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## MEMORANDUM

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To: Community Venture Partners (attn.: Bob Silvestri) 73 Surrey Avenue  
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Date: February 15, 2016

SUBJECT: Review of Corte Madera Inn Final Environmental Impact Report: wetlands, wildlife, and aquatic habitat impacts

I reviewed Appendix H (biological data) and DEIR Section 4.3 (Biological Resources) regarding wetlands and aquatic habitats at the proposed project site. My findings regarding potential significant impacts and mitigation are summarized here, and discussed below.

**Summary:** The Corte Madera Inn “pond” habitat complex consists of three distinct elements that together support a persistent, important roost site of black-crowned night herons, contiguous with to foraging (feeding) habitat for black-crowned night herons and other wading birds. The Corte Madera Inn pond habitat complex comprises:

- (a) riparian upland non-native trees bordering the pond and fringing wetlands;
- (b) submerged perennial aquatic vegetation beds (SAV, or “vegetated shallows” – wigeongrass, *Ruppia maritima*) extending across the brackish pond bed, influenced by seasonably variable salinity (brackish to fresh-brackish salinity range);
- (c) perennial fringing brackish marsh composed of extensive to patchy saltgrass (*Distichlis spicata*) and alkali-bulrush (*Bolboschoenus maritimus*) wetland zones above the permanently submerged aquatic vegetation zone (*Ruppia maritima*).

Both the SAV beds and the fringing brackish marsh are jurisdictional waters of the United States and both qualify as jurisdictional “Special Aquatic Sites” subject to regulations of the Clean Water Act Section 404(b)(1): vegetated shallows (40 CFR §230.43), occupying most of the pond area, and wetlands (40 CFR §230.41). The types, status, and ecological functions of these jurisdictional waters are incorrectly and incompletely described in the DEIR., which erroneously identifies them as mere “other waters”. The DEIR omits analysis of potentially significant impacts to the important special aquatic site resources of SAV beds, which it incorrectly identifies as (nuisance) “algal blooms”.

The entire pond (SAV beds and lower marsh zones) provide *perennial* aquatic habitat for small fish that are the important aquatic prey base for wading birds (egrets and herons), which access fish at their shallow (wading depth) margins. The habitat structure and functions of adjacent perennial aquatic vegetated shallows and terrestrial/riparian roosting (tree) could not be mitigated by an off-site fresh-brackish *seasonal* non-tidal wetland mitigation bank, since (a) *seasonal* wetlands lack *perennial* shallow water fish habitat necessary for a rich prey base for egrets and herons, and (b) large tree or shrub roost habitat suitable for egrets or herons cannot practically be established in fresh-brackish seasonal wetland soils in diked baylands. Even if adequate off-site compensatory mitigation habitat

were successfully established in San Pablo Bay, it would not provide mitigation for loss of site-faithful heron roosts in the San Rafael Bay area wetlands. The loss of the Corte Madera Inn pond would be a potentially significant impact to an integrated aquatic, wetland, and riparian habitat complex, and wetland-dependent wildlife. This impact is not mitigated by a seasonal non-tidal wetland mitigation bank, regardless of the acreage ratio or credits transferred.

**1. Wetlands and other special aquatic sites.** The “biotic resources assessment” dated October 2013 claims that the pond at Corte Madera Inn is a “water of the United States but not a wetland”. This conclusion is inconsistent with previous evidence provided by Wetlands and Water Resources (2005) and previous biological assessments they cite, indicating that pond wetland-aquatic vegetation zonation includes two federal Clean Water Act jurisdictional habitats that qualify as “special aquatic sites”:

(a) A vegetated **wetland** zone (40 CFR § 230.41.) composed of discrete patches of alkali-bulrush fringing low brackish marsh (*Bolboschoenus maritimus* in current taxonomic treatments; synonymous with obsolete names *Scirpus maritimus*, *S. robustus* (misapplied), and *Schoenoplectus maritimus*) and more extensively distributed saltgrass high brackish marsh (*Distichlis spicata*). 40 CFR § 230.41.

(b) A **submerged aquatic vegetation bed** (vegetated shallows; 40 CFR §230.41). The aquatic vegetation was tentatively identified by WWR in 2005 as a linear-leaved pondweed species (*Potamogeton* sp.), but it is most likely salt-tolerant wigeongrass (*Ruppia maritima*), or possibly brackish-tolerant sago pondweed (*Stuckenia pectinata*) or variable mixtures of both that fluctuate with salinity. Page 7 of the DEIR shows a summer photograph of the pond described as “algae on the surface”. This algal mat pattern is typical of late summer growth of shallow-submersed leaves and stems of *Ruppia maritima* that support filamentous green algae in warm summer months. *Ruppia* holds the attached algal mat in place and restricts wind-stress current transport of free-floating algae. Otherwise, a free-floating algal mat would be transported by wind-stress currents to the shoreline. When *Ruppia* canopies die and degrade, floating algae tend to sink or beach along the shore. *Ruppia* colonies are frequently mistaken for “algae” by casual observers or inexperienced field biologists.

Both “wetlands” and “vegetated shallows” are Special Aquatic Sites, with equal special status under the Clean Water Act Section 404(b)(1) guidelines, and they are not generic “other waters” of the United States, which lack special regulatory policies for impact assessment, mitigation, and alternatives analysis. The DEIR and Biotic Assessment (appendix H) misidentify the pond as mere “other waters”. The Biotic Assessment fails to identify or assess impacts to these special aquatic sites regulated under Section 404 of the Clean Water Act. WWR (2005) concluded that the previous Section 404 delineation performed by Zentner and Zentner failed to mention the presence of saltgrass (a native wetland grass species indicator of saline wetlands), which has dominated much of the Pond’s lower banks since biological investigations at the site were initiated in the late 1980s. WWR stated that “Saltgrass is not mentioned in either the delineation’s text or data sheets, despite the fact that one of the delineation’s maps displays a thick, dashed line around the perimeter of the Pond labeled “SALTGRASS”. The map WWR cited was based almost entirely on a map produced by Western Ecological Services Company (WESCO) in 1989. WWR noted that WESCO stated in even back in 1989 that saltgrass “is able to dominate the lower banks of the pond”, a condition that persisted to 2005 despite omission by Zentner and Zentner. The DEIR (page 4.3-2) states that this fringe contains pickleweed, another salt marsh wetland indicator plant when it is dominant to co-

dominant along a pond edge. The current (2013) Zenter and Zentner wetland delineation cited in the Biotic Assessment (Appendix H, DEIR) on page 8 describes the presence of saltgrass growing along the water's edge. This fringe of wetland plants along the "water's edge" meets EPA/Corps criteria for wetlands. Indeed, Appendix H states explicitly that wetland vegetation occurs at the pond (page 9), as a "scattered fringe" or "thin fringe". This is also indicated on the wetland delineation figure, which does not account for the claimed lack of jurisdictional wetlands despite reference to map legend of "scattered wetland vegetation". There is no wetland regulatory exemption or definition for "scattered". Thinness or discontinuity of wetland do not eliminate either wetland status or jurisdictional status under current or all past Corps of Engineers/EPA wetland delineation criteria. No quantitative data on extent or distribution of this wetland vegetation is given by Appendix H. Appendix H also fails to discuss previous observations of saltgrass and alkali-bulrush marsh, and fails to discuss its present condition or why it would not be a "wetland", jurisdictional or otherwise.

The DEIR (p. 4.3-6) describes sensitive natural communities as "natural community types considered by the CDFW to have a high inventory priority because of their rarity and vulnerability to disturbance and loss." However, the DEIR goes on to state that "[n]o sensitive natural community types are present on the site. This is another example of the erroneous and misleading characterization of the sensitive, special-status (Special Aquatic Site) submerged aquatic vegetation/vegetated shallows and fringing wetlands of the pond habitat complex.

This inconsistent and incoherent information regarding wetlands habitat at the project site precludes the public from understanding the correct magnitude, context, type and intensity of impacts to aquatic, wetland, and riparian habitats. The failure to correctly identify the type of jurisdictional wetland and aquatic habitats, and their distinctive ecological functions, precludes meaningful public comments on the adequacy of compensatory mitigation in seasonal wetland mitigation banks (see 2, below).

The repeated omission of both saltgrass marsh and alkali-bulrush marsh from the 2013 wetland jurisdictional delineation and biotic assessment is not consistent with the evidence that stable, persistent, fringing brackish marsh exists at the project site. Fringing marshes may be temporarily unobservable during high water pond stands in winter when above-ground marsh vegetation is submerged or senesced or both. The EIR preparer and lead agency should verify the extent of submerged aquatic vegetation (vegetated shallows) when they may be observable from about April to August. Similarly the EIR preparer and lead agency should verify the extent of saltgrass and alkali-bulrush marsh (wetlands). Omission of these special aquatic sites would likely result in failure to assess potentially significant unmitigated impacts. DEIR lacks any analysis of the impacts of filling and destroying the pond's special aquatic sites (vegetated shallows and wetlands).

**2. Wetland and vegetated shallows wildlife habitat mitigation.** Compensatory mitigation of these aquatic and wetland habitats at remote mitigation banks would not compensate for setting-specific impacts to sensitive or special-status wildlife species. Submerged aquatic vegetation beds and wetlands provide important foraging habitat for locally roosting black-crowned night herons, as well as other wading birds that visit the pond to forage. As regional heron and egret experts John Kelly and Scott Jennings noted (2016), the energetic efficiency of foraging at a food-rich site, with thermal protection of a tree canopy roost adjacent to foraging habitat, is an important ecological

function for heron conservation. Black crowned night herons have recurrently roosted in the trees bordering the pond for over a decade. WWR observed 20 black-crowned night herons roosting or foraging at the pond in fall 2005, and this species is site-faithful (re-occupying preferred locations for roosts). . Roosting reportedly occurs in apparently non-native riparian vegetation (ornamental trees) along the pond edge (WWR 2005).

I agree with heron experts John Kelly and Scott Jennings of Audubon Canyon Ranch, who identify the important value of the wetlands/aquatic habitat at Corte Madera pond for the active roosting colony of Black-crowned night herons. The conservation significance of this individual colony, as they explained, inheres in its role as a component of a complex of roost sites that enables the larger population to respond to ecological variability in predation, food availability, or disturbances. I agree with their expert opinion that the destruction of this long-established roost site would constitute a significant long-term cumulative (incremental) impact to the regional population, even if the “acute” (direct, short-term) impact of its destruction was not detected. The distinction between short-term direct impacts versus long-term cumulative impacts is relevant here.

The Appendix H states only that black-crowned night herons do not nest at the site, but it fails to disclose that they roost and feed there, and have done so for over a decade. This is misleading, because the DEIR’s omission of ecologically important heron roosting, and its exclusive emphasis on lack of heron nesting suggests that there are no potential significant impacts to herons if there are no nests. This is not a reasonable or biologically justifiable threshold of significance in a CEQA context. The long-term presence of a heron roost next to a stable, productive perennial aquatic foraging habitat (pond SAV and wetland) is a biologically significant resource, and its destruction would be a threshold for significant impacts in eastern Marin County, where heron roost sites, and potentially suitable roost sites, are scarce. .

Appendix H fails to provide the DEIR with any basis for assessing potentially significant impacts to the pond foraging habitat (vegetated shallows and wetlands within wading depth of egrets). The regional distribution of black-crowned night heron roosting and foraging habitats, and the relative importance or size of the site’s roost (significance) is not assessed. The DEIR is completely deficient in assessment of impacts to black-crowned night herons and their habitat.

My understanding is that the project proposes to mitigate the loss of the pond and habitat through the purchase of credits at the Burdell Ranch Wetland Conservation Bank, an existing 82 acre wetland located 17 miles north of the project area. In my opinion, money towards restoration work at the Burdell Ranch wetland does not adequately compensate for the elimination of the wetlands at the project site. The Burdell Ranch mitigation bank is a non-tidal “freshwater” (in fact, predominantly fresh-brackish) *seasonal* wetland complex that necessarily lacks large trees or tall canopy shrubs suitable for heron roosts, because large trees and shrubs cannot grow in fresh-brackish (slightly saline) wetland soils of diked baylands. The Burdell Ranch wetlands are *seasonal* wetlands that necessarily lack perennial “vegetated shallows” (submerged aquatic vegetation) or other extensive, perennial shallow aquatic habitats providing year-round rich prey base for herons and egrets. The Burdell wetlands are “seasonal” wetlands because of habitat management objective requirements of the Burdell Mitigation Bank Memorandum of Agreement among state and federal resource agencies (MOA, p. 12). The description of the mitigation bank at its website ([www.burdellranch.com](http://www.burdellranch.com)) identifies its suitability for mitigation of wetlands, but *not* submerged aquatic vegetation/vegetated shallows.

The Burdell Ranch mitigation bank cannot provide either the type (vegetated shallows) or wildlife habitat functions (year-round adjacent heron roost habitat and foraging habitat) of the Corte Madera Inn pond. Moreover, it is located in San Pablo Bay, which implies a disadvantageous, long energetically costly flight distance between potential heron foraging and roost sites (Kelly *et al.* 2007), compared with the integrated habitats of the project site (Kelly and Jennings 2016). Finally, mitigating heron habitat or populations in San Pablo Bay would not offset the local decline in heron habitat in Corte Madera or San Rafael Bay vicinity wetlands.

Regarding the potential water quality of the pond, I agree with WWR's conclusion that conclusion that hypoxia and hydrogen sulfide emissions (likely to occur in summer stratified pond conditions with warm temperatures and brackish organic bottom sediments) would be highly feasible to correct with simple measures to enhance DO, such as very few bubblers that create weak vertical currents (mixing, overcoming stratification) and provide dissolved oxygen throughout the water column. This simple water quality enhancement potential should be considered in assessment of pond impacts and alternatives.

**3. Conclusions.** The DEIR findings regarding wetlands and wetland jurisdiction are based on conflicting, inconsistent evidence. The DEIR appears to omit all disclosure and impact analysis of perennial submerged aquatic habitat beds (vegetated shallows) The DEIR premise that no jurisdictional wetlands or other wetlands are present is not credible, since all information sources identify the presence of wetland vegetation in shallow aquatic habitat. Finally, the off-site compensatory mitigation approach for wetlands and aquatic habitats would likely result in unmitigated significant impacts due to the loss of the full integrated pond habitat complex supporting site-faithful foraging and roosting black-crowned night herons.

My conclusions are based on my professional experience as senior staff biologist at the U.S. Army Corps of Engineers (San Francisco District), and U.S. Fish and Wildlife Service, where I was responsible for wetland jurisdictional delineations and their review, wetland impact assessments, wetland restoration plans and mitigation plans, and joint NEPA/CEQA impact assessments, including EIR/EIS document management. I have over 36 years professional experience in management, restoration of coastal habitats, with specialization in wetlands and other shoreline habitats.

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