



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

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 SECRETARY OF THE  
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Kimberly D. Bose  
 Secretary  
 Federal Energy Regulatory Commission  
 888 First Street, N.E.  
 Washington, D.C. 20426

**Subject:** Review of the biological assessment for the Port of Coos Bay slip and access channel, Jordan Cove LNG Terminal, and Pacific Connector Gas Pipeline projects (CP07-441-000, CP07-444-000)

Dear Ms. Bose:

The Fish and Wildlife Service (Service) has received Federal Energy Regulatory Commission's (FERC) biological assessment (BA) for the proposed Jordan Cove and Pacific Connector project (Project) construction and operations, including a new Liquefied Natural Gas (LNG) terminal on North Spit, Coos Bay, Oregon, and an approximately 234 mile long natural gas pipeline that terminates at Malin, Oregon. The BA and your undated letter requesting section 7 formal consultation in accordance with the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) was received on May 8, 2009.

The Service completed its 30 day review of the BA and notified FERC on June 3, 2009 via electronic mail that the BA would not be adequate to allow for initiation of formal consultation on the Project, as outlined in regulations governing interagency consultation (50 CFR 402.14).

FERC, the applicants, and their consultants should be commended for their efforts to produce this BA and its supportive documents (appendices, plans and references). Collectively they represent a highly complex source of immense amounts of information and analyses, as is appropriate for a project of such significance and complexity. These parties must also be commended for their initial use of a strategic, facilitated, and iterative informal consultation process with the Service and other agencies to develop the Applicant Draft Biological

Assessment<sup>1</sup>. The Service strongly believes that the Project and the BA are significantly more complete and sound from an ESA standpoint than would have occurred absent this approach.

Unfortunately, the inherent complexities of assessing a project of this nature are compounded by the manner in which information is organized and presented within the BA— multiple appendices and the division of same-resource relevant information among the main BA narrative and the various appendices hinders effective and timely review. Additionally, there are inconsistencies between the text and referenced tables and appendices, and between project components and other information as described in the BA and those same topics described by the applicant or as understood by us through a variety of previous communications with FERC and the applicant. Collectively, these organizational and consistency issues substantially impair the usability and adequacy of the BA, thereby precluding initiation of consultation.

Additionally, the Project is routed through some of the most important habitats currently available for the survival and recovery of several ESA-listed species, especially the Northern spotted owl (NSO) and marbled murrelet (MAMU). Based on the information currently available to the Service through this BA and other sources, it appears the Project will result in removal or degradation of significant acreages of habitat for these species, and adverse impacts to a high number of sites occupied by NSOs and MAMUs. Given the declining status of these two species, the Service is concerned that such impacts may not be consistent with the species' long-term survival and recovery. Additional analysis, discussion, and development of appropriate minimization measures conducted in a collaborative fashion by FERC, the applicants and their consultants, and the Service will be necessary to definitively address these critical issues.

With the broad issues above in mind, the sections of this document that follow will identify the informational, analytical, organizational, and substantive aspects of the BA that are most problematic and that should be most subject to refinement by FERC and the applicant and to additional collaborative discussion with the Service and other entities.<sup>2</sup> Formal consultation for the Project will commence once the Service has determined that the above efforts have resolved the subject issues. At that time, section 7 of the ESA allows the Service up to 90 calendar days to conclude a formal consultation with your agency and an additional 45 calendar days to prepare our biological opinion (unless we mutually agree to an extension). Therefore, we expect to provide you with our biological opinion no later than 135 calendar days after receipt of complete

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<sup>1</sup> The Project's informal ESA consultation has included several years of discussion between the Service, Project applicants, FERC and its contractor, and federal and state resource agencies. The Service previously provided numerous substantive comments on several incomplete sections of the applicant draft BA (ADBA). The Service's most recent review of the multiple versions of the ADBA was of a document dated March 10, 2008. The Service participated in several subsequent ESA meetings with Project applicants after the March 10, 2008 ADBA, resulting in many additional Project ESA impact avoidance and minimization commitments. The Service also provided limited review of an economic model that could be used for determining a "first approximation" for application to the Project's impact mitigation needs. However, since March 10, 2008, no additional versions of the ADBA were provided for Service review, including the final ADBA that was submitted by Project applicants to FERC in January, 2009. Additionally, despite several Service requests that FERC provide a draft BA for Service review prior to transmittal of the final BA, this request was denied by FERC.

<sup>2</sup> It must also be noted that the complexities of this document and Project have not allowed the Service to develop a complete and final list of issues and comments within the time period subsequent to our receipt of the BA and your letter requesting consultation. It is therefore possible that the Service will provide additional comments or request additional information in the future.

formal consultation package. We recommend a meeting between the Service, FERC, and the applicants as soon as possible to discuss the issues contained in this letter.

#### Federal Land Management and Northern Spotted Owl Recovery Plan

Implementation of the Bureau of Land Management's (BLM) Western Oregon Resource Management Plan revisions (WOPR) and the 2008 Northern Spotted Owl Recovery Plan (RP) form much of the analytical context for assessment of the Project's ESA effects to the NSO and MAMU. Unfortunately, there is significant uncertainty related to the long-term applicability of these two products. Both are the subject of ongoing litigation. With respect to the RP, in response to the litigation, the Service has requested that plaintiffs allow us time to conduct a comprehensive independent scientific review of the RP. It is expected that such a review will result in proposals for significant modification of elements of the RP, especially those related to the size and distribution of habitat/population reserves, management of "matrix" lands between reserves, management of fire-prone landscapes such as in SW Oregon, the role of nonfederal lands, and the impact of habitat removal or degradation within occupied NSO sites. It can reasonably be expected that both the current litigation related to WOPR and expected changes to the RP will result in similarly significant modifications to the resource management plans that direct the management of BLM land. Collectively, such changes would most likely result in the Project being viewed as more impactful to NSOs (and possibly MAMUs) than described in the BA. Because the specific nature and timing of such changes are not predictable, neither are the effects those changes would have on the BA, consultation, and other aspects of implementation of the Project. However, based on the current status of the Project BA and the WOPR and RP litigation, it is reasonably likely that these changes will manifest during or shortly following consultation and require reassessment. In this situation, the Service could reasonably suggest the Project is not ripe for consultation. As an alternative, the Service proposes that in addition to strengthening the BA as per these formal comments, FERC and the applicant work closely with the Service and other resource and land management entities in an effort to review and strengthen several components of the Project, especially the plan described in Appendix Q of the BA, to provide the public high levels of assurance that the effects of remaining project impacts have been fully identified, and minimized or offset consistent with the conservation and recovery of affected ESA species.

#### Biological Assessment Compared to Applicant Draft Biological Assessment (ABDA)

As noted in the Service's October 7, 2008 comments on the ADBA, a significant component of our sufficiency review of the final BA will be evaluation of how all the Service's previous comments and concerns have been addressed. The attached document (Attachment 1) highlights the Service's previous ESA concerns and comments that are not adequately addressed by FERC and the applicants in the BA. These previously identified and unresolved ESA issues should be addressed and incorporated into the BA before it is finalized.

#### Applicants' Review of the Biological Assessment

During a June 2, 2009 meeting with the applicants and FERC, the applicants provided a draft comparison of the January 2009 final ADBA and the BA. The applicants pledged to file an updated version of the BA comparison document with FERC. The comparison document indicates that FERC rearranged some sections of the ADBA, modified language in certain

sections of the ADBA, and added information to other sections of the ADBA. The applicants' review also identified several instances where incorrect information was presented in the BA or modified from the ADBA without explanation. Of most concern to the Service are differences in ESA effects determinations for some species and differences in conservation measures proposed for timber removal activities in areas associated with MAMU.

### Incorrect Project Description

There are multiple references to route alternatives discussed in the Draft Environmental Impact Statement and it is not clear if the BA effects analyses are premised on these outdated alternatives or on the proposed routing described in the Final Environmental Impact Statement (FEIS). These references should be updated, and replaced with final routing as defined in the FEIS. Any other updated activities, as determined by the FEIS, should also be incorporated into the BA, and, as necessary, reanalyzed.

### ESA Listed Species and Critical Habitat--Vertebrates

For each listed species, the following comments provide a general overview of informational and substantive shortcomings of the BA identified by the Service, as well as some more specific comments and concerns that, at this time, collectively preclude the Service from making the effects determinations required in consultation. In some cases, we have also tried to identify aspects of the BA or the Project itself that indicate the potential for determinations or outcomes that would be inconsistent with the requirements of the Act.

#### *Northern Spotted Owl*

The BA presents a very mixed picture of the scope and significance of the impacts of the Project to NSO. At face value, the BA indicates that no single occupied or projected occupied NSO site will be subject to large quantities of habitat removal or degradation (range from 0.2 – to 2.0% of suitable habitat in an occupied or predicted site). However, the sheer number of NSO sites impacted (>90) coupled with the already questionable long-term viability of some of the sites and the regional population as whole (as indicated in the recent range-wide demographic analysis), with the escalating threats from fire and barred owls, and with the uncertainty to the recovery/conservation analytical context posed by ongoing RP and WOPR issues (see Federal Land Management and Northern Spotted Owl Recovery Plan above) do not provide a solid foundation for supporting the overall conclusion of the BA that disturbance and habitat removal impacts and resulting incidental take will not be significant with respect to the long-term survival and recovery of the species. In addition, significant amounts of currently unoccupied but suitable habitat will be removed and/or degraded, including some very high-quality interior habitat. This could not only potentially reduce the physical/geographic connectivity between habitat/population reserves, but also the demographic connectivity between these areas via reduced landscape support for non-territorial NSOs. The BA presents only the most minimal discussion and assessment of these latter issues related to connectivity and unoccupied habitat.

Other issues related to the analytical and informational framework of the BA or to determinations within the BA that are not adequately supported by that framework are as follows:

- a) The BA identifies only NSO sites centered in reserve-status lands as impacted reserve allocation NSOs. Proper analyses require that NSO sites not centered on but with home ranges overlapping these allocations are also identified as impacted reserve status NSOs.
- b) There is not adequate information in the BA for the Service to understand Project impacts to individual NSOs and NSO pairs, especially those that have displayed high site fidelity and high productivity over time. The BA needs to include a description and assessment of the site history and nest tree fidelity for each site, and of individual NSO pair annual reproduction rates and relative production of surviving offspring.
- c) Impacts to NSO population clusters are not addressed. "Clusters" are mentioned briefly, but only in the context of how NSO sites are grouped within the linear project analysis area. The BA needs to assess the relationship of impacted NSO sites to the actual functional population clusters that occur at a landscape-level broader than the linear project analysis area. How do the sites contribute to the size, productivity, and viability of the associated cluster, and to its connectivity to proximal clusters? How will impacts to the sites alter these contributions?
- d) The analysis described in b) and c) above requires not only assessment of the pre- and post-Project status of the impacted sites, but also the status of the other sites that comprise the subject cluster.
- e) The analyses described in b), c) and d) above should distinguish between general landscape population clusters and reserve land allocation population clusters. Both are important, but the latter is where conservation and recovery of the species will be most focused.
- f) The BA seems to utilize amounts of habitat availability within regional home range radii as absolute thresholds for regulatory take and for assessing the viability of both impacted and non-impacted sites. This is highly problematic given the current poor status of this species. The home range, core area and nest site habitat availability standards described in the BA should be viewed only as a guide for assessing these issues, and as means of determining relative potential (rather than absolute likelihood) of incidental take. With this in mind, the BA may underestimate the amount of potential incidental take and other adverse effects to individual NSO sites and the significance of those effects to local, regional, and provincial NSO populations.
- g) There is no assessment of Project impacts to forest stands that are on a trajectory to become suitable NSO habitat within the operational life of the Project. Harvest and disturbance events related to the construction and operation of the Project may prolong the time necessary for these stands to achieve habitat suitability. As with NSO sites and currently suitable habitat, the BA should clearly identify total acreage of capable NSO habitat removed and the distribution of this habitat, especially with respect to NSO population clusters and reserve land allocations, assess the significance of these impacts, and identify measures to minimize these longer-term impacts to species recovery, including additional mitigation measures.
- h) The BA provides limited spatial representation of all relevant impacts/issues, and how they are distributed across conservation/recovery-relevant geographies. It is extremely difficult to

try to place all the described impacts (as well as those that still need to be described) in a broader population and landscape level context.

### *Marbled Murrelet*

The BA does not provide a solid foundation for fully assessing Project impacts to MAMU, its critical habitat, and resulting conservation status of the species. The Project impacts that the Service has been able to identify, especially significant habitat removal and disruption (including at sites occupied by the species), in conjunction with ongoing threats to the species, the status of the two conservation zones in the Project area, and the continued decline of MAMU range-wide, do not provide a solid foundation for supporting the overall conclusion of the BA that disturbance and habitat removal impacts and resulting incidental take will not be significant with respect to the long-term survival and recovery of the species.

The Marbled Murrelet Recovery Plan (Plan) identifies reductions in amount and quality of MAMU habitat, in combination with high MAMU predation levels associated with habitat fragmentation, habitat removal, and other human activities, as the greatest threats to MAMU population viability. The Marbled Murrelet Five-Year Review was recently completed and found significant and troubling MAMU population declines between San Francisco Bay and the Canadian border (annual decline of 4.3% and total decline of 34% between 2001 and 2008). These declines are largely attributed to removal of late successional and old growth forest from coastal lands. The Plan strongly emphasizes maintenance of suitable and occupied MAMU habitat on Federal and nonfederal forests as an essential component for the stabilization and recovery of MAMU. The Plan's management priorities for the Project area include maintaining designated occupied MAMU sites; minimizing loss of unoccupied but suitable MAMU habitat; and decreasing time for development of new MAMU habitat. Based on information available to the Service through this BA and other sources, it appears that the Project could result in activities and impacts that are not consistent with the Plan and that could exacerbate current MAMU population declines.

The Project proposes to remove habitat or disrupt/degrade habitat at 73 occupied MAMU stands. The Project will cross a MAMU critical habitat unit five times, and remove approximately 7 acres of suitable habitat and 11 acres of recruitment habitat from the critical habitat unit, with an additional 10 acres of suitable habitat in the critical habitat unit impacted by establishment of Uncleared Storage Areas (UCSA). Some of these habitat removal and disruption events will occur within the MAMU critical nesting period.

The Project's habitat removal would represent a substantial deviation from the Plan and from the long-term management strategy that has guided conservation of this species in the region in that it would result in removal of occupied MAMU habitat on BLM land. To date on Coos Bay District BLM, no suitable MAMU habitat has been removed and no suitable MAMU habitat within critical habitat has been removed. This precautionary strategy has been implemented in recognition of the highly threatened status of MAMU and the crucial importance of remaining suitable habitat to the conservation and recovery of the species.

To fully assess Project impacts to MAMU and to determine the significance of the issues identified above, several areas of additional information are required: 1) prior applicant

commitments; 2) route alignments; 3) disruption distances; and 4) other information necessary for the Service to prepare an adequate and legally defensible consultation document.

1. Commitments: The Service received applicant commitment on several issues during the informal consultation discussions. The BA did not clearly identify these important MAMU commitments, because they do not appear to exist anywhere in the BA or the commitment is only found after extensive search in an appendix. These applicant commitments included:
  - No timber removal will occur during the MAMU breeding period in several specific stands.
  - No MAMU nest trees would be removed during the entire breeding period.
  - Daily collection of garbage on the right-of-way during the entire MAMU nesting period (see page 4-131 and also Appendix V page 4). These commitments to remove construction debris and food wastes on a daily basis are crucial, and also should be incorporated into the entire Project Construction overview section (3.1.4.3 starting on page 3-47) with specific notation that the daily collection of construction debris and food waste applies to any and all project construction activities that occur within the zone of MAMU potential presence.
  - Compliance with MAMU daily timing restrictions. Since the late breeding period disturbance distances only apply if daily timing restrictions are used (except for existing road use) you should include a column in table 4.3.4.3-1 that lists the disruption distances in the late-breeding period that have no corresponding daily timing restrictions. The late breeding period disturbance distances for these sites would then be the same as the disruption distances in the critical breeding periods.

The BA's main text should be updated to clearly identify these important MAMU impact minimization and avoidance measures and affirm these previous applicant commitments for MAMU.

2. Route Alignment: It is unclear whether the new Coos Bay upland alignment, as identified in the FEIS, has been fully analyzed in the BA. For instance, Appendix Q, Figure 2 still shows in-estuary alignment through Coos Bay, Figure 4.3-3 does not appear to include the FEIS' Coos Bay routing, page 4-91 does not discuss MAMU survey efforts in the FEIS alignment at Coos Bay, and page 4-93 does not clearly indicate any new MAMU sites are included in the BA's analysis. The entire MAMU section of the BA (4.3.4) should be updated to reflect an analysis including the new alignment sections at Coos Bay.

Unlike the rest of the Project's proposed alignment in MAMU habitat, the Service has not had discussions and agreement on MAMU conservation measures for the new alignment at Coos Bay (avoidance of MAMU impacts via macro-siting the pipeline, further minimizing adverse impacts with timing and distance restrictions, reducing right-of-way width, restoring habitat, and other offsetting measures). There are 16 new MAMU sites in this Coos Bay upland alignment, including 6 potentially occupied stands in which habitat will be removed. Before a final BA is completed, thorough discussions on the new alignment must be completed between the Service, FERC, and applicants, and (as identified above) conservation measures agreed-upon to address adverse effects to MAMU from the new alignment. These efforts to further minimize Project effects to MAMU should be documented and incorporated into the final BA.

3. Additional information is required to fully describe impacts to MAMU and its critical habitat, the extent to which these impacts result in incidental take, and the significance of these impacts relative to recovery plan objectives and the long-term survival and recovery of the species. To describe these impacts, MAMU stands need to be identified by size, occupancy status, ownership, land use allocations (when Federal lands), Critical Habitat Unit and inland zone. The BA should be updated to provide site specific information on acres of habitat removed, fragmentation, and loss of habitat buffers (linear, not acreage) for each individual parcel of MAMU habitat (occupied, assumed occupied, and unoccupied stands).

The BA addresses NSO and MAMU issues concurrently in several areas. While they are both considered to be associated with late successional-old growth forest stands, there are several differences in habitat considerations (such as nest structure, canopy cover, general habitat structure complexity) for the two species. Based on our interpretation of the information provided in the BA and several of the appendices, it appears the definition of late successional-old growth habitat (80 year old forest) is used to describe suitable habitat for both NSO and MAMU. Specifically, on page 55 of the BA, section 3.2.2 Summary of Impact to Marbled Murrelet Habitats, last paragraph states "The remaining 72.34 acres of MAMU suitable nesting habitat (97.32 acres in Table 3.2-1a minus 24.98 acres) and 131.64 acres of affected recruitment habitat (192.74 acres in Table 3.2-1a minus 61.10 acres) would be replanted with conifers. Replanted conifers would be considered late successional-old growth forest habitat in approximately 80 years though they would attain mid-seral forest status in 40 years." While this replanting may, in approximately 40-80 years, start providing limited benefit to NSOs, it is unclear to the Service how this replanting would provide any benefit to MAMU nest structure, canopy cover, and general habitat structure complexity in this 40-80 year time frame. Due to this confusion, the Service requests further explanation and additional information describing the age at which conifers will attain the characteristics and complexity (nest structure, canopy cover, and general habitat structure) of suitable MAMU habitat.

It is unclear if MAMU PCE 2 is addressed in the BA. The following information should be clearly provided and analyzed in the BA:

- Identify the half tree site potential height in the Project area;
- Establish if 80 year and older tree stands, as presented in the BA, are equivalent to the half tree site potential height associated with PCE 2;
- Identify number of acres of PCE 2 removed by each land ownership, land use allocation, CHU, and inland zone;
- Identify the acres of forest removed that is capable of becoming critical habitat PCE 1 or 2, within each CHU by land ownership, land use allocation, and inland zone;
- Identify the length of the pipeline and new roads created in each critical habitat unit by land ownership, land use allocation, CHU, and inland zone.

The BA should provide a summary of potential nesting structure/grey habitat that will be removed greater than 20 miles from the ocean. This should be identified by land ownership, land use allocations, Critical Habitat Unit (CHU) and inland zone.

The Service and FERC should discuss how best to present this additional information in the BA.

4. **Disruption Distances:** Disruption distances of >100 yards that apply during the critical breeding season also need to be applied to the entire breeding period when daily timing restrictions cannot be guaranteed. Table 4.3.4.3-1 does not reflect this minimum disruption distance and should therefore be updated with all associated narrative. This modification in disruption distance may also affect the calculations for acres of habitat that will be subject to a disruption event, therefore these acreages should be recalculated and presented. Human presence attracts corvids, which increases the predation risk at MAMU nest sites that are located near Project activities. Therefore, human presence increases the MAMU disruption distance to a minimum of 100 yards due to the increases in predation risks from corvids when humans are present during Project construction and operation.

#### *Lost River and Shortnose Sucker*

Page 4-431 and 4-439, Fish Salvage sections, indicate permits would be required for fish salvage. This is incorrect. The Service will cover salvage of Lost River and shortnose sucker within the Incidental Take Statement in the biological opinion. Please remove these incorrect paragraphs from these pages. Please contact the National Marine Fisheries Service (NMFS) to determine if this is also incorrect for NMFS-listed fish species.

Page 4-431 (Lost River sucker) and 4-439 (shortnose sucker) discuss Pacific Connector's coordination with the Service and Reclamation regarding a fish sampling plan, and reference back to the text for explanation of these sampling plans. However, there does not appear to be any additional information on these sampling plans in the text of BA. Please provide this information in the final BA.

#### ESA Listed Species and Critical Habitat - Plants and Invertebrates

The Service provided significant ESA plant species comments to FERC on March 13, 2009, as part of the Service's comments on the Project's Administrative Final EIS (AFEIS). We include these comments as an attachment (Attachment 2) and expand on them, below. These AFEIS ESA plant species comments identify substantial Service concerns with the Project's current inability to survey all ESA plant habitats, and lack of specific commitments to avoid, minimize, restore, and mitigate for impacts to ESA plants that are discovered in the construction area. Additionally, as noted in comments below, many listed plants are difficult to successfully detect during surveys, resulting in a false assumption that an ESA-listed plant species would not be present in the Project construction area. There is therefore significant uncertainty that the Project will address its ESA listed plant impacts, without substantial improvement in the BA's proposed action, including additional ESA plant impact minimization activities (e.g., land acquisition or conservation easement on listed plant habitat).

### *Applegate's Milk-Vetch*

The Service was under the impression that all surveys for Applegate's milk-vetch, on all potentially-affected properties, had been completed in 2007 and 2008. However, Page 4-454 of the BA states the following:

"Sites located by ORNHIC in 2007 and FWS and SBS in 2008 north and south of MPs 195.5 and 195.8 may also be indirectly impacted as a result of habitat alteration of the 234 acres of surveyed (and the 677 un-surveyed acres) suitable Applegate's milk-vetch habitat that occur within the analysis area. Of the surveyed and unsurveyed habitat, approximately 328 acres would be altered during construction of the proposed pipeline (draft EIS-route), of which 277 acres were surveyed and determined suitable."

The BA states that there will be no direct effects to Applegate's milk-vetch. However, based on page 4-454 of the BA, surveys of all of potential suitable habitat appear to have not occurred. In fact, Appendix V, Attachment M of the BA includes a phone record with a landowner denying permission to do Applegate's milk-vetch surveys on the route variation proposed near the Klamath River to avoid listed plant populations. The phone record also indicates that the Project has no current knowledge as to whether additional Applegate's milk-vetch plants would be found on the proposed reroute, when surveys were eventually completed. It is possible that Project construction will impact Applegate's milk-vetch because, if suitable habitat is present, the Service assumes the species is present. Additionally, plants may be missed by surveys or dormant during survey periods. A "likely to adversely affect" determination for Applegate's milk-vetch is therefore appropriate, based on survey uncertainty and incompleteness.

The current BA is unclear as to the exact actions the Project must take if a plant(s) is discovered during future surveys or construction. The BA should include specific measures that the Project must implement, including survey requirements, notification of Service, avoidance, minimization, restoration, and mitigation measures. In addition, similar to Gentner's fritillary below, if there is high degree of uncertainty that completed and future plant surveys will successfully identify all Applegate's milkvetch plants in the right-of-way, then additional conservation actions (such as land acquisition or conservation easement of Applegate's milkvetch habitat) should be proposed by the Project that provide significant conservation benefit to this endangered species, and that will reduce the overall negative impacts of the Project to this endangered species.

Additional mitigation measures (such as land acquisition or conservation easement of Applegate's milk-vetch habitat) should be discussed and agreed upon between the Service and applicants, and included in the final BA's mitigation plan, to address this significant uncertainty surrounding impacts to Applegate's milk-vetch from Project construction activities.

### *Gentner's Fritillary*

The BA indicates approximately 538 acres of potentially suitable habitat have been identified that may contain Gentner's fritillary, over 42 miles of pipeline construction. Approximately 219 acres of suitable habitat has not been surveyed, and previous Project surveys on accessible lands identified numerous fritillary plants, or potential plants, in or near the right-of-way. Unfortunately, it is unlikely previous or future plant surveys will identify all potentially impacted

fritillary plants along the construction right-of-way, as these plants may be dormant and underground during survey and construction periods. Therefore, there is high likelihood of direct impacts to a high number of Gentner's fritillary from construction actions.

The BA therefore incorrectly concludes that the proposed action is not likely to adversely affect Gentner's fritillary. Clearly, the Project will have high likelihood of adverse impacts to this listed plant. The effects determination for Gentner's fritillary should be modified to "likely to adversely affect".

The BA is additionally insufficient in that it identifies a general set of conservation measures that might (or might not) be implemented. The BA must specifically define and require a set of sequential notification, avoidance, minimization, restoration, and mitigation measures to offset impacts to Gentner's fritillary that have been identified in surveys or are discovered during construction.

Conservation measures for Gentner's fritillary are targeted at known plants. However, there will always be a high degree of uncertainty associated with surveys for fritillary plants as well as with the efficacy of conservation measures that only address known fritillary locations, as a high number of fritillary plants may be dormant and undiscovered during previous and future surveys and construction activities and therefore would not be protected by any of the BA's conservation measures. Again, the Service notes that a high amount of suitable Gentner's fritillary habitat occurs in the right-of-way (538 acres of habitat over 42 miles of Project construction), resulting in a significant likelihood of adverse impact to this endangered species. The Service therefore recommends that, to offset the uncertainty associated with current and future fritillary surveys and significant likelihood of high levels of impact to Gentner's fritillary plants, that the Project, with Service assistance, identify and undertake a Gentner's fritillary conservation action (such as land acquisition or conservation easement of Gentner's fritillary habitat) that provides significant conservation benefit to this endangered species, and reduces the overall negative impacts of the Project to this endangered species.

#### *Western Lily*

Please update section 4.7.1.2, Analysis Area, to indicate surveys on private lands in Coos County were conducted for Western lily, not Applegate's milk-vetch.

It is unclear if any of the Western lily analysis contained in the BA is pertinent to the FEIS selected upland route at Coos Bay. It appears to the Service that the Western lily analysis includes review of more than one route. Please clarify if the current analysis is correct for this new FERC-defined upland route. If it is not correct, please limit the BA analysis to the FEIS route.

Given this unclear analysis of Project impacts to Western lily, the Service cannot agree to a determination of "not likely to adversely affect".

The current BA is unclear as to the exact actions the Project must take if a plant(s) is discovered during future surveys or construction. The BA should include specific measures that the Project must implement, including survey requirements, notification of Service, avoidance, minimization, restoration, and mitigation measures. In addition, similar to Gentner's fritillary

above, if there is high degree of uncertainty that completed and future plant surveys will successfully identify all Western lily plants in the right-of-way, then additional conservation actions (such as land acquisition or conservation easement of Western lily habitat) should be proposed by the Project that provide significant conservation benefit to this endangered species, and that will reduce the overall negative impacts of the Project to this endangered species.

*Vernal Pool Fairy Shrimp, Large-Flowered Meadowfoam, and Cook's Lomatium*

The BA indicates up to five pipe storage yards may be used (one has clearly been eliminated), with a confusing discussion of how certain sites have been surveyed and excluded from further consideration, other sites have certain areas excluded, and other sites (totaling 123 acres) have not been surveyed. For the three ESA-listed vernal pool-obligate species, please provide a single summary narrative or table that depicts the exact pipe storage sites that will be used, and only provide analysis of effects around the specific sites that still are under consideration.

The critical habitat section (one paragraph) indicates two proposed pipe storage yards are adjacent to fairy shrimp critical habitat, but does not name these sites. The Service assumes, from figure 4.6-1, that these are the Medford Industrial Park and the Burrill Lumber site, however please provide the correct site names in the critical habitat section. Other BA text indicates these two pipe storage sites are still under consideration, and at least one has potential vernal pool habitat. For sites that are adjacent to critical habitat, please provide an expanded analysis of potential impacts to the vernal pool fairy shrimp critical habitat Primary Constituent Elements (as listed on page 4-443). Especially focus your additional, expanded critical habitat analysis on Project impacts to the PCE associated with hydrologic connectivity.

Figure 4.6-1 should only include the final pipe storage sites identified from analysis above. Please add the Rogue Aggregates site location to Figure 4.6-1.

Section 4.6.1.4 indicates that vernal pool fairy shrimp surveys were not conducted in 2007 or 2008. The Service has not been contacted about fairy shrimp protocol surveys in 2009. Given the Service's two-year survey protocol requirement for fairy shrimp (including two full wet seasons over five years or back-to-back full season surveys that include one wet and one dry season), the Service is wondering if these surveys will conclude in time for pipes to be delivered to surveyed and cleared sites for pipeline construction activities?

Section 4.7.4.4 makes a "no effect" determination for large-flowered meadowfoam (even though this species was discovered during surveys), but then lists several reasons why the determination should be "Not likely to adversely affect". Note that section 4.7.5.5 makes a "not likely to adversely affect" determination for the Cook's lomatium, which is found in similar locations as the large-flowered meadowfoam.

Please expand the effects analysis for large-flowered meadowfoam and Cook's lomatium to include an assessment of how use of pipe storage yards might impact hydrologic function associated with off-Project vernal pools where these listed species may occur. If use of any pipe storage location results in modifications in the timing, duration, magnitude, or quality of hydrological connections to an off-site, occupied ESA vernal pool obligate species, then the overall ESA effects determination would correctly be "likely to adversely affect".

As noted in comment above associated with fairy shrimp critical habitat PCE addressing hydrologic connectivity, additional analysis provided should prove there is no effect to the vernal pools that support these listed vernal pool obligate species.

There is significant uncertainty associated with the efficacy of the Project's conservation measures associated with minimizing impacts to vernal pool hydrologic connectivity, and especially to hydrologic impacts to two critical habitat units adjacent to two of the proposed pipe storage sites. Therefore, additional mitigation measures (such as land acquisition or conservation easement of vernal pool habitat) should be discussed and agreed upon between the Service and applicants, and included in the final BA's mitigation plan, to address this significant uncertainty surrounding impacts to vernal pools from the proposed pipe storage locations.

#### *Kincaid's lupine*

Page 4-488 indicates approximately 522 acres of land within the construction right-of-way have not been surveyed, and an undescribed analysis indicates that, of those 522 acres, only 0.135 acres were judged to be suitable and occupied by 111 plants that would be directly removed by construction activities. Further, an additional 515 plants within a slightly larger impact area (0.389 acres) were estimated to be indirectly impacted by Project activities, as well as other habitat modifications in the action area that would indirectly impact Kincaid's lupine plants. Additional analytical information should be provided to substantiate this analysis.

Page 4-490 indicates the Project will attempt to establish land owner permission to salvage and transplant lupine from the right-of-way between MPs 96.5 and 96.9. Please see comment on translocation, below. The BA should propose an alternative, final transplant location, if the land owner does not allow transplant onto adjacent suitable private lands.

The Service previously provided FERC, via comments to the Administrative FEIS, guidance on translocation, monitoring, and long term protection of Kincaid's lupine. The following should be incorporated into the BA and Kincaid's Lupine Mitigation Plan:

- Instead of transplant to nearby suitable location, FWS strongly suggests that any successfully salvaged lupine plants be moved to a nearby nursery environment. Unfortunately, translocating salvaged plants to a new area is extremely risky and often unsuccessful. To ensure highest rate of success, plants should be conditioned a year or two in a nursery and then outplanted during the fall to a dedicated nearby mitigation bank site with a conservation easement.
- FWS recommends the revegetated pipeline locations within Kincaid's lupine suitable habitat be monitored and treated, for at least 15 years, perhaps alternating years after 5 years, to ensure successful restoration.
- Pacific Connector should consider development of 3rd party endowments to ensure restoration sites are managed and protected.

The Kincaid's Lupine Mitigation Plan (Appendix V, Attachment M) does not have any review of the 522 acres of suitable lupine habitat on the right-of-way on unsurveyed lands, or commitment to implement the Mitigation Plan's measures for plants on unsurveyed lands (survey, avoid,

minimize, restore, mitigate) that are described for known populations of Kincaid's lupine. The Kincaid's lupine mitigation plan should be updated to address lupine plants that are discovered on unsurveyed lands, and identify specific measures to avoid impacts, and (if pipeline cannot be rerouted) otherwise minimize impacts including 3 years of Kincaid's lupine seed collection before plant salvage and translocation and Project construction. Please note the Kincaid's Lupine Mitigation Plan [page 5] indicates seed collection from Kincaid's lupine would occur in the 2 years before construction as well as the year of construction (3 total years) this commitment should also be applied to unsurveyed lands.

Kincaid's lupine may occur between MPs 45.7 and 102.0. The Kincaid's Lupine Mitigation Plan (Appendix V, Attachment M) does not address restoration of suitable Kincaid's lupine and other native plant species habitat, where these unoccupied but suitable lupine habitats exist in this approximately 56 mile pipeline segment. The updated BA and Kincaid's Lupine Mitigation Plan should contain a stronger commitment, where Kincaid's lupine suitable habitat is adversely impacted by Project construction activities, to restore these suitable Kincaid's lupine habitats to a more native species composition, including establishment of Kincaid's lupine in suitable but unoccupied habitats.

Given the challenge of 3 years of seed collection on unsurveyed lands prior to construction, the high degree of uncertainty that translocation of Kincaid's lupine will be successful, the high estimated number of plants that will therefore be injured or killed during construction (minimum of 266, based on analysis provided on page 4-488), and the high acreage (522 acres) of currently unsurveyed but suitable Kincaid's lupine lands in the construction right-of-way, the Service recommends additional mitigation measures (such as land acquisition or conservation easement of Kincaid's lupine habitat) should be discussed and agreed upon between the Service and applicants, and included in the final BA's mitigation plan, to address this significant uncertainty surrounding impacts to Kincaid's lupine from the proposed Project.

#### General ESA Comments and Concerns

The Service notes that there is conflicting commitment and analysis in the BA associated with implementation of all previously negotiated MAMU and NSO seasonal and daily timing and distance restrictions associated with various construction activities. The Service and applicants carefully developed specific prescriptions for each MAMU stand that occurs in the Project action area, and the applicant clearly committed to implementing these actions. However, the BA does not provide firm commitments to implement these previously negotiated protective measures (e.g., page 4-110 indicates that any of the MAMU conservation measures might be altered based on construction constraints, safety of construction crews, and adherence to the in-service dates.) Additionally, there are examples throughout the BA where protective commitments are not consistent and sometimes strongly conflict (e.g., page 3-99 discussing seasonal and daily timing restrictions of MAMU in Spread 1). Given the resulting uncertainty about whether FERC will require the applicant to fully implement all agreed-upon conservation actions, the analysis of effects for MAMU and NSO results in higher-than-negotiated and anticipated amounts of adverse impact to listed species (e.g., adverse effects to NSO are much higher than anticipated on page 4-214, apparently based on potential for the applicant to deviate from protective conservation measures), and the quantification of numbers of impacted individuals becomes unsupported (e.g., summarization of MAMU disturbance impacts on page 4-142 seems to indicate minimal protections in place for at least some of the MAMU sites). These uncertainties

in application (or selective application) of protective conservation measures also causes the final effects summaries for these two species to be questionable. The final BA must clearly commit FERC and the applicant to these previously-negotiated conservation measures, and provide an accurate analysis of effects to these listed species based on full and successful implementation of these conservation measures.

There may be some temporary and permanent impacts from use of Uncleared Storage Areas (UCSAs) in ESA species habitats. While the Service supports the use of UCSAs in lieu of larger and more impactful Temporary Extra Work Areas (TEWAs), use of UCSAs is an experiment with no previous information to predict success and no guarantee that adverse effects to ESA species will be fully avoided. The Project is proposing significant acreage of UCSAs, which translates into substantially larger linear measurements of potential impact, as UCSAs are narrow and long, and will occur over a large number of miles of ESA habitats. Additional analysis and disclosure of the linear extent of UCSAs (examples: linear feet of UCSA constructed in MAMU critical habitat, linear feet of UCSA in MAMU occupied habitat, linear feet of UCSA in NSO critical habitat, linear feet of UCSA in LSRs) is necessary in the BA. Additionally, the Service will require monitoring of impacts to NSO and MAMU from each UCSA, with requirement to mitigate any ESA habitat impacted. The Service recommends that the BA clearly commit the applicant to monitoring the impacts from use of UCSAs on ESA habitats, and mitigating for any unanticipated impacts to NSO and MAMU habitat that occur from UCSAs during or after construction and restoration activities.

Page 3-55: The Service highly recommends that the final BA include an analysis of impacts of removing hazard trees in suitable MAMU and NSO habitat. Removal of suitable habitat, even for purposes of safety, may result in take of a listed species and therefore is an action that should be reviewed under FERC's ESA consultation. The Service, FERC, applicant, BLM, and Forest Service should work together to develop a hazard tree removal plan, that can be presented and analyzed in the final BA.

The BA does not clearly commit to initiation and/or completion of NSO and MAMU surveys on currently unsurveyed lands. The BA should clearly explain survey commitments that will occur on unsurveyed lands prior to construction activities, what protective actions will be taken if a listed species is documented, and what protective actions will be modified or discarded if a species is not discovered upon completed surveys.

Chapter 3, Page 3-61 to 3-63, Hydrostatic testing. Using NMFS fish screening standards will not prevent entrainment of many aquatic nuisance species. It may prevent entrainment of ESA listed salmon, but not of aquatic insects, or other aquatic nuisance species. These nuisance species, in turn, may alter habitats important to ESA species. The BA should clearly identify specific tests that will be conducted to identify invasive species and pathogens at each hydrostatic testing water withdrawal site. Additionally, the last two BMPs (page 3-63) should be used at all locations of water discharge.

Page 8 of ECRP, 3.3.2 Forest/Timber Clearing. Trees harvested from any wetland or riparian area (characterized as two site potential tree heights) should be left in wetland and riparian areas to support ESA listed aquatic and terrestrial species. The BA should clearly indicate a greater commitment to leave large woody material in the construction area to benefit ESA-listed species.

### Compensatory Mitigation Plan

The Service views the Compensatory Mitigation Plan (CMP) as a critical component of the Project's overall impact minimization strategy. Numerous macro- and micro-siting adjustments, seasonal work restrictions, and other measures have been proposed or adopted to reduce the amount and type of impacts the Project would otherwise have on various species and resources. As noted above, the Service participated in several meetings with Project applicants after the March 10, 2008 ADBA, resulting in many Project impact avoidance and minimization commitments. However, the Service did not participate in the actual formulation of the CMP. While the Service generally believes that the types of land reallocation, restoration, and acquisition measures proposed in the CMP, and to some extent even the extent and location of these measures proposed in the CMP, are conceptually sound, additional CMP supplementation in the form of information and expansions or additions to some restoration and acquisition measures will need to be considered and incorporated into the BA. As currently described in the BA, the CMP is not adequate for addressing the Project's impacts to ESA species and habitats, including how individual CMP actions link to specific ESA effects to an individual animal or plant, and how the CMP would result in clearly beneficial effects to those individual animals or plants.

Despite numerous avoidance and minimization measures, impacts remain to listed species and habitats. Especially for NSO and MAMU, these impacts are significant in the form of: incidental take of adults and juveniles at occupied and projected occupied sites; reduced productivity or occupancy of sites associated with designated habitat reserves or population clusters; and removal or degradation of suitable and dispersal habitat within and between habitat reserves or population clusters. The significance and effect of these remaining impacts with respect to the conservation and recovery of these species need to be addressed through additional minimization measures, such as those discussed in the CMP. Additionally, as noted above, other ESA-listed species that are not addressed in the CMP will also experience adverse effects from Project actions. The CMP must be expanded to address adverse impacts to these additional ESA-listed species.

Because of the importance of these impacts to ESA-listed species, it will be crucial that adequate types and amounts of minimization measures are included in the CMP and that the CMP provide reasonable levels of detail and assurance about their nature, location, effects, and implementation<sup>3</sup>. There is no binding commitment evident in the CMP (except associated with an Agreement in Principle for the Forest Service's actions associated with the Forest Plan amendments) to undertake actions to offset adverse impacts to ESA species and habitats. A site specific plan similar to that developed for Forest Service lands needs to be developed for the CMP's commitments on Federal and nonfederal lands. To assess the adequacy of the CMP to minimize impacts to ESA listed species, we need more detail in the CMP regarding the specific Federal projects such as "forest stand treatments" (CMP Table 2, page ix). The BA should also provide more detail on the specific management activities proposed, the timeframe for implementation, the spatial relationship of CMP management actions to the species site and/or

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<sup>3</sup> While the Service has no doubt of the intent of Pacific Connector to follow through with the proposed activities, the courts have held (per *National Wildlife Federation v. NMFS* (9th Cir)), that regulatory agencies can only consider actions where there is a clear, definite commitment of resources for future actions with clear links to recovery needs of ESA-listed species..

habitat that was impacted, the age of stand to be treated, the associated short-term impacts to ESA listed species from habitat enhancement activities, the species' recovery plan actions that the CMP management action will address and benefit, and the time frames necessary until anticipated ESA species benefits begin to accrue. New CMP maps, which identify listed species sites and proposed CMP mitigation projects, should be provided to the Service. Incorporating these elements into the BA would enable the Service to more fully consider these actions in our Biological Opinion.

The Service notes in Chapter 3, page 115, section 3.3.2, second paragraph, that the CMP is a working document that "would be revised throughout consultation process". The Service began specific discussions of the Project's CMP on June 1, 2009 with the Forest Service and BLM, and had initial discussions with the Project's applicants, FERC, and other agencies on June 2, 2009. The Service looks forward, as part of the ESA consultation process, to additional discussions with the applicants, FERC and other stakeholders to revise and finalize the CMP. To ensure that any CMP modifications will not conflict with agreements already established, these future CMP discussions need to include, at a minimum, federal land managers and ODFW.

#### Conclusion and Summary

The BA and supportive documents provide an immense amount of information. The Service commends FERC, the applicants, and their consultants for their efforts to produce this BA. We also appreciate the willingness of the applicants to utilize collaborative processes during various periods of the informal consultation. There is little doubt that the Project's proposed action and the BA are much more complete and sound than would have occurred absent this approach.

The Service has attempted to identify the additional analysis, discussion, and conservation measures that will be necessary to allow the BA to provide a solid foundation for fully assessing Project impacts to listed species, critical habitat, and their resulting conservation status, and for assuring that Project impacts are consistent with the long-term survival and recovery of listed species. We believe that development of these additional products will be best accomplished through a collaborative effort by FERC, the applicants and their consultants, and the Service. The Service looks forward to this effort and is committed to participating to an extent and in a fashion that supports timely and successful resolution of associated issues.

If you have any questions on the comments or issues contained in this document, please contact Doug Young at (503) 231-6179.

Sincerely,

  
*Acting* Paul Henson, PhD  
State Supervisor

cc:

FERC Friedman

TetraTech Scott, Hurley

Jordan Cove - Braddock

Pacific Connector - Miller, Schwalbe, Lattin

NMFS - Wheeler

ODFW Owens

ODoE - Hughs

Corps - Andazola

USFS - Hupp

BLM - Styduhar

USFWS - (Myers) Lacey

**Attachment 1. Assessment of Whether FERC Addressed the Service's October 7, 2008, Comments on Applicant Draft Biological Assessment.**

**Page 14 ADBA:** Can PCGP use "micro-spreads" during pipeline construction to address any remaining Project timing and location conflicts with NSO and MAMU habitats and breeding periods? This would minimize adverse effects to these species and likely reduce the amount of Incidental Take that is likely to occur from disturbance and/or disruption.

Service Review of Final Biological Assessment: **Comment Not Addressed.**

**Page 15 and elsewhere ADBA:** Blasting may be a widely-used activity, both in terrestrial and aquatic environments. A noise report was provided that proposes ¼ mile buffer for NSO and MAMU, to avoid disturbance/disruption. It is not clear whether the "blast mitigation" techniques described in the white paper, including stemming (the packing of dense sand in blast holes on top of the charges prior to blasting); and either blast mats *or* covering the blast area with 3 to 4 feet of native soil will always be implemented by the project. This information should be provided in the proposed action section. If during the blasting portion of the project data indicate that the noise is above 92 decibels at 440 yards, blasting operations should cease until more effective mitigation measures can be employed.

Service Review of Final Biological Assessment: **BA pages 3-58 to 60 discusses blasting techniques but never describes or specifically commits FERC/applicant to mitigation measures identified in blasting analysis in Appendix P. Without the commitment to implement specific blast mitigation measures that were incorporated into the blasting analysis and mitigation recommendations, the Service cannot agree that the noise disturbance thresholds for marbled murrelet and Northern spotted owl have been successfully addressed.**

Will other noise-intensive machinery be employed, that the ESA subgroup did not discuss? One example of concern is use of a hammer hoe for construction through rocky soils. This loud pneumatic equipment may cause disturbance effects to NSO and MAMU, if employed near occupied habitats. If hammer hoes will be used, how will noise impacts to adjacent occupied NSO or MAMU habitat be mitigated? The applicant should review the entire alignment where noise-related impacts to NSO and MAMU might occur, and meet with the Service to discuss any use of hammer hoes or other loud equipment, and ensure the construction action fully avoids (i.e., complies with ESA bird work windows) ESA-listed bird disturbance. Will any other loud equipment be employed that has not been assessed for ESA disturbance effects?

Service Review of Final Biological Assessment: **Comments Not Addressed. Examples of other loud equipment proposed for use in BA (page 3-58): rock saws and hydraulic hammers.**

**Page 18, ADBA:** Construction and other Project-related activities within ¼-mile of occupied MAMU stands or known/predicted NSO nest sites should be limited to after August 5 for MAMU and July 15 for NSO to reduce the amount of Incidental Take that is likely to occur from disturbance and/or disruption. Efforts have been made to review and update proposed Project construction schedule in NSO and MAMU areas, via multiple meetings and conference calls. These updated commitments, and resultant effects analyses, should be incorporated into the final BA.

Service Review of Final Biological Assessment: **Comments Addressed, but unclear commitment by FERC to require applicant to comply with these timing and distance restrictions. Additional negotiation therefore required.**

**Pages 18 – 22 ADBA:** No harvest of suitable habitat should occur from NSO nest patches. The Project should take all precautions to avoid any entry into a known or predicted NSO nest patch.

Service Review of Final Biological Assessment: **Comments Not Addressed. Additional negotiation therefore required.**

**Pages 24 – 38 ADBA:** It is unclear what the proposed action is, given reports that the Port of Coos Bay has withdrawn their proposal to include the general cargo facility as part of the proposed action. Clearly define what the proposed action for development and operation of the access channel and terminal. Provide updated information on any design modifications for the potentially smaller dimensions, and dredging volume, for the terminal area. If future use of the access channel and terminal area for other interrelated purposes, such as a general cargo facility, then these reasonably certain to occur actions should be described and analyzed in the BA.

Service Review of Final Biological Assessment: **Comments Adequately Addressed.**

**Page 39 ADBA:** Please describe the when/where/how of installing cathodic protection in the pipeline, including any predicted disturbances to listed species (e.g., non-compliance with listed bird disturbance windows), re-entry of waterways, and additional timber removal. Even if it will be installed following pipeline installation, we must consider the effects to listed species from all activities and effects from this future action. Your ESA responsibility is to describe all interrelated/interdependent actions, such as cathodic protection, and discuss the potential effects in the final BA.

Service Review of Final Biological Assessment: **Comments Not Addressed. Additional negotiation therefore required.**

**Page 52 ADBA:** Please describe in more detail where “two-tone” right-of-way construction techniques will be utilized. How will these areas be restored? Where will excess spoils be stored or disposed of? How are these acreages accounted for in the calculation of habitat removed?

Service Review of Final Biological Assessment: **Unclear if comments regarding habitat removal acreages has been addressed. Additional negotiation therefore required.**

**Page 73 ADBA:** Please demonstrate that sufficient native plant stock and/or seed is available to restore the construction footprint, including all associated Project features to the ROW. If native seed and plant stock is not immediately available, describe your plan to acquire and/or propagate these native plant materials as rapidly as possible, while temporary vegetation resources are used.

Service Review of Final Biological Assessment: **Comments Not Adequately Addressed. Additional negotiation therefore required.**

**Page 90 ADBA:** The compensatory mitigation plan is incomplete and lacks sufficient detail to be considered in an ESA consultation. Adequate information and specificity should be included in the final BA's compensatory mitigation plan, including effects being compensated, projected mitigation ratios for each resource impacted (via a Habitat Equivalency Analysis model or other habitat equivalency calculation), specific habitat functions being returned via mitigation activities, locations and specific descriptions of compensatory mitigation, funding mechanisms to accomplish all mitigation activities (including long-term monitoring, maintenance, and management), commitments as to timing of projects/purchases, and agreements from federal or private project managers to site these projects and/or undertake these actions at specific locations and under specific timeframes.

Service Review of Final Biological Assessment: **Mitigation Plan still incomplete, inadequate. Additional negotiation therefore required.**

If the above project-specific information is not made available in the final FERC BA, additional site-specific NEPA and ESA documents will need to be developed before each future compensatory mitigation action can be implemented. This additional NEPA and ESA analysis and compliance would potentially force compensatory mitigation actions far into the future, as well as reduce the certainty as to whether these compensatory mitigation actions would ever be completed. Lack of certainty of compensatory mitigation implementation/completion will adversely impact the Service's ability to consider Project compensatory mitigation in the final biological opinion's (BO) jeopardy/adverse modification analysis.

Service Review of Final Biological Assessment: **Comments Not Addressed. Additional negotiation therefore required.**

To ensure the Project's ESA impacts, beginning when ROW clearing commences in year 1, do not appreciably increase the likelihood of jeopardy to listed species and/or adverse modification to critical habitat, these compensatory mitigation actions should be fully secured/enhanced/implemented, and performance confirmed, *before* Project ROW clearing commences. The final FERC BA should clearly describe the commitment to

fully mitigate for anticipated Project impacts before any Project ROW clearing activities begin.

**Service Review of Final Biological Assessment: Comments Not Addressed. Additional negotiation therefore required.**

Finally, the Project should be held accountable to fully compensate for impacts that are not truly “temporary” in nature. For instance, full restoration of original species composition and environmental function will not be rapidly restored for mid seral, late successional, or old growth categories of trees. For all habitat types that will not rapidly recover their original species composition and function, even after restoration, the Project should be accountable to compensate for habitat impacts to the entire ROW (not just the portion where no restoration occurs). Therefore, for purposes of ESA analysis and compensatory mitigation, the acreage of permanent impact that must be compensated for will be significantly higher than the draft BA indicates.

**Service Review of Final Biological Assessment: Comments Not Adequately Addressed. Additional negotiation therefore required.**

**Page 143 – 145 ADBA:** The Sediment Placement Subgroup identified numerous conservation measures which are designed to protect and benefit western snowy plovers. The list of conservation actions on page 143 of the draft BA has not been updated to reflect more recent Sediment Placement subgroup discussions. The updated list of western snowy plover conservation measures should be included in the Proposed Action section.

**Service Review of Final Biological Assessment: Comments Addressed.**

The May 12 data request response to Environmental Information Request 35 (page 43-44) indicates: “JCEP...has agreed to provide funding as enumerated below. The funding will be provided to the entity as defined by the agencies and it will be the responsibility of the particular entity to administer the funding. The funding to be provided by JCEP will be *on the condition that no additional requirements will be placed on the JCEP relative to the western snowy plover issue*” (italics added). The Service is concerned with this statement because, as discussed in detail during the April 11, 2008 Sediment Placement Subgroup meeting, the JCEP’s commitment to fund these western snowy plover conservation measures was unconditional. The Service applauds JCEP’s commitment to funding conservation measures for western snowy plover, as well as proposing mitigation measures (BMPs, education/outreach programs) that will assist with western snowy plover impact avoidance and minimization. The BMPs and education/outreach programs negotiated during Sediment Placement subgroup meetings and subsequently proposed by JCEP, which will strongly minimize impacts to western snowy plover, represent the types of requirements the Service would require within an Incidental Take Statement. However, the Service cannot guarantee that additional measures to minimize impacts will not be recommended or required. For example, the final BO may have additional western snowy plover terms and conditions in the

*Incidental Take Statement, that are required of FERC to minimize incidental take of western snowy plover. Again, the Service applauds the applicant for the western snowy plover mitigation commitments, as well as the western snowy plover conservation commitments, but the Service cannot be held to a “conditional funding requirement” that would conflict with our regulatory requirements to minimize Project impacts to western snowy plover.*

**Service Review of Final Biological Assessment: Comments Not Addressed. Additional negotiation therefore required.**

**Page 149 ADBA:** Use the 1996 designated critical habitat for all MAMU analyses associated with Project impacts to critical habitat.

**Service Review of Final Biological Assessment: Comment Addressed.**

**Page 159 ADBA:** Please describe the effects of helicopter prop-wash (down-draft) to MAMU as a result of helicopter use in/near occupied stands. Prop-wash may affect nesting MAMU by causing adults to flush from the nest, leaving eggs/young vulnerable to environmental conditions or predation, disrupt adult pair switching at the nest, disrupt a feeding attempt of young, or eject young/eggs from the nest.

**Service Review of Final Biological Assessment: Comments Not Addressed. No specific helicopter operation guidelines to reduce/avoid impacts to MAMU provided in proposed action section (hover and flight height above tree line, minimum height of helicopter operation, etc), no information provided on locations of helicopter log landings in relationship to MAMU, or analysis of impacts to MAMU from flight paths between helicopter logging locations on page 3-53 and log landing locations.**

**Page 196 ADBA:** As per comments on effects from helicopter downdraft on MAMU (above), please describe the effects of helicopter prop-wash to NSO as a result of helicopter use in/near nest patches.

**Service Review of Final Biological Assessment: Comments Not Addressed. No specific helicopter operation guidelines to reduce/avoid impacts to NSO provided in proposed action section (hover and flight height above tree line, minimum height of helicopter operation, etc), no information provided on locations of helicopter log landings in relationship to NSO, or analysis of impacts to NSO from flight paths between helicopter logging locations on page 3-53 and log landing locations.**

**Page 201 ADBA - PCGP** should limit post-construction maintenance activities (mowing, other vegetation management, other routine pipeline maintenance and access) to periods outside the critical breeding period, where MAMU and NSO may occur. If these maintenance activities are scheduled during the late breeding period in MAMU habitat, crepuscular timing restrictions should be observed.

**Service Review of Final Biological Assessment: Comments Addressed.**

**Page 202 ADBA** - Due to the uncertain impacts of utilizing UCSAs, the suitability of the habitat after use as an UCSA may be reduced to “dispersal only” capabilities. For the purposes of evaluating the effects of habitat loss, these acres (224) should be included in the total habitat impacted calculations, equating to a total of 644 acres of suitable Nesting, Roosting, Foraging habitat removed or modified.

Service Review of Final Biological Assessment: **Comments Addressed, but no monitoring proposed to ensure UCSA have minor impact, no mitigation proposed if monitoring indicates UCSA have adverse impacts to ESA species’ habitat.**

**Page 366 ADBA:** A Lost River sucker and shortnose sucker salvage plan (currently lacking in the draft BA) should describe the equipment necessary to carry out capture and efficient and safe transport to more suitable habitat. Details, including locations to release salvaged suckers, should be worked out in negotiation with the Service’s Klamath Falls Fish and Wildlife Office and the local ODFW field office.

Service Review of Final Biological Assessment: **Comments Addressed.**

**Page 379 ADBA:** 4.5.1.4 Conservation Measures for vernal pool fairy shrimp: some simple erosion control methods are proposed for protecting potential fairy shrimp sites from sediment effects. Additionally, the Project should ensure no direct impacts (e.g., no siting of pipe storage on top or adjacent to a fairy shrimp site) be allowed to vernal pool fairy shrimp habitat.

Service Review of Final Biological Assessment: **Comments Addressed. However, elsewhere in the cover letter the Service discusses associated fairy shrimp concerns.**

**Page 385 ADBA:** Surveys for Gentner’s fritillary have not been completed on approximately 60 inaccessible acres. A second year of surveys is needed to confirm absence of fritillary on all surveyed habitats. If fritillary are found during future surveys of inaccessible areas, or during 2008 surveys, how will the Project address these new locations? Two examples are pipeline rerouting, and/or other conservation efforts to minimize effects and salvage/reintroduce plants.

Service Review of Final Biological Assessment: **Comments not adequately Addressed. Additional comments provided in cover letter.**

**Page 385 ADBA:** If avoidance of Gentner’s fritillary cannot occur, please provide a specific plan to address plant protections and reintroductions. Collection, removal and transplanting of *Fritillaria gentneri* bulblets is a proven method of propagule collection. Some loss of some plant propagule material will occur during propagule collection and transplanting. The BA needs to quantify amount of adverse effect due to pipeline construction and salvage efforts. Areas for bulblets outplanting should be identified in the BA, should be protected habitat (i.e. conservation easement), and should be

monitored for at least 5 years, or until transplanting effort is successful, based on mutually agreed-to success standards.

Service Review of Final Biological Assessment: **Comments not adequately addressed. Additional comments provided in cover letter.**

**Page 386 ADBA:** A “not likely to adversely effect” determination for Gentner’s fritillary is not a correct determination of effect. Although there is little anticipated suitable habitat in the proposed pipeline route, the assumption of species presence is still warranted. Year two surveys are not yet completed, and if there is uncertainty, we give the benefit of the doubt to the species (i.e. likely to adversely effect).

Service Review of Final Biological Assessment: **Comments not addressed. Additional comments provided in cover letter.**

**Page 388 ADBA:** It is not clear whether surveys for western lily are up-to-date in terms of being conducted on the most current proposed pipeline route, or whether the surveys were conducted over an old pipeline route. With the new upland route identified in the draft EIS, please ensure western lily surveys are conducted in this new alignment. If areas with suitable freshwater wetland is included in the new, alternative pipeline route, but these habitats are unsurveyed for wetlands prior to final BA, the BA should clearly describe how western lily populations will be addressed (eg, surveys, Project avoidance and minimization of impacts, other conservation actions).

Service Review of Final Biological Assessment: **Comments not clearly addressed. Additional comments provided in cover letter.**

**Page 397 ADBA:** Douglas County has 18 lupine populations, three of which were recently discovered on private lands near or within the Project area. There are currently eight known lupine populations on Federal lands, and 10 populations on private lands. At least five additional lupine populations have been extirpated or have not been relocated in 20 years or more. In the Kincaid’s lupine recovery outline, Douglas County is a Tier 1 Recovery Zone. The Service seeks, for each Tier 1 Recovery Zone, to achieve protection of 5,000 square meters of cover within two lupine metapopulations (a grouping of populations that are within pollinator distance <~6 miles> from one another) and satellite populations. The discovery of the three new lupine populations on private lands near the Project put recovery of the Kincaid’s lupine in Douglas County much closer to attainment. Therefore, the Project should be extremely careful not to adversely impact ongoing conservation actions in Douglas County (e.g., Conservation Agreements for protection of Kincaid’s lupine on private lands), and should seek to avoid direct removal of Kincaid’s lupine wherever these plant populations occur (see additional comments on avoiding Kincaid’s lupine, page 401 of the BA, below, and conserving Kincaid’s lupine via a comprehensive plant salvage plan, provided in General Comments, above).

Service Review of Final Biological Assessment: **Comments not adequately addressed. Additional comments provided in cover letter.**

**Page 401 ADBA:** Kincaid's lupine are known to be very rhizomatous, and are best assessed by estimating percent cover. It is nearly impossible to determine how many plants occur in a population. Essentially, rhizomatous clones can extend out 10 meters from the above-surface components of individual plants. Therefore, the impacts of pipeline construction could extend up to 10 meters from the surface components of an individual plant. For mapping the polygons refer to Page 3 in: Wilson, M. V., T. Erhart, P. C. Hammond, T. N. Kaye, K. Kuykendall, A. Liston, A. F. Robinson, C. B. Schultz, and P. M. Severns. 2003. The biology of Kincaid's lupine (*Lupinus sulphureus* spp. *Kincaidii*), a threatened species of western Oregon native prairies. *Natural Areas Journal*. 23: 72-83.

Service Review of Final Biological Assessment: **Comments not addressed.**

**Page 401 ADBA:** The Service's recovery outline for Kincaid's lupine mentions several threats that have caused the species to have become listed and prevent the species from attaining recovery. Many of these threats will be exasperated by the installation of the pipeline across two populations and across many miles of suitable habitat for the lupine. Threats are identified below, and should be assessed in the BA:

1. Adjacent land use practices. Exogenous impacts from nearby lands, which could include spreading invasive or noxious weeds, escaped grazing animals, etc., which degrades suitable habitats by reducing the viability of remnant populations of associated species.
2. Hydrologic alterations. Changes in landforms may modify the natural hydrology of a site; examples would include roadside ditching or establishment of new roads and water bars, thereby altering the annual duration of soil saturation, which in turn affects the species composition of the site.
3. Invasive species. Invasive nonnative species are a threat in virtually all known habitats in the region. Invasive species dramatically change the vegetation structure, often out competing the natives for water and nutrients (Wilson et al. 2003). Common invasive species include *Dactylis glomerata*, *Festuca arundinacea*, *Holcus lanatus*, *Rubus discolor*, *Rosa eglanteria* (sweetbriar rose), and *Cytisus scoparius*.
4. Isolation / fragmentation. The increasing isolation and fragmentation of the remaining habitat patches as a result of the destruction of suitable habitats throughout the region has resulted in smaller population sizes, loss of genetic diversity, reduced gene flow among populations, disruption of metapopulation structure, and increased susceptibility to local population extirpation caused by environmental catastrophes.
5. Road development/maintenance. *Lupinus sulphureus* ssp. *kincaidii* occurs in many small, fragmented populations, many of which are adjacent to roads. Roadside development and routine roadside maintenance generally involves herbicide application or mowing, which reduces or even eliminates populations.
6. Habitat vandalism. Vandalism, defined as deliberate destruction of individuals or habitat, occasionally occurs when rare species cause unpopular restrictions on use of public or private lands. Although not a common occurrence, vandalism could further reduce habitat function and destroy individual plants or animals.

Service Review of Final Biological Assessment: **Comments Addressed, except for 6. Habitat vandalism, above.**

**Page 402 ADBA:** Please include an analysis of how construction of the pipeline and operation and maintenance of the ROW will affect long-term viability of Kincaid's lupine when populations are impacted by construction of the pipeline - in some cases, the ROW will permanently divide populations in half. Fragmentation is a serious impact to a population as well and greatly diminishes a population's ability to withstand environmental change.

Service Review of Final Biological Assessment: **Comments not adequately Addressed. Additional comments provided in cover letter, including comments on insufficiency of proposed mitigation.**

**Page 403 ADBA:** The proposed action should provide an amount of seed needed for collection and for establishment of Kincaid's lupine. There is a ratio of seed sown to number of successful germinations and survival to adulthood. For one plant to successfully survive to adulthood it takes a much greater amount of seed. Plants should be planted in areas that can ensure long-term protection status - either on BLM lands or on private land with a conservation easement.

Service Review of Final Biological Assessment: **Comments not Addressed.**

**Page 403 ADBA:** Efforts to transplant Kincaid's lupine populations in the Willamette Valley have not been very successful, but no similar transplant efforts have occurred in Douglas County. Therefore, the Service would recommend avoidance of all lupine populations, then if that is not possible, to attempt both multi-year seed collection and concerted efforts to salvage all plants and transplant to nearby habitat unaffected by pipeline construction. Seeds should be collected as soon as possible (2008 to 2010).

Service Review of Final Biological Assessment: **Comments not adequately Addressed.**

Attempts to collect seed grow out plants and salvage all plants should estimate greenhouse space, constant greenhouse care, seed preparation, germination, and both transplant and salvage costs. The Service recommends that a much higher proportion of seeding and transplant occur to the actual loss of plant within the scope of the pipeline route to offset mortality due to uncertainties in salvage operations and greenhouse grown plant losses (refer to Kaye, T.N. and A. Brandt. 2005. Seeding and transplanting rare Willamette Valley prairie plants for population restoration. Challenge Cost-share project funded jointly by Eugene District, Bureau of Land Management and Institute for Applied Ecology).

Service Review of Final Biological Assessment: **Comments not adequately Addressed.**

**Appendix F, Page 11:** FERC should not grant the variance from topsoil segregation for this project, at least in those areas where significant topsoil occurs. Subsequent restoration efforts will be more successful, especially in areas where topsoil is already limited (e.g., some forested habitats) if topsoil is segregated.

Service Review of Final Biological Assessment: **Comments not adequately Addressed.**  
**Lack of topsoil segregation may result in lowered success in restoring the right-of-way. Additional mitigation needed to offset lowered probability of restoration success, especially on forested nonfederal lands where no topsoil segregation is proposed in BA.**

**Appendix F, Page 28:** Please demonstrate, for federal and non-federal lands, that sufficient native plant stock and/or seed is available to restore the entire construction footprint. If the amount of native plant stock or seed material is not available, please describe what alternatives will be used, where non-native materials would be used, and how they would be managed to encourage an eventual native plant community.

Service Review of Final Biological Assessment: **Comments not Addressed.**

**Attachment 2. Service's ESA Plant Comments (dated March 13, 2009) on Jordan Cove-Pacific Connector Administrative Final EIS that are Pertinent to the Biological Assessment.**

FWS has multiple concerns regarding the AFEIS' treatment of plants, per comments below. The FWS recommends development of an ESA and sensitive Plant Conservation Plan, where Pacific Connector's final agreements to surveys, avoidance and minimization measures, propagation, restoration, and other compensatory mitigation measures are clearly defined for all ESA and sensitive plant species potentially impacted by the Project.

**Gentner's fritillary**

The AFEIS states "More plants could be located within the analysis area during forthcoming surveys; the effect of the Project upon the recovery of the species would depend upon the number of plants being impacted and their proximity to management areas within Recovery Unit 3 (SBS 2008)".

Per previous FWS comments, FWS recommends the AFEIS require Pacific Connector to develop a contingency plan to avoid, minimize, restore, and mitigate for potential F. gentneri plants found in the pipeline route during upcoming surveys or during construction. We can't determine from AFEIS how the Project planning and subsequent construction would be proceed should plants be found right in the route where they couldn't be avoided for some reason. FWS and Pacific Connector and others previously discussed a possible purchase of mitigation bank lands in suitable F. gentneri habitat, but the AFEIS does not provide any compensatory mitigation proposals of this sort. A mitigation bank could also act as a possible salvage depository.

The F. gentneri avoidance and minimization plan should follow bulb removal and salvage protocols identified by ODA: see:  
<http://www.fws.gov/oregonfwo/Species/Data/GentnersFritillary/Documents/ODA2004ReportFritillariaGentneri.pdf>

**Kincaid's lupine**

AFEIS indicates: "Approximately 522 acres of land within the construction right-of-way were unsurveyed due to denied access by landowners. On those lands, an estimated 111 additional plants could be removed by construction (based on known densities of Kincaid's lupine within known occupied habitats)."

Per previous FWS comments, FWS recommends the AFEIS require Pacific Connector to develop a contingency plan to avoid, minimize, restore, and mitigate for potential L. sulphureus ssp. kincaidii plants found in the survey route during upcoming surveys or during construction. A mitigation site could also act as a possible salvage depository.

AFEIS indicates: "Plant salvage — If landowner approval is obtained, a qualified botanist would attempt to salvage Kincaid's lupine plants in the construction right-of-way that can

not be avoided and attempt to transplant them immediately off-site in suitable habitat. Transplanting this species is expected to be difficult; therefore, the feasibility of this mitigation effort would be determined during the salvage effort by Pacific Connector's environmental staff and the salvaging botanist." FWS strongly suggests that any successfully salvaged plants be moved to a nearby nursery environment. Unfortunately, translocating salvaged plants to a new area is extremely risky and often unsuccessful. To ensure highest rate of success, plants should be conditioned a year or two in a nursery and then outplanted during the fall to a dedicated nearby mitigation bank site with a conservation easement.

AFEIS indicates: "5) Monitoring — Success of revegetation efforts would be monitored near Kincaid's lupine populations annually for 3 years after construction. Plant surveys would include monitoring for noxious weeds, which would be controlled if encountered, using methods specific to protecting existing and dormant Kincaid's lupine plants." What is the long-term plan after 3 years? The footprint of a pipeline and noxious weeds are not likely to disappear after 3 years, so FWS recommends the pipeline be surveyed near revegetation sites for at least 15 years, perhaps alternating years after 5 years.

Pacific Connector should consider development of 3rd party endowments to ensure restoration sites are managed and protected.

### **Western lily**

FWS doesn't know where western lily are on the new alignment near Coos Bay. There could be direct impacts from eventual pipeline construction, requiring formal ESA consultation.

FWS recommends Pacific Connector develops a contingency plan to survey, avoid, mitigate, restore, and mitigate for potential L. occidentale plants found in the survey route during upcoming surveys or during construction. FWS would also suggest Pacific Connector purchase a conservation easement on suitable local property and fund an endowment for long term management. A suggestion is the 8-acre Hultin property near Bandon.