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STAFF REPORT: MATERIAL AMENDMENT

Amendment Application No.: 1-15-0277-A1

Applicant: Mercer Fraser Company

Location: Lower Eel River along the middle and upstream (southern) end of the Sandy Prairie landform off of Riverwalk Drive and Dinsmore Drive, west of Fortuna, Humboldt County (APNs 106-041-02,-14,-16; 200-352-02,-03; 200-361-02,-03; 200-362-11; 200-341-05,-08,-09, &-10).

Description of Previously Approved Project: Continued seasonal extraction of up to 270,000 cubic yards of river run aggregate (sand and gravel) per year for a period of five years (up to 70,000 cy per year at Plant A and up to 200,000 per year at Plant B).

Proposed Amendment: Modify special conditions for the protection of the western snowy plover and yellow-billed cuckoo consistent with the measures, recommendations, and conditions of the September 3, 2015 Biological Opinion of the U.S. Fish and Wildlife Service.

Staff Recommendation: Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

Commission staff recommends approval of Coastal Development Permit (CDP) Permit Amendment Request 1-15-0277-A1 with conditions.

On August 13, 2015, the Commission approved with conditions CDP 1-15-0277 authorizing the continued seasonal extraction of up to 270,000 cubic yards of gravel aggregate per year, for five years, from gravel bars on the lower Eel River. The Commission granted its approval of the mineral extraction development subject to 13 special conditions. At the time the Commission acted on the original permit, the U.S. Fish and Wildlife Service (FWS) had not yet completed its biological opinion (BO) with the specific recommendations for protection of the federally threatened western snowy plover and the federally threatened western yellow-billed cuckoo. As a result, to ensure the project would have no adverse impact on sensitive plover and cuckoo habitats, the Commission prohibited gravel extraction activities during the nesting and breeding seasons for both birds, limiting extraction activities to late September and the early part of October.

On September 3, 2015, the FWS issued its BO, which determined that with the use of surveys for plovers and cuckoos and determinations that no plovers and cuckoos are present within 1,000 feet of gravel operations, gravel extraction may commence as early as July 22nd in any given year. The BO concludes that recommended protective measures, if appropriately implemented, are appropriate “to avoid and minimize adverse effects to the plover and avoid adverse effects to the cuckoo.” The BO includes a number of “conservation measures,” “reasonable and prudent measures,” and “terms and conditions” to be implemented during gravel extraction operations each year to avoid or minimize potential impacts to the threatened species and designated critical habitats. The applicant proposes to amend CDP 1-15-0277 to allow for an extension of the seasonal start date of permitted extraction operations consistent with the seasonal provisions authorized within the BO’s requirements to avoid impacts to plovers and cuckoos.

As proposed and conditioned incorporating the measures, terms, and conditions of the BO, the proposed mining project as amended will be located in areas that will avoid intrusion into plover ESHA and cuckoo ESHA and/or be performed at times when sensitive species are not nesting and/or utilizing the site for habitat consistent with the BO protective measures. Therefore, staff believes the amended development as conditioned is consistent with the use limitations of Section 30233 of the Coastal Act on dredging in wetlands, as the amended gravel extraction project is for mineral extraction within areas that are not environmentally sensitive, consistent with Section 30233(a)(5).

Staff recommends modifying and reimposing Special Conditions 4 through 6 of the original permit requiring the applicant to undertake the proposed amended development consistent with the BO measures for the protection of plover and cuckoo habitat areas.

The motion to adopt the staff recommendation of approval of CDP amendment request 1-15-0277 with special conditions is found on page 4.

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APPENDICES

[Appendix A](#) – Substantive File Documents

[Appendix B](#) – Staff report for CDP 1-15-0277 (without original appendices or exhibits)

EXHIBITS

[Exhibit 1](#) – Regional Location Map

[Exhibit 2](#) – Aerial Photo

[Exhibit 3](#) – Biological Opinion (excerpts)

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** the proposed amendment to Coastal Development Permit No. 1-15-0277 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves the coastal development permit amendment on the grounds that the development as amended and subject to conditions, will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit amendment complies with the California Environmental Quality Act because feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the amended development on the environment.

II. STANDARD AND SPECIAL CONDITIONS

The Standard Conditions 1-5 and Special Conditions Nos. 1-3, 7-10, and 12-13 of CDP 1-15-0277 remain in full force and effect. **Special Conditions 4, 5, 6, and 11 of the original permit are modified as shown below and reimposed as conditions of the CDP as amended.** The modified conditions are listed below. New and deleted language appears as **bold double-underlined** and **~~bold double-strikethrough~~** text respectively. See **Appendix B** for the text of all the original permit conditions.

4. **Protection of Western Snowy Plover. ~~No gravel extraction activities shall occur during the Western snowy plover nesting season (between March 1 and September 15).~~**
 - A. **Extraction-related activities shall occur no earlier than July 22nd, and any extracted-related activities occurring prior to September 15th may only occur provided that appropriate surveys for western snowy plover are conducted prior to commencement of gravel extraction operations consistent with the methods, protocols, and directives detailed in plover Conservation Measures 2, 3, 4, 5, 6, and 10 listed in the September 3, 2015 Biological Opinion of the U.S. Fish and Wildlife Service for LOP 2015-1. Survey results shall be submitted to the Executive Director prior to commencement of gravel extraction operations.**
 - B. **If surveys result in the detection of any adult plovers, broods, chicks, or nests within 1,000 feet of a planned extraction site or haul route, extraction activities shall only be performed and continue consistent with subsections 1-2 below:**

1. If plovers or an active plover nest is within the area of planned operations or a 1,000-foot buffer area, activities within 1,000 feet of the plovers or nest shall be delayed until the nest has hatched and the plovers have moved to a distance greater than 1,000 feet away (hazing is not authorized).
 2. Extraction activities within 1,000 feet of plover habitat may only occur if three consecutive days of FWS-approved plover surveys conducted by a FWS-approved biologist are completed with no detections of plovers or nests. Operators must ensure that extraction activities do not occur when plovers or nests are within 1,000 feet of the extraction site.
- C. Vehicle use in suitable plover habitat shall be consistent with the methods, protocols, and directives detailed in plover Conservation Measure No. 7 listed in the September 3, 2015 Biological Opinion of the U.S. Fish and Wildlife Service for the Corps Letter of Permission (LOP) 2015-1.
- D. Access roads owned, controlled, or used by the gravel operator shall be gated and locked when no active extraction and hauling is occurring, including at night, to deter recreational vehicles from impacting western snowy plover nesting habitat on gravel bars. However, gates shall be designed only to block vehicles and shall allow for pedestrian access to the river, unless the applicant obtains additional authorization from the Commission to block pedestrian access.
- E. All trash and food scraps in the work area shall be removed daily and secured in predator-proof receptacles. Feeding wildlife, including corvids and gulls, shall be prohibited.
5. Protection of Western Yellow Billed Cuckoo. ~~No gravel extraction operations shall occur during the yellow billed cuckoo breeding season (between April 30 and September 15).~~
 - A. Prior to commencement of gravel extraction operations in any given year, annual pre-activity surveys for western yellow-billed cuckoo shall be conducted consistent with the methods, protocols, and directives detailed in plover Conservation Measures 1 through 6 listed in the September 3, 2015 Biological Opinion of the U.S. Fish and Wildlife Service for the Corps Letter of Permission (LOP) 2015-1. Survey results shall be submitted to the Executive Director prior to commencement of gravel extraction operations.
 - B. If surveys result in the detection of any cuckoos within 1,000 feet of a planned extraction site or haul route, extraction activities shall not commence until the nest has hatched or the fate of the nest has been determined in consultation with the U.S. Fish and Wildlife Service. Hazing is not authorized.
 - C. Suitable habitat for the cuckoo shall not be cleared, cut, or removed, except for hand pruning of overhanging vegetation (stems smaller than 6 inches in diameter) along existing haul routes. As required by Special Conditions 1 and 7 of this coastal development permit, gravel extraction operations shall not disturb or remove any riparian vegetation on gravel bars that is either (i) part of a contiguous riparian vegetation complex 1/16-acre or larger or (ii) that is 1-inch-in-diameter at breast height (DBH) or greater.

6. Extraction Season.

- A. No gravel extraction operations shall occur prior to September 15, except as may be allowed pursuant to pre-activity survey clearances detailed in Special Conditions 4 and 5 of this coastal development permit and the related Conservation Measures listed in the September 3, 2015 Biological Opinion of the U.S. Fish and Wildlife Service for LOP 2015-1. In no case shall gravel extraction operations occur prior to July 22.
- B. All extraction and reclamation must be completed by October 15th of each season. The Executive Director may approve up to a two week extension of gravel extraction and reclamation activities beyond that date to as late as November 1 if the permittee has submitted a request for an extension in writing, the Executive Director determines that dry weather conditions are forecast for the extension period, and any necessary extensions of time have been granted by the CDFW, the Corps, and NOAA Fisheries. No extraction or reclamation activities shall occur after October 15th unless the permittee has first received approval of an extension of time in writing from the Executive Director. The permittee must have reclaimed all portions of the seasonal development area except for removal of any authorized seasonal crossings before an extension can be authorized.

- 11. Authorized Development Termination Date.** ~~The gravel operations authorized by this permit shall terminate on December 31, 2019. Continued gravel operations after that date shall require a new coastal development permit.~~ The gravel operations authorized by this permit are valid for five (5) gravel extraction seasons from the date of Commission approval of CDP Amendment No. 1-15-0277-A1 (i.e., gravel extraction is authorized during the 2016 through the 2020 extraction seasons). One request for an additional four-year (4-yr.) period of development authorization may be accepted, reviewed, and approved by the Executive Director for a maximum total of nine (9) years of development authorization (i.e., the 2021 through the 2024 extraction seasons), which is coincident with the authorization period of U.S. Army Corps of Engineers LOP 2015-1 and the associated Biological Opinions of the U.S. Fish and Wildlife Service and National Marine Fisheries Service, provided that the request would not substantively alter the project description and/or potentially require modifications of conditions due to new information or technology or other changed circumstances. The request for an additional four-year period of development authorization shall be made prior to July 22, 2020 (which is the start of the 5th extraction season authorized under this permit as amended). If the request for an additional four-year period would substantively alter the project description and/or potentially require modifications of conditions due to new information or technology or other changed circumstances, an amendment to this permit will be necessary. All gravel operations proposed after December 31, 2024, or after 2020 if no additional four-year period of authorization has been granted by the Executive Director or amendment has been obtained, shall require a new coastal development permit.

III. FINDINGS AND DECLARATIONS

A. BACKGROUND AND AMENDMENT DESCRIPTION

On August 13, 2015, the Commission approved with conditions Coastal Development Permit (CDP) 1-15-0277 authorizing the continued seasonal extraction of up to 270,000 cubic yards of gravel aggregate per year, for five years, from two sites (plant A and plant B) on the Sandy Prairie landform, between river miles 10 and 12 on the lower Eel River, west of the city of Fortuna in Humboldt County (**Exhibits 1-2**). The Commission granted its approval of the mineral extraction development subject to 13 special conditions ([Appendix B](#)). Special Conditions 4, 5, 6, and 8 include restrictions on the timing of the authorized development each year as follows:

- Special Condition 4 prohibits gravel extraction activities from occurring during the nesting season of the federally listed western snowy plover (March 1-September 15).
- Special Condition 5 prohibits gravel action operations from occurring during the breeding season of the federally listed western yellow-billed cuckoo (April 30-September 15).
- Special Condition 6 expressly states that no gravel operations shall occur prior to September 15 or after October 15 of each year during the permit's 5-year term (which terminates on December 31, 2019, per Special Condition 11). The condition does allow for the granting by the Executive Director of an extension of the gravel extraction season to as late as November 1st, provided that the permittee has submitted a request for an extension in writing, the Executive Director determines that dry weather conditions are forecast for the extension period, and any necessary extensions of time have been granted by the California Department of Fish and Wildlife (CDFW), the Army Corps of Engineers, and NOAA-Fisheries.
- Special Condition 8 states that the seasonal development area must be reclaimed before October 15th, or by the extended date approved by the Executive Director pursuant to Special Condition 6. It provides directives on reclamation activities including filling in depressions, grading, and removal of seasonal crossings.

The proposed amendment would primarily modify the special conditions of the original permit that protect the western snowy plover and yellow-billed cuckoo consistent with the measures, recommendations, and conditions of the September 3, 2015 Biological Opinion (BO) of the U.S. Fish and Wildlife Service.

The western snowy plover (*Charadrius nivosus nivosus*) is a federally listed threatened species, which in the past has been observed nesting on gravel bars of the lower Eel and Van Duzen Rivers during April through early September. The U.S. Fish and Wildlife Service (FWS) has overseen surveying on the gravel bars within the Eel River during the April to September breeding season window.

The western yellow-billed cuckoo (*Coccyzus americanus*) was listed as a threatened species under the federal Endangered Species Act (ESA) in 2014 and is also listed as threatened under

the California ESA. Critical habitat for the species was proposed by the FWS in 2014 and is not yet finalized. If designated, critical habitat in the Lower Eel River would comprise an 8-mile long continuous segment of willow-cottonwood riparian vegetation from west of the town of Fortuna (Sandy Prairie) downstream to the Eel River estuary. Proposed designated critical habitat for this species consists of riparian stands of more than 37 acres and more than 325 feet in width. The yellow-billed cuckoo may use the riparian areas adjacent to gravel mining operations and haul routes along the lower Eel River for breeding habitat.

At the time the Commission acted on the original permit, the FWS had not yet completed its BO with the specific recommendations for protection the plover and cuckoo. As a result, to ensure the project would have no adverse impact on sensitive plover and cuckoo habitats, the Commission prohibited gravel extraction activities during the nesting and breeding seasons for both birds, limiting extraction activities to late September and the early part of October.

On September 3, 2015, following conditional approval of the CDP on August 13, 2015, the FWS issued its Biological Opinion (BO), in accordance with Section 7 of the federal Endangered Species Act, on the project's effects on the federally threatened Pacific Coast population of the western snowy plover, the federally threatened western yellow-billed cuckoo, and the designated and proposed critical habitats for the plover and cuckoo (respectively). The FWS determined that with the use of surveys for plovers and cuckoos and determinations that no plovers and cuckoos are present within 1,000 feet of gravel operations, gravel extraction may commence as early as July 22nd in any given year. The BO includes a number of "conservation measures," "reasonable and prudent measures," and "terms and conditions" to be implemented during gravel extraction operations each year to avoid or minimize potential impacts to the threatened species and designated critical habitats (**Exhibit 3**). These requirements include, in part: (1) not commencing gravel extraction operations in any given year prior to July 22; (2) completing FWS-approved surveys each year for pre-extraction operations that occur between March 1 and August 22; (3) and various other measures mostly having to do with survey protocols, vehicular driving speeds, reporting requirements, and gating and locking access roads owned, controlled, or used by gravel operators when no active extraction and hauling is occurring (including at night) in order to deter off-highway vehicle (OHV) impacts to nesting habitats on gravel bars.

The applicant proposes to amend CDP 1-15-0277 to allow for an extension of the seasonal start date of permitted extraction operations consistent with the seasonal provisions authorized within the BO's requirements to avoid impacts to plovers and cuckoos. The applicant also proposes to extend the length of the authorized development (currently valid through 2019) to coincide with the term of the two BOs completed for the Corps' LOP 2015-1 authorization, which runs through 2024.

The coastal resource issues affected by the proposed permit amendment are limited to protection of environmentally sensitive plover habitat areas (hereafter plover ESHA) and environmentally sensitive cuckoo habitat areas (cuckoo ESHA). As explained in the findings below, the proposed amended development would not lessen or avoid the intent of the approved permit.

B. STANDARD OF REVIEW

The project site is located in the Commission’s retained permit jurisdiction. The County of Humboldt has a certified Local Coastal Program (LCP), but the site is within an area shown on State Lands Commission maps over which the State retains a public trust interest. Therefore, as required by Public Resources Code Section 30519(b) and Commission regulation section 13166(c), the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

C. OTHER AGENCY APPROVALS

U.S. Army Corps of Engineers

The Corps permit granted for the original development was approved after Commission approval of the CDP and after the FWS had completed its BO. The Corps issued LOP 2015-1 for upstream gravel operations on September 18, 2015, which incorporates the BO recommendations for protection of plovers and cuckoo that the permittee is now proposing be incorporated into the CDP through the proposed permit amendment. In addition, the authorization period for LOP 2015-1 and the associated BOs of NMFS and the FWS runs through the year 2024, which matches the revised gravel extraction authorization period for the CDP requested by the permittee. Therefore, no Corps permit amendment is required.

State Lands Commission

The State Lands Commission issued a lease agreement with the applicant for the seasonal crossings in the river on August 28, 2015. SLC staff confirmed that there is no need to amend the lease agreement since the proposed amendment does not pertain to the timing of installation of the seasonal crossings.

D. GRAVEL EXTRACTION WITHIN RIVERINE WETLANDS

Section 30233 of the Coastal Act states, in applicable part, as follows:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

...

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas. [Emphasis added.].

...

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary...

Section 30107.5 of the Coastal Act defines “environmentally sensitive area” as encompassing:

...any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

Section 30230 of the Coastal Act states, in applicable part:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 of the Coastal Act states as follows:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Sections 30230, 30231, and 30233 of the Coastal Act, when read together as a suite of policy directives, set forth a number of different limitations on what types of projects may be allowed in coastal wetlands. For analysis purposes, the limitations applicable to the subject project can be grouped into four general categories or tests. These tests require that projects that entail the dredging, diking, or filling of wetlands demonstrate that (1) the purpose of the filling, diking, or dredging is for one of the seven uses allowed under Section 30233; (2) the project has no feasible less environmentally damaging alternative; (3) feasible mitigation measures have been provided to minimize adverse environmental effects; and (4) the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

The following analysis of the four categories/tests summarized above is limited to only those issues raised by the proposed permit amendment (i.e., the proposal to commence operations prior to September 15, during the plover and cuckoo nesting seasons).

Allowable Use

The first test set forth above is that any proposed fill, diking, or dredging must be for an allowable use as enumerated under Section 30233 of the Coastal Act. The development involves dredging and temporary filling for the mining of gravel aggregate materials. Mineral extraction is specifically enumerated as a permissible use in the above-cited policy [Section 30233(a)(5)], provided the activity is not undertaken in environmentally sensitive areas. As explained in the staff report for the permit dated July 31, 2015, the approved project is consistent with the use limitations of Section 30233 of the Coastal Act on dredging in coastal water bodies, as the

project as conditioned authorizes mineral extraction in areas that are not environmentally sensitive, consistent with Section 30233(a)(5).¹ There are various types of environmentally sensitive habitats around the project site including: (a) the flowing waters of the river, which provide habitat for threatened salmonid species; (b) riparian habitat, including potential breeding habitat for the federally threatened plover and North Coast black cottonwood forest (a rare vegetation type) occurring within the project vicinity; and (c) exposed gravel bars that provide nesting habitat for the plover.

Regarding the project's potential effects on the snowy plover, the BO completed by the FWS dated September 3, 2015 states that the gravel extraction project "has the potential to result in adverse effects to the [western snowy] plover through habitat modification, disturbance, direct mortality, and impairing recovery." Though originally thought to inhabit primarily open beach strand environments, plovers have also been observed roosting and nesting on gravel bars on the lower Eel River. The plover sightings on the Eel River have been in the months of April through early September, during the nesting season. Unlike many avian species which nest in trees, plovers establish their nests on the open gravel bars. Plover adults, nests, and chicks are very cryptic, largely because of their ability to blend in with their surroundings as a defense strategy. All life stages of the plover are susceptible to death or injury by humans driving, operating equipment, and otherwise using occupied plover habitat. Disturbance from noise and activity associated with gravel extraction, vehicle use, and pre-gravel extraction activities may adversely affect western snowy plovers by altering their feeding and breeding behavior, reducing the suitability of nesting habitat, masking essential warning signs of predators, and attracting potential scavengers/predators. According to the FWS, data from other portions of the plover's range suggest that activity and vehicle use in nesting and chick rearing habitat during low light and night conditions likely increases the risk of vehicle strikes to plovers, including adults. Activities associated with gravel extraction (including surveys for engineering, hydrology and biological resources) often need to be conducted prior to the initiation of gravel extraction activities. Because these pre-extraction activities require vehicular use and human presence in potential nest areas during the nest season, the potential exists to adversely affect the western snowy plover through direct harm or harassment.

Regarding the project's potential effects on western yellow-billed cuckoo, the species has been detected in the larger concentrations of riparian vegetation along the lower Eel River. Federally listed in 2014, the yellow-billed cuckoo has been observed in the lower Eel River area since

¹ The multi-year gravel operation approved under CDP 1-15-0277-A1 allows for use of a variety of extraction techniques that have been established by the previous Corps LOP and recommended by NOAA Fisheries as techniques that would avoid significant impacts to salmonids. All but one of the proposed gravel extraction techniques would involve excavation on dry portions of the gravel bars without encroachment into the salmon habitat of the wetted river channel. The sole exception is the wet trenching technique, which would involve diverting the stream flow to a secondary channel location and then excavating sediment directly from portions of the channel. The wet trenching method of extraction would only be used when there is the objective of improving instream salmonid habitat by the limited use of sediment removal, and where the diversion of the low flow channel into a secondary channel that provides salmonid habitat is possible. Although the wet trenching technique would involve excavation within salmonid ESHA habitat, and thus would not be permissible under Section 30233(a)(5), the Commission evaluated this aspect of the development in its original approval of CDP 1-15-0277 under Section 30236 of the Coastal Act in Section IV-G of the findings for CDP 1-15-0277, because the wet trenching method proposed is a permissible alteration.

2000, and may be utilizing the riparian forest areas along the river as breeding habitat. Proposed designated critical habitat for this species consists of riparian stands of more than 37 acres and more than 325 feet in width. According to the 2015 biological assessment prepared for the Lower Eel River gravel mining projects, riparian habitat adjacent to the project site appears suitable in size and width to meet minimum size requirements for a yellow-billed cuckoo breeding area. However, the FWS BO determined that the proposed project is not expected to modify cuckoo habitat, and therefore “No adverse effects to the cuckoo are expected.”

The BO lists a series of measures and requirements “to avoid and minimize adverse effects to the plover and avoid adverse effects to the cuckoo.” These include, but are not limited to, the following: (1) measures specifying survey requirements and protocols that are required prior to initiation of any gravel extraction operations that may occur prior to September 15th in any given extraction year (September 15th is considered the end of the breeding and nesting seasons for both the federally threatened plover and cuckoo species), (2) minimum buffer distances to be established around identified sensitive habitats, (3) protocols for vehicular use in areas adjacent to potential plover habitat areas, and (4) measures to be implemented to deter recreational vehicle impacts to plovers on gravel bars.

Because the BO had not yet been completed when the Commission approved the original permit in August of 2015, the Commission imposed conditions restricting all extraction-related operations until after the end of the nesting season (i.e., until after September 15th) for both the plover and the cuckoo. In this way, the Commission assured that mineral extraction would not occur within plover ESHA or cuckoo ESHA, inconsistent with use limitations of Section 30233(a)(5), as discussed below.

As previously discussed, the applicant proposes to amend the permitted development to allow for an extension of the seasonal start date of permitted extraction operations consistent with the seasonal provisions authorized within the BOs protective measures to avoid impacts to plovers and cuckoos. The amended development as proposed and conditioned herein is consistent with the use limitations of Section 30233(a)(5), because mineral extraction will not occur within the flowing waters of the river (salmonid habitat), within environmentally sensitive riparian habitat, or within sensitive species (including plover and cuckoo) nesting habitats. As proposed, development associated with gravel extraction operations will avoid plover ESHA and cuckoo ESHA. The proposed mining project as amended will be located in areas that will avoid intrusion into plover ESHA and cuckoo ESHA and/or be performed at times when sensitive species are not nesting and/or utilizing the site for habitat consistent with the BO protective measures. As discussed above, the FWS has determined that its recommended protective measures, if appropriately implemented, are appropriate “to avoid and minimize adverse effects to the plover and avoid adverse effects to the cuckoo.”

To ensure that mineral extraction will not occur within plover ESHA or within cuckoo ESHA consistent with the use limitations of Section 30233(a)(5), the Commission modifies and reimposes Special Conditions 4, 5, and 6. **Special Condition 4**, as modified and reimposed, requires the applicant to undertake the proposed amended development consistent with the BO plover protective measures, including requirements for pre-activity surveys, establishment of a minimum 1,000-foot buffer if any plover ESHA is detected, restrictions on vehicle use in areas

of potential plover habitat, and other protective measures. **Special Condition 5**, as modified and reimposed, requires the applicant to undertake the proposed amended development consistent with the BO cuckoo protective measures, including requirements for pre-activity surveys, establishment of a minimum 1,000-foot buffer if any cuckoo ESHA is detected, and riparian protective measures. Finally, **Special Condition 6**, as modified and reimposed, allows for gravel extraction operations to commence prior to September 15 only if undertaken pursuant pre-activity survey clearances detailed in Special Conditions 4 and 5 of this CDP and the related conservation measures listed in the BO.

Furthermore, to ensure that mineral extraction will not occur within environmentally sensitive salmonid habitat or environmentally sensitive riparian habitat consistent with the use limitations of Section 30233(a)(5), the Commission reimposes Special Conditions 1, 2, 3, 7, and 8. Collectively, these conditions (1) prohibit seasonal crossings from being placed within salmonid ESHA, (2) require protections for riparian ESHA, and (3) include the various conservation measures identified by NOAA-Fisheries in its BO completed for the project as necessary to protect water quality and salmonid habitat.

Therefore, as conditioned herein, the amended development is consistent with the use limitations of Section 30233 of the Coastal Act on dredging in coastal water bodies, as the proposed gravel extraction as amended is for mineral extraction within areas that are not environmentally sensitive, consistent with Section 30233(a)(5).

Alternatives

The second test set forth by the Commission's dredging and fill policies is that the proposed dredge or fill project must have no feasible less environmentally damaging alternative.

One alternative to the proposed amended development is the "no project" alternative, which means not amending the permit and banning extractions operations during both the snowy plover and cuckoo nesting and breeding seasons. This is not a less environmentally damaging alternative than the amended development, as under both alternatives, impacts to snowy plover and cuckoos will be avoided through the use of the various BO measures summarized above.

Therefore, the Commission finds that there is no less environmentally damaging feasible alternative to the amended development as conditioned, as required by Section 30233(a).

Feasible mitigation measures

As discussed in the above Findings and on pages 32-40 of the original staff report for the permit (Appendix B), the Commission finds that the proposed amended development, as conditioned, includes all feasible mitigation measures (summarized above) to minimize adverse environmental effects, consistent with the third test set forth by the dredging and fill policy of the Coastal Act. As conditioned, there are no feasible mitigation measures available that would substantially lessen any significant adverse impacts that the activity may have on the environment, consistent with Section 30233(a).

Maintenance and enhancement of habitat values

As discussed in the above Findings, the conditions of the permit as amended will ensure that the amended development will not have significant adverse impacts on fisheries resources, river morphology, riparian ESHA, plover ESHA, cuckoo ESHA, or water quality. Therefore, the Commission finds that the amended development, as conditioned, will maintain and enhance the biological productivity and functional capacity of the habitat maintain and restore optimum populations of marine organisms and protect human health consistent with the fourth general limitation set forth by Sections 30230, 30231, and 30233.

Conclusion

The Commission thus finds that the project as amended is for an allowable use, that there is no feasible less environmentally damaging alternative, that no additional mitigation is required for the impacts associated with the dredging of coastal waters, and that riverine habitat values will be maintained or enhanced. Therefore, the Commission finds that the amended development, as conditioned, is consistent with Sections 30230, 30231, and 30233 of the Coastal Act.

E. PROTECTION OF ADJACENT ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Section 30240 of the Coastal Act states in part that:

...

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

As explained above and in the staff report for the original permit dated July 31, 2015, the annual extraction operations as conditioned will not be performed within environmentally sensitive habitat either within or outside of the bank-full channel of the river. Although the gravel extraction operations will not be performed directly within ESHA, the development will occur adjacent to several kinds of ESHA as discussed above, including sensitive salmonid habitat in the river, possible western snowy plover habitat in areas of the gravel bars that will be restricted from gravel mining activities, riparian habitat that has become established on the gravel bars and along the banks of the river, and those portions of the riparian habitat that may be used for nesting by the yellow billed cuckoo. As amended under this permit, discussed above, the gravel extraction operations will be sited and designed to prevent significant disruption of these adjacent ESHAs for all of the following reasons:

- **Salmonids:** As discussed in the above Finding, the proposed amended development, as conditioned, includes the various conservation measures identified by NOAA-Fisheries in its BO completed for the project as necessary to protect water quality and salmonid habitat. These measures, included in Special Conditions 1, 2, 3, 7, and 8, which are reimposed as conditions of this permit amendment without any changes, will prevent impacts that would significantly degrade adjacent salmonid ESHA and will be compatible with the continuance of any such identified habitat areas, consistent with Section 302040(b) of the Coastal Act.

- Riparian habitat: To ensure that the gravel extraction operation continues to avoid significant degradation of adjacent riparian habitat, the Commission reimposes **Special Condition 1**, which prohibits mining in those portions of the gravel bars where the riparian vegetation has reached a size and extent where there is an expectation of appreciable habitat values for nesting, forage and cover of wildlife being afforded. Furthermore, the Commission reimposes **Special Condition 7** requiring that the proposed project not disturb or remove any of the established riparian vegetation at the site and prohibits the cutting of new haul roads through the habitat. Existing haul roads through the riparian areas must be used to truck gravel from the bar to the stockpiling and processing facility. Finally, the Commission modifies and reimposes **Special Condition 5**, which prohibits the removal of riparian vegetation that may support cuckoo nesting habitat.
- Western yellow-billed cuckoo: As previously discussed, the applicant proposes to amend the permitted development to allow for an extension of the seasonal start date of permitted extraction operations during the cuckoo nesting season consistent with the seasonal provisions authorized within the BO's requirements to avoid impacts to cuckoos. As previously discussed, the FWS determined that with the use of surveys for cuckoos and determinations that no cuckoos are present within 1,000 feet of gravel operations, gravel extraction may commence as early as July 22nd and will avoid development within cuckoo ESHA. **Special Condition 5**, modified and reimposed as discussed above, requires the applicant to undertake the proposed amended development consistent with the BO cuckoo conservation measures, including requirements for pre-activity surveys, establishment of a minimum 1,000-foot buffer if any cuckoo ESHA is detected, and riparian protective measures. Furthermore, **Special Condition 6**, modified and reimposed, prohibits gravel extraction operations from occurring prior to July 22nd. Thus, the proposed amended development, as conditioned, will avoid degradation of the cuckoo habitat.
- Western snowy plover: As previously discussed, the applicant proposes to amend the permitted development to allow for an extension of the seasonal start date of permitted extraction operations during the plover nesting season consistent with the seasonal provisions authorized within the BO's requirements to avoid impacts to plovers. As previously discussed, the FWS determined that with the use of surveys for plovers and determinations that no plovers are present within 1,000 feet of gravel operations, gravel extraction may commence as early as July 22nd and will avoid development within plover ESHA. **Special Condition 4**, modified and reimposed as discussed above, requires the applicant to undertake the proposed amended development consistent with the BO plover protective measures, including requirements for pre-activity surveys, establishment of a minimum 1,000-foot buffer if any plover ESHA is detected, restrictions on vehicle use in areas of potential plover habitat, and other protective measures. Furthermore, **Special Condition 6**, modified and reimposed, prohibits gravel extraction operations from occurring prior to July 22nd. Thus, the proposed amended development, as conditioned, will avoid degradation of the plover habitat.

Therefore, the Commission finds that the proposed amended development, as conditioned, will be sited and designed to prevent impacts that would significantly degrade adjacent ESHA and will be compatible with the continuance of any such identified habitat areas, consistent with Section 302040(b) of the Coastal Act.

F. PROTECTION OF PUBLIC ACCESS TO THE RIVER

Coastal Act Section 30210 requires in applicable part that maximum public access and recreational opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Section 30211 requires in applicable part that development not interfere with the public's right of access to the sea where acquired through use (i.e., potential prescriptive rights or rights of implied dedication). Section 30212 requires in applicable part that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, such as when adequate access exists nearby or when the provision of public access would be inconsistent with public safety. In applying Sections 30210, 30211, and 30212, the Commission is limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

As explained in the staff report for the original permit dated July 31, 2015, the project site is located between the first public road (Highway 101) and the sea (the Eel River is considered to be an arm of the sea in this area). Recreational use of the river in this particular section of the river is very limited, largely because there are very few access points to the river. The principal public access use of the project site that does occur is for recreational fishing. Other public access and recreational uses of this stretch of the river include recreational boating. The prime fishing season occurs in the spring or wet season when gravel extraction is not occurring. To the extent that canoeists and boaters do use the river channel during the extraction season, the Commission reimposes **Special Condition 2**, which will ensure that any crossings of the channel installed by the applicants will not block passage down the river. The condition requires that any proposed seasonal crossing of the low flow or secondary channels shall be of the railroad flatcar variety rather than culverted fill crossings. The condition also requires that the flatcar crossing be installed in such a manner that a minimum 3-foot vertical clearance is maintained above the surface of the water so that canoes and kayaks are able to pass through such a crossing.

Due to the significant adverse impacts that vehicle use on the gravel bars has on the plover, the FWS BO includes conservation measures aimed at minimizing vehicle impacts to plover habitat. Plover conservation measure number 7 imposes limits on vehicular use in potential plover nesting areas during the nesting season. Plover conservation measure number 8 states that access roads owned, controlled, or used by commercial gravel operators shall be gated and locked during the plover nesting season when no active extraction and hauling is occurring (including at night) in order to deter recreational vehicle impacts to plovers on gravel bars. As previously discussed, **Special Condition 4**, as modified and reimposed, requires the applicant to undertake the amended development consistent with the BO plover conservation measures, including restrictions on vehicle use in areas of potential plover habitat. However, the condition requires that gates shall be designed only to block vehicles and shall allow for pedestrian access to the

river, unless the applicant obtains additional authorization from the Commission to block pedestrian access.

Thus, the Commission finds that the amended development, as conditioned, will have no significant adverse effect on public access, and the amended development as proposed without new public access is consistent with the public access policies of the Coastal Act.

G. PERIOD OF AUTHORIZATION

As part of the amendment request, the applicant has requested authorization to modify Special Condition 11, which requires that the gravel operations authorized by the permit terminate on December 31, 2019, five years after Commission approval of the original permit. The Commission has, on occasion, granted multi-year permits for on-going development. However, given the fact that circumstances can change over time and techniques for minimizing adverse impacts from development can also evolve, the Commission generally conditions permits authorizing on-going development to limit the authorized development for a fixed period of time, typically five years.

The applicant is requesting that Special Condition 11 be modified so that the gravel operations authorized by the permit do not have to terminate until after the 2024 gravel extraction season to match the authorization period granted under Corps LOP 2015-1 and the associated Biological Opinions of NMFS and FWS. The Corps permit and the BOs issued for the original development were approved after Commission approval of the applicant's original CDP. Over the years, the Commission has collaborated with a multi-agency review team of local, state, and federal agencies pursuant to the Corps approval process to develop consistent limitations and protocols addressing the environmental effects of for lower Eel River gravel extraction projects. The limitations and protocols are based in part on information and recommendations from the NMFS and FWS developed as part of formal consultation process on threatened and endangered species required by the Federal Endangered Species Act. The limitations and protocols sometimes change, usually after the period of authorization under a Corps LOP has expired. The NMFS and FWS prepare new BOs in conjunction with the issuance by the Corps of a new LOP, which sometimes results in changes to the gravel extraction limitations and protocols.

The Commission can best address changing circumstances that affect on-going gravel extraction operations and incorporate new techniques for minimizing adverse impacts from development when it can consider the new analyses of gravel extraction operations conducted by NMFS and FWS at the time new BOs and Corps LOPs are issued for on-going gravel extraction operations on the lower Eel River. Thus, matching the authorization period granted under the Commission's CDP with the authorization period granted under the Corps LOP can be helpful in the Commission's periodic review of new CDP applications for gravel extraction operation on the Lower Eel River. Therefore, the Commission modifies and reimposes **Special Condition 11** to change the date of termination of the authorized development from 2019 to 2024, which corresponds to the project termination dates listed in LOP 2015-1 and in the associated BOs. The condition limits the length of development authorized under this CDP to a period of five years from the date of Commission approval. One request for an additional four-year period of authorized development may be accepted, reviewed, and approved by the Executive Director for a maximum total of nine years of development (corresponding to the project termination dates

listed in LOP 2015-1 and in the associated BOs), provided that the request would not substantively alter the project description and/or require modifications of conditions due to new information or technology or other changed circumstances. This condition ensures that the Commission will have the opportunity to take into account changed circumstances and to reconsider the project activities at a later date. The future reconsideration of the project would have the benefit of being informed by the results of the gravel extraction operations authorized under this CDP and the analyses of any new BOs prepared by NMFS or FWS for gravel extraction operations on the lower Eel River.

H. CALIFORNIA ENVIRONMENTAL QUALITY ACT

The County of Humboldt, as the lead agency, adopted a Programmatic Environmental Impact Report (PEIR) to describe and analyze the potential environmental effects resulting from the gravel extraction operations in the lower Eel and lower Van Duzen Rivers in 1992.

Section 13096 of the Commission's administrative regulations requires Coastal Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirement of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are any feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on conformity with Coastal Act policies at this point as if set forth in full. As discussed above, the project as proposed to be amended has been conditioned to be consistent with the policies of the Coastal Act. No public comments regarding potential significant adverse environmental effects of the project amendment were received prior to preparation of the staff report. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts which the activity may have on the environment. Therefore, the Commission finds that the proposed amended development, as conditioned to mitigate the identified impacts, can be found to be consistent with the requirements of the Coastal Act to conform to CEQA.

**APPENDIX A
SUBSTANTIVE FILE DOCUMENTS**

File for Coastal Development Permit No. 1-15-0277

File for Coastal Development Permit No. 1-15-0277-A1

File for Coastal Development Permit No. 1-15-0204

File for Coastal Development Permit No. 1-15-0204-A1

File for Coastal Development Permit No. 1-15-0205

File for Coastal Development Permit No. 1-15-0205-A1

File for Coastal Development Permit No. 1-16-0423

Humboldt County certified Local Coastal Program

APPENDIX B

STAFF REPORT FOR CDP 1-15-0277 (APPROVED 8/13/15)

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
 1385 8TH STREET, SUITE 130
 ARCATA, CA 95521
 VOICE (707) 826-8950
 FACSIMILE (707) 826-8960



Th12d

Filed:	6/3/15
180 th day:	11/30/2015
Staff:	K. Sirkin-A
Staff Report:	7/31/15
Hearing Date:	8/13/15

STAFF REPORT: REGULAR CALENDAR

Application No:	1-15-0277
Applicant:	Mercer Fraser Company
Location:	Lower Eel River at the middle to upper (southern) end of the Sandy Prairie landform, west of Fortuna, Humboldt County (APNs 106-041-02,-14,-16; 200-352-02,-03; 200-361-02,-03; 200-362-11; 200-341-05,-08,-09, &-10).
Project Description:	Seasonal extraction of up to 270,000 cubic yards of river run aggregate (sand and gravel) per year for a period of five years (up to 70,000 cy per year at Plant A and up to 200,000 per year at Plant B).
Staff Recommendation:	Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

The applicant proposes to perform seasonal extraction of up to 270,000 cubic yards (cy) of river run aggregate from the Sandy Prairie landform within the lower Eel River, between river miles 10 and 12, west of the city of Fortuna in Humboldt County (up to 70,000 cy per year at Plant A and up to 200,000 cy per year at Plant B). Plant A is located on the “Pedrazzini Bar” at the upper (southern) end of the landform on the west side of Riverwalk Drive (formerly 12th Street) and Plant B is located on the properties of Canevari & Christen at the middle of the landform, at the end of Dinsmore Drive. The applicant has operated at Plant A for over 40 years and has a County-approved vested right for annual extraction of up to 70,000 cubic yards at this site. Plant B has been in operation since 1993 (previously under the operation of Canevari Timber

Company) and been leased by the applicant since 1999. The proposed annual extraction amount is proposed as an upper limit, is consistent with the Humboldt County Programmatic Environmental Impact Report (PEIR) for the lower Eel River and is based upon evaluation of data collected under the PEIR and Interim Management Programs. In any given year, project extraction volumes, locations, and methods would be submitted by the project consultants for annual review and approval by local, state, and federal agencies, consistent with the terms and conditions of their prior authorizations. including the County of Humboldt, California Department of Fish and Wildlife, and the U.S. Army Corps of Engineers. See Exhibit 4 for full project details.

The major coastal act issue raised by this application is whether the proposed gravel extraction activities will be conducted in a manner that will protect environmentally sensitive habitat areas (ESHA) and riverine resources within and adjacent to the project site consistent with Sections 30230,30231, 30233, and 30240 of the Coastal Act.

Staff believes that, with the recommended conditions described below, the proposed gravel extraction operation has been limited to ensure that: (1) no dredge or fill activities will occur within ESHA; (2) only stream alterations that will improve fish habitat will be undertaken; and (3) permissible development will avoid significant degradation of adjacent ESHA. The development as conditioned is consistent with limitations and protocols for lower Eel River gravel extraction projects developed by a multi-agency review team of local, state, and federal agencies pursuant to the U.S. Army Corps of Engineers approval process. The limitations and protocols are based in part on information and recommendations from the National Marine Fisheries Service and U.S Fish & Wildlife Service developed as part of formal consultation process on threatened and endangered species required by the Federal Endangered Species Act. Staff believes that the proposed project as conditioned is consistent with the requirements of Sections 30230, 30231, 30233, 30236 and 30240 of the Coastal Act, as well as all other applicable policies of the Coastal Act.

The motion to adopt the staff recommendation of approval of Coastal Development Permit (CDP) 1-15-0277 with special conditions is found on page 4.

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APPENDICES

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EXHIBITS

[Exhibit 1 – Regional Location Map](#)

[Exhibit 2 – Vicinity Map](#)

[Exhibit 3 – Project Location Map](#)

[Exhibit 4 – Detailed Project description](#)

[Exhibit 5 - Geomorphic Impact Analysis](#)

Note: The following 3 exhibit are included in a combined exhibit packet prepared for CDP Application Nos. 1-15-0204, 1-15-0205, and 1-15-02077, attached separately

[Exhibit A – CHERT analysis of Eel River Cross Sections at Gravel Mining Site, 1997 -2007](#)

[Exhibit B – Lower Eel River Gravel Mining and Extraction Activities Biological Assessment \(Western Snowy Plover and Western Yellow-billed Cuckoo](#)

[Exhibit C – Biological Assessment for Aggregate Extraction Operations in the Eel, South Fork Eel, Van Duzen and Trinity River, Humboldt County, California](#)

I. MOTION AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

*I move that the Commission **approve** Coastal Development Permit 1-15-0277 pursuant to the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

- 1. Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
- 2. Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
- 3. Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
- 4. Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Extraction Limitations.** Extraction of material shall occur within the date limitations prescribed by Special Conditions 4, 5 and 11 and shall be subject to the following limitations:

- (A) Consistent with the proposed project description, the permittee shall extract no more than 270,000 cubic yards of gravel annually from the project site
- (B) The permittee shall only extract material by traditional skims, horseshoe skims, inboard skims, narrow skims, alcove extractions, wetland pits, wet trenches for salmonid habitat improvement purposes only, and/or dry-trenches in the manner described in the U.S. Army Corps of Engineers (Corps) Letter of Permission Procedure 2015 (LOP-2015) Public Notice dated March 3, 2015 (No. 2007-00857-N). If wet trenching methods for salmonid habitat improvements are used, the trenching within the wet channel shall be limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat. If dry trenching methods are used, a barrier such as silt fencing, or a gravel berm shall be constructed and maintained during trenching along the entire length of the excavated area to prevent turbid water from entering the flowing river. After completion of gravel extraction operations, the permittee shall remove the berm to prevent the creation of fish traps;
- (C) Excavation shall not occur in the active channel (area where water is flowing unimpeded through the river channel);
- (D) Extraction quantities shall not exceed (1) the proposed cubic yards per year of gravel extraction, (2) any specific allocation limit required by the U.S. Army Corps of Engineers (Corps), and (3) the long-term average sustained yield based on estimates of mean annual recruitment, as utilized by the County of Humboldt Extraction Review Team (CHERT);
- (E) Gravel extraction operations shall not disturb or remove any of the riparian vegetation on the river banks;
- (F) Gravel extraction operations shall not disturb or remove any of the riparian vegetation on the gravel bar that is either: (1) part of contiguous riparian vegetation complex 1/16-acre or larger, or (2) one-inch-in-diameter at breast height (DBH) or greater;
- (G) Horseshoe extractions shall occur on the part of the gravel bar that is downstream from the widest point of the bar and must be set back from the low flow channel with vertical offsets;

- (H) Dry trench extractions shall be (1) limited to excavation on an exposed dry gravel bar; (2) either shallow and stay above the water table, or deep and extend below the water table, and (3) breached on the downstream end and connected to the river to prevent fish stranding after excavation when the sediment in the trench has settled;
- (I) Alcove extractions shall be (1) located on the downstream end of gravel bars where naturally occurring alcoves form and provide refuge for salmonids; (2) regularly shaped or irregularly shaped to avoid riparian vegetation; (3) open to the low flow channel on the downstream end to prevent fish stranding; and (4) extracted to a depth either above or below the water table;
- (J) Any bar-skimming extractions that are consistent with subsection (B) above that are proposed adjacent to the low flow channel shall have a minimum skim floor elevation at the elevation of the 35% exceedence flow;
- (K) The upstream end of the bar (head) shall not be mined or otherwise altered by gravel extraction operations. The minimum head of the bar shall be defined as that portion of the bar that extends from at least the upper third of the bar to the upstream end of the bar that is exposed at summer low flow; and
- (L) The location of wetland pits shall be above the two-year flood frequency elevation.

2. Seasonal Crossings. Any proposed crossing of the low flow channel or secondary channels during gravel extraction shall be subject to the following requirements:

- (A) The crossing shall be of the railroad flatcar or bridge variety placed in a manner so as to span the channel with a minimum clearance of three (3) feet above the water surface;
- (B) Stream channel crossing locations shall be determined on a site-specific basis. Special consideration shall be given to the proposed placement of the channel crossings at riffles and based on findings from CHERT that the location will minimize adverse effects to salmonids;
- (C) No portion of the abutments or bridge supports shall extend into the wetted channel except in shallow flat-water areas;
- (D) The presence of heavy equipment in the wetted low-flow channel shall be minimized by limiting the number of heavy equipment crossings during each crossing installation or removal. A maximum of two crossings per installation and two crossings per removal is allowed, although one crossing is preferred. Heavy equipment shall not be used in the wetted low-flow channel except for channel crossing installation and removal;
- (E) Channel crossings shall only be placed after June 30 of each year; and

- (F) Channel crossing removal shall be completed by October 15 of each year or by the extended date approved by the Executive Director pursuant to Special Condition No. 6.

3. Annual Gravel Extraction Plan.

A. PRIOR TO THE START OF EACH YEAR'S GRAVEL EXTRACTION OPERATIONS, the permittee shall submit, for the review and written approval of the Executive Director, a final gravel extraction plan for that gravel extraction season consistent with the terms and conditions of this permit and that contains the following:

1. A gravel extraction plan of the annual gravel extraction operation containing cross-sections, maps, and associated calculations that accurately depict the proposed extraction area, demonstrates that the proposed extraction will be consistent with the extraction standards and limitations specified in Special Condition Nos. 1, 2, 4, 5, 6, 7, and 8 and is prepared in conformance with the requirements of the Corps Letter of Permission Procedure 2015 (LOP-2015) Public Notice dated March 3, 2015 (No. 2007-00857-N);
2. A pre-extraction vertical rather than oblique aerial photo of the site taken during the spring of the year of mining at a scale of 1:6,000 and upon which the proposed extraction activities have been diagrammed;
3. A botanical survey prepared by a qualified biologist with experience in riparian and wetland vegetation mapping, for the review and approval of the Executive Director, that maps all vegetation found in potential extraction areas of the site and highlights the location and extent of all vegetated areas containing woody riparian vegetation that is either (i) part of a contiguous riparian vegetation complex 1/16-of-an-acre or larger or (ii) one-inch-in-diameter at breast height (DBH) or greater. If the areas proposed for extraction are devoid of vegetation, the applicant may substitute the submittal of photographs (including aerial) that are sufficient in the opinion of the Executive Director to demonstrate that no vegetation exists in the proposed extraction areas in lieu of the botanical survey;
4. A copy of the gravel extraction plan recommended by CHERT for the subject year, unless review by CHERT is not required by the County, and evidence that the final gravel extraction plan is consistent with the recommendations of CHERT as well as consistent with all standard and special conditions of this permit;
5. A post-extraction survey of the prior year's mining activities (if any) conducted following cessation of extraction and before alteration of the extraction area by flow following fall rains, that includes the amount and dimension of material excavated from each area mined and is prepared in conformance with the requirements of the Corps Letter of Permission Procedure 2015 (LOP-2015) Public Notice dated March 3, 2015 (No. 2007-00857-N);

6. The results of biological monitoring report data required by the Corps Letter of Permission Procedure 2015 (LOP-2015) Public Notice dated March 3, 2015 (No. 2007-00857-N);
7. A plan for run-off control to avoid significant adverse impacts on coastal resources. The runoff control plan shall include, at a minimum, the following components:
 - (a) Provisions demonstrating that:
 - (i) Run-off from the gravel mining extraction and stockpiling sites shall not increase sedimentation in coastal waters;
 - (ii) Run-off from the gravel mining extraction and stockpiling sites shall not result in pollutants entering coastal waters;
 - (iii) Best Management Practices (BMPs) shall be used to prevent entry of polluted stormwater runoff into coastal waters during the transportation and storage of excavated materials, including but not limited to:
 - (iv) A suite of the following temporary erosion and runoff control measures, as described in detail within in the “California Storm Water Best Management Commercial-Industrial and Construction Activity Handbooks, developed by Camp, Dresser & McKee, et al. for the Storm Water Quality Task Force, shall be used during mining: Spill Prevention and Control (CA12), Vehicle and Equipment Fueling (CA31), Vehicle and Equipment Maintenance (CA32), Employee / Subcontractor Training (CA40), and Dust Control (ESC21);
 - (b) A narrative report describing all temporary runoff control measures to be used during mining;
 - (c) A site plan showing the location of all temporary runoff control measures; and
 - (d) A schedule for installation and removal of the temporary runoff control measures; and
8. Evidence demonstrating that any proposed wet trenching proposed for instream salmonid habitat restoration purposes is limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat, including, but not limited to, written approval of the proposed wet trenching from NOAA-Fisheries and/or the California Department of Fish and Wildlife (CDFW).

B. The permittee shall undertake development in accordance with the approved final gravel extraction plan. Any proposed changes to the approved final gravel extraction plan

shall be reported to the Executive Director. No changes to the approved final gravel extraction plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

4. **Protection of Western Snowy Plover.** No gravel extraction activities shall occur during the Western snowy plover nesting season (between March 1 and September 15).
5. **Protection of Western Yellow Billed Cuckoo.** No gravel extraction operations shall occur during the yellow billed cuckoo breeding season (between April 30 and September 15).
6. **Extraction Season.**
 - A. No gravel extraction operations shall occur prior to September 15.
 - B. All extraction and reclamation must be completed by October 15th of each season. The Executive Director may approve up to a two week extension of gravel extraction and reclamation activities beyond that date to as late as November 1 if the permittee has submitted a request for an extension in writing, the Executive Director determines that dry weather conditions are forecast for the extension period, and any necessary extensions of time have been granted by the CDFW, the Corps, and NOAA Fisheries. No extraction or reclamation activities shall occur after October 15th unless the permittee has first received approval of an extension of time in writing from the Executive Director. The permittee must have reclaimed all portions of the seasonal development area except for removal of any authorized seasonal crossings before an extension can be authorized.
7. **Resource Protection.** The gravel extraction and processing operations shall not disturb or remove any of the established riparian vegetation habitats along the banks of the river, nor any of the riparian vegetation areas on the gravel bar limited by Special Condition No. 1. No new haul roads shall be cut through the habitat. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete, oil or petroleum products, or other organic or earthen material from any gravel extraction or reclamation activities shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into river waters.
8. **Seasonal Site Closure.** The seasonal development area must be reclaimed before October 15th, or by the extended date approved by the Executive Director pursuant to Special Condition No. 6. All other portions of the site must be reclaimed when extraction has been completed. Reclamation includes: (a) filling in depressions created by the mining that are not part of the approved extraction method; (b) grading the excavation site according to prescribed grade; and (c) removing all seasonal crossings and grading out the abutments to conform with surrounding topography and removing all temporary fills from the bar. After October 15th the development area must be reclaimed daily except for the removal of authorized seasonal crossings.
9. **State Lands Commission Review.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director, a written determination from the State Lands Commission that:
 - (A) No State lands are involved in the development; or

- (B) State lands are involved in the development and all permits required by the State Lands Commission have been obtained; or
- (C) State lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

10. Final Biological Opinions. PRIOR TO ISSUANCE OF THE COASTAL

DEVELOPMENT PERMIT, the applicant shall submit evidence, for the review and approval of the Executive Director, that the National Marine Fisheries Service (NOAA-Fisheries) and the FWS have issued final Biological Opinions in support of the gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit. The applicant shall inform the Executive Director of any changes to the project required by the agencies. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

- 11. Authorized Development Termination Date.** The gravel operations authorized by this permit shall terminate on December 31, 2019. Continued gravel operations after that date shall require a new coastal development permit.

12. Final Army Corps of Engineers Approval of LOP-2015. PRIOR TO

COMMENCEMENT OF ANY DEVELOPMENT AUTHORIZED BY THIS COASTAL DEVELOPMENT PERMIT, the permittee shall provide to the Executive Director a copy of the final LOP issued by the Corps. The permittee shall inform the Executive Director of any changes to the project required by the Corps. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

13. Annual Army Corps of Engineers Approvals. PRIOR TO THE START OF EACH

YEAR'S GRAVEL EXTRACTION OPERATIONS, the permittee shall submit a copy of any authorization issued by the Corps granting approval for that year's gravel extraction season which is consistent with all terms and conditions of this permit, or evidence that no seasonal authorization is required. The applicant shall inform the Executive Director of any changes to the project required by the Corps. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares as follows:

A. PROJECT DESCRIPTION

The Mercer Fraser Company proposes to conduct seasonal gravel extraction of up to 270,000 cubic yards (cy) of aggregate per year, for five years, from two sites (plant A and plant B) on the Sandy Prairie landform, between river miles 10 and 12 on the lower Eel River, west of the city of

Fortuna in Humboldt County (Exhibit No. 2). Extracted aggregate would be transported to an existing processing site outside of the Coastal Commission's jurisdiction. The applicant also proposes to install seasonal railroad flatbed crossings over low-flow river channels to facilitate gravel transport and the reclamation of extraction areas. The location of crossings would be based upon river morphology and avoidance of sensitive riverine habitat elements. Estimated abutment fill volume would be less than 400 cubic yards total for both ends of each crossing. Upon bridge removal, all fill materials would be removed and abutment areas would be reclaimed to pre-crossing conditions. See Exhibit No. 4 for full project details.

The applicant proposes to conduct gravel extraction at two different sites on the Sandy Prairie landform referred to as Plant A and Plant B. Plant A, where the applicant proposes to extract up to 70,000 cubic yards of sand and gravel annually, is located on the “Pedrazzini Bar” at the upper (southern) end of the landform on the west side of Riverwalk Drive (formerly 12th Street). The bar is approximately 1,754 feet in length (as measured along the center-line of the stream, adjacent to the bar). Plant B, where the applicant proposes to extract up to 200,000 cubic yards of sand and gravel annually, is located on the properties of Canevari & Christen at the middle of the landform, at the end of Dinsmore Drive. The bar is approximately 3,507 feet in length (as measured along the center-line of the stream, adjacent to the bar). Based on the amount of exposed gravel existing with the river’s current configuration, there are approximately 208 acres of exposed gravel bar subject to extraction within the project boundaries of Plant A and approximately 185 acres of exposed gravel bar subject to extraction within the project boundaries of Plant B. Based on current river configuration and recent extraction plans, approximately 100 acres at each site may be disturbed annually. The exact location and area would vary each year depending on annual river conditions.

As proposed, up to 70,000 cy of aggregate would be extracted annually from locations at plant A and up to 200,000 cy of aggregate would be extracted annually at locations at plant B. These amounts are proposed as upper limits and are based upon evaluation of information and data collected under the Humboldt County Programmatic Environmental Impact Report (PEIR) and Interim Management Programs. See table 1 for the 2015 specific mining proposal. Future mining proposals will vary in response to annual recruitment volumes, river geomorphology, and instream conditions.

Table 1. Specific mining proposal for the 2015 gravel extraction season.

	Location	Type of extraction	Acres	Size (width and depth)	Extraction Volume (cy)
Plant A	A1	Trench	1.47	90' w x 4' d	8,507
	A2	Trench	0.95	90' w x 12' d	14,182
	A3	Trench	0.87	70' w x 12' d	12,130
	A4	Skim	2.48	147' w x 5' d	16,293
	A5	Trench	1.4	90' w x 11' d	18,800
Plant B	B1	Skim	0.63	237' w x 6.0' d	2,600
	B2	Skim	3.18	238' w x 4.5' d	13,160
	B3	Skim	2.71	237' w x 4.7' d	11,700

In any given year, project extraction volumes, locations, and methods would be submitted by the applicants and reviewed for consistency with the current Army Corps of Engineers (Corps) Letter of Permission Procedure (LOP-2015) and approval by local, state, and federal agencies, including the County of Humboldt, California Coastal Commission (CCC), the California Department of Fish and Wildlife (CDFW) and NOAA-Fisheries. Annual assessments and site evaluations would be used to determine: (1) where aggregate could be excavated without causing long-term river bed degradation; (2) the levels and volume of recruitment; and (3) appropriate extraction volumes. No mining would occur at any location until after specific mining and reclamation plans are developed and approved on the basis of annual environmental assessments and monitoring of the proposed project site.

Proposed gravel extraction operations would utilize several different kinds of extraction methods, including traditional skimming, narrow skims, secondary channel skims, low terrace extractions, wetland pits, alcoves, and trenching for the purpose of salmonid habitat enhancement (See Appendix B for detailed extraction methods). The annual mining would include one or more of the above methods, depending on factors such as extraction site location, salmonid habitat enhancement needs, annual replenishment of aggregate, and other environmental factors. Most gravel extraction operations would utilize the traditional skimming extraction method. Traditional skimming extraction areas typically would be located on the inside of meanders, on point bars or side channel bars. The head of the bar, upstream riffle, and channel cross-over would be preserved by locating extractions on the lower two-thirds of the bar, downstream of such features. Minimum extraction floor elevations would be designed to maintain at least 20-inches of depth over riffles. Extractions from deposits bordering dry secondary channels would be designed with minimum extraction floor elevations no less than one foot above the adjacent secondary channel thalweg.

Extraction activities in areas containing woody vegetation would be managed to protect vegetation from removal or disturbance by the extraction processes or low to moderate flow events. This would be achieved by adjusting extraction boundaries to avoid vegetation and by maintaining horizontal buffers around vegetation patches in a manner that would reduce erosion.

The project proposes to maintain extraction area channel confinement to the elevation of the 35 percent exceedance flow of the Eel River in order to maintain confined stream depth for migrating salmonids, as is required by LOP-2015 and the terms and conditions of NOAA-Fisheries.

On-bar stockpiling of aggregate would occur in designated areas that would be delineated during the pre-extraction agency site visits. Any on-bar stockpiling would be temporary until transport to the processing facility could be coordinated. Extraction operations conducted after October 15th in any given mining year would maintain reclaimed conditions at the end of each working day and temporary stockpiles would be no larger than the volume of aggregate that could be removed from the bar surface during the current work day.

During any given extraction year, gravel mining would not occur until after July 22nd, consistent with U.S. Fish and Wildlife Service (FWS) recommendations for minimizing disturbance of the

western snowy plover and the yellow-billed cuckoo during their breeding seasons. Extraction operations would be completed in any given mining year by October 31st at the latest. This involves grooming and smoothing the extraction areas to prevent potential fish stranding and to promote a predictable flow pattern over the site upon inundation. Following final reclamation each year, all equipment and vehicles would be removed from the bankfull channel by November 1st or earlier if declared by the Corps, NOAA-Fisheries, and/or the CDFW. This coincides with the onset of the rainy season and rise in the river, which likely will inundate the extraction areas and/or prompt the upstream migration of adult salmonids.

Access to the site would be provided by existing haul roads to the downstream, middle and upstream end of the extraction areas and temporary flatcar bridges are proposed to cross the river. Proposed crossings would be constructed using a 90-foot flatcar spanning a portion of the mainstem lower Eel River. Approximately 200 cubic yards of gravel would be scraped from adjoining areas to form the abutments for each end of the crossings. The bridges will be constructed to maintain a minimum of 3 feet clearance from bridge to water surface at the time of construction. The crossings would be removed at the end of each extraction season and the abutment material would be regraded to blend in with surrounding topography. Following completion of the extraction and removal of the bridge, the approaches and the channel will be restored to the fullest extent feasible.

B. ENVIRONMENTAL SETTING

The lower Eel River from the city of Rio Dell downstream to the estuary is a depositional reach bordered by open pastures and some urban development. The average channel width of the lower Eel is 1,900 feet, and summer fog influences water temperatures in the river. Historically, the channel in much of the project area was significantly deeper than it is currently, and through the first half of the 20th century the river was navigable by shallow draft boats for commercial shipping.

The project site includes 260 additional acres of land located primarily to the east outside of the coastal zone, which includes 4 acres of exposed cobble, 3 acres of riparian scrub, 39 acres of black cottonwood, 106 acres of river terrace (located west of the project site within the coastal zone but not part of the extraction area), 54 acres of agricultural lands, and 54 acres devoted to processing the extracted aggregate material (including stockpiling, crushing, washing, sorting, screening, and asphalt concrete production).

The project site is located on the Sandy Prairie landform within the lower Eel River between river miles 10 and 12, west of the city of Fortuna in Humboldt County, on both sides (north and south) of the Fortuna sewage treatment plant, at the general location of the confluence of Strongs Creek with the Eel River (Exhibit No. 2). The total project area is approximately 735 acres in size, with a 424-acre project area associated with Plant A and a 311-acre project area associated with Plant B. The larger properties of Plant A and Plant B (totaling 995 acres) include processing areas and additional agricultural and river terrace land located primarily outside of the coastal zone. The extraction sites are on both sides of the Eel River and generally within the limits of “ordinary high water.” Based on the amount of exposed gravel existing with the river’s current configuration, there are approximately 208 acres of exposed gravel bar subject to extraction within the project boundaries of Plant A and approximately 185 acres of exposed gravel bar

subject to extraction within the project boundaries of Plant B. Based on current river configuration and recent extraction plans, approximately 100 acres on Plant A and 100 acres of Plant B may be disturbed annually. The exact location and area vary each year depending on annual river conditions. The total project area is approximately 735 acres in size, with a 424-acre project area associated with Plant A and a 311-acre project area associated with Plant B. The larger properties of Plant A and Plant B (totaling 995 acres) include processing areas and additional agricultural and river terrace land located outside of the coastal zone. The extraction sites are on both sides of the Eel River and generally within the limits of “ordinary high water.”

The Sandy Prairie landforms was produced by deposition of large quantities of aggregate materials in the main and overflow channels of the lower Eel River and has persisted as such since at least 1916. The active channel of the Eel River is about 4,600 feet wide within this depositional reach and has multiple braids. The main low flow channel typically alternates location to the east and west side of a relatively large island (known as Canevari Island). The landform contains multiple channels that are separated by islands at high flows. The Sandy Prairie landform is located two miles upstream of the zone of tidal influence and is also at a transition point in the river where the channel slope decreases from points further upstream. Large quantities of sand and gravel carried in suspension in the Eel River are annually deposited at the Sandy Prairie landform due to its proximity to the zone of tidal influence and the decrease in slope.

Historical analyses of gradient and riffle conditions in the lower Eel provide additional evidence that the river is severely aggraded relative to historic conditions. The Eel River at its confluence with the Van Duzen River (approximately 2 river miles upstream of the project site) is aggraded to the point that, in some years (e.g., 1994 and 2001), salmonids holding in the lower Eel River cannot migrate upstream in late fall due to subsurface flows. This same situation has occurred just below the 12th Street levee in the vicinity of the project site. In the past, the CDFW has requested that gravel operators open up the channels to allow for fish passage.

Bank protection and levee structures placed in the lower Eel River have limited the river's ability to migrate and overflow its banks. The river's meandering ability during high flows has been influenced by the past land uses in the area, including construction of the Sandy Prairie levee in 1959 and the Grizzly Bluff levee following the 1964 flood, plus the cutting of the old original channel sometime in the 1860's at Fernbridge (approximately 5 river miles downstream of the project site). Levees separate potential overflow areas from the main channel and concentrate the high flow energy of floods to a narrower part of the river bed, thereby moving more bedload material through the project area. When available sediment exceeds the channel carrying capacity, sediment deposition (channel aggradation) occurs. The braided section of the channel between river mile 10.5 and 13.1, where the subject project area is located, contains the largest available area to store bedload during the 50- to 100-year flows.

No known archaeological resources exist at the site. Much of the terrace land along this area has been subject to disturbance as agricultural lands and has been inundated during major flood events. Areas of gravel bars, within the bank full channel, are generally not considered conducive to the establishment or preservation of archaeological sites due to the high incidence of inundation and fluvial reworking.

Habitat Types and Special Status Species. The area within the OHW boundary is subject to change based upon natural river processes (e.g., erosion, accretion, and meander). Habitat types that occur in the area include the exposed gravel bars, North Coast riparian scrub, North Coast black cottonwood forest, and the low-flow river channel.

The exposed cobble in the gravel bars adjacent to the low-flow channels provides roosting and/or nesting habitats for at least two avian species, killdeer (*Charadrius vociferus*) and western snowy plover (*Charadrius alexandrinus nivosus*), but otherwise represents one of the sparsest habitats in terms of wildlife diversity and numbers. The western snowy plover has been listed under the federal Endangered Species Act (ESA) as a threatened species since 1993. Though originally thought to inhabit primarily open beach strand environments, plovers have also been observed roosting and nesting on gravel bars on the lower Eel River. The plover sightings on the Eel River have been in the months of April through early September, during the nesting season. Unlike many avian species which nest in trees, plovers establish their nests on the open gravel bars.

In general, the riparian vegetation lining the lower Eel River is perhaps the single-most important element for the natural environment in the area, providing habitat for many birds and mammals. The presence of two different kinds of riparian habitat, riparian scrub and black cottonwood forest, provides habitat for a greater number of wildlife species than a more uniform and simple habitat structure would. In addition to its habitat value, the riparian corridor also provides water quality protection, bank stabilization through root penetration, and flood protection.

The North Coast riparian scrub habitat in the project area fluctuates in size, density, location, and maturity in response to flow events, sediment deposition, and natural meandering of the river channel. The vegetation growing within this habitat type is dominated by coyote brush (*Baccharis pilularis*), a sparse covering of small trees (including cottonwood and willow), and various (mostly weedy annual) grasses and herbs. Riparian scrub habitat supports a variety of wildlife species, including a number of small mammals such as raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), gray fox (*Urocyon cinereoargenteus*), rodents and rabbits, and many bird species that use the habitat for foraging, nesting, and cover.

North Coast black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) forest lines the river banks and terraces, maintaining natural channel confinement in the absence of large flood events. This habitat type is a broad-leaved, winter deciduous forest dominated by black cottonwood, with lesser amounts of willow (*Salix* spp.) and red alder (*Alnus rubra*). The forest has a dense canopy as well as a dense shrub layer and herbaceous understory. The stands of North Coast black cottonwood forest in the area range back to 45 years old, established following major flooding of the Eel River that occurred in 1964. The cottonwood forest represents the most structurally complex habitat in the area, which in turn supports a higher number and diversity of wildlife species than the other habitats. The North Coast black cottonwood forest provides valuable foraging, breeding, roosting, and shelter habitat for a wide variety of wildlife species including at least nine bird species, eight mammalian species, two amphibian species, and one reptile species.

Although none have been detected at the project site, the black cottonwood forest offers suitable habitat for a state-listed endangered species, the willow flycatcher (*Empidonax traillii*), as well as four “species of special concern,” including black-shouldered kite (*Elanus caeruleus*), Cooper’s hawk (*Accipiter cooperii*), yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*). Although these species have not been detected, the Western Yellow-billed cuckoo (*Coccyzus americanus*), a federally-listed threatened species, has been detected in the larger concentrations of riparian vegetation that are adjacent to the project site. Federally listed in 2014, the yellow-billed cuckoo has been observed in the lower Eel River area since 2000, and may be utilizing the riparian forest areas along the river as breeding habitat.

In general, the riparian zone along the lower Eel River provides migration routes and breeding habitat for wildlife. Over 200 different species of birds and 40 different species of mammals have been observed in the Eel River Delta, most of which utilize portions of the riparian corridor. Riparian vegetation also is critical to the survival of salmonids residing in and migrating through the lower Eel River.

The Eel River and its tributaries are ranked among the most significant anadromous fisheries in Northern California. Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), and steelhead trout (*Oncorhynchus mykiss*) are among the most important species with regard to commercial and sport fisheries. The Southern Oregon – Northern California Coasts Evolutionarily Significant Unit of coho salmon (SONCC coho) is currently listed as a threatened species in areas between Punta Gorda and the California-Oregon border under the both the Federal Endangered Species Act (ESA) and the state of California Endangered Species Act (CESA). SONCC coho salmon were listed by the federal government in May of 1997, with critical habitat designated in May of 1999. Additionally, California Coastal Chinook salmon were federally listed as “threatened” in September of 1999, with critical habitat designated in February of 2000. Finally, North Coast steelhead trout were listed as “threatened” in June of 2000.

The lower Eel River, including the project area, is mainly utilized by anadromous fish as a migration route to and from the upstream spawning grounds. In addition, the lower Eel River provides summer rearing habitat for juvenile salmonids, especially steelhead yearlings and fall Chinook sub-yearlings, and holding areas for adult summer steelhead as well as spawning and nursery habitat for marine fishes and invertebrates. A reference to the project site in the Biological Assessment prepared for the lower Eel River (Stillwater 2015)¹ states as follows:

“Habitat adjacent to the Hauck Bar consists primarily of flatwater units with several small age 2+ steelhead habitat units and one adult holding pool just downstream of the confluence of the Van Duzen River. The primary habitat goal is to enhance upstream salmonid migration habitat through development or maintenance of a fish passage channel through the Van Duzen River delta.” [page 36].

Other fish species in the river that are listed by the CDFW as “species of special concern” include coastal cutthroat trout (*Oncorhynchus clarki*) and Pacific lamprey (*Lampetra tridentata*).

¹ Stillwater Sciences. 2015. Biological Assessment for Aggregate Extraction Operations in the Eel, South Fork Eel, Van Duzen, and Trinity Rivers, Humboldt County, California. Prepared for Mercer-Fraser, Randall Sand and Gravel, Eureka Ready Mix, Tom Bess, Jack Noble, Leland Rock, Wallan and Johnson, and Klamath-Trinity Aggregates.

The Northern population of Green sturgeon (*Acipenser medirostris*) is dually listed under CESA and the ESA.

The riverine habitat of the river channels on the project site and the occasional ponds that form under summer low water conditions provide habitat not only for fish, but also for invertebrates, amphibians, invertebrate-eating birds, and various mammals including river otters, mink, and other mammals that come to the river to forage (e.g., deer and raccoon).

C. BACKGROUND

The Lower Eel River has been used for gravel extraction since 1911. Currently, approximately six gravel operations are located along a 9-mile stretch of the Lower Eel River, and three additional operations are located on the lower reaches of the Van Duzen River, which flows into the Eel River at Alton. All of the operations along the Eel River and the portion of the lowest most operation on the Van Duzen River, west of the Van Duzen River Railroad Bridge are within the coastal zone. All of the gravel operations on the Lower Eel and Van Duzen Rivers are interrelated in the sense that all of the gravel bars derive their material from the same upstream sediment sources. The Eel River is considered to be a “hydraulically-limited” rather than “sediment-limited” river. This means that replenishment is more a factor of the size and duration of winter flows than the production of sediment in the watershed. Thus, over-extraction by all of the projects in the lower Eel River combined with multiple low winter flow years can contribute cumulatively to erosion of the bed and banks of the river, which in turn can erode adjacent riparian and other habitat areas, interfere with fishery resources, undermine bridge supports and cause other significant adverse impacts if not properly managed.

Regulation History

Humboldt County. Gravel mining operations on the Eel River require the approval of a number of different local, state and federal agencies. The initiation of coordinated review of gravel mining began in 1991, when to comply with environmental review requirements under the California Environmental Quality Act (CEQA), Humboldt County prepared a PEIR that described and analyzed the potential environmental effects resulting from the ongoing gravel removal operations in the lower Eel and Van Duzen River watersheds. The PEIR was certified in July 1992 and is still used in the management of gravel extraction projects in the area today.

Subsequent to the adoption of the PEIR, Humboldt County began regulating gravel operations through a comprehensive monitoring and management strategy that was established to control the cumulative impacts of approved gravel operations on riverbed degradation and bank erosion. At the heart of the strategy is an administrative approval process that annually reviews the proposed extraction plans, including proposed methods and locations of extraction. Additionally, the strategy includes a long-term monitoring component that provides data for use when making annual decisions on where and how much gravel can be removed from the lower Eel and Van Duzen Rivers without adversely affecting the rivers. The monitoring program involves periodic biological surveys, annual cross-sections and thalweg profiles, and annual aerial and ground photography at each gravel operation site. The information is then compiled and compared to previous year’s data to determine quantities of gravel recruitment, changes in channel morphology, and potential impacts on wildlife and fisheries.

In addition to the monitoring component of the approval process, the County has established an extraction review team (CHERT) to provide the County and other agencies with scientific input on on-going gravel operations. CHERT is composed of independent fluvial morphologists, hydrologists, biologists, and botanists and the group has the authority to review all annual gravel extraction plans and identify the need for changes to those plans as deemed necessary by the monitoring data. CHERT plays an active role in the annual approval process, and works with the gravel mining operators to establish annual extraction quantities and extraction methods that comply with local, state and federal regulations and permit requirements.

U.S. Army Corps of Engineers (Corps). In addition to local government approval, the gravel extraction operations on the lower Eel and Van Duzen Rivers require authorization from the Corps. To coordinate and expedite this process for the numerous in-stream gravel extraction operations in Humboldt County, the Corps adopted a Letter of Permission (LOP) procedure for authorization of such projects. The LOP procedure includes incorporation of the County's CHERT review process. An applicant who wants to be covered by the LOP must submit annual gravel plans and monitoring information to the Corps for approval under the procedure. LOP's have been issued for gravel extraction operations since 2002, with the last LOP authorization expiring following the 2014 gravel extraction season.

With the expiration of LOP 2009, the planning process for a new LOP procedure began in the spring of 2014. In March of 2014, the Corps issued a new LOP procedure notice (No. 2007-0857-N), which describes standardized procedures for gravel extraction activities, temporary stockpiling of gravel, associated salmonid habitat improvement activities, and construction of seasonal road crossings for the five year implementation period of LOP 2015-1. The new LOP 2015 announcement is very similar to LOP 2009 in its terms and conditions. See Appendix B for a list of the LOP 2015 gravel extraction terms and limitations.

National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (FWS). As with all "federal actions" that might adversely impact rare, threatened, and endangered fish and wildlife species, the LOP process is subject to consultations with the applicable natural resource trust agencies as required under Section 7 of the Endangered Species Act (ESA). Consultations are conducted by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) who are the trust agencies responsible for species listed under the ESA. Section 7 of the ESA directs all federal agencies to use their existing authorities to conserve threatened and endangered species, and, in consultation with other federal agencies possessing ecological expertise regarding ecology and habitat requirements for these plants and animals, ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to management of federal lands as well as other federal actions that may affect listed species, such as federal approval of private activities through the issuance of federal permits, licenses, or other actions such as the LOP gravel mining and authorization procedure.

The consultation process consists of the applicant developing a biological assessment (BA) that details the current status of the fish and wildlife species in the subject area, as well a preliminary assessment of the likely effects of the action on those species. The BA is then submitted to the resource agencies assigned the responsibility for protecting the ESA-listed species. Following review and analysis of the information provided in the BA, the agencies issue a Biological Opinion (BO) regarding impacts of the proposed action on listed fish and wildlife species, in this

case, gravel extraction operations. In past gravel extraction operation approvals, the Commission has relied upon the BOs issued by the agencies when considering gravel extraction operation permit applications. NOAA's consultation covers the following threatened and endangered species: Southern Oregon/Northern California Coho salmon (*Oncorhynchus kisutch*), California Coastal Chinook salmon (*Oncorhynchus tshawytscha*), and Northern California steelhead trout (*Oncorhynchus mykiss*). The Southern Oregon – Northern California Coasts Evolutionarily Significant Unit of coho salmon (SONCC coho) is currently listed as a threatened species in areas between Punta Gorda and the California-Oregon border under the both the Federal Endangered Species Act (ESA) and the state of California Endangered Species Act (CESA). SONCC coho salmon were listed by the federal government in May of 1997, with critical habitat designated in May of 1999. Additionally, California Coastal Chinook salmon were federally listed as “threatened” in September of 1999, with critical habitat designated in February of 2000. Finally, North Coast steelhead trout were listed as “threatened” in June of 2000.

The FWS has been providing consultation on the western snowy plover since it was listed as threatened in 1993, and on the Lower Eel River since plovers were first discovered nesting on Eel River gravel bars near Fernbridge in June of 1996. Since the last consultation that was performed in 2009, the Western Yellow-billed cuckoo has been listed as threatened (August 2014) and critical habitat for the species has been proposed in the Lower Eel and Van Duzen Rivers in areas including the project site. In response to this listing, the Corps has requested consultation on both the western snowy plover and the western Yellow-billed cuckoo under the current LOP procedure.

The consultations provide critical evidence that proposed gravel mining operations on the Lower Eel and Van Duzen Rivers will not result in significant adverse impacts on threatened and endangered species. In past actions on coastal development permits for gravel mining on the Lower Eel and Van Duzen Rivers, the Commission has relied upon the biological opinions to find consistency of the gravel mining projects with the Coastal Act.

Coastal Commission Permits. Over the past two decades, the Commission has issued at least 30 permits for gravel extraction operations on the lower Eel and Van Duzen Rivers, as summarized in Appendix C. In general, actual annual extraction volumes in the lower Eel River have been lower than the annual approved volumes over the last decade. See Appendix C for extraction volume information. Gravel extraction operations have historically varied with market demands and river conditions. Actual annual extracted volumes have consistently been lower than approved volumes. From 1997 through 2014, a total of 3,366,790 cubic yards of aggregate was extracted from the Lower Eel River (averaging 187,044 cubic yards annually), which is only 65 percent of the total approved volume of 5,193,634 cubic yards. Appendix C, table 3 shows the volume of gravel approved for extraction and actually extracted at the Mercer Fraser sites. Between 2004 and 2014, a combined total of 1,216,644 cubic yards was extracted from the Sandy Prairie Landform, with an annual average of 110,604 cubic yards.

D. STANDARD OF REVIEW

The project site is located in the Commission's retained permit jurisdiction. The County of Humboldt has a certified Local Coastal Program (LCP), but the site is within an area shown on State Lands Commission maps over which the State retains a public trust interest. Therefore, as required by Public Resources Code Section 30519(b) and Commission regulation section

13166(c), the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

E. OTHER AGENCY APPROVALS

State Lands Commission

The project is located in the bed of the Eel River, a navigable river, between the ordinary high water marks. As such, the State of California holds a public trust easement and other property interests at the site. Any such property interest would be administered by the State Lands Commission. To assure that the applicant has a sufficient legal property interest in the site to carry out the project and to comply with the terms and conditions of this permit, the Commission attaches Special Condition No. 9 which requires that the applicant submit evidence that any necessary authorization from the State Lands Commission has been obtained prior to commencement of any development related to the construction of summer bridge crossings.

Humboldt County

Humboldt County Use Permit

The County approved a renewal of the Conditional Use, Coastal Development and Surface Mining permit (CDP-10-02/CUP-10-01/SMP-10-01/RP-10-01) on February 2, 2012. The renewal will expire on July 22, 2026.

CHERT Review

Pursuant to the Corps LOP permit procedures and the County of Humboldt's surface mining regulations, in-stream gravel mining projects within Humboldt County are required to be assessed for potential direct and cumulative to riverine resources by an independent scientific panel known as CHERT. The CHERT in turn makes specific recommendations including recommendations that may involve changes to the amount of gravel proposed to be extracted, the specific location(s) of the extraction area(s), or the proposed mining techniques. To ensure that the annual gravel extraction plan recommended for approval by CHERT each year is the same as the annual gravel extraction plan that was reviewed under this permit by the Commission, and to ensure that extraction does not exceed the extraction limits established under Special Condition No. 1, the Commission attaches Special Condition No. 3-A-(4), which requires the applicant to annually submit to the Executive Director for written review and approval a copy of the pre-extraction mining plan review comments obtained from the CHERT as part of the final gravel extraction plan as well as evidence that the final gravel extraction plan is consistent with all recommendations of CHERT and all terms and conditions of this permit.

California Department of Fish and Wildlife (CDFW)

The project requires a Section 1603 Streambed Alteration Agreement from the CDFW. The applicant received the approved agreement (#1600-13-0355) on June 19, 2014. The agreement is for a five-year term and expires on January 31, 2019.

Regional Water Quality Control Board

The project requires a Water Quality Certification (WQC) from the North Coast Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act. The Board issued WQC

Order No. 2003-0017-DWQ for gravel extraction activities on June 9, 2015, expiring on June 1, 2020.

U.S. Army Corps of Engineers (Corps)

Final LOP-2015 Approval

The project is within and adjacent to a navigable waterway and is subject to the authority of the U.S. Army Corps of Engineers under Section 404 of the Federal Water Pollution Control Act (33 USC 1251 et seq.) and Section 10 of the Rivers and Harbors Act (33 USC 403). As discussed above, the project requires review and authorization by the Corps. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the Corps, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. The Corps is permitting the proposed gravel operations under its Letter of Permission Procedure 2015 (LOP 2015). The Corps posted the LOP 2015 for public comment on March 3, 2015. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission attaches Special Condition No. 13, which requires the applicant to submit to the Executive Director evidence of the Corps' approval of the project prior to commencement of construction. The condition requires that any project changes resulting from the Corps' approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit.

Annual Review

Permittees using the LOP will be required to submit annual gravel plan and monitoring information to the Corps for approval prior to each year's gravel extraction activities. To ensure that the annual gravel extraction plan ultimately approved by the Corps each season is the same as the project specified in the annual gravel extraction plan approved by the Executive Director pursuant to Special Condition No. 1 herein, the Commission attaches Special Condition No. 13, which requires the applicant, prior to commencing gravel extraction operations each year, to demonstrate that all necessary approvals from the Corps for the approved gravel extraction, as conditioned herein, have been obtained. The condition requires that any project changes resulting from the agency's approval not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit. The Commission also attaches Special Condition No. 11 to specify an authorization termination date of November 1, 2019, which corresponds to the project termination date listed in the ESA Section 7 consultation submitted by the Corps to NOAA-Fisheries.

U.S. Fish and Wildlife (FWS) and NOAA-Fisheries (NMFS)

The project requires final Biological Opinions being issued by the NOAA-Fisheries and the FWS. As discussed above, the Biological Opinions are being prepared as a result of formal consultations between the Corps and NOAA-Fisheries and FWS pursuant to Section 7 of the ESA. The NOAA-Fisheries BO is expected to be finalized by the end of July 2015, and the FWS BO is expected to be finalized by the early September 2015. To ensure that the project ultimately approved by the agencies is the same as the project authorized herein, the Commission attaches Special Condition No. 10, which requires the applicant to submit, prior to permit issuance, final

Biological Opinions in support of the gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit. The applicant shall inform the Executive Director of any changes to the project required by the agencies. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

F. REVIEW OF EEL RIVER IN-STREAM GRAVEL EXTRACTION PROJECTS UNDER THE COASTAL ACT

Several coastal resource protection policies of the Coastal Act apply to gravel extraction projects along the Eel River. The applicant's gravel extraction project is typical of most of the gravel extraction operations on the lower Eel River in that it includes (a) traditional skimming of gravel bars that are dry and exposed in the summer but inundated during high winter flows, (b) trenching of gravel bars that may extend into the wetted channel even during the dry season, (c) the placement of gravel along the edges of secondary channels to create abutments for seasonal railroad flat car crossings for vehicles used in the gravel extraction operations, and (d) stockpiling, staging, and/or processing operations in upland areas adjoining the river and adjacent to existing riparian areas. As discussed in the findings below, the skimming of gravel bars outside ESHA constitutes permissible fill and dredge of seasonal wetlands pursuant to Section 30233. The limitations of both Section 30233 and 30240(a) prohibit the skimming of the gravel bar in locations containing environmentally sensitive habitat area such as nesting habitat for the Western snowy plover, or developed riparian habitat. The trenching of gravel bars containing ESHA that extends into the wetted channel may only be authorized if it is a permissible alteration of a river or stream as set forth in Section 30236. Finally most of the elements of the gravel extraction operation are adjacent to various kinds of ESHA, including salmonid habitat within the waters of the river, nesting snowy plover habitat on the gravel bars, riparian habitat on the bars and along the river banks, and yellow billed cuckoo breeding habitat within some of the afore-mentioned riparian habitat. As such, these elements of the gravel extraction operations are subject to the requirements of Section 30240(b) that development adjacent to ESHA be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat and restoration areas.

For the reasons discussed in the findings below, the Commission reviews (a) development undertaken outside ESHA involving the skimming of the dry gravel bars and the placement of gravel along the edges of secondary channels to create abutments for seasonal railroad flat car crossings under Section 30233 in Finding G, "Gravel Extraction Operations Within Riverine Wetlands," below, (b) the trenching of gravel bars containing ESHA that extend into the wetted channel under Section 30236 in Finding H, "Development Within Coastal River and Streams," below, and (c) all of the elements of the gravel extraction operations that are adjacent to ESHA in the mitigation discussion of Finding G and in Finding I, "Protection of Environmentally Sensitive Habitat Areas.

G. GRAVEL EXTRACTION OPERATION WITHIN RIVERINE WETLANDS

The proposed development involves the extraction of sand and gravel from the lower Eel River. Sections 30230, 30231, and 30233 of the Coastal Act address the protection of wetlands from the impacts of development such as gravel mining activities. These sections require, in part, that

marine resources (including salmonids) and coastal wetlands be maintained, enhanced, and where feasible restored. Sections 30230 and 30231 specifically call for the maintenance of the biological productivity and quality of marine resources, coastal waters, streams, wetlands, and estuaries necessary to maintain optimum populations of all species of marine organisms and for the protection of human health. Section 30233 of the Coastal Act applies to any diking, filling, or dredging project in a river and other coastal waters. Gravel extraction within a river bed is a form of dredging within a wetland. In addition, the temporary installation of gravel abutments for seasonal crossings of secondary channels to gain access to extraction areas partially within flat water areas of these channels is a form of filling a wetland.

Section 30233 of the Coastal Act allows the dredge and fill of wetlands for mineral extraction outside ESHA, stating in applicable part, as follows:

(a) *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

...

(5) *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.* [Emphasis added.]

...

(c) *In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary...*

Section 30107.5 of the Coastal Act defines “environmentally sensitive area” as encompassing:
...any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

Section 30230 of the Coastal Act states, in applicable part:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes. [Emphasis added.]

Section 30231 of the Coastal Act states as follows:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

When read together as a suite of policy directives, Sections 30230, 30231, and 30233 set forth a number of different limitations on what types of projects may be allowed in coastal wetlands. For analysis purposes, the limitations applicable to the subject project can be grouped into four general categories or tests. These tests require that projects that entail the dredging, diking, or filling of wetlands demonstrate that:

1. the purpose of the filling, diking, or dredging is for one of the seven uses allowed under Section 30233;
2. feasible mitigation measures have been provided to minimize adverse environmental effects;
3. the project has no feasible less environmentally damaging alternative; and
4. the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

Permissible Use for Dredging and Filling of Coastal Waters. The first test set forth above is that any proposed fill, diking, or dredging must be for an allowable use as enumerated under Section 30233 of the Coastal Act. The proposed project involves dredging and temporary filling for the mining of gravel aggregate materials. Mineral extraction is specifically enumerated as a permissible use in the above-cited policy [Section 30233(a)(5)], provided the activity is not undertaken in environmentally sensitive areas. Therefore, to the extent that the proposed gravel extraction activities will avoid environmentally sensitive areas, the proposed gravel extraction operation is consistent with the use limitations of Section 30233(a)(5).

The multi-year gravel operation proposes to use a variety of extraction techniques that have been established by the previous Corps LOP and recommended by NOAA Fisheries as techniques that would avoid significant impacts to salmonids. All but one of the proposed gravel extraction techniques would involve excavation on dry portions of the gravel bars without encroachment into the salmon habitat of the wetted river channel. The sole exception is the wet trenching technique, which would involve diverting the stream flow to a secondary channel location and then excavating sediment directly from portions of the channel. The wet trenching method of extraction would only be used when there is the objective of improving instream salmonid habitat by the limited use of sediment removal, and where the diversion of the low flow channel into a secondary channel that provides salmonid habitat is possible. Although the wet trenching technique would involve excavation within salmonid ESHA habitat, and thus would not be permissible under Section 30233(a)(5), the Commission evaluates this aspect of the proposed development under Section 30236 of the Coastal Act in Section IV-G of the findings below because the wet trenching method proposed is a permissible alteration of a river or stream proposed for the improvement of fish habitat.

There are various types of environmentally sensitive habitats around the project site including: (a) the live (flowing) waters of the river, which is habitat for threatened salmonid species; (b) riparian habitat, including North Coast riparian habitat that is breeding habitat for the federally threatened western Yellow-billed cuckoo and North Coast black cottonwood forest occurring on a large island and on the left bank of the river within the project site; and (c) exposed gravel bars

adjacent to the flowing water that provide nesting habitat for the federally threatened western snowy plover.

The proposed mining project will be located in areas that will avoid intrusion into these habitat areas and/or be performed at times when sensitive species will not be nesting and/or utilizing the site for habitat. For example, as discussed further below, as part of the gravel extraction operations, the applicant also proposes to install seasonal crossings with piled-up gravel abutments that could extend into shallow flat-water portion of the channel. Although these flat water areas are wetlands and inundated even during the summer months, the flat water areas do not support threatened salmon species or other threatened or endangered species and are not considered ESHA under the Coastal Act. Descriptions of the habitats in the project area and their use by wildlife are found in the Findings Section IV-B, “Environmental Setting: Habitat Types & Special-Status Species,” of this report.

i. No Dredge or Fill of Flowing River Channel Environmentally Sensitive Habitat

Under Section 30107.5 of the Coastal Act, any area supporting a plant, animal, or habitat is environmentally sensitive if the area meets two main criteria: (1) the plant, animal, or habitat is either rare or of special value because of its special nature or role in the ecosystem, and (2) the area could be easily disturbed or degraded by human activities and developments.

The water column and river bottom substrate within the year-round low-flow channel of rivers provide habitat for a wide variety of resident and migratory fish and wildlife species at all trophic levels, ranging from aquatic macroinvertebrates to mammals. These perennially-inundated areas within the river meet the first criterion of the definition of environmentally sensitive area because during the time that the proposed mining would be conducted within these riverine areas, the inundated areas of the reach may contain federal- and state-listed salmonids.

The perennially-inundated areas within the river also meet the second criterion in that diversion, dewatering, fill, and dredging activities for gravel extraction, such as proposed by the applicant, can quickly disturb and degrade the affected habitat areas the mining activities come in contact with. Trenching can also destabilize the river channel and cause erosional impacts that can degrade the perennially inundated areas within the river on a more permanent basis long after the initial excavation work is completed.

In past permit actions the Commission has previously determined that such riverine perennial channels that support threatened salmonids are environmentally sensitive areas. The Commission has consistently conditioned permits for development in and near such channels and along riparian woodlands within streams and rivers to avoid disturbances of such environmentally sensitive aquatic resources.

In the most comprehensive sense, the entire area between the banks of the river could be considered an environmentally sensitive area, at least during portions of the year when covered by higher flows. However, during the summer dry season when river waters are confined to the definable low-flow channels, the dry exposed areas within the stream banks become inaccessible to salmonid species and other aquatic life forms. Therefore, the Commission has generally

applied the environmentally sensitive area designation only to the portions of the river containing live flow.

Not all portions of the river containing live flow during the summer-early fall gravel mining season necessarily qualify as environmentally sensitive. Although salmonids are found in the lower Eel at most times of the year, the edges of the shallow flat-water areas do not support salmonid fish species during the summer to early fall gravel extraction season. Unlike other portions of the Eel River and other North Coast rivers, the lower Eel does not provide spawning habitat for salmonid species. Instead, salmon pass through the area during migration periods to spawn further upstream. During the summer and early fall, water temperatures in the lower Eel River are considered stressful for salmonids. As water temperatures increase, the amount of dissolved oxygen (DO) in the water decreases. Surveys conducted under the Corps LOP procedure have shown that juvenile salmonid habitat areas are located in riffles and at the head of pools, where dissolved oxygen and food concentrations are highest. Shallow flat-waters and the shallow reaches of long pools are avoided by juvenile salmonids since they do not have the necessary oxygen and food concentrations, lack cover, and do not provide relief from higher water temperatures.

More specifically, the use of the lower Eel River by threatened salmonid species has been established during surveys performed pursuant to the Corps LOP process and has been documented in previous Biological Opinions prepared for the proposed gravel operations. The site-specific surveys provide a basis for demonstrating that salmonids do not inhabit the shallow flat-waters of the lower Eel River during the summer months though the results cannot be generalized to other river systems where no such surveys have occurred. Therefore, the Commission finds that during the summer and early fall, the edges of the shallow flat-water areas of the lower Eel River channel are not environmentally sensitive, as they do not provide juvenile salmonid habitat.

None of the proposed extraction techniques except “wet trenching” described below in Section IV-G specifically include extraction within wetted channel. However, the applicants do propose to install seasonal crossings with abutments that could extend into shallow flat-water portions of the channel. The CHERT gravel mining recommendations prepared for the gravel extraction operations require that seasonal crossings be located where the temporary bridge structures would minimize the potential impact to sensitive salmonid habitats. The locations are determined based on identification by a fisheries biologist of where sensitive juvenile rearing and adult holding habitats do not exist. NOAA-Fisheries and CHERT annually review the proposed bridges placement and determine where the bridges can be located to avoid salmonids. If the seasonal crossings cannot completely span the channel, the review process will direct the crossings to be located in shallow flat-water areas where salmonids are not present. The wider flat-water portions of the channel are usually too wide to be feasibly crossed by a seasonal crossing without some portions of the crossing abutments extending into the side of the channel.

To ensure that mineral extraction and associated activities such as the installation of seasonal crossings within an ESHA as precluded by Coastal Act Sections 30233(a)(5) and 30240 do not occur, the Commission attaches (1) Special Condition No. 1-(C), which prohibits excavation from occurring within the active wetted channel, where sensitive salmonid species could be

present, except for wet trenching performed for restoration of instream salmonid habitat authorized pursuant to Section 30236, and (2) Special Condition No. 2-(C), which prohibits any portion of the seasonal crossing abutments from extending into the wetted channel, except in shallow flat-water areas, which are not considered environmentally sensitive during the time of year when gravel extraction operations are permitted to occur.

ii. No Dredge or Fill of Riparian Vegetation Environmentally Sensitive Habitat

The Coastal Commission has previously determined that most forms of riparian vegetation are environmentally sensitive, as riparian zones serve many critical ecosystem functions. First, riparian areas contribute important organic debris that is transformed into nutrients, which support the riverine food web. Wood, leaf litter, and other organic matter from riparian areas provide nutrients for life at the base of the food web. Riparian vegetation supports insects and other prey resources, which are eaten by juvenile salmon and other fish and wildlife. If these areas are altered or eliminated, the food supply and, thus, the abundance of fish is likely to be reduced. Riparian vegetation provides cover – both for shade and protection purposes – for aquatic species such as salmonids, which need cool water temperatures for growth and survival. Furthermore, riparian areas capture contaminants, by absorbing or filtering contaminated stormwater runoff soils and vegetation in riparian areas can prevent pollutants from entering coastal waters. Moreover, healthy riparian areas support rich and diverse communities of animals, including birds, amphibians, and mammals that depend on the areas for feeding, breeding, refuge, movement, and migration. Riparian areas also serve as buffers for human health and safety. The riparian functions of water quality, soil stability, and the ability to absorb the impacts of large storm events and other natural, physical processes have direct benefits to humanity. Flooding and storm events can be exacerbated in the absence of riparian areas, which serve as protective buffers. The Commission has consistently conditioned permits for development near riparian woodlands along streams and rivers to avoid disturbances of riparian areas where mature vegetation exists.

Some of the riparian vegetation on the gravel bar is inundated during high flows and is often uprooted and scoured by river flows. The hydrodynamics of the river can cause the channel itself to migrate over time, which can eliminate more stands of riparian vegetation from one year to the next. As a result, much of the vegetation is young, having only grown a season or several seasons since the time of the last inundation severe enough to remove the plants previously growing there. Given that some of this riparian vegetation is very new and underdeveloped, it may not provide habitat values sufficient enough for the vegetation to be characterized as environmentally sensitive habitat.

Under Section 30107.5 of the Coastal Act, as discussed above, any area supporting a plant, animal, or habitat is environmentally sensitive if the area meets two main criteria: (1) the plant, animal, or habitat is either rare or especially valuable because of its special nature or role in the ecosystem, and (2) the area could be easily disturbed or degraded by human activities and developments. The non-persistent, young riparian scrub-shrub areas clearly meet the second criterion in that gravel extraction on the river bar, such as proposed by the applicant, can quickly degrade or obliterate riparian areas that extraction activities come into contact with. With regard to the first criterion, the young riparian scrub-shrub vegetation is not rare, as it generally does not contain rare or endangered species, and it can be found extensively on the many thousands of

acres gravel bars along North Coast waterways. However, such vegetation can be considered especially valuable and therefore also meet the first criterion.

In general, riparian vegetation must grow to a certain size and mass before it can begin to contribute significantly to the river ecosystem. A willow sprig growing in isolation that has just taken root and only rises a few feet out of the ground cannot serve the ecosystem functions discussed above such as contributing organic debris to the riverine food web (including supporting insects and other macro-invertebrates on which juvenile salmonids depend), capturing contaminants, providing forage area, nesting opportunities, or screening from predators for birds and wildlife, and other functions. As the plant grows taller, however, and as more riparian plants colonize the surrounding area, the developing vegetation begins to contribute more debris to the riverine food web, capture more contaminants, and provide more forage, nesting, and cover opportunities that make it especially valuable habitat and therefore an environmentally sensitive area.

There is no clear-cut answer to the question of just when in the growth and development of riparian scrub vegetation it reaches the point where it can be considered environmentally sensitive. In discussions with the CDFW staff, Commission staff has learned that no specific plant height and diameter, coverage, age, etc. thresholds exist for riparian vegetation that define when habitat value is sufficient to categorize the vegetation as environmentally sensitive. Part of the reason for this uncertainty is that there can be tremendous variability in the values of riparian vegetation of the same size from one location to the next depending on such factors as surrounding habitat and vegetation, surrounding land uses, river configuration, etc.

One existing standard that may provide useful guidance for determining when riparian scrub-shrub vegetation reaches the point of becoming environmentally sensitive is a standard imposed in the Corps LOP Procedure. The one restriction of the Corps LOP for gravel mining on the Eel River concerns riparian vegetation and states as follows:

“All riparian and woody vegetation and wetlands must be avoided to the maximum extent possible. Any riparian vegetation or wetland that is to be disturbed must be clearly identified by mapping. Woody vegetation that is part of a contiguous 1/8-acre complex or is at least two inches in diameter breast height (DBH) must be mitigated if it is disturbed. Impacts to other woody vegetation must be described and a summary submitted to the Corps and CHERT with the gravel extraction plans. These impacts may require mitigation at the discretion of the Corps...”

The above-referenced restriction establishes a threshold for when impacts to riparian vegetation must be mitigated. The threshold is reached any time the riparian area that would be disturbed contains woody vegetation that is part of a contiguous 1/8-acre complex or is at least two inches (2”) in diameter at breast height.

The Corps administers its permit program under Section 404 of the Clean Water Act (and the related Section 10 of the Rivers and Harbors Act of 1899). This administration limits mineral extraction in wetlands and open coastal waters differently than Section 30233 of the Coastal Act does. As previously stated, Section 30233(a)(5) only allows the dredge or fill of wetlands and

open coastal waters for mineral extraction if the mineral extraction occurs outside of environmentally sensitive areas. Conversely, the Corps can allow mineral extraction in an environmentally sensitive area so long as mitigation is provided. Thus, the Corps' purpose in determining when mitigation should be required is not the same as determining when riparian vegetation reaches a level of growth and development such that it should be considered environmentally sensitive.

By requiring mitigation whenever a riparian vegetation area that is to be disturbed contains woody vegetation that is part of a contiguous 1/8-acre complex or is at least 2 inches DBH, the Corps LOP indicates that vegetation at this level already is providing habitat value. Otherwise, if the vegetation were not providing habitat value there would be no need for mitigation. Therefore, the Commission finds that the riparian vegetation must reach a form of growth and development where it provides important habitat values at some point before the Corps threshold is reached. Acknowledgement of this fact is contained in the rest of the Corps standards which indicate that impacts to other woody vegetation not rising to the threshold level must also be described and submitted to the Corps and may require mitigation at the discretion of the Corps.

In discussions with CDFW staff, Commission staff has discerned that under average growing conditions, a willow tree that is one inch (1") in DBH or part of a contiguous 1/16-acre complex would likely have survived for one growing season. Given that riparian vegetation is only becoming established during the first growing season, the vegetation may not provide significant habitat value at this point. On the other hand, vegetation that has survived more than one growing season would be established and likely to be used by wildlife. Therefore, the Commission finds that the riparian scrub-shrub vegetation should be characterized as an environmentally sensitive area when the vegetation contains woody vegetation that is part of a contiguous complex of 1/16-acre or larger or is one-inch or larger in DBH. In addition, by restricting extraction in vegetated areas that are essentially half as developed as the riparian vegetation for which mitigation is indicated under the Corps LOP, the Commission will minimize the chances that any riparian vegetation providing significant habitat value will be disturbed by the proposed gravel extraction.

To ensure that mineral extraction proposed by the applicant each year is not performed within an area of environmentally sensitive riparian vegetation, thereby remaining an allowable use under Coastal Act Section 30233(a)(5), the Commission attaches Special Condition Nos. 1-(E) & 1-(F), which further state that gravel extraction operations shall not disturb or remove any area of riparian vegetation growing on the river banks or on the gravel bar meeting either the aerial extent or plant girth criteria discussed above. Furthermore, the Commission attaches Special Condition No. 3 which requires the applicant to submit annually for the review and approval of the Executive Director a final gravel extraction plan for the gravel extraction season that is consistent with the extraction limitations of Special Condition No. 1, which include the aforementioned limitations on extracting gravel in riparian areas.

iii. No Dredge or Fill of Exposed Gravel Bars Environmentally Sensitive Habitat

Another form of environmentally sensitive habitat that has the potential to occur on the exposed gravel bars is seasonal nesting habitat of the western snowy plover. As noted previously, the western snowy plover is a federally listed threatened species, which in the past has been

observed nesting on gravel bars of the lower Eel and Van Duzen Rivers during April through early September. The FWS has overseen surveying on the gravel bars within the Eel River during the April to September breeding season window. Overall, population numbers, nests, and fledged chicks are dropping. Compared to 2006 high totals of 50 birds and 44 nests on Humboldt County beaches and 18 birds with 13 nests on the lower Eel River gravel bars, there were 42 birds and 59 nests on the beaches and 0 birds with 0 nests on the Lower Eel River in 2014. Results from surveys upstream from Leland to Sandy Prairie bars from 2010 to 2014 resulted in no snowy plovers detections. There appears to be a shift from the 2001 high of 39 birds and 39 nests on the lower Eel River to a preference for the local beaches for breeding.

As the habitat of rare and endangered species meets the definition of environmentally sensitive areas pursuant to Section 30107.5 of the Coastal Act, the Commission finds that any areas utilized by the western snowy plover during the nesting season when the birds are present constitute ESHA. Therefore, the Commission attaches Special Condition No. 4, which requires that gravel extraction operations not commence until after September 15. Special Condition No. 4 will ensure that gravel extraction operations that could harm plovers are not conducted during the entire plover nesting season between March 1 and September 15.

iv. Conclusion on Use Limitations of Coastal Act Section 30233(a).

Therefore, as conditioned herein, the proposed gravel extraction operation is consistent with the use limitations of Section 30233 of the Coastal Act on dredging in coastal water bodies, as the proposed gravel extraction is for mineral extraction in areas that are not environmentally sensitive, consistent with Section 30233(a)(5).

Alternatives Analysis. The second test set forth by the Commission's dredging and fill policies is that the proposed dredge or fill project must have no feasible less environmentally damaging alternative. In this case, the Commission has considered the various identified alternatives, and determined that there are no feasible less environmentally damaging alternatives to the project as conditioned by Special Condition Nos. 1-13. A total of four possible alternatives have been identified, including: (a) the "no project" alternative; (b) obtaining sand and gravel from quarry operations; (c) obtaining sand and gravel from terrace deposits in the Eel River floodplain; and (d) modifying the proposed project. As explained below, each of these alternatives is infeasible and/or more environmentally damaging than the proposed project as conditioned.

i. No Project Alternative

The no project alternative means that no gravel extraction would occur at the site. Without extraction from the site, an equivalent amount of sand and gravel materials would be obtained from other sources to meet regional demand for cement and concrete aggregate products for the construction of roads, buildings, and other development. Increasing production from other river bar extraction operations would have environmental impacts similar to or greater than the proposed project.

The proposed project is located in an area where gravel has historically been accumulated and mined. Mining in many other parts of the river where gravel does not accumulate could lead to changes in river geomorphology which, in turn, could cause a variety of adverse impacts such as

increased sedimentation, the undermining of bridge supports, and bank erosion resulting in the loss of environmentally sensitive riparian habitat areas and/or adjacent agricultural lands.

As discussed below, obtaining additional sand and gravel terrace deposits from the valley floors of local rivers would also create adverse environmental impacts similar to or greater than the proposed project. The Commission therefore finds that the “no project” alternative is not a feasible less environmentally damaging alternative to the project as conditioned.

ii. Obtaining Sand and Gravel from Quarry Operations

Excavation from the river could be avoided if an equivalent amount of sand and gravel could be obtained from upland quarries. As discussed in the PEIR there are few quarries in the vicinity where it would be economically feasible to obtain material of sufficient quality and quantity as compared to that available at the project site. The substrate of nearby areas of Humboldt County is composed mostly of the Franciscan formation, which is comprised of large masses of greywacke and sandstone interspersed with less competent (for construction applications) clay and silt materials. This composition of material generally does not lend itself to quarrying. The quarries that are found in the region are generally located in remote areas with limited water supplies and where no nearby processing facilities are available. The unprocessed materials would need to be transported greater distances resulting in increased traffic, air quality, and greenhouse gas emissions impacts. The Commission therefore finds that substituting gravel extracted from quarry operations is not a feasible less environmentally damaging alternative to the project as conditioned.

iii. Obtaining Sand and Gravel from Terrace Deposits

Excavation from the river could be avoided if an equivalent amount of sand and gravel products could similarly be obtained from terrace deposits in the floodplain of the lower Eel, Van Duzen, or Mad Rivers. The floors of these river valleys are underlain by substantial amounts of gravel deposited over thousands of years and provide materials to upland rock quarries. However, extracting gravel from these terrace deposits would create its own adverse environmental impacts. Much of the valley floor of each of these rivers is developed with agricultural and timber production uses. Converting productive coastal agricultural lands or forest lands to gravel extraction or other uses would not be consistent with Coastal Act policies, which call for the maintenance of lands suitable for agriculture and timber production. Most of the remaining undeveloped areas of these river valleys are currently covered with riparian habitat and other environmentally sensitive habitats. Extracting gravel from such areas would result in far more impacts to environmentally sensitive habitat than extraction at the project site as conditioned by the permit to avoid all riparian habitats. Therefore, the Commission finds that substituting gravel extracted from terrace deposits in local river valleys is not a feasible less environmentally damaging alternative to the proposed project as conditioned.

iv. Modifying the Proposed Project as Conditioned

Various modifications to the project as proposed and conditioned could be made in an attempt to reduce the environmental effects. One such modification would be to mine in different locations at the project site. However, this modification would not result in less significant adverse impacts

than the project as conditioned under this permit. As discussed previously, the proposed project has been conditioned to avoid the dredge or fill of wetlands within ESHA. Additionally, modifying the proposed gravel extraction project to require mining in different locations at the project site could result in greater impacts to coastal resources and would not be a feasible less environmentally damaging alternative. No other feasible modification to the proposed extraction scheme has been identified. Therefore the Commission finds that modifying the proposed gravel extraction project as conditioned is not a feasible less environmentally damaging alternative.

v. Conclusion

For all of the reasons discussed above the Commission finds that there is no less environmentally damaging feasible alternative to the development as conditioned, as required by Section 30233(a).

Feasible Mitigation Measures. The third test set forth by the dredging and fill policy of the Coastal Act is whether feasible mitigation measures have been provided to minimize the adverse environmental impacts of the proposed project. Depending on the manner in which the gravel extraction operation is conducted, the portions of the proposed project to be conducted below the ordinary high water mark could have five potentially significant adverse effects on the natural environment of the Lower Eel River. Potential impacts include: (a) direct and indirect impacts on fisheries; (b) alteration of the riverbed and increased bank erosion; (c) impacts on environmentally sensitive riparian vegetation; (d) impacts on western snowy plover; and (e) impacts on water quality. The potential impacts and their mitigation are discussed in the following sections:

i. Measures To Avoid Significant Degradation of Fisheries Habitat

Gravel extraction activities undertaken within the flowing river channel in the form of trenching have the potential to have both direct and indirect adverse impacts on threatened salmonid species through: (a) water quality degradation associated with increased turbidity and sedimentation; (b) fish injuries and or mortality from contact with excavation equipment; (c) fish injuries, deaths, and changes in behavior due to flow diversions; (d) decreased invertebrate production associated with removal and/or degradation of habitat substrate; and (e) increased susceptibility to predation due to tendency of fish to concentrate in trench excavations that afford little or no cover from predators and poachers.

As noted previously, the Eel River and its tributaries are ranked among the most significant anadromous fisheries in Northern California and include coho salmon, Chinook salmon, and steelhead trout, all federally listed threatened species under the ESA. The project area and the lower Eel River are important for these anadromous fish as a migration route to and from upstream spawning grounds. In addition, the lower Eel River supports summer rearing habitat for juvenile salmonids, especially steelhead yearlings and fall Chinook sub-yearlings, and holding areas for adult summer steelhead as well as spawning and nursery habitat for other marine fishes and many invertebrates.

Gravel extraction from river bars can adversely affect fisheries in a number of ways. Poorly designed extractions can alter the river channel or even cause capture of the channel into

extraction areas in a manner that can lead to significant downstream erosion of stream banks and greater sedimentation of the river. In addition, NOAA-Fisheries has indicated that juvenile and adult salmonid stranding could occur as a result of certain extraction methodologies depending on how the methodology is implemented and the manner in which the extraction area is reclaimed following extraction. For example, the various on-bar and secondary channel trenching techniques could result in salmonid stranding once river waters rise following the end of the mining season and then subsequently drop during the following spring. The potential for salmonid stranding is minimized if the trenches are breached on their downstream ends to provide the fish with a connection back into the river's main channel.

NOAA-Fisheries staff has also indicated that gravel mining has the potential to result in elevated turbidity levels and increased sedimentation. Fine sediments can become entrained in runoff from skimmed bar surfaces, as skimming typically exposes finer sediment that would be inundated during higher discharges. Increased sedimentation can adversely impact salmonid spawning habitat by filling pores spaces, which decreases hydraulic conductivity of the gravel, thus reducing the supply of oxygenated water to incubating eggs.

Construction and removal of channel crossings and the use of heavy equipment can adversely affect salmonids. Heavy equipment is required to operate in the wetted, low-flow channel to construct and remove the crossings, which are typically placed at riffle locations. According to NOAA-Fisheries, death or injury of salmon through direct contact with such heavy equipment is likely during installation and removal of the crossing structures. In addition, the operation of heavy equipment has the potential to result in disturbance to salmonids caused by noise and vibration in the extraction work area. Furthermore, stream crossings can also impact juvenile rearing habitat by impeding or altering channel stream flow dynamics.

The impacts of gravel mining operations on fish species include more than just the direct gravel mining activities within or in proximity to the low flow channel or the individual impacts of a particular gravel mining operation at one site. Often of greater significance are the indirect effects of gravel mining on geomorphology together with the cumulative adverse impacts on sensitive fish species from all of the various gravel mining operations occurring along the river. An assessment of the significant adverse indirect and cumulative impacts of gravel mining operations along the lower Eel River on sensitive fish species is discussed within the Biological Opinion issued by NOAA-Fisheries (Appendix D).

The Corps formally requested that NOAA-Fisheries prepare a Biological Opinion to analyze the LOP Procedure 2015 for proposed gravel extraction on Humboldt County rivers over the next five years (through 2019). The draft Biological Opinion reportedly will be finalized by the end of August 2015 and is expected to contain salmonid protection measures similar to both the Commission's prior approval at the subject site and the prior Biological Opinion relating to the protection of salmonids along the lower Eel River. Through the LOP process, mitigation measures have been developed for abutments that enter the wetted channel. During construction, the gravel mining operator is required to contain abutment fill behind a containment structure such as a K-rail, sill logs, concrete blocks, or other suitable material to avoid filling any more of the channel than is absolutely necessary. The below-water abutment fill is required to consist only of clean washed gravel to minimize downstream turbidity. Bridge construction, use, and

removal shall occur prior to the arrival of the upstream migrating adult salmonids. Based on the biological information collected as part of the consultation, NOAA-Fisheries staff indicates in discussions with Commission staff that the NOAA-Fisheries staff concludes that the proposed seasonal extraction of gravel over the next five years will not result in more than incidental take of threatened salmonid species and will not jeopardize their continued existence.

To ensure that significant adverse impacts to salmonids from exceedance of incidental take of listed species does not occur during authorized mining operations, the Commission attaches Special Condition Nos. 1 and 3 which incorporate specific elements of the proposed LOP 2015. These elements have been identified by NOAA-Fisheries as important for minimizing impacts to channel form and function, as well as protecting fish habitat.

During their consultation, NOAA-Fisheries reviewed the extraction methods and techniques described in LOP 2015 including, but not limited to, traditional skims, horseshoe skims, inboard skims, narrow skims, alcove extractions, wetland pits, wet trenches for salmonid habitat improvement purposes only, and dry-trenches. NOAA-Fisheries staff believes that although there is a preference for the non-skimming methods, none of the above methods would adversely affect channel form and function in a manner that would be likely to jeopardize the continued existence of the sensitive fish species.

Therefore, to ensure that the mineral extraction proposed by the applicants use these proposed techniques to avoid degradation of threatened salmonid species habitat, the Commission includes within the requirements of Special Condition No. 1-(B) a limitation which requires use of only these extraction methods. This requirement will ensure that significant adverse disturbance of fish habitat from use of inappropriate extraction measures will be avoided.

Maintaining a head of the bar buffer, where gravel extraction would be precluded, is intended to provide protection of the natural stream flow steering effect provided by an undisturbed bar. According to the Biological Opinion, head-of-bar buffers reduce the potential for geomorphic changes to the river from sediment extraction. The buffer helps to maintain bar slope and form, which in turn helps to guide stream flows that are effective at creating and maintaining habitats. Therefore, Special Condition No. 1-(K) precludes mining in the upper one-third of a gravel bar, consistent with NOAA Fisheries Staff recommendations and Corps permit requirements.

The use of vertical offsets of the gravel extraction area from the low flow channel of the river will also help minimize sedimentation impacts on the river. The natural entrainment of sediment into river flows in the dry summer and early fall seasons is minimal in comparison with natural entrainment in winter months, when heavy rains entrain large quantities of sediment into river flows. Anadromous fish depend on the natural variation in sedimentation and river flows for spawning, migration, and other life-cycle habitat needs. Artificially introducing large amounts of sediment at times of the year when natural entrainment is otherwise low would adversely affect the anadromous fish as discussed above. Therefore, certain vertical offsets need to be maintained to prevent the sediment in lower skimmed surfaces of the bars from becoming entrained prior to the beginning of significant movement of fine bed load material in the river that occurs during winter months. The general benefit of increased skim floor elevations is that effects associated with sediment inputs are reduced as the elevation of the skim floor increases. The applicant

proposes to set minimum skim floor elevations to correspond to the water surface elevation of the flow that is exceeded 35 percent of the time in the historic record of daily average flows for rivers in Humboldt County. According to the draft Biological Opinion, the 35 percent exceedence flow is the flow where significant movement of fine bed load material begins in the rivers of Humboldt County. A skim floor at the 35 percent exceedence flow will provide confinement of the low flow channel until the stream is gaining in volume and naturally beginning to transport fine sediment. Therefore, Special Condition No. 1-(J) requires that any bar-skimming extractions that are proposed adjacent to the low flow channel shall have a minimum skim floor elevation at the elevation of the 35% exceedence flow.

In addition, gravel mining operations on the river bed need to cease before the rainy season to prevent significant adverse impacts to fisheries, as the runs of the various species of anadromous fish up and down the river increase in the fall with the rise in river water levels and remain at high levels through the early spring. In recent CDFW Section 1600 Streambed Alteration Agreements issued for gravel extraction at the project site, CDFW has limited gravel extraction operations to the dry season of June 1 through October 15 each year, which corresponds to the period when potential impacts to fisheries are lowest. CDFW can choose to extend the operations until November 1 if dry weather conditions prevail. The 2015 NOAA-Fisheries Biological Opinion is also anticipated to allow for completion of gravel mining operations by October 15, with similar extensions to November 1 if possible.

Therefore, the Commission attaches Special Condition No. 6 that requires mining and all post-extraction bar grooming work and equipment removal be performed during the summer months and completed by October 15 to ensure no significant disturbance to anadromous fish. The Executive Director may approve a one or two week extension of gravel extraction and regrading activities to as late as November 1 if dry weather conditions are forecasted and the permittee has received all necessary approvals to extend gravel operations from CDFW, the Corps, and NOAA-Fisheries.

NOAA-Fisheries staff also is of the opinion that the proposed gravel mining is not likely to destroy or adversely modify SONCC coho salmon designated critical habitat (Exhibit D). To ensure this opinion and the other recommendations of NOAA Fisheries staff has not changed in a manner inconsistent with the Commission's approval by the time the Biological Opinion are issued, the Commission attaches Special Condition No. 10, which requires the applicant to submit, prior to permit issuance, final Biological Opinions in support of the gravel extraction authorized by this permit and that are consistent with all terms and conditions of this permit. Any changes required by the agency shall be reported to the Executive Director and not incorporated into the project until the applicant obtains any necessary amendments to the coastal development permit.

Therefore, the Commission finds that as conditioned, the proposed gravel mining project would avoid significant disturbance of sensitive fish species consistent with the requirements of Sections 30231, 30233, 30236 and 30240 of the Coastal Act.

ii. Measures to Avoid Significant Degradation of River Morphology

As discussed above, a potential impact of gravel mining operations is degradation of the riverbed and erosion of the riverbanks. Such impacts can occur if the amount of gravel extracted from a particular part of the river over time exceeds the amount of gravel deposited on the site through natural recruitment – the downstream movement of sand and gravel materials. Bed degradation and bank erosion can also result from the manner in which gravel is extracted. For example, if gravel bars are skimmed too close to the low-water surface or are left with a very shallow slope, the river may spread across the bar during higher flows, thereby reducing the depth of the channel and may result in channel migration or channel “braiding.” Channel braiding can also result in watercourse reaches where aggradation of materials is a problem. Such sites tend to trap gravel that would otherwise move downstream, potentially trapping or impeding fish migration up and down the river.

Although the applicant proposes to extract an amount of gravel that is small relative to the overall permitted gravel mining activity along the Eel River, approval of extraction operations without consideration of potential effects on river morphology could cause bed degradation and riverbank erosion.

In January of 2009 CHERT released a 10-year analysis of river channel cross sections taken at various sites along the Eel and Van Duzen Rivers near mining sites (including the lower, middle, and South Fork reaches of the Eel River and the lower Van Duzen River) (Exhibit A). The report represents the longest-term geomorphic analysis completed to date examining the potential effects of gravel mining operations on river channel morphology. The report found that “while certain methods of mining and locally excessive volumes can affect instream habitat in the short term, the river does not appear to suffer from long term or broad scale channel bed degradation from gravel mining. Furthermore, the CHERT adaptive management program authorized by the interim management plan specifically addresses preventing local over-extraction and avoiding/minimizing mining methods that cause aquatic and riparian habitat damage” (page 2). The report concludes that “...we did not discern any large scale, persistent adverse effects of Eel River gravel mining on channel thalweg elevations, mean bed elevations, or scour...Gravel mining effects in the Eel River are probably limited to short term, localized effects which the adaptive management program and federal and state oversight attempt to avoid or minimize. Refinement of project-scale minimization measures will continue to be a fundamental component of the adaptive management process, as will instream habitat improvement projects associated with gravel extraction operations” (page 24).

More recently, channel profiles taken following the 2013 gravel mining season show modest amounts of fill and scour within the active channel area of the lower reach of the Eel River as compared to channel profiles taken in 2009. The reworking of the low flow channel, as seen in the more recent channel profiles, is not an unexpected occurrence in a semi-unconstrained alluvial channel. The higher elevation channel margins and channel banks of the monitoring cross sections appear stable in profile as these areas are not subject to regular inundation and flow energy that generates scour and fill. The higher elevation alluvial surfaces of the site are also protected by herbaceous and woody vegetation which tends to reduce high flow energy and provide armoring of the surface sediments. Therefore, the comparative data depicts a stable channel form that is not being adversely affected by gravel mining operations at the site.

As discussed in the previous section, the proposed gravel extraction methods have been proposed to avoid significant adverse impacts to channel form and function. The determination of the NOAA-Fisheries staff that gravel operations conducted in accordance with the LOP-2009 procedures would not result in more than an incidental take of listed species and will not likely threaten the continued existence of these species, and the opinion of NOAA-Fisheries staff that mining under the LOP-2015 would similarly not result in more than incidental take of listed species, is based in part on a finding that the extraction methods specified in LOP-2015 will be used to help preserve channel form and minimize bank and bar erosion that would degrade fishery habitat. Special Condition No. 1 limits the use of gravel extraction techniques to those recommended by NOAA-Fisheries. In addition, annual gravel extraction plans will be reviewed by CHERT in consultation with NOAA-Fisheries and the Corps to ensure that the particular methods proposed in any given year will minimize the chances of degradation of channel form based on conditions that exist at the time. Special Condition No. 3 requires that annual gravel extraction plans be submitted for the review and approval of the Executive Director and section (A)(4) of that condition requires that the submitted plans be consistent with the recommendations of CHERT. These requirements will ensure that disturbance of the active channel will be avoided.

iii. Measures to Avoid Significant Degradation of Environmentally Sensitive Riparian Vegetation

To ensure that disturbances to riparian habitat are prevented, Special Condition No. 1 includes the requirement that the mining be performed, on the portions of the gravel bar that do not contain or are in close proximity to riparian vegetation with environmentally sensitive habitat characteristics. Furthermore, the Commission attaches Special Condition No. 7, which reiterates that gravel extraction and processing operations shall not disturb or remove any area of environmentally sensitive vegetation growing on the gravel bar or river bank, and enumerates the threshold growth characteristics for when riparian vegetation becomes environmentally sensitive habitat. In this manner, significant degradation of all of the adjacent environmentally sensitive riparian vegetation in the vicinity of the project will be avoided.

iv. Measures To Avoid Significant Degradation of Western Snowy Plover

The western snowy plover (*Charadrius alexandrinus nivosus*) was listed as a threatened species by the FWS in 1993. A final rule for critical habitat for the species was published by the FWS in 2005. On the Lower Eel River, designated critical habitat for the plover includes seasonally exposed gravel bars located between the mouth of the Eel River upstream to its confluence with the Van Duzen River. At the state level, the western snowy plover has been classified by CDFW as a “species of special concern” throughout all of California since 1978.

Snowy plovers were first documented nesting on gravel bars along the lower Eel River in 1996, which prompted increased surveying and monitoring efforts to describe the seasonal and spatial use of the lower Eel River by plovers. Surveys have indicated that snowy plovers are distributed along the unvegetated portions of larger gravel bars from the mouth of the Eel River upstream to the mouth of the Van Duzen River and individuals have been found on the gravel bars from early April until early September. Overall, population numbers, nests, and fledged chicks are dropping. Compared to 2006 high totals of 50 birds and 44 nests on Humboldt County beaches

and 18 birds with 13 nests on the Lower Eel River gravel bars, there were 42 birds and 59 nests on the beaches and 0 birds with 0 nests on the Lower Eel River in 2014. Results from surveys upstream from Worswick Bar from Leland to Sandy Prairie bards from 2010 to 2014 resulted in no snowy plovers detections. There appears to be a shift from the 2001 high of 39 birds and 39 nests on the Lower Eel River to a preference for the local beaches for breeding (LACO 2015). Although the reason for this apparent shift in habitat use from river bars to beaches is not understood, it is clear that some nest loss along the lower Eel has occurred due to river floods (high spring flows). Additionally, Colwell et al. (2005-2008) documented that recreational vehicle use of the gravel bars directly contributed to 41 percent of Eel River plover nest failures over the previous four years.

Western snowy plover adults, nests, and chicks are very cryptic, largely because of their ability to blend in with their surroundings as a defense strategy. All life stages of the plover are susceptible to death or injury by humans driving, operating equipment, and otherwise using occupied plover habitat. Disturbance from noise and activity associated with gravel extraction, vehicle use, and pre-gravel extraction activities may adversely affect western snowy plovers by altering their feeding and breeding behavior, reducing the suitability of nesting habitat, masking essential warning signs of predators, and attracting potential scavengers/predators.

According to the FWS, data from other portions of the western snowy plover's range suggest that activity and vehicle use in nesting and chick rearing habitat during low light and night conditions likely increases the risk of vehicle strikes to plovers, including adults. Activities associated with gravel extraction (including surveys for engineering, hydrology and biological resources) often need to be conducted prior to the initiation of gravel extraction activities. Because these pre-extraction activities require vehicular use and human presence in potential nest areas during the nest season, the potential exists to adversely affect the western snowy plover through direct harm or harassment.

To avoid significant degradation of plover habitat, the Commission attaches Special Condition No. 4. Special Condition No. 4 requires that gravel mining shall not start before September 15. The requirements of Special Condition No. 4 will ensure that gravel operations will not be performed in western snowy plover nesting sites or otherwise significantly disturb this threatened species. Therefore, as conditioned, the Commission finds that the project will avoid significant degradation of the western snowy plover habitat.

v. Measures to Avoid Significant Degradation of yellow billed cuckoo habitat

The western Yellow-billed Cuckoo (*Coccyzus americanus*) was listed as a threatened species by the U.S. Fish and Wildlife Service (FWS) in 2014 and is also listed as a California Endangered Species and a U.S. Forest Service Region 5 Sensitive Species. Critical habitat for the species was proposed by the FWS in 2014 and is not yet finalized. Critical habitat in the Lower Eel River was proposed in 2014 and if designated would comprise an 8-mile long continuous segment of willow-cottonwood riparian vegetation from west of the town of Fortuna (Sandy Prairie) downstream to a point in the estuary (Cock Robin Island) of the lower Eel River in Humboldt County, California. Proposed designated critical habitat for this species consists of riparian stands of more than 37 acres and more than 325 feet in width. As the habitat of rare and

endangered species meets the definition of environmentally sensitive areas pursuant to Section 30107.5 of the Coastal Act, the Commission finds that any areas utilized by the yellow-billed cuckoo during the breeding season when the birds are present constitute ESHA.

Proposed gravel mining activities will require the use of heavy equipment, and vehicles, all of which introduce high levels of noise and human activity into the environment that could disrupt potential yellow-billed cuckoo habitat within the riparian areas. Disturbance from human presence or activities during the breeding season may potentially disrupt yellow-billed cuckoos essential breeding behaviors in adjacent riparian areas that may be used for breeding by causing (1) abandonment of the breeding effort by failure to initiate nesting or to complete incubation; (2) noise disruption of the established breeding territory; and (3) frightening adults from utilizing potential nesting areas. Potential effects depend on frequency, timing, location and intensity of activities.

Because the Yellow-billed cuckoo is a federally listed threatened species, the FWS coordinates with the Corps to provide guidance and regulatory review to gravel extraction operators on the lower Eel River. The FWS is developing as part of the Federal Endangered Species Act biological consultation process with the Army Corps of Engineers on the Corp's proposed issuance of the proposed LOP for proposed gravel extraction operations over the next five year on the lower Eel River. The biological opinion is not anticipated to be issued until mid-September, 2015. In the absence of more specific recommendations that may be contained in the biological opinion that is ultimately issued, to avoid the significant degradation of yellow-billed cuckoo habitat, the Commission attaches Special Condition No. 5. Special Condition No. 5 requires that no gravel mining operations shall be allowed during the yellow billed cuckoo breeding season (April 30 – September 15).

vi. Measures to Avoid Significant Adverse Impacts on Water Quality

If properly managed, the proposed gravel operations should not significantly adversely affect the river's water quality. However, gravel extraction operations in close proximity to an open stream course could adversely impact water quality and ultimately the biological productivity and fisheries resources of the river. For example, pushing gravel materials or allowing sediment-laden water to drain from an excavation bucket into the river could degrade water quality and biological productivity by increasing the turbidity of the water. In addition, if not retained to allow settlement of suspended sediment, wash water from gravel processing activities could entrain soil materials which could result in sedimentation of coastal waters.

To prevent such occurrences, the Commission attaches Special Condition Nos. 1, 3, 7, and 8. Special Condition No. 1 requires the applicant to perform the mining project on the exposed gravel bar in order to avoid in-water activities that might result in sedimentation of the river. Special Condition No. 3 requires that a runoff control plan be reviewed and approved by the Executive Director as part of the annual gravel extraction plan ensuring that mining equipment be maintained and operated in such a manner as to not allow for release of petroleum products into the river, that spill clean-up materials be available on the worksite, and that operators and sub-contractors undergo spill contingency training. Special Condition No. 7 prohibits placing any material into the river during gravel extraction activities. Special Condition No. 8 requires

that all materials be promptly removed from the river bar after the cessation of mining and prior to the start of the rainy season.

Therefore, as conditioned, the project will not result in significant adverse impacts to coastal water quality.

vii. Conclusion

The Commission finds, as conditioned herein, the proposed gravel extraction operation is consistent with the requirements of Section 30233 of the Coastal Act in that feasible mitigation measures have been provided to minimize adverse environmental effects. The gravel extraction limitations and performance standards imposed through Special Condition Nos. 1, 3, and 6 are designed to prevent impacts to river morphology, riparian vegetation, threatened and endangered species, and water quality. Together with the requirements of Special Condition Nos. 7 and 8 to prohibit placement of material into the active channel and limit the extraction season, the project is conditioned to ensure that significant adverse impacts to the Eel River from the proposed gravel extraction operation will be avoided. Therefore, the proposed project as conditioned is consistent with the requirements of Sections 30230, 30231, and 30233 of the Coastal Act.

Maintenance and Enhancement of Estuarine Habitat Values. The fourth general limitation set by Sections 30231 and 30233 is that any proposed dredging or filling project in coastal waters must maintain and enhance the biological productivity and functional capacity of the habitat, where feasible.

As discussed in the section of this finding on mitigation, the conditions of the permit will ensure that the project will not have significant adverse impacts on fisheries resources, river morphology, environmentally sensitive riparian vegetation, western snowy plover, or water quality. By avoiding impacts to coastal resources, the Commission finds that the project will maintain the biological productivity and functional capacity of the habitat consistent with the requirements of Sections 30230, 30231, and 30233 of the Coastal Act.

The Commission thus finds that the project is an allowable use, that there is no feasible less environmentally damaging alternative, that no additional mitigation is required for the impacts associated with the dredging of coastal waters, and that riverine habitat values will be maintained or enhanced. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Sections 30230, 30231, and 30233 of the Coastal Act.

H. DEVELOPMENT WITHIN COASTAL RIVERS AND STREAMS

Section 30236 of the Coastal Act states the following:

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat. [Emphases added.]

Section 30236 sets forth a number of different limitations on what development may be allowed that causes substantial alteration of rivers and streams. For analysis purposes, a particular development proposal must be shown to be for one of three purposes: (1) for a necessary water supply project; (2) flood control projects where there is no other feasible methods for protection of existing structures within the floodplain and the project is necessary for public safety and the protection of existing development; or (3) primarily for fish and wildlife habitat improvement. In addition, the development proposed must provide the best mitigation measures feasible to minimize the significant adverse environmental effects of the subject channelization, damming, or other substantial alteration of a river or stream.

As discussed above, the wet trenching technique, which may be undertaken in an annual gravel extraction plan if authorized by NOAA-Fisheries and CDFW, would involve excavation within salmonid ESHA habitat and thus would not be permissible under Section 30233(a)(5). However, Section 30236 allows substantial alteration of rivers and streams where the primary function is for the improvement of fish habitat. To the extent that use of the wet trenching technique is primarily for the improvement of fish habitat, the proposed wet trenching excavation is consistent with the use limitations of Section 30236, as explained below.

Trenching can be an effective tool for the enhancement of salmonid migration corridors and in providing cold water refuge adjacent to the wetted channel. NOAA-Fisheries encourages the use of trenching on the lower Eel and lower Van Duzen Rivers to assist salmonid migration through dry river reaches. A migration trench is essentially a designed channel mimicking a natural channel, which permits salmonid migration and water flow through a dry reach of a stream. Meander and slope may be designed into the channel to control velocity and provide resting areas for fish. Large woody debris also may be placed within the channel to provide cover and refuge for salmonids during upstream migration or downstream emigration. Connection of the designed channel at the upstream end must be carefully planned so that the existing channel area is not significantly diminished and so that low, pulse flows do not encourage fish migration into channel areas that are incapable of providing cover and protection from predation or upstream passage. The upstream connection to the existing channel should most likely form a narrow riffle to prevent pool dewatering.

To ensure consistency with the limited purpose for which Section 30236 allows substantial alteration of rivers and streams, the Commission attaches Special Condition No. 1-(B), which states that if wet trenching methods for salmonid habitat improvements are used, the trenching within the wet channel shall be limited to the trenching configuration and extraction volume that is the minimum amount necessary for improving salmonid habitat. Additionally, the Commission attaches Special Condition No 3-(A)-9. This condition requires that, prior to the start of each year's gravel extraction operations, the applicant shall submit, for the Executive Director's review and approval, a final gravel extraction plan for that gravel extraction season that includes, among other things, evidence demonstrating that any proposed wet trenching for instream salmonid habitat restoration purposes is limited to the restrictions described above, including but not limited to, written approval of the proposed wet trenching from NOAA-Fisheries and/or the CDFW.

Limiting the trenching configuration and extraction volumes to the minimum amount necessary for improving salmonid habitat ensures that the primary function of the technique will be for the improvement of fish habitat, even though there may be incidental use of the gravel extracted for commercial purposes. Such extraction is consistent with Section 30236, provided that the best mitigation measures feasible also are incorporated into the project. Special Condition Nos. 1, 3, 6, 7, and 8 discussed above require use of the best feasible extraction standards and limitations, methods of extraction, and the timing of extraction to avoid and minimize significant adverse environmental effects on salmonid habitat.

Therefore, the Commission finds that as conditioned herein, the proposed wet trenching excavation is consistent with the requirements of Section 30236 of the Coastal Act, in that the primary function of the wet trenching is the improvement of fish habitat, and the best feasible mitigation measures have been provided to minimize or avoid significant adverse environmental effects.

I. PROTECTION OF ADJACENT ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Section 30240(b) of the Coastal Act states that development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat areas. Under Section 30107.5 of the Coastal Act, as discussed above, any area supporting a plant, animal, or habitat is environmentally sensitive if the area meets two main criteria: (1) the plant, animal, or habitat is either rare or especially valuable because of its special nature or role in the ecosystem, and (2) the area could be easily disturbed or degraded by human activities and developments.

As discussed above in Finding G, “Gravel Extraction Operations within Riverine Wetlands,” the proposed annual extraction operations as conditioned will not be performed within environmentally sensitive habitat either within or outside of the bank-full channel of the river. Although the gravel extraction operations will not be performed directly within ESHA, the development will occur adjacent to several kinds of ESHA as discussed above, including sensitive salmonid habitat in the river, possible western snowy plover habitat in areas of the gravel bars that will be restricted from gravel mining activities, riparian habitat that has become established on the gravel bars and along the banks of the river, and those portions of the riparian habitat that may be used by the yellow billed cuckoo for breeding. As conditioned, the approved gravel extraction operations will be sited and designed to prevent significant disruption of these ESHA habitats.

i. Salmonid Habitat

As discussed in detail within the above referenced Finding F, the gravel extraction operations as conditioned will avoid significant degradation of sensitive fish species consistent with the requirements of Sections 30230, 30231, 30233, 30236 and 30240 of the Coastal Act.

ii. Riparian Habitat

Gravel extraction operations have been conducted adjacent to the riparian habitat along the lower Eel River for several decades. In April of 2009, McBain and Trush conducted a study of woody

riparian vegetation trends of the Eel and Van Duzen Rivers for the period of 1995-2008 that demonstrates that the riparian habitat along the river continues to thrive in the presence of the adjacent gravel extraction operations. The Hauck Bar project area was included in the 2,800 acre study area that extended from Fox Creek on the Van Duzen River to Fernbridge on the Eel River. The study results concluded that over the period of study (1995-2008), the combined percent acreages of the open riparian categories (floodplain, woodland, and terrace) remained relatively stable, suggesting that gravel extraction did not have a detectable effect on overall woody riparian vegetation acreage. The study also noted that the total area of annual extraction within the lower Eel River study area was quite small and therefore changes in vegetation acreage relative to the size of the lower Eel River extraction reach and study area are likely undetectable. The combined area of proposed extraction operations within the lower Eel River study area would remain at low levels during the five-year period of authorization of this coastal development permit.

A comparison of photos of the project site between 2009 and 2014 shows that vegetation density and overall area have increased significantly at the project site between 2009 and 2014. To ensure that the gravel extraction operation continues to avoid significant degradation of adjacent riparian habitat, Special Condition No. 1, prohibits mining in those portions of the gravel bars where the riparian vegetation has reached a size and extent where there is an expectation of appreciable habitat values for nesting, forage and cover of wildlife being afforded. Furthermore, Special Condition No. 7 requires that the proposed project not disturb or remove any of the established riparian vegetation at the site and prohibits the cutting of new haul roads through the habitat. Existing haul roads through the riparian areas must be used to truck gravel from the bar to the stockpiling and processing facility.

iii. Yellow Billed Cuckoo Habitat

The yellow billed cuckoo may use the riparian areas adjacent to gravel mining operations along the lower Eel River. Breeding habitat may exist in areas adjacent to gravel operations and haul roads that have been previously established. The western Yellow-billed Cuckoo (*Coccyzus americanus*) was listed as a threatened species by the U.S. Fish and Wildlife Service (FWS) in 2014 and is also listed as a California Endangered Species and a U.S. Forest Service Region 5 Sensitive Species. Critical habitat for the species was proposed by the FWS in 2014 and is not yet finalized. Critical habitat in the Lower Eel River was proposed in 2014 and if designated would comprise an 8-mile long continuous segment of willow-cottonwood riparian vegetation from west of the town of Fortuna (Sandy Prairie) downstream to a point in the estuary (Cock Robin Island) of the lower Eel River in Humboldt County, California. Proposed designated critical habitat for this species consists of riparian stands of more than 37 acres and more than 325 feet in width. According to the 2015 biological assessment prepared for the Lower Eel River gravel mining projects, riparian habitat adjacent to the project site appears suitable in size and width to meet minimum size requirements for a yellow-billed cuckoo breeding area. As the habitat of rare and endangered species meets the definition of environmentally sensitive areas pursuant to Section 30107.5 of the Coastal Act, the Commission finds that any areas utilized by the yellow-billed cuckoo during the breeding season when the birds are present constitute ESHA.

Proposed gravel mining activities will require the use of heavy equipment, and vehicles, all of which introduce high levels of noise and human activity into the environment that could disrupt potential yellow-billed cuckoo habitat within the riparian areas. Disturbance from human presence or activities during the breeding season may potentially disrupt yellow-billed cuckoos essential breeding behaviors in adjacent riparian areas that may be used for breeding by causing (1) abandonment of the breeding effort by failure to initiate nesting or to complete incubation; (2) noise disruption of the established breeding territory; and (3) frightening adults from utilizing potential nesting areas. Potential effects depend on frequency, timing, location and intensity of activities.

Because the Yellow-billed cuckoo is a federally listed threatened species, the FWS coordinates with the Corps to provide guidance and regulatory review to gravel extraction operators on the lower Eel River. The FWS is developing as part of the Federal Endangered Species Act biological consultation process with the Army Corps of Engineers on the Corp's proposed issuance of the proposed LOP for proposed gravel extraction operations over the next five year on the lower Eel River. The biological opinion is not anticipated to be issued until mid-September, 2015. In the absence of more specific recommendations that may be contained in the biological opinion that is ultimately issued, to avoid significant degradation of yellow-billed cuckoo habitat, the Commission attaches Special Condition No. 5. Special Condition No. 5 requires that no gravel mining operations shall be allowed during the yellow billed cuckoo breeding season (April 30 – September 15).

iv. Western Snowy Plover Habitat

As discussed above in Finding G, "Gravel Extraction Operations within Riverine Wetlands," the endangered western snowy plover will sometimes nest on the gravel bars within the Eel River. Gravel operations could lead to plover mortality if nesting plovers are present during the gravel extraction operation. The plover nesting season begins in March and ends by mid-September. The end of the plover nesting season coincides closely with the end of the breeding season for the yellow billed cuckoo, which as described above runs from April 30 to mid-September. The prohibition imposed by Special Condition No. 5 against commencing gravel extraction operations prior to September 15 to avoid significant impacts to the Yellow billed cuckoo will also protect nesting plovers. To ensure that gravel extraction operations that could harm plovers are not conducted during the full plover nesting season (which begins two months prior to the Yellow billed cuckoo breeding season), Special Condition No. 4 requires that no gravel extraction operations occur during the plover nesting season, i.e. between March 1 and September 15.

In permits previously granted for gravel extraction operations along the Eel River, the Commission has allowed for the possibility for gravel extraction to begin prior to the close of the plover nesting season on September 15 if plover surveys were to demonstrate that no plover nests exist within the gravel extraction area. These allowances for earlier commencement of gravel extraction were based on FWS recommendations contained in biological opinions prepared by FWS at that time. The new FWS biological opinion anticipated to be issued by mid-September may contain similar allowances for earlier commencement of gravel extraction. However, as Special Condition No. 5 already prohibits commencement of gravel extraction prior

to September 15 in order to protect the yellow billed cuckoo, which was only recently listed federally as a threatened species in 2014, allowances for earlier commencement of gravel extraction cannot be made even though under certain circumstances earlier commencement of extraction would not result in significant adverse impacts to the plover.

Therefore, for the reasons discussed above, the Commission finds that the project as conditioned will be sited and designed to prevent impacts which would significantly degrade adjacent ESHA and will be compatible with the continuation of these habitat areas consistent with Section 30240(b).

J. PROTECTION OF VISUAL RESOURCES

Section 30251 of the Coastal Act provides in applicable part that the scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be (a) sited and designed to protect views to and along the ocean and scenic coastal areas, and (b) visually compatible with the character of surrounding areas.

The gravel extraction area and processing facilities generally are not visible from Highway 101 or any other public coastal viewing areas. The extraction operation has existed at the site for many years, and the proposed project will not be any more prominent than the gravel extraction that has occurred at the site in the past.

Therefore, the Commission finds that as conditioned, the proposed project is consistent with the visual resource policies of Section 30251 of the Coastal Act, as the project is compatible with the visual character of the surrounding area and will not block views to and along the coast.

K. PUBLIC ACCESS

Section 30210 of the Coastal Act states:

In carrying out the requirements of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30211 of the Coastal Act states:

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212 of the Coastal Act states, in applicable part:

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

(1) It is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,

(2) Adequate access exists nearby, or,

(3) Agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.

Section 30214 of the Coastal Act states:

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

(b) It is the intent of the Legislature that the public access policies of this article are carried out in a reasonable manner that considers the equities and that balances the rights of the individual property owner with the public's constitutional right of access pursuant to Section 4 of Article X of the California Constitution. Nothing in this section or any amendment thereto shall be construed as a limitation on the rights guaranteed to the public under Section 4 of Article X of the California Constitution.

(c) In carrying out the public access policies of this article, the commission and any other responsible public agency shall consider and encourage the utilization of innovative access management techniques, including, but not limited to,

agreements with private organizations which would minimize management costs and encourage the use of volunteer programs.

Coastal Act Section 30210 requires in applicable part that maximum public access and recreational opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Section 30211 requires in applicable part that development not interfere with the public's right of access to the sea where acquired through use (i.e., potential prescriptive rights or rights of implied dedication). Section 30212 requires in applicable part that public access from the nearest public roadway to the shoreline and along the coast is provided in new development projects, except in certain instances, such as when adequate access exists nearby or when the provision of public access would be inconsistent with public safety. In applying Sections 30210, 30211, and 30212, the Commission is limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

The project site is located between the first public road (Highway 101) and the sea (the Eel River is considered to be an arm of the sea in this area). Recreational use of the river in this particular section of the river is very limited, largely because there are very few access points to the river. The principal public access use of the project site that does occur is by fishermen who use the river channel for recreational fishing. The prime fishing season occurs in the spring or wet season when gravel extraction is not occurring.

Other public access and recreational uses of this stretch of the river include canoeing and recreational boating. Kayakers and canoeists are generally able to stop at seasonal crossings and portage around the crossings. However, during most of the gravel extraction season that is authorized by this permit, seasonal crossings may be put in place as early as July 1 and remain in place as late as October 15. During any given season, four of the six gravel operations on the lower Eel and lower Van Duzen rivers are likely to have seasonal crossings over the main channel of the rivers, some with multiple crossings. The cumulative impacts on boaters having to stop and portage around the seasonal crossings of the various gravel operators on the lower Eel would be significant. Therefore, the Commission attaches Special Condition No. 2 which will ensure that any seasonal crossings installed by the applicants will not block passage down the river. The condition requires that any proposed seasonal crossing of the low flow or secondary channels shall be of the railroad flatcar variety rather than culverted fill crossings. The condition also requires that the flatcar crossing be installed in such a manner that a minimum 3-foot vertical clearance is maintained above the surface of the water so that canoes and kayaks are able to pass through such a crossing.

Due to the significant adverse impacts that vehicle use on the gravel bars has on the federally threatened western snowy plover and yellow billed cuckoo, the FWS proposes terms and conditions aimed at minimizing vehicle impacts. The FWS is requiring that vehicle use in suitable plover habitat shall be minimized during the plover nesting season (March 1-September 15), and that access roads owned, controlled, or utilized by commercial gravel operators shall be gated and locked during the plover nesting season when no active extraction and hauling is occurring (including at night). These requirements have been included as part of Special

Condition No. 4, which specifies various measures to protect western snowy plover in the project area, as discussed in Findings IV-D and IV-E above. The condition imposed by the Commission requires that the gates be designed to block vehicular access only and shall allow for pedestrian access, unless the applicant obtains additional authorization from the Commission to block pedestrian access. This condition will keep the vehicles that adversely affect the plovers off of the bars during the plover nesting season while protecting pedestrian access to the river consistent with the access policies of the Coastal Act. If the applicant desires to install gates that block pedestrian as well as vehicular access, the applicant must apply for additional authorization from the Commission so that the Commission can evaluate whether such gates in the specific location proposed would block the public's right of access inconsistent with the access policies of the Coastal Act.

Thus, as conditioned, the project will not significantly affect the fishermen, canoeists, or other recreational boaters. Furthermore, gravel extraction operations have been occurring at the site for many years. The continued extraction authorized by this permit will not create any additional burdens on public access than have existed in the past. The project will not create any new demands for fishing access or other public access use.

The project as conditioned would have no significant adverse effect on public access. Therefore, the Commission finds that the project, as proposed without new public access, is consistent with the public access policies of the Coastal Act.

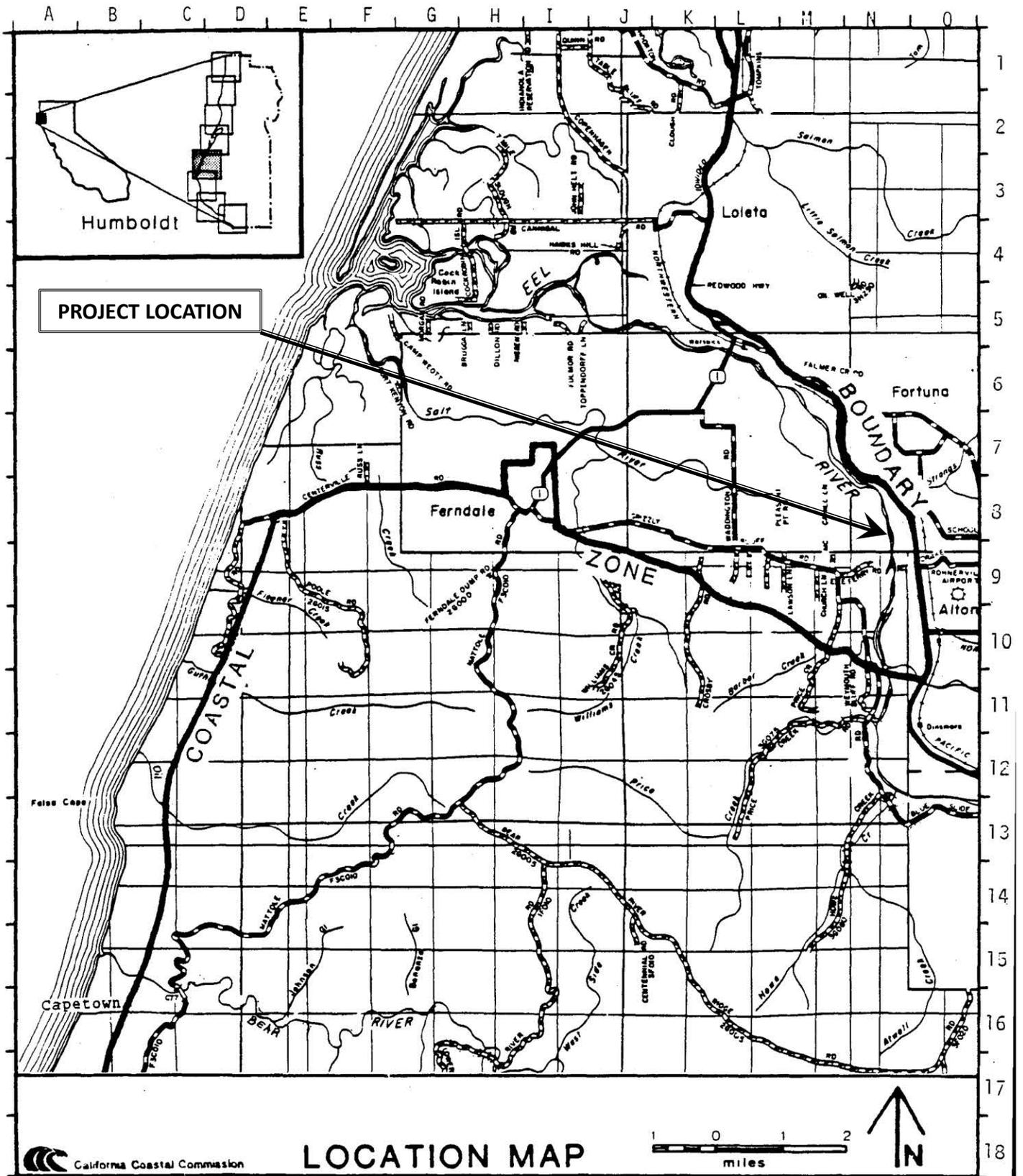
L. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The County of Humboldt, as the lead agency, adopted a Programmatic Environmental Impact Report (PEIR) to describe and analyze the potential environmental effects resulting from the gravel extraction operations in the lower Eel and lower Van Duzen Rivers in 1992.

Section 13906 of the Commission's administrative regulations requires Coastal Commission approval of a coastal development permit application to be supported by findings showing that the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d) (2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would significantly lessen any significant effect that the activity may have on the environment.

The Coastal Commission's review and analysis of CDP applications has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. As a responsible agency, the Commission conducted its analysis of the potential impacts of the proposed development that the Commission is authorized by the Coastal Act to review. The Commission has reviewed the relevant coastal resource issues associated with the proposed project and has identified appropriate and necessary conditions to assure protection of coastal resources consistent with the requirements of the Coastal Act. The staff report discusses the relevant coastal resource issues with the proposed development. All public comments received to date have been addressed in the staff report, including staff's oral presentation and the findings adopted by the Commission. The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. As conditioned, there are no additional feasible

alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse environmental effect that approval of the proposed project, as modified, would have on the environment. Therefore, the Commission finds that the proposed repair and maintenance project can be found to be consistent with the Coastal Act and CEQA Section 21080.5(d)(2)(A).



California Coastal Commission

LOCATION MAP



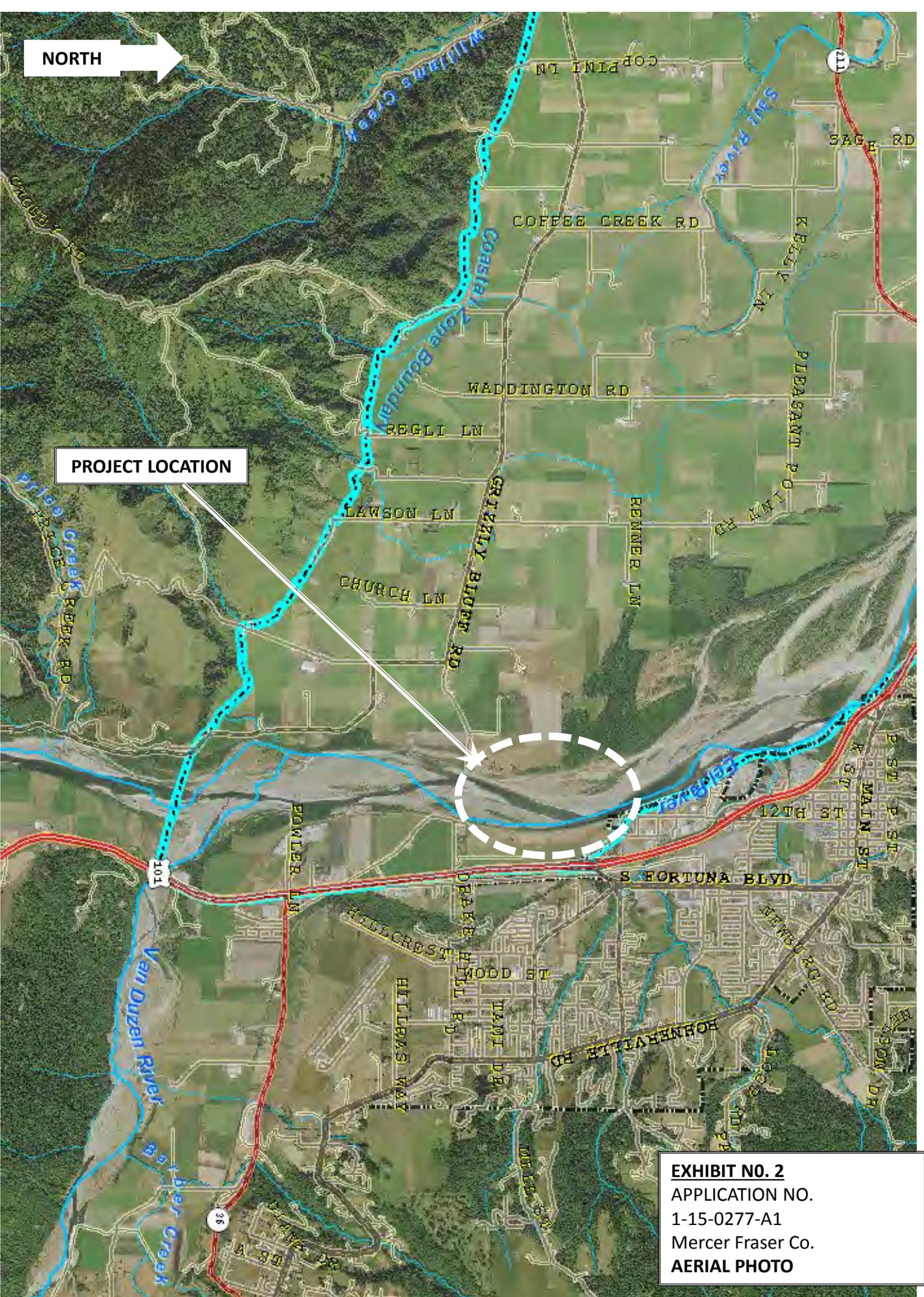
County of Humboldt

EXHIBIT NO. 1
 APPLICATION NO.
 1-15-0277-A1
 Mercer Fraser Co.
REGIONAL LOCATION MAP

NORTH

PROJECT LOCATION

EXHIBIT NO. 2
APPLICATION NO.
1-15-0277-A1
Mercer Fraser Co.
AERIAL PHOTO





United States Department of the Interior



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In Reply Refer To:
AFWC-15B0075-15F0204

SEP 03 2015

Ms. Jane M. Hicks
Chief, Regulatory Division
San Francisco District, U.S. Army Corps of Engineers
1455 Market Street
San Francisco, California 94103-1398

Subject: Formal Consultation on the Proposed Gravel Operations in Humboldt County, California: Letter of Permission, Procedure 2015 (Corps File: 2007-00857N; LOP 2015-1)

This is the Fish and Wildlife Service's (Service) biological opinion based on our review of proposed gravel operations in Humboldt County, California, and its effect on the federally threatened Pacific Coast population of the western snowy plover (*Charadrius nivosus nivosus*; plover), federally threatened western yellow-billed cuckoo (*Coccyzus americanus*; cuckoo), and designated and proposed critical habitat for the plover and cuckoo (respectively), in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Your April 30, 2015, request for formal consultation was received by our office electronically, on June 3, 2015. The hard copy mailed to our office was never received. The U.S. Army Corps of Engineers (Corps) has determined that proposed gravel extraction on the Eel River may affect the plover and designated plover critical habitat. The Corps has determined that gravel extraction in Humboldt County is not likely to adversely affect the cuckoo, and its proposed critical habitat (Corps, April 30, 2015). The Corps did consider direct and indirect effects to the federally endangered tidewater goby (*Eucyclogobius newberryi*), and determined that implementation of proposed gravel operations would have no effect on the goby and its designated critical habitat (LACO Associates 2015).

This biological opinion (BO) is based on information provided in the Corps', April 30, 2015, letter requesting consultation, the Public Notice for Gravel Mining Activities within Humboldt County (Public Notice 2007-00857N), the biological assessment (LACO Associates, 2015), and other sources of information from our files and literature. A file of this consultation is available at the Arcata Fish and Wildlife Office, located at the letterhead address.

Gravel extraction has occurred within the Eel River basin and other river systems within Humboldt County for decades, and has been regulated under a variety of programs, including the

Section 404 permit process of the Clean Water Act, and the Rivers and Harbors Act, both administered by the Corps. The Corps is the lead Federal action agency for purposes of fulfilling Section 7 obligations under the Act for this project. The plover has been known to use the project area since the early 1990s (J. Sterling in Harris, 1991). Subsequent to plovers being documented on selected gravel bars within the Eel River watershed in 1996 (Tuttle et al. 1997), the Service provided technical assistance to the Corps regarding potential effects of gravel extraction on plovers.

Consultation History

The Corps initiated a request for formal Section 7 consultation in April 2004, for gravel extraction on the lower Eel River for activities under Letter of Permission 2004-1 (LOP 2004), and an individual permit for Eureka Ready Mix. The Service issued a non-jeopardy BO for the batched requested permits on September 6, 2005 (Service file no. 8-14-2005-2730). Following the expiration of LOP 2004, we issued a non-jeopardy BO for LOP 2009 on November 4, 2009 (Service file no. 8-14-2009-3689, 81331-2009-F-0154 LOP-2009). The BO for LOP 2009 expired in 2014.

The Service designated critical habitat for the plover on the lower Eel River, within the project area on September 29, 2005 (70 FR 56970). Due to a legal challenge, the Service re-designated critical habitat for the plover in 2012; reaffirming previous designations within the LOP project area (77 FR 36728). In addition, the cuckoo was listed October 3, 2014, as threatened (79 FR 59992), and critical habitat was proposed (79 FR 67154).

The western yellow-billed cuckoo was listed as a distinct population segment on October 3, 2014 (79 FR 59992). Critical habitat for the cuckoo was proposed December 2, 2014 (79 FR 71373).

BIOLOGICAL OPINION

1.0 DESCRIPTION OF THE PROPOSED ACTION

1.1 Project Description

We incorporate the proposed action here by reference, as it is stated in the Public Notice for Gravel Mining Activities within Humboldt County, dated March 3, 2015 (Public Notice 2007-00857N). The proposed project (LOP 2015) is a modification of LOP 2009, and, as it relates to the plover and cuckoo, is consistent with earlier mining operations authorized under LOP 2009, and its extensions. The purpose of the LOP is to standardize reporting procedures and streamline the Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act authorizations for discharge of dredged and fill materials associated with gravel mining on the unvegetated gravel bars of the rivers and streams of Humboldt County. Gravel may be extracted by the following excavation techniques: horseshoe skim, narrow skim, inboard skim, traditional skim, wet floodplain pit, dry floodplain pit, oxbows, alcoves, secondary channel skims, migration channel excavation, and high terrace skim (Winzler and Kelly 2009, LACO Associates

2015). Each technique is described in the biological assessment (Winzler and Kelly 2009, LACO Associates 2015). The footprint of actual extraction will vary by year depending on aggregation of material from preceding high flows. Extraction is to occur on the Mattole, Eel, Mad, and Trinity river systems within Humboldt County.

Pre-extraction activities, and material storage and processing may occur outside of the Corps' section 404 Clean Water Act jurisdiction; however those actions are directly related to gravel extraction from adjacent gravel bars within their jurisdiction. As a result, the effects of pre-extraction activities, and material storage and processing must be considered under the Act as interrelated or interdependent to the Federal action (50 CFR 402). Processing areas are identified in the Biological Assessment (Winzler and Kelly 2009, LACO Associates 2015).

1.1.1 Conservation Measures

The following measures, as stated in the proposed LOP 2015, will be implemented during gravel extraction each year to avoid or minimize potential impacts to the Pacific Coast western snowy plover and western yellow-billed cuckoo:

Pacific Coast western snowy plover (lower Eel River, and if detected on other systems)

1. Operators will attempt to initiate all extraction related activities after September 15 each year to avoid direct effects to plovers. However, if this is not feasible, gravel extraction will not occur prior to July 22.
2. All pre-extraction activities within plover habitat that occur between March 1 and August 22 require a Service-approved surveyor (authorized under section 10(a)(1)(A) of the Act). Plover surveyors will have the authority to direct the activities of workers, and if necessary, halt pre-extraction activities until technical assistance is received from the Service regarding avoidance or minimization measures. All reference to plover surveys will be conducted by a Service-approved surveyor.
3. Plover surveys will be conducted prior to initiation of extraction activities to determine if a plover, nest, or brood is present within 1,000 feet of the extraction site (refer to item 3 below). If an active plover nest is present within 1,000 feet of a planned extraction site, extraction activities will not commence until the nest has hatched or the fate of the nest has been determined.
4. Between July 22 and September 15, extraction may commence within plover habitat after three (3) consecutive days of surveys have determined that no adult plovers, broods, chicks, or nests are within 1,000 feet of the proposed extraction site. The three consecutive days of surveys will not begin before July 20th, and will only occur on days of acceptable weather conditions (generally in the mornings and not during periods of low light, high winds or when heat waves distort observations).
5. Between July 22 and September 15, all areas containing suitable habitat within 1,000 feet of extraction sites will be surveyed for plovers and nests to determine the likelihood of

chicks, juveniles and adults moving into areas where they could be affected by operations.

6. Between July 21 and September 15, operators of extraction sites that have plovers or nests within 1,000 feet of extraction sites will ensure the following: (1) daily plover surveys are conducted to determine the status of plovers and nests, (2) that plovers move to a distance greater than 1,000 feet away before commencing operations, and (3) training is provided to all extraction site personnel by a Service-approved biologist, for all extraction site personnel regarding identification of adult and immature plovers, plover behavior, and implementation of the conservation measures in the BO and the measures contained in LOP 2015.
7. Between July 21 and September 15, night driving (0.5 hour after sunset to 0.5 hour before sunrise) will be prohibited within suitable plover habitat. Daytime driving will be limited to only those trips essential to complete authorized work. Parking, staging, and maintenance of vehicles and equipment will not occur in areas of suitable plover habitat. The first three (3) vehicle trips on haul roads in suitable habitat each day shall not exceed 10 mph to allow plovers and chicks to vacate roads.
8. Access roads owned, controlled, or used by commercial gravel operators will be gated and locked when no active extraction and hauling is occurring (including at night) in order to deter recreational vehicle impacts to plovers on gravel bars.
9. Before September 15, the Corps will not participate in on-site pre-extraction reviews until the Service-approved surveyor provides the Corps written or verbal confirmation that pre-extraction surveys have been completed in accordance with this BO and LOP 2015. In addition, if a Service representative is not on-site at the pre-extraction review, the surveyor must contact the Service via a call (voicemail message is okay) or e-mail notifying them that the survey was conducted.
10. All operators conducting surveys within suitable plover habitat will submit annual plover survey reports to the Arcata Fish and Wildlife Office by November 15 of each year gravel extraction activities occur.

Western yellow-billed cuckoo

1. Service-approved survey protocol will be used to conduct cuckoo surveys (i.e., Halterman, M., M. J. Johnson, and J. A. Holmes 2011; *A Natural History Summary and Survey Protocol for the Western Yellow-billed Cuckoo Population*, see Appendix J). In addition, surveys will be conducted by a Service-approved surveyor (authorized under section 10(a)(1)(A) of the Act).
2. Survey call-stations would only be established if an extraction area or haul route was proposed within 1,000 feet of suitable habitat during the cuckoo's breeding season (May 1-September 15).

3. Identification of suitable cuckoo habitat and cuckoo survey locations will be determined in consultation with the Service.
4. Cuckoo detections, either during protocol surveys or incidentally, will be reported to the Service within 48 hours of discovery.
5. Suitable habitat for the cuckoo will not be cleared, cut, or removed, except for hand pruning of overhanging vegetation (stems smaller than 6 inches in diameter) along existing haul routes. Any other vegetation removal requiring equipment or power tools will be limited to outside the cuckoo's breeding season (i.e., limited to the period September 15-April 30).
6. All operators conducting surveys within cuckoo habitat will submit annual cuckoo survey reports to the Arcata Fish and Wildlife Office by November 15 of each year gravel extraction activities occur.

1.2 Action Area

The action area is defined at 50 CFR 402.02 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the purposes of this consultation, the Service recognizes the action area to include Humboldt County, California, including the lower Eel River. This analysis area enables the Corps and the Service to fully understand the cumulative, interrelated, and interdependent effects of the action within an appropriate landscape context.

1.3 Time-frame of Biological Opinion

This BO is valid through the life of LOP 2015, which will expire December 31, 2025.

2.0 STATUS OF THE SPECIES:

2.1 Legal Status

Pacific Coast western snowy plover

The Pacific Coast population of the western snowy plover was federally listed as threatened on March 5, 1993. In August 2002, we received a petition from the Surf Ocean Beach Commission of Lompoc to delist the Pacific Coast western snowy plover population. The City of Morro Bay submitted substantially the same petition dated May 30, 2003. On March 22, 2004, we published a notice that the petition presented substantial information to indicate that delisting may be warranted (71 FR 20607). We issued a 12-month finding on April 21, 2006, reaffirming the plover's listed status as a threatened Distinct Population Segment (50 FR 20607). A 5-year status review of the population under sections 4(b)(3)(B) and 4(c)(2) of the Act was completed on June 6, 2006. In California, the plover has been classified by the California Department of Fish and Wildlife as a "species of special concern" throughout all of California since 1978 (California Natural Diversity Database 2001).

2003: Single bird probably heard on Worswick Bar on 29 May 2003 (McAllister 2010). A single bird heard on Holmes Flat in late June (McAllister 2010).

2005: Beginning of formal YBC surveys in the LER, one bird seen, heard and recorded at Sandy Prairie on June 6, 2005 (McAllister 2010).

2006: Up to 3 birds recorded on Cock Robin Island, Roper's Island, with probably breeding pair seen with one juvenile (McAllister 2010).

2007: One adult seen and probable juvenile heard on Cock Robin Island (McAllister 2010).

2008: Two adults recorded with one apparent juvenile on Cock Robin Island (McAllister 2010).

2009: No birds detected on the lower Eel River (McAllister 2010).

2010: Up to 3 birds recorded on Cock Robin Island from July 12, 2010 and July 17, 2010. A single incidental report of a calling bird on Singley Bar on July 23, 2010 (McAllister, 2010).

2012: Incidental report of a calling bird heard on Cock Robin Island on July 9, 2012 (Rob Fowler, Humboldt and Del Norte counties sub-regional editor of North American Birds, pers. comm.).

2013: Up to 2 adults recorded from May 31, 2013 to July 18, 2013, from the lower Salt River (McAllister, 2013).

In addition to the above records, there was a cuckoo sighting, possibly nesting, in 2015 on the lower Smith River in Del Norte County, north of the project area (Schmidt, *in litt.* 2015).

4.0 EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat that will be added to the environmental baseline, along with the effects of other activities that are interrelated and interdependent with the action. Interrelated actions are those that are part of the larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonable certain to occur.

The proposed action has the potential to result in adverse effects to the plover through habitat modification, disturbance, direct mortality, and impairing recovery. No adverse effects to the cuckoo are expected. The conservation measures described in the *Description of the Proposed*

Action are expected to avoid and minimize adverse effects to the plover and avoid adverse effects to the cuckoo.

4.1 Pacific Coast Western Snowy Plover

4.1.1 Habitat Modification

Modification of suitable plover nesting habitat will occur on the gravel bars annually as a result of gravel operations. Gravel mining activities are likely to alter the topography of the natural gravel bars. An estimated 1,190 acres of gravel bars could be modified during each year of the LOP period. Mad River Biologists (2002) estimated that 806 acres of suitable plover nesting habitat could be modified annually. However, these effects are expected to be temporary, as winter flows should replenish gravel that was extracted during the non-winter months.

Proposed gravel mining activities will modify suitable plover nesting habitat and could put chicks at increased risk of predation. Plovers are visually oriented and rely on their eyesight to detect food items and potential predators. Proposed gravel extraction activities that physically modify suitable habitat by creating flat or gently sloped bars, and removal or maintenance of areas devoid of vegetation and debris, have been considered by some as a benefit to nesting plovers (Mad River Biologists 2002). Conversely, plover chicks are known to hide near debris items or vegetation when threatened. As a result, removing debris or herbaceous vegetation through gravel extraction could put chicks at an increased risk to predation (Mad River Biologists 2002).

Scraping, as an extraction methodology, could modify gravel bars and enhance nesting habitat by providing low gradient, topographically uniform bars that lack debris and dense vegetation (Mad River Biologists 2002). However, at some locations, extraction has resulted in low terraces, or shelves, that break up the bar's topography and consequently restrict a plovers' field of view. These 'terraces' could restrict an incubating plover's ability to detect an approaching mammalian predator (Mad River Biologists 2002).

Trenching, as an extraction method could also modify suitable habitat. After gravel extraction, any berms remaining are breached and a trench is connected to the river. Trenches may not be filled to assist in fish passage. Trenching could cause injury or death to plovers as described in section 4.1.3 below. However, trenches should not impair the plovers' ability to detect predators or food items because neither plovers nor their predators are likely to use the trenches. On an annual basis, trenches are likely to be filled in with gravel after the breeding season by over-winter flows. Trenching potentially affects less surface area than traditional skimming methods, thereby reducing the amount of habitat disturbed. This is especially true when a low water year follows extraction, and gravel recruitment is therefore low.

Plovers have used mined and unmined gravel bars habitats with no apparent difference in nest or chick survivorship (Mad River Biologists 2001a). Plover nesting was concentrated on the upper gravel bars near the Van Duzen River in the late 1990's and early 2000. Subsequently, there has been a shift to the Worswick Bar (Fernbridge) and unmined gravel bars downstream, where gravel mining does not occur, or occurs infrequently (Colwell et al. 2004; Colwell et al. 2010).

The cause for the shift in downstream nesting is unknown, but does not appear to be related to gravel extraction (Mad River Biologists 2001a). Therefore, it does not appear that gravel mining adversely affects plover habitat, based on the observation that plovers have continued to nest on substrates previously mined for sand and gravel resources.

In summary, we do not anticipate that plovers will be adversely affected due to habitat modification for the following reasons: (1) plovers along the lower Eel River have nested successfully in areas mined for gravel (Mad River Biologists 2001a; Colwell et al. 2004; Colwell et al. 2009); (2) gravel extraction does not appear to adversely affect nesting habitat or success downstream along the lower Eel River; and (3) during all but a low water year, it is expected that water levels during the winter will redeposit gravel throughout the lower Eel River region used by plovers.

4.1.2 Disturbance

The proposed activities will require use of personnel, heavy equipment, and vehicles, all of which can introduce high levels of noise and human activity into the environment. Disturbance from human presence or activities during the breeding season may potentially disrupt the species' essential breeding behaviors by causing: (1) abandonment of the breeding effort by failure to initiate nesting or to complete incubation; (2) separation of adults from their broods; and (3) deterring adults and broods from using favored foraging areas. The potential effects of disturbance will depend on the frequency, timing, location, and intensity of activities.

Disturbance to plovers could result from noise generated by extraction activities such as excavators, bulldozers etc. In addition, noise from rock crushing activities, gravel processing plants and pre-extraction site visits and pit delineation could disrupt plover nesting or foraging activities. The average existing ambient sound level over the lower Eel River portion of the action area ranges from 40-65 dBA (Humboldt County 1992; Tuttle et al. 1997). Noise levels include substantial input from the adjacent Highway 101 corridor. This ambient noise level is on the threshold between "very low" and "low" according to noise guidance developed by the Arcata Fish and Wildlife Office (Service 2006). Gravel extraction and operational noise from gravel processing (which was added to the existing Highway 101 traffic noise) is expected to increase the noise level within the Eel River portion of the action area to 66-90 dBA (Humboldt County 1992; Tuttle et al. 1997; Pacific Affiliates 1997). The Service considers this noise level to be "moderate" to "high" (Service 2006). The highest readings (at Worswick Bar, during crushing operations) are not expected to exceed 90 dBA and are expected to be less than 20-25 dBA above ambient levels. This level of noise disturbance may not result in adverse effects to plovers at potential nesting locations due to the close proximity of Highway 101 and the distance nests would occur to the crusher location. Crushers and gravel processing occurs out of the river channel in excess of 1,000 feet from suitable plover nesting and foraging habitat.

Nesting plovers are not expected to be adversely affected by gravel mining activity, provided the activity occurs greater than 1,000 feet from the nest. For example, an incubating plover showed no apparent sign of distress when a bulldozer was operating approximately 1,000 feet from the nest on an Eel River gravel bar (Mad River Biologists 2002). Pre-extraction activities (e.g. site visits, marking extraction sites, conducting transects and cross-sections), however, may cause

temporary disturbance to nesting plovers. Incubating plovers may leave a nest, exposing the nest to predation and climate (e.g., rain, wind, sun). Similarly, temporary disturbance from pre-extraction activities may separate brooding adults from chicks, exposing chicks to predation and weather.

The proposed action includes conservation measures to reduce impacts. Among other measures, operators must ensure that extraction activities do not occur when plovers or nests are within 1,000 feet of an extraction site. In addition, a Service-approved plover surveyor will survey proposed gravel extraction sites prior to gravel operations. If nesting plovers are found, operations will not begin until the nest has fledged or failed. Because of the cryptic nature of plover nests, however, active nests could be missed or plovers could wander into a work area after surveys are complete. The exact number of plovers that may be adversely affected by the proposed action is difficult to determine as the number of plovers present in the action area is expected to vary from year to year. For example, 27 plovers were detected in the Eel River area in 2004; however, only 3 plovers were present in that area in 2009. Therefore, it is difficult to determine the precise number of plovers and chicks likely to be present during pre-extraction and extraction activities throughout the life of LOP 2015.

4.1.3 Injury or Mortality

The recovery plan (Service 2007) summarizes potential ways activities may cause mortality of plovers. Plover chicks and eggs are highly cryptic, making them difficult to see, even at close range. Many species that predate on plover chicks are visual predators. When in the presence of danger, plover chicks tend to 'freeze' in place and rely on their cryptic plumage for safety from these visual predators. Pedestrians, vehicles, and heavy equipment may crush highly cryptic eggs or chicks and flush adult plovers off their nests. Separation of plover adults from their nests and broods can cause mortality through exposure of eggs or chicks to heat, cold, blowing sand, and/or predators. Repeated disturbances may cause plovers to nest in marginal habitat where their chances of reproductive success are reduced.

Vehicle and heavy equipment traffic is a threat to the survival of plover eggs and chicks. Vehicles and heavy equipment could crush adults, chicks, and eggs; or could flush adults off of nests, exposing chicks or eggs to weather and predators. Circumstantial evidence indicates that vehicles crushed nests at Clam Beach/Little River in 1998 and 2002 (Tuttle, *in litt.* 2002). In addition, a vehicle crushed an active nest on the Eel River gravel bar in 2002 (McAllister, *in litt.* 2002). Furthermore, vehicles crushed adult plovers at Vandenberg Air Force Base and Oceano Dunes State Vehicular Recreation Area in 1994 and 1998, respectively. Moreover, a plover chick was stepped on during the 1998 nesting season by a pedestrian at Oceano Dunes State Vehicular Recreation Area, in a portion of the park closed to vehicle use (Service 2009). Finally, a wintering plover was struck and killed by an ATV on Centerville Beach in 2009 (Colwell et al. 2009). To reduce the potential for vehicles crushing plovers or their eggs or flushing adults off of nests, gravel operators on the lower Eel River will gate access to the gravel bars when gravel is not actively being extracted (Conservation Measure 8). In addition, Conservation Measure 7 is designed to reduce the potential for vehicles directly related to gravel mining from impacting plovers.

Injury or mortality to plovers could also occur from trenching, as an extraction method, as trenches could entrap flightless chicks. Trenches may be as deep as the reach of the equipment. If a flightless chick becomes entrapped in a trench, it could be more vulnerable to predation or may die due to starvation.

In addition, mortality of adults, chicks, and eggs may occur as a result of collisions with extraction equipment and/or workers. Plover eggs in the gravel bar environment are especially difficult to detect. It is possible that chicks from an undetected nest or adults may enter the extraction areas during extraction and after daily surveys. Undetected nests, chicks, or adults in the extraction areas will be highly vulnerable to injury or mortality from crushing or entrapment.

The likelihood of injury or mortality will be minimized by the conservation measures described in the project description, Section 1.1.1 of this BO. Among other measures, operators must ensure that extraction activities do not occur when plovers or nests are within 1,000 feet of an extraction site. In addition, a Service-approved plover surveyor will survey proposed gravel extraction sites prior to gravel operations. If nesting plovers are found, operations will not begin until the nest has fledged or failed. Because of the cryptic nature of plover nests, however, active nests could be missed or plovers could wander into a work area after surveys are complete. The exact number of plovers that may be adversely affected by the proposed action is difficult to determine as the number of plovers present in the action area is expected to vary from year to year. Therefore, it is difficult to determine the precise number of plovers and chicks likely to be present during pre-extraction and extraction activities throughout the life of LOP 2015.

4.1.4 Recovery

The Eel River is identified in the recovery plan as a breeding location important for recovery. However, the proposed action is not likely prevent achievement of the recovery plan's population target of 40 breeding adults because the likelihood of adverse effects will be minimized through implementation of the conservation measures identified in the project description.

In addition, the recovery plan identifies 12 breeding sites in RU2 that are important for recovery (Service 2007). Nesting has only occurred consistently at four of these locations (Clam Beach/Little River, Eel River Wildlife Area, Humboldt Bay south spit, and Eel River gravel bars). Intermittent nesting has occurred at other sites, including Big and Stone Lagoons, Gold Bluffs Beach, and Manchester and MacKerricher State Parks. As a result of crypsis provided to plover eggs and chicks from gravel cobble, the Eel River gravel bars have been the most productive habitat for nesting and fledging success (Herman and Colwell 2015).

The proposed action is not expected to eliminate plover use of the Eel River gravel bars. Therefore, it is unlikely that the proposed action will influence the long-term distribution of breeding plovers along the Eel River or within RU2. Furthermore, the conservation measures implemented as part of the project will avoid and minimize any potential for adverse effects to plovers.

4.1.5 Effects on Designated Critical Habitat

Modification of plover critical habitat will occur on the gravel bars annually as a result of gravel operations. Gravel mining activities are likely to alter the topography of the natural gravel bars. An estimated 1,349 acres of designated plover critical habitat could be modified during each year LOP 2015 is in effect. Mad River Biologists' 2002 estimate of 806 acres of suitable nesting habitat, and an unspecified amount of critical habitat could potentially be modified annually. The amount of area potentially modified will vary by year depending on river flows and the amount of gravel deposited. Extraction method will also affect surface area modified; eg. trenches generally affecting less surface area than skimming.

We do not anticipate that designated plover critical habitat or the PCEs will be adversely affected as a result of implementing the proposed action for the following reasons: (1) studies indicate that plovers along the lower Eel River gravel bars, including the proposed project area, do not show a nest site preference based on cobble size (Mad River Biologists 2001a; Winzler and Kelly 2009; LACO Associates 2015); (2) during all but a low water year, it is expected that high water levels during the winter will redeposit gravel throughout the action area; and (3) river scouring during winter storms and flooding provide the dynamic process needed to maintain the PCEs. Therefore, the plover's designated critical habitat on the lower Eel River is not expected to be adversely affected by the proposed action. Although temporary habitat modification may occur if winter flows do not replace extracted cobble. However, we anticipate that the function of the habitat will remain suitable for plover nesting (Mad River Biologists 2001a).

4.2 Western Yellow-billed Cuckoo

4.2.1 Habitat Modification

The proposed project is not expected to modify cuckoo habitat; therefore, no adverse effects to cuckoo habitat is expected. Furthermore, gravel extraction activities are outside of the areas where cuckoos have been detected. Protective measures prevent habitat modification or removal (i.e. 1,000-foot buffer, minimal pruning prior to onset of nesting).

4.2.2 Disturbance

Some evidence exists that traffic noise can affect those bird species which vocalize at low frequencies, such as the cuckoo (Goodwin and Shriver 2010). However, since the action area at the lower Eel River parallels the Highway 101 corridor, it could prove difficult to separate traffic noise impacts to cuckoo and gravel operational noise impacts. Furthermore, cuckoos have not been detected within the areas proposed for gravel extraction. As a result, they would not be exposed to elevated noise levels. If cuckoos are found at sites other than the Eel River, then implementation of the 1,000-foot buffer protective measure should be adequate to prevent disturbance.

4.2.3 Injury and Mortality

Because no suitable habitat for cuckoos is expected to be modified or removed, and no cuckoos have been detected within the areas proposed for gravel extraction, no injury or mortality to cuckoos is expected.

4.2.4 Recovery

A recovery plan has not been developed for the cuckoo. Therefore, recovery criteria have not been established.

4.2.5 Proposed Critical Habitat

Critical habitat has not been designated for the cuckoo. Gravel extraction does not occur within suitable cuckoo habitat; however, cuckoo habitat may potentially be adjacent to areas of access and gravel storage and processing.

We anticipate no impacts to proposed critical habitat for the western yellow-billed cuckoo for the following reasons: 1) gravel extraction occurs outside of cuckoo habitat; 2) there are no known cuckoo detections on river segments where cuckoos have been detected, although potential, unsurveyed habitat does occur in some areas; 3) and the 1,000-foot protective measure is expected to be sufficient to prevent degradation of habitat function due to disturbance.

5.0 CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The majority of the suitable nesting habitat along the Eel River is either under private ownership, or under the management of the California State Lands Commission.

5.1 Plover

Recreational use, specifically operation of recreational or other vehicles, may have resulted in plover nest loss, through crushing, on the gravel bars (Colwell et al. 2003). Furthermore, recreational vehicle use has the potential to affect nesting plovers in the future. Besides the potential for eggs or birds getting crushed, recreationists deposit trash on the gravel bars, potentially attracting corvids and other nest and chick predators. Access to Humboldt County's Worswick bar has been gated, and berms or other barriers have been installed during the summer months in an attempt to deter vehicle access from the County's extraction and storage facility. However, vehicles continue to access the gravel bars from other sites, such as private land across from the Worswick bar. Implementation of conservation measure 8 in the project description is expected to reduce the potential for non-gravel mining vehicles to access the gravel bars, and therefore reduce the potential for vehicle strikes on plover nests, chicks, and adults.

5.2 Cuckoo

There is a potential for recreational vehicles to disturb breeding and nesting cuckoos. The conservation measures in the project description for the cuckoo should avoid or reduce the potential for disturbance likely to result from implementation of the project.

6.0 CONCLUSION

Pacific Coast western snowy plover

After reviewing the current status of the plover, the environmental baseline for the action area, the effects of the proposed gravel operations on the lower Eel River gravel bars in Humboldt County, and the cumulative effects, it is the Service's biological opinion that the gravel operations, as proposed (including full implementation of conservation measures), are not likely to jeopardize the continued existence of the plover or adversely modify designated plover critical habitat.

The Service reached this conclusion based on the following factors:

1. Conservation measures included in the proposed action will avoid the likelihood of injury, or mortality of adult plovers, eggs and chicks.
2. Attainment of the recovery plan's management goals for the Eel River and RU2 will not be compromised by the proposed action.
3. No permanent impacts to plover habitat or designated critical habitat are expected
4. The dynamic nature of the Eel River will annually (in most cases) maintain habitat with gravel deposits, and provide scouring that maintain the PCEs of designated critical habitat.

Western yellow-billed cuckoo:

After reviewing the current status of the cuckoo, the environmental baseline for the action area, the effects of the proposed gravel operations within Humboldt County, and the cumulative effects, it is the Service's biological opinion that gravel operations, as proposed (including full implementation of conservation measures), are not likely to jeopardize the continued existence of the cuckoo or adversely modify proposed critical habitat, as no adverse effects to cuckoo are expected.

INCIDENTAL TAKE STATEMENT

1.0 INTRODUCTION

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat

modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under that Act provided that such taking is in compliance with this Incidental Take Statement.

The measure described below is non-discretionary, and must be undertaken by the Corps so that it becomes a binding condition of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fail to assume and implement the terms and conditions or (2) fail to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CFR §402.12(I)(3)].

2.0 AMOUNT OR EXTENT OF TAKE:

Western Snowy Plover

Deriving estimates for the number of plovers within the action area that might be incidentally taken is difficult to determine, because they are small, cryptically-colored birds that are difficult to detect in their natural habitats. Furthermore, the number of plovers in the action area has varied. Consequently, anticipating the precise number of plovers that may be taken as a result of the proposed action is difficult.

Although we are unable to determine the precise number of adults, eggs, or chicks that might be taken, we estimate that 1,349 acres of plover habitat, which corresponds to designated critical habitat on the lower Eel River, might be affected by the proposed gravel extraction activities; albeit over several years of the project. Furthermore, based on the lack of breeding plovers in recent years (i.e., since 2010) the number of adults, eggs, and chicks that could be incidentally taken is expected to be low, no more than 1 pair and 3 eggs. However, there is potential for plovers to re-establish nesting along the lower Eel River, or elsewhere within the LOP area, at their 2006 levels or greater.

Western Yellow-Billed Cuckoo

We believe that the avoidance measures provided in LOP 2015 will prevent the incidental take of the cuckoo and avoid adverse effects to proposed cuckoo critical habitat. As site-specific information becomes available and observations of cuckoo nesting occur, the avoidance measures may be modified. However, we believe the measures are sufficient to avoid take.

Therefore, no incidental take is afforded for potential or actual impacts to the cuckoo. As a result, there are no Reasonable and Prudent Measures to be implemented.

3.0 EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the plover. No incidental take is expected for the western yellow-billed cuckoo, provided that the avoidance measures presented in LOP 2015 are fully implemented. Consequently, the following Reasonable and Prudent Measures and Terms and Conditions apply only to the plover. The Reporting Requirements do, however, apply to the cuckoo as well as the plover.

4.0 REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measure is necessary or appropriate to minimize impacts of incidental take of plovers:

Minimize gravel mining related impacts to adult plovers and their nests, chicks, and eggs.

5.0 TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measure described above and outline required reporting/monitoring requirements. The reasonable and prudent measure, with its implementing terms and conditions, is designed to minimize the impact of incidental take that might otherwise result from the proposed action. We analyzed the potential effects of the project with the understanding that the Conservation Measures described as part of the project description would be fully implemented. Therefore, the following terms and conditions are non-discretionary, and must be implemented along with measures provided in the project description.

1. To protect flightless chicks, an exclusionary fence will be installed around all trenches to minimize the potential for chick entrapment. The fencing will be installed within 24 hours of digging the trench. The fencing will be a silt fence fabric not less than 24 inches tall. The fabric will be keyed-in to the gravel bar so that no gaps greater than 0.5 inch exist below the fabric. The fabric will extend across both sides of the entire trench. The exclusionary fencing will remain in place until September 15 or until no plovers are detected on the gravel bars within the action area.
2. Large woody debris or other salmonid habitat restoration structures will not be incorporated on the Worswick Bar. Elevated structures can be used by plover predators as perch sites. If large wood debris washes up on the Worswick Bar without human intervention (i.e. large woody debris is deposited as a result of natural river flows rather than being dragged or otherwise placed by humans), it should be left in place. If the large woody debris needs to be moved, it will be done outside of the plover breeding season, and in coordination with the Arcata FWO.

3. All trash and food scraps brought into the action area will be removed daily and secured in predator-proof receptacles. Feeding wildlife, including corvids and gulls, will be prohibited.
4. The Corps will ensure that gravel operators are aware of the plover Conservation measures described in the project description, and terms and conditions in this biological opinion. In addition, the Corps shall make periodic checks to ensure that all of the conservation measures, and therefore the terms and conditions of this biological opinion are being adhered to. The Corps shall note the date and time of compliance checks, the situation under which the check was completed (eg. whether or not extraction activities were ongoing at the time of the compliance check, the Corps was on a site visit, etc.), the findings of the compliance check, and any corrective action taken by the Corps and/or operator. A minimum of 3 compliance checks shall be conducted annually throughout the LOP period, beginning the first extraction year following issuance of this BO.
5. Prior to January 31st of each year for the duration of project, the Corps shall provide the Service with an annual compiled report of gravel extraction activities on the lower Eel River gravel bars (not individual reports from gravel operators). The report shall discuss and summarize plover survey results from the previous extraction-year, including, but not limited to, adult plover use of the project area, nest numbers and locations, nest fates, brood activity, and reproductive success. The report shall include a complete list of survey dates and related pre-extraction activity, weather conditions, names of plover surveyors, and survey results (even survey results when no plovers were detected). The result of the Corps' compliance checks (term and condition 3 above) shall be included in the annual report. The first report shall be submitted by January 31st of 2016 if gravel extraction activities occurred during 2015.

The Service believes that no more than one pair of adult plovers, and one nest containing up to three eggs, will be incidentally taken as a result of harassment during the LOP period. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measure provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measure.

6.0 REPORTING REQUIREMENTS

Upon locating a dead or injured plover, initial notification must be made to the Service's Office of Law Enforcement in Sacramento, California at (916) 414-6400 and the Field Supervisor of the Arcata Fish and Wildlife Office at (707) 822-7201 immediately, and in writing within three (3) working days. Notification must include the date, time, and location of the carcass; cause of death or injury, if known; and any other pertinent information. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state for later analysis of cause of death. The finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily

disturbed, unless to remove it from the path of further harm or destruction. Photographs are encouraged. Should any treated listed species survive, the Service should be contacted regarding the disposition of the animal. In the case of take or suspected take of western snowy plovers not exempted in this biological opinion, the Arcata Fish and Wildlife Office and the Division of Law Enforcement shall be notified within 24 hours.

7.0 COORDINATION OF INCIDENTAL TAKE WITH OTHER LAWS, REGULATIONS AND POLICIES

The Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), of the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Annually submit plover survey data to the Northern California plover RU2 working group.
2. Encourage gravel operators to restrict access to gravel bars by installing gates or other barriers, and providing signs asking for cooperation with access goals.
3. We encourage the Corps to assess the final designation of cuckoo critical habitat to determine if potential actions under LOP 2015, or implementation of it's authorities, may affect designated critical habitat.

To keep the Service informed of actions which minimize or avoid adverse effects or which benefit listed, proposed, or candidate species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in your June 24, 2009, request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner

that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this BO, please contact staff biologist Jim Watkins at (707) 882-7201.

Sincerely,



Bruce Bingham
Field Supervisor

cc:

California Coastal Commission, Eureka, CA (Attn: K. Sirkin)

U.S. Army Corps of Engineers, Eureka, CA (Attn: J. Mazza)