# SUGGESTIONS FROM THE PUBLIC REGARDING NATURAL RESOURCES AND VISITOR EXPERIENCE ANALYSIS IN THE GGNRA DOG PLAN/EIS -

# ADDITIONS AND REMOVAL OF LITERATURE

## NATURAL RESOURCES

### GGNRA Literature Suggested by Public Comment for Inclusion in Plan/EIS:

The following citations have been suggested for inclusion in the Plan/EIS through either individual comments in the PEPC database or through a hard copy of letters sent with comments to the draft Plan/EIS. The full citations that have been suggested are described, a summary of the article/paper/brochure has been prepared, a determination if the citation has been peer reviewed has been included, and the number of times the article/paper/brochure has been cited. Finally, a conclusion proposed by EA and next steps have been suggested for each citation as well as a table that follows this text discussion.

1. Warren, Megan. 2007. *Recreation Disturbance Does Not Change Feeding Behavior of the Western Snowy Plover*. Unpublished undergraduate thesis. UC Berkeley Environmental Sciences 196, Senior Research Seminar, May 7, 2007.

**Peer Reviewed: No**

The study looked at disturbance of Western Snowy Plover (*Charadrius alexandrines nivosus*) populations as a result of recreation disturbance. Disturbance was measured through observation surveys during February and March of 2007 at Crissy Field, Limantour Beach, and Abbott’s Lagoon. Sites were classified by their level of recreation use, and the number of birds present, with a minimum population size for the samples of four birds. Disturbances were categorized into no response, and mild, moderate, or major response. Foraging activities were also recorded to determine the amount of time birds spent scanning for prey, actively foraging, and time spent alert. A linear regression was used to determine the relationship between frequency of disturbance and foraging, alert, and searching time. The linear regression indicated no relationship between disturbance level and alert time while feeding (p-values were p=0.86 for disturbance level and foraging time, p=0.73 for disturbance level and alert time, and p=0.24 for disturbance level and searching time). However the study size and time spent in the field observing were not sufficient, and her sites were not standardized (Crissy Field had no foraging). Discussion focused on other ways in which recreation may impact foraging behaviors of WSP, such as location of recreation, and removal of debris.

As stated during public comments to the draft Plan/EIS in the PEPC database: “Some of the most compelling research in the last few years has been by researchers such as Warren (2007) who admit that they expected to find that off-leash dogs had a major impact on the diversity, abundance, and feeding behaviors of birds and small mammals. However, when they did the actual research, they found no such impact.”

**Citations**: This paper is not on Google Scholar, and the number of citations is unknown. It is available widely on the websites of San Francisco area dog-walking groups, personal blogs, and is noted in a book called *Unleashed Fury: The Political Struggle for Dog-friendly Parks* by Julie Walsh.

Papers on this topic that have been frequently cited include:

* Lafferty, KD. 2001. *Disturbance to wintering western snowy plovers* (cited 67 times)
* Lafferty, Goodman, and Sandoval. 2006. *Restoration of breeding by snowy plovers following protection from disturbance* (cited by 25)

These papers and others are cited in scientific journals

**Correspondence ID and Availability:**Correspondence ID: 1929 and 4693, already in EAEST files

**EAEST CONCLUSION:** This paper has not been published because it was an undergraduate thesis, it has not been peer reviewed, and is not included on Google Scholar (citations in other papers is unlikely). Because of these reasons and due to the small study size and time spent in the field observing, and because the sites were not standardized, EA does not suggest including this literature into the Plan/EIS. In addition, EA has already incorporated and referenced the Lafferty 2001 citation mentioned above into the Plan/EIS.

**NEXT STEP:** None.

1. California Department of Parks and Recreation. 2001. *Pilot Program for Unleashed Dog Areas*. December 17, 2001.

**Peer Reviewed: No**

This report introduces a pilot program for off-leash dog walking in selected units of the State Park System, recognizing the need for off-leash dog parks in urban areas. Guidelines for off-leash dog parks were established, and a task group was formed to make recommendations and come up with two or three potential off-leash confined dog areas in state park units, which would undergo a pilot program to test the feasibility of off-leash dog walking. The report discusses issues of disagreement amongst the task group, and provides the sites chosen and the benefits and issues with these sites.

**Citations:** This paper is not available on Google Scholar, and the number of citations is unknown. It is available on the California Department of Parks and Recreation website. Similar papers include other pilot program reviews, and the following:

* Foster, LK. 2006. *Dogs on the Beach: A Review of Regulations and Issues Affecting Dog Beaches in California* (cited 2 times)

This paper was produced for the California Research Bureau, as requested by Assembly member Ted W. Lieu.

**Correspondence ID and Availability:**Correspondence ID: 3759, already in EAEST files

**EAEST CONCLUSION:** This paper has not been published, it has not been peer reviewed, has not been cited, and does not present any results following the pilot program. This paper is merely a discussion of a proposed pilot program. Certain sections of the report are somewhat informative, including: Site Design Characteristics, Roles and Responsibilities, Suggested Dog Park Etiquette, and Measures of Success. EA suggests using this study as a guide if the above sections are applicable in the Plan/EIS, but also obtaining the Foster (2006) paper as well.

**NEXT STEP:** Incorporate useful elements into Plan/EIS where appropriate. Papers and reports that describe programs or positions of agencies and organizations may help identify the perspectives and opinions of the organization, but are not applicable to the discussion of impact analysis.

1. Foster, Lisa K. 2006. *Dogs on the Beach: A Review of Regulations and Issues Affecting Dog Beaches in California*. Prepared by the California Research Bureau for Assembly member Ted W. Lieu. May.

**Peer Reviewed: Unknown**

Paper presents findings from a study from the California Research Bureau about the benefits and issues surrounding the creation of dog beaches in the state of California. Benefits explored include the promotion of exercise and socialization. Concerns with dog beaches include habitat, health concerns, and liability. The study was commissioned to determine if off-leash recreation in California State Parks was appropriate and needed, and if municipal and city parks provided enough areas for this kind of recreation. The document provides a good overview of the dog beach situation in California, and measures taken by different entities to manage dog beaches.

**Citations:** This paper has been cited two times on Google Scholar:

* Baum, A. 2009. *Levels of Fecal Indicator Bacteria at Dog Beach and Nearby Coastal Beaches of the City of San Diego, CA*. Masters Thesis, San Diego State University (no citations)
* RDFC Park. 2009. *Habitat Restoration Feasibility Study.* Suffolk County, NY (no citations)

**Correspondence ID and Availability:**Correspondence ID: Paper was found through literature review of *Pilot Program for Unleashed Dog Areas;* already in EAEST files

**EAEST CONCLUSION:** While this paper is more general than technical, it provides a clear overview of the situation of dog beaches in California, and the issues surrounding these beaches. Certain sections of the report are somewhat informative, including the discussion of management techniques employed by various municipalities. The paper may also provide a source for additional literature from citations in the text. EA suggests using this study for general discussions where applicable in the Plan/EIS, including when discussing the benefits of dog walking in the visitor experience section.

**NEXT STEP:** Incorporate useful elements into Plan/EIS where appropriate.

1. Ewing, John. 1999. *Managing Off-leash Recreation in Urban Parks.* February 27, 1999.

**Peer Reviewed: No**

Summary written for SFDOG about the benefits of dog ownership and off-leash recreation, particularly in regards to San Francisco. Paper lays out the position of SFDOG in support of off-leash dog walking, and includes suggestions for elements necessary to create a successful off-leash area. Paper includes no citations.

**Citations:** This paper is not available on Google Scholar, and the number of citations is unknown.

**Correspondence ID and Availability:**Correspondence ID: 3759, already in EAEST files

**EAEST CONCLUSION:** This paper has not been published, it has not been peer reviewed, and has not been cited. Papers and reports that describe programs or positions of an agency or organization may help identify perspectives and opinions of the organization, but are not applicable to the discussion of impact analysis. EA suggests that while this paper may be useful for outlining the position of SFDOG, it should not be included as a reference for impact analysis.

**NEXT STEP:** None.

1. Robinson-Nilsen, Caitlin, Demers, Jill Bluso, and Cheryl Strong. 2010. *Western Snowy Plover Numbers, Nesting Success, Fledgling Success and Avian Predator Surveys in the San Francisco Bay, 2010*. SFBBO and USFWS. December 30, 2010.

**Peer Reviewed: No**

The study looked at the nesting success of Western Snowy Plovers and sought to contribute to the management of the population of WSP of the San Francisco Bay. The study recorded numbers of WSP, site use, nest success, fledging success, use of habitat enhancement project sites. The species and numbers of nest and avian predators in the breeding season were also recorded. Counts for adult plovers in the 2010 breeding season were 275 individuals. Of 245 nests in the South Bay, 100 hatched, 133 were depredated, six were abandoned, two were flooded, one was lost at hatch and one had an unknown nest fate. WSP chicks were banded in order to study their movements and to estimate fledging success, which ranged from 0-100%, dependent on the pond, though the average fledging rate was 41 percent. Lastly, the study indicated that California Gulls are a predator of concern, among other predatory species.

**Citations**: This paper is available on Google Scholar, and has no citations. A report on the Snowy plovers similar to this report appears to be produced yearly. Other similar papers include:

* Colwell et al. 2005. *Snowy Plover reproductive success in beach and river habitats* (cited 22 times)
* Stenzel et al. 2007. *Survival and natal dispersal of juvenile Snowy plovers (Charadrius alexandrines) in central coastal California* (cited 17 times)

These papers are from scientific journals.

**Correspondence ID and Availability:**Correspondence ID: 3945, already in EAEST files

**EAEST CONCLUSION:** This paper has not been cited or peer reviewed. The methods used to monitor the plovers in this study have also not been peer reviewed. This study discusses breeding Western snowy plovers and the effects of predators at salt ponds in southern San Francisco Bay. Because GGNRA currently does not support breeding Western snowy plovers or the habitat described as salt ponds, the context (breeding versus non-breeding behavior at GGNRA) and area of this study (salt pond versus Pacific Ocean beach at GGNRA) is not applicable to the Plan/EIS.

**NEXT STEP:** None;EA will not include this study in the Plan/EIS.

1. NPS. 2006. *Protecting the Snowy Plover*. October.

**Peer Reviewed: Unknown**

An informational handout produced by NPS about the Western Snowy Plover and its presence in GGNRA. Handout provides description of the species, threats to WSPs, and ways to protect breeding and nesting WSPs at GGNRA. Handout also includes a map of the Crissy Field wildlife protection area (WPA), and the Ocean Beach plover protection area.

**Citation**: There are no citations for this paper on Google Scholar. The paper is not available on Google Scholar but is available on the internet elsewhere. Similar documents are unknown.

**Correspondence ID and Availability:**Correspondence ID: 3945, already in EAEST files

**EAEST CONCLUSION:** Comment noted; it is unclear what additional information from this general handout describing the Western snowy plover could be added to the Plan/EIS.

**NEXT STEP:** None.

1. USFWS. 2006. *San Francisco Garter Snake (Thamnophis sirtalis tetrataenia) 5-Year Review:Summary and Evaluation*. Sacramento Field Office, Sacramento, California. September.

**Peer Reviewed: Unknown**

Paper provides a scientific review of the San Francisco garter snake (SFGS) recovery plan. Review was completed by USFWS staff using surveys, peer-reviewed journal articles, and documents from Section 7 Consultation as part of the review. Review outlines areas of habitat, and a detailed review of the status of populations of the San Francisco garter snake at specific known sites. There are also detailed reviews of the genetics of the regional populations. A Five-factor analysis (based on threats, conservation measures, and regulatory mechanisms) within the document looks at the present or impending destruction of habitat at several sites with known occurrences of the SFGS. Other threats, like illegal collection, disease, predation, and the inadequacy of the existing regulatory mechanisms are also discussed. Lastly, the review provides the recommendation that no change is needed in the status of the SFGS, though the report re-classifies the species with a new recovery priority number. Suggested future actions include the development of an updated recovery plan, actions to encourage conservation among private landowners, habitat restoration and enhancement initiatives, the creation of captive holding facilities, increased demographic research, and increased law enforcement.

**Citations**: There are no citations for this paper on Google Scholar. The paper is not available on Google Scholar but is available online elsewhere. Similar documents are unknown.

**Correspondence ID and Availability:**Correspondence ID: 4640 and 4650, already in EAEST files

**EAEST CONCLUSION:** EA has reviewed this document and will add the threats to SF Garter Snake which include: 1) loss of open spaces to construction, 2) loss of grasslands (due to stopping grazing and fire suppression that allows for denser vegetation growth), and 3) illegal specimen collection.

**NEXT STEP:** Add statements regarding threats to the SF garter snake as specified above to Plan/EIS.

1. Fancy, SG, Gross, JE, and SL Carter. 2009. *Monitoring the Condition of Natural Resources in US National Parks*. Environmental Monitoring and Assessment: Vol. 151, pp 161-174.

**Peer Reviewed: Yes**

The paper discusses the ecological monitoring program in 32 eco-regional networks under NPS Vital Signs Monitoring. This network includes 270 parks with significant natural resources. Monitoring allows NPS to develop sound information on the status of these resources, and to provide information on the success of current resource management practices. Having this network allows managers and decision-makers to gather broad-based resource trends when making decisions. Monitoring data are taken from a variety of sources, and synthesized into formats that target key audiences, such as the general public, congress, and park planners. The paper discusses the factors involved in setting up such a network, determining indicators and the priority of factors. Lastly, the paper explores challenges and future steps for the monitoring program.

**Citation**: This paper is cited 35 times on Google Scholar. Papers that cite this paper and papers that are similar to this paper include:

* Bestelmeyer et al. 2009. *State-and-Transition Models for Heterogeneous Landscapes: A Strategy for Development and Application* (cited 40 times)
* Laundres, Morgan, and Swanson. 1999. *Overview of the use of natural variability concepts in managing ecological systems* (cited 610 times)
* Jones et al. 2009. *Monitoring land use and cover around parks: A conceptual approach* (cited 14 times)

These papers are from peer reviewed journals.

**Correspondence ID and Availability:**Correspondence ID: 4640, 4650, and 4667, already in EAEST files

**EAEST CONCLUSION:** This document suggests the GGNRA is not monitoring their Recreation Areas, specifically in San Mateo County (from Arnita Bowman, correspondence # 4640, #4650, and # 4667). However, GGNRA does participate in monitoring through the San Francisco Bay Area Network Inventory &Monitoring (I&M) Program. This I&M Program monitors resources identified as vital signs; GGNRA also completes monitoring in San Mateo County, and monitors resources outside of the I&M Program. The I&M Program uses peer-reviewed protocols for monitoring purposes.

**NEXT STEP:** None.

1. Murphy, Dan. 1996. *San Francisco Peninsula Birdwatching: Ocean Beach and Fort Funston.* Sequoia Audubon Society.

**Peer Reviewed: No**

This is an informational article on bird watching at Fort Funston and Ocean Beach. The document contains detailed descriptions of habitat available at these sites, and where the best areas to find birds at specific times of year would be. The article lists likely bird species at certain areas, as well as less common species. The report was also submitted by the commenter with the yearly report of abundance for Ocean Beach from July 1, 2010 to June 30, 2011 from ebird.org.

**Citations**: This paper is not available on Google Scholar, and citations are unknown.

**Correspondence ID and Availability:**Correspondence ID: 4683, already in EAEST files

**EAEST CONCLUSION:** In general, this paper is informative regarding the bird species present at Fort Funston and Ocean Beach, but is not peer reviewed, not cited, and does not provide any information on dog disturbance to these birds. This paper does provide some general information on locations used by birdwatchers, and may have some information to be incorporated into affected environment for wildlife and/or visitor use and experience. EA suggests using general information from this paper in the Plan/EIS within the affected environment section.

**NEXT STEP:** EA will incorporate some general information on bird watching areas and bird species into the affected environment section of the Plan/EIS from this document but will primarily use the Beach Watch and NPS data to describe birds that occur at Ocean Beach and Fort Funston.

1. North American Bird Conservation Initiative, U.S. Committee. 2011. *The State of the Birds: 2011 Report on Public Lands and Waters*. U.S. Department of Interior: Washington, DC. 48 pages.

**Peer Reviewed: Yes**

Each year, the *State of the Birds* report provides important scientific data to a broad audience with a call to action to improve the conservation status of birds and the environment. The 2011 report brings attention to the tremendous promise of public lands and waters for conserving America’s wildlife and habitats.

“Major threats to coastal birds include habitat loss and degradation, human disturbance, and predators. Public recreation, development interests, and wildlife compete for beaches. Public ownership of beaches varies among states. In most states, all land below the mean high tide line belongs to the state, and citizens have the right to unrestricted access. Primary threats to birds on beaches include human-caused disturbance, increased predators, sea-level rise, and habitat loss. Many states allow off-road vehicles (ORVs) or **unrestricted public access with pets such as dogs** and cats. ORVs can be highly disturbing to nesting or feeding shorebirds.”

**Citations:** None - recently published; suggested for incorporation into EIS by Marin Audubon Society

**Correspondence ID and Availability:**Correspondence ID: 4695, already in EAEST files

**EAEST CONCLUSION:** This reference was suggested for inclusion by Marin Audubon Society in their comments to the Draft Plan/EIS letter dated 27 May 2011. Of the 48 pages in this report, there is only one statement regarding dogs and this sentence neither relates dogs to disturbance of birds nor explicitly states dogs as a threat to birds. Report includes overview of bird habitats, the importance of public lands for bird species, and threats to bird conservation. EA suggests including statements from this report in the discussion of bird species and conservation within the Plan/EIS.

**NEXT STEP:** EA will incorporate some statements from this document about bird habitat and conservation into the Plan/EIS.

1. Grinnell, Joseph. 1932. “Type localities of birds described from California.” *University of California Publications in Zoology*, Vol. 38, No. 3:243-324.

**Peer Reviewed: Yes**

There are records of snowy plover bird and egg specimens collected during nesting season within GGNRA [Crissy Field]. Also, the Western Snowy Plover is culturally significant in that the type specimen (the individual specimen used as a basis for determining the characteristics for the species) was collected in the Presidio of San Francisco by Lt. William P. Trowbridge on May 8, 1854 (Grinnell, 1932 as cited in Zlatunich 2008 – see below). This is a record of a specimen of the Western Snowy Plover where the type specimen was collected in the Presidio in early May. The passage indicates that this specimen was once located in the National Museum and later in a collection in England, but the location was unknown in 1932.

**Citations:** Article has been cited 9 times; suggested for incorporation into EIS by Golden Gate Audubon Society

**Correspondence ID and Availability:**Correspondence ID: 4695; in EAEST records. Also available for purchase on Amazon for $18.00 (<http://www.amazon.com/localities-described-California-University-publications/dp/B00086AJSO>).

**EAEST CONCLUSION:** This reference was suggested for inclusion by Golden Gate Audubon Society in their comments to the Draft Plan/EIS letter dated 31 May 2011. Information regarding historical nesting of the Western snowy plover at Crissy Field will be added to the Plan/EIS.

**NEXT STEP:** EA will add text from this passage to the text regarding historical nesting of the Western Snowy Plover in San Francisco.

1. Zlatunich, Matthew. 2008. *Western Snowy Plover Monitoring at the Crissy Field Wildlife Protection Area of the Presidio of San Francisco and the Effectiveness of the Seasonal Use Restriction 2007/2008*. Golden Gate Audubon, San Francisco, California.

**Peer Reviewed: No**

The report contains the results of 38 surveys of Western snowy plovers from August 2007 through April 2008 at the Crissy Field WPA. Surveys were conducted for one hour from an observation platform, and included monitoring all wildlife species observed. The Cosco Busan oil spill in 2007 resulted in the increase of monitoring of WSP at Crissy Field and Ocean beach, which were impacted, resulting in a subsequent clean-up effort being carried out at the site. There were at a minimum six WSP in the WPA throughout the wintering season. Disturbances were recorded, and off-leash dogs were shown to have a 23 percent disturbance rate of WSP, while the rate for on-leash dogs was only 2 percent. The study indicated that education and enforcement have been effective in reducing the presence of dogs at the site, but are not adequate to bring park users in compliance with seasonal restrictions. Study provided recommendations for managing WSP at GGNRA.

 An individual specimen of Western Snowy Plover was collected in the Presidio of San Francisco by Lt. William P. Trowbridge on May 8, 1854 and used as a basis for determining the characteristics of this species) (Grinnell, 1932 as cited in Zlatunich 2008).

**Citations**: Article is available online, but is not available on Google Scholar; this document referenced the Grinnell 1932 citation.

**Correspondence ID and Availability:**Correspondence ID: Found during research, already in EAEST files

**EAEST CONCLUSION:**  This document was not suggested for inclusion during the public comment period, but S. Koser found and reviewed this document and added to literature review. This document provides a continuation of long-term data on recreation and impacts on snowy plovers, and therefore may be useful for a more general discussion of Western Snowy Plovers. However, these data were independently collected by GGA and the methods were not peer-reviewed. The Zlatunich studies will not be incorporated into the plan/EIS since NPS has collected similar information through their monitoring program, which has been peer-reviewed.

**NEXT STEP:** None.

1. Zlatunich, Matthew and Lynes, Michael. 2010. *Western Snowy Plover Monitoring at the Crissy Field Wildlife Protection Area of the Presidio of San Francisco 2009/2010*. Golden Gate Audubon, San Francisco, California.

**Peer Reviewed: Unknown**

In 2009-2010, Golden Gate Audubon volunteers continued monitoring wintering western snowy plovers at the Crissy Field Wildlife Protection Area in the Presidio, San Francisco CA. Data collected indicate that the number of plovers using the WPA continues to decline from 4.11 plovers observed per survey hour in 2005-2006 to 1.55 plovers per survey hour in 2009-2010. Compliance with the dog leash requirements remains approximately 34%, unchanged from 2008-2009, meaning that approximately 2/3 of dog owners visiting the area are failing to comply with the requirement to leash their dogs. Protection of the plovers would be enhanced by increased outreach and education, enforcement of leash requirements, and other measures to decrease disturbances of the plovers and other wildlife that rely on the WPA.

**Correspondence ID and Availability:**Correspondence ID: Found during research, already in EAEST files

**Citations**: Document is available on Google Scholar but has not been cited.

**EAEST CONCLUSION:** This document was not suggested for inclusion during the public comment period, but S. Koser found and reviewed this document and added it to the literature review. This document provides a continuation of long-term data on recreation and impacts on snowy plovers, and therefore may be useful for a more general discussion of Western Snowy Plovers in the EIS. However, these data were independently collected by GGA and the methods were not peer-reviewed. The Zlatunich studies will not be incorporated into the plan/EIS since NPS has collected similar information through their monitoring program, which has been peer-reviewed.

**NEXT STEP**: None.

1. Pomerantz, G. A., Decker, D.J., Goff, G.R., & Purdy, K. G. (1988). ***Assessing impact of recreation and wildlife: a classification scheme.*** Wildlife Society Bulletin, 16, 58-62.

**Peer Reviewed: No**

Meeting public demand for wildlife recreation opportunities while avoiding undesirable impacts
on wildlife and its habitat is a constant challenge for wildlife managers. The authors developed a classification of impacts that recreational activities can have on wildlife which can be used as framework for making decisions regarding the permissibility of various recreational uses of wild lands. Negative impacts were classified into the following six categories: 1) Direct mortality, 2) Indirect mortality, 3) Lowered productivity, 4) Reduced use of refuge, 5) Reduced use of preferred habitat, 6) Aberrant behavior or stress.

**Citations**: Article has been cited on Google Scholar 42 times; suggested for use in impacts analysis by Charles Pfister.

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** EA does not suggest incorporating the proposed impact categories into the impacts analysis, as draft impact thresholds have already been developed and used in the plan/EIS. NEPA does not require use of impact thresholds, rather, they are only a tool to help the agency evaluate whether or not an action may have significant impacts. New impact threshold development would be a significant project cost as measured in both schedule delay and dollars, and would not enhance the impacts analysis as relates to the question of significance from a NEPA standpoint.

**NEXT STEP:** None.

1. Davidson, N. C., and P. I. Rothwell. 1993. *Human disturbance to waterfowl on estuaries: conservation and coastal management implications of current knowledge*. Wader Study Group Bull. 68:97-105.

**Peer Reviewed: Yes**

The article explores the impact of recreational disturbance on waterfowl species, and the ways to assess this disturbance. The article looks at the patterns of recreation and how these patterns translate to disturbance, for example areas on a beach where people are recreating. Factors that must be accounted for include the “buffering capability” that birds have to deal with disturbance before they face a reduced energy balance, and the necessity of distinguishing between impacts to individuals and effects on a whole population of waterfowl. There are difficulties in assessing this, particularly with migratory populations, for which effects of disturbance may not be manifested at the area where the effects occurred. The authors have chosen certain circumstances for which disturbance is most likely to be high regardless of other factors such as during certain times of year, in certain kinds of weather, and depending on what kind of disturbance is occurring. The article notes that dogs and moving people have a larger effect on birds than visitors who remain in one place for a long period of time. The authors conclude by suggesting management techniques to lessen disturbance of recreation on waterfowl species.

**Citations**: This article cannot be found on Google Scholar, and has no citations. Similar articles included:

* Madsen. 1995. *Impacts of disturbance on migratory wildlife* (cited by 136)
* Verhulst et al. 2001. *Experimental Evidence for effects of human disturbance on foraging and parental care in oystercatchers* (cited by 66)
* Blanc et al. 2006. *Effects on non-consumptive leisure disturbance to wildlife* (cited by 14)

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** Suggest incorporating some general statements in this article (from Charles Pfister) into the Literature Review section of Chapter 4 describing impacts to wildlife.

**NEXT STEP:** EA will read and review entire article and incorporate results into the Literature Review section of Chapter 4.

1. Gill, J.A., Norris, K., and W.J. Sutherland. 2001. *Why behavioral responses may not reflect the population consequences of human disturbance*. Biological Conservation 97:265-268.

**Peer Reviewed: Yes**

The paper is an investigation into the validity of the idea that the level of response by a species is indicative of the accessibility of a species and the need to protect the species. A common idea in previous literature is that the more a species avoids human disturbance, the more the species requires protection. Alternately, species that do not strongly avoid human disturbance are believed to need less protection. The authors challenge this idea by indicating why the level of disturbance avoidance may not accurately indicate the vulnerability of a species, and need for conservation because the costs of disturbance must be weighed against the nearby available habitat. The cost of moving in response to disturbance is greater if available habitat is not as plentiful, and as such species with no available habitat must remain despite the level of disturbance. The authors make the point that future studies should address how behavioral changes in response to disturbance impact factors like survival and reproductive success. They also stress that studies must take into account the strength of density-dependence within a system in order to determine whether changes in survival or fecundity will have any impact on overall population size.

**Citations**: This article has been cited on Google Scholar 238 times. Similar articles include:

* Frid and Dill. 2002. *Human-caused disturbance Stimuli as a Form of Predation Risk* (cited 363 times)
* Beale and Monahan. 2004. *Behavioural responses to human disturbance: a matter of choice?* (cited 100 times)
* Fernández-Juricic et al. 2002. *Alert distance as an alternative measure of bird tolerance to human disturbance: implications for park design* (cited 76 times)

These articles are from scientific journals.

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** Suggest incorporating the results in this article (from Charles Pfister) into the impacts analysis of Chapter 4 for the Plan/EIS.

**NEXT STEP:** EA will read and review entire article and incorporate the results into the Plan/EIS.

1. Keller, VE. 1991. *Effects of human disturbance on eider ducklings Somateria mollissima in an estuarine habitat in Scotland*. Biological Conservation 58: 213-228.

**Peer Reviewed: Yes**

Eider ducklings *Somateria mollissima* on the Ythan estuary in Scotland were frequently disturbed by recreational activities, both when roosting on the shore and when feeding in the water. Shore-based activities (fishermen, people walking along the shore, dogs) caused more disturbances than water-based ones (windsurfers, rowing boats). Disturbance affected the activity of eider creches for up to 35 min. Disturbance of small ducklings led to an increase in predator encounters during the five minutes following the disturbance.

**Citations**: This paper has been cited on Google Scholar 28 times. Similar articles include:

* Ounstead et al. (1992) *Examination of the effects of disturbance on birds with reference to its importance in ecological assessments* (Cited 110 times)
* Lord et al. (1997) *Effects of human activity on the behaviour of northern New Zealand dotterel Charadrius obscurus aquilonius chicks* (Cited by 43)
* Mikola et al. (1994) *The effects of disturbance caused by boating on survival and behaviour of velvet scoter Melanitta fusca ducklings*

Articles are generally in biological and environmental management scientific journals

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668; Available for purchase for $31.50 (<http://www.sciencedirect.com/science/article/pii/000632079190120X>), and available at JHU. Article was not purchased by EAEST.

**EAEST CONCLUSION:** Because the authors only studied disturbance (not explicitly from dogs) of one duck species in Scotland, it would be challenging to extrapolate to impacts at GGNRA and thus it is not suggested that this article be included in discussion for Plan/EIS.

**NEXT STEP:** None.

1. Kersten, M. and T. Piersma. 1987. *High levels of energy expenditures in shorebirds: metabolic adaptations to an energetically expensive way of life*. Ardea 75: 175-187.

**Peer Reviewed: Yes**

The authors completed a study to look at the relationship of daily energy expenditure (DEE) and basal metabolic rate (BMR) in three species of shorebirds. Free birds were caught and kept in cages for the duration of the three year study. They were fed commercial food pellets, and daily weight change and oxygen consumption were measured. The relationship between metabolic rate and air temperature was also studied. The cost of adding body fat was calculated, and it was determined that for birds to add a gram of fat they require 1.3-2.6 grams of additional food consumption. The birds were found to have a BMR that was higher than expected for their average weights. This shows that energy expenditure and DEE for shorebirds is relatively high, and that the cost of thermoregulation in these species is also high. Hence, both at rest, and under restrained and unrestrained conditions, shorebirds utilize more energy than other non-passerine birds of their size, but the ratios between active and rest metabolism are almost identical to those in other bird species.

**Citations**: The article has been cited 247 times on Google Scholar. Other similar articles include:

* Daan et al. 1990. *Avian basal metabolic rates: their association with body composition and energy expenditure in nature* (Cited 289 times)
* Piersma et al. 1996. *Variability in basal metabolic rate of a long-distance migrant shorebird (red knot, Calidris canutus) reflects shifts in organ sizes* (Cited 129 times)

Articles cited are found in physiology journals

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** Suggest incorporating the results in this article (from Charles Pfister) into the impacts analysis of Chapter 4 for the Plan/EIS, with discussion on disturbance resulting in energy expenditure and a reduction of foraging time.

**NEXT STEP:** EA will read and review entire article and incorporate a basic summary (using familiar terms) of the results into the Plan/EIS.

1. Kirby, J. S., C. Clee, and V. Seager. 1993. *Impact and extent of recreational disturbance to wader roosts on the Dee Estuary: some preliminary results*. Wader Study Group Bull. 68:53-58.

**Peer Reviewed: Yes**

This paper outlines the results of data collected by volunteers who patrolled Kirby Beach during wader roosting to try to limit disturbances to roosting birds. These volunteer wardens patrolled the beach during high tides, and stopped visitors who were about to disturb the roosting birds. They would talk to visitors, provide them with educational material, and record data on disturbances. They recorded the number of potential disturbances, details of any disturbances, and the number of wading birds that were trying to feed or roost at the time of disturbance. The response of the birds to disturbance was also recorded. The most common disturbance recorded was from walkers and dogs, with dogs accounting for 26-41 percent of potential disturbances, and 27-72 percent of actual disturbances. The most common response of birds to disturbances by dogs was to take flight and soon return to the area.

**Citations**: This article has been cited 27 times on Google Scholar. Similar articles include:

* Gill et al. 2001. *The effects of disturbance on habitat use by black‐tailed godwits Limosa limosa* (cited 59 times)
* Burton et al. 1996. *Effects on shorebird numbers of disturbance, the loss of a roost site and its replacement by an artificial island at Hartlepool, Cleveland* (cited 33 times)

Articles are from scientific journals.

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** Although this study took place in Wales, it has been peer reviewed, cited numerous times, and includes a discussion of disturbance to birds from dogs. Because of this, EA suggests incorporating the results in this article (from Charles Pfister) into the impacts analysis of Chapter 4 for the Plan/EIS.

**NEXT STEP:** EA will read and review entire article and incorporate the results into the Literature Review section of Chapter 4.

1. Lenth, B.E., Knight, R.L., and M.E. Brennan. 2008. *The Effects of dogs on wildlife communities*. Natural Areas Journal 28(3):218-227.

**Peer Reviewed: Yes**

The effects of dogs on wildlife were studied by comparing the activity levels of wildlife in areas where dogs were allowed, and areas where they were prohibited. Wildlife activity was measured using five methods: (1) pellet plots, (2) track plates, (3) remote triggered cameras, (4) on-trail scat surveys, and (5) mapping prairie dog (*Cynomys ludovicianus*) burrow locations. The presence of dogs along trails was correlated to altered habitat usage by wildlife. Use of areas where dogs were allowed was significantly lower than use in areas where dogs were prohibited. These findings have implications for the management of natural areas, particularly those that allow dogs to be off-leash.

**Citations**: Article has been cited 14 times on Google Scholar. Similar articles include:

* Taylor and Knight. 2003. *Wildlife Responses To Recreation And Associated Visitor Perceptions* (cited 111 times)
* Banks and Bryant. 2007. *Four-legged friend or foe? Dog walking displaces native birds from natural areas* (cited 23 times)

These articles are from scientific journals

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** This article has already been used in and cited in the Plan/EIS as has the Banks and Bryant (2007) article; the Taylor and Knight (2003) article did not attempt to address differences in wildlife response as a result of difference recreational activities such as dog walking so this article was not included in the Plan/EIS.

**NEXT STEP:** None.

1. Pfister, C., Harrington, B.A., and Lavine, M. 1992. *The impact of human disturbance on shorebirds at a migration staging area.* Biological Conservation 60: 115-126.

**Peer Reviewed: Yes**

The effects of human disturbance on the capacity of a migratory bird staging area were studied. Long-term census data was analyzed, and results indicated that in four of seven migratory bird species, birds showed one or more types of movement in response to disturbance. At areas of high human disturbance, the abundance of migratory bird species may be reduced up to 50 percent. Disturbance is implicated as a potential factor in long-term declines in shorebird abundance at the site, and may be limited or reduced by closing parts of the beach during migration.

**Citation**: This article has been cited 103 times on Google Scholar. Similar articles include:

* Gill et al. 1996. *A method to quantify the effects of human disturbance on animal populations* (cited 191 times)
* Burger. 1998. *The effect of human activity on birds at a coastal bay* (cited 171 times)

These articles are in biological journals

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668; in EAEST files.

**EAEST CONCLUSION:** Suggest incorporating the results in this article (from Charles Pfister) into the impacts analysis of Chapter 4 for the Plan/EIS under a discussion of people and other threats, particularly in the indirect and cumulative impacts sections.

**NEXT STEP:** EA will read and review entire article and incorporate the results into the Plan/EIS.

1. Scott, F. E. 1989. *Human disturbance of wading birds on the Ythan estuary. Unpubl. B.Sc. thesis, Department of Zoology*, Univ. Aberdeen. 42 pp. [abstract in Wader Study Group Bull. 68:81-82]

**Peer Reviewed: No**

The disturbance to waders from walkers, bait-diggers, and sport fishermen was studied. Dog walkers were found to be the most common cause of disturbance, and more than half of the walkers were accompanied by dogs. The study showed the reactions of different species to these different recreational activities. The time it took for birds to return to an area after disturbance was studied, and most species kept considerably far distances from disturbance by fishermen, though these distances were shorter than distances from bait diggers and walkers. Some species found on tidal flats were slow to return after disturbance by walkers, sometimes taking 25 minutes to come back to a site.

**Citations**: This article is not available on Google Scholar. Similar articles are unknown.

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668; not available for purchase, may be on ILL, abstract is available online

**EAEST CONCLUSION:** This paper has not been published because it was a thesis, it has not been peer reviewed, and has not been cited. EA does not suggest using this article (from Charles Pfister) in the Plan/EIS.

**NEXT STEP:** None.

1. Smit, C. J., and G. J. M. Visser. 1993. *Effects of disturbance on shorebirds: a summary of existing knowledge from the Dutch Wadden Sea and Delta area*. Wader Study Group Bull. 68:619.

**Peer Reviewed: Yes**

Study that analyzed a set of studies carried out at the Wadden Sea and Delta area. Paper addresses the effects of disturbance by various activities on shorebirds. The impacts of leisure activities and other activities on both foraging and resting birds were studied. The paper reviewed the data from several studies to explore the responses of various species of birds from activities in a variety of habitats. The effects of small airplanes, jets and helicopters are also considered, as are the effects of disturbance on food intake and behaviour of territorial birds. Frequent disturbance may force waders to abandon traditional high-tide roosts.

**Citations**: Cited on Google Scholar 72 times. Other similar papers include:

* Roberts. 1993. *Responses of foraging sanderlings to human approaches* (cited 27 times)
* Laursen et al. 2005. *Factors affecting escape distances of staging waterbirds* (cited 19 times)

Articles were found in biological journals

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** Although this study took place in Europe, it has been peer reviewed, cited numerous times, and includes a discussion of disturbance to birds from dogs as well as a description of different results of disturbance to shorebirds. Because of this EA suggests incorporating the results in this article (from Charles Pfister) into the impacts analysis of Chapter 4 for the Plan/EIS. Data from disturbance by dogs as well as data from disturbance by other sources should be incorporated.

**NEXT STEP:** EA will read and review entire article and incorporate the results into the Literature Review section of Chapter 4.

1. Thomas, K., Kvitek, R.G., and C. Bretez. 2003. *Effects of human activity on the foraging behavior of sanderlings Calidris alba*. Biological Conservation 109: 67-71

**Peer Reviewed: Yes**

Urbanization and coastal development has dramatically reduced the beach habitat available for foraging shorebirds worldwide. This study tested the general hypothesis that recreational use of shorebird foraging areas adversely affects the foraging behavior of sanderlings *Calidris alba*. Observations conducted on two central California beaches from January through May and September through December of 1999 showed that increases in the number and activity of people significantly reduced the amount of time sanderlings spent foraging. Although the sample size was low, the most significant negative factor was the presence of free running dogs on the beach. The experimentally determined minimal approach distance did not vary significantly with the type of human activities tested. Based on these results, policy recommendations for minimizing the impact of human beach activities on foraging shorebirds include: (1) people maintain a minimum distance of 30 m from areas where shorebirds concentrate and (2) strict enforcement of leash laws.

**Citations**: Article has been cited 59 times on Google Scholar. Similar articles include:

* Berger. 1991. *Human activity influence and diurnal and nocturnal foraging of sanderlings (Calidris alba)* (cited 114 times)
* Yasue. 2005. *The effects of human presence, flock size and prey density on shorebird foraging rates* (cited by 32)

These studies are from scientific journals.

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** Because this study has been peer reviewed, cited numerous times, and includes a discussion of disturbance to birds from “free running” dogs on Californian beaches, EA suggests incorporating the results in this article (from Charles Pfister) into the impacts analysis of Chapter 4 for the Plan/EIS.

**NEXT STEP:** EA will read and review entire article and incorporate the results into the Literature Review section of Chapter 4.

1. Giolitto, Marianne. 2007. *Trailhead Leash Pilot Project*. The City of Boulder, Department of Open Space and Mountain Parks. Boulder Colorado. July 19.

**Peer Reviewed: No**

Study prepared for the City of Boulder on a pilot program designed to increase control of dogs at trailhead areas where user conflicts were more likely, without system-wide restrictions on dog walkers. Five trailhead areas were involved in a change in restrictions, as well as an outreach/educational campaign. While the main goal of the pilot program was to reduce conflicts and improve visitor experience, a secondary goal was to improve environmental conditions that arose from off-trail trampling in the trailhead area. Observational studies were completed to determine the effectiveness of the increased regulation at the trailhead, and to determine that these regulations did not just shift the location of impacts. The study showed that the implementation of the restrictions increased compliance with dog control and excrement, decreased conflictive behavior and safety issues, and lessened the percentage of dogs that went off-trail. Despite these results, displacement of detrimental effects was observed once visitors had left the areas where a leash requirement was in place. The study then considered the benefits and downsides to implementing the program or not implementing the program. The final decision by the management staff was to implement the program at other sites.

**Citations:** No known citations

**Correspondence ID and Availability:**Provided for inclusion by NPS, already in EAEST files

**EAEST CONCLUSION:** This study (commissioned by City of Boulder Open Space and Mountain Parks) examines one of the more intensive dog walking programs in the country, and it can be used to illustrate potential positives and negatives of a dog walking program at GGNRA. While the results of this survey may be incorporated into the impacts analysis of Chapter 4 for the Plan/EIS, the survey is not peer reviewed, and it will not form the basis for a decision regarding dog walking at GGNRA.

**NEXT STEP:** EA will read and review entire article and incorporate the results into the Plan/EIS.

1. Chow, Nola. 1996. *1994-95 Bank Swallow Annual Report*. US04906-32.

**Peer Reviewed: No**

This study was based on the results of monitoring of the bank swallow colony at Fort Funston for the 1994 and 1995 seasons. While monitoring was also completed in 1993, the monitoring was greatly scaled back in 1994 and 1995. Photos were taken to map burrows, and observers counted the number of burrows, amount of activity, number of young, presence of other species, and potential disturbances. The colony was visited several times throughout the season, and changes in new burrow activity and chick counts were recorded. A decrease in funding in 1995 changed the data collection and summary for that year. Results indicated a decline in the adults from 1994 to 1995, but note that the lack of strong site tenacity and unobtrusive monitoring methods used in the study make drawing conclusions on colony size across years difficult. However, the study also included monitoring and observations of human activity and activity of other species at the site, including the American kestrel, which was observed preying on nearly fledged bank swallow chicks. Aircraft, human, particularly hangliders, dogs, and hawks were commonly observed potential disturbances, but swallow activity only ceased during aircraft activity, and the other potential disturbances were not noticed or documented. Suggestions for increased protection include exclusion of hang gliders, prohibition of fireworks, and the closure of the above cliffs.

**Citations**: This article is not available on Google Scholar.

**Correspondence ID and Availability:**Provided for inclusion by NPS, already in EAEST files

**EAEST CONCLUSION:** This study was not peer reviewed. Suggest incorporating general statements about bank swallow relative abundance and locations at Ft. Funston, but should not be cited for dog disturbance to bank swallows.

**NEXT STEP:** EA will read and review entire article and incorporate per above.

1. Taylor, A.R., Knight, R.L. 2003. *Wildlife responses to recreation and associated visitor perceptions*. Ecological Applications, Vol. 13, No. 4, pp. 951-963.

**Peer Reviewed: Yes**

This article examined the effects of recreationists on wildlife. Specifically, the study looked at recreationists participating in various kinds of on and off trail recreation, and the percent probability that wildlife would flush in response to the presence of recreationists. The area of influence was studied to determine the area or distance within which wildlife may be displaced or disturbed by recreation. Experiments indicated that bison, mule deer, and pronghorn antelopes, had a 70 percent probability of flushing from disturbance by on-trail recreationists within 100 meters. Mule deer had a 96 percent chance of flushing within 100 meters of off-trail recreationists. These numbers were used to calculate the area of influence of recreationists on these three wildlife species.

The study also included a section on the perceptions of recreationists about how their impacts on wildlife. Taylor and Knight conducted a survey of 640 backcountry trail users with questions regarding how close visitors felt was acceptable to approach wildlife, how far they felt the animals had moved after being impacted, and about the degree to which recreationists believed their actions were causing stress to wildlife. The survey also included questions about what type of activity recreationists though was most stressful to wildlife, and what actions for wildlife management they would support at the site (Antelope Island). These visitors largely failed to accurately perceive their impact on wildlife; the perceived distances for approaching wildlife were much closer than the actual distances at which wildlife was found to be disturbed by recreation. Users from different recreational groups held other groups more responsible for causing stress in wildlife than the group they associated with (i.e. bikers felt hikers had more of an impact than bikers). The perceptions of visitors recreating at the site have important management implications for dealing with wildlife stress in response to recreation.

**Citations:** This article is available on Google Scholar, and has been cited 118 times. Papers that cite this paper or are similar to this paper include:

* Whittington, et al. 2005.  *Spatial Responses of Wolves to Roads and Trails in Mountain Valleys* (cited 92 times)
* Hilty et al. 2006. *Corridor ecology: the science and practice of linking landscapes for biodiversity conservation* (cited 156 times)
* George and Crooks. 2006. *Recreation and large mammal activity in an urban nature reserve* (cited 49 times)

**Document Availability:** Document is available online and in EAEST folders.

**EAEST CONCLUSION:** The study contains some material appropriate to incorporate into the Plan/EIS about the disturbance of wildlife from various kinds of recreation, and about perceptions of visitors for wildlife impacts. This is a study of recreation impacts on bison, mule deer, and antelope and not relevant because it doesn’t discuss dog impacts at all. This study will not be included in the Plan/EIS.

**NEXT STEP:** None.

1. Stankowich, T. 2008. *Ungulate flight response to human disturbance: a review and meta- analysis*. Biological Conservation, Vol. 141, pp.  2159-2173.

**Peer Reviewed: Yes**

Stankowich analyzed several studies on wildlife responses to disturbance to determine the importance of various factors on the level of disturbance. This comprehensive review looked at flight responses of different ungulate wildlife species in experiments with human and vehicle disturbances. Stankowich found that ungulate flight response is largely a factor of level of threat (speed of approach, directness of approach), but that type of threat, habitat, sex and size of the group, and familiarity with hunting played a role in the response. Disturbance by humans on foot was found to cause a greater flight response than a vehicle disturbance, and humans were also found cause a greater response than dogs among ungulate species. Human disturbance along a predictable path, such as a trail, elicited less of a response than a human disturbance off of trails.

This compiled data was then used by Stankowich to determine five factors to consider when looking at models for ungulate flight responses caused by disturbance. These factors are (1) how seasonal variation in reproductive status and body condition effects wariness, (2) the relative impacts of lethal and non-lethal human contact, and (3) unique natural history traits that may cause differences in flight behavior between populations, (4) the availability of alternative sites, and (5) shorter distances between feeding sites and refugia can reduce the impact of other factors on flight responses.

**Citations:** This article is available on Google Scholar and has been cited 43 times. Papers that cite this paper or are similar to this paper include:

* Leighton et al. 2010. *Conservation and the scarecrow effect: Can human activity benefit threatened species by displacing predators* (cited 7 times)
* Manor and Saltz. 2005. *Effects of human disturbance on use of space and flight distance of mountain gazelles* (cited 5 times)
* Tarlow and Blumstein. 2007. *Evaluating methods to quantify anthropogenic stressors on wild animals* (cited 47 times)

**Document availability:** Document is available online and in EAEST folders.

**EAEST CONCLUSION:** This paper may provide some general information to support the idea that humans disturb wildlife species, particularly when they are off-trail. This paper also supports the idea that humans elicit a greater response in larger wildlife than dogs. However, the paper only relates to ungulate species, and is not applicable to the Plan/EIS. This study will not be included in the Plan/EIS.

**NEXT STEP:** None.

1. Tarlow, E.M., Blumstein, D.T. 2007. *Evaluating methods to quantify anthropogenic stressors on wild animals*. Applied Animal Behaviour Science, Vol. 102, pp. 429-451.

**Peer Reviewed: Yes**

Humans have a variety of direct and indirect impacts on wildlife and a number of methods have been proposed to identify and quantify anthropogenic stressors that negatively impact wildlife. The ideal method would ultimately help predict the presence, absence, or population viability of animals living with a particular stressor. Tarlow and Blumstein critically review seven methods that have been used, or are potentially useful, to identify anthropogenic stressors on animals. We rank them from fitness indicators to disturbance indicators: breeding success, mate choice, fluctuating asymmetry, flight initiation distance, immunocompetence, glucocorticoids, and cardiac response. They describe each method’s ease of use, precision in quantifying the stressor, accuracy in predicting the presence, absence, or population viability of a species experiencing a given stressor, and the repeatability of the results across populations and species. From this analysis, Tarlow and Blumstein conclude that there is no single optimal method to quantify anthropogenic stressors; method selection will depend on precise goals and fiscal constraints.

Tarlow and Blumstein looked at several methods of evaluating the impact of anthropogenic stressors on wildlife populations, and the effectiveness of using these various methods. They outlined the reasoning for employing each method. They found that using a cardiac response measure ranked highest for measuring mean response, followed by glutocorticoids. Flight initiation distance (FID) ranked highest for ease of use, but was ranked low for accurately predicting whether the presence or absence of a species was due to anthropogenic stressors. The end conclusion made by Tarlow and Blumstein was that each method must be evaluated for accuracy, ease of use, and cost before being chosen in a specific situation.

**Citations:** This article is available on Google Scholar, and has been cited 47 times. Papers that cite this paper or are similar to this paper include:

* Wey et al. 2008. *Social network analysis of animal behaviour: a promising tool for the study of sociality* (cited 110 times)
* Cyr and Romero. 2009. *Identifying hormonal habituation in field studies of stress* (cited 24 times)
* Beale. 2007. *The Behavioral Ecology of Disturbance Responses* (cited 18 times)

**Document availability:** Document is available online and in EAEST folders.

**EAEST CONCLUSION:** While this paper does provide some summary material on the various ways in which anthropogenic activities may cause stress to wildlife, this paper is largely focused on the technical aspects of using these different methods for measuring stress. This study will not be included in the Plan/EIS.

**NEXT STEP:** None.

1. Reed, S.E. & Merenlender, A.M., 2008. *Quiet, nonconsumptive recreation reduces protected area effectiveness*. Conservation Letter, Vol. 1,  pp. 146-154.

**Peer Reviewed: Yes**

Reed and Merenlender studied the impacts of quiet or nonconsumptive recreation on native and non-native carnivores. Six common mammalian carnivore species were studied: native coyotes, bobcats, and gray foxes, and non-native red foxes, domestic dogs, and domestic cats. Scat samples were used for DNA verification and species identification to survey for mammalian carnivores in 28 parks and preserves in northern California. Neighboring protected areas without recreation, and with recreation were studied as paired sites. The presence of nonconsumptive recreation led to a five-fold decline in the diversity and density of native carnivore species, and resulted in a shift to higher abundances of non-native species. A decline in species distribution and density from areas without recreation to areas with recreation was observed across all paired sites. Interestingly, no evidence indicated that carnivores avoided trails within recreational areas, but their density and distribution was decreased for these sites overall. Dogs were detected with greater frequency at sites that provided areas for recreation. One shortcoming of the study is that it does not provide the mechanisms by which human recreation disturbs wildlife, but only looks at the distribution and density of mammalian carnivores in areas with and without recreation. Reed and Merenlender conclude with possible management implications from the outcome of the study, including the possibility of limiting areas where recreation is permitted.

**Citations:** This article is available on Google Scholar, and has been cited 25 times. Papers that cite this paper or are similar to this paper include:

* Vanak and Gompper. 2009. *Dogs Canis familiaris as carnivores: their role and function in intraguild competition* (cited 11 times)
* Brade et al. 2009. *Habitat attributes of landscape mosaics along a gradient of matrix development intensity: matrix management matters* (cited 9 times)
* Müllner et al. 2003. *Exposure to ecotourism reduces survival and affects stress response in hoatzin chicks (Opisthocomus hoazin)* (cited 150 times)

**Document availability:** Document is available online and in EAEST folders.

**EAEST CONCLUSION:** This paper is pertinent due to both the subject matter and because the regional area where the study was conducted is in proximity to GGNRA. The conclusions and results should be incorporated into the Plan/EIS (including any shortcomings as noted above) along with the Merenldener and Reed 2011 study.

**NEXT STEPS:** Data and results from the study should be incorporated into the Plan/EIS where applicable.

1. Mathew J. Reeves, Ann P. Rafferty, Corinne E. Miller, Sarah K. Lyon-Callo. 2011. *The Impact of Dog Walking on Leisure-Time Physical Activity: Results From a Population Based Survey of Michigan Adults*. Journal of Physical Activity and Health, 2011; 8 (3): 436-444

**Peer Reviewed: Yes**

Reeves et al. analyzed data collected in the 2005 Michigan Behavioral Risk Factor Survey to look at the relationship of dog walking to leisure-time physical activity (LTPA). The study sought to determine the extent to which dog ownership and regular dog walking was associated with physical activity among survey respondents. Of 5,902 respondents 41% owned a dog, and of these, 61% walked their dog for at least 10 minutes at a time. However, only 27% walked their dog at least 150 minutes per week. Dog walking was associated with a significant increase in walking activity and LTPA. Compared with non-dog owners, the odds of obtaining at least 150 minutes per week of total walking were 34% higher for dog walkers, and the odds of doing any LTPA were 69% higher. Results indicate that dog walking was associated with more walking and LTPA, but that not all dog owners walk their dogs. Those individuals that do walk their dogs regularly are more likely to obtain the recommended amount of physical activity than those individuals who do not own a dog or do not walk their dog.

**Citations:** This article is available on Google Scholar, and has been cited 2 times.

**Document availability:** Document is available online and in EAEST folders.

**EAEST CONCLUSION:** This study provides an association between the dog ownership and exercise. Results of the analysis of this survey should be incorporated into the Plan/EIS in a general context to provide rationale for claims that dog ownership increases the likelihood of exercise.

**NEXT STEPS:** Use general statements from results of analysis to be added in to the Plan/EIS where appropriate.

1. Hayley Cutt, Billie Giles-Corti, Matthew Knuiman, Anna Timperio, and Fiona Bull. 2008. *Understanding Dog Owners’ Increased Levels of Physical Activity: Results From RESIDE*. American Journal of Public Health: January 2008, Vol. 98, No. 1, pp. 66-69.

**Peer Reviewed: Yes**

This study looked at how dog ownership influences physical activity. Data was analyzed from a cross-section survey of 1,813 adults within 74 new housing developments in Perth, Australia, regarding walking, cycling, public transportation use, and sense of community. Dog walkers perceived their neighborhoods as more attractive, reported a higher level of social support and sense of neighborhood cohesion than individuals who did not own dogs. Although only 23% of the dog owners walked their dogs 5 or more times per week, the adjusted odds of achieving sufficient physical activity and walking were 57% to 77% higher among dog owners compared with those not owning dogs (*P*<.05). Dog ownership was independently associated with physical activity and walking, independent of demographic, intrapersonal, and perceived environmental factors. Cutt et al. conclude that encouraging dog walking could increase community physical activity levels, and provide health and community benefits.

**Citations:** This article is available on Google Scholar, and has been cited 27 times. Papers that cite this paper or are similar to this paper include:

* Wood et al. 2005. *The pet connection: Pets as a conduit for social capital?* (cited 67 times)
* Salmon et al. 2010. *Dog Ownership, Dog Walking, and Children’s and Parents’ Physical Activity* (cited 5 times)
* Dembicki and Anderson. 2008. *Pet Ownership May Be a Factor in Improved Health of the Elderly* (cited 69 times)

**Document availability:** Document is available online and in EAEST folders.

**EAEST CONCLUSION:** This study provides an association between the dog ownership and exercise, as well as a sense of community. Although the study is from Australia, the analysis of this survey can be incorporated into the Plan/EIS impacts analysis.

**NEXT STEPS:**  Incorporate into the Plan/EIS where appropriate, including impacts analysis.

1. American Veterinary Medical Association. 2007. U.S. Pet Ownership and Demographics Sourcebook.

**Peer Reviewed: No**

This reference describes the results of a large survey of the pet owning public and pet population demographics taken from over 47,000 households. The survey results are presented with the results of similar surveys dating back to 1987 and describe long-term trends. The primary topics of this report include key Findings, Total Pet Ownership and Pet Population, Veterinary Medical Use and Expenditures, Pet Owner Demographics, and pet Owner Profiles. The American Veterinary Medical Association (AVMA) retained Irwin Broh & Associates Inc. to conduct the research for this study. A questionnaire was distributed by mail to 80,000 U.S. households randomly selected from the MySurvey.com panel of TNS Custom Research Inc. The sample was selected to be representative of all U.S. households with respect to market size, age of household head, household size and income within each of the nine Census regions. The sample also matched Census quotas for family versus nonfamily households, as well by state and the top 25 Metropolitan Statistical Areas.

**Citations:** This article is available on Google Scholar and has been cited 16 times. Similar reports include:

* Shepherd, A.J. 2008. *Results of the 2006 AVMA Survey of Companion Animal Ownership in US Pet-Owning Households* (cited by 9; peer reviewed; published in the [Journal of the American Veterinary Medical Association](http://avmajournals.avma.org/loi/javma)).
* Wise et al. 2002. *Results of the AVMA Survey of Companion Animal Ownership in US Pet-Owning Households* (cited by 43; peer reviewed; published in the [Journal of the American Veterinary Medical Association](http://avmajournals.avma.org/loi/javma)).

**Document availability:** This study is available online and in EAEST folders. Also suggest obtaining the Shepherd 2008 and Wise et al. 2002 studies, which are peer-reviewed.

**EAEST CONCLUSION:** This study provides some general statistics regarding pet ownership and other socioeconomic trends regarding pets that would be useful information for inclusion in the Plan/EIS.

**NEXT STEPS:** Data and results from the U.S. Pet Ownership and Demographics Sourcebook as well as the two peer-reviewed articles listed above should be incorporated into the Plan/EIS where applicable.

1. Lafferty, K.D., Goodman, D., and Sandoval, C.P. 2006. *Restoration of Breeding by Snowy Plovers Following Protection from Disturbance.* Biodiversity and Conservation. DOI 10.1007/s10531-004-7180-5. Volume 15. Pp 2217–2230

**Peer Reviewed: Yes**

This study presented the results of the threatened western snowy plover (*Charadrius alexandrinus nivosus*) at a public beach (Sands Beach, Coal Oil Point Reserve) in Santa Barbara, CA before and during a period when a barrier directed foot traffic away from a section of upper beach where snowy plovers roost. The barrier reduced disturbance rates by more than half, including disturbances by dogs. Snowy plovers increased in abundance (throughout the season) and their distribution contracted to within the protected area. Snowy plovers that were outside the protected area in the morning moved inside as people began using the beach. Disturbance rates fell dramatically following protection; of the recreational disturbances that remained, most were by humans (92%), followed by dogs (8%). In most of the disturbance by dogs, the dog was unleashed. A variety of predators ate eggs or chicks; crows consumed the most eggs, red-tailed hawks consumed the most chicks, and one chick was killed by an unleashed dog. Before protection, plovers did not breed at Coal Oil Point. During protection, snowy plovers bred in increasing numbers each year and had high success at fledging young. These results demonstrate how recreational disturbance can degrade habitat for shorebirds and that protecting quality habitat may have large benefits for wildlife and small impacts to recreation.

**Citations:** This article is available on Google Scholar and has been cited 35 times.

**Document availability:** This study is available online and in EAEST folders.

**EAEST CONCLUSION:** This study provides information on impacts to a specific shorebird (Western snowy plover) discussed in the plan/EIS at a California beach. The management regime studied in this paper included a physical boundary around a proposed plover nesting area. The prohibition of both humans and off-leash dogs resulted in the success of snowy plover nesting after initiation of that regime.

**NEXT STEPS:** The results of this study should be incorporated into the Plan/EIS where applicable, including impacts analysis.

1. Reed, S.E. and Merenlender, A.M. 2011. Effects of Management of Domestic Dogs and Recreation on Carnivores in Protected Areas in Northern California. Conservation Biology. Volume 25, Issue 3. June. Pp 504-513.

**Peer Reviewed: Yes**

Protected lands in California that permit public access were reviewed (using the GreenInfo Network of CA protected areas database, 2009), including federal, state, and local parks, forests, and private nature reserves. It was found that 78.7% of protect lands in CA permit unrestricted access by domestic dogs, 18.2% permit dogs only in specific areas, and only 0.2% exclude domestic dogs entirely (Reed and Merenlender 2011, 504). This study investigated whether carnivore species richness and abundance were associated with management of domestic dogs and recreational visitation in protected areas in northern California. The study surveyed for mammalian carnivores and human visitors in 21 recreation areas in which dogs were allowed off-leash or on-leash or were excluded, and compared the observations in the recreation areas with observations in seven reference sites that were not open to the public. Due to the relationship between human and dog visitation rates, this study could not separate the effects of humans from the effects of dogs (Reed and Merenlender 2011, 513). This study found that native carnivore species richness was greater and the relative abundances of native coyotes (*Canis latrans*) and bobcats (*Lynx rufus*) were greater in the reference sites. Abundances of bobcats and all carnivores declined as the number of visitors increased. The policy on domestic dogs did not appear to affect species richness and abundance of mammalian carnivores, but the number of dogs observed was strongly associated with human visitation (R2 = 0.54). The key factors associated with recreational effects on carnivores appear to be the presence and number of human visitors to protected areas (Reed and Merenlender 2011, 504). The authors of this study “believe that enforcing leash laws may not be the best use of limited management resources,” but that “prohibiting dogs in protected areas, however, may affect human visitation rates” (Reed and Merenlender 2011, 513). Although many factors affect visitation to protected areas, the Reed and Merenlender (2011, 513) study found that recreation areas that allowed dogs had 60% more human visitors than those that did not, which suggests that people may be more attracted to sites where they are permitted to bring dogs. Because controlling visitation is likely to be even more difficult and expensive than enforcing domestic dog policies, the authors suggest designating some sites as recreation areas open to the public and others as nature reserves closed to the public as the most efficient strategy for managing the effects of recreation on carnivores (Reed and Merenlender 2011, 513).

**Citations:** This article is available on Google Scholar but has not been cited, possibly due to the recent 2011 publication date.

**Document availability:** This study is available online and in EAEST folders.

**EAEST CONCLUSION:** This study provides an overview of the percent of lands in CA that allow domestic dogs and presents results from a CA study on impacts to carnivores from visitors at recreation areas that allow dogs compared to reference sites that prohibit dogs. The study could not separate the effects of humans from the effects of dogs (Reed and Merenlender 2011, 513) but provides management recommendations for reducing impacts from visitors to native carnivores.

**NEXT STEPS:** The results of this study should be incorporated into the visitation and wildlife sections of Plan/EIS where applicable along with the Merenlender and Reed 2008 study.

## NATURAL RESOURCES

### GGNRA Literature Suggested by Public Comment for Removal From Plan/EIS:

The following citations have been suggested for removal from the Plan/EIS through the PEPC comment database and/or the Charles Pfister letter comments to the draft Plan/EIS. The full citations that have been suggested are described, a summary of the article/paper/brochure has been prepared, a determination if the citation has been peer reviewed has been included, and the number of times the article/paper/brochure has been cited, as well as a conclusion proposed by EA and suggested next steps.

1. Numerous NPS Reports regarding the Western snowy plover at Ocean Beach

**Peer Reviewed: Yes – monitoring protocols have been peer-reviewed and approved by PRBO and NPS**

These reports have been “picked apart by non-scientist off-leash dog advocates,” according to Charles Pfister. Mr. Pfister reviewed a number of studies done by GGNRA that were cited in the Draft Plan/EIS and states the following: “The number of incidences to disturbance and harassment of Western snowy plovers reported by NPS is small because the sampling method used by NPS: 1.) involved observers moving up and down the beach and surveying an entire segment of the beach and not watching specific flocks of plovers, and 2.) the sampling method did not attempt to specifically include observation periods when the level of disturbance was mostly likely to be severe, so the periods of peak disturbance, which may be very significant in assessing overall impacts are not presented in the data.”

As stated during public comments to the draft Plan/EIS in the PEPC database, these reports are “Unable to prove any impact on plover population numbers, the 1996 Hatch Report argued that dogs "disturb" plovers. However in the entire 1.5 year study, only 19 out of 5,692 dogs -- less than one-third of one percent -- were observed deliberately chasing plovers, and none was reported to actually catch or harm a bird. The report adds that on another 15 occasions, at least 100 additional plovers were "inadvertently disturbed" by dogs, comparing this to the 48 plovers inadvertently disturbed by people without dogs, implying that people inadvertently disturb plovers at least twice as often as dogs alone. But a closer reading of the report shows that the disturbances from dogs were noted in about half the recording time (24 hours of observations) as that devoted to studying people (40 hours). Had the two groups been observed for equal amounts of time, the number of disturbances would have been nearly the same.”

Also stated during public comments to the draft Plan/EIS in the PEPC database, “The GGNRA's own studies indicate that dogs have no significant negative impact on the population of snowy plovers at Ocean Beach. The Nov 15, 1996 report of snowy plovers by GGNRA staffer Daphne Hatch found that there was an increase of more than 100% in the number of snowy plovers in the years after the 1979 Pet Policy went into effect (allowing off-leash dogs on Ocean Beach and elsewhere). There was no negative relationship between the number of dogs and the numbers of plovers on the beach at the same time. Indeed, the 1996 Hatch Report says: *Factors other than the number of people or dogs, possibly beach slop and width, appear to exert greater influence over Snowy Plover numbers on Ocean Beach*."

Additional public comments to the draft Plan/EIS in the PEPC database: “A follow-up 2006 Hatch Report considers effects on the numbers of plovers after two Federal Court rulings reinstated the 1979 Pet Policy, allowing off-leash dogs back on Ocean Beach. According to the study, the maximum number of plovers ever recorded was in 1994, at a time when there were no restrictions on off-leash dogs on Ocean Beach. Numbers of plovers have varied since then, (from a low of 14 in 2000 to 35 in 2005), but there is no correlation between when numbers of plovers were low and when dogs were allowed off-leash. Indeed, data from the 2006 Hatch Report posted by the GGNRA on its website actually show an increase in plover numbers in 2005, the year after the first Court Ruling. The annual mean of snowy plover numbers (total number of plovers observed during all surveys in a year, divided by the number of surveys done that year) show an increase in plover populations after the Court rulings (from 26.55 in 2004 to 31.30 in 2005). The annual snowy plover median listed (the number of plovers counted in a single survey, with half the surveys counting more plovers than the median number and half the surveys reported less) is 28 for 2004 and 33 for 2005. Note that in the 2006 Hatch Report, an incident is classified as a "disturbance" when, in response to an off-leash dog, a plover lifted up its head and looked around. This overreaching and misuse of the term "disturbance" illustrates the bias inherent to the Hatch observational studies.”

**Citations**: None

**Correspondence ID and Availability:**Correspondence ID: 1803, 3715, 4021, 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** These are studies that NPS has conducted and reflect some of the only site-specific baseline information and disturbance from dogs regarding Western snowy plovers at Ocean Beach. These citations will stay in the Plan/EIS because the monitoring protocols have been peer-reviewed and approved by the PRBO and NPS. Only the factual information and observations are presented in the Plan/EIS. Public comment describing possible limitations to the Hatch report will be included in the EIS.

**NEXT STEP:** Keep citations in Plan/EIS, but include the public comment on both sides of the issue describing possible limitations to the Hatch report.

1. Hatch, D., W. Merkle, and D. Press. 2007. *Status Report: Western Snowy Plovers and Recent Changes in Human and Dog Use within the Snowy Plover Management Area at Ocean Beach and the Wildlife Protection Area at Crissy Field*. Golden Gate National Recreation Area. Unpublished Report.

**Peer Reviewed: Yes – monitoring protocols have been peer-reviewed and approved by PRBO and NPS; the report was reviewed by NPS science advisors**

Mr. Pfister reviewed this study conducted by GGNRA and describes the issues with the Hatch Report, determines it is not a scientifically defensible report and states the following: “The use of encounter rates as a measure of the rate of disturbance is an attempt to use the data set for something it is just not suited for…..Given all the factors involved in determining the behavior, distribution, and abundance of snowy plovers, this is a pathetically low number of observational hours from which to draw any conclusions….Apparently in one hour I observed more instances of dogs disturbing Western snowy plovers than in the entire five years of this study.”

**Citations**: None

**Correspondence ID and Availability:**Correspondence ID: 1803, 4021, 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** This is a study that NPS has conducted and reflects some of the only baseline information we have regarding Western snowy plover disturbance at Ocean Beach. These citations will stay in the Plan/EIS because the monitoring protocols have been peer-reviewed and approved by the PRBO and NPS, but public comment describing possible limitations to the Hatch report will be included. Only the factual information and observations are presented in the Plan/EIS.

**NEXT STEP:** Keep citations in Plan/EIS, but include the public comment on both sides of the issue describing possible limitations to the Hatch report. .

1. NPS. 2007e. *Bank Swallow Monitoring at Fort Funston, Golden Gate National Recreation Area 1993-2006*. Golden Gate National Recreation Area, San Francisco, CA. March [sometimes referred to as Hatch 2006 Bank Swallow Report].

**Peer Reviewed: No**

As stated during public comments to the draft Plan/EIS in the PEPC database, “Hatch's Bank Swallow report 2006 makes conclusions which are not based on her data. She makes speculative statements about what dogs could do, but there is no evidence for damage, e.g., digging which leads to burrow collapse.”

**Citations**: None

**Correspondence ID and Availability:**Correspondence ID: 1580, 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** This study has not been peer reviewed, has not been cited, and includes discussions that have been controversial with many readers of the Plan/EIS. However, this is a study that NPS has conducted and reflects some of the only baseline information and disturbance data we have regarding bank swallows at Fort Funston. Only the factual information and observations are presented in the Plan/EIS; speculative statements, if any, will be removed.

**NEXT STEP:** Keep citations in Plan/EIS.

1. Bekoff, M., and C.A. Meaney. 1997. *Interactions among Dogs, People, and the Environment in Boulder, Colorado: A Case Study*. Department of Environmental, Population, and Organismic Biology, University of Colorado, Boulder.

**Peer Reviewed: No**

Charles Pfister explains that this study is “hopelessly flawed” and that other studies such as Lenth et al. 2008 (cited in the Plan/EIS) show how unreliable the methods and results were of this Beckoff and Meaney 1997 Study and that their method of direct observation of dogs “flushing or chasing” wildlife did not detect significant disturbance impacts on mammals. Mr. Pfister also states that this survey takes place in open spaces areas in Boulder, CO and that “songbirds are rarely susceptible to harassment or disturbance by dogs. Their habitats, behavior, and the lack of ability of dogs to stalk them make songbirds essentially invulnerable to disturbance by dogs, unless a human trains a dog to located nests of ground nesting species.”

**Citations**: 11

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** It is suggested that EA will reword the Literature Review section of Chapter 4 that describes impacts to wildlife as a result of dogs. Impacts to both shorebirds and other landbirds such as songbirds are currently lumped together, which is incorrect since these two groups of birds respond very differently to disturbance by dogs. If this study is removed from the impacts to shorebirds and presented separately in impacts to landbirds (inland birds such as songbirds), the validity of the impacts to both shorebirds and landbirds would be improved.

**NEXT STEP**: Remove citation from document, and separate impacts to landbirds, such as songbirds, from shorebirds in chapter 4 of the Plan/EIS.

1. Forrest, A., and C.C. St. Clair. 2006. *Effects of Dog Leash Laws and Habitat Type on Avian and Small Mammal Communities in Urban Parks*. Urban Ecosystems 9(2):51–66. April 2006.

**Peer Reviewed: Yes**

Charles Pfister explains that “the study has little relevance to the issues at hand in GGNRA, as the study involved songbirds, not shorebirds, and the habitats in the study were generally not comparable to GGNRA, especially the open beach areas used by shorebirds in GGNRA.”

As stated during public comments to the draft Plan/EIS in the PEPC database: “Some of the most compelling research in the last few years has been by researchers such as Forrest and Cassidy St. Clair (2006) who admit that they expected to find that off-leash dogs had a major impact on the diversity, abundance, and feeding behaviors of birds and small mammals. However, when they did the actual research, they found no such impact.”

**Citations**: 10

**Correspondence ID and Availability:**Correspondence ID: 1803, 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** It is suggested that EA will reword the Literature Review section of Chapter 4 that describes impacts to wildlife as a result of dogs. Impacts to both shorebirds and other landbirds such as songbirds are currently lumped together, which is incorrect since these two groups of birds respond very differently to disturbance by dogs. If this study is removed from the impacts to shorebirds and presented separately in impacts to landbirds (inland birds such as songbirds), the validity of the impacts to both shorebirds and landbirds would be improved.

**NEXT STEP**: Keep discussion of this citation, but present results in a more appropriate sub-section, such as the Literature Review section of Chapter 4 that describes impacts to landbirds such as songbirds.

1. Russell, W., J. Shulzitski, and A. Setty. 2009. *Case Study: Evaluating Wildlife Response to Coastal Dune Habitat Restoration in San Francisco, California*. Ecological Restoration. 27(4): 439-448.

**Peer Reviewed: Yes**

The Tetra Tech Public Comment Report for Crissy Field Dog Group states that: “This study appears biased. The restricted area was restored with native vegetation while the unrestricted area was not restored. Wildlife was more abundant in the restored area but this may have been due to the replanted native vegetation.”

Statement from Draft Plan/EIS: “At Fort Funston in GGNRA, a survey was conducted to determine the differences between a restricted/restored habitat that included a fenced exposure and was planted with native vegetation versus an unrestricted/unrestored habitat that included an area that received heavy visitor use, including off leash pets and was not planted with native vegetation (Shulzitski and Russell 2004, 5). Results of the survey detected two to three times more wildlife (bird, amphibian, reptile, and mammal species) in the restricted/restored habitat compared to the unrestricted/unrestored habitat (Shulzitski and Russell 2004, 18). As suggested by Shulzitski and Russell (2004, 5), heavy off-leash dog use increases deterioration of native dune communities.”

**Citations**: None.

**Correspondence ID and Availability:**Correspondence ID: 4698, already in EAEST files

**EAEST CONCLUSION:** the point of the above study was to correlate impacts to vegetation and wildlife as a result of dogs in an uncontrolled off-leash area at GGNRA to the unrestricted/unrestored habitat in the study.

**NEXT STEP**: This discussion of this study was removed from the Plan/EIS, but EAEAST will keep one general statement in the Plan/EIS because it is one of the few statements we have that connect dog disturbance to vegetation: Heavy off-leash dog use increases deterioration of native dune communities (Shulzitski and Russell 2004, 5).

## VISITOR EXPERIENCE

### GGNRA Literature Suggested for Inclusion in Plan/EIS:

The following citations have been suggested for inclusion into the Plan/EIS through either individual comments in the PEPC database or through a hard copy of letters sent with comments to the draft Plan/EIS. The full citations that have been suggested are described, a summary of the article/paper/brochure has been prepared, a determination if the citation has been peer reviewed has been included, and the number of times the article/paper/brochure has been cited. Finally, a conclusion proposed by EA and next steps have been suggested for each citation as well as a table that follows this text discussion.

1. Erickson, Elizabeth B. 2001. *Rocky Mountain National Park: History and Meanings as Constraints to African-American Park Visitation*. Unpublished doctoral dissertation, West Virginia University, Morgantown, West Virginia.

**Peer Reviewed: No**

The study looked at the historical and cultural constraints of visits by African-Americans to Rocky Mountain National Park. Interviews were conducted with African-American residents in nearby Denver, Colorado, as well as within Rocky Mountain National Park. Interview questions were pertaining to participants’ relationship to the park, meanings they ascribed to the park, and their perceived constraints to visitation. This data was analyzed using snowball sampling, and secondary data sources were also used to profile visitation to the park. The study divided participants into six groups based on their perceived constraints on park visitation and meanings they ascribe to the park. Overall the study indicated major constraints to visitation included both historical and cultural factors.

**Citations**: According to Google Scholar, this paper has not been cited. Similar articles include:

* Floyd, M. 1999. *Race, ethnicity and use of the National Park System* (cited 64 times)
* McDonald, JM. 1987. Minority *and ethnic variations in outdoor recreation participation: trends and issues* (cited by 8)

These and other similar articles were from reviews, journals, and symposiums about social science, leisure, and recreation.

**Correspondence ID and Availability:** Correspondence ID: 1850, already in EAEST files

**EAEST CONCLUSION:** This paper has not been published because it was a doctoral dissertation, it has not been peer reviewed, and has not been cited. EA suggests using the Floyd 1999 article instead.

**NEXT STEP:** None

1. Floyd, Dr. Myron. 1999. *Race, Ethnicity and Use of the National Park System.* Social Science Research Review. 1(2): 1-24.

**Peer Reviewed: Unknown**

This paper reviews the social science literature on racial and ethnic minority use of the National Park System. Four theoretical perspectives are examined—the marginality hypothesis, subcultural hypothesis, assimilation theory, and the discrimination hypothesis. Each perspective is described, and its strengths and limitations discussed. Research on race, ethnicity, and participation in outdoor recreation is also examined. Studies consistently show that racial and ethnic groups visit national parks and participate in recreation activities at differing rates. The style and pattern of park use also vary among racial and ethnic groups. Social science research on this topic can help park managers serve the diversity of recreation needs, preferences, and styles associated with diverse racial and ethnic groups.

**Citations**: According to Google Scholar, this paper has been cited 81 times. Similar articles include:

* Gobster, PH. 2002. *Managing urban parks for a racially and ethnically diverse clientele* (cited 123 times)
* Walker, GJ, Deng, J, and RB Dieser. 2001. *Ethnicity, Acculturation, Self-Construal, and Motivations for Outdoor Recreation* (cited by 50)

These and other similar articles were from a journal about social science, leisure, and recreation.

**Correspondence ID and Availability:** Correspondence ID: Found during research, already in EAEST files

**EAEST CONCLUSION:** This paper provides an in-depth outline of several theories on recreation by minority groups, as well as a discussion of several studies about minority recreation in the National Park System. Information from this paper should be incorporated into the Plan/SEIS where appropriate.

**NEXT STEP:** EA will review report further and add pertinent data from paper to Plan/EIS.

1. Vaske, J. and Donelly, M. 2007. Visitor Tolerances and Standards for Off Leash Dogs at Boulder Open Space and Mountain Parks. HDNRU Report No. 75. Report for Boulder Open Space and Mountain Parks, Fort Collins, Colorado State University. Human Dimensions in Natural Resources Unit.

**Peer Reviewed: No**

A study of visitor experience related to dogs in open space areas in Boulder, CO indicated that a significant proportion of visitors to open areas reacted strongly to negative behavior associated with off-leash dog walking. A group of 951 visitors, including dog owners and non-dog owners, completed questionnaires regarding their attitudes towards potentially disruptive behavior by dogs. This study suggests that the negative behaviors many visitors associated with dogs in natural areas are not simply minor irritants but could potentially spoil the entire experience for the visitor; some visitors may completely avoid areas of intense off-leash dog activity in GGNRA such as Crissy Field, Fort Funston, and Ocean Beach (Pfister letter).

**Citations**: None.

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** This dog management survey (commissioned by City of Boulder Open Space and Mountain Parks) examines perceived conflict with off-leash dogs, visitor tolerances and standards for off-leash dogs, and off-leash dog/human interactions. This study examines one of the more intensive dog walking programs in the country, and it can be used to illustrate potential positives and negatives of a dog walking program at GGNRA. While the results of this survey may be incorporated into the impacts analysis of Chapter 4 for the Plan/EIS, the survey is not peer reviewed, and it will not form the basis for a decision regarding dog walking at GGNRA. Additionally, the survey could be considered as an example for possible future studies to determine the tolerance of visitors at GGNRA to dogs and for the subsequent development of management criteria.

**NEXT STEP:** EA will review report further and add pertinent data from paper to Plan/SEIS.

1. Manning, R.E. 2007. *Parks and Carrying Capacity: Commons without Tragedy*. Island Press: Washington-Covelo-London. 328 pages.

**Peer Reviewed: Yes**

The presence of off-leash dogs affects the carrying capacity of GGNRA, which can be defined as the level and type of recreation use that can be accommodated in a park without violating standards for relevant indicator variables (Manning 2007, p. 25). In terms of the indicator of visitor experience, different user groups probably have widely different tolerance levels of the presence of on-leash and off-leash dogs. The stratified results of the 2002 Survey regarding such issues as attitudes towards leash laws undoubtedly reflect such differences (Pfister Letter).

**Citations**: 87

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, and 4668, can purchase as a Google eBook for $19.25

**EAEST CONCLUSION:** This reference is a 328 page book. EA reviewed the reference made by Mr. Pfister, which provides a definition of carrying capacity. Mr. Pfister notes that the carrying capacity of the park should be included within the discussion of numbers of off-leash dogs, and currently carrying capacity is not discussed within the Plan/DEIS. The addition of carrying capacity to the discussion of visitor use is not feasible without further study. The monitoring management strategy in the Plan/EIS is specifically designed to address this by evaluating impacts to natural and cultural resources and compliance with NPS regulations specific to dog walking, recommending closures where necessary.

**NEXT STEP:** None.

1. Arnberger, A., Haider, W. and Muhar, A. 2004. Social Carrying Capacity of an Urban Park in Vienna. Working Papers of the Finnish Forest Research Institute 2.

**Peer Reviewed: No**

A quantitative study by Arnberger et al. (2004) shows that that presence of off-leash dogs in an urban park made a remarkable difference in the degree of tolerance of visitors for crowding in the park. The presence of off-leash dogs decreased the tolerance of visitors to social conditions such as crowding. A certain degree of crowding of visitors that might be acceptable with few or no dogs off-leash became unacceptable when many visitors had dogs off-leash. Such a result is intuitively obvious at areas of GGNRA, where visitors with off-leash dogs congregate, such as Crissy Field or Fort Funston; active off-leash dogs may seem to take up all the space between people and create a greater sense of crowding than would otherwise occur (Pfister Letter).

**Citations**: According to Google Scholar, this paper has not been cited. Similar articles include:

* Arnberger, A. and Haider, W. 2007. *Would You Displace? It Depends! A Multivariate Visual Approach to Intended Displacement from an Urban Forest Trail*. Journal of Leisure Research. Volume: 39, Issue: 2, Pages: 345-365 (cited by 18 and peer reviewed)

**Correspondence ID and Availability:**Correspondence ID: 3689, 3690, already in EAEST files. Arnberger and Haider 2007 article is also available for purchase at JHU and Towson University

**EAEST CONCLUSION:** This paper has not been published because it was a working paper, it has not been peer reviewed, and has not been cited. EA suggests using the Arnberger and Haider 2007 article instead which presents similar conclusions but has been published in a journal.

**NEXT STEP:** None

1. Arnberger, A. and Haider, W. 2007. Would You Displace? It Depends! A Multivariate Visual Approach to Intended Displacement from an Urban Forest Trail. Journal of Leisure Research. Volume: 39, Issue: 2, Pages: 345-365

**Peer Reviewed: Yes**

A dichotomous choice survey was applied to explore the contributions of various social conditions to intended displacement from the main trail of a recreation area in Vienna, Austria. The trail scenarios were depicted as digitally calibrated images which systematically displayed combinations of levels of crowding with different mixes of user types, group sizes, compliance behavior, direction of movement, and placement within the image. Intended displacement was measured by interviewing 237 visitors on-site. The resulting model documents that the intention to displace is influenced by all six systematically controlled social factors as well as the interactions between crowding and several other design variables. High visitor numbers, unleashed dogs, small group sizes, more face to face encounters, a mix of user types moving at different speeds and several combinations between them increased intentions to displace.

**Citations:** According to Google Scholar, this article has been cited 18 times. Citations include:

* Reichhart, T, Arnberger A, and A Muhar. 2007. A comparison of still images and 3D animations for assessing social trail use conditions (cited by 3)

**EAEST CONCLUSION:** This paper was published in a peer reviewed journal. EA suggests that the data on off-leash dogs provided in this document may be used to characterize potential impacts to visitors without dogs from off-leash dog walking, and may also be used in more general terms. Data on dogs indicates that there was low on-leash compliance and that visitors responded negatively to off-leash dogs, and that situations with no dogs would entice visitors to continue to use the trail, and that leashed dogs were perceived in an neutral manner.

**NEXT STEP:** EA will review document in more depth and add to Plan/SEIS where appropriate.

1. Williams, Kathryn J.H., Weston, Michael A., Henry, Stacy, and Grainne S. Maguire. 2009. *Birds and Beaches, Dogs and Leashes: Dog Owners’ Sense of Obligation to Leash Dogs on Beaches in Victoria, Australia.* Human Dimensions of Wildlife: An International Journal: 14:2, 89-101.

**Peer Reviewed: YES**

Domesticated dogs threaten the conservation of beach-nesting birds in Australia through disturbance, and destruction of eggs and chicks. Leashing of dogs can improve conservation outcomes, but few dogs are leashed on beaches. We surveyed dog owners to explore their sense of obligation to leash dogs on beaches. Dog owners were more likely to feel obliged to leash their dog when they believed other people expected dogs to be leashed, and when they believed their dog was a threat to wildlife or people. Dog owners were less likely to feel obliged to leash their dog if they considered unleashed dog recreation to be important. Improved compliance may be achieved through community-based approaches to foster social norms for dog control, tailoring information products to emphasize the risk that all unleashed dogs may pose to beachnesting birds and raising awareness of designated off-leash exercise dog recreation areas. Respondents also indicated a higher obligation to leash dogs than is exhibited on beaches, meaning many may not actually put this belief into practice. Also, many dog owners perceived their own dog to be less of a threat than other dogs, and many had a poor understanding of how dogs may negatively impact wildlife. These may be factors that result in high noncompliance of leash laws.

**Citations:**  This article is available on Google Scholar and has been cited 4 times. Similar reports include:

* Ornsby and Forys. 2010. *The Effects of an Education Campaign on Beach User Perceptions of Beach-Nesting Birds in Pinellas County, Florida* (Cited 1 time)
* Weston and Elgar. 2007. *Responses of Incubating Hooded Plovers (Thinornis rubricollis) to Disturbance* (cited 19 times)

**Document Availability:** Document was provided by park to EA. In EA files

**EAEST Conclusion:** Document provides nice analysis of survey results regarding perceptions of dogs on beaches from a peer-reviewed journal. Although survey was relatively small and undertaken in a foreign country, they seem to cover many of the same issues that impact the GGNRA with noncompliance and off-leash dogs. Results will be incorporated into the plan/EIS.

**NEXT STEPS:** The results of this study should be incorporated into the visitation and park operation sections of Plan/EIS where applicable.

## VISITOR EXPERIENCE

### GGNRA Literature Suggested for Removal From Plan/EIS:

The following citations have been suggested for removal from the Plan/EIS through the PEPC comment database and the Charles Pfister letter comments to the draft Plan/EIS. The full citations that have been suggested are described, a summary of the article/paper/brochure has been prepared, a determination if the citation has been peer reviewed has been included, and the number of times the article/paper/brochure has been cited, as well as a conclusion proposed by EA and suggested next steps.

1. Social Research Laboratory. 2002b “Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues.” Technical Report, Northern Arizona University. December.

**Peer Reviewed: Yes**

FROM PEPC: Numerous complaints regarding the use of this survey, included here is one example: “The telephone survey on page 99 was statistically useless. 1700 calls is way too small and how do you know they even visit these places. There are more people on a sunny weekend at F.F. than you have talked to. Northern Arizona University and SF State data about minorities fear of dogs in parks. Do better studies with larger pools of respondents.”

FROM CHARLES PFISTER LETTER: The survey results actually indicate that 49% of respondents who had seen off-leash dogs believed that off-leash dogs had no impact on their experience. This section incorrectly assumes that 49% of respondents represent a user group that has “no preference” regarding the presence of off-leash dogs in GGNRA. This assumption is false, because the survey results did not question the respondents as to what their attitudes would be if the respondents had experienced some type of negative behavior associated with off-leash dogs, such as categorized by Vaske and Donnelly (2007). This false assumption should have been obvious to NPS, as over half of the respondents opposed off-leash dog walking. A better interpretation of the results of the 2002 Social Research Library with reference to the Vaske and Donnelly (2007) study suggest a more likely characterization of user groups is that the 36% of respondents who “strongly oppose” off-leash dog walking in GGNRA as identified by the survey represent a collection of user groups who have extraordinary safety concerns, general safety concerns, and/or find that many of the negative behaviors of off-leash dogs strongly impact their visitor experience. It is likely that 17% of respondents who “somewhat oppose” off-leash dog walking have some safety concerns and/or find negative behaviors associated with dogs moderately impact their visitor experience. It is possible or even likely that the 36% figure of respondents strongly opposing off-leash dog walking represents an approximation for the proportion of visitors who would likely be displaced from areas where off-leash dog walking occurs and cannot be avoided by visitors.

**Citations**: None

**Correspondence ID and Availability:**Correspondence ID: 1694, 1802, 3689, 3690, and 4668, already in EAEST files

**EAEST CONCLUSION:** Keep this study in Plan/EIS.

**NEXT STEP:** Rewrite the presentation of this study in the Plan/EIS.

1. Hu, Karin. 2000. *Survey of Fort Funston Recreational Use*. September.

**Peer Reviewed: No**

A total of 1629 adult recreational users were counted during this study. The majority of recreational users were walkers who brought one or more dogs to accompany them, approximately 87 % (with a range of 74-96%). The results of this study show that dog walking is an important recreational activity at Fort Funston and are consistent with the NPS survey conducted at this site in August of 1999. The remaining recreational users who were not accompanied by a dog were engaged in activities such as hang gliding, playing on the sand dunes, sitting on benches, walking, jogging, flying model airplanes, flying kites, sight-seeing, riding bikes, or riding scooters. Several future studies are suggested as a result of this study and include: a study of whether the presence of dogs increases personal safety for women, the demographics of Fort Funston should be studied to see if citizen needs (particularly senior and disabled visitors) are being addressed, a study of the park use during winter months (possibly only the dog walkers use this site), and a study to look at opening more GGNRA areas to recreational users with off-leash dogs. The author has stated that Fort Funston accommodates approximately 5.3% of GGNRA visitors but makes up less than 0.3% of GGNRA acreage and overcrowding at this site could lead to strained resources and increased maintenance costs.

**Citations:** This article is not available on Google Scholar.

**Document availability:** This study was attached to Correspondence ID #4670 and is in EAEST folders.

**EAEST CONCLUSION:** This study has not been published or peer reviewed. The results of this study should not be incorporated into the visitation section of the Plan/EIS. Updated visitor use statistics collected by NPS for Fort Funston should be used instead of this study, which is now 12 years old.

**NEXT STEPS:** None

1. Garrison, B. A. 1998. Bank Swallow (*Riparia riparia*). *In* The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. <http://www.prbo.org/calpif/htmldocs/riparian_v-2.html>.

**Peer Reviewed: Unknown**

This study reference provides a good overview of the biology of the bank swallow, including information regarding the disturbance of this bird species. This source states that “bank swallows appear relatively insensitive to moderate levels of human-induced disturbance; several colonies occur in coastal locations at public seashores where human activity can be substantial (Garrison 1998, 14).”

“A wide variety of land uses occur around bank swallow colonies including hydroelectric power generation, irrigation water conveyance, recreational boating, commercial agriculture, vehicular and pedestrian traffic, and domestic livestock grazing. These land uses appear relatively benign as long as the integrity of the nesting bank remains. Any land use has the potential for adverse effects if it causes fluctuating water levels and increased erosion during the nesting period whereby banks with active colonies collapse. Mortality to eggs and nestlings can occur if banks collapse. Adjacent land uses that retain nesting bank integrity, allow bank erosion to occur, and provide insect food resources are unlikely to have substantive adverse impacts to Bank Swallows (Garrison 1998, 14).”

**Citations:** This article is not available on Google Scholar.

**Document availability:** This study was attached to Correspondence ID #4670 and is in EAEST folders.

**EAEST CONCLUSION:** This study has not been published or peer reviewed. The results of this study should not be incorporated into the visitation section of the Plan/EIS. Updated visitor use statistics collected by NPS for Fort Funston should be used instead of this study, which is now 12 years old.

**NEXT STEPS:** None

## VISITOR HEALTH AND SAFETY

### GGNRA Literature Suggested by Public Comment for Inclusion in Plan/EIS:

The following citations have been suggested for inclusion in the Plan/EIS through either individual comments in the PEPC database or through a hard copy of letters sent with comments to the draft Plan/EIS. The full citations that have been suggested are described, a summary of the article/paper/brochure has been prepared, a determination if the citation has been peer reviewed has been included, and the number of times the article/paper/brochure has been cited. Finally, a conclusion proposed by EA and next steps have been suggested for each citation as well as a table that follows this text discussion.

1. Pets Are Wonderful Support (PAWS). 2007. *The Health Benefits of Companion Animals*. Brochure produced for PAWS.

**Peer Reviewed: No**

This is an informational brochure on the benefits of the human-animal bond on healthy and sick individuals, with information of the detrimental impacts of removing pets from those who are terminally ill. Brochure provides direction for health professionals on maintaining the relationship of terminally ill patients with their pets. The brochure details the physiological benefits of the human-animal relationship and provides examples of health benefits related to pet interactions. Brochure notes that dog ownership can decrease risk factors for cardiovascular disease, and decreased physiological stress, among many other benefits, including benefits of increased social interaction.

**Citation**: This paper is not cited or available on Google Scholar. Similar articles include:

* Beck and Meyers. 1996. *Health enhancement and companion animal ownership* (cited 105 times)
* Garrity et al. 1989. *Pet Ownership and Attachment as Supportive Factors in the Health of the Elderly* (cited 76 times)
* Winefield et al. 2008. *Health Effects of Ownership of and Attachment to Companion Animals in an Older Population* (cited 7 times)

These papers are from peer reviewed journals.

**Correspondence ID and Availability:**Correspondence ID: 4704, already in EAEST files

**EAEST CONCLUSION:** This paper has not been published because it was a brochure, it has not been peer reviewed, and has not been cited. EA suggests using other articles instead to describe the health benefits of dog walking.

**NEXT STEP:** Review of literature similar to above citation indicates that there are several newer papers, and that many different studies are contradictory on the benefits of dog ownership and walking on physical and mental health, particularly for the elderly.

1. Villabli, JR, Cleries, M, Bouis, S, Peracho V, Duran, J, and C. Casas. 2010. *Decline in hospitalisations due to dog bite injuries in Catalonia, 1997-2007. An effect of government regulation?* Injury Prevention, Vol. 16, pp. 408-410.

**Peer Reviewed: Yes**

This study analyzed dog bites from population data collected before and after a change in legal regulations on dog ownership. These regulations included breed-specific measures. Data was collected from people hospitalized with injuries resulting from dog bites during 1997-2008. Data indicated a significant decline in hospitalizations due to dog bites after the enactment of stricter regulations in 1999 and 2002. These regulations were associated with a decline in dog bites within the population.

**Citations**: This paper cannot be found on Google Scholar, and has no citations. It is available on the PubMed database. Related citations include the following articles on PubMed:

* Hoff et al. 2005. *Emergency department visits and hospitalizations resulting from dog bites, Kansas City, MO, 1998-2002.*
* Bernardo et al. 2002. *A comparison of dog bite injuries in younger and older children treated in a pediatric emergency department.*

These articles come from peer reviewed health journals.

**Correspondence ID and Availability:**Correspondence ID: 1881; available for purchase for one day- $30 (<http://injuryprevention.bmj.com/cgi/secure_ppv>), may be on inter-library loan (ILL) through Johns Hopkins University (JHU).

**EAEST CONCLUSION:** Although these data are presented in a peer reviewed document, it has no citations and EA suggests using the CDC data instead to describe trends of dog bites as well as the U.S. Department of Health and Human Services report regarding dog bites (as suggested in correspondence #4278). Because the above paper and regulations occurred in Catalonia, Spain, and was also breed specific, it is difficult to gauge whether regulations in Spain would be applicable or useful in California for this Plan/EIS. EA suggests using the CDC data as stated above instead.

**NEXT STEP:** None.

1. Unshelm, J, Rehm, N, and E Heidenberger. 1993. *The Problem of the danger of dogs; a study of incidents with dogs in a large city*. Dtsch Tierarztl Wochenschr, Vol. 100, No. 10, pp 383-389. October 1993. Published in German.

**Peer Reviewed: Unknown**

This study examined incidents with dogs in Munich from 1986-1991, and analyzed data based on sex of victim, dog, influence of the breed, age of the dog and victim, behavior of the owner, and location of the incident. The results indicated that certain breeds were more likely to be involved in bite incidents, and that the influence of the dog owner was very important in determining the seriousness and frequency of incidents. Additionally, results indicated that almost 90 percent of dogs had been off-leash, and while most events occurred in public places, only 9 percent occurred in parks.

**Citation**: Citations: This paper cannot be found on Google Scholar, and has no citations. It is available on the PubMed database. Related citations include the following articles on PubMed:

* O’Sullivan et al. 2008. *Characteristics of 234 dog bite incidents in Ireland during 2004 and 2005*.
* Shuler et al. 2008. *Canine and human factors related to dog bite injuries.*

These articles came from peer reviewed and non-peer reviewed journals on veterinary medicine.

**Correspondence ID and Availability:**Correspondence ID: 1881, not available for purchase, may be available through ILL

**EAEST CONCLUSION:** EA was unable to determine if this article was peer reviewed; it has no citations. EA suggests using the CDC data instead to describe trends of dog bites as well as the U.S. Department of Health and Human Services report regarding dog bites (as suggested in correspondence #4278).

**NEXT STEP:** None.

1. Beck, Alan, ScD, Loring, Honey, and Randall Lockwood. 1975. *The Ecology of Dog Bite Injury in St. Louis, Missouri*. Public Health Reports: May-June 1975, Vol. 90, No. 3.

**Peer Reviewed: Yes**

This study was concerned with the situation present during a dog bite—as the paper says, “an analysis of the activity of the victim and the animal in the specific environmental context of the bite incident, that is, the ecology of dog bite injury.” Data from St. Louis was used, where reports of dog bite incidents require a narrative detailed description of the bite event and thus include extensive data on the circumstances of the incident. The results indicated that bite rates were increasing, particularly among children. Of the victims, 67.3 percent did not interact with the owner. Paper discussed that while society may view a dog bite as being the fault of the victim, this idea may need to be re-evaluated.

**Citations**: This paper has been cited 91 times on Google Scholar. Similar papers include:

* Weiss, Friedman, and Coben. 1998. *Incidence of dog bite injuries treated in emergency departments* (cited 205 times)
* Overall and Love. 2001. *Dog bites to humans- demography, epidemiology, injury, and risk* (cited 81 times)

These articles came from peer-reviewed veterinary journals.

**Correspondence ID and Availability:**Correspondence ID: 1881, already in EAEST files

**EAEST CONCLUSION:** These data are presented in a Public Health Report which has been cited numerous times, and looks at the specific context of the dog bite, whereas the CDC data doesn’t evaluate in that detailed of a context. EA suggests using the Beck (1975) paper as well as the CDC data to describe trends of dog bites and U.S. Department of Health and Human Services report regarding dog bites (as suggested in correspondence #4278), as described in more detail below.

**NEXT STEP:** Incorporate data from this health report into Plan/EIS as applicable but note the study limitations as well as the older, published date of this study.

1. Centers for Disease Control and Prevention. 2011. *WISQARS (Web-based Injury Statistics Query and Reporting System)*. February 24, 2011. Available [online]: http://www.cdc.gov/injury/wisqars/index.html. Accessed June 14, 2011.

**Peer Reviewed: N/A**

This is the CDC’s database of all fatal and non-fatal injuries in a nationwide system. Data also includes violent death data, and the cost of injuries. This data can be used to learn about public health and economic burdens of injuries. This data can be searched and sorted to find out information about dog bites and attacks, among other injuries.

<http://www.cdc.gov/HomeandRecreationalSafety/Dog-Bites/biteprevention.html>

Park users have legitimate concerns about their safety around dogs, especially off-leash dogs. According to the CDC, approximately 4.5 million people are bitten by dogs each year, with approximately one-fifth of those (or 885,000) requiring medical attention for dog-related injuries.

**Citations: N/A**

**Correspondence ID and Availability:**Correspondence ID: 3715, already in EAEST files

**EAEST CONCLUSION:** This reference was suggested for inclusion by Golden Gate Audubon Society in their comments to the Draft Plan/EIS letter dated 31 May 2011 as well as in numerous public comments in the PEPC database. A generalized statement regarding the number of dog bites and cost of injuries can be included in the Plan/EIS from the CDC website, as suggested for incorporation by Golden Gate Audubon Society

**NEXT STEP:** Have already obtained data from website, need to add some general statements to Plan/EIS and add CDC to References Section; may also want to consider adding data from the U.S. Department of Health and Human Services regarding dog bites (as suggested in Correspondence ID 4278). EA will note limitations of this study as well as any issues of transferability that may affect the conclusions.

1. Public Health Agency of Canada. 1999. *Injuries associated with…Dog bites and dog attacks*. Canadian Hospital Injury Reporting and Prevention Program (CHIRPP). November 11, 1999. Available [online]: http://www.phac-aspc.gc.ca/injury-bles/chirpp/injreprapbles/dogbit-eng.php. Accessed June 14, 2011.

**Peer Reviewed: N/A**

CHIRPP is the database of injury reporting and prevention for Canada. This is a computerized information system that collects data on injuries that are seen at emergency rooms of 14 hospitals in Canada. Most of these involve children, as 10 of these hospitals are pediatric hospitals. These injuries do not represent all injuries, only those seen in emergency room facilities.

**Citations: N/A**

**Correspondence ID and Availability:**Correspondence ID: 3715, already in EAEST files

**EAEST CONCLUSION:** Instead of incorporating Canadian information regarding dog bites and injuries, EA suggests using data from the CDC website as suggested above.

**NEXT STEP:** None.

1. City and County of San Francisco. n.d. *Guidelines for Dog Walkers*. Animal Care and Control. Available [online]: http://www.sfgov2.org/index.aspx?page=1083. Accessed June 21, 2011.

**Peer Reviewed: N/A**

These are the guidelines for dog walkers in the city and county of San Francisco. Guidelines are signed by professional dog walkers, who are then listed on the website as having agreed to the proposed restrictions. These include regulations about the number of dogs each walker should have, license and vaccination requirements, cleaning up feces, leash use in on-leash areas, and vehicle transport. Services will be removed if complaints on companies are received. The website also includes information on city and county codes relating to dogs. There are codes regarding dog licensing, duties of owners, vaccination requirements, and about controlling dogs.

**Citations: N/A**

**Correspondence ID and Availability:**Correspondence ID: 3931, already in EAEST files

**EAEST CONCLUSION:** Comment noted. These suggestions have already been incorporated into PEPC under the concern statement titled: “Suggest New Alternative Elements” for evaluation. Many of these standards are already incorporated into existing alternative elements.

**NEXT STEP:** Evaluate for inclusion in EIS as an additional alternative element.

1. Kutsch, Ginger. 2011. *2011 Dog Attack and Interface Survey United States Report.* The Seeing Eye. Summer 2011Volume 77 , Number 1

**Peer Reviewed: No**

Approximately 8,500 people who are blind or visually impaired partner with guide dogs to increase their ability to move about safely, effectively, and independently. Attacks and interface by aggressive dogs continues to threaten the physical and emotional well being of guide dog teams. Even without physical injury, attacks and interface can negatively affect a guide dog’s behavior and work performance. Following an attack, guide dogs may be unable to work because of physical injuries and they may develop undesirable behaviors towards other dogs. The Seeing Eye, a leading expert on advocacy issues related to the safe and effective travel of guide dog teams, designed a 55-question survey related to guide dog handlers’ experiences with attacks and interface by aggressive dogs. Survey results indicated that 44 percent of respondents had experienced at least one attack. Of these 58 percent were attacked more than once. A total of 83 percent of respondents had experienced interface by an aggressive dog. The majority of the attacks or interface occurred on a public-right-of-way including sidewalks and roadways. Results showed that 76 percent of dog attacks were from an off-leash dog, 47 percent were from a leashed dog inadequately controlled by the owner, and 13 percent were from a dog that was tied and left unsupervised. Similar results were noted for incidents of interference with dogs. Findings revealed that 64 percent of those who experienced an attack did not report the incident to animal control or police because they did not feel the attack was harmful enough or they were unable to identify the dog or owner. Of those attacked, 35 percent reported changes in their dog’s behavior towards other dogs including becoming distracted, aggressive towards other dogs, and fearful of other dogs. During and following an attack, dog handlers can incur physical injuries, become disoriented in their surroundings, and become anxious.

**Citations: not cited**

**EAEST CONCLUSION:** This paper has not been peer reviewed or cited. General points on impacts to guide dogs could be incorporated into the SEIS (such as potential costs of an attack to a guide dog), but do not include statistics or survey.

**NEXT STEP:** Incorporate data from this report into Plan/EIS as applicable.

1. Kutsch, Ginger and J. Steuerwalt. 2003. *2003 Guide Dog Users Inc Guide Dog Interface/Attack Survey Results*. November 2003*.*

**Peer Reviewed: No**

Survey similar to that described above by Kutsch. Survey was for Guide Dog Users, Inc members and other dog guide handlers. Survey consisted of a 40-question interview related to dog guide handlers’ experiences with, and attitudes about, interference and attacks by uncontrolled dogs. Paper includes results of the 44 questions.

**Citations: not cited**

**EAEST CONCLUSION:** This paper has not been peer reviewed or cited. Do not include this study; if needed include prior study (Kutsch 2011).

**NEXT STEP: None**

| **Lit Review Number** | **Corr. ID** | **Document** | **In EA files** | **If no, status** |
| --- | --- | --- | --- | --- |
| **NATURAL RESOURCES -** GGNRA Literature Suggested for Inclusion in Plan/EIS |
| 1 | 1929, 4693 | Warren, Megan. 2007. *Recreation Disturbance Does Not Change Feeding Behavior of the Western Snowy Plover*. Unpublished undergraduate thesis. UC Berkeley Environmental Sciences 196, Senior Research Seminar, May 7, 2007. | Yes |  |
| 2 | 3759 | California Department of Parks and Recreation. 2001. *Pilot Program for Unleashed Dog Areas*. December 17, 2001.  | Yes |  |
| 3 | N/A | Foster, Lisa K. 2006. *Dogs on the Beach: A Review of Regulations and Issues Affecting Dog Beaches in California*. Prepared by the California Research Bureau for Assemblymember Ted W. Lieu. May | Yes |  |
| 4 | 3759 | Ewing, John. 1999. *Managing Off-leash Recreation in Urban Parks.* February 27, 1999. | Yes |  |
| 5 | 3945 | Robinson-Nilsen, Caitlin, Demers, Jill Bluso, and Cheryl Strong. 2010. *Western Snowy Plover Numbers, Nesting Success, Fledgling Success and Avian PredatorSurveys in the San Francisco Bay, 2010*. SFBBO and USFWS. December 30, 2010.  | Yes |  |
| 6 | 3945 | NPS. 2006. *Protecting the Snowy Plover*. October. | Yes |  |
| 7 | 4640, 4650 | USFWS. 2006. *San Francisco Garter Snake (Thamnophis sirtalis tetrataenia) 5-Year Review:Summary and Evaluation*. Sacramento Field Office, Sacramento, California. September. | Yes |  |
| 8 | 4640, 4650, 4667 | Fancy, SG, Gross, JE, and SL Carter. 2009. *Monitoring the Condition of Natural Resources in US National Parks*. Environmental Monitoring and Assessment: Vol. 151, pp 161-174.  | Yes |  |
| 9 | 4704 | Pets Are Wonderful Support (PAWS). 2007. *The Health Benefits of Companion Animals*.Brochure produced for PAWS. | Yes |  |
| 10 | 1881 | Villabli, JR, Cleries, M, Bouis, S, Peracho V, Duran, J, and C. Casas. 2010. *Decline in hospitalisations due to dog bite injuries in Catalonia, 1997-2007. An effect of government regulation?* Injury Prevention, Vol. 16, pp. 408-410.  | No | Available for purchase for one day- $30 (<http://injuryprevention.bmj.com/cgi/secure_ppv>), may be on ILL/through JHU – EA will not purchase because not suggested for inclusion in Plan/EIS |
| 11 | 1881 | Unshelm, J, Rehm, N, and E Heidenberger. 1993. *The Problem of the danger of dogs; a study of incidents with dogs in a large city*. Dtsch Tierarztl Wochenschr, Vol. 100, No. 10, pp 383-389. October 1993. Published in German.  | No | Not available for purchase, may be available through ILL– EA will not aquire because not suggested for inclusion in Plan/EIS |
| 12 | 1881 | Beck, Alan, ScD, Loring, Honey, and Randall Lockwood. 1975. *The Ecology of Dog Bite Injury in St. Louis, Missouri*. Public Health Reports: May-June 1975, Vol. 90, No. 3. | Yes |  |
| 13 | 3715 | Centers for Disease Control and Prevention. 2011. *WISQARS (Web-based Injury Statistics Query and Reporting System)*. February 24, 2011. Available [online]: http://www.cdc.gov/injury/wisqars/index.html. Accessed June 14, 2011.  | Yes |  |
| 14 | 3715 | Public Health Agency of Canada. 1999. *Injuries associated with…Dog bites and dog attacks*. Canadian Hospital Injury Reporting and Prevention Program (CHIRPP). November 11, 1999. Available [online]: http://www.phac-aspc.gc.ca/injury-bles/chirpp/injreprapbles/dogbit-eng.php.  | Yes |  |
| 15 | 3931 | City and County of San Francisco. n.d. *Guidelines for Dog Walkers.* Animal Care and Control. Available [online]: http://www.sfgov2.org/index.aspx?page=1083. Accessed June 21, 2011.  | Yes |  |
| 16 | 4683 | Murphy, Dan. 1996. *San Francisco Peninsula Birdwatching: Ocean Beach and Fort Funston.* Sequoia Audubon Society.  | Yes |  |
| 17 | 4695 | North American Bird Conservation Initiative, U.S. Committee. 2011. *The State of the Birds: 2011 Report on Public Lands and Waters*. U.S. Department of Interior: Washington, DC. 48 pages. | Yes |  |
| 18 | 4695 | Grinnell, Joseph. 1932. “Type localities of birds described from California.” *University of California Publications in Zoology*, Vol. 38, No. 3:243-324. | Yes | EA purchased for $18.00 (<http://www.amazon.com/localities-described-California-University-publications/dp/B00086AJSO>)  |
| 19 | Found during research | Zlatunich, Matthew. 2008. *Western Snowy Plover Monitoring at the Crissy Field Wildlife Protection Area of the Presidio of San Francisco and the Effectiveness of the Seasonal Use Restriction 2007/2008*. Golden Gate Audubon, San Francisco, California. | Yes |  |
| 20 | Found during research | Zlatunich, Matthew and Lynes, Michael. 2010. *Western Snowy Plover Monitoring at the Crissy Field Wildlife Protection Area of the Presidio of San Francisco 2009/2010*. Golden Gate Audubon, San Francisco, California. | Yes |  |
| 21 | 3689, 3690,4668 | Pomerantz, G. A., Decker, D.J., Goff, G.R., & Purdy, K. G. (1988). *Assessing impact of recreation and wildlife: a classification scheme.* Wildlife Society Bulletin, 16, 58-62. | Yes |  |
| 22 | 3689, 3690,4668 | Davidson, N. C., and P. I. Rothwell. 1993. *Human disturbance to waterfowl on estuaries: conservation and coastal management implications of current knowledge*. Wader Study Group Bull. 68:97-105. | Yes |  |
| 23 | 3689, 3690,4668 | Gill, J.A., Norris, K., and W.J. Sutherland. 2001. *Why behavioral responses may not reflect the population consequences of human disturbance*. Biological Conservation 97:265-268. | Yes |  |
| 24 | 3689, 3690,4668 | Keller, VE. 1991. *Effects of human disturbance on eider ducklings Somateria mollissima in an estuarine habitat in Scotland*. Biological Conservation 58: 213-228.  | No | Available for purchase for $31.50 (http://www.sciencedirect.com), and available at JHU– EA will not purchase because not suggested for inclusion in Plan/EIS |
| 25 | 3689, 3690,4668 | Kersten, M. and T. Piersma. 1987. *High levels of energy expenditures in shorebirds: metabolic adaptations to an energetically expensive way of life*. Ardea 75: 175-187. | Yes |  |
| 26 | 3689, 3690,4668 | Kirby, J. S., C. Clee, and V. Seager. 1993. *Impact and extent of recreational disturbance to wader roosts on the Dee Estuary: some preliminary results*. Wader Study Group Bull. 68:53-58.  | Yes |  |
| 27 | 3689, 3690,4668 | Lenth, B.E., Knight, R.L., and M.E. Brennan. 2008. *The Effects of dogs on wildlife communities*. Natural Areas Journal 28(3):218-227. | Yes |  |
| 28 | 3689, 3690,4668 | Pfister, C., Harrington, B.A., and Lavine, M. 1992. *The impact of human disturbance on shorebirds at a migration staging area.* Biological Conservation 60: 115-126. | Yes | EA purchased for $31.50 (<http://www.sciencedirect.com)and>  |
| 29 | 3689, 3690,4668 | Scott, F. E. 1989. *Human disturbance of wading birds on the Ythan estuary. Unpubl. B.Sc. thesis, Department of Zoology*, Univ. Aberdeen. 42 pp. [abstract in Wader Study Group Bull. 68:81-82] | No | Not available for purchase, may be on ILL, abstract is available online – EA will not purchase because not suggested for inclusion in Plan/EIS |
| 30 | 3689, 3690,4668 | Smit, C. J., and G. J. M. Visser. 1993. *Effects of disturbance on shorebirds: a summary of existing knowledge from the Dutch Wadden Sea and Delta area*. Wader Study Group Bull. 68:6-19. | Yes |  |
| 31 | 3689, 3690,4668 | Thoms, K., Kvitek, R.G., and C. Bretez. 2003. *Effects of human activity on the foraging behavior of sanderlings Calidris alba*. Biological Conservation 109: 67-71 | Yes |  |
| 32 | Provided by NPS | Giolitto, Marianne. 2007. *Trailhead Leash Pilot Project*. The City of Boulder, Department of Open Space and Mountain Parks. Boulder Colorado. July 19.  | Yes |  |
| **VISITOR EXPERIENCE -** GGNRA Literature Suggested for Inclusion in Plan/EIS |
| 1 | 1850 | Erickson, Elizabeth B. 2001. *Rocky Mountain National Park: History and Meanings as Constraints to African-American Park Visitation*. Unpublished doctoral dissertation, West Virginia University, Morgantown, West Virginia.  | Yes |  |
| 2 | 3689, 3690, 4668 | Vaske, J. and Donelly, M. 2007. *Visitor Tolerances and Standards for Off Leash Dogs at Boulder Open Space and Mountain Parks*. HDNRU Report No. 75. Report for Boulder Open Space and Mountain Parks, Fort Collins, Colorado State University. Human Dimensions in Natural Resources Unit. | Yes |  |
| 3 | 3689, 3690, 4668 | Manning, R.E. 2007. *Parks and Carrying Capacity: Commons without Tragedy*. Island Press: Washington-Covelo-London. 328 pages. | Yes | EA purchased for $19.25 on Google eBook |
| 4 | 3689, 3690, 4668 | Arnberger, A., Haider, W. and Muhar, A. 2004. Social Carrying Capacity of an Urban Park in Vienna. Working Papers of the Finnish Forest Research Institute 2. | Yes | Not applicable because EA suggests purchasing the 2007 Arnberger article below instead since it was published in a peer reviewed journal |
|  | 3689, 3690,4668 | Arnberger, A. and Haider, W. 2007. *Would You Displace? It Depends! A Multivariate Visual Approach to Intended Displacement from an Urban Forest Trail*. Journal of Leisure Research. Volume: 39, Issue: 2, Pages: 345-365 | Yes | EA purchased for £11.35 (<http://direct.bl.uk>) |
| N/A | N/A | Floyd, M. 1999. *Race, ethnicity and use of the National Park System* | Yes |  |

**REVIEW OF REFERENCES ALREADY INCLUDED IN PLAN/DEIS**

| **Ref Citation** | **Admin No.** | **Page No.** | **Ch.** | **Ref in-house and admin record (Y/N)** | **Peer-reviewed (Y/N/don’t know); if yes, type** | **Park anecdotal (comment matrix or pers. comm.)** | **If park anecdotal, supported by other lit cited?** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Andrusiak 2003 | 1642 | 28, 29, 540, 795, 796, 797, 798, 799, 800, 1115 | 1, 4 | Y | Unknown | N | N |
| AVMA 2001 | 1404 | 30, 286, 1593 | 1, 3, 4 | Y | Y | N | N |
| Banks and Bryant 2007 | 1326 | 16,28, 797, 608, 799, 800, 1115, 1116 | 1, 4 | Y | Y | N | N |
| Barker 2009 |  | 264, 1365, 1383, 1389, 1392  | 3, 4 | N |  |  |  |
| Beach Watch 2006 | 1406 | 323 | 3 | Y | Unknown | N | N |
| Beach Watch Online 2009 | 1665 | 16, 803, 856, 870 | 1, 4 | Y | Unknown | N | N |
| Bekoff and Meaney 1997 | 1666 | 30, 540, 797 | 1, 4 | Y | Y | N | N |
| Bennett 2008 | 1805 | 248, 1123, 1138 | 3, 4 | Y | Unknown | N | N |
| Bourne et al. 2008 | 1667 | 10 | 1 | Y | N | N | N |
| Burger et al. 2004 | 1644 | 798 | 4 | Y | Y | N | N |
| Buxton 1998 | Cited in 1491 | 257 | 3 | Cited in USFWS 1998 | Unknown | Y |  |
| California Dept of parks 2007 | Same as 1387 | 26 | 1 | Should be removed- same as state of CA 2007 | Unknown |  |  |
| California State Water Resources Control Board 2009 | 1395 | 41 | 1 | Y | N | N | N |
| CAS 2005 | 1214 and 1407 | 221 | 3 | Y | N | N | N |
| CCC 2008 | 1525 | 684, 962, 964, 970, 986, 1334, 1339, 1340, 1344 | 4 | Y | N | N | N |
| City and County of San Francisco 2008 | 1526 | 406, 413, 510, 515, 590, 595, 856, 861, 869, 1515, 1521, 1684, 1689 | 4 | Y | Unknown | N | N |
| City and County of San Francisco 2010 |  | 800 | 4 | N |  |  |  |
| City College of San Francisco 2008 | 1527 | 445, 450, 684, 688, 1215, 1550, 1554, 1713, 1717 | 4 | Y | N | N | N |
| City of Boulder 2009 | 1389 | 27 | 1 | Y | N | N | N |
| City of Daly City 2010a | 1528 | 415, 424, 517, 522, 597, 604 | 4 | Y | N | N | N |
| City of Daly City 2010b | 1529 | 424, 517, 523, 597, 604, 871, 880 | 4 | Y | N | N | N |
| City of Nashville and Davidson County 2005 | 1390 | 27, 28 | 1 | Y | Unknown | N | N |
| City of Santa Cruz 2009 | 1391 | 27 | 1 | Y | N | N | N |
| Clayton Pers. Comm. N.D. |  | 24 | 1 | Unknown | N | Y |  |
| CNPS 2009 | 1409 | 257 | 3 | Y | N | N | N |
| CNPS 2010 | 1410 | 231 | 3 | Y | N | N | N |
| Coast 2006 |  | 286, 287 | 3 | N | N | Y |  |
| Coastsider 2010 | 1531 | 445, 450, 684, 688, 1550, 1554, 1713, 1717 | 4 | Y | N | N | N |
| Contra Costa Times 2010 | 1532 | 490, 495 | 4 | Y | N | N | N |
| County of Marin 2006a | 1392 | 26 | 1 | Y | N | N | N |
| County of Marin 2006b | 1393 | 26 | 1 | Y | N | N | N |
| County of Marin 2007 | 1661 | 296, 300, 301, 306, 308, 313, 315, 321, 323, 329, 331, 338, 340, 345, 346, 352, 465, 469,470, 475, 476, 481, 483, 489, 544, 548, 549, 554, 555, 561, 563, 567, 620, 624, 626, 630, 632, 637, 639, 644, 646, 650, 699, 704, 706, 711, 718, 740, 745, 746, 752, 753, 758, 767, 773, 775, 780, 809, 815, 905, 911, 1037, 1043, 1069, 1077, 1079, 1085 | 4 | Y | N | N | N |
| County of San Mateo 2007 | 1394 | 27, 42 | 1 | Y | N | N | N |
| Cowardin et al. 1979 | 1411 | 239 | 3 | Y | Unknown | N | N |
| CRCCD 2009 | 1412 | 29, 225, 286, 461, 462, 1593 | 1, 3, 4 | Y | N | N | N |
| Dawson 2001 |  | 249, 1165 | 3, 4 | N |  |  |  |
| Denny 1974 | Cited in 1680 | 28, 796 | 1, 4 | N-cited in Sime 1999 | Unknown | N | N |
| DFG 1992 | 1415 | 254 | 3 | Y | Unknown | N | N |
| DFG 2004 | 1416 | 249, 250  | 3 | Y | Unknown | N | N |
| DFG 2009 | 1417 | 247 | 3 | N | Unknown | N | N |
| DFG 2010 |  | 229, 245 | 3 | N |  |  |  |
| Drake 2008 |  | 227 | 3 | N |  |  |  |
| Dunlop et al. 2005 |  | 461 | 4 | N |  |  |  |
| Dybala 2002 | 1730 | 240 | 3 | Y | N | N | N |
| East Bay Regional Parks 2006 | 1212 | 27 | 1 | Y | N | N | N |
| Elder n.d. |  | 222 | 3 | N |  |  |  |
| Farenthold 2006 |  | 227 | 3 | N |  |  |  |
| Fong 2010 |  | 251, 1191, 1192, 1198, 1203, 1209, 1214 | 3, 4 | N-  |  | Y |  |
| Fong and Campo 2006 |  | 240 | 3 | N |  |  |  |
| Fong et al. 2000 |  | 232 | 3 | N  |  |  |  |
| Forrest and St. Clair 2006 | 1740 | 30, 797, 800, 1115 | 1, 4 | Y | Y | N | N |
| Frizke 2009 |  | 1302, 1304 | 4 | N |  | Y |  |
| Frizke 2010a |  | 238 | 3 | N |  | Y |  |
| Frizke 2010b |  | 257 | 3 | N |  | Y |  |
| Frizke 2010c |  | 257, 1312, 1313, 1333 | 3, 4 | N |  | Y |  |
| Garrison 2004 | 1420 | 254 | 3 | Y | Unknown | N | N |
| George and Crooks 2006 |  | 796 | 4 | N |  |  |  |
| GFNMS Working Group 2008 | 1789 | 296, 300, 465, 469, 545, 548, 712, 720, 725, 804, 807, 995, 1001, 1002, 1008, 1010, 1015, 1017, 1023 | 4 | Y | Unknown | N | N |
| GGNPC n.d. |  | 905, 911, 1139, 1144 | 4 | N |  |  |  |
| GGNPC 2010a | 1539 | 354, 359, 392, 398, 583, 588, 658, 664, 1407, 1464, 1470, 1502, 1507, 1641, 1646, 1673, 1678 | 4 | Y | N | N | N |
| GGNPC 2010b | 1540 | 361, 368, 568, 574 | 4 | Y | N | N | N |
| GGNPC 2010c |  | 549, 554, 699, 704, 768, 773, 809, 815 | 4 | N |  |  |  |
| GGNPC 2010d | 1541 | 323, 329 | 4 | Y | N | N | N |
| GGNPC 2010e | 1719 same as NPS 2009h | 1124, 1129, 1131, 1137, 1138, 1144, 1146, 1151, 1153, 1157, 1159, 1164 | 4 | Y (same as NPS 2009h) | N | N | N |
| GGNRA 2004 |  | 256 | 3 | N |  |  |  |
| Haller 2009b |  | 262, 263 | 3 | N |  | Y |  |
| Haller 2009c |  | 258 | 3 | N |  | Y |  |
| Hamm et al. 2007 | 1650 | 255 | 3 | Y | Unknown | N | N |
| Hansen Pers. Comm. 2006 |  | 26 | 1 | Unknown | N | Y |  |
| Hatch 1996 | 1319 | 253, 856, 1240, 1250 | 3, 4 | Y | N | N | N |
| Hatch et al. 2006 | 1651 | 253, 799, 832, 856, 1240, 1241, 1250 | 3, 4 | Y | N | N | N |
| Hatch et al. 2007 | 1652 | 253, 406, 589, 799, 832, 856, 1240, 1241, 1250 | 3, 4 | Y | N | N | N |
| Hatch et al. 2008 | 1653 | 799, 832, 856, 1250 | 4 | Y | N | N | N |
| Hatch et al. 2010 | 1654 | 1203, 1219, 1312, 1320 | 4 | Y | N | Y |  |
| Heal the Bay 2006 | 1424 | 228 | 3 | Y | N | N | N |
| Heal the Bay 2009 | 1425 | 228 | 3 | Y | N | N | N |
| Hines 2009 |  | 1594 | 4 | N |  |  |  |
| Holland 2006  |  | 27, 42 | 1 |  |  | Y |  |
| Joslin and Youmans 1999 | 1228 | 225 | 3 | Y | Unknown | N | N |
| Kenny 2006 |  | 27 | 1 | Unknown | N | Y |  |
| Lafferty 2001a | 1656 | 29, 540, 795, 798, 799, 800, 898, 902, 906, 910, 914, 923, 927, 930, 932, 935, 939, 948, 953, 956, 965, 969, 981, 985, 987, 989, 990, 994, 1047, 1051, 1098, 1115, 1240 | 1, 4 | Y | Y | N | N |
| Lafferty 2001b | 1655 | 253, 798 | 3, 4 | Y | Y | N | N |
| LEES + Associates n.d. | 1658 | 541 | 4 | Y | Unknown | N | N |
| Lenington 2006 |  | 26 | 1 |  |  | Y |  |
| Lenth et al. 2008 | 1236 | 28, 29, 540, 541, 796, 797, 800, 1115, 1271, 1276 | 1, 4 | Y | Y | N | N |
| Lim and Olivieri 1982 |  | 461 | 4 | N |  |  |  |
| LSU 2009 | 1344 | 1593 | 4 | Y | N | N | N |
| Machado 2006 |  | 26 | 1 | Unknown | N | Y |  |
| Marin Municipal Water District 2002 | 1668 | 26, 41 | 1 | Y | N | N | N |
| Martini n.d. a | 1429 | 263, 265, 1386, 1392 | 3, 4 | Y | N | N | N |
| Martini n.d. b |  | 265, 1362, 1365 | 3, 4 | N |  |  |  |
| May 2006 |  | 26 | 1 |  |  | Y |  |
| May and Associates 2005 | 1430 | 236, 239 | 3 | Y | N | N | N |
| McBride and Heady 1968 | Cited in NPS 2005a | 238 | 3 | Cited in NPS 2005a |  |  |  |
| McCormick 1992 |  | 234 | 3 | N |  |  |  |
| McNamee 2006 |  | 26 | 1 | Unknown | N | Y |  |
| MDNR n.d. | 1345 and 1543 | 461 | 4 | Y | N | N | N |
| MDRNRE 2010 | 1520 | 15 | 1 | Y | N | N | N |
| Merkle 2010b | 1752 | 240, 248, 249, 555, 705, 1124, 1130, 1165, 1198 | 3, 4 | Y | N | Y |  |
| Merkle 2010c | 1753 | 482, 1002, 1165 | 4 | Y | N | Y |  |
| Merkle 2010d | 1754 | 249, 1138 | 3, 4 | Y | N | Y |  |
| Merkle 2010e | 1755 | 1016, 1241, 1328 | 4 | Y | N | Y |  |
| Merkle 2010f | 1756 | 234, 799 | 3, 4 | Y | N | Y |  |
| Midpeninsula Regional Open Space 2004 | 1219 | 26 | 1 | Y | N | N | N |
| Midpeninsula Regional Open Space 2007a | 1669 | 26 | 1 | Y | N | N | N |
| Midpeninsula Regional Open Space 2007b |  | 26 | 1 | Unknown |  |  |  |
| Miller et al. 2001 | 1082 and 1660 | 29, 540, 795, 796, 1115 | 1, 4 | Y | Y | N | N |
| Mills 1999 | 1398 | 29, 800 | 1, 4 | Y | Unknown | N | N |
| MMC 2007 |  | 804, 808, 810, 815, 817, 824, 826, 830, 832, 840, 842, 848, 850, 854, 856, 861, 869, 871, 880, 882, 887 | 4 | N |  |  |  |
| MMC 2009 | 1544 | 1242, 1248, 1251, 1256, 1262 | 4 | Y | N | N | N |
| MMC 2010 |  | 234, 255, 256, 799, 1282 | 3, 4 | N |  |  |  |
| MVM 2008 | 1521 | 15  | 1 | Y | Y | N | N |
| NAU 2002a | 1487 | 8, 13, 30, 31, 270, 280, 281 | 1 | Y | N | N | N |
| NAU 2002b | 1486 | 9, 13, 19, 31, 279, 280, 281 | 1  | Y | N | N | N |
| Nelson et al. 2010 |  | 266 | 3 | N |  |  |  |
| Newby 2000 | 1181 | 247, 1117 | 3, 4 | Y | Unknown | N | N |
| NISC 2006 | 1431 | 243 | 3 | Y | N | N | N |
| NOAA 2005 |  | 250, 1179 | 3, 4 | N |  |  |  |
| NOAA 2010a |  | 700, 706, 713, 720, 725, 727, 731, 996, 1001, 1002, 1008, 1010, 1015, 1017, 1023, 1024, 1029 | 4 | N |  |  |  |
| NOAA 2010b |  | 792 | 4 | N |  |  |  |
| NPS n.d.a | 1352 | 225, 1361 | 3, 4 | N | N | N | n |
| NPS n.d.b | 1457 and 1640 | 252 | 3 | Y | Unknown | N | N |
| NPS n.d.c |  | 266 | 3 | N |  |  |  |
| NPS n.d. d | 1564 and 1646 | 296, 300, 465, 469, 545, 548, 802, 804, 807, 1406, 1410, 1414  | 4 | Y | N | N | N |
| NPS n.d. e |  | 1364, 1388 | 4 | N- still in preparation |  |  |  |
| NPS n.d. f |  | 1364, 1365 | 4 | N |  | Y |  |
| NPS 1980 | 1671 | 36, 37, 279, 801, 1355, 1563 | 1, 3, 4 | Y | N | N | N |
| NPS 1991 |  | 793, 1111 | 4 | N |  |  |  |
| NPS 1992 |  | 1393 | 4 | N |  |  |  |
| NPS 1993 |  | 239 | 3 | N |  |  |  |
| NPS 1994a |  | 37, 38, 71 | 1, 2 | N |  |  |  |
| NPS 994b |  | 1393 | 4 | N |  |  |  |
| NPS 1996 |  | 37, 71 | 1, 2 | N |  |  |  |
| NPS 1997 | 1434 | 266 | 3 | Y | N | N | N |
| NPS 1998 |  | 41, 260, 262, 1355 | 1, 4 | N |  |  |  |
| NPS 1999 | 1435 | 225, 228, 231, 234, 243, 244, 260, 261, 262, 461 | 3, 4 | Y | N | N | N |
| NPS 2000a |  | 281 | 3 | N |  |  |  |
| NPS 2000b |  | 1401 | 4 | N |  |  |  |
| NPS 2001a | 139 | 1, 23, 35, 41 | 1 | Y | Unknown | N | N |
| NPS 2001b |  | 5, 11, 21, 43, 45, 68, 254 | 1 , 2, 3 | E-copy, not in admin record | Unknown | N | N |
| NPS 2002a | 243 | 3,20 | 1 | Y | Unknown | N | N |
| NPS 2002b | 1401 | 43, 63 | 2 | Y | N | N | N |
| NPS 2002c | 16591784 | 227, 1070 | 3, 4 | Y | N | N | N |
| NPS 2003a |  | 20 | 1 | N | Unknown | N | N |
| NPS 2003b |  | 22 | 1 | N | N | N | N |
| NPS 2003c | 1437 | 228 | 3 | Y | N | N | N |
| NPS 2003d |  | 1070 | 4 | N |  |  |  |
| NPS 2003e |  | 279 | 3 | N |  |  |  |
| NPS 2004a | 1439 | 265, 1364, 1365, 1383, 1388 | 3, 4 | Y | N | N | N |
| NPS 2004b |  | 1591 | 4 | N |  |  |  |
| NPS 2005a |  | 221, 236, 237, 238, 239, 240, 241, 247, 541, 542, 543, 684, 688, 768, 773, 775, 780, 802, 905, 911, 956, 962, 964, 970, 972, 978, 980, 986, 1070, 1077, 1079, 1085, 1173, 1178, 1180, 1184, 1186, 1190, 1192, 1197, 1198, 1202, 1203, 1208, 1209, 1213, 1215, 1218, 1271, 1275, 1277, 1281, 1293, 1300, 1405, 1596, 1599, 1602, 1604, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1618, 1619, 1620, 1621, 1622, 1623, 1630, 1631, 1632, 1634, 1635, 1636, 1640, 1641, 1642, 1643, 1644, 1646, 1648, 1649, 1651, 1652, 1653, 1655, 1657, 1658, 1659, 1661, 1662, 1663, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1675, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1703, 1704, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1717 | 3, 4 | N |  |  |  |
| NPS 2005b |  | 260, 262, 1364, 1388, 1393 | 3, 4 | N |  |  |  |
| NPS 2005c |  | 248, 1117, 1153 | 3, 4 | N |  |  |  |
| NPS 2006a | 1359 | 1, 34 | 1  | Y  | Unknown | N | N |
| NPS 2006b | 1440 | 12, 22, 34, 35, 43, 93, 285, 291, 459, 537, 791, 793, 1111, 1355, 1401, 1402, 1563 | 1, 2, 3, 4 | Y | N | N | N |
| NPS 2006c |  | 41, 239, 1404 | 1, 3, 4 | N |  |  |  |
| NPS 2006d | 1561 | 244, 802, 956, 962 | 3, 4 | Y  | N | N | N |
| NPS 2006e | 1480 | 253, 1241 | 3, 4 | Y | N | N | N |
| NPS 2006f |  | 264, 1364, 1389 | 3, 4 | N |  |  |  |
| NPS 2006g | 1442 | 271, 273, 286, 1053 | 3, 4 | Y | Unknown | N | N |
| NPS 2006h | 1441 | 227, 240, 1250 | 3, 4 | Y | N | N | N |
| NPS 2006i |  | 541, 1094 | 4 | N |  |  |  |
| NPS 2007a |  | 41 | 1 | N-cannot find |  |  |  |
| NPS 2007b | 1280-1301 | 70, 86, 227, 549, 699, 802, 809, 815 | 2, 4 | Y | N | N | N |
| NPS 2007c |  | 224, 227, 248, 259, 753, 1364, 1388 | 3, 4 | N (in files, not in admin record) | Unknown | N | N |
| NPS 2007d | 1336 and 1444 | 284 | 3 | Y | N | N | N |
| NPS 2007e | 1803 | 1263 | 4 | Y | N | N | N |
| NPS 2008a | 1477 | 17, 232, 1241, 1382, 1391 | 1, 3, 4 | Y | N | N | N |
| NPS 2008b |  | 68, 233, 241, 273, 284 | 2, 3 | N |  |  |  |
| NPS 2008c | 1704 and App. G | 230, 242, 249, 250, 253, 254, 270, 273, 283 | 3 | Y | N | N | N |
| NPS 2008d | 1446 | 242, 250, 251, 856, 1172, 1173, 1178, 1179,1186 | 3, 4 | Y | N | N | N |
| NPS 2008e  | 1447 and 1502 | 252, 253, 254, 799  | 3, 4 | Y | N | N | N |
| NPS 2008f | 1547, 1662, and 1663 | 491, 495, 1146, 1152, 1457, 1462, 1636, 1640 | 4 | Y | N | N | N |
| NPS 2008g | 1546 | 259 | 3 | Y | N | N | N |
| NPS 2008h |  | 266, 1293, 1301, 1303, 1311, 1320, 1321, 1327 | 3, 4 | N |  |  |  |
| NPS 2008i |  | 699, 996, 1001, 1002, 1008, 1010, 1015, 1017, 1023, 1024, 1029, 1070, 1077, 1079, 1085 | 4 | N |  |  |  |
| NPS 2008j |  | 260, 262, 1364, 1388 | 3, 4 | N |  |  |  |
| NPS 2008n | 1450 | 1363 | 4 | Y | N | N | N |
| NPS 2009a | 1451 | 16, 229 | 1, 3 | Y | N | N | N |
| NPS 2009b | 1854 | 28, 232, 236, 237, 238, 240, 241, 248,251, 252, 253, 254, 255, 274, 275, 275, 360, 568, 726, 798, 808, 816, 832, 862, 964, 980, 1024, 1068, 1123, 1172, 1179, 1186, 1203, 1242, 1248, 1250, 1251, 1256, 1262, 1263, 1270, 1271, 1275, 1277, 1281, 1442, 1472, 1522, 1591 | 1, 3, 4 | Y | N | Y |  |
| NPS 2009c |  | 45, 1308 | 2, 4 | N |  |  |  |
| NPS 2009d | 1347 | 227, 242, 243, 245, 266, 905, 911, 1085, 1139, 1144, 1166 | 3, 4 | Y | N | N | N |
| NPS 2009g | 1233 | 248 | 3 | Y | N | N | N |
| NPS 2009h | 1719 | 247, 248 | 3 | Y | N | N | N |
| NPS 2009e |  | 241, 255 | 3 | N |  |  |  |
| NPS 2009f | 1685 | 254, 576, 1472, 1473, 1475, 1476, 1477, 1479 | 3, 4 | Y | N | N | N |
| NPS 2009i |  | 266 | 3 | N |  |  |  |
| NPS 2009j |  | 265, 1145 | 3, 4 | N |  |  |  |
| NPS 2009k | 1445? | 239, 240 | 3 | Unknown |  |  |  |
| NPS 2009l | 1793 | 699, 704, 706, 711, 712, 718, 720, 725, 767, 995, 1000, 1002, 1008, 1010, 1015, 1017, 1022, 1166, 1192 | Y | N | N | N | N |
| NPS 2009m | Same as 1550 | 549, 809, 815 | 4 | Copy of NPS 2009r |  |  |  |
| NPS 2009q | 1549 | 323, 329, 476, 481, 549, 554, 699, 704, 767, 773, 809, 815, 1436, 1441, 1619, 1623 | 4 | Y | N | N | N |
| NPS 2009r | 1550 | 323, 329, 477, 482, 554, 699, 704, 768, 773, 1619, 1623 | 4 | Y | N | N | N |
| NPS 2010a | 1552 | 221, 264 | 3 | Y | N | N | N |
| NPS 2010b |  | 222, 231, 232, 237, 241, 242, 244, 245, 247, 248, 249, 252, 253, 254, 255, 257, 270, 274, 322, 323, 331, 354, 359, 361, 376, 406, 414, 549, 699, 719, 803, 809, 870, 995, 1002, 1069, 1142, 1192, 1219, 1464, 1470, 1568, 1572, 1574, 1576, 1579, 1581, 1582, 1584, 1641, 1646 | 3, 4 | N |  |  |  |
| NPS 2010c | 1554 | 1481, 1486, 1656, 1661 | 4 | Y | N | N | N |
| NPS 2010d | 1555 | 323, 329, 549, 554, 699, 704, 767, 773, 809, 815 | 4 | Y | N | N | N |
| NPS 2010f | 1557 | 376, 384, 582, 651, 657 | 4 | Y | N | N | N |
| NPS 2010h | 1559 | 415, 424, 597, 604, 1407, 1523, 1530, 1691, 1697 | 4 | Y | N | N | N |
| NPS 2010i | 1560 | 361, 368, 568, 574, 720, 725 | 4 | Y | N | N | N |
| NPS 2010j | 1561 | 426, 432, 524, 528, 605, 609, 665, 670, 726, 731, 1407, 1531, 1537, 1699, 1703 | 4 | Y | N | N | N |
| NPS 2010m | 1853 | 1179, 1192, 1206 | 4 | Y | N | Y |  |
| NPS 2010n |  | 1070 | 4 | N |  |  |  |
| NPS and CSLC 2007 |  | 699, 704, 706, 711, 712, 718, 720, 725, 995, 1000, 1002, 1008, 1010, 1015, 1017, 1022, 1166, 1192 | 4 | N |  |  |  |
| NPS and Presidio Trust 2001 | 1455 | 257, 1313 | 3, 4 | Y | Unknown | N | N |
| NRCS 2004a | 1458 to 1461 | 222, 223, 224 | 3 | Y | N | N | N |
| NRCS 2004b | 1462 to 1465, and 1725 | 222, 224 | 3 | Y | N | N | N |
| NRCS 2005 | 1469 | 223, 224 | 3 | Y | Unknown | N | N |
| NRM Environmental Consulting 2007 | 1804 | 248, 1158, 1159, 1160, 1161, 1162, 1163 | 3, 4 | Y | Unknown | N | N |
| NVPDC 1998a | 1565 | 1594 | 4 | Y | N | N | N |
| NVPDC 1998b |  | 461 | 4 | N |  |  |  |
| ODHS n.d. | 1470 | 227 | 3 | Y | N | N | N |
| Page et al. 1995 |  | 252 | 3 | N |  |  |  |
| Palacio 2006 |  | 27 | 1 | N |  | Y |  |
| Pimentel et al. 2000 | 1367 | 30 | 1 | Y | Y | N | N |
| PLT 2008 | 1471 | 684, 980, 986 | 4 | Y | N | N | N |
| Powell 1978 |  | 231 | 3 | N |  |  |  |
| PRBO 2002 |  | 237, 241, 242 | 3 | N |  |  |  |
| Presidio Parkway 2008 | 1645 | 699, 996, 1001, 1002, 1008, 1010, 1015, 1017, 1023, 1568 | 4 | Y | N | N | N |
| Presidio Parkway 2010 | 1568 | 1472, 1479, 1481, 1486, 1568, 1574, 1576, 1579, 1581, 1582, 1584, 1648, 1655, 1657, 1661 | 4 | Y | N | N | N |
| Presidio Trust 2002 |  | 38 | 1 | N |  |  |  |
| Presidio Trust 2010 | 1571 | 376, 384, 503, 509, 576, 582, 651, 657, 1488, 1493, 1662, 1667 | 4 | Y | N | N | N |
| PR Newswire 2009 | 1567 | 1594 | 4 | Y | N | N | N |
| Reference USA 2005 |  | 24 | 1 | N | N | N | N |
| Riley et al. 2004 | 1675 | 29, 800 | 1, 4 | Y | Y | N | N |
| Roberts 2007 | 1676 | 30, 31, 281, 282 , 1405 | 1, 3, 4 | Y | Unknown | N | N |
| San Francisco Bay Conservation and Development Commission 2009 |  | 1451, 1456, 1630, 1635 | 4 | N |  |  |  |
| San Francisco Examiner 2010 | 1569 | 400, 405 | 4 | Y | N | N | N |
| Saunders et al. 2006 | 1575 | 266 | 3 | Y | Unknown | N | N |
| Scolari 2009 |  | 260, 262, 1361, 1365, 1369, 1372, 1375, 1383, 1385, 1389, 1392 | 3, 4 | N | Unknown  |  |  |
| SBCWD 1998 | 1353 | 224 | 3 | Y | N | N | N |
| Seattle Parks and Recreation 2009 | 1679 | 28 | 1 | Y | N | N | N |
| Semenoff-Irving and Howell 2005 | 1342 and 1507 | 237, 238 | 3 | N | Unknown | N | N |
| Sieyes et al. 2008 |  | 1598, 1602 | 4 | N |  |  |  |
| SF Parks and Rec (SFRPD) 2002 | 1226 and 1596 | 27, 1408 | 1, 4 | Y | Unknown | N | N |
| SF Parks and Rec (SFRPD) 2005 |  | 270 | 3 | N |  |  |  |
| SF Parks and Rec (SFRPD) 2007 | 1678 | 27 | 1 | Y | N | N | N |
| SF Parks and Rec (SFRPD) 2009 | 1796 | 726, 731, 1024, 1029 | 4 | Y | Unknown  | N | N |
| SFPUC 2007 | 1677 | 42 | 1 | Y | N | N | N |
| SFPUC 2009 | 1232 | 228 | 3 | Y | N | N | N |
| SFPUC 2010 |  | 1593 | 4 | N |  |  |  |
| Shulzitski and Russell 2004 | 1304, 1479, and 1703 | 233, 244, 575, 797, 800 | 3, 4 | Y | Unknown | N | N |
| Sime, 1999 | 1680 | 14, 28, 29, 540, 795, 796, 797, 798, 799, 800, 1115, 1123, 1302 | 1, 4 | Y | Unknown | N | N |
| Smith 2010 |  | 249, 1138, 1191 | 3, 4 | N  |  |  |  |
| Social Research Laboratory 2002a | 1487 | 1403, 1404, 1405 | 4 | Y | Unknown | N | N |
| Social Research Laboratory 2002b | 1486 | 1402, 1403, 1404, 1405, 1409 | 4 | Y | Unknown | N | N |
| SOI 2009 |  | 265 | 3 | N |  |  |  |
| Stafford and Horne 2004 | 1438 and 1713 | 226, 227 | 3 | Y | Unknown | N | N |
| State of California 2007 | 1387 | 26 | 1 | Y | N | N | N |
| Stormwater Center 2009 | 1570 | 461, 1593, 1594 | 4 | Y | N | N | N |
| Stynes 2007 | 1681 | 23 | 1 | N | N | N | N |
| Swenson 1995 |  | 249 | 3 | N |  |  |  |
| Takekawa et al. 2003 | 1720 | 232 | 3 | Y | Unknown | N | N |
| Toogood 1980 |  | 259, 260 | 3 | N |  |  |  |
| Torrey 2006 |  | 41 | 1 | N |  |  |  |
| URS Corporation 2010 |  | 251, 257, 1191, 1209, 1333 | 3, 4 | N |  |  |  |
| USACE 1987 | 1488 | 223 | 3 | Y | Unknown | N | N |
| US Census Bureau 2000 |  | 19, 282 | 1, 3 | UK | N | N | N |
| USDA 2005 | 1797 | 620, 625, 626, 631, 632, 638, 639, 644, 646, 650, 652, 657, 659, 664, 665, 671, 672, 676, 667, 682, 684, 897, 903, 905, 911, 913, 920, 922, 928, 930, 936, 938, 945, 947, 954, 955, 962, 964, 970, 972, 978, 980, 986 | 4 | Y | Unknown | N | N |
| USDOT 2009 | 1572 | 1472, 1479, 1481, 1486, 1568, 1574, 1576, 1579, 1581, 1582, 1584, 1648, 1655, 1657, 1661 | 4 | Y | N | N | N |
| US EPA 2001 | 1682 | 20 | 1 | Y | Unknown | N | N |
| USEPA 2008a | 1534 | 490, 495 | 4 | Y | N | N | N |
| USEPA 2008c |  | 470, 475, 490, 495 | 4 | N |  |  |  |
| USFDA 2009 | 1418 | 1594 | 4 | Y | N | N | N |
| USFWS 1984 | 1489 | 247, 248, 684, 688, 905, 911, 956, 962, 964, 970, 972, 978, 980, 986, 1118, 1122, 1124, 1129, 1130, 1131, 1136, 1137, 1138, 1139, 1144, 1146, 1151, 1152, 1153, 1157, 1159, 1164 | 3, 4 | Y | Unknown | N | N |
| USFWS 1985a | 1573 | 252 | 3 | Y | Unknown | N | N |
| USFWS 1995 |  | 248, 1138, 1158, 1162 | 3, 4 | N |  |  |  |
| USFWS 1998 | 1491 | 225, 226, 256, 1321, 1322, 1324, 1327  | 3, 4 | Y | N | N | N |
| USFWS 2001 | 1492 | 856 | 4 | Y | N | N | N |
| USFWS 2002 | 1493 | 251, 252 | 3 | Y | Unknown | N | N |
| USFWS 2003 | 1494 | 225, 231, 236, 256, 257, 575, 597, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1301, 1312, 1313, 1314, 1316, 1319, 1320 | 3, 4 | Y | N | N | N |
| USFWS 2005a | 1496 | 244 | 3 | Y | N | N | N |
| USFWS 2005b | 1495 | 17, 249, 1165, 1166, 1171 | 1, 3 | Y | N | N | N |
| USFWS 2006 |  | 251, 1191, 1209 | 3, 4 | N |  |  |  |
| USFWS 2007a | 1498 | 16, 72, 798, 799, 800, 1240, 1241, 1242, 1243, 1246, 1250, 1252, 1254, 1255, 1256, 1258, 1259, 1261, 1262 | 1, 2, 4 | Y | N | N | N |
| USFWS 2007b |  | 804, 808, 810, 815, 817, 824, 826, 831, 833, 840, 842, 848, 850, 855, 857, 861, 869, 871, 880, 882, 887 | 4 | N |  |  |  |
| USFWS 2007c | 1721 | 252 | 3 | Y | N | N | N |
| USFWS 2008a | 1182 | 1165, 1166, 1171 | 4 | Y | N | N | N |
| USFWS 2008b |  | 251, 1191, 1209, 1214, 1248 | 3, 4 | N |  |  |  |
| USFWS 2008d | 1503 | 243, 255, 1271, 1275, 1277, 1281 | 3 | Y | N | N | N |
| USFWS 2009c |  | 804, 808, 810, 815, 817, 824, 826, 831, 833, 840, 842, 848, 850, 855, 857, 861, 869, 871, 880, 882, 887 | 4 | N |  |  |  |
| USFWS and NOAA 1998 |  | 245 | 3 | N |  |  |  |
| USGS 2004 | Same as Shulzitski and Russell 2004 | 376, 596, 1263, 1292, 1302 | 4 | Y | Unknown | N | N |
| USGS 2008 | 1346 1508 | 227 | 3 | Y | N | N | N |
| US Institute for Conflict Resolution 2004 | 1384 | 18 | 1 | Y | Unknown | N | N |
| USVA | 1647 | 1094 | 4 | Y | N | N | N |
| Veeck 2006 |  | 1595 | 4 | N |  |  |  |
| VMD 2004 | 12081510 | 227 | 3 | Y | N | N | N |
| Ward and Ablog 2006 | 1441 (same as NPS 2006h) | 832, 1016 | 4 | Y (same as NPS 2006h) | N | N | N |
| Wasserman n.d. |  | 283 | 3 | N |  |  |  |
| Williams 2003 |  | 242 | 3 | N |  |  |  |
| Zlatunich 2009 | 1421 | 253, 1240, 1241 | 3, 4 | Y | Unknown | N | N |

red-record is anecdotal, blue- same document with another name

Issues:

 Page number:

* 16- USFWS 2005, USFWS 2007, and USFWS 2009 needs a, b, or c
* 23- DOI 512 Department Manual, 2 – needs to be added to references
* 29- Lafferty needs to be 2001a
* 72- USFWS 2007 should be 2007a. Also plan title is incorrect (though it seems to also be a commonly used name for the project)
* 73- typo Mori Point extra parenthesis before California red-legged frog needs to be removed or closing one needs to be added
* 221- I’m fairly sure the NPS 2010a reference is incorrect
* 222-I think the NPS 2010b may also be an incorrect reference
* 224- I think reference to NPS 2007c is incorrect
* Reference list is out of alphabetical order in many places
* Joslin and Youmans is incorrectly cited (as per the suggested citation in the text)
* 234- Marine Mammal Center is cited as Marine Mammal Center in text and MMC in references
* 239- NPS 2009k reference in text is incorrect, should be for NPS 2010i. NPS 2009k is in regards to the aviation history of Crissy Field
* 240- Merkle 2010b reference should likely be Merkle 2010c. Even so, the data contained in the email has a different frequency than is discussed in the text (dogs in lagoon once a month vs. once a week).
* 248- Reference to NPS 2009g should likely by NPS 2009h (which accurately refers to MBB rather than visitor use statistics)
* 252- USFWS 2007 needs to be USFWS 2007a (2 citations on page)
* 260- NPS 1999b should be NPS 1999 (also true on pg 261 and 262, which have several of these incorrect citations)
* 265 – NPS 2010x needs to be changed to correct source-not x
* 267- Rothman 2002 is not included in the reference list
* 268- Gramann 2003 is not included in the reference list (see also pg. 269 several citations)
* USGS 2004 is the same as Shulzitski and Russell 2004. One of these should be removed
* NPS 2009m should be merged with NPS 2009r—they are the same record
* 796- Is Lenth et al. 2008 and Lenth and Knight 2008 the same thing? We only have one in our references
* 796- Mainini et al. 1993 is not on the reference list (also cited on 797
* 797- Abraham 2001 is not in our reference list
* 798- Do Klein 1993 and Gabrielsen and Smith 1995, both cited in Lafferty 2001b, need a reference on list? Also Burger 2002 unpublished data is not on reference list
* 799- Does Yalden and Yalden 1990, summarized in Sime 1999 need to be added to reference list?
* 803- NPS 2008 needs a, b, c etc
* Ward and Ablog 2006 is same as NPS 2006h
* 1111- Mueller 1994 needs to be added to the reference list
* 1124- GGNPC 2010e is the same as NPS 2009h
* 1139- GGNPC 2010f needs to be added to reference list (also on pg 1145)
* 1180- reference to NPS 2009 needs a, b, c, etc (also true on 1184, 1186, 1190)
* 1191- one of the USFWS 2008 references needs a, b, c, etc (likely it is B)
* 1219- There is no USFWS 1985d in the references – add
* 1240- GGA 2009 is not in references –add (also on pg 1241, 1243, 1245)
* 1240 CRB 2006 is not in references – add
* 1240 – formatting error with quote
* 1250- NPS n.d., NPS 2006 and NPS 2008 all need a, b, c, etc
* 1263- NPS n.d. needs a, b, c, etc (also on pg 1388)
* 1360- there is no NPS 199b in the references (also on pg 1363, 1364, 1383)
* 1361- Haller 2009 needs a, b, c etc. (also on pg 1362)
* 1365- There is no NPS 1999a in the references, Martini n.d. needs a, b, c, etc. (also on 1369, 1389)
* 1382- NPS 1999a, and 1999b are not in the references (also on pg 1387, 1388, 1389, 1392); NPS 2006 and Martini n.d. needs a, b, c, etc.
* 1388- There is no Martini n.d. c or Haller 2010 in the references
* 1407- San Francisco Examiner 2009 is not in references (also pg 1509, 1513)
* 1408- Los Angeles Times 2010 and National Trust for Historic Preservation 2009 are not in the references