



Memorandum

Corte Madera Inn Pond Comments

To: Barbara Salzman, Marin Audubon Society
From: Stuart Siegel and Christina Toms
Date: 14 November 2005

At the request of the Marin Audubon Society, Wetlands and Water Resources, Inc. (WWR) conducted brief site visits to the Corte Madera Inn Pond (“the Pond”) on September 12, 2005 and November 9, 2005. The purpose of these visits was threefold: (1) to determine if wetlands exist at the site that would meet federal, state, and local wetland definitions, (2) to evaluate the importance of the Pond and its associated habitats to wildlife, and (3) to examine whether other water quality improvement options may be feasible.

1 Do Wetlands Exist at the Corte Madera Inn Pond?

The members of the Town of Corte Madera Planning Commission explicitly stated at their September 13, 2005 meeting that they would rather not focus on the rather pedantic details of whether or not jurisdictional wetlands exist at the Pond. However, it is important to recognize that this apparent hair-splitting exists for a reason: 82% of the North Bay’s historic tidal wetlands have been lost to development and agriculture since the mid 1800s. As a result, wildlife species that depend on these systems to provide foraging and/or breeding habitat need every single piece of habitat they can find.

The Town’s Zoning Ordinance defines wetlands as follows: “[w]etland means an area inundated or saturated by surface or ground water at a frequency or duration sufficient to support hydrophytic vegetation” (Corte Madera Municipal Code Section 18.04.855). The General Plan defines wetlands as “... the environments of subtidal mudflats, mudflats, tidal salt marsh, periodically inundated or brackish marsh, diked marshland, associated upland, and freshwater marsh” (Corte Madera General Plan, page G-14). It is therefore critical to recognize the following facts about the Pond:

- Our site visits of September 12, 2005 and November 9, 2005 confirmed that two facultative wet (FACW) and one obligate (OBL) wetland plant species, as defined by the US Fish and Wildlife Service (Reed 1988) exist at the Pond:
 - Dispersed individuals of fat hen (*Atriplex subspicata*) FACW species indicative of saline wetlands, grow as dispersed individuals around the Pond’s high water level perimeter,
 - A ring of salt grass (*Distichlis spicata*), a FACW species indicative of saline wetlands, surrounds most of the Pond along the high water level perimeter, and

- Two patches of alkali bulrush (*Schoenoplectus maritimus* [formerly *Scirpus maritimus*]), an OBL emergent aquatic plant, grow in the western lobe of the pond (Figure 1)

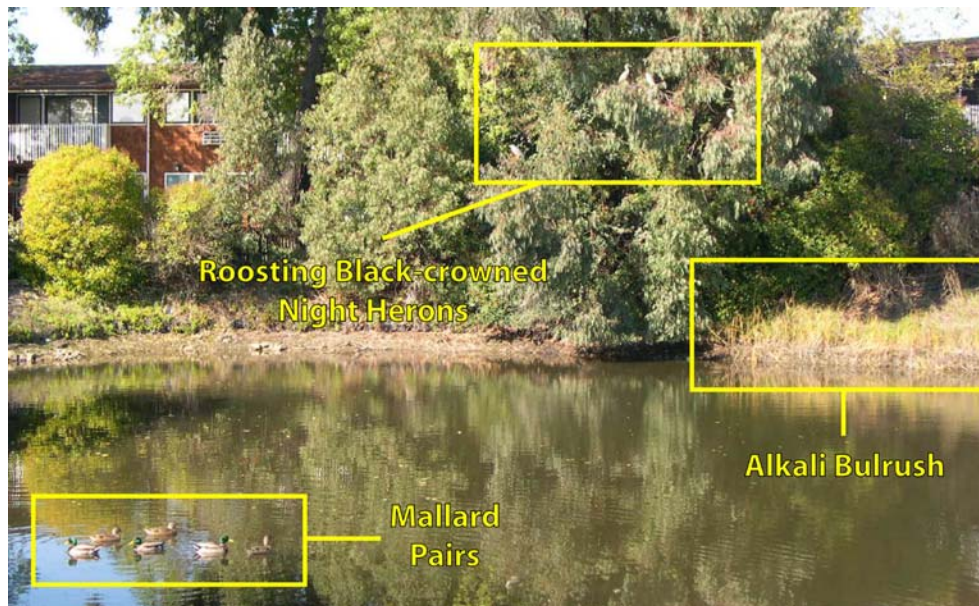


Figure 1. Wildlife and alkali bulrush in the Pond's western lobe, November 9, 2005. Photo by Christina Toms.

The existence of this vegetation, coupled with the Pond's hydrology and soils, qualifies the site as wetlands under the regulations of the Clean Water Act (US Army Corps of Engineers, 40 CFR §230.41), the US Fish and Wildlife Service (Cowardin 1979), the California Coastal Commission (14 CCR 13577), and, importantly, the Town of Corte Madera General Plan and Zoning Ordinance (Corte Madera Municipal Code Section 18.04.855). Though the October 25, 2001 USACE jurisdictional delineation failed to account for these existing resources (one species of which is shown on the 1989 WESCO map of the site but is not included in the delineation), these resources and conditions nonetheless exist. The Town's General Plan does not specify any source of its wetland definition, thus there is no basis to accept the outdated USACE jurisdictional delineation as a definitive determination on wetlands presence or absence.

- USEPA defines the special aquatic site category of vegetated shallows as, "...permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation" (40 CFR §230.43). Section 230.43 further defines possible loss of values by the discharge of fill materials into these special aquatic sites to include smothering vegetation and benthic organisms. Vegetated shallows would fall within the Town's General Plan wetland definition and therefore be subject to the same protection policies.

Our site visit of September 12, 2005 verified the presence of submerged aquatic vegetation (SAV) that are direct indicators of vegetated shallows. The species observed was likely pondweed (*Potamogeton* spp.) specimens were not collected for species identification. We further observed a very large number of small fish in the pond; again, specimens were not collected for identification but their presence demonstrates that conditions are suitable to

support aquatic life and thus the pond directly exhibits the functions and values that this type of special aquatic site provides.

These data collectively demonstrate 1) the presence of wetlands according to the Town's General Plan and Zoning Ordinances wetland definitions and 2) the presence of vegetated shallows per USEPA definition. Therefore, these data contradict the conclusions stated in the Revised Initial Study and Draft Mitigated Negative Declaration and the Town's Staff Report for the Corte Madera Inn Pond fill project regarding absence of wetlands and they support the application of the Town's General Plan wetland protection policies.

2 Importance of Existing Wetlands

While the Corte Madera Inn Pond is only 0.65 acres, with an average volume of approximately 2 acre-feet, it serves as foraging and possibly breeding habitat for a wide variety of wildlife species. The following list, provided by the Marin Audubon Society, contains 25 bird species that have been observed using the Pond and its associated habitats over the last 5 years:

- Pied billed Grebe (*Podilymbus podiceps*)
- Double-crested Cormorant (*Phalacrocorax auritus*)
- Black Crowned Night Heron (*Nycticorax nycticorax*)
- Green Heron (*Butorides virescens*)
- Snowy Egret (*Egretta thula*)
- Great Egret (*Ardea alba*)
- Great Blue Heron (*Ardea herodias*)
- Mallard (*Anas platyrhynchos*)
- Hooded Merganser (*Lophodytes cucullatus*)
- American Coot (*Fulica Americana*)
- Greater Yellowlegs (*Tringa melanoleuca*)
- Black-necked Stilt (*Himantopus mexicanus*)
- Killdeer (*Charadrius vociferous*)
- Ring-billed Gull (*Larus delawarensis*)
- Mourning Dove (*Zenaida macroura*)
- Scrub Jay (*Aphelocoma californica*)
- American Crow (*Corvus brachyrhynchos*)
- Yellow-rumped Warbler (*Dendroica coronata*)
- Wilson's Warbler (*Wilsonia pusilla*)
- California Towhee (*Pipilo crissalis*)
- Spotted Towhee (*Pipilo maculatus*)
- Golden-crowned Sparrow (*Zonotrichia atricapilla*)
- White-crowned Sparrow (*Zonotrichia leucophrys*)
- Red-winged Blackbird (*Agelaius phoeniceus*)
- Brewer's Blackbird (*Euphagus cyanocephalus*)

A November 9, 2005 site visit by WWR staff clearly demonstrated how, despite the Pond's small size, it is an important foraging and roosting habitat for large numbers of birds. On that day, at

least 20 adult and immature black-crowned night herons were witnessed both foraging and roosting at the site (Figures 1 and 2). Other birds seen foraging were one great egret and one snowy egret (Figure 2), and three male/female mallard pairs (Figure 1).

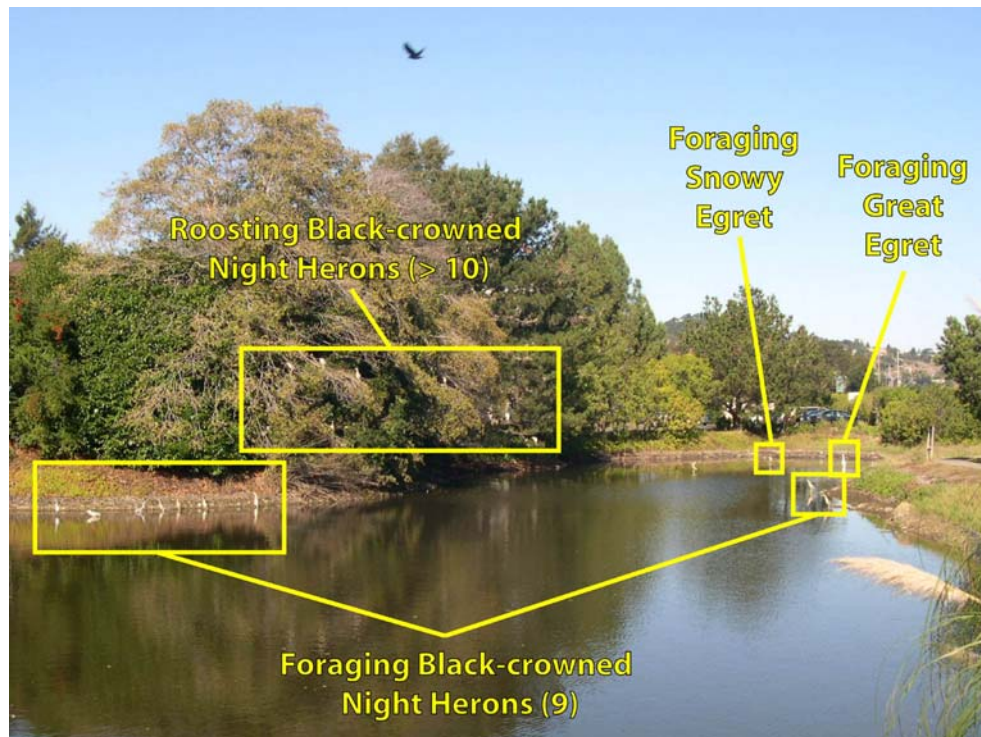


Figure 2. Foraging and roosting herons and egrets at the Pond, November 9, 2005. Photo by Christina Toms.

Except for the mallards, all of these birds prefer shallow wetland habitats. In wetland areas, great and snowy egrets primarily feed on aquatic invertebrates, fish, and amphibians, while mallards feed on aquatic invertebrates, insects, and aquatic vegetation. It is therefore reasonable to assume that conditions at the Corte Madera Inn Pond are favorable enough to allow these prey organisms to thrive, otherwise the birds would not expend their time foraging there.

3 Inadequacy of Existing Mitigation Plan

The February 7, 2003 Corte Madera Inn Mitigation Program Summary prepared by Zentner and Zentner states on page 1 that “[m]itigation credits of 0.65 have been purchased at the Burdell Ranch Wetland Conservation Bank to mitigate...” The Burdell Ranch Wetland Conservation Bank is approximately 14 miles to the north of the Pond. Though populations in the general vicinity of the Conservation Bank may benefit if the wetland mitigation bank is successful, the *local* populations that currently utilize the Pond would not receive those same benefits. Additionally, the Burdell Ranch Bank is a new project, and it is unlikely that it has developed habitat that will immediately offset habitat losses at the Pond. This would compound the spatial loss of habitat at the Pond by creating additional *temporal* losses.

Given the information above, has the Town received documentation from the applicant that (1) confirms such a mitigation credit purchase, (2) confirms that the mitigation habitat has been constructed and has met its ecological performance standards and therefore is able to offset both

spatial *and* temporal impacts, and (3) demonstrates to the Town that adverse impacts to the Pond will be mitigated effectively in terms of acreage *and* timing of replacement habitats?

4 “Fixing” the Corte Madera Inn Pond

Based on statements made at the September 13, 2005 Planning Commission meeting, there are a number of constituents throughout Corte Madera who believe that the Pond has water quality problems and thus is somehow *broken*, and that the most reasonable way to *fix it* is by paving it over and turning it into a parking lot. However, the Initial Study described the pond’s water quality problems primarily as “stagnation” and “noticeable odors”. No specific water quality parameters such as dissolved oxygen (DO), biological oxygen demand (BOD), turbidity, or the presence/absence of odorous algae-produced compounds such as geosmin and/or 2-methylisoborneol (MIB) are described. Aquatic systems like the Pond are filled with organic material, bacteria, algae, and other building blocks of the aquatic food web. It is the nature of these systems that, on a regular basis, they produce gases such as hydrogen sulfide (H₂S) that have odors offensive to humans. Paving over the Pond simply because it does not mesh with human aesthetics sets a dangerous and unfortunate precedent for Corte Madera and Marin County.

The Pond obviously has high enough dissolved oxygen (likely ≥ 5 mg/L, the RWQCB minimum) to support communities of aquatic vegetation, benthic invertebrates, and fish. However, the Pond’s DO may not be high enough to support the Pond’s BOD during periods of stratification and high primary production (summertime). This time period is when undesirable odors such as H₂S may be produced in the Pond and noticed by surrounding residents. Increasing summertime DO levels in the Pond, and reducing the occurrences of these odors, can be achieved at a relatively low cost through mechanical mixing.

Mechanical mixing is a process whereby oxygen is transferred from the air to the upper water to the sediments through propellers or baffles. These highly efficient systems can be completely submerged, and transfer oxygen from well-oxygenated surface water to less-oxygenated deeper water and sediments throughout the pond. They can also be partially submerged, increasing agitation at the air-water interface, increasing surface DO levels, and then transporting this high-DO water down to deeper water and sediments and throughout the pond (Horne and Goldman 1994). Corte Madera Inn Pond is an excellent candidate for mechanical mixing for a number of reasons:

1. The pond’s markedly small volume (2 acre-feet) means that relatively low levels of electricity would be needed to power any pumps or motors; this electricity could easily be provided through sustainable wind or solar power or through lines to adjacent properties.
2. The pond’s existing surroundings of Highway 101 and a busy hotel/restaurant complex and its continued use by wildlife means that wildlife are unlikely to be disturbed by the seasonal operation of mechanical mixing devices.
3. Mechanical mixing would only need to be employed during certain periods of time, primarily in the warm summer months. This time period would help keep operation and maintenance activities and their associated costs to a minimum.

With the Pond, the Town of Corte Madera has a unique opportunity to preserve and enhance valuable wildlife habitat in the most unlikely of locations. In doing so, it would set an excellent example for municipalities around the San Francisco Bay area, many of which are faced with similar questions about how to manage remnant tidal systems.

References

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