 1 - 3 of the Caribou National Revised Forest Plan (RFP) address the Vision, Desired Future Condition, Goals, Standards and Guidelines the Forest Service committed to use. The public has relied on these commitments, but the Forest Service apparently has left these up to the Project Proponents. The Project Proponents did not address these in any depth, if at all. There is no demonstration that the Forest Service has complied with or addressed these commitments. Quotes are from the RFP with pages identified.

"Develops and uses scientifically credible strategies for the protection of species and ecosystems." (p1-2). Migration corridors, linkages, peripheral habitat were not analyzed.

"Monitoring and evaluation is an essential feature of the Plan." (p1-4). No Forest Service monitoring of DFC, habitat and populations presented.

"The NFMA diversity provision and the fish and wildlife resource regulation establish a goal to provide habitat for the continued existence of vertebrate species in the planning area. The goal is met by following the provisions of 36 CFR 219.19(a)(1) through (a)(7). The bottom line is that the Forest Service may not adopt a plan that it knows or believes would, through possible future Forest Service actions, extirpate a vertebrate species from the planning area." (p1-4). The destruction of habitat from mining, roads and other activities is effectively extirpating most species from the mine footprint and project areas during mining and for some species, permanently. There was no analysis of population data from Forest Service monitoring of population trends and no analysis of project and cumulative effects on habitats and species other than broad general assertions.

"Watershed protection and ecological restoration have been given a high priority in the Forest Service in decision-making processes, including budget and program planning, land management planning, project implementation, and watershed assessments for forest and interagency plans." (p2-1). Other than reclamation of the mine footprint to some early seral plant community, habitat structure and ecological restoration were not addressed.

"New scientific information indicates that 60 percent of the healthiest aquatic habitats occur in roadless or very low road density areas on federal land, specifically in the Columbia River Basin (ICBEMP, 2000)." (p2-2). Our analysis for Dairy Syncline showed the HBIRA in already degraded condition with the project eliminating all security habitat. What is the status or IRAs and security habitat in the area affected by NMM. This has not been analyzed.

Only 10% of watersheds are in good condition, 80% need restoration and improvement. Only about 30% of riparian areas are in pfc. (p2-3). Aspen are in a high departure from HRV and a 40% decline in aspen acres on the Forest. (p2-4). Sagebrush habitats have more bare ground and suffer increasing soil loss. (p2-5). In comments on other mines, we have recommended the steps needed to analyze, document and restore habitat. Clearly at NMM these are non-existent

and there is no intent to restore or improve habitats as the intent of the regulations, Forest Plan and other rules provide.

"Due to changes in and loss of historic habitat, big game animals are pioneering new winter ranges on and adjacent to the Forest. The most recent impact is urban residential development on historic winter ranges." (p2-6). Winter range is not analyzed, but clearly could not exist under the Proposed Plan.

"The Revised Forest Plan addresses minerals operations, reclamation and hazardous substance management by requiring the mine operators to use the most current science and research as it becomes available." (p2-11). We saw no studies of successful reclamation or covers, no data from other projects in the mining area to validate the practices proposed. This also applies to BMPs or EMPs. How are we left with this massive contaminated landscape if these supposed protections were adequate?

"In six of the seven ecological subsections on the Forest, Yellowstone and Bonneville cutthroat trout stronghold restoration and protection will be emphasized." (p2-12). We see no restoration effort to restore flows and habitat. Restoration mechanisms and locations should have been identified and proposed as part of the Proposed Plan.

"The National Forest Management Act (NFMA) regulations require National Forests to provide habitat in order 'to maintain viable populations of existing native and desired non-native vertebrate species in the planning area.'" (p2-13). There was no population analysis for species at risk, nor was the habitat fragmentation affecting big game, sage grouse, lynx, wolverine, and raptors such as Northern goshawk analyzed.

"The Plan addresses big game issues important to the Idaho Department of Fish and Game by designating winter ranges and prescription areas which emphasize big game security. It will maintain habitat for threatened, endangered, and sensitive species, where they exist." (p2-13). There was no analysis of the current state of wildlife habitat, connectivity and security areas.

DFCs and Vision for the CNF: *"Landscapes display a balance of physical landscape components, including upland terrestrial habitats, riparian areas, wetlands, and clean water. Both aquatic and terrestrial habitats are becoming less fragmented and more connected." (p3-2).* Once again there was no analysis showing that habitats are becoming less, not more, fragmented and water quality is definitely not "clean" per the intent of the CWA.

"Within 10 years of signing of the Record of Decision (ROD), reassess composition and structure and other indicators used in the Caribou Sub-regional Properly Functioning Condition Assessment. This should include the Caribou and adjacent areas to determine changes achieved." (p3-3). No information on PFC of the habitats pre-mining, in adjacent areas, and the currently disturbed area was provided.

"Soil quality, productivity, and hydrologic function are maintained and restored where needed. Long term soil productivity is sustained and meets future land needs. Soils have adequate protective cover, adequate levels of soil organic matter (litter), and coarse woody material. Physical, chemical and biological processes in most soils function to sustain the site. Microbiotic crusts and their importance to soil stability are recognized. Management practices are designed to retain these soil components." (p3-5). There was nothing in the Proposed Plan describing how these processes and components are to be restored.

"Long-term soil productivity is sustained by limiting detrimental soil disturbances and by retaining ground cover, microbiotic crusts, fine organic matter and, where applicable, woody residue on activity areas." (p3-6). All woody residue was lost from the forested and shrub habitats, and soil organic matter, microbes were disrupted by excavation, storage and mixing. This was not addressed in the Proposed Plan.

"For ground-disturbing activities where detrimental soil disturbances (defined in FSH 2509.18) occur on areas of 10 acres or greater, plan and implement rehabilitation to meet desired future conditions." (p3-6). The Proposed Plan did not address DFC for the disturbed areas.

"Detrimental soil disturbance such as compaction, erosion, puddling, displacement, and severely burned soils caused by management practices should be limited or mitigated to meet long-term soil productivity goals." (p3-6). No data or research was provided to demonstrate that reclaimed areas will meet this.

"Sustain site productivity by providing the following minimum amounts of woody residue =3 inches in diameter dispersed on the site as outlined in Table 3.1." (p3-7). Reclamation description did not provide for woody residue.

"Adequate bonds or other security instruments shall be required for special use authorizations if it is determined that the use has potential for disturbance that may require rehabilitation or when needed to ensure other performance." (p3-10). Only a reclamation bond for the mine footprint was provided. No information was provided to indicate that the bond will ensure that long term damage is corrected or habitats restored.

"Mineral resources are available for development, consistent with other resource uses. Paleontological resources are properly managed to provide for preservation and use of these resources for current and future generations. Drastically disturbed sites are reclaimed so that natural recovery to pre-disturbed conditions is most likely. Reclamation emphasizes: 1) suitable topsoil preservation; 2) use of native plant species; and 3) stabilizing lands to a topographic relief (landform) that conforms to natural surroundings. Drastically disturbed lands are reclaimed to prescribed post-disturbance land uses as soon after disturbance as is practical. On mined lands and other drastically disturbed lands, maintain or reestablish hydrologic function, integrity, quality and other surface resource values within the capability of affected lands. Provide for mineral resource development using state of the art practices for surface resource

protection and reclamation, and with consideration of social and economic resources. Mining activities are administered to prevent the release of hazardous substances in excess of established state and/or federal standards. Reclamation is designed to eliminate or minimize wildlife, livestock, and/or human exposure to hazardous substances.” (p3-11). These provisions were not addressed in the Proposed Plan. The topography appears to be permanently altered with an unnatural relief, a huge open pit and no forested habitats provided. There was no evidence provided or studies from reclaimed areas in the phosphate mining area to show the success of reclaiming these areas, the plant communities developed over time, the status of COPCs in soils and vegetation. The Proposed Plan did not address restoration of hydrologic function, particularly for streams and springs and their associated riparian or wetland areas.

”Conduct annual reviews of Best Management Practices (BMPs) and make appropriate adjustments to ensure that hazardous substance releases do not exceed state and/or federal standards.” (p3-12). There was no summary of these reviews or any studies documenting the effectiveness of BMPs or EPMs. Clearly, given the status of pollution described in the Proposed Plan, they were not effective.

”Lessee/ operator shall conduct pre-mining, concurrent, and/or post-mining water quality and aquatic habitat monitoring (both surface and groundwater) on all phosphate-mining sites where bond release has not occurred, using most current sampling procedures and protocols.” (p3-12). There was no reporting of this monitoring data in the Proposed Plan.

”Best Management Practices shall continue to be developed, refined and implemented to ensure that no release of hazardous substances into the environment exceeding established state and/or federal standards occurs.” (p3-12). We have commented in detail on the past failures of covers and BMPs. The existence of COPC contamination at Smoky Canyon Mine and the other mines indicates the technology and models are still experimental and cannot be relied upon.

”When surface disturbing activities are proposed within geologic units having a moderate or high potential for the occurrence of vertebrate fossils (other than fish or sharks), a field survey of the area shall be made prior to, and if possible, during the proposed activities.” (p3-12). We did not find any reference to this in the Proposed Plan.

”Reclamation vegetation shall be monitored for bio-accumulation of hazardous substances prior to release for multiple use management.” (p3-13). We have seen no studies or summaries of past projects reclamation or affected areas other than the summary in the PAS. Are mining companies collecting data on reclamation areas and soils adjacent to the mine footprint and haul roads to ascertain the concentration of COPCs in soils and vegetation? We can't tell from the Proposed Plan what, if any, monitoring was done at NMM.

”The lessee/operator shall monitor reclamation work annually and report to the Forest Service

until reclamation is accepted and the bond released.” (p3-13). According to the PAS, some reclamation covers remains very sparse with high concentrations in soil and vegetation.

“Loss of available surface water sources for uses such as wildlife or grazing, as a consequence of mining operations shall be replaced or mitigated by the mine operator. This includes the loss of water quality sufficient to maintain post-mining uses.” (p3-13). No mitigation was described for loss of these nor any monitoring and mitigation plan for post mining water quality, spring and stream restoration.

“Ground cover should be assessed prior to release of the reclamation bond to assure: 1) minimum ground cover exists to attain long-term soil productivity requirements; 2) ground cover should persist at minimum cover needs without artificial assistance (e.g. watering, fertilizers, etc.); and 3) meet or trend towards post-mining land use goals.” (p3-14). Same comments as above. No reported data for the various mines showing the status of revegetation.

“In reclaimed areas, vegetation should include species that meet wildlife habitat needs. Wildlife structures (slash piles, logs, rock piles) using native vegetation and materials are designed to provide cover for wildlife movements in created openings.” (p3-14). No provision for these features were seen in the Proposed Plan reclamation description.

“Watersheds provide infiltration, retention, and release of water appropriate to soil type, vegetation, climate, and landform. Watersheds provide a well-distributed pattern of nutrients and energy as well as diverse age-classes of vegetation that contribute to watershed health. Restoration strategies promote recovery of watershed, riparian, water quality and aquatic conditions characteristic of the geoclimatic setting.” (p3-15). No restoration strategy was described to restore these structural and functional characteristics.

“Each year, complete at least one Watershed Assessment for a 5th HUC watershed. Incorporate Hydrologic Condition Inventories using A Framework for Analyzing the Hydrologic Condition of Watersheds or current equivalent Regional or National guidance.” (p3-16). Nothing was provided in the Proposed Plan regarding watershed functions and hydrologic alteration of stream flows, spring flows, groundwater.

“Not more than 30 percent of any of the principal watershed and/or their subwatersheds (6th HUC) should be in a hydrologically disturbed condition at any one time.” Note hydrologically disturbed applies to changes in natural canopy, surface soil characteristics that may alter natural streamflow quantities and character. (p3-16).

“Proposed actions analyzed under NEPA should adhere to the State Nonpoint Source Management Plan to best achieve consistency with both Sections 313 and 319 of the Federal Water Pollution Control Act.” (p3-16). IDAPA provides for practices such as livestock exclusion and buffer zones for riparian areas to address sediment and e. coli pollution. There was no plan

to relieve stress on the streams and springs in the project area (undefined) by reducing livestock impacts, water diversions and other measures to restore water quality and stream flows.

"Diverse forested and non-forested ecosystems are maintained within their historic range of variability and/or restored through time with emphasis on aspen, aspen-conifer, mixed conifer, big sagebrush, mountain brush and tall forbs." (p3-17). Reclaimed ODAs and mine pit do not provide this HRV.

"In each 5th code HUC which has the ecological capability to produce forested vegetation, the combination of mature and old age classes (including old growth) shall be at least 20 percent of the forested acres. At least 15 percent of all the forested acres in the HUC are to meet or be actively managed to attain old growth characteristics." (p3-19). There was no discussion or analysis of the current state of forested vegetation, the amount removed, the percentage of mature and old age classes to compare with this criterion.

"Maintain the dead and down woody material guidelines for wildlife. (See Wildlife Standards and Guidelines for Dead and Down material)." (p3-19). No mention of how this is to be achieved in the reclamation plan or in areas inside and outside the mine footprint in the Project Area.

"The Forest provides habitat that contributes to state wildlife management plans. Forest management contributes to the recovery of federally listed threatened, endangered, and proposed species and provides for conditions, which help preclude sensitive species from being proposed for federal listing." (p3-24). In our comments on various mines and other Forest projects, we have discussed the displacement of wildlife and fragmentation of habitats, loss of security areas and blocking of migration corridors for lynx and other species by roads, mines, transmission lines. Part of reclamation should be restoring these functions for special status species. This is not addressed in the Proposed Plan.

"Maintain, and where necessary and feasible, provide for habitat connectivity across forested and non-forested landscapes." (p3-24). Nothing was provided in the Proposed Plan to mitigate fragmentation or restore connectivity.

Wolverine Habitat: *"Within two years of signing the ROD, complete a GIS analysis to identify potential wolverine natal den sites. Within four years of the ROD, survey potential wolverine natal den sites to document wolverine presence and assess suitability as natal denning habitat."* (p3-24). The FEIS for the Caribou NF RFP provided information on wolverines, but there was no mention of these studies and potential wolverine habitat in the Proposed Plan.

Canada Lynx Habitat: *"Within three years of signing the ROD, complete surveys on the Soda Springs and Montpelier Ranger Districts."* (p3-24). No evidence in the Proposed Plan that effects of the NMM and reclamation plan on lynx were considered.

Sage Grouse: *"Within five years of signing the ROD, map functional and degraded sage*

grouse nesting and winter habitat within 5 miles of known leks. Identify opportunities to increase quality or quantity of that habitat." (p3-25). Was this done for the NMM? What leks were in the area and what is their status today. How will reclamation restore sage and sharptail grouse habitat?

Migratory Landbirds: *"Within five years of signing the ROD, establish breeding bird trend plots to monitor changes in breeding birds in relation to structure or shrub riparian habitats. Once established, reread plots every three years."* (p3-25). There was no discussion of these trend plots and the resulting data if they were ever established and monitored, how the NMM affected these birds and how the Proposed Plan will restore their habitat.

Amphibians: *Repeat amphibian surveys at 10 year intervals to determine habitat and population trends.*" Survey potential habitat. (p3-25). The Proposed Plan mentioned amphibians in the Sediment Pond, but there was nothing about the effects on their natural habitat or the chemical effects on potential populations, or restoring their habitats.

In project analyses affecting grassland, sagebrush, mature and old forest habitats, assess impacts to habitat and populations for MIS Columbian sharp-tailed grouse, sage grouse and northern goshawk. (p3-25). No data provided for the cover and vegetation community characteristics needed for these MIS. No population trends provided. No information on the status of their habitats and populations pre-mining and how the Proposed Plan will restore their habitats.

Snag/cavity nesting habitat not characterized. Table 3.3 lists biological potentials by forested vegetation type. (p3-28). There was no analysis of these characteristics and how reclamation will restore this habitat feature.

"Management direction which will maintain linkages for Canada lynx on the Forest is located in the following places: Vegetation Desired Future Conditions; Vegetation Goals 1-4; Vegetation Standard 2; Wildlife Goals 2, 3, and 5; Vegetation Goal 7; Lands Objective 1; and Lands Standard 1." (p3-28). There was no analysis of the status of these attributes or measures needed to maintain or restore the linkages.

Northern goshawk standards and guidelines are provided in Table 3.5. *"Open roads in goshawk territories shall be given priority for closure to meet management prescription road density standards. First priority shall be to close roads in nest areas; second priority in post-fledging family areas; third priority in foraging areas. Where possible, open road density should be zero in the nest areas and the post-fledging family areas."* (p3-30). Road density was not addressed, goshawk home ranges were not mapped and analyzed for the habitat characteristics, security and road densities in the Project Area, what habitats were destroyed by mining and how these will be restored.

Habitat guidelines for Flammulated, Boreal and Great Gray owls include limiting timber harvest and maintaining mature and old forest age classes. (p3-31). Same comment as above for goshawk.

Big game guidelines provide for buffers for sight distance around big game concentration areas and provide for security or travel corridors near created opening. (p3-31). These were not identified by location and there was no mapping or analysis of travel corridors functionality pre-mining and how they will be restored.

For Sage grouse, *"Management activities should consider proximity to active lek locations during site-specific project planning. Those within 10 miles of an active sage grouse lek and 2 miles of active sharp-tailed grouse leks should be considered further for suitability as grouse habitat."* (p3-32). The Proposed Plan did not provide data or analysis of the current condition of habitats for sage grouse within 10 miles of the NMM and its Project Area.

Amphibian guidelines include *"Maintain amphibian habitats when developing and modifying springs and wetlands."* (p3-32). Habitats were be reduced or destroyed at the NMM. The Proposed Plan did not discuss restoring or mitigating these habitats.

Landbird guidelines include: *"Stands of mature trees (including snags and dead-topped trees) should be maintained next to wet meadows. Where feasible, maintain 30 to 50 percent of the sagebrush habitat in a 5th code HUC in contiguous blocks greater than 320 acres to support sagebrush obligate species. (Page and Ritter, 1999). Practices which stabilize or increase native grass and forbs cover in sagebrush habitats with 5% to 25% sagebrush canopy cover should be implemented. (Page and Ritter, 1999). In sagebrush habitats, manage herbaceous cover to conceal nests through the first incubation period for ground and low shrub-nesting birds. It is assumed that proper use of rest-rotation or deferred-rotation grazing should meet these conditions, although not every year on every area (Idaho Partners in Flight 2000)."* (p3-33). These attributes, their condition pre-mining and current status. Their management and restoration were not addressed.

Transportation goals, standards, guidelines and objectives include: *"Roads and trails not needed for long-term objectives are decommissioned, stabilized, and restored to a more natural state. Within three years of signing the ROD, initiate site-specific travel planning to incorporate Revised Forest Plan direction on access management. Roads identified as unneeded in a roads analysis should be decommissioned, stabilized and returned to production."* (p3-36). This was not addressed. All temporary and illegal roads and trails should be mapped and, as we suggest, the mining companies could do this as a mitigation.

Pocatello ARMP Goals, Objectives, Actions

FLPMA incorporates language from the Multiple Use and Sustained Yield Act stating in part, *"use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output."* 43 USC 1702(c).

A review of the April 2012 Record of Decision and Pocatello Field Office Approved Resource Management Plan provides a picture of management that states, through its Planning Criteria, Goals, Objectives and Actions, an intent to provide for wildlife and watershed values, and native American values. Our reviews of the EIS for the Caldwell Canyon Mine, Dairy Syncline Mine, Smoky Canyon Mine, Rasmussen Valley Mine and their Reclamation Plans present a very different picture. It is a picture of a single use, phosphate mining, that literally bulldozes all other considerations aside and is given priority over all other uses. Despite the length of these EIS, and the numerous technical reports referenced, we cannot say that the multiple use values espoused by FLPMA (or NFMA for that matter) are supported. Nor can we say that the intent of the ARMP is carried out. In the following paragraphs we summarize some, but not all, of the provisions of the ARMP that are not met in the Proposed Plan. We have not commented on them individually, but the Proposed Plan must meet the intent of the ARMP.

ARMP Selected Planning Criteria (ARMP Table 5)

- The principles of multiple use and sustained yield, as set forth in FLPMA, will be applied in the RMP.
- Recognize Idaho Non-Point Source Management Program Plans and relevant state water quality standards.
- Maintain, improve, or restore natural functions to benefit water storage, groundwater recharge, water quality, and fish and wildlife values.
- Provide for multiple use and sustained yield of forage for wildlife and domestic livestock. In consultation with the Idaho Department of Fish and Game (IDFG), ensure that wildlife habitat is sustained.
- Incorporate management actions that do not jeopardize the continued existence of federally listed threatened or endangered plant or animal species or that result in the destruction or modification of critical habitat.
- Incorporate management actions that protect sensitive species and do not contribute to the listing of species proposed for federal listing (candidate species).
- Protect and maintain the intrinsic and recreational values associated with native and appropriate nonnative species.

- Protect critical deer and elk winter range and big game habitat.
- Consider need to minimize harassment of wildlife or significant disruption of wildlife habitats.
- Identify areas that are managed specifically to protect nonmineral resource values but may conflict with mineral resource development.
- Manage to retain values that make cultural resources and areas significant to tribal members. Protect cultural use areas, in cooperation with tribal governments. Recognize Fort Bridger Treaty rights with all associated management activities and uses.

The ARMP (p10) notes that BLM planning regulations require its plans to be consistent with those adopted by other federal, state, local and tribal governments. The 2003 Caribou National Forest Revised Forest Plan and EIS was among those listed.

The ARMP includes Goals, Objectives and Management Actions. These bullets below reflect these.

- GE-1 use inventories and surveys to document the condition and extent of resources/uses to monitor and respond to changes in conditions. Mitigate potential adverse effects.
- GE-2 consistent with multiple use and sustained yield, achieve desired conditions while providing an ecologically healthy environment. Reduce impacts from management actions and maintain or improve resource conditions.
- GE-3 provide proper nutrient cycling, hydrological cycling, restore or improve public lands adversely affected by major surface disturbance. Employ Idaho Standards for Rangeland Health (1997) to determine success of reclamation, rehabilitation, or restoration activities.
- CR-1 ensure scientific and socio-cultural values are maintained and available for appropriate uses by present and future generations. Traditional uses have long term preservation.
- TR-1 maintain traditional/cultural use values and the health of land and water resources so treaty rights and interests can be fulfilled.
- SW-1 provide for soil quality, productivity and hydrological function within naturally sustainable limits.
- SW-2 manage activities to maintain or contribute to the long-term improvement of surface and ground water quality; prioritize stream management and restoration by presence of sensitive species, amount of stream on BLM lands, condition and importance for achieving multiple use objectives.
- VE-1 mitigation measures to reduce visual contrasts with rehabilitation/restoration areas
- VE-4 maintain or increase Land Health Condition-A acres; prioritize treatment and restoration in Greater sage- and Columbian sharp-tailed grouse Source and Key habitat. habitats for conservation and recovery of special status species; in aspen/aspen conifer and dry conifer types maintain or increase LHC-A and B acres.

- FW-1 manage habitats for vegetation composition and structure assures continued presence of fish and wildlife as part of an ecologically healthy system; manage riparian areas for habitat and population linkage, restore degraded riparian areas, use seasonal restrictions for winter range, fawning and calving habitats, during planning reduce number of designated routes/roads in big game habitats; manage livestock season of use, stocking rates to provide sufficient shrub forage for wildlife. Big game winter range shown in Figure 2.
- FW-2 maintain connectivity among habitats, use opportunities to improve habitat connectivity and reduce fragmentation of upland and riparian habitats by land actions, habitat improvement projects, wildlife, fire ES&R and restoration projects.
- SS-1 manage special status species and habitats to provide for their continued presence and conservation. Conserve, inventory and monitor special status species. Maintain or improve the quality of listed species habitat by managing public land activities to support species recovery and the benefit of those species.
 - Bald eagle - determine distribution of populations and suitable habitats; cooperate in conducting nest surveys and monitoring; cooperate in maintenance and improvement of habitat in key foraging areas such as deer winter range, aquatic and riparian habitats.
 - Gray wolf - determine distribution of wolves and key gray wolf habitat areas such as dens, rendezvous sites, and crucial big game winter ranges; cooperate in improving gray wolf habitat by improving big game winter range.
 - Utah Valvata Snail - gather existing information to understand the distribution of known populations, ensure Federal actions support or do not preclude species recovery.
 - Maintain or improve the quality of sensitive species habitat by managing to support recovery and benefit those species
 - Pygmy rabbits - survey potential habitats, manage sagebrush habitats for suitable pygmy rabbit conditions, suitable and potential habitat should be managed to allow for expansion of populations.
 - Boreal toads and Northern leopard frogs - identify and inventory populations, manage riparian areas towards PFC, increase pool habitat, mitigate activities having adverse effects on habitats, manage Lane and Lander Creeks as priority areas.
 - Sage Grouse - Protect and maintain suitable habitats and reconnect separated populations, manage key habitat for sagebrush, grass and forb cover, monitor progress and adjust activities to make progress towards Greater sage grouse goals and objectives, evaluate future actions for threats and restore shrub-steppe habitats in source areas, restoration areas and areas that link populations.
 - Cutthroat trout - monitor populations, habitat quantity and quality, enhance channel integrity, water quality, and habitat connectivity, fence streams with these species to exclude livestock, eliminate or reduce threats to present or potential cutthroat trout distribution and to habitat quality and quantity, strive to achieve highest quality trout habitats

- Migratory birds - improve canopy cover and understory health of sagebrush, maintain 30 - 50% of sagebrush habitat in 5th HUC in contiguous blocks greater than 320 acres, stabilize or increase native grass and forb cover in sagebrush, restore shrub-steppe habitats in restoration or corridor areas.
- Special status plants - meet or make significant progress towards meeting Idaho Standards for Rangeland Health (BLM 1997) for special status plant habitat.
- Where special status species can be conserved and habitat connectivity improved, lands will be acquired through land tenure adjustments, easements, and interagency cooperation.
- LR-4 assure land classifications and withdrawals of public lands are appropriate to protect important resource values.
- LR-5 maintain overall public land base, protect significant resource values, high value parcels may not be suitable for disposal except through exchange for equal or higher resource value lands.
- LR-6 balance development with protection of natural resources and public enjoyment and recreation.
- ME-1 reclamation plans for minerals development operations will be designed to meet applicable Idaho Standards for Rangeland Health (BLM 1997), reclamation complete when these standards have been met.
- ME-2
 - On split estate lands approval of any operations plan will be coordinated with the surface owner to mitigate impacts; stipulations, mitigation and reclamation requirements will be the same as on public lands and/or equivalent to State standards.
 - Final reclamation will meet applicable standards for watersheds, riparian areas and wetlands, stream channels and floodplains, seedings, exotic plant communities, and water quality with future site management directed towards attaining standards for native plant communities and threatened and endangered plants and animals (BLM 1997).
 - The lessee/operator will monitor reclamation and report to the Authorized Officer annually until reclamation is accepted as adequate.
 - Mineral operations will replace or mitigate any loss of available surface water sources for uses such as wildlife or grazing.
 - Plan selection for reclamation will reflect the surrounding ecosystem and post development land use.
 - Before bond release, the site will be assessed to assure: minimum ground cover exists to attain long-term soil productivity, ground cover persists, impacted lands meet or trend towards meeting applicable standards and post development land use objectives. In reclaimed areas, vegetation will include species that meet wildlife habitat needs. Cover for wildlife will be incorporated into design plans (e.g. slash piles, logs, rock piles, etc.).
 - Prevent or control sediment and the release of contaminants into the environment.

- Monitor hydrologic function and watershed health with adjustments to operations and reclamation as necessary to achieve PFC of watersheds, revegetation objectives and protection of resources.
- Mine site plans designed to protect SE Idaho surface water resources, wildlife habitat and ecological resources, multiple beneficial uses, ground water resources.
- Meet ARMP Appendix F and (p101) action levels for selenium, cadmium, chromium, nickel, vanadium and zinc for vegetation, ground water, surface water, and CWA.
- Appropriate site specific mitigation measures will be implemented as conditions of approval.
- Site specific mitigation measures will be developed through the NEPA process and applied to ensure that operations comply with applicable laws, land use plan guidance and do not result in unnecessary degradation.