



October 31, 2011

Steve Hampton
California Department of Fish and Game
Office of Spill Prevention and Response
1700 K Street
Sacramento, CA 95814

Re: Draft Damage Assessment and Restoration Plan/Environmental Assessment (Draft DARP/EA) for the *Cosco Busan* Oil Spill and impacts on human recreational uses

Dear Mr. Hampton:

Thank you for the opportunity to comment on the Draft Damage Assessment and Restoration Plan/Environmental Assessment for the *Cosco Busan* Oil Spill. The comments below are presented on behalf of the San Francisco Bay Area Water Trail program with regard to the impacts of the oil spill on human recreational uses.

The Water Trail is being implemented by the State Coastal Conservancy in collaboration with the Association of Bay Area Governments, San Francisco Bay Conservation and Development Commission, and the Department of Boating and Waterways and a broad-based advisory committee that includes representatives from the Department of Fish and Game, the National Park Service, East Bay Regional Park District, and the U.S. Fish and Wildlife Service, among others. Official designation of sites (landing/launching trailheads) has just begun, but more than 100 sites, as identified in the Enhanced Water Trail Plan, have the potential to be designated. (More details may be found at <http://www.scc.ca.gov>.) Water Trail sites have been identified in all nine Bay Area Counties affected by the spill.

Access to clean, safe shoreline launching and landing areas for recreational boating in small, non-motorized craft is at the heart of the Water Trail program. Non-motorized boat use for this project is defined to include wind-surfing, kite-boarding, kayaking, canoeing and outrigger-canoeing, skulling, dragon boating, whale boating, and stand-up paddling.

As noted in Section 4.3.5 (Human Recreational Uses) of the Draft DARP/EA, during the *Cosco Busan* oil spill, a large number of beaches were closed or subject to access limitations, and on-water activities such as wind-surfing and kite-boarding were curtailed. Use of many of the other types of non-motorized boating craft listed above would also have been curtailed.

1330 Broadway, 13th Floor
Oakland, California 94612-2530
510•286•1015 Fax: 510•286•0470

We appreciate the analysis of affected areas, and the analysis of the value of affected use presented in the Draft DARP/EA. There are multiple, potential Water Trail sites (trailheads) within the areas where oiling was observed in the East Bay, San Francisco Peninsula, and Marin County. It is a difficult to match up potential Water Trail sites with the maximum observed oiling map provided in Figure 14 because of this figure's scale, but a few sites do appear to be within the bounds of this map. They are listed below as an aid to the Trustees as they select a suite of restoration projects to compensate the public for lost use of recreational resources.

Site Name	County
Albany Beach	Alameda
Berkeley Marina	Alameda
Point Emery	Alameda
Middle Harbor Park	Alameda
Keller's Beach (Miller/Knox Regional Shoreline)	Contra Costa
Ferry Point (Miller/Knox Regional Shoreline)	Contra Costa
Point Isabel Regional Shoreline	Contra Costa
Angel Island	Marin
Aquatic Park (Maritime National Historic Park)	San Francisco
Crissy Field	San Francisco
Treasure Island	San Francisco

There are potential Water Trail sites in all nine counties, however, and many of the existing sites are in need of a broad array of improvements that would support human recreational use.

Thank you again for the inclusion of recreational impacts in your analysis of the effects of the *Cosco Busan* oil spill. I would be happy to serve as a resource to the trustee agencies as they consider compensatory actions related to non-motorized recreational boating.

Sincerely,



Ann C. Buell
Project Manager
State Coastal Conservancy
abuell@scc.ca.gov

cc: Laura Thompson, Association of Bay Area Governments (Bay Trail)
Ellen Miramontes, San Francisco Bay Conservation and Development Commission
Steve Watanabe, Department of Boating and Waterways

Steve Hampton
California Department of Fish and Game
Office of Spill Prevention and Response
1700 K Street
Sacramento, CA 95814

Dear Mr. Hampton

I personally would like to thank the Trustees for their work in developing the Cosco Busan Draft Damage Assessment and Restoration Plan, and for providing this opportunity for public comment.

Distribution of funding to recreational projects should include the restoration at Kent Island, Bolinas Lagoon as a preferred project. Kent Island tidal flats and marsh habitats were impacted by the Cosco Busan oil spill, likely causing direct and indirect impacts to the shorebirds and waterfowl, invertebrates, fish, and special status plants and animals that rely on the Lagoon's rich estuary habitat. I request that the Trustees allocate funding for restoration of Kent Island to compensate for the habitats and species impacted.

Funding will not only support comprehensive removal of non-native vegetation now anchoring the island while also allowing the planting of native vegetation. Completion of the project, will restore 23 acres of habitat including regionally rare flood shoal tidal delta habitat and create nesting habitat for the federally endangered Snowy Plover. The pending Kent Island work will also provide benefits to the Lagoon's natural Estuarine hydrodynamics. Benefits resulting from the Kent Island restoration project are critical to restoring the resources damaged by the Cosco Busan oil spill and the allocation of funds to complete the project will greatly increase the probability of project success.

Another Bolinas piece of recreational infrastructure in need of repair is the College of Marin boat dock on Wharf Road. This is a heavily used dock by local fishermen, boat and kayak launchers, birders, school children and fisher folk of all kinds. The ramp does not allow disabled access and is a safety hazard, yet the College does nothing to repair it's many defects. This is the often used point of departure for excursions to Kent Island and I am certain will be heavily used when restoration efforts are underway. I request that the Trustees allocate funding for restoration of the Bolinas Boat Dock to compensate for recreational opportunities lost.

Thank you for considering these comments.

Sincerely,
Bruce Curtis Bowser
B C B & Associates
Bolinas ~ Oceans Advocate
P.O. Box 598, 89 Brighton Avenue
Bolinas, California 94924-0598
Tel. 415 868 2459



Marin Audubon Society

P.O. Box 599 | MILL VALLEY, CA 94942-0599 | MARINAUDUBON.ORG

October 20, 2011

Steve Hampton
California DFG-OSPR
1700 K Street, suite 205
Sacramento, CA 95814

RE: Support for Cosco Busan Settlement Funds for Aramburu Island

Dear Mr. Hampton,

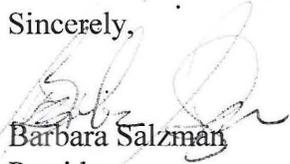
This conveys the Marin Audubon Society's support for the allocation of funds from the settlement of the Cosco Busan spill litigation to the Aramburu Island Habitat Restoration Project.

When successfully completed, this restoration project should greatly improve habitat for resident and migratory wildlife, including shorebirds, waterfowl, terns, and hopefully harbor seals. The project will expand salt marsh, upland refugia and seasonal wetlands. Improvement of unvegetated habitat will also benefit terns and marine mammals.

Particularly important for Marin Audubon is the expansion and improvement of the bird roosting and refuge habitat because of the large number of oiled birds that were found on the island after the spill. Improving the features that contribute to the Island serving as a haul out for harbor seals is also important. With the project improvements, we hope that the island can once again attract harbor seals to haul out.

Improvement of the habitat of Aramburu Island is long over due. We look forward to the project offering broad benefits for many species of the Bay's wildlife and we support commitment of settlement funds from the Cosco Busan oil spill to achieve these goals.

Sincerely,



Barbara Salzman
President

cc: Brooke Langston

From: Cecily Harris <charris@co.sanmateo.ca.us>
To: <shampton@ospr.dfg.ca.gov>
Date: 10/20/2011 11:51 AM
Subject: Cosco Busan Oil Spill Damage Assessment and Restoration Plan Input

Steve,

Thank you for the update about the Draft Plan. It was very informative.

San Mateo County requests that an alternate project be added for the Devils Slide Coastal Trail. This project could be listed under the "Bird" category.

The Devils Slide Coastal Trail will be opened as a multiple use trail once the Devils Slide tunnels are opened by CalTrans in 2013.

Thus far, the County is partnering with State agencies on the following projects. Using funding from the California Coastal Conservancy, the County is working with CalTrans to develop two parking areas at either end of the Trail to offer restrooms, drinking fountains, kiosks and signs. Plans and permits for the Green Valley Trail will also be developed using these funds. CalTrans is also providing a small grant for a series of interpretive signs to be situated along the Coastal Trail.

There is an approximately 200-foot area along the future Coastal Trail where nesting birds will need protection from human intrusion. Undoubtedly there will be many cyclists, pedestrians and equestrians using this new approximately 1.2 mile trail. Nesting birds include pigeon guillemots and common murre. Preliminary conversations with USFWS, NOAA (Gulf of the Farallones NMS) and Coastal Commission have led to suggested solutions ranging from a pedestrian tunnel, faux rock barricade or chain link fence. Regardless of the treatment, some signage should also be incorporated into the project.

We don't yet have cost estimates yet but I can provide you with information as it becomes available.

Please let me know what other information you need at this time.

Thanks,

Cecily Harris
Financial Services Manager
San Mateo County
Division of Parks
455 County Center, 4th Floor
Redwood City, CA 94063-1646
(650) 363-4027 phone
(650) 599-1721 fax

Wild places & friendly spaces



October 24, 2011

Steve Hampton
California Department of Fish and Game
1700 K Street, Suite 250
Sacramento, CA 95811

To Steve Hampton:

The Watershed Project is in support of the Cosco Busan Draft Damage Assessment and Restoration Plan Project. We would like to express our interest for the inclusion of an oyster reef along the Breuner Marsh shoreline in Richmond, CA.

The “Living Shoreline” model is a type of restoration that includes upland through subtidal features. The ecosystem is viewed in its proper setting, as a holistic whole. The coordinated restoration of upland and subtidal components leads to a system whose features benefit each other.

The inclusion of an oyster reef at the current Breuner Marsh restoration will also be in support of the San Francisco Bay Subtidal Habitat Goals project. This document aims to restore 8,000 acres of shellfish bed habitat in San Francisco Bay within 50 years. The shoreline that includes Breuner Marsh, from Pt. San Pablo to Pt. Pinole, accounts for 46 percent of these 8,000 acres. An oyster reef would benefit other species of interest to the restoration project, including eelgrass, fish and birds.

If the restoration of subtidal habitat cannot be included at Breuner Marsh, we would support the “Living Shoreline” model incorporated into restoration efforts at Albany Beach, the Emeryville/Berkeley shoreline, Heron’s head park in San Francisco or Point Molate in Richmond.

Thank you for all the continued good work you do in our community.

Sincerely,

Christopher Lim
Living Shoreline Manager
The Watershed Project

From: Denise Greig <GreigD@TMMC.org>
To: "shampton@ospr.dfg.ca.gov" <shampton@ospr.dfg.ca.gov>
Date: 9/21/2011 1:56 PM
Subject: RE: Cosco Busan draft DARP now available for public comment through Oct 31
Attachments: Harris 2011 neuroglial heterotopia.pdf

Hi Steve...I'm not sure how the public comment on this works, but here goes....

I think the mammal section sounds good except for the statement that harbor seal pupping appeared normal in 2008 following the oil spill. You may want to include this case study from a pup born in Sausalito. It was certainly not normal, but not necessarily related to the oil spill either,

Denise

Wildlife Biologist
The Marine Mammal Center
2000 Bunker Road
Fort Cronkhite
Sausalito, CA 94965
(415) 289-7343
fax: (415) 754-4043
GreigD@tmmc.org<mailto:GreigD@tmmc.org>

vet sci dept fax: (415) 754-4078
<http://www.marinemammalcenter.org/>

[See references for paper citation (Harris 2011).]

October 31, 2011

Steve Hampton
Office of Spill Prevention and Response
1700 K Street, Suite 250
Sacramento, CA 95811

Submitted by email to : shampton@ospr.dfg.ca.gov

Re: Comments on Cosco Busan Draft Restoration Plan

Dear Dr. Hampton,

Thank you for the opportunity to comment on the Cosco Busan's Draft Restoration Plan.

I recommend the inclusion of an additional project to benefit eelgrass restoration and, hence, the herring fishery. A mooring field in Richardson's Bay would greatly benefit eelgrass beds.

Currently, there are approximately 80-120 boats that anchor in Richardson's Bay, depending on the season. According to Richardson's Bay Regional Agency, a substantial number of the boats are anchored by inappropriate objects such as old engine blocks and railroad wheels. These objects will generally keep a boat in the vicinity (until a large storm), but are dragged around the bottom of the Bay, tearing out eelgrass. Moorings would significantly reduce the impacts on eelgrass and might allow for more restoration potential than other eelgrass project considered, including monitoring of the eelgrass scar in Keil Cove.

Baykeeper is working with multiple parties to engage the permitting process necessary for approval of a mooring field in Richardson's Bay, as well as an enforcement program to ensure all boats in the area get and stay "on the grid." Implementation and enforcement costs should be included in the project plan to ensure the project's successful launch. Based on numerous conversations with those who would implement the project, Baykeeper believes it is a feasible, efficient and cost-effective approach to restoring many acres of eelgrass.

Baykeeper would be happy to provide further detail regarding the number and location of moorings that could be installed, types and costs of available moorings, and operational costs for implementation and enforcement during the restoration period.

Sincerely,



Deb Self
Executive Director



Steve Hampton
California Department of Fish and Game
Office of Spill Prevention and Response
1700 K Street, Sacramento, CA 95814

October 15, 2011

Dear Mr. Hampton,

PRBO Conservation Science appreciates the comprehensive effort the Trustees have put into assessing the impacts to wildlife of the Cosco Busan oil spill event (CBE) presented in the Oil Spill Draft Damage Assessment and Restoration Plan. However, we would like to ask that the Trustees consider changes to the restoration plan that will more accurately address the impacts to the Western Snowy Plovers (WSP) affected by the spill. We have information that we believe may be new to the Trustees that should be considered to improve mitigation for the plover. Specifically, we recommend the following three changes: 1) broaden target areas of the proposed restoration areas to include the Monterey Bay Area, and 2) include as a focus the need to support predator management efforts in the Monterey Bay Area.

1) **Include the Monterey Bay Area in the list of proposed restoration areas for WSP's.**

In analyses currently underway at PRBO of survival and productivity of individually-marked WSPs oiled in the CBE, the Monterey Bay area is the only identified breeding area for affected birds. Targeted areas of the proposed restoration projects (South Bay Salt Ponds, Muir Beach Dunes, Albany Beach) have not been demonstrated to have been used by breeding Snowy Plovers affected by the CBE. Two Snowy Plovers oiled in the CBE have used one of the target areas (South Bay Salt Ponds) for non-breeding activities since the CBE (San Francisco Bay Bird Observatory unpubl. data). Further, proposed restoration projects mention the Snowy Plover only indirectly as a beneficiary species, are primarily targeted toward other species or habitats, and cannot be clearly demonstrated to benefit Snowy Plovers affected by the CBE.

Of the Snowy Plovers oiled in the CBE, four are known to have bred in Monterey Bay prior to and/or following the CBE (PRBO unpubl. data). One of these plovers definitively failed to breed following oiling as a hatch-year bird in the CBE. We are currently analyzing these data through a grant provided by the OWCN, but preliminary results suggest that the CBE may have negatively impacted reproductive success of at least one out of these four (25%) oiled plovers that subsequently nested at Monterey Bay.

2) **Support predator management in the Monterey Bay Area.** The Monterey Bay WSP population is closely managed and monitored, and has a track record of meeting or exceeding recovery plan productivity goals (PRBO annual reports to USFWS). But the Monterey Bay population in recent years has been seriously and adversely impacted by

nest predation from human-subsidized predators (particularly the Common Raven, whose range has rapidly expanded into in the Monterey Bay area within the last decade). And, while management of introduced or human-subsidized predator populations is essential to ensuring adequate plover reproductive success in the future, there is no dedicated source of funding to support this predator management. We propose that the Trustees dedicate funding for predator management to benefit Pacific Coast Snowy Plovers in the Monterey Bay region. This project would be consistent with restoration proposed for the Marbled Murrelets affected by the CBE (see footnote below). We strongly support the Trustees efforts to restore both the Marbled Murrelet and Western Snowy Plover. We believe that supporting predator management in the Monterey Bay region, by targeting the population most directly affected and by supporting a project that has demonstrated ongoing success in conservation of the species, will better mitigate the effects of the CBE on Pacific Coast WSPs than the projects currently proposed. Funding should be directed to resource management agencies (USFWS Salinas River National Wildlife Refuge and/or California State Parks Monterey and Santa Cruz Districts).

Thank you for your consideration of our comments. Please let us know if you have any further questions by contacting gpage@prbo.org or 415 868-0371 ext 309.

Sincerely,



Ellie M. Cohen
President and CEO

Cc: Gary Page

Footnote: In the DARP, the Trustees estimated (Appendix C and Section 4.3.1.7) that the CBE resulted in mortality of 2 to 5 Snowy Plovers (max of ~0.3% of the federally-listed Pacific Coast population). The Trustees also estimated that the CBE resulted in mortality of 13 Marbled Murrelets (~0.3% of the Zone 4 population). It is worth noting that this percentage would be much lower if taken as a proportion of the entire federally-listed Marbled Murrelet population. Yet there are no Snowy Plover-specific restoration projects proposed even though the estimated maximum Snowy Plover mortality, as a percentage of total population size, was approximately the same as that for Marbled Murrelets.

From: Frederick Griffin <fjgriffin@ucdavis.edu>
To: <shampton@ospr.dfg.ca.gov>
CC: Carol Vines <cavines@ucdavis.edu>, Gary Cherr <gncherr@ucdavis.edu>
Date: 10/28/2011 11:06 AM
Subject: Comments on Draft DARP/EA

To: Steve Hampton
California Department of Fish and Game Office of Spill Prevention and Response
1700 K Street
Sacramento CA 95814
Fax: 916-324-8829, Email: shampton@ospr.dfg.ca.gov

Dear Steve:

Please accept our comments regarding the Proposed Project to address Eelgrass and Pacific herring damage.
(Section 4.3.3.2)

The proposed project is a nine-year endeavor to increase eelgrass beds primarily along the Marin County shore of San Francisco Bay with one of the stated objectives being to enhance herring stocks. This seems appropriate since direct damage to herring reproduction was documented to have resulted from the oil spill. Furthermore, the initial sites chosen for eelgrass restoration are characterized as potentially good spawn locations and thus herring reproduction should benefit from eelgrass restoration at these sites (San Rafael Bay, Richardson Bay, and Horseshoe Cove).

As currently designed this proposal contains no provisions to assess if herring spawning is enhanced or whether successful development of herring embryos and larvae has occurred. Collecting this information should be a requirement. The justification or driver for restoration (contained in the Summary of Injury) is that oil from the Cosco Busan spill damaged herring reproduction by inducing increased abnormalities in embryos and larvae. And, one of the stated purposes of the eelgrass restoration project is to enhance herring reproduction. How will successful reproduction (defined as number and percentage of viable embryos that successfully hatch as normal larvae) be monitored in restored areas and how will it compare with reproduction in areas not restored? General biomass estimates of herring in the SF Bay are highly variable and influenced by many factors ranging from suitable spawn locations that vary from season to season, young-of-the-year survival, and ocean survival of fish prior to return spawning. As herring biologists, it is our view that the only way to directly assess successful restoration in specific locations would be to determine reproductive success (as described above) in those specific areas.

We submit that the success of herring reproduction associated with these restoration sites must be followed for the duration of the eelgrass restoration project. In this respect, monitoring is not unlike that proposed for the bird roosting and nesting projects listed in the draft DARP/EA.

Please contact us if you have any questions or desire further input

Thank you,

Fred J. Griffin
Gary N. Cherr
Carol A. Vines

Fred J. Griffin, PhD
Specialist II
University of California, Davis
Bodega Marine Lab
P.O. Box 247
Bodega Bay, CA 94923
707-875-2054

October 31, 2011

Cosco Busan Trustees
c/o Steve Hampton
California DFG-OSPR, 1700 K Street, Suite 250
Sacramento, CA 95814
shampton@ospr.dfg.ca.gov, fax (916-324-8829)

RE: Draft DARP/EA for the *Cosco Busan* Oil Spill

Dear Steve and *Cosco Busan* Trustees,

Thank you for the opportunity to provide public comments on the *2011 Cosco Busan Draft Damage Assessment and Restoration Plan/ Environmental Assessment (DARP/EA)*. Clearly the trustees have put a significant effort into making the best available knowledge for public review and I commend the *Cosco Busan* Trustees and RP for the level of detail provided therein.

Clearly the damage of the *Cosco Busan* Oil Spill extended beyond the limited geographic area indicated by the spill area in the DARP/EA. All scoters, grebes and most other seabirds affected are migratory species and were killed during their non-breeding season (winter), which means that we must reach out beyond this geographic area to seek effective and lasting conservation solutions, perhaps in wintering areas far from where the incident occurred. The conservation issues for migratory species are complex, requiring the involvement of multiple, often international and sometimes extractive stakeholders.

Because the two most common species of sea ducks (Surf and White-winged Scoters [*Melanitta perspicillata*, *M. fusca*]) are repeatedly and greatly impacted by oil spills in California (e.g. 1997 *Kure*, 1999 *Stuyvesant*, 2007 *Cosco Busan* Oil Spill) and to date have yet to be significantly compensated for within these plans, I offer these project concepts focused on mitigation for these species.

Please consider the following three projects in your assessment of potential alternatives to restore damages from the *Cosco Busan* Oil Spill:

- **Identification and Mitigation of Mortality Factors affecting Sea Ducks in California**

Sea ducks populations are in serious declines from multiple indicators, including breeding bird surveys in the US¹ and Canada², aerial surveys³ and beach surveys⁴. The reasons for dramatic declines in scoter

¹ [FWS 2010] Trends in Duck Breeding Populations, 1995-2010. U.S. Fish and Wildlife Service. July 2, 2010.

²Dickson, D. L. and H. G. Gilchrist. 2002. Status of Marine Birds of the Southeastern Beaufort Sea. *Arctic* 55:46–58.

populations are not well understood. Specifically the roles of parasites and pathogens have yet to be examined fully. Skerratt and others⁵ suggested infectious diseases to be a limiting factor.

In central CA, the most frequent human-related impacts to sea ducks are entanglement (1.5%) and chronic oil pollution (1%), based on a 2005-2009 study of mortality factors affecting marine birds conducted in central CA⁶. Whereas infectious disease occurs are thought to occur less frequently, waterfowl are one of the most susceptible groups of birds to massive disease outbreaks caused by bacteria (e.g. Avian Cholera, Botulism), which occur episodically and can affect 10,000s of individuals in a single event⁷. Recently, a new threat to the Pacific scoter populations has emerged; plumage fouling from harmful dinoflagellate blooms caused the mass stranding of thousands of birds in CA, OR and WA^{8,9}. Given the potential synergistic effects of sea surface temperature and increased coastal eutrophication to increase the probability of parasitic, bacterial, fungal, viral, harmful algal, chemical and other unusual die-offs, it is prudent to increase response capabilities and preparedness for treating these unique and vulnerable marine birds.

Given the large mortality to scoters during the spill and the high level of conservation concern, it is clear that more information regarding potentially compounding mortality factors warrants further investigations into those which may affect population trends to inform mitigation for, and management of these populations.

For these reasons, it would be of management interest to study the large number of *Cosco Busan* carcasses collected during the spill (~1,800) to determine the prevalence of (1) a highly contagious respiratory infection, *Aspergillosis*, (2) the frequency of parasitism by acanthocephalan worms, and (3) other contributing mortality factors among seabirds collected and died during the rehabilitation effort. This would allow for understanding of contagious and potentially zoonotic impacts and how these differ among species. This might help to explain losses contributed by these other disease factors that

³ Washington Fish and Wildlife Commission, unpublished report.

⁴ Beach Surveys conducted by Moss Landing Marine Laboratories (BeachCOMBERS) indicated a significant reduction in the number of white-wing scoters found from 1970s to 1990s. Nevins, HM, SR Benson, EM Phillips, J de Marignac, A deVolgelaere, J Ames and JT Harvey. 2011. Coastal Ocean Mammal and Bird Education and Research Surveys (BeachCOMBERS): ten years of monitoring the pulse of the Monterey Bay National Marine Sanctuary, 1997 – 2007. Sanctuary Conservation Series. <http://sanctuaries.noaa.gov/science/conservation/beachcomber.html>

⁵ Skerratt, L.F., J. C. Franson, C.U. Meteyer and T. E. Hollmen. 2005. Causes of Mortality in Sea Ducks (Mergini) Necropsied at the USGS-National Wildlife Health Center. *Waterbirds* 28(2): 193-207.

⁶ Nevins, HM, C Young, C Gobble, and JT Harvey. 2011. Chronic Oil and Seabirds. Report to California Department of Fish and Game Office of Spill Prevention and Response. [unpublished report] 47 pp. Available from: Seabird Health Study, Marine Wildlife and Veterinary Care and Research Center, 1451 Shaffer Road, Santa Cruz, CA 95062

⁷ [USGS] U.S. Geological Survey. 1999. Field Manual of Wildlife Diseases, General Field Procedures and Diseases of Birds. Milton Friend and J. Christian Franson, Technical Editors. U.S. Geological Survey, Biological Resources Division, National Wildlife Health Center, 6006 Schroeder Rd., Madison, WI 53711. 440 p. Available online: http://www.nwhc.usgs.gov/publications/field_manual/

⁸ Jessup, D. A., M. A. Miller, J. P. Ryan, H. M. Nevins, H. A. Kerkering, A. Mekebri, D. B. Crane, T. A. Johnson, and R. M. Kudela. 2009. Mass Stranding of Marine Birds Caused by a Surfactant-Producing Red Tide. *PLoS ONE* 4(2): e4550. doi:10.1371/journal.pone.0004550

⁹ Phillips, EM, JE Zamon, HM Nevins, C Gobble, R Deurr, and L Kerr. 2011. Summary of birds killed by a harmful algal bloom along south Washington and north Oregon coast during October 2009. *Northwestern Naturalist* 92: 120-126.

would not otherwise be understood without examining these birds. In order to improve rehabilitation care and restore healthy populations, we need to understand which disease factors are most prevalent and which may be treatable. This project would provide a quantification of sources of injury affecting scoters and identification of threats to the Pacific Flyway population. Ultimately this will benefit the health of the population.

- **Rehabilitation as Mitigation of Human-impacts to Sea Ducks and other Seabirds**

To my knowledge, this is the first oil spill mortality assessment to subtract “those rehabilitated and released birds that likely survived” from the estimated damages (DARP/EA Appendix B, p. 84). This marks a change in the perception by oil spill restoration councils of the value of oiled wildlife rehabilitation, which has greatly improved in the last 20 years. This is highly noteworthy that the *Cosco Busan* Trustees have set a novel precedent in oil spill response and restoration —that rehabilitation of oiled birds is not only valid during response because of public and legal mandate, but that rehabilitation has a population-level value from the Trustees’ perspective.

Based on this idea —*that rehabilitation can compensate for individuals lost in the spill*—the trustees might consider the following project to compensate for sea ducks and other seabirds damaged by the *Cosco Busan* oil spill. The trustees could compensate for losses of sea duck species due to *Cosco Busan* by directly replacing equivalent numbers of birds through the annual rehabilitation of sick and injured sea ducks related to entanglement and other human-caused injuries. This would result in a measureable increase in number of individuals per year rehabilitated and released which would otherwise be killed through sources of injury and morbidity including chronic oiling, gunshot, entanglement, infectious and non-infectious diseases. Each year rehabilitation centers through the state treat and care for hundreds to thousands of sick and injured sea ducks and other seabirds with support based solely from volunteer time and private donations. This could be greatly improved through a project to build capacity within existing oil spill response centers that would both compensate for lost birds and have the added benefit of increasing oil spill readiness and improving animal care techniques.

- **Temporary Reduction of Hunting Pressure**

A project could compensate for losses of sea duck species due to the 2007 *Cosco Busan* by replacing equivalent numbers of birds through a temporary 3-7 year reduction in hunting pressure through a permit buy-back and hunter education program. It is surprising that at this point in the planning process the idea of compensating for losses from the *Cosco Busan* oil spill by reducing hunting pressure in the local (i.e., Pacific Flyway) population would not have been considered by the agencies. An

increase in number of individuals per year which would otherwise be taken through direct harvest on state and federal permits would conceivably replace equivalent numbers in a relatively short time.

Direct harvest of Surf Scoters in CA is on the order of 475 birds/ yr (1999-2010); this is between 12-19% of the total Pacific flyway harvest, estimated to be ~4,000 birds per year. In 2008 alone, an estimated 1,400 scoters were killed during the annual hunt in CA; this is nearly equivalent to the 1,147 scoters killed in the spill. The trustees would benefit from engaging and partnering with the hunting groups (e.g., California Waterfowl Association, Duck Unlimited, others) to provide for a temporary reduction in take of Surf and White-winged Scoters in CA and elsewhere in the Pacific Flyway. Certain localized human-related threats, such as hunting pressure and injuries, are more easily mitigated within existing state and federal agencies management purview than larger natural and environmentally-stochastic sources of mortality. This would also provide an opportunity to engage this stakeholder community in factors affecting their resource such as losses to oil spills, climate change and other mortality factors.

In my opinion, all three of these projects provide direct nexus, tangible replacements and/or significant contributions to replacing equivalent birds and will cause no adverse environmental impacts.

Thank you for the opportunity to provide input on this restoration plan. Please contact me if you need clarification on the ideas presented here.

Sincerely,

A handwritten signature in cursive script that reads "Hannah M. Nevins".

Hannah Nevins
Seabird Biologist
190 Benito Ave.
Santa Cruz, CA 95062, hnevins@mlml.calstate.edu

From: Joshua Adams <jadams@mlml.calstate.edu>
To: <shampton@ospr.dfg.ca.gov>, RW Henry <henry@biology.ucsc.edu>, HannahNev...
Date: 11/4/2011 10:51 AM
Subject: seabird enhancement along West Cliff Drive, Santa Cruz, CA

RE: Draft DARP/EA for the Cosco Busan Incident

Dear Steve,

Thank you for the opportunity to provide public comments on the *2011 Cosco Busan Draft Damage Assessment and Restoration Plan/ Environmental Assessment (DARP/EA)*. Clearly the trustees have put a significant effort into making the best available knowledge for public review and I commend the Trustees and RP for the level of detail provided therein.

Estimated Mortality from Bird Injury Report - PIGU – 6; BRAC – 262; PECO –16; CORM – 94

Monterey Bay – samples collected during the time of the spill matched Cosco (p. 55)

In spring 2011, we conducted an experiment (with the permission of the City of Santa Cruz) along West Cliff Drive whereby we removed several hundred pounds of invasive ice plant from a Brandt's cormorant (BRAC) nesting ledge just prior to nest initiation. The following day the cleared area was occupied by pre-nesting BRAC. We enlisted volunteer community support to monitor the cormorants at this site and provide public outreach and education throughout the breeding season. Pairs that initiated incubation in cleared areas experienced levels of reproductive success equivalent to the near-by colony located at Año Nuevo Island. We believe that this work can be repeated and enhanced in the future to replace BRAC lost in the Cosco Busan Spill. Furthermore, the habitat along west cliff provides nesting and roosting sites for approximately 30-40 pairs of pigeon guillemots (PIGU). Although there are no estimates of reproductive success for this population, we contend that habitat restoration and perhaps predator control adjacent to these nesting sites can also benefit this species. We have formed a community of people interested in restoring native plant communities adjacent to high quality seabird nesting areas along West Cliff and currently are working to secure funds from the OSPR environmental enhancement fund (EEF) to complete initial restoration work. We urge the Trustees of the Cosco Busan Settlement to consider supporting collaborative restoration efforts along West Cliff Drive, Santa Cruz. Such efforts could help offset damages to seabirds affected by the Cosco Busan oil spill.

Thanks,

Josh Adams



SONOMA LAND TRUST

966 Sonoma Avenue
Santa Rosa, CA 95404
Tel: 707 526 6930
Fax: 707 526 3001
www.sonomalandtrust.org

October 22, 2011

Steve Hampton
California Department of Fish and Game Office of Spill Prevention and Response
1700 K Street
Sacramento CA 95814

Subject: Cosco Busan Oil Spill - Draft Damage Assessment and Restoration Plan/Environmental Assessment

Dear Mr. Hampton,

Like all who value the Bay for its habitat, fishing, and recreation, the Sonoma Land Trust (SLT) is pleased to see the comprehensive civil settlement between federal, state and local agencies and the owners and operators of the M/V Cosco Busan.

We support the process and outcomes described in the Draft Damage Assessment and Restoration Plan/Environmental Assessment. Although we are disappointed by the relatively small proportion of the settlement being allotted to habitat restoration projects, we recognize the high toll paid by recreational users as a result of the spill.

The Sears Point Restoration Project, a project of SLT located on the Sonoma County shoreline of San Pablo Bay, contains both restoration and recreation elements. The Project will restore nearly 1,000 acres of tidal marsh and construct 2.5 miles of the Bay Trail overlooking the restored tidal marsh. This trail segment will connect with 1.3 miles of existing Bay Trail and will provide greatly expanded recreational opportunities along the Bay in an area that has few. In addition to constructing the trail and the levee on which it will sit, SLT will construct an at-grade public railroad crossing, access road, and parking lot. We are pleased to see that \$7.5 million dollars of the \$18.8 million dollars allotted for recreational improvements will be available through a competitive grant process. We look forward to submitting our proposal.

Kind Regards,


Julian Meisler
Baylands Program Manager

From: cela oconnor <celaoconnor@hotmail.com>
To: <shampton@ospr.dfg.ca.gov>, <kbimrose@farallones.org>
CC: John OConnor <jfoconnor@att.net>
Date: 10/28/2011 4:44 PM
Subject: Cosco Busan Oil Spill funds comment letter

Dear Mr. Hampton,

Please consider this option to help direct the money now available from the Cosco Busan Oil Spill to a vitally important project in Bolinas Lagoon.

Bolinas Lagoon was in the pathway of the Cosco Busan Oil Spill on November 7, 2007. Local response helped to reduce the adverse impacts of that oil spill. Many millions of dollars are now available from the oil spill to do restoration work in the many areas affected by the oil spill. We believe that Bolinas is deserving of a large share of the restoration funds now available.

Bolinas Lagoon is designated a Ramsar site. This tidal estuary is a wetland of international importance and has just undergone extensive investigation, research and planning in preparation for the Bolinas Lagoon Ecological Restoration Project. A Locally Preferred Plan (LLP) was selected and titled Bolinas Lagoon Ecological Restoration Project. The several actions for that plan are found on Page 89 of that document.

The most important goal of the LLP is "to restore natural sediment transport and ecological functions of Bolinas Lagoon by ameliorating the negative effects of human induced changes". Seadrift Lagoon is LLP - 8 "manage tidal exchange of Seadrift Lagoon to promote tidal circulation in Bolinas Lagoon".

We support millions of dollars be directed toward that effort from the Cosco Busan Oil Spill funds. The Army Corps of Engineers was developing a plan to manage more effective tidal exchanges utilizing Seadrift Lagoon waters to incorporate into the daily tidal exchanges. We support the plan when finalized.

A brief history of the development of Seadrift Lagoon: The Dipsea housing development in Bolinas Lagoon encompasses ninety acres of original lagoon surface area. A forty-acre surface area within the ninety-acre surface area was then dredged to become Seadrift Lagoon. The dredged material along with other fill was used to form fifty acres of road and building sites.

The Army Corps of Engineers approved the original plans for the Seadrift Lagoon. The Seadrift Lagoon was to maintain connectivity with Bolinas Lagoon and to function as intertidal waters. Following the completion of the project, the culverts at each end of the Seadrift Lagoon were closed and only used to freshen the internal waters of Seadrift Lagoon during one tidal cycle occasionally. The lagoon was made landlocked and has remained landlocked. The amount of tidal water that Dipsea Lagoon could contribute to the greater lagoon tidal prism is considerable.

An intertidal forty acre Dipsea Lagoon with two tides daily, added together totals a seven foot height of daily water exchange and would equal two hundred and twenty eight acre feet of tidal water exchange a day or 450,000 cu yds of water would be added to the tidal prism each day.

There is no other way of increasing vital lagoon tidal volume. Dredging to accomplish a tidal prism gain is not considered a viable option. I urge the decisionmakers to fund to the greatest degree possible this vital Seadrift Lagoon LLP- 8. The Bolinas Lagoon qualifies in many ways to receive substantial funds from the Cosco Busan Oil Spill.

Bolinas Lagoon and its environs are used by millions of bay area persons as a place of recreation. Stinson Beach and Bolinas Beach and the Golden Gate National Recreational Area are all common to Bolinas Lagoon. Marin County Open Space District and Parks Dept. manage the day to day activities of the Bolinas Lagoon. It is most deserving of the lions share of the funding designated for recreation. Common recreational activities are kayaking, swimming, viewing the wildlife, fishing, clamming or walking its shores. Ecologically the lagoon will benefit greatly from the increase in tidal prism from the Seadrift Lagoon Army Corps of Engineers' Plan.

Sincerely,

John and Cela O'Connor
P.O. Box 116
Bolinas, CA 94924

10/19/11

I want to acknowledge the Trustees who have put a lot of work into developing this DRAFT Damage Assessment and Restoration Plan and also thank them for allowing this opportunity for public comment. My name is Kate Bimrose and I am a representative of the Farallones Marine Sanctuary Association. The natural resources of the Gulf of the Farallones National Marine Sanctuary were damaged by the Cosco Busan oil spill and currently there are no preferred projects within the Restoration Plan to address the Sanctuary waters impacted by the spill. One project that has been identified, but not preferred, is the continuation of an invasive species removal project at Kent Island in Bolinas Lagoon. Although five years of funding for this project have been secured, the Farallones Marine Sanctuary Association strongly urges the Trustees to continue this project by allocating funds for years 6-10 in order to achieve successful completion of the project. Because the project will have been underway for five years prior to allocation of Cosco Busan restoration funds, execution of years 6-10 of the project will be at a reduced cost, approximately \$200,000, and all necessary environmental reviews and permits will have already been received. Additionally, if funding is allocated, completion of the Kent Island project will achieve comprehensive invasive species removal, native vegetation planting, and restore regionally rare flood shoal tidal delta habitat, all of which are critical to restoring resources damaged by this oil spill.

Thank you,

Kate Bimrose

Farallones Marine Sanctuary Association
kbimrose@farallones.org.



Making San Francisco Bay Better

October 28, 2011

Steve Hampton
Office of Spill Prevention and Response
1700 K Street
Sacramento, CA 95814

SUBJECT: Draft Damage Assessment and Restoration Plan/
Environmental Assessment for the *Cosco Busan* Oil Spill

Dear Mr. Hampton:

Thank you for the opportunity to comment on the *Draft Damage Assessment and Restoration Plan/Environmental Assessment for the Cosco Busan Oil Spill* (DARP). Although the San Francisco Bay Conservation and Development Commission (Commission or BCDC) has not reviewed the document, the following are staff comments based on our review of the DARP in the context of the Commission's authority under the McAteer-Petris Act (California Government Code Sections 66600 et seq.) and the federal Coastal Zone Management Act, and the provisions of the Commission's *San Francisco Bay Plan* (Bay Plan). The Commission has jurisdiction over San Francisco Bay generally from the Golden Gate to the south end of the Bay and to the Sacramento River line; a shoreline "band" extending inland 100 feet from the Bay; certain tributary waterways; salt ponds; and areas diked from the Bay and managed as wildlife refuges and duck clubs; and the Suisun Marsh. Within the Commission's jurisdiction, any person or governmental agency wishing to place fill, extract materials, or make any substantial change in use of any water, land or structure must first secure a permit from the Commission.

The DARP responds to the need for the public to be compensated for natural resource and recreational losses resulting from the November 2007 *Cosco Busan* oil spill. State and federal Trustee agencies assessed the types and extent of damages, applied appropriate costing to the damages, and received through settlement, funding for restoration projects such as described in the DARP, some of which lie outside the Commission's jurisdictional authority. The DARP correctly states that individual implementing entities will need to apply for required permitting, including from the Commission.

Project Permitting. A number of the preferred projects called for in San Francisco Bay present the potential need for a BCDC permit. The DARP further states no adverse coastal effects are anticipated from development of the proposed restoration projects; however, for any proposed activity in the Bay, including placement of fill as defined in the McAteer-Petris Act, the Commission is required to assess the potential effects to resources under its regulatory authority. Projects identified in the DARP where Commission approval likely will be required, include, but are not necessarily limited to:

- Placing water control structures at Eden Landing ponds E6A and E6B for water level management to enhance habitat for small ducks and grebes in the winter and for Snowy Plovers during summer months.
- Placing roosting platforms on the Berkeley Pier for pelicans, cormorants, gulls, scoters and diving ducks, and shorebirds.

- Planting 36 acres of eelgrass over a nine-year period to provide spawning habitat for herring at specific locations in the Central Bay.
- Activities to restore sandy beach habitat and possible shallow subtidal habitat at Albany Beach.
- Activities to restore salt marsh and mudflat habitat at Aramburu Island. This project appears already to have been permitted by BCDC.
- Placement of mesh bags containing Pacific oyster shells at various locations in the Central Bay to restore the native oyster population.

Recreational Use. As described in the DARP, “[t]he Trustees intend to select a suite of restoration projects to compensate the public for lost use of the recreational resources caused by the spill. These projects may include improvements or enhancements to public piers, parks, bike paths, boat ramps, fishing areas, or other infrastructure in order to increase the value of recreational experiences involving beach use, boating, and/or fishing.” As understood by Commission staff, projects will be chosen based on a process to be developed by the Trustees, which will be communicated to the public in the near future. BCDC looks forward to the upcoming selection process and would like to highlight three areas of concern at this time, which will require coordination with local proponents for submittal to the Trustees.

Albany Beach. The DARP states the Trustees will work closely with the East Bay Regional Park District in its restoration of Albany Beach. BCDC staff sees this location as a prime opportunity to improve recreation facilities as well, including seating, shelters, picnic tables and a public restroom. The public is known to swim in the Bay at this location, and it is a popular launching spot for kitesurfers. The *San Francisco Bay Area Water Trail Plan* being implemented by the State Coastal Conservancy identifies Albany Beach as a potential trail head, or launching site, for boaters in human-powered and beachable sail craft, such as kayaks, dragon boats, outrigger canoes, rowboats, windsurfers and kiteboards.

Removal of obstructions to on-water recreational use. The Commission works with other agencies to try to remove from the Bay fill, structures, and vessels that adversely affect Bay habitat and recreational uses. Examples of such projects that have come to our attention include, but are not limited to, the following:

- Removal of approximately 120 abandoned and lived-on vessels moored on public property in Richardson’s Bay, Marin County.
- Removal of the collapsed Castro Point Pier including many creosote treated pilings on State Lands Commission property on the City of Richmond shoreline, Contra Costa County, as well as any other abandoned and/or derelict creosote treated pilings located on public property.
- Removal of derelict fill and barges on public property at the foot of West C Street in the City of Benicia, Solano County.
- Removal of a number of large and small vessels, some of which are owned and some of which are abandoned, located around the Bay.

Aquatic Park Municipal Pier. Aquatic Park at the western edge of San Francisco's Fisherman Wharf area provides protected water-recreation opportunities for hundreds of individual swimmers and two swim clubs, as well as for the rowing community. Additionally, the calm water environment provided by the curving breakwater is the city's only protected anchorage. Also located here is one of only two sandy beaches in San Francisco. The Municipal Pier itself is a favored access point to the Bay for visitors to the northern waterfront. This amenity is heavily used by locals and tourists year-round and supports tens of thousands of users, including many sustenance fishers, each year. The deteriorated condition of the breakwater, however, limits the number who can enjoy closer access to the Bay at this unique location between the Golden Gate Bridge and Alcatraz Island, and even dictates its closure during special events when larger numbers are drawn to the waterfront. Funding is needed for reconstruction of the City of San Francisco's Municipal Pier at Aquatic Park, which is partially closed due to structural issues and possibly slated for full closure in 2012.

Staff very much appreciated the Trustees' clear and thorough accounting of the adverse effects to the environment created by the oil spill and the rationale for the preferred restoration measures. We look forward to working with project applicants in implementing the Bay habitat enhancements. Please refer implementing agencies to our Chief of Permits, Bob Batha, at 415.352-3612, or to our Senior Permits Analyst, Jaime Michaels at (415)352-3613.

Should you have any questions related to these comments, please do not hesitate to contact me at 415.352-3644 or lindas@bcdca.gov. Thank you again for the opportunity to review the DARP for the *Cosco Busan* oil spill.

Sincerely,

LINDA SCOURTIS
Coastal Planner

cc: Katie Shulte Joung, State Clearinghouse



October 31, 2011

Steve Hampton
California DFG-OSPR
1700 K Street, Suite 250
Sacramento, CA 95814

**Subject: *Cosco Busan* Draft Assessment and Restoration Plan
Environmental Assessment**

Dear Mr. Hampton:

On behalf of the San Francisco Bay Trail Project, I am submitting comments on the Draft Assessment and Restoration Plan Environmental Assessment for the *Cosco Busan* oil spill. The San Francisco Bay Trail is a visionary plan for a shared-use bicycle and pedestrian path that will one day allow continuous travel around San Francisco Bay. Currently, 313 miles of trail have been completed. Eventually, the Bay Trail will extend over 500 miles to link the shoreline of nine counties, passing through 47 cities and crossing seven toll bridges. The attached map shows the regional vision of the project.

The Bay Trail provides the public with a direct connection to the edge of San Francisco Bay. The trail attracts a wide variety of users, including: walkers, bicyclists, joggers, wheelchair riders, dog walkers, bicycle commuters, schoolchildren, etc. Over 50 miles of shoreline trail exist within the affected shoreline area and portions of the trail were closed to the public as a result of the oil spill and clean-up efforts.

The Bay Trail is administered by the Association of Bay Area Governments (ABAG) and we are responsible for coordinating the completion of the trail by allocating funds and managing grants to local, state and federal governments and other shoreline land managers. We are well-positioned to identify sections of the trail that need improvement and are eligible for funding as a Recreational Use Project under this program to compensate the public for lost recreational use resulting from the spill. Please include ABAG on the list of agencies to submit project ideas, review proposals and manage improvements to Bay Trail segments through this program.

Thank you for considering these comments and please contact me at 510-464-7935 or laurat@abag.ca.gov if you have questions about this letter or the Bay Trail in general.

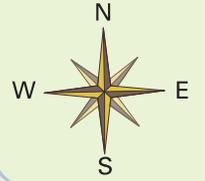
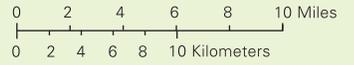
Sincerely,

A handwritten signature in black ink that reads "Laura Thompson". The signature is written in a cursive, flowing style.

Laura Thompson
Bay Trail Project Manager



SAN FRANCISCO BAY TRAIL



- Existing and Planned Bay Trail
- Connector Trail
- County Line
- Parks and Open Space



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Gulf of the Farallones National Marine Sanctuary
991 Marine Dr., The Presidio
San Francisco, CA 94129

October 31, 2011

Steve Hampton
California Department of Fish and Game, Office of Spill Prevention and Response
Sent Via Email to: shampton@ospr.dfg.ca.gov

RE: Cosco Busan Draft Damage Assessment and Restoration Plan Comments

Dear Mr. ^{Steve} Hampton,

The Gulf of the Farallones National Marine Sanctuary (Sanctuary) would like to thank the Trustees for their work in developing the Cosco Busan Draft Damage Assessment and Restoration Plan, and for providing this opportunity to give ideas for recreational projects not currently identified.

The Sanctuary recommends that funding distribution for recreational projects prioritize projects that protect and assist with the restoration of wildlife, while also inspiring marine stewardship along the shorelines of San Mateo, San Francisco and Marin counties. The Sanctuary recommends the Trustee Council fund recreational programs that serve these two functions, as well as combine experiential learning and stewardship messages. Projects of this sort will help compensate for the impacts to habitat and species resulting from the oil spill, and give recreational users tools to reduce human impacts to shoreline/nearshore species so as to protect future generations of seabird and mammal populations.

One recreational project that fits perfectly with the combined priorities of recreation, resource protection and marine education and stewardship, is the establishment of a bird blind that spans approximately 200 feet of a planned interpretive trail at Devils Slide. The Sanctuary specifically requests that recreational funds established for San Mateo County are allocated to this project. Funding to implement the bird blind would: 1) protect seabirds from human disturbances in an area that is known to be vulnerable to seabird populations; 2) provide hikers/bikers with an enhanced viewing opportunity of nesting Common Murres, Pigeon Guillemots, Peregrine Falcons and other sea life; and 3) educate visitors about the importance to protect seabirds from human disturbance.

The "bird blind" project has a high probability of success and, because of its conservation and outreach components, its implementation will provide several important benefits to species affected by the Cosco Busan oil spill. If funded, the Sanctuary intends on being a partner, and will link this project to the messages and branding of its Seabird Protection Network (Network). The Network specifically aims to reduce human disturbance and improve the survival and recruitment of seabirds at coastal breeding and roosting sites by targeting the three main disturbance sources: boats, planes and humans on foot. This bird blind project fits with those Network goals.

Thank you for the opportunity to provide comments. Please contact me if you have any questions.

Sincerely,

Maria Brown
Superintendent



October 10, 2011

Steve Hampton
California DFG-OSPR
1700 K Street, Suite 250
Sacramento, CA 95814
shampton@ospr.dfg.ca.gov

Re: Damage Assessment and Restoration Plan (DARP) Settlement funds for Aramburu Island Enhancement Project

Dear Mr. Hampton,

I am writing to express my support for the Aramburu Island Enhancement Project, currently being implemented by the Richardson Bay Audubon Center & Sanctuary, in conjunction with the Marin County Department of Parks and Open Space. As a local government official representing the Town of Tiburon, I value our natural resources and feel that it is critical we do our best to ensure that our protected areas provide the best possible habitat for wildlife while protecting our valuable coastlines.

I fully support using settlement monies from the Cosco Busan oil spill to fund the current plan to remove non-native plants, increase cover of native plants, and expand seasonal wetlands and tidal marsh that will ultimately improve habitat for resident and migratory birds. Urban and industrial development around the entire San Francisco Bay, and the Marin coastline in particular, have greatly limited habitat for native birds and wildlife. Enhancing habitat within Richardson Bay is critical for the large numbers of water birds that visit the site each year, earning Richardson Bay the designation of an "Important Bird Area". The Aramburu Island Project is an important step in creating the types of habitat that were once common on Richardson Bay more than a century ago.

In addition, the Aramburu Island Project will reduce the rate of erosion on the eastern side of Aramburu Island that currently contributes to increased sedimentation in Richardson Bay. By firming up the eastern shoreline, this project will mitigate the effects of sea level rise.

The following goals of the project are directly aligned with the goals of the DARP:

- Habitat improvements at Aramburu Island
- Creation and improvement of bird roosting habitat
- Oyster bed restoration at multiple sites around the Bay
- Recreational use improvements, via a new kayak picnic area on the island

Jeff Slavitz
Mayor

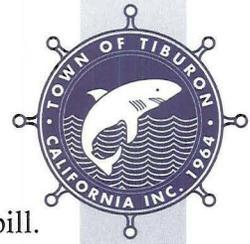
Jim Fraser
Vice Mayor

Richard Collins
Councilmember

Alice Fredericks
Councilmember

Emmett O'Donnell
Councilmember

Margaret A. Curran
Town Manager



Additionally, Aramburu Island is a logical choice for this funding, as more than 100 oil-covered water birds were found on Aramburu Island in the days after the Cosco Busan spill.

It should also be known that Richardson Bay Audubon Center and Marin County have done an excellent job keeping the community informed throughout the Aramburu Island Project, and I have been provided ample opportunity to learn more about this project, and to provide input when appropriate. They have held four public meetings during which they answered questions and addressed many concerns. Audubon also posts work days and opportunities to assist with the project on their website to fully engage the community.

Audubon's track record of collaborative restoration and research projects around the Bay confirms that they are taking this project seriously, and that they will be thoughtful and thorough in its execution. Nationally recognized organizations such as Point Reyes Bird Observatory (PRBO) Conservation Science, San Francisco State University (SFSU), and the National Oceanic and Atmospheric Administration (NOAA) repeatedly partner with Audubon, which indicates that they are a valuable and reputable partner. In fact, Audubon successfully restored tidal marsh habitat in San Pablo Bay in partnership with the San Pablo Bay National Wildlife Refuge.

In conclusion, I support the work of Richardson Bay Audubon Center and Marin County, and believe that this project will greatly benefit wildlife, habitats, and the people of San Francisco Bay, and will contribute to a healthier Bay. Richardson Bay Audubon is a leader in environmental stewardship and habitat restoration in the Bay Area. Audubon continues to ensure the protection of the Bay, from which we will all benefit. I am happy to see Cosco Busan Settlement funds support this project.

Sincerely,

Margaret Curran
Town Manager
Town of Tiburon

C: Brooke Langson, Director
Richardson Bay Audubon Center & Sanctuary

From: Mark Rauzon <mjrauz@aol.com>
To: <SHAMPTON@OSPR.DFG.CA.GOV>
Date: 10/30/2011 6:56 PM
Subject: comments

To Steven Hampton, OSPR.
Comments on the Cosco Busan Oil Spill Draft Damage Assessment and Recovery Plan

I am pleased to see the process moving forward after a long hiatus. I hope you are successful in implementing the proposed projects. The very thorough plan reflects well the time and consideration you and others have put into this document.

You have an ambitious set of restoration plans (see below) that entail work in the aquatic environment, which is expensive. I hope the allotted moneys -about 5 million dollars- will be able to accommodate a successful effort on all the projects. When operating in water, costs can soar quickly.

I suggest prioritizing these items so the major efforts that have the biggest payback for the investment are adequately funded.

Of course one of the issues about this set of action items is the amount of funds going to the public "lost day-use" concept, something like 12 million. Will this money show benefit to the damaged resources? Perhaps a pre-budgeting of the proposed natural resource projects is required and left over funds can go to the public sector.

Overall I approved of the plans as stated. However, in the public actions, several new ones should be added:

- Redesigning the end of the Berkeley Pier so that the public can see the enhanced bird platforms built in another project.
- Remote "critter cams" cameras can shoot live video from the newly restored pier for consumption at the nearby Berkeley Marina Nature Center.
- Make a movie about the various restorations projects, especially the Berkeley Pier.

Regarding the Berkeley Pier, I applaud inclusion of this artificial island concept, which has been proposed many years ago and was awaiting a funding source for implementation. Now that one has arrived, I hope this project is expedited.

Shorebirds and seabirds will benefit, especially as sea level rise threatens our beaches, which are already overcrowded with people and dogs, invasive grasses and garbage. This platform will even allow birds to avoid an oil spill event!

Construction of this platform can also further social justice by having students training in the welding, construction trades at Laney College make them for professional marine construction company placement. In other words, some of the lost public shoreline use can be translated into community benefit from these platforms being locally made.

Thank You,
Mark Rauzon
Laney College,
Oakland, CA

Comments on the Draft Damage Assessment and Restoration Plan/Environmental Assessment Cosco Busan Oil Spill

October 25, 2011

These comments address the only the beach and dune enhancement proposal at the Albany Beach.

I believe the plan incorrectly assesses the probability of success for the Albany Beach enhancement proposal, especially with respect to restored dune habitat.

Technically, the site looks good for habitat restoration. What has been inadequately considered are a) the long-established human use patterns; and b) the ongoing political controversy over appropriate uses and access rules for this small section of the East Bay shoreline.

Albany Beach has been heavily used for several decades by off-leash dogs and their owners. Private advocacy groups (Citizens for East Shore Parks, Audubon, and certain local factions of the Sierra Club) have been singularly unsuccessful in persuading East Bay Regional Park District, or any other State or Local authority, to even begin to enforce the existing restrictions on off-leash dogs. The dog restrictions and leash rules exist in theory only - Albany beach has been and continues to be the best de facto off-leash dog beach along the East Bay shoreline, and the only accessible sandy dog beach for many miles north or south.

Rightly or wrongly, the dog people are not giving up their off-leash access to Albany Beach and the adjoining areas without a very hard fight on several levels - and they represent about 40% of all East Bay households.

It is clear that any proposed habitat restoration at Albany Beach inshore of extreme low tide can only be successful in conjunction with draconian enforcement measures directed against this very large and effective interest group. These will be expensive, unpopular, and most likely not achieve the intended result. It will be virtually impossible to prevent at least occasional disruption by off-leash dogs, and the effect of this disruption on the viability of any habitat restoration project needs to be fully assessed.

The political implications are also very real and very negative. Draconian enforcement measures will not endear the program to some of the most valuable potential supporters of FWS and habitat protection in general. CESP and allied groups, on the other hand, stake a considerable portion of their own political credibility on the success of these projects in heavily used urban waterfront areas, exactly the places where they are the most expensive and the least likely to succeed.

If the real goal is habitat protection, rather than taking a side in local land-use politics, this part of the Albany shoreline should be left alone. On the other hand, projects that improve human access to the beach - and these are already a significant component of the current EBRPD plan - will be appropriate, cost-effective, and appreciated. These include an expanded legal parking area in closer proximity to the south end of the beach, power, water and sewage hook-ups to support washdown water and bathrooms, and access facilities for hand-launched watercraft.

For habitat enhancement, a much more sensible alternate proposal at a nearby site would create some cuts in the jetty surrounding the lagoon on the west side of the Albany Bulb. This would prevent hikers (and their dogs) from walking out onto the jetty, and instantly create many acres of safe roosting for a number of bird species. (I note the nesting pair of black oystercatchers on the Berkeley Marina rip-rap breakwater, a similar structure that is isolated from land. Photo, including the chick, at <http://www.well.com/user/pk/waterfront/photo-of-the-week/Oystercatcher-02-2.html>.) This would likely be considerably more cost-effective than restoring rotting pilings for the proposed habitat platforms on the derelict Berkeley Pier.

Please note that these comments are my own and do not necessarily reflect the Berkeley Waterfront Commission.

Paul Kamen, Naval Architect, P.E.

Chair, Berkeley Waterfront Commission <http://www.BerkeleyWaterfront.org>

1224 Campus Drive, Berkeley, California 94708

pk@well.com <http://www.SurfacePropulsion.com>

510-540-7968 510-540-6324 (fax) 510-219-8106 (cell)

From: Richard Golightly <Richard.Golightly@humboldt.edu>
To: Steve Hampton <SHAMPTON@OSPR.DFG.CA.GOV>
Date: 10/24/2011 2:05 PM
Subject: Public Comments on Cosco Busan DARP

I wanted to add to the public comments on the Cosco Busan DARP. We have been conducting experiments with taste aversion in jays in Redwood National Park as a means to assist in recovery of Marbled Murrelets in California. The report from these experiments will be available in the next few months, but after your public comment period ends. Thus I wanted to provide some of the results as insight to the Trustees that may allow this new technique to be used to augment or reinforce other mechanisms considered by the trustees for Marbled Murrelets.

In the experiments, Steller's Jays were successfully dissuaded from eating or attacking mimics of murrelet eggs after being exposed to treated mimic-eggs, both in the lab and in the field. Results suggest that a reasonable application of this technique will reduce predation of murrelet eggs by the Jays by at least 37%, and perhaps much more. We will be recommending that treatment be applied to large landscapes to minimize the influence of untreated areas on murrelet habitat. The application of taste aversion will provide protections for at least one field season and perhaps for many seasons. The technique can be used to start management actions now or be used in additional experiments such as understanding effect time or assessing resultant changes in murrelet populations and productivity using at-sea measurements.

Thank you for the opportunity to comment,
Rick Golightly

--

Richard T. Golightly Ph.D.
Department Of Wildlife
Humboldt State University
Arcata, CA 95521
Phone: 707-826-3952
Fax: 707-826-3943

Strawberry Recreation District Zone IV

Tirrell B. Graham, Chair
P.O. Box 1186
Tiburon, CA 94920

October 26, 2011

Mr. Steve Hampton
California Department of Fish and Game
Office of Spill Prevention and Response
1700 K Street
Sacramento, CA 95814

Dear Mr. Hampton:

I am writing to comment on the *Cosco Busan Oil Spill Draft Damage Assessment and Restoration Plan/Environmental Assessment*.

On the east side of Strawberry Peninsula in Richardson Bay, there are approximately seventy private residences that have access to the Strawberry Channel, a channel that has existed since the early 1950s connecting the Strawberry Peninsula, Cove Apartments, and Strawberry Recreation District public dock and shoreline with San Francisco Bay. Most of the private properties have docks adjacent to the channel, and most of the owners are active boaters on San Francisco Bay. When Strawberry was beginning to be developed, navigation rights were given to the Strawberry Recreation District, and, in the mid-1980s, a special district, called Strawberry Recreation District Zone IV, was formed to fund and oversee the maintenance of the Strawberry Channel on behalf of Zone IV residence owners. District members pay annual assessments which are used to fund the dredging. I am the current Chair of Zone IV.

The Strawberry Channel provides deep water access to Richardson Bay, not just for the Strawberry residence owners, but also for residents of The Cove Apartments (which has docks for approximately 40 boats). There is also public access to the Strawberry Channel from a public dock on Harbor Cove Way (located on land owned by the Strawberry Recreation District) and from multiple shoreside locations. Small boat operators, rowers, kayakers, stand-up paddlers and swimmers use the public dock on the channel for access to the Bay. The Audubon Society accesses Aramburu Island from a dock at the Cove Apartments. The south and west sides of Aramburu Island front on Strawberry Channel. Fishermen shorecast into the channel from the southerly tip of Strawberry Peninsula and the eastern tip of Harbor Cove Way.

The Strawberry Channel adds measurably to the diversity of aquatic wildlife in Richardson Bay. Before we resumed maintenance dredging in the early 1990s, the channel would completely dry out twice daily. Now with our dredging, there is a minimum of 6 feet of water in the channel 24 hours a day. Since the dredging was resumed, there has been an increase of wildlife. Harbor seals haul out on Aramburu Island only because of adjacent deep water access to and escape route from the island provided by the restored channel, as recognized in Audubon Society's island wildlife sanctuary development plan. Diving ducks, pelicans and terns feed comfortably in the channel, knowing there will be sufficient water. The channel provides Aramburu Island's source of separation from the shore to make it an appropriate site for both upland and shore bird sanctuary.

The Cosco Busan oil spill impacted the Strawberry Peninsula, and particularly the properties fronting on Strawberry Channel. This is reflected in the Oil Spill Draft Assessment document, Appendix I, which shows Richardson Bay and the Strawberry Peninsula shore within the "High Impact" region of San

Francisco Bay for boaters. The Herring Injury Report includes damage assessment for Richardson Bay, between Strawberry Peninsula and Sausalito's north shore. The Trustees of the settlement fund have recognized Richardson Bay as an impacted site by including in the Trustees' restoration plan selections both an eel grass planting project for Richardson Bay and a wildlife sanctuary development project which the Audubon Society will manage on Aramburu Island (the latter project receiving a grant of \$2,200,000 from the Trustees).

My specific comment on the Draft Damage Assessment and Restoration Plan is two-fold:

First, the Boating Losses Report, Appendix I, has an evaluation omission which significantly reduces its measurement of the impact of the oil spill on boaters. The appendix limited its measurement of recreational boater use to established commercial marinas and yacht club facilities. No count was given, apparently, to locations that have private (as opposed to public commercial and yacht club) boating access to the bay waters. In Marin County alone, this is at least several hundred boats, including the nearly 100 boat mooring sites available along the Strawberry Channel. (A study done in October, 2000 by Zitney & Associates estimated 77 daily boat trips in the Strawberry Channel from Strawberry and public and private Cove apartment users.) Likewise omitted from the Appendix I assessment were Marin County boat docks at Shelter Bay apartments in Mill Valley, private homes (and Tiburon Yacht Club) in Paradise Cay, residences along Corte Madera Creek in Greenbrae, and private homes and apartments along the San Rafael Canal. I believe that there are at least an equal number of uncounted boats and impacted boaters with private access to the bay waters in Alameda and San Mateo counties within the high impact boating area affected by the Cosco Busan spill. The recreational boating impact of the spill is almost certainly understated in the Assessment. It would be appropriate to specifically recite this likely damage undermeasurement in the Assessment.

Second, the draft plan provides for the \$18.8 million recreational restoration fund to be limited to public projects, including the \$1,400,000 portion of the settlement recovery which was generated as a result of the boating damage assessment and settlement with Cosco Busan. Those boating related losses were sustained by private boat owners and their guests, not by the land-based public at large. The recreation restoration plan should allow for boat-use organizations and facilities, whether private or public, to apply for and receive funding for projects related to boating access to the bay waters. Enhancement of boating access to San Francisco bay would be an appropriate offset for the recreational damage caused to boaters by the Cosco Busan oil spill. Boating access enhancements could include such items as boat launch ramp upgrades and repairs, breakwater repairs, channel and marina dredging, and construction of public docking or mooring facilities. San Francisco Bay is sorely lacking in public docking space in the vicinity of places boaters would appreciate being able to visit – for example, near restaurants and the ball park in San Francisco. The Trustees should make allowance in the Restoration Plan for specific boating related restoration disbursements. Additionally, it would be appropriate to have the disbursement of those funds overseen by an organization or group of entities familiar with Bay Area boating activities – marina operators, yacht clubs, fishing organizations, special districts, as possibilities. Our district, Strawberry Recreation District Zone IV, would like to oversee the distribution of recreation settlements in the Strawberry area. I ask that the Trustees consider including these proposed changes in the final version of the Restoration portion of the Cosco Busan Oil Spill Damage Assessment and Restoration Plan/Environmental Assessment document.

Thank you for your attention to these comments.

Tirrell B. Graham
Chair, Strawberry Recreation District Zone IV



FARALLONES MARINE SANCTUARY ASSOCIATION

October 28, 2011

Steve Hampton
California Department of Fish and Game
Office of Spill Prevention and Response
1700 K Street
Sacramento, CA 95814

To: Steve Hampton

The Farallones Marine Sanctuary Association (Association) would like to thank the Trustees for their work in developing the Cosco Busan Draft Damage Assessment and Restoration Plan, and for providing this opportunity for public comment. This letter serves as the Association's recommendation for: 1) Distribution of funding to recreational projects that provide opportunities to experience our shorelines in ways that do not disturb wildlife but inspire marine stewardship and; 2) The inclusion of restoration at Kent Island as a preferred project for impacted tidal flat and marsh habitat.

1) The Association recommends the Trustee Council fund recreational programs that combine experiential learning and stewardship messages along the shorelines of San Mateo, San Francisco and Marin counties. In addition, the Association requests that funds for recreational projects are allocated to a new interpretive trail at Devils Slide in San Mateo which is in need of a 200 foot bird blind to protect the seabirds from human disturbance while simultaneously providing the hikers with an enhanced viewing opportunity of nesting Common Murres, Pigeon Guillemots, Peregrine Falcons and other sea life.

2) The natural resources of the Gulf of the Farallones National Marine Sanctuary were damaged by the Cosco Busan oil spill, yet there are currently no preferred projects within the Restoration Plan to address the Sanctuary waters impacted by the spill. One project that has been identified, but not preferred due to existing funding, is the continuation of an invasive species removal project at Kent Island in the internationally recognized Bolinas Lagoon. Areas of Bolinas Lagoon tidal flat and marsh habitats were impacted by the Cosco Busan oil spill, likely causing direct and indirect impacts to the myriad of shorebirds and waterfowl, invertebrates, fish, and special status plants and animals that rely on the Lagoon's rich ecological habitat. Therefore, the Association requests that the Trustees allocate funding for restoration of Kent Island to compensate for the habitats and species impacted.

Some funding for this project has already been secured. Additional funding will not only support comprehensive removal of non-native vegetation and the planting of native vegetation, but upon completion of the project, will restore 23 acres of habitat including regionally rare flood shoal tidal delta habitat. Restoration of this habitat will improve conditions for the repopulation of native plants and create nesting habitat for the federally endangered Snowy Plover, one of the shorebird species impacted by the Cosco Busan oil spill. Additional funding for the project will also provide benefits to

the Lagoon's natural hydrodynamics, which will support secondary benefits to interconnected habitats and species supported by Bolinas Lagoon. These benefits resulting from the continuation of the Kent Island restoration project are critical to restoring the resources damaged by the Cosco Busan oil spill and the allocation of additional fund to complete the project will greatly increase the probability of project success.

Thank you for taking the time to consider these comments.

Sincerely,

A handwritten signature in black ink that reads "Terri Watson". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Terri Watson
Executive Director
Farallones Marine Sanctuary Association

From: Wanda Simpson-Baczek <wbaczek@earthlink.net>
To: <shampton@ospr.dfg.ca.gov>
Date: 10/21/2011 10:59 AM
Subject: 'Weighing In'

I was very interested in the article link from mojosail re: the possibility of a bird sanctuary/nesting area utilizing the old Berkeley pier. What a good, and forward-thinking option for everyone, the birds, the public, the planet...

I am a sail boat owner, and have seen too many untrained wannabes crash, or nearly crash into said pier. With a whole Bay out there to sail in, they cling to anything nearby, or try to drive through the 'opening.' Always an interesting experience to watch.

No charts for these folks. Just put up an Off Limits and send them out into our lovely bay waters... Keep 'em as far away as possible, and revive what was, once, when the Spanish first came, an area teeming with birds and fish and wildlife. Millions of birds, it is estimated, once used this whole area, now narrowed down to what has been reclaimed, a pittance, in the greater scheme of life on the Bay.

Let part of the 'sailing experience' be looking out into a Bay filled with life, once again.

W. Simpson-Baczek



Zach Peery
Assistant Professor
Department of Forest and Wildlife Ecology
120 Russell Laboratories, 1630 Linden Drive
Madison WI 53706-1598 USA
ph: (+1) 608-890-2766 fax: (+1) 608-262-9922
<http://forest.wisc.edu>

October 31, 2011

Dear Trustees,

Please accept this brief comment on the Cosco Busan Draft Damage Assessment and Restoration Plan. First, I commend the Trustees on developing such a comprehensive and well-crafted plan. However, I would like to comment on the fact that all of the restoration funds targeted at Marbled Murrelets will be applied to the northern California population and none to the central California population. While genetic work by my lab group indicated that the three murrelets that died as a result of the spill originated from northern California, it is important to recognize that this represents a small sample size from which to determine the relative impacts to these two populations and does not indicate with any confidence that the central California murrelet breeding population was not impacted.

Assuming an equal proportion of the northern California and central California breeding populations occurred in the area affected by the Cosco Busan spill, about 10 times more northern California murrelets would have been present than central California murrelets (given that the northern California population is about 10x larger than the central California population). Under such a scenario, the two populations would be expected to have experienced the same proportional impact, but 10 times more northern California birds would have been available to be recovered during the spill. Using the basic binomial probability distribution, and assuming 3 murrelets were recovered (as was the case) and that 10% of murrelets that occurred in the spill area originated from central California (i.e., equal impact to the two populations), there is a 73% chance that no central California murrelets would have been recovered. Conversely, there is only a 27% chance that any central California murrelets would have been recovered. Again, this scenario corresponds to a situation where the two populations would have experienced approximately equal proportional impacts from the spill.

Moreover, radio-telemetry work I have conducted shows that murrelets do disperse north from waters off of breeding habitat in the Santa Cruz Mountains (see fig below, Peery et al. 2008. *Auk* 125:113-123). Esther Burkett of the California Department of Fish and Game also found that central California murrelets dispersed north of the Golden Gate as part of her radio-telemetry study. Thus, it is quite possible, based on known movements of radio-marked individuals, that central California murrelets could have been affected by the Cosco Busan spill.

Finally, the central California population is highly threatened due to its small population size, apparently low reproductive success, and the fragmented nature of remnant nesting habitat with high densities of nest predators. Moreover, the genetic distinctiveness of this population suggests that it will not be “rescued” by immigration from larger populations to the north. Note also that since northern California was not genetically different from populations further to the north (Oregon to Alaska), it was not possible assign the oiled murrelets to any particular breeding population in this range, so allocating all conservation funds to northern California is somewhat arbitrary. For these reasons I encourage you to consider using some of the Cosco Busan restoration funds to support murrelet conservation in central California.

Feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Zach Peery". The signature is fluid and cursive, with the first name "Zach" and the last name "Peery" clearly distinguishable.

Zach Peery

Fig 1. Locations of marbled murrelet radio-tagged in Ano Nuevo Bay, Sept 14 2002.





Hetch Hetchy Regional Water System

Services of the San Francisco Public Utilities Commission

Natural Resources and Lands Management Division

1145 Market Street, 4th Floor
San Francisco, CA 94103
T 415.554.3265
F 415.934.5770

Steve Hampton
California Department of Fish and Game
Office of Spill Prevention and Response, 1700 K Street
Sacramento CA 95814

January 27, 2012

Dear Mr. Steve Hampton,

The San Francisco Public Utilities Commission (SFPUC) supports the Revised Cosco Busan Restoration Proposal, which now includes marbled murrelet restoration in Fish and Wildlife Service Conservation Zone 6. We believe this revised proposal is more appropriate mitigation than the original proposal since the spill occurred in San Francisco Bay, which is partially within Zone 6.

The SFPUC owns lands that include critical habitat for marbled murrelet within Zone 6. The SFPUC annual monitoring program indicates that marbled murrelet nesting activity on SFPUC lands has been stable or increasing over the past decade. In contrast, monitoring at other Santa Cruz Mountain nesting locations and at sea indicates that the overall Zone 6 marbled murrelet population has been declining over recent decades. The SFPUC lands that support murrelet nesting are closed to public access and virtually free of corvids. Nest predation by corvids has been documented as a significant cause of nest failure for murrelets in Zone 6, and high corvid presence at other marbled murrelet nesting locations is likely a factor in the recent declines.

The SFPUC is supportive of the mitigation measures outlined in the Revised Restoration Proposal for marbled murrelets. In particular, the SFPUC believes that the corvid taste aversion conditioning is a promising new method with the potential to reduce corvid nest predation with minimal ecological side effects. The corvid reduction and behavior modification measures that are now in the Revised Restoration Proposal should enhance the long term viability and stability of marbled murrelet populations in Zone 6, including SFPUC lands.

If we can be of further assistance, please contact Ellen Natesan at (415) 554-1556 or enatesan@sfgwater.org.

Sincerely,

Tim Ramirez
Natural Resources and Lands Management Division Manager
Water Enterprise

Edwin M. Lee
Mayor

Anson Moran
President

Art Torres
Vice President

Ann Moller Caen
Commissioner

Francesca Vietor
Commissioner

Vince Courtney
Commissioner

Ed Harrington
General Manager

