

February 29, 2016

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San Francisco, CA 94104

**Subject: Comments on the Habitat Protection Plan for the Monterey Bay Shores
Resort Project**

Dear Mr. Silver and Ms. Prabhala:

This letter contains my comments on the revised Habitat Protection Plan (dated 11 Nov 2015) for the Monterey Bay Shores Resort Project (“Project”). I am submitting these comments on behalf of the Sierra Club, the Center for Biological Diversity, Audubon California, and Monterey Audubon Society. I previously submitted comments on this project on May 11, 2015, and August 13, 2015. I have attached those comment letters and I hereby incorporate them by reference.

Security National Guaranty, Inc. (“Applicant”) plans to construct a 1.34 million ft² mixed-use resort on a 39-acre parcel in the City of Sand City, California. In addition to the development, the Project entails approximately 680,000 cubic yards of grading (385,000 cubic yards of which would be disposed), 20.37 acres of “habitat restoration,” public access trails and amenities, utility extensions and infrastructure, and related development (e.g., roads, parking lots, signs, fences, and lights).

I am an environmental biologist with 23 years of professional experience in wildlife ecology and natural resources management. To date, I have served as a biological resources expert for over 100 projects throughout California. My experience and scope of work in this regard has included assisting various clients with evaluations of biological resource issues, reviewing environmental compliance documents prepared pursuant to the California Environmental Quality Act (“CEQA”) and the National Environmental Policy Act (“NEPA”), and submitting written comments in response to CEQA and NEPA documents. I have provided written and oral testimony for the California Energy Commission, California Public Utilities Commission, and U.S. district courts. My educational background includes a B.S. in Resource Management from the University of California at Berkeley, and a M.S. in Wildlife and Fisheries Science from the Pennsylvania State University.

The comments contained herein focus on Project impacts to the western snowy plover (*Charadrius nivosus nivosus*). My comments are based on my review of the environmental documents prepared for the Project, a review of scientific literature pertaining to the western snowy plover, and the knowledge and experience I have acquired during more than 23 years of working in the field of natural resources management.

Introduction

The revised Habitat Protection Plan (“revised HPP”) claims it contains measures for the protection, preservation, and recovery of the western snowy plover.¹ It further claims that the Project has been specifically designed to create new, restored, and enhanced habitat elements that would make the Project site more attractive than the existing site to breeding snowy plovers.² The revised HPP concludes the proposed Project would not: (1) significantly impact plover habitat, (2) impair essential behavioral patterns (including breeding, feeding or sheltering), or (3) cause take or harm of any snowy plovers.³ These claims and conclusions are unfounded and contradict existing evidence. Indeed, the revised HPP provides no evidence that a project similar to what the Applicant proposes has ever been built without having a significant impact on the western snowy plover. To the contrary, there is overwhelming scientific evidence that projects similar to what the Applicant proposes have had numerous direct and indirect impacts on the species.

Eight USFWS Concerns

On April 7, 2014, the U.S. Fish and Wildlife Service (“USFWS”) submitted a letter to the California Coastal Commission regarding Project impacts on the western snowy plover.⁴ The USFWS concluded the Project, as currently proposed, could not be built without resulting in take of snowy plover and other listed species.⁵ The USFWS further concluded the HPP is not adequate to avoid take of listed species and that it is not a substitute for a Habitat Conservation Plan (“HCP”) or incidental take permit.⁶ Thus, the USFWS recommended to the California Coastal Commission that the Applicant prepare a HCP in support of an application for an incidental take permit.⁷ I concur with the USFWS that the proposed Project would result in take of the western snowy plover and that the Applicant should prepare a HCP.

¹ Revised HPP, p. 1-3.

² Revised HPP, pp. 1-5, 4-2, and 4-48.

³ Revised HPP, pp. 3-10 and 4-1.

⁴ U.S. Fish and Wildlife Service. 2014 Apr 7. Letter to M Watson, California Coastal Commission regarding Monterey Bay Shores Resort Development, Sand City, Monterey County, California.

⁵ *Ibid.* See also 2015 May 13. Letter to M Watson, California Coastal Commission regarding Monterey Bay Shores Resort Development, Sand City, Monterey County, California.

⁶ *Ibid.*

⁷ *Ibid.*

The April 7, 2014, letter from the USFWS relayed eight specific concerns pertaining to the Applicant's Draft HPP (dated Oct 2013). These eight concerns were intended to serve as examples, not an exhaustive list, of the inadequacies of the Applicant's Draft HPP with respect to protection of western snowy plovers.⁸ In the subsequent section I address the inadequacy of the revised HPP in resolving the eight specific concerns identified by the USFWS. I then discuss other inadequacies of the revised HPP, particularly with respect to Project impacts on the western snowy plover. Appendix A to this letter summarizes the status of the western snowy plover and threats to the species.

1. DISCUSSION OF BREEDING ACTIVITY AT THE PROJECT SITE

The USFWS commented that the Draft HPP did not discuss nesting activity during the 2012 and 2013 breeding seasons. The revised HPP provides a discussion of western snowy plover nesting activity on the Project site between 1989 and 2014. However, it continues to misrepresent the location of nest sites. Specifically, the revised HPP claims: “[n]esting activity has not been found above 20 feet MSL [mean sea level] in elevation or on the upper bluff of the site since 1994; however, observations of one or two nests per year within the open sandy sites above the high tide line and below the toe of the bluff indicate that suitable breeding habitat remains within the strand area.”⁹ This statement is inconsistent with survey data collected by Point Blue Conservation Science (“Point Blue”).¹⁰ Those data demonstrate snowy plovers nested in the foredune/secondary dune portion of the Project site (referred to as Management Area 2 in the HPP) between 1990 and 2002 (Figure 1), and again in 2014.¹¹

The revised HPP indicates: “[i]n 2014, one unsuccessful nesting attempt was documented on the lower beach portion of the Monterey Bay Shores site.”¹² However, it subsequently indicates that nesting attempt was an “alleged sighting.”¹³ That statement is incorrect. The geographic coordinates of the nest site were recorded with a global positioning system, and the nest was photographed. Those sources of information prove there was a nest on the Project site, and that the nest site was within the foredune/secondary dune portion of the Project site—not on the lower beach as reported in the revised HPP (Figures 2 and 3).

⁸ U.S. Fish and Wildlife Service. 2015 Apr 7. Letter to M Watson, California Coastal Commission regarding Monterey Bay Shores Resort Development, Sand City, Monterey County, California. p. 3.

⁹ Revised HPP, p. 3-6.

¹⁰ Point Blue Conservation Science. 2014 Apr 1. Letter to the California Coastal Commission regarding Agenda Item 10a; Application A-3-SNC-98-114. *See also* Point Blue Conservation Science. 2015 Aug 20. Letter submitted to the California Coastal Commission regarding the SNG Dune Restoration Plan.

¹¹ *Ibid.*

¹² Revised HPP, p. 3-7.

¹³ Revised HPP, p. 4-13, footnote 3.

The revised HPP's description of snowy plover nesting activity on the Project site relies on historic data collected by Point Blue.¹⁴ However, as noted in the USFWS's April 7, 2014, letter: Point Blue's surveys efforts have been limited and inconsistent in the Project area.¹⁵ Indeed, over the past 15 years, Point Blue has only monitored the lower beach infrequently, if at all.¹⁶ Because comprehensive surveys of the Project site have not been consistently conducted, and because data on snowy plover activity within the foredune/secondary dune portion of the Project site were limited to incidental sightings (i.e., while monitoring the lower beach), it is extremely likely there has been more snowy plover nesting activity on the Project site than what is reported in the revised HPP.

Although the revised HPP was released on November 11, 2015, it provides no information on nesting activity on the Project site during 2015.¹⁷ There were as many as nine instances of nesting at the Project site in 2015 (Figure 4).¹⁸ This constitutes a substantial increase in nesting activity compared to previous years. The revised HPP's failure to report data from 2015 is a significant omission, especially because much of the HPP is predicated on the false belief that nesting at the site is limited to one or two nests per year.¹⁹

¹⁴ Table 1 in the revised HPP suggests nest data collected between 2001 and 2004 is reported in Zander (2005). However, Zander (2005) appears to be limited to surveys conducted in 2005. *See* Revised HPP, p. 5-7. Moreover, the surveys were conducted by Point Blue, under contract to Zander Associates. *See* 2008 EIR Addendum, p. 41.

¹⁵ U.S. Fish and Wildlife Service. 2014 Apr 7. Letter to M Watson, California Coastal Commission regarding Monterey Bay Shores Resort Development, Sand City, Monterey County, California. p. 3.

¹⁶ Personal communication with Carleton Eyster, Avian Ecologist, Point Blue Conservation Science on February 25, 2016.

¹⁷ *See* Revised HPP, Table 1.

¹⁸ Point Blue Conservation Science. 2015 Aug 20. Letter submitted to the California Coastal Commission regarding the SNG Dune Restoration Plan.

¹⁹ Revised HPP. p. 3-6.



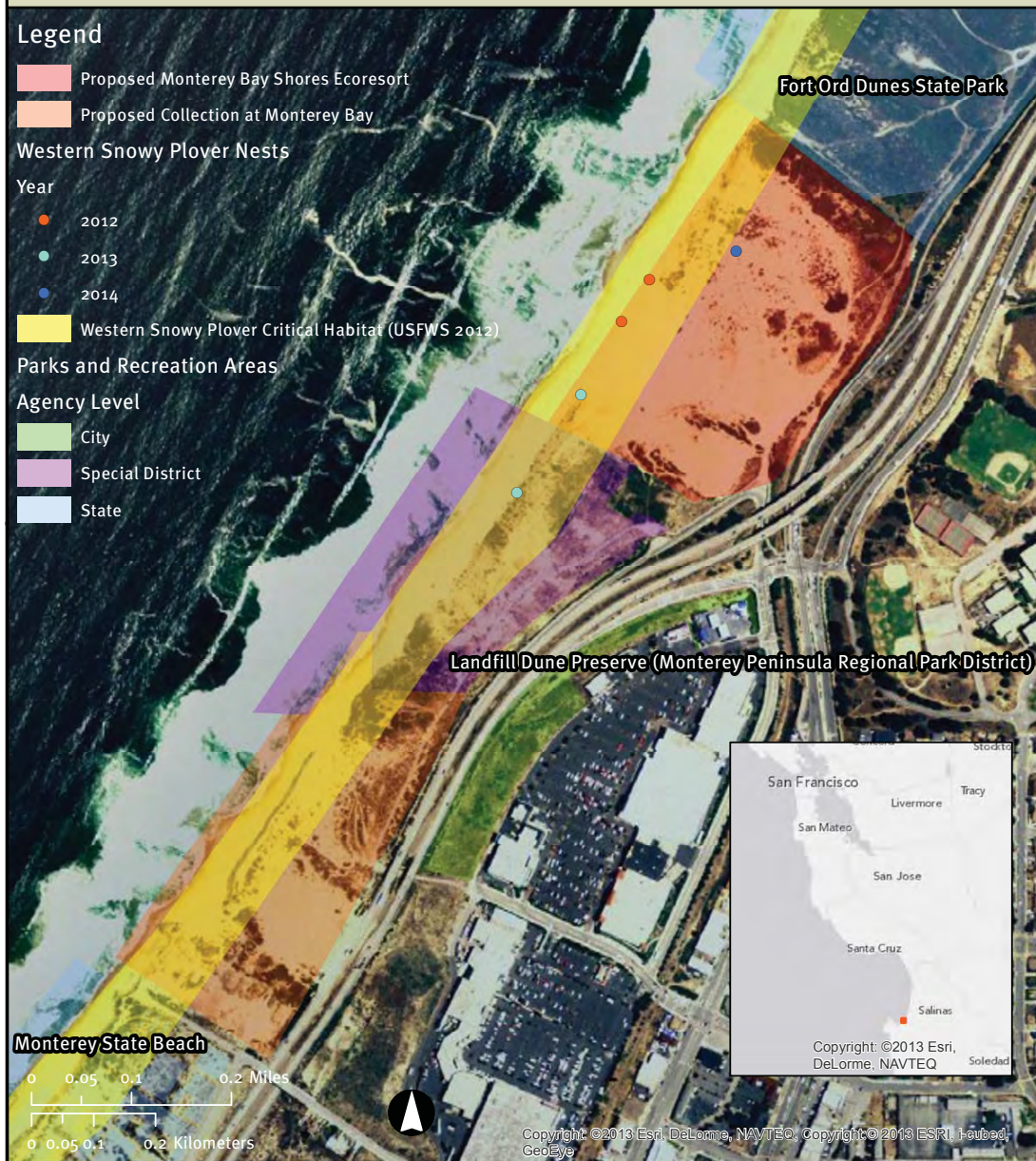
Figure 1. Western snowy plover nest locations on the Project site, 1990-2013.²⁰

²⁰ Point Blue Conservation Science. 2014 Apr 1. Letter to the California Coastal Commission regarding Agenda Item 10a; Application A-3-SNC-98-114.



Figure 2. Western snowy plover nest on the Project site. Iceplant and ocean in the background demonstrates the nest was located in the foredune/secondary dune area.

Western Snowy Plover Critical Habitat and Nests (2010-2014) Sand City, California



Created by: Katie Krieger, Audubon California



Figure 3. Map of western snowy plover nests detected on the Project site, 2010-2014. Dark blue dot depicts location of nest site detected in 2014.



Figure 4. Western snowy plover nest locations on the Project site during 2015. Nest NC08 consisted of a hatched brood of three chicks.

2. BIOLOGICAL OBJECTIVES

The USFWS's second concern pertained to the biological objectives listed in the Draft HPP. As explained below, the "biological objectives" listed in the revised HPP provide only superficial benefits to the snowy plover.

Management Area 1 (Beach and Strand)

The first biological objective for Management Area 1 is to:

- *"Remove all non-native vegetation within this management area and control non-native plant species so that non-native species represent no more than 1 percent of the vegetative cover."*

According to the revised HPP, Management Area 1 *consists primarily of bare sand* with scattered pockets of sea rocket (*Cakile maritima*), beach bur (*Ambrosia chamisonis*), and other pioneer species that are typical of the first stage of plant succession in the bare sand.^{21,22} Sea rocket is the only non-native species that occurs within Management Area 1; however, it is not abundant.²³ Snowy plovers are known to nest among patches of sea rocket, and the presence of sea rocket is not considered a significant threat to snowy plover habitat.²⁴ Therefore, removing sea rocket (which currently covers approximately 5% of Management Area 1) would not provide a significant benefit to the snowy plover.²⁵

The second biological objective is to:

- *"Replant, restore and establish coastal strand vegetation in accordance with the Landscape Plan by collecting native seeds from the project site and within the project vicinity prior to grading."*²⁶

The revised HPP provides no evidence that Management Area 1 needs to be restored, or that planting additional vegetation in Management Area 1 would benefit snowy plovers. Snowy plovers require open, sparsely vegetated habitats for courtship, nesting, and foraging.²⁷ As a result, increasing vegetative cover in Management Area 1 could actually

²¹ Revised HPP, p. 2-2.

²² The only "other" plant species currently present in Management Area 1 is beach saltbush, which is a native species. See Rana Creek. 2016 Jan 19. Monterey Bay Shores Supplemental Addendum to Landscape Plan. Table 1.

²³ Rana Creek. 2016 Jan 19. Monterey Bay Shores Supplemental Addendum to Landscape Plan. Table 1.

²⁴ Washington Department of Fish and Wildlife. 1995. Washington state recovery plan for the snowy plover. Olympia, Washington. 87 pp. See also United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²⁵ Rana Creek. 2016 Jan 19. Monterey Bay Shores Supplemental Addendum to Landscape Plan. Table 1.

²⁶ HPP, pp. 4-6 and 4-7.

²⁷ Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. Condor 112(3):507-510. See also United States Fish and Wildlife Service. 2007. Recovery Plan for the

degrade habitat for snowy plovers. This issue is confounded because the Applicant established a performance standard of 5% vegetative cover for Management Area 1.²⁸ However, sampling data collected by the Applicant's consultant (Rana Creek) in December 2015 indicates native plants currently cover 13% of Management Area 1.²⁹ This undermines the value of planting vegetation as a biologically meaningful objective.

The third "biological objective" is:

- *"Following the planting of coastal strand plants in this management area, establishing permanent monitoring transects designed to cover a minimum of 5% of the revegetated area. To monitor vegetation establishment success, data will be collected annually by the approved biologist using the line intercept method."*

Vegetation sampling is a *strategy*, not an objective.³⁰ Nevertheless, monitoring vegetation establishment success in Management Area 1 is not a biologically meaningful objective for the snowy plover because plovers select open habitats with little vegetation (which facilitates early predator detection).³¹

The fourth "biological objective" is:

- *"In accordance with the Landscape Plan, arrange vegetation and 1 to 4 foot high microtopographic contouring designed in part to attract snowy plovers to potentially use, nest and breed within this management area."*

The HPP does not provide any scientific evidence that arranging vegetation and 1 to 4 foot high microtopographic contouring might attract snowy plovers. Indeed, on February 16, 2015, the California Coastal Commission sent the Applicant a letter that stated:

In our January 15, 2015 meeting, it was represented that the purpose of the depressions was to create habitat for snowy plovers. We requested additional information on this point, including how these features provide potential habitat enhancements. The response provided in the January 26, 2005 letter from Steve Kaufmann was that the grading was proposed to "provide the undulations and a more natural coastal dune formation." We do not see a valid dune reason for the depressions, do not understand how they will enhance habitat, and believe them to be more unnatural than natural otherwise. In fact, given the windy environment, dune formations in this area are more likely to take the form of

Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²⁸ Revised HPP, Table 2.

²⁹ Rana Creek. 2016 Jan 19. Monterey Bay Shores Supplemental Addendum to Landscape Plan. Table 2.

³⁰ U.S. Fish and Wildlife Service. 2004. Writing Refuge Management Goals and Objectives: A Handbook. U.S. Fish and Wildlife Service, Arlington, Virginia. 34 pp.

³¹ Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. Condor 112(3):507-510.

mounds or hillocks. The proposed depressions will not be stable and will be rapidly filled-in with blowing sand. Please eliminate this feature from the plans.³²

Moreover, according to literature published by the Applicant, the contouring would be designed to create “sheltered hollows that provide protection from the sea winds for visitors and wildlife alike.”³³ Contouring that attracts visitors would not benefit the snowy plover.

The fifth biological objective is:

- “Add biological features such as barren sand areas combined with sparsely vegetated sandy substrate and pieces of driftwood designed to attract snowy plovers to potentially use, nest and breed within this management area.”

Adding biological features (i.e., habitat elements) so that snowy plovers “potentially use” the management area is not a meaningful objective. That is, adding biological features for potential use by plovers is entirely different than adding features that end up being used by plovers. Consequently, the revised HPP must identify a specific objective that demonstrates the proposed techniques provide an actual benefit to plovers (e.g., plovers build a nest next to a piece of driftwood deposited by the Applicant).

Although driftwood provides many benefits to plovers, it also attracts humans that collect it for firewood or decorative items. This can result in destruction of nests and newly hatched chicks that frequently crouch by driftwood to hide from predators and people.³⁴ As a result, deposition of driftwood could result in an ecological “trap” unless the Applicant establishes a mechanism for ensuring its protection.³⁵

As discussed previously, the second biological objective is to establish vegetation in Management Area 1. This appears to conflict with the objective to “add biological features such as *barren sand areas combined with sparsely vegetated sandy substrate.*”

The sixth biological objective is:

- “Require the approved biologist to conduct surveys within this management area for western snowy plover prior to, and throughout, the breeding season (March

³² California Coastal Commission. 2016 Feb 16. Letter sent to Ed Ghandour, SNG, regarding Prior to Issuance Condition Compliance Review for Coastal Development Permit Number A-3-SNC-98-114 (Monterey Bay Shores Resort). p. 7.

³³ SNG. Monterey Bay Shores [web site]. Available at: <http://www.montereybayshores.com/PDF/Eco_Overview.pdf>. (Accessed 2014 Dec 6). p. 8.

³⁴ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

³⁵ An ecological “trap” an area where an animal settles to breed because conditions at the time of settlement seem appropriate. However, either because natural conditions change, or humans change them, the animal has made a mistake and either dies or has reduced reproductive output. Thus the animal is, in essence, lured into what turns out to be poor-quality habitat. See Robertson BA, JS Rehage, A Sih. 2013. Ecological novelty and the emergence of evolutionary traps. Trends in Ecology & Evolution 28:552-560.

through September), prior to, during, and after construction and annually thereafter so long as the Pacific Coast distinct population segment of the western snowy plover remains listed as endangered or threatened under the federal Endangered Species Act, and any portion of the site remains designated as critical habitat.”

Whereas surveys are an appropriate *strategy*, the revised HPP does not provide the information needed to assess the value of the surveys in protecting snowy plovers and their nest sites. Specifically, the revised HPP does not identify the: (a) search techniques, (b) search area, (c) specific timing and spacing of the surveys (e.g., number of days prior to construction surveys would be conducted and number of days between successive surveys), and (d) level of effort (e.g., total days and man-hours). This information is needed to ensure the surveys are effective in avoiding and minimizing the Project’s impacts to snowy plovers.

Point Blue has been monitoring western snowy plover breeding activity in the Project region for the last 25 years. This has resulted in unique expertise and a substantial data set pertaining to the western snowy plover population. The Applicant’s proposal to conduct annual breeding season surveys at the Project site is unnecessarily duplicative of Point Blue’s ongoing survey effort. Thus, as a condition of HPP approval, it is my opinion that the Applicant should provide Point Blue with funding for the performance of surveys at the Project site.

The seventh biological objective is to:

- *“use exclosures, signage, and monitoring to establish two seasonal nesting protection zones along the beach and strand for purposes of protecting potential nesting habitat.”*

A nest “exclosure” is constructed out of wire mesh, whereas a symbolic fence is constructed by stringing cable or rope between posts that surround the nest site. Both designs are intended to exclude human activity; however, only wire exclosures exclude predators. Although the revised HPP refers to “exclosures,” it suggests those exclosures would be constructed of fencing.³⁶ As a result, it is unclear whether the Applicant intends to install nest exclosures, or simply symbolic fences.

The revised HPP does not identify the size of the exclosures, which is critical to their value as nesting protection zones. Muir and Colwell (2010) studied the response of incubating plovers to an observer approaching the nests. Incubating plovers ceased incubation and left nests when an observer approached within a mean distance of 80 ± 33 meters.³⁷ This led Muir and Colwell to conclude that fencing erected to minimize human disturbance should be placed such that people cannot approach closer than 100 meters

³⁶ Revised HPP, p. 4-48.

³⁷ Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. *Condor* 112(3):507-510.

(328 feet). This conclusion has three important ramifications on the proposed nesting protection zones:

1. A “nesting protection zone” must be at least 2.5 acres to prevent human disturbance to incubating plovers.³⁸
2. The Project design precludes the ability to establish a 2.5-acre “nesting protection zone” that is ≥ 100 meters away from the resort pathways.³⁹
3. Management Area 1 is 4.03 acres.⁴⁰ As a result, it would be impossible to install two nesting protection zones of adequate size in Management Area 1, especially while also providing humans with lateral and medial access to the beach.

The eighth biological objective is:

- *“If plover nests are found outside of the seasonal nesting protection zones in this management area during surveys, the approved biologist will restrict access to the additional nesting snowy plover areas through the erection of exclosures, signage and direction to the public and users of the beach in order to protect any such nests during the breeding season.”*

Restricting access to nesting snowy plover areas is a *strategy*, not an objective.⁴¹ Although the objective is implied (protection of snowy plover nests during the breeding season), it lacks a measurable element that would be monitored to determine success or failure.⁴² Consequently, the biologist would not know if the objective has been met, if the strategy is appropriate, or whether adaptive management is needed. As a result, the Applicant’s strategy and objective(s) need to be clearly defined, specific, and measurable. For example, a meaningful biological *objective* might be to have at least one chick fledged from the Project site per year; the *strategy* for achieving that objective might be to restrict all access to nests; and thus the *measurable elements* would be the number of chicks that fledged and the extent to which access to nests was restricted.

The ninth “biological objective” is:

- *“Avoid grading of any part of this management area.”*

This is not a biological objective, although it is an appropriate avoidance strategy.

³⁸ 328 ft x 328 ft = 2.47 acres

³⁹ Maximum distance between resort pathways leading to the beach is 708 ft, which leaves a 52-foot wide sliver of beach that is ≥ 328 ft from a pathway. 52 ft x 124 ft (distance between high tide line and bluff) = 0.15 acre.

⁴⁰ Revised HPP, p. 4-3.

⁴¹ U.S. Fish and Wildlife Service. 2004. Writing Refuge Management Goals and Objectives: A Handbook. U.S. Fish and Wildlife Service, Arlington, Virginia. 34 pp.

⁴² *Ibid.*

The tenth biological objective is:

- “*Authorize the biologist to monitor and, in coordination with the construction manager, resort operator or property owner, regulate activities that may significantly and adversely affect the snowy plover during the breeding season (e.g., redirect lighting away from plover nesting).*”

The revised HPP not only lacks a measurable element for this proposed strategy, but also assurance that it would be implemented. The revised HPP does not *require* the biologist to regulate activities affecting snowy plovers, nor does it provide any assurances that the construction manager, resort operator, or property owner would authorize actions recommended by the biologist. Even if activities affecting snowy plovers are regulated, the revised HPP fails to incorporate enforcement measures that would ensure compliance with the regulations. These are significant flaws because several studies have shown that voluntary compliance with snowy plover protection measures (especially with posted pet regulations) is low unless accompanied by an enforcement mechanism.⁴³

The final biological objective is:

- “*Prohibit any permanent lighting in this management area.*”

This is not a biological objective, although it is an appropriate impact avoidance strategy.

Management Area 2 (Foredune/Secondary Dune Area)

The biological objectives for Management Area 2 are identical to those identified for Management Area 1, with the following exceptions:

- Vegetation will be irrigated for up to three years.
- The goal for vegetative cover is 20%.^{44,45}
- There is no mention of restricting access to snowy plover nesting areas.
- There is no mention of vegetation spacing or microtopographic contouring.
- One biological objective has been added: ‘*[m]inimize significant damage or degradation to western snowy plover critical habitat so that any such habitat impact does not rise to the level of "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."* 50 C.F.R. § 17.3.’

⁴³ Lafferty KD. 2001. Human disturbance to wintering western snowy plovers at a southern California beach. *Biological Conservation* 10:1-14. *See also* Lafferty KD. 2001. Disturbance to wintering western snowy plovers. *Biological Conservation* 101:315-325.

⁴⁴ Table 2 in the Revised HPP sets the goal at 5% (secondary dune) and 10% (foredune).

⁴⁵ Native plants currently provide 52% cover in Management Area 2, excluding cover provided by *Achillea millefolium*, which was incorrectly categorized as a non-native species. *See* Rana Creek. 2016 Jan 19. Monterey Bay Shores Supplemental Addendum to Landscape Plan. Table 4.

These differences do not alleviate the flaws discussed above (i.e., under Management Area 1). Although the revised HPP suggests the Applicant would “minimize significant damage or degradation to western snowy plover critical habitat,” it does not identify the specific measures that would be implemented to accomplish that task. In addition, the revised HPP does not identify how the Applicant would monitor habitat conditions and snowy plover behavior (i.e., to ensure there is no impairment of essential behavioral patterns). Substantial evidence indicates the Project would directly and indirectly impact critical habitat and the primary constituent elements that the species needs to survive and reproduce. The revised HPP does not include mitigation to offset habitat loss (including functional loss) and the adverse effects that the Project would have on the persistence and recovery of the species. As a result, it is unreasonable for the Applicant to conclude the Project would not cause significant habitat modification or degradation.

3. PRECONSTRUCTION SURVEY AREA

The USFWS commented about the lack of pre-construction surveys in inland areas of the Project site. The revised HPP resolves this issue.

4. SEASONAL RESTRICTIONS AND OTHER PROTECTION MEASURES

The USFWS’s April 2014 letter explained why the exclosures (nesting protection zones) proposed by the Applicant would not prevent “take” of plovers. Because snowy plovers have precocial chicks that cannot be contained within exclosures, the USFWS typically recommends seasonal avoidance of disturbance in or near snowy plover nesting habitat during the breeding season. The revised HPP does not resolve this issue because it does not include seasonal avoidance of disturbance in or near snowy plover nesting habitat during the breeding season, nor does it include measures to protect snowy plover chicks once they leave the exclosures. The only reliable way to prevent “take” (including impairment of essential behavioral patterns) is to prohibit anthropogenic sources of disturbances during the entire snowy plover breeding season.

5. TAKE OF PLOVERS

The USFWS’s April 2014 letter addressed flaws with the Applicant’s rationale for concluding construction noise would not result in nest abandonment. Specifically, the USFWS discussed why management activities at the Oceano Dunes State Vehicular Recreation Area (“SVRA”) did not provide evidence supporting the Applicant’s rationale.

The revised HPP eliminated reference to the Oceano Dunes SVRA. However, it claims Project construction would not cause nest abandonment because:

- a) Grading and/or construction is not proposed within the beach and strand area, where all western snowy plover activity has been observed during the past 21 years.

- b) The Applicant will seek to avoid grading during the nesting season, if feasible, and any grading that is allowed will be limited to 60-90 days, if feasible.
- c) A biologist will conduct pre-construction surveys, monitor grading, and take all necessary protective measures if a nest is observed near grading activities.

The revised HPP argues: “*these measures will ensure no take of plover.*”⁴⁶ There are several flaws with that argument.

First, the argument is predicated on the false statement that all western snowy plover activity during the past 21 years has been limited to the beach and strand area. This statement is refuted by survey data collected by Point Blue.⁴⁷ As noted by Coastal Commission Staff, the Project includes grading and construction of facilities (e.g., paths and overlook areas) in areas historically used by plovers.⁴⁸

Second, the revised HPP acknowledges grading could occur during the snowy plover breeding season. To protect plovers outside of the grading area, the Applicant proposes a temporary fence and signage that will be erected “*no more than 20 feet beyond the limit of grading.*”⁴⁹ Allowing construction activity within 20 feet of a snowy plover nesting area would undoubtedly: (a) preclude use by plovers; or (b) result in nest abandonment, disturbance, or another form of take if plovers are using the area when grading begins.⁵⁰ Furthermore, a temporary fence has little value as a take avoidance measure because snowy plovers have precocial chicks that leave the nest within hours after hatching.⁵¹ Snowy plover chicks from nests on the Project site or adjacent areas would be susceptible to direct (e.g., crushing) and indirect (heightened vigilance that precludes normal foraging activities) impacts from Project construction activities. The only reliable way to prevent those impacts is to prohibit construction activities during the entire snowy plover breeding season.

Third, grading (and other types of anthropogenic disturbance) during the breeding season would eliminate primary constituent element (“PCE”) 4 for the western snowy plover,⁵² which is:

⁴⁶ Revised HPP, p. 4-48.

⁴⁷ Point Blue Conservation Science. 2014 Apr 1. Letter to the California Coastal Commission regarding Agenda Item 10a; Application A-3-SNC-98-114. *See also* Point Blue Conservation Science. 2015 Aug 20. Letter submitted to the California Coastal Commission regarding the SNG Dune Restoration Plan.

⁴⁸ California Coastal Commission. 2015 May 14. Staff Report Addendum for F13a, Application A-3-SNC-98-114-EDD (SNG Dispute Resolution Hearing), Exhibit 3: Resort Paths and Plover nesting.

⁴⁹ Revised HPP, p. 4-18. [emphasis added].

⁵⁰ Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. *Condor* 112(3):507-510. *See also* Rodgers JA Jr, ST Schwikert. 2002. Buffer-Zone Distances to Protect Foraging and Loafing Waterbirds from Disturbance by Personal Watercraft and Outboard-Powered Boats. *Conservation Biology* 16(1):216-224.

⁵¹ Precocial chicks are well developed, feed themselves, run about, and regulate their body temperature.

⁵² PCEs are the physical and biological features of a landscape that a species needs to survive and reproduce.

Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior.⁵³

Fourth, it is very difficult to locate snowy plover nests because they consist of shallow scrapes in the sand, and the camouflaged eggs are often partly buried.⁵⁴ The chicks leave the nest within hours of hatching and may travel along the beach as far as four miles from their natal area.⁵⁵ Chicks are difficult to detect due to their diminutive size (Figure 5), tendency to crouch near or under objects (e.g., driftwood) to hide from predators (Figures 6 and 7), and the tendency of young chicks to lie motionless when approached by humans.⁵⁶

Even if the Applicant is able to successfully avoid direct impacts to nests and broods, construction activities could indirectly affect nests or broods in a variety of ways. When a brooding adult is disturbed, it often leaves eggs and chicks exposed, and hence vulnerable to predation and inclement weather.⁵⁷ In addition, human activity can cause brood movement, resulting in the separation of one or more chicks from the rest of the brood.⁵⁸ Movement into adjacent territories can result in attacks on the young by other adult plovers, resulting in chick death and abandonment.⁵⁹

Surveys and monitoring (of unknown scope and quality) by a single biologist, and a fence that is *no more than* 20 feet (6.1 meters) beyond the limit of grading, do not ensure take is prevented. Muir and Colwell (2010) reported that incubating plovers ceased incubation and left nests when an observer approached within a mean distance of 80 ± 33 meters.⁶⁰ Trulio et al. (2013) reported that birds flushed off their nests when a human approached within a mean distance of 145 meters.⁶¹ Grading equipment will create loud noise that will extend well beyond the 20-foot fence. Human activity and noise associated with the

⁵³ Federal Register. 2012 Jun 19. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover; Final Rule. Federal Register 77(118):36728-36869.

⁵⁴ Baicich PJ, CJ Harrison. 1997. A guide to the nests, eggs, and nestlings of North American Birds. 2nd ed. London: Academic Press.

⁵⁵ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. pp. 14 and 15.

⁵⁶ *Ibid*, pp. 12 and 36. See also Colwell MA, SJ Hurley, JN Hall, SJ Dinsmore. 2007. Age-Related Survival and Behavior of Snowy Plover Chicks. Condor 109(3):638-647.

⁵⁷ Colwell MA, SJ Hurley, JN Hall, SJ Dinsmore. 2007. Age-Related Survival and Behavior of Snowy Plover Chicks. Condor 109(3):638-647.

⁵⁸ Ruhlen TD, S Abbott, LE Stenzel, GW Page. 2003. Evidence that human disturbance reduces snowy plover chick survival. Journal of Field Ornithology 74(3):300-304.

⁵⁹ *Ibid*.

⁶⁰ Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. Condor 112(3):507-510.

⁶¹ Trulio LA, C Robinson-Nilsen, J Sokale, KD Lafferty. 2012. Report on nesting snowy plover response to new trail use in the South Bay Salt Pond Restoration Project. Available at: <http://www.southbayrestoration.org/documents/technical/Final%20Plover%20Report%20RLF_31Jan12.pdf>.

proposed grading activities would occur all day for up to 90 days during the breeding season. This has significant implications on the potential for take. Research has shown that the longer the disturbance lasts, the longer the time before birds return to their nest (and thus, the greater the risk to the nest).⁶²

In summary, snowy plover nests and chicks are extremely difficult to locate, and even the most experienced surveyor will miss them. Snowy plover chicks (and adults) could easily move into the construction area without being seen, whereupon they would be highly susceptible to mortality, brood separation, or other adverse impacts. The 20-foot buffer fence proposed in the revised HPP would not prevent take of plovers. The only reliable way to prevent take is to prohibit construction activities during the entire snowy plover breeding season.



Figure 5. Western snowy plover chick.

⁶² *Ibid.*



Figure 6. Western snowy plover chick crouched near driftwood and vegetation.



Figure 7. Western snowy plover chick hiding under oyster shell.

6. NESTING PROTECTION ZONES

The USFWS indicated it was not clear how the Dynamic Nesting Protection Zone(s) would be protected. The revised HPP does not resolve this issue; it simply indicates the approved biologist will use exclosures, signage, and monitoring to establish the Dynamic Nesting Protection Zone(s).⁶³ The revised HPP does not identify the exclosure design (e.g., construction materials). This precludes the ability to evaluate the likelihood that the exclosures would be effective in excluding humans, predators, and unleashed pets.

Furthermore, the revised HPP does not identify the effort (e.g., frequency and intensity) that would be devoted to monitoring the effectiveness of the exclosures and signage. This is important because voluntary compliance with snowy plover protection measures is often low.⁶⁴ For example, managers of the Coal Oil Point Reserve in Santa Barbara

⁶³ Revised HPP, p. 4-42.

⁶⁴ Lafferty KD. 2001. Human disturbance to wintering western snowy plovers at a southern California beach. *Biological Conservation* 10:1-14. *See also* Lafferty KD. 2001. Disturbance to wintering western snowy plovers. *Biological Conservation* 101:315-325.

County noted that posting of the leash law and attempts to educate pet owners were ineffective at reducing disturbance to snowy plovers.⁶⁵

The revised HPP claims: “[f]encing, signage, and monitoring are well-established and accepted measures to protect plover nesting and plover activity.”⁶⁶ This claim is misleading because fencing is not always effective. As the revised HPP acknowledges, the nest that occurred at the Project site in 2014 failed due to human disturbance despite the presence of a symbolic fence. Even wire mesh nest enclosures are not always effective. For example, Mabee and Estelle (2000) reported: “we found no significant difference in the daily survival rate between nests that were protected by predator enclosures and nests that were unprotected.”⁶⁷ According to the federal Recovery Plan:

Although enclosures are contributing to improved productivity and population increases in some portions of the western snowy plover’s Pacific coast range, problems have been noted in some localities. Potential risks associated with enclosures include vandalism, disturbance of the birds by curiosity seekers, and use of enclosures as predator perches. Over time, enclosures may provide a visual cue to predators, making it easier for them to target adults, chicks, and eggs, and requiring predator management. On several occasions depredations of adult western snowy plovers have been documented in or near enclosures, and efforts have been made to establish enclosures later in the season after the peak migration of raptors (Brennan and Fernandez 2004, Lauten *et al.* 2006).⁶⁸

As the USFWS pointed out in its April 2014 letter, enclosures can help protect eggs in some situations, but they do not protect the chicks once the eggs hatch.⁶⁹ As a result, the USFWS concluded the enclosures (nesting protection zones) proposed in the HPP would not prevent “take” of plovers because the Project would exacerbate numerous threats (e.g., increased human presence and types of disturbance) known to cause take of plovers.⁷⁰ The revised HPP does not resolve this issue.

⁶⁵ *Ibid.* See also University of California, Santa Barbara Natural Reserve System. 2001. Snowy Plover Management Plan (SPMP) – 2001. Available at: <<http://coaloilpoint.ucnrs.org/SnowyPloverProgram.html>>. (Accessed 16 Nov 2014). See also Lafferty KD, D Goodman, CP Sandoval. 2006. Restoration of breeding by snowy plovers following protection from disturbance. *Biodiversity and Conservation* 15:2217-2230.

⁶⁶ Revised HPP, p. 4-48.

⁶⁷ Mabee TJ, VB Estelle. 2000. Assessing the Effectiveness of Predator Enclosures for Plovers. *The Wilson Bulletin* 112(1):14-20.

⁶⁸ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. p. 88.

⁶⁹ U.S. Fish and Wildlife Service. 2014 May 13. Letter to M Watson, California Coastal Commission regarding Monterey Bay Shores Resort Development, Sand City, Monterey County, California.

⁷⁰ *Ibid.* See also U.S. Fish and Wildlife Service. 2015 Apr 7. Letter to M Watson, California Coastal Commission regarding Monterey Bay Shores Resort Development, Sand City, Monterey County, California.

7. PREDATOR MANAGEMENT PLAN

The USFWS's April 2014 letter pointed out that the Draft HPP did not provide any detail on what the Applicant's Predator Management Plan ("PMP") would entail or any certainty that it would succeed. The revised HPP does not resolve these issues.

The PMP states: "[s]pecific quantitative success criteria for predator monitoring and control cannot be defined because the types and numbers of predators may vary widely from year to year. There are a number of other factors that contribute to the success or failure of plover nesting attempts, including food availability or natural elements such as wind, tides, and rain."⁷¹ This is an indefensible argument. The effect of the variables mentioned in the PMP (e.g., variation in predator abundance and climatic variables) could be distinguished through statistical analysis and a sampling scheme that incorporates control sites. Doing so would enable success criteria, such as:

1. Nest depredation by predators at the Project site will not exceed 10% of that at control sites.
2. Predator control efforts at the Project site will reduce the mean abundance of predators X, Y, and Z by 50% over baseline levels within 5 years of implementation.

8. SUCCESS CRITERIA

The USFWS's April 2014 letter discussed flaws with the success criterion proposed for snowy plovers at the Project site. The letter stated:

The HPP (page 4-23) describes a success criterion for western snowy plover of one successful nesting pair within 10 years following construction and characterizes this threshold as "attracting nesting plovers back to the site." This goal is biologically inadequate to maintain the current level of nesting and does not recognize the western snowy plovers currently nest within the Project area. In addition, defining success as successful nesting (eggs surviving to hatch) would not guarantee successful fledging (chicks surviving until they are nature enough to fly).

The revised HPP refines the success criterion for snowy plover. However, it eliminates the value of that success criterion by allowing the Applicant to claim success if an alternative criterion is satisfied. The revised HPP states:

"Success criteria establish standards for species and habitat conservation goals. As shown above, since 2000, the average plover nesting occurrence on the property has been less than one nest per year (about .5 per year). This HPP sets as success criterion documented plover nesting on the lower beach and strand area at numbers above the annual average since 2000. The success criterion is an annual average of one plover nest and the fledging of one juvenile per year, within five years after the resort is opened. The success criterion, if achieved,

⁷¹ Revised HPP, Appendix M: Predator Management Plan (dated 14 Oct 2015). p. 1-7.

would represent a 100 percent increase in the annual average plover nesting for this site. However birds are highly mobile and may not return to a site on their own volition, regardless of habitat restoration efforts. This is evident by the known data, which shows that in 11 of the past 15 years (or 73 percent of the time), there has been no plover nesting anywhere on the property.⁷²

Therefore, habitat restoration efforts should be evaluated by an alternative criterion. For the purposes of this plan, if plover are not observed nesting on the property within five years after construction, or the annual nesting and fledging goals are not met, then success of the habitat restoration effort will be defined by documenting that the proposed native coastal strand vegetation goals for Management Areas 1 and 2 have been established.”⁷³

The information and rationale presented in the Applicant’s argument is completely unfounded and is inconsistent with accepted practices for evaluating the success of a habitat restoration project.

First, the numbers presented in the revised HPP are incorrect. Thirty-seven snowy plover nests have been documented on the Project site since the year 1990.⁷⁴ This equates to an average of 1.42 nests per year. Therefore, the success criterion of one nest within five years after the resort has opened would constitute an 86% decline in the annual average plover nesting attempts at the site, not a 100% increase as alleged in the revised HPP.

Second, it is entirely inappropriate to use vegetative cover as the success criterion for snowy plover—especially because snowy plovers typically nest on barren to sparsely vegetated sandy substrate (which the HPP acknowledges).⁷⁵ As reported by Morrison (2002): “*the success of a restoration project should be judged by how wildlife species respond to it.*”⁷⁶ Haufler et al. (2002) describe five types of performance measures that can be used to evaluate success at the species level: (1) viability analysis of species in landscapes, (2) occurrence and distribution of species within representative ecosystems, (3) population measures and comparisons, (4) population continuity, and (5) functional measures.⁷⁷ Success criteria for snowy plover at the Project site must incorporate one or more of those performance measures.

⁷² According to Table 1 in the revised HPP, there was no reported nesting activity on the Project site during 10 of the past 15 years, or 10 of the past 16 years if the 2015 nesting season is included.

⁷³ Revised HPP, pp. 4-33 and -34.

⁷⁴ Point Blue Conservation Science. 2014 Apr 1. Letter to the California Coastal Commission regarding Agenda Item 10a; Application A-3-SNC-98-114. *See also* Point Blue Conservation Science. 2015 Aug 20. Letter submitted to the California Coastal Commission regarding the SNG Dune Restoration Plan.

⁷⁵ Revised HPP, p. 3-5.

⁷⁶ Morrison ML. 2002. *Wildlife Restoration: Techniques for Habitat Analysis and Animal Monitoring*. Island Press: Washington (DC). p. 1.

⁷⁷ Haufler JB, RK Baydack, H Campa III, BJ Kernohan, C Miller, LJ O’Neil, L Waits. 2002. Performance measures for ecosystem management and ecological sustainability. *Wildl. Soc. Tech. Rev.* 02-1, 33 pp.

Management Areas 1 and 2

The revised HPP proposes using vegetative cover to evaluate success of the habitat restoration effort. The vegetation performance criterion for Management Area 1 is 5% vegetative cover at Year 5.⁷⁸ The performance criterion for Management Area 2 is also 5%, except for the foredune, which is 10%.⁷⁹ Sampling data collected by the Applicant's consultant (Rana Creek) in December 2015 indicates native plants currently provide 13% cover in Management Area 1 and 52% cover in Management Area 2.⁸⁰ Therefore, the revised HPP allows the Applicant to claim "success" for snowy plover even if cover of native plants declines by 62% in Management Area 1 and 90% in Management Area 2.

Management Area 3

The revised HPP presents conflicting information on the vegetation performance criteria for Management Area 3. Specifically, page 4-40 indicates the criterion for Management Area 3 is 5% vegetative cover on leeward slopes and 50% cover on windward slopes. This conflicts with Table 2, which identifies the criterion as an *average* of 50% cover, with the windward slopes supporting a lower percentage of plant cover than the leeward slopes due to the scouring effects of the wind.⁸¹

The revised HPP identifies "50% diversity of species planted minimum 3.4 acres of Monterey spineflower" as one of the success criteria for Management Area 3.⁸² This is illogical, and presumably an error. Nevertheless, "50% diversity of species" is not a valid criterion because biological diversity is expressed as a numerical value (generally between 1.5 and 3.5 if the Shannon-Wiener Diversity Index is used), not a percentage.

OTHER ISSUES

Impacts to Critical Habitat

The revised HPP provides the following discussion of Project impacts to critical habitat:

It is also important to note that the limited critical habitat area that will be subject to grading is the higher elevation critical habitat. This area has not historically been used for plover nesting since the late 1990s. It was included as critical habitat in the event that sea level rise causes the shoreline to erode and move inland during the next 100 years. Thus, a short term 60-90 day impact to this limited area that is principally set aside for future recovery (but which is not presently being used and which has not been used in the past 21 years) will not result in the take of, or harm to, the species. It should also be considered that the

⁷⁸ Revised HPP, Table 2.

⁷⁹ *Ibid.*

⁸⁰ Rana Creek. 2016 Jan 19. Monterey Bay Shores Supplemental Addendum to Landscape Plan. Tables 2 and 4.

⁸¹ *See footnote to Revised HPP, Table 2.*

⁸² Revised HPP, p. 4-40.

typical lifespan of a plover is 3 years, with some specimens living 15 years. In that context, a 60-90 day impact to this limited area that is set aside for future sea level rise 100 years from now will not cause take or harm to the species.⁸³

The revised HPP misses the point, which is that the Project would eliminate critical habitat, and that it would impair (and perhaps preclude) use of previously occupied habitat for as long as the Project is in existence.

Consistency with Recovery Plan

The revised HPP claims it provides numerous measures consistent with the goals and objectives identified in the Recovery Plan for the Pacific Coast Population of the Western Snowy Plover.⁸⁴ The stated goal of the Recovery Plan is to “ensure the long-term viability of the Pacific coast western snowy plover population so that this population can be removed from the Federal list of endangered and threatened species.”⁸⁵

The revised HPP does not *ensure* the long-term viability of the Pacific coast western snowy plover population. This is reflected in the success criteria, which enable the Applicant to claim success of the HPP even if plover nesting ceases on the Project site once construction begins.

Habitat Restoration

Habitat restoration is defined as the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning the majority of natural functions to the lost or degraded native habitat.⁸⁶ The revised HPP indicates the Applicant would restore Management Area 1, where the majority of snowy plover sightings have occurred during the past 21 years.⁸⁷ The revised HPP, however, fails to provide any evidence that Management Area 1 requires restoration, or that the actions proposed in the revised HPP would return the *natural functions* that have been lost or degraded in Management Area 1. Indeed, the Project would inevitably eliminate one of those natural functions, which is habitat that has minimal disturbance from humans, pets, vehicles, or human-attracted predators.⁸⁸

According to the revised HPP: “[m]anagement Area 2 will be restored to include the following communities identified on the Landscape Plan: foredune, secondary dune, and

⁸³ Revised HPP, p. 3-9.

⁸⁴ Revised HPP, p. 3-11.

⁸⁵ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. pp. 140 and 141.

⁸⁶ 16 USCS § 3772 (5).

⁸⁷ Revised HPP, p. 4-3.

⁸⁸ Federal Register. 2012 Jun 19. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover; Final Rule. Federal Register 77(118):36728-36869.

biofiltration basin...[t]his management area also includes three vertical beach accessways, a public vista point, and two private resort vista points.”⁸⁹ A biofiltration basin is not native habitat, neither are accessways and vista points. In no way could installation of those features be considered habitat restoration.

Coordination with Sand City and State Parks

According to the revised HPP: “[t]he Permittee will coordinate with Sand City and State Parks in the management, protection and recovery of plovers along the Sand City coastline.”⁹⁰ I concur that coordination with Sand City and State Parks is necessary to assure appropriate protection and management of snowy plovers and their habitat. Scientific studies have shown that the abundance of a species within a habitat patch can be dependent not only on the processes within the patch, but also on the processes in the surrounding matrix.⁹¹ This is especially true for the western snowy plover, which has broods that may travel along the beach as far as 6.4 kilometers (4 miles) from their natal area.⁹²

State Parks has expressed concern about indirect impacts of the Project to snowy plovers that breed at Fort Ord Dunes State Park (“Park”). State Parks believes the Project could result in greater enforcement needs at the Park, and that the Project may inhibit its ability to meet the conservation goals and thresholds identified in its pending HCP.⁹³ Despite these issues, the only stated requirement of the Applicant’s coordination program is: “evaluation of the feasibility of obtaining conservation easements or other habitat protection agreements with neighboring landowners designed to enhance the existing plover protection and recovery.”⁹⁴ The Applicant’s proposal to evaluate the feasibility of obtaining conservation easements does not constitute an effective coordination program. As a result, the HPP must identify definitive actions the Applicant will take to assist State Parks and Sand City in protecting the regional snowy plover population.

Adaptive Management

The Draft HPP indicated the Applicant would prepare an adaptive management plan.⁹⁵ The revised HPP, however, has no mention of an adaptive management plan. An

⁸⁹ Revised HPP, p. 4-4.

⁹⁰ Revised HPP, p. 4-22.

⁹¹ Baillie SR, WJ Sutherland, SN Freeman, RD Gregory, E Paradis. 2000. Consequences of Large-Scale Processes for the Conservation of Bird Populations. *Journal of Applied Ecology* 37(Suppl. 1):88-102.

⁹² United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

⁹³ California Coastal Commission. 2014. CDP Application Hearing, Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. California Department of Parks and Recreation, 2014 Apr 1 letter to the California Coastal Commission.

⁹⁴ Revised HPP, p. 4-22.

⁹⁵ EMC Planning Group Inc. 2013 Oct. Habitat Protection Plan. p. 4-16.

adaptive management plan is needed, especially because the HPP points to adaptive management as the solution for rectifying undesired outcomes (e.g., if plover nesting does not increase on the site).⁹⁶

The U.S. Department of the Interior defines adaptive management as “a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood.”⁹⁷ The Applicant’s proposal to implement “adaptive management” has minimal value as a mitigation strategy because there are few uncertainties associated with the outcomes of the proposed management actions (i.e., installing nesting protection zones within a matrix of development and disturbance activities). As discussed previously, numerous scientific studies have documented the response of snowy plovers to urban development and anthropogenic sources of disturbance, even when nest sites are protected.

In discussing adaptive management, Morrison (2002) added:

1. “The concept of adaptive management or adaptive resource management is centered primarily on monitoring the effects of land-use activities on key resources and then using the monitoring results as a basis for modifying those activities to achieve the project’s goals (Walters 1986; Lancia et al. 1996).”
2. “Adaptive management is not a trial-and-error approach.”
3. “Attempting to fix a problem after implementation is quite different from developing an action plan prior to the start of a project.”
4. “Regardless of the specific approach, adaptive management offers a structure whereby clear goals are established and then monitored—and specific actions for responding to deviations are planned at the *outset* of the project.”⁹⁸

The Applicant’s approach violates these concepts by: (1) proposing a trial-and-error approach; (2) allowing little flexibility in modifying land-use activities in response to monitoring results; and arguably, (3) assuming the problem (reduction in nesting and/or reproductive success) could be fixed after Project implementation.

The aforementioned issues are confounded because the revised HPP fails to establish appropriate goals—and specific actions for responding to deviations in meeting those goals—at the *outset* of the project (i.e., Morrison’s fourth concept). For example, the revised HPP states: [i]f plover nesting does not increase on the site, the need for adaptive management may be required.”⁹⁹ This cannot be accepted as a viable approach because

⁹⁶ Revised HPP, p. 4-34.

⁹⁷ Williams BK, RC Szaro, CD Shapiro. 2009. Adaptive Management: The U.S. Department of the Interior Technical Guide. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

⁹⁸ Morrison ML. 2002. Wildlife Restoration: Techniques for Habitat Analysis and Animal Monitoring. Island Press: Washington (DC).

⁹⁹ Revised HPP, p. 4-34.

the revised HPP does not identify any specific actions that would (or could) be implemented to meet the goal (i.e., an increase in plover nesting). If the Applicant continues to point to adaptive management as the solution, it must apply the concept correctly by developing specific hypotheses, thresholds that trigger changes in management practices, and other means for implementing the feedback loops that define the concept.

Monitoring Methods

Vegetation Performance Criteria

The revised HPP proposes permanent monitoring transects designed to cover a minimum of 5% of the revegetated area.¹⁰⁰ The revised HPP indicates: “data gathered from these transects will provide adequate assessments of the relative success of the restoration activities.”¹⁰¹ This statement is not supported by evidence or analysis (e.g., power analysis).¹⁰² Based on my review of the sampling data recently collected by Rana Creek, line transects that are limited to 5% of the revegetated area would not provide sufficient data for meaningful analysis. Rana Creek’s data demonstrate considerable variance in the amount of vegetative cover at the Project site.¹⁰³ Indeed, the revised HPP acknowledges that: “due to the dynamic nature of the beach strand area and tidal action during storm events, percent cover of vegetation will vary widely [in Management Area 1].”¹⁰⁴

The revised HPP indicates: “[v]ertical color infrared aerial photographs will be obtained of the project site in the fifth year of the project. These aerials will provide documentation of vegetation cover over the entire site.”¹⁰⁵ Aerial photographs that document vegetation cover over the entire site provide more reliable data than sampling data collected from 5% of the site. As a result, the aerial photographs should be used to evaluate success in meeting the vegetation performance criteria (percent cover by plant community).

Snowy Plover Habitat

The revised HPP states: “[t]he approved biologist will monitor the success of the protection, management and restoration efforts annually.”¹⁰⁶ It further states: “[a]

¹⁰⁰ Revised HPP, pp. 4-8, -9, and -11.

¹⁰¹ Revised HPP, p. 4-28.

¹⁰² Power analysis is used to determine the sample size required to detect an effect of a given size with a given degree of confidence.

¹⁰³ See *standard deviations and standard errors reported in*: Rana Creek. 2016 Jan 19. Monterey Bay Shores Supplemental Addendum to Landscape Plan. Tables 2 and 4.

¹⁰⁴ See *footnote to* Revised HPP, Table 2.

¹⁰⁵ Revised HPP, p. 4-30.

¹⁰⁶ Revised HPP, p. 4-33.

comprehensive assessment of the efficacy of the habitat restoration program, especially as it relates to efforts to protect and enhance nesting habitat for the western snowy plover, will be completed five years following the commencement of resort operations.”¹⁰⁷ These statements are vague and do not ensure the proposed monitoring and assessment would provide the information needed to protect plovers and inform adaptive management procedures. Specifically, the revised HPP does not identify the variables that would be monitored (or assessed) or how those variables would be measured. In addition, the revised HPP fails to establish quantitative triggers for adaptive management based on the monitoring results. As a result, the proposed monitoring and assessment do not ensure the Applicant would achieve the desired outcome (i.e., habitat protection and enhancement).

The revised HPP provides conflicting information on the Applicant’s maintenance program. It first states: “[a] maintenance program providing recommended activities for maintaining the habitat areas in perpetuity is addressed in the Landscape Plan and will be included in the HPP.”¹⁰⁸ However, it subsequently states the maintenance program “will be prepared and included in the five-year assessment report.”¹⁰⁹

Performance Security

The revised HPP proposes a comprehensive assessment of the habitat restoration program five years after commencement of resort operations.¹¹⁰ As a result, the Project will be completed before habitat restoration efforts can be deemed successful.¹¹¹ The revised HPP must establish a mechanism that guarantees the success of the habitat restoration program. Typically, this entails a performance security that is large enough to complete the restoration program or purchase other habitat in the event the Applicant fails to successfully complete the work in accordance with the approved agreement.

The Snowy Plover Trust Fund Description in the HPP is Totally Inadequate

The trust fund to be established at some indefinite future date for snowy plover habitat restoration and protection totally lacks detail and contains no firm commitments to do anything to protect the plovers. The monetary commitment of the Applicant is vague—only an unquantified portion of the “net room rentals” from the resort would be contributed to the fund. Not only is the portion to be set aside unquantified, but there is no definition of “net room rentals.” Likewise, Sand City’s “commitment” to contribute an amount equal to one half percent of the transient occupancy tax has not yet been

¹⁰⁷ Revised HPP, p. 4-30.

¹⁰⁸ *Ibid.*

¹⁰⁹ *Ibid.*

¹¹⁰ *Ibid.*

¹¹¹ Revised HPP, p. 4-46.

approved by the City Council.¹¹² Consequently, the revised HPP must establish the minimum amount the Applicant will contribute to the trust fund annually.

The revised HPP indicates: (a) 15% of the annual trust funds expended would be used for on-site snowy plover management, protection, and recovery efforts;¹¹³ and (b) 15% of the trust funds would be dedicated to assist Sand City in “covering costs of the coordination effort, including all conservation, adaptive management and/or avoidance measures determined to be needed.”¹¹⁴ The revised HPP does not identify the fate of the remaining 70% of the funds. Furthermore, there is no requirement that the funds be expended annually, nor is there any carryover provision requiring that funds not spent in any one year be spent in subsequent years. Finally, it is not clear whether costs pertaining to “management” that could be paid from the trust fund would include payment for the biological monitor and performance of surveys (already being performed by Point Blue), possibly precluding using the trust fund moneys for conservation, adaptive management, or avoidance measures.

The purposes of the fund for snowy plover protection are stated too narrowly and should be expanded to include acquisition of compensation habitat for snowy plovers, and for off-site snowy plover protection and recovery projects, as deemed necessary by the USFWS and California State Parks. The revised HPP fails to provide any projections of the “net room rental revenues” or the proceeds anticipated from the transient occupancy tax. This makes it impossible to determine whether these funding sources would be adequate to achieve the desired outcomes (e.g., snowy plover management and protection) over the life of the project, which could be decades.

It is completely unsatisfactory for the trust fund to be administered by Sand City and a “local environmental group” not further described, but presumably chosen by Sand City and/or the developer. The fund should be administered by the California Coastal Conservancy, in consultation with the USFWS and Western Snowy Plover Working Group, which have the requisite knowledge and expertise to see that the funds are expended effectively and for the purposes intended. Criteria for administration of the fund must be specified by staff in its review, and must incorporate an organization or governmental entity with a track record in western snowy plover protection and recovery efforts, or an entity like the California Coastal Conservancy that would administer the funds in consultation with appropriate wildlife agencies.

The HPP cannot be approved until the trust fund is firmly established with all missing details provided, including the amount of money that would be generated and expended, and the governance structure that would ensure input from agencies and entities with expertise in managing and monitoring western snowy plovers.

¹¹² Revised HPP, p. 4-43.

¹¹³ Revised HPP, p. 4-44.

¹¹⁴ Revised HPP, p. 4-22.

Seasonal Nesting Protection Zones

The revised HPP indicates: “[t]he approved biologist will establish the extent of the proposed seasonal nesting protection zones based on previously documented nesting history, current site conditions and current plover activity, if any, balanced with public lateral access requirements and objectives.”¹¹⁵ The *extent* of protection zones must also be based on scientific data pertaining to: (a) the spatial scale at which plovers select nesting habitats, and (b) the buffer distance needed to minimize human disturbance to nesting plovers. Those data indicate plovers select nest sites surrounded by approximately 100 meters (328 feet) of relatively open habitat, and that seasonal nesting protection zones must exclude humans within a 100-meter buffer around the nest site.¹¹⁶

The revised HPP further indicates:

If the approved biologist identifies multiple plover nests, the seasonal or dynamic nesting protection zones may be relocated or expanded, if necessary, for the protection of the plover nest(s), balancing public access and the two resort accesses with plover protection and recovery. In such an event, if necessary, additional expansion areas of up to two acres will be provided within the area bounded by the 10 MSL contour line on the sandy beach and the two resort beach trails on the north and south (with a 25 foot buffer), respectively, while facilitating lateral and vertical beach access.¹¹⁷

The proposed measure does not ensure protection of plover nests. To protect plover nests, the configuration of additional nesting protection zones must be based on the location of the nest site(s)—not artificial constraints such as the 10 MSL (mean sea level) contour line and beach access trails. For example, the 25-foot buffer proposed in the revised HPP would be insufficient to prevent nest abandonment if the nest is located near the beach trail. To sufficiently protect nest sites, the revised HPP must incorporate trail closures and other mechanisms for excluding human activity within 100 meters of nest sites.

Regulation of Beach Activities

According to the revised HPP, the approved biologist shall be authorized to manage access to the beach and management areas, impound unrestrained pets and otherwise ensure the Dune Restoration Plan is followed.¹¹⁸ This measure is too vague to be considered an effective mitigation strategy. The revised HPP must identify the specific regulations that will be established and enforced at the Project site.

¹¹⁵ Revised HPP, p. 4-31.

¹¹⁶ Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. *Condor* 112(3):507-510.

¹¹⁷ Revised HPP, p. 4-21.

¹¹⁸ Revised HPP, p. 4-19.

Pet Restrictions

The revised HPP indicates the approved biologist will establish pet restrictions.¹¹⁹ Nowhere, however, does the HPP identify what those restrictions will be or how they will be enforced, other than signage “requiring pets to be leashed.”¹²⁰ This is a significant issue because dogs on beaches can pose a serious threat to western snowy plovers during both the breeding and nonbreeding seasons.¹²¹ Unleashed pets, primarily dogs, sometimes chase snowy plovers and destroy nests.¹²² Repeated disturbances by dogs can interrupt brooding, incubating, and foraging behavior of adult western snowy plovers and cause chicks to become separated from their parents.¹²³ Pet owners frequently allow their dogs to run off-leash even on beaches where it is clearly signed that dogs are not permitted or are only permitted if on a leash.¹²⁴ Enforcement of pet regulations on beaches by the managing agencies is often lax or nonexistent.¹²⁵ For example, managers of the Coal Oil Point Reserve in Santa Barbara County noted that posting of the leash law and attempts to educate pet owners were ineffective at reducing disturbance to snowy plovers.¹²⁶

Beach-raking

The revised HPP indicates beach-raking will be prohibited during the western snowy plover breeding season.¹²⁷ Beach-raking and debris (e.g., driftwood) collection remove habitat features for both plovers and their prey, and precludes nests from being established.¹²⁸ Therefore, allowing beach-raking during the non-breeding season would adversely affect plovers during both seasons (breeding and non-breeding).

Litter Control

The revised HPP states: “a litter control plan is required as part of this HPP and the corresponding predator management plan.”¹²⁹ However, the HPP does not provide the

¹¹⁹ *Ibid.*, p. 4-20.

¹²⁰ *Ibid.*, p. 4-33.

¹²¹ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

¹²² *Ibid.*

¹²³ *Ibid.*

¹²⁴ *Ibid.*

¹²⁵ *Ibid.*

¹²⁶ University of California, Santa Barbara Natural Reserve System. 2001. Snowy Plover Management Plan (SPMP) – 2001. Available at: <<http://coaloilpoint.ucnr.org/SnowyPloverProgram.html>>. (Accessed 16 Nov 2014). See also Lafferty KD, D Goodman, CP Sandoval. 2006. Restoration of breeding by snowy plovers following protection from disturbance. *Biodiversity and Conservation* 15:2217-2230.

¹²⁷ Revised HPP, p. 4-20.

¹²⁸ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

¹²⁹ Revised HPP, p. 4-20.

litter control plan. The only information provided in the HPP is that: (a) SNG will install signs informing visitors that they are required to “pack out” their garbage; (b) refuse containers will require lids that tightly close at all beach access points; and (c) there will be “regular” trash removal.¹³⁰ These measures are insufficient to prevent direct harm to snowy plovers and their habitats due to the accumulation of litter. Any attempt to maintain snowy plover habitat must include periodic sweeps of the Project area to remove litter.

Impacts to Wintering Snowy Plovers and their Habitat

The revised HPP fails to address impacts to wintering snowy plovers. Sandy beaches in California collectively provide wintering habitat for thousands of interior-breeding and coastal western snowy plovers.¹³¹ Overwinter survival is conditional upon the quality and composition of habitat at wintering sites.¹³² Indeed, the long-term protection of breeding *and wintering* plovers and their habitat are required recovery components.¹³³ The loss of extant high-quality wintering habitat would intensify population decline.¹³⁴

McDonald et al. (2010) created a habitat suitability model for the western snowy plover in central California. The model results, which were validated by nest site and historic data, provide the basis for a strong argument that “take,” as defined under the Endangered Species Act, is regularly occurring to wintering populations of western snowy plovers at sites that are not managed for the species.¹³⁵

Impacts to Other Taxa

Black Legless Lizard

The black legless lizard is a California Species of Special Concern. It has a state rank of S2, which means it is: “imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.”¹³⁶ Although the revised HPP acknowledges black legless lizards are most abundant in dune habitats, and although the species has been detected immediately adjacent to the Project site, the revised HPP does

¹³⁰ *Ibid.*

¹³¹ MacDonald B, T Longcore, S Dark. 2010. Habitat suitability modeling for Western Snowy Plover in Central California. The Urban Wildlands Group, Los Angeles, California, 129 pp.

¹³² *Ibid.*

¹³³ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

¹³⁴ MacDonald B, T Longcore, S Dark. 2010. Habitat suitability modeling for Western Snowy Plover in Central California. The Urban Wildlands Group, Los Angeles, California, 129 pp.

¹³⁵ *Ibid.*

¹³⁶ California Department of Fish and Wildlife, Natural Diversity Database. January 2016. Special Animals List. Periodic publication. 51 pp. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline>.

not include any measures to avoid and minimize direct impacts to legless lizards during Project construction.^{137,138}

The revised HPP indicates no black legless lizards have been found on the Project site.¹³⁹ This information is misleading. The black legless lizard is a secretive, fossorial organism that is rarely detected aboveground.¹⁴⁰ As a result, specialized techniques (e.g., raking suitable substrates) are generally required to identify presence of the species. I could not find any evidence that those techniques have ever been implemented at the Project site. As a result, the failure to detect legless lizards at the Project site is not evidence the species is absent. Because the Project site contains a habitat type commonly occupied by the species, and because the species has been documented on adjacent properties, there is a high likelihood of the species occurring at the Project site.

EXPECTED CONSEQUENCES OF THE PROJECT

Direct Loss of Snowy Plover Habitat

As the California Coastal Commission acknowledges, the Project would directly impact designated critical habitat and “all of the foredune vegetation used by nesting shorebirds, including ‘historic nesting habitat’ for the western snowy plover.”¹⁴¹

Functional Loss of Snowy Plover Habitat

Primary constituent elements (PCEs) are the physical and biological features of a landscape that a species needs to survive and reproduce. At a minimum, the Project would eliminate PCE 4 for the western snowy plover, which is:

Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior.¹⁴²

The loss of PCE 4 would result in functional habitat loss, even if the habitat remains intact. Functional habitat loss not only reduces the amount of available habitat, but it also causes habitat fragmentation. Currently, the shoreline beach area at the Project site is

¹³⁷ Revised HPP, p. 3-13.

¹³⁸ Data provided to S Cashen on 10 Feb 2015 by A Chang, Biogeographic Data Branch, California Department of Fish and Wildlife.

¹³⁹ Revised HPP, p. 3-13.

¹⁴⁰ Jennings MR, MP Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Final Report to the California Department of Fish and Game. *See also* California Department of Fish and Game, California Interagency Wildlife Task Group. 2000 [update]. California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.

¹⁴¹ *Ibid*, p. 97.

¹⁴² Federal Register. 2012 Jun 19. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover; Final Rule. Federal Register 77(118):36728-36869.

part of an unbroken stretch of sandy beach extending roughly 13 miles from the Salinas River to the Monterey Harbor, and the dunes at the site are part of one of the largest remaining intact coastal dune fields in California.¹⁴³

Direct and indirect impacts associated with the Project would result in a net loss of habitat that is *essential to plover recovery efforts and the success of the species*.¹⁴⁴

Human Use Will Increase Substantially

Beach recreational activities tend to cluster around entrances and parking facilities.¹⁴⁵ Currently, disturbance to plovers at the Project site and surrounding beaches is limited by the absence of parking areas and beach access points.¹⁴⁶ However, as the California Coastal Commission has acknowledged, once the Project is developed it “will provide a new coastal priority” and “the site is likely to become a popular place to access the shoreline for area residents and visitors alike, given the easy access from the highway and readily available parking.”¹⁴⁷ The scientific literature is unequivocal regarding the adverse effects that humans, and human-related activities, have on snowy plovers.

Protection Measures Will Not Be Effective, Especially Without Enforcement

Voluntary compliance with snowy plover protection measures is often low.¹⁴⁸ This is due to a person’s tendency to view his or her actions in isolation, and as doing no immediate harm. Although human disturbances are generally non-lethal and temporary, the cumulative effects of disturbance to snowy plovers can be significant.¹⁴⁹

The revised HPP does not include any enforcement measures to ensure compliance with its proposed protection measures. Several studies have demonstrated the ineffectiveness of snowy plover protection measures lacking an enforcement mechanism to promote compliance. For example, managers of the Coal Oil Point Reserve in Santa Barbara County noted that posting of the leash law and attempts to educate pet owners were

¹⁴³ California Coastal Commission. 2014. CDP Application Hearing, Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. pp. 35, 90, and 118.

¹⁴⁴ *Ibid*, p. 98.

¹⁴⁵ ESA PWA. 2012. Evaluation of Erosion Mitigation Alternatives for Southern Monterey Bay. Technical Report prepared for Monterey Bay Sanctuary Foundation and The Southern Monterey Bay Coastal Erosion Working Group. 216 pp.

¹⁴⁶ California Coastal Commission. 2014. CDP Application Hearing, Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. p. 124.

¹⁴⁷ *Ibid*, pp. 124 and 125.

¹⁴⁸ Lafferty KD. 2001. Human disturbance to wintering western snowy plovers at a southern California beach. *Biological Conservation* 10:1-14. *See also* Lafferty KD. 2001. Disturbance to wintering western snowy plovers. *Biological Conservation* 101:315-325.

¹⁴⁹ Lafferty KD, D Goodman, CP Sandoval. 2006. Restoration of breeding by snowy plovers following protection from disturbance. *Biodiversity and Conservation* 15:2217-2230.

ineffective at reducing disturbance to snowy plovers.¹⁵⁰ However, compliance with the leash law increased dramatically after police began patrolling the beach and ticketing owners with unleashed dogs.¹⁵¹ Nevertheless, although leashing makes it difficult for pets to chase birds, and it reduces the probability of disturbance and the number of birds per disturbance, leashed pets still disturb birds.¹⁵²

Take Will Occur

The California Coastal Commission, USFWS, Point Blue, and others all have concluded that the Project is likely to result in the “take” of snowy plovers, despite the Applicant’s preparation of a HPP.¹⁵³ Based on my review of dozens of peer-reviewed publications pertaining to the effects of disturbance on snowy plovers, I believe it is inevitable that the Project would result in take, as defined by the Endangered Species Act. The Applicant’s HPP is not a viable substitute for a federally approved habitat conservation plan (HCP) and a federally issued incidental take permit.

Snowy Plovers Will Abandon the Project Site and Adjacent Areas

Ultimately, the best available scientific information suggests snowy plovers will stop nesting on, and in the vicinity of, the Project site. Several other biologists, the USFWS, and the California Coastal Commission have reached this same conclusion.¹⁵⁴ Most notably, the Coastal Commission concluded the Project has the potential to *forever displace plovers* from the Project site.¹⁵⁵

CONCLUSION

The revised HPP does not resolve the issues discussed in the USFWS’s April 2014 comment letter. Based on my review of dozens of peer-reviewed publications pertaining

¹⁵⁰ *Ibid.* See also University of California, Santa Barbara Natural Reserve System. 2001. Snowy Plover Management Plan (SPMP) – 2001. Available at: <<http://coaloilpoint.ucnrs.org/SnowyPloverProgram.html>>. (Accessed 16 Nov 2014).

¹⁵¹ *Ibid.*

¹⁵² Lafferty KD. 2001. Human disturbance to wintering western snowy plovers at a southern California beach. *Biological Conservation* 10:1-14. See also Lafferty KD. 2001. Disturbance to wintering western snowy plovers. *Biological Conservation* 101:315-325.

¹⁵³ California Coastal Commission. 2014. Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. p. 6. See also USFWS, 2014 Apr 7 letter to the California Coastal Commission, p. 4. See also Point Blue Conservation Science, 2014 Apr 1 letter to the California Coastal Commission, pp. 1 and 2.

¹⁵⁴ See Attachments to Staff Report Addendum for April 8, 2014 for April 9, 2014 Hearing: (a) USFWS, 2014 Apr 7 letter to the California Coastal Commission, pp. 4 and 7. (b) USFWS, 1999 Sep 30 letter to City of Sand City, pp. 1-5. See also K. Neuman 1998 May 10 letter to City of Sand City regarding Monterey Bay Shores Coastal Resort and Mixed Use Project, p. 3.

¹⁵⁵ California Coastal Commission. 2014. CDP Application Hearing, Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. p. 98.

to the effects of disturbance on snowy plovers, I believe it is inevitable that the Project would result in take, as defined by the Endangered Species Act. As a result, I concur with the USFWS that the Applicant should prepare a HCP in support of an application for an incidental take permit.¹⁵⁶

Sincerely,



Scott Cashen, M.S.
Senior Biologist

¹⁵⁶ *Ibid.*

Appendix A: Status of the Western Snowy Plover and Existing Threats to the Population

STATUS OF THE WESTERN SNOWY PLOVER

Rangewide and Regional Status

The western snowy plover (*Charadrius nivosus nivosus*) is one of the least numerous shorebirds in North America.¹⁵⁷ Historically, thousands of snowy plovers nested along the California coast.¹⁵⁸ By 1980 the snowy plover had disappeared from significant parts of its coastal California breeding range, and biologists estimate the breeding population along the coast has now dwindled to less than 1,500 birds.¹⁵⁹

The Pacific coast population of the western snowy plover was federally listed as threatened in 1993. In 2004 the U.S. Fish and Wildlife Service (USFWS) reevaluated the status of the Pacific coast population in response to a petition to have the population delisted. Based on that status review, the USFWS concluded the Pacific coast population should remain listed as threatened, and in 2007 it completed a recovery plan for the species.

The Pacific coast population of the western snowy plover has continued to decline despite publication of the recovery plan and protection under the Endangered Species Act. Point Blue Conservation Science (in collaboration with the USFWS and California Department of Parks and Recreation) has been monitoring the status of nesting snowy plovers along the shores of Monterey Bay since 1984, and on small pocket beaches in northern Santa Cruz County since 1988.¹⁶⁰ Point Blue Conservation Science's (Point Blue) report for the 2013 breeding season concluded:

Plovers experienced another year of subpar breeding success in the Monterey Bay area in 2013. Clutch hatching rate was 54% and chick fledging rate 31% below the prior 14-year average. As a result, the total of 116 fledges was 51% lower than the average of the prior 14 years. The consequence of the low number of fledglings produced in 2013 will likely be a smaller breeding population in the Monterey Bay area in 2014. One fledged young per male is necessary to sustain a population experiencing average mortality levels but only 0.6 chicks per male fledged in 2013.¹⁶¹

¹⁵⁷ Morrison RIG, BJ McCaffery, RE Gill, SK Skagen, SL Jones, GW Page, CL Gratto-Trevor, BA Andres. 2006. Population estimates of North American shorebirds, 2006. Wader Study Group Bulletin 111:66-84.

¹⁵⁸ WesternSnowyPlover.org. n.d. Western Snowy Plover Natural History and Population Trends. *Adapted from U.S. Fish and Wildlife Western Snowy Plover Pacific Coast Population Draft Recovery Plan*, May 2001. Available at: <http://www.westernsnowyplover.org/pdfs/plover_natural_history.pdf> (Accessed 14 Nov 2014). *See also* Thomas SM, JE Lyons, BA Andres, EE T-Smith, E Palacios, JF Cavitt, JA Royle, SD Fellows, K Maty, WH Howe, E Mellink, S Melvin, T Zimmerman. 2012. Population Size of Snowy Plovers Breeding in North America. *Waterbirds* 35(1):1-14.

¹⁵⁹ *Ibid.*

¹⁶⁰ Point Blue Conservation Science. 2014. Nesting of the Snowy Plover in the Monterey Bay Area, California in 2013. Point Blue Conservation Science, Petaluma (CA). 32 pp.

¹⁶¹ *Ibid.*

Poor reproductive success has contributed to the decline and low population size of the western snowy plover, especially where it breeds on coastal beaches used by humans for recreation.¹⁶² Due to consistently low productivity on ocean beaches, the Pacific coast population of the western snowy plover has become a management-dependent species requiring provision of undisturbed nesting areas and protection from predators to sustain the breeding population.¹⁶³

Status of Snowy Plovers and Critical Habitat in the Project Area

Snowy plovers have been observed using the Project site for nesting, foraging, and overwintering for more than 25 years.¹⁶⁴ Since 1990, Point Blue has monitored 37 nests on the Project site and numerous nests on the adjoining properties (e.g., Fort Ord Dunes State Park).¹⁶⁵ Plovers nested (or attempted to nest) on the Project site every year between 2012 and 2015.¹⁶⁶

The Project site not only supports snowy plovers, but also contains federally designated critical habitat for the species. Critical habitat is defined as “a specific geographic area that is essential for the conservation of a threatened or endangered species and that may require special management and protection.”¹⁶⁷ Within designated critical habitat, the USFWS protects areas that provide primary constituent elements (PCEs), which are the physical and biological features of a landscape that a species needs to survive and reproduce.¹⁶⁸ PCEs of critical habitat for the western snowy plover include:

1. Areas that are below heavily vegetated areas or developed areas and above the daily high tides;
2. Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or lowwater flow and annual high tide or highwater

¹⁶² Colwell MA, CB Millett, JJ Meyer, JN Hall, SJ Hurley, SE McAllister, AN Transou, RR LeValley. 2005. Snowy Plover reproductive success in beach and river habitats. *Journal of Field Ornithology* 76(4):373-382.

¹⁶³ Colwell M, NS Burrell, MA. Hardy, K Kayano, JJ Muir, WJ Pearson, SA Peterson, KA Sesser. 2010. Arrival times, laying dates, and reproductive success of Snowy Plovers in two habitats in coastal northern California. *Journal of Field Ornithology* 81(4):349-360. *See also* Point Blue Conservation Science. 2014. Nesting of the Snowy Plover in the Monterey Bay Area, California in 2013. Point Blue Conservation Science, Petaluma (CA). 32 pp.

¹⁶⁴ California Coastal Commission. 2014. CDP Application Hearing, Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. p. 98.

¹⁶⁵ Point Blue Conservation Science. 2014 Apr 1. Letter to the California Coastal Commission. Attachment to Staff Report Addendum for April 8, 2014 for April 9, 2014 Hearing.

¹⁶⁶ *Ibid.* *See also* Point Blue Conservation Science. 2015 Aug 20. Letter submitted to the California Coastal Commission regarding the SNG Dune Restoration Plan. *See also* 2014 Apr 9 email communication from Amy Palkovic, California Department of Parks and Recreation, to Jacob Martin, USFWS.

¹⁶⁷ USFWS. 2002. Critical Habitat: What is it? Publication 703/358 2105. Available at: <<http://endangered.fws.gov>>. (Accessed 14 Nov 2014).

¹⁶⁸ *Ibid.*

- flow, subject to inundation but not constantly under water, that support small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, that are essential food sources;
3. Surf- or water-deposited organic debris, such as seaweed (including kelp and eelgrass) or driftwood located on open substrates that supports and attracts small invertebrates described in PCE 2 for food, and provides cover or shelter from predators and weather, and assists in avoidance of detection (crypsis) for nests, chicks, and incubating adults; and
 4. Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior.¹⁶⁹

The Project site currently provides these PCEs.¹⁷⁰

Threats and Types of Impacts to the Species

The primary threat range-wide to Pacific coast population of the western snowy plover is decreased habitat availability.¹⁷¹ Specific causes and effects vary geographically, but include fragmentation, degradation, and loss of habitat due to expansion of urban development and increased recreational beach use.¹⁷² These adverse effects often are exacerbated by various anthropogenic influences that benefit or attract predators of the snowy plover.¹⁷³

The Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (Recovery Plan) specifically identifies the construction of homes, resorts, and parking lots on coastal sand dunes as an irrevocable type of habitat loss for western snowy plovers.¹⁷⁴ In addition to causing direct loss of habitat, urban development causes a suite of other direct and indirect impacts that adversely effect plovers. For example, increased development increases human use of the beach, thereby increasing disturbance to plovers.¹⁷⁵ In addition, the value of breeding and wintering habitat is diminished by increased levels of illumination at night (e.g., building and parking lot lights); increased

¹⁶⁹ Federal Register. 2012 Jun 19. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover; Final Rule. Federal Register 77(118):36728-36869.

¹⁷⁰ USFWS. 2014 Apr 7. Letter to the California Coastal Commission. Attachment to Staff Report Addendum for April 8, 2014 for April 9, 2014 Hearing.

¹⁷¹ MacDonald B, T Longcore, S Dark. 2010. Habitat suitability modeling for Western Snowy Plover in Central California. The Urban Wildlands Group, Los Angeles, California, 129 pp. *See also* United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

¹⁷² United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

¹⁷³ *Ibid.*

¹⁷⁴ *Ibid.*

¹⁷⁵ *Ibid.*

sound and vibration levels; and pollution drift (e.g., pesticides).¹⁷⁶ Finally, activities such as beach raking and debris (e.g., driftwood) collection remove habitat features for both plovers and their prey, and precludes nests from being established.¹⁷⁷

INCREASE IN HUMAN DISTURBANCE

Disturbance by humans and their pets is a key factor in reducing or eliminating snowy plover nesting habitat.¹⁷⁸ Humans and dogs negatively impact plovers by causing: (1) destruction of nests and chicks; (2) increased disturbance leading to reduced incubation or brooding constancy; and (3) decreased foraging opportunities by adults and chicks.¹⁷⁹

Direct mortality can occur when humans or dogs inadvertently step on chicks.¹⁸⁰ More commonly, indirect mortality occurs because high levels of human activity hinder normal brooding, foraging, and sheltering activities. Snowy plover chicks are precocial (well-developed). After hatching, the male bird cares for the chicks for approximately 28 days.¹⁸¹ However, the chicks quickly must learn how to feed themselves, balance thermoregulatory needs, and avoid predators without assistance. Human activities can be especially detrimental to survivorship during this critical period in the species' life cycle. When a brooding adult is disturbed, it often leaves chicks exposed, and hence vulnerable to predation, inclement weather, and reduced foraging time.¹⁸² Human activity may also cause brood movement, resulting in the separation of one or more chicks from the rest of the brood.¹⁸³ In addition, movement into adjacent territories can result in attacks on the young by other adult plovers, resulting in chick death and abandonment.¹⁸⁴

Because anthropogenic disturbance is the primary threat to the western snowy plover, numerous biologists have concluded that protecting occupied sites from human disturbance may be essential to the conservation and recovery of the species.¹⁸⁵ In the

¹⁷⁶ *Ibid.*

¹⁷⁷ *Ibid.*

¹⁷⁸ MacDonald B, T Longcore, S Dark. 2010. Habitat suitability modeling for Western Snowy Plover in Central California. The Urban Wildlands Group, Los Angeles, California, 129 pp.

¹⁷⁹ Colwell MA, CB Millett, JJ Meyer, JN Hall, SJ Hurley, SE McAllister, AN Transou, RR LeValley. 2005. Snowy Plover reproductive success in beach and river habitats. *Journal of Field Ornithology* 76(4):373-382. *See also* United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

¹⁸⁰ *Ibid.*

¹⁸¹ Colwell MA, SJ Hurley, JN Hall, SJ Dinsmore. 2007. Age-Related Survival and Behavior of Snowy Plover Chicks. *Condor* 109(3):638-647.

¹⁸² *Ibid.*

¹⁸³ Ruhlen TD, S Abbott, LE Stenzel, GW Page. 2003. Evidence that human disturbance reduces snowy plover chick survival. *Journal of Field Ornithology* 74(3):300-304.

¹⁸⁴ *Ibid.*

¹⁸⁵ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751. *See also*

subsequent section I briefly summarize several types of anthropogenic disturbance that would increase substantially after Project development.

Recreation

The increasing level of human recreation was cited as a major threat to the breeding success of the Pacific coast population of the western snowy plover at the time of listing.¹⁸⁶ Since then, biologists from the USFWS have examined specific locales and determined that recreation has been causing the "take" of snowy plovers.¹⁸⁷

Pedestrians-

Pedestrians (e.g., beach walkers and joggers) can cause both direct mortality and harassment of western snowy plovers.¹⁸⁸ Pedestrians have been known to inadvertently step on eggs and chicks, deliberately take eggs from nests, and remove chicks from beaches, erroneously thinking they have been abandoned.¹⁸⁹ People also may cause broods of western snowy plovers to run away from favored feeding areas. Trash left on the beach by pedestrians is known to attract snowy plover predators.¹⁹⁰

Beach-related recreational activities that are concentrated in one location (e.g., sunbathing, picnicking, sandcastle building, birding, and photography) can negatively affect incubating adult western snowy plovers when those activities occur too close to nests.¹⁹¹ Recreational activities that occur in the wet sand area can adversely affect western snowy plovers when they disturb plover adults or broods, which feed at the edge of the surf along the wrack line.¹⁹²

Dogs-

Dogs on beaches can pose a serious threat to western snowy plovers during both the breeding and nonbreeding seasons.¹⁹³ Unleashed pets, primarily dogs, sometimes chase snowy plovers and destroy nests.¹⁹⁴ Repeated disturbances by dogs can interrupt

Brindock KM, MA Colwell. 2011. Habitat Selection by Western Snowy Plovers During the Nonbreeding Season. *Journal of Wildlife Management* 75(4):786-793.

¹⁸⁶ *Ibid.*

¹⁸⁷ University of California, Santa Barbara Natural Reserve System. 2001. Snowy Plover Management Plan (SPMP) – 2001. Available at: <<http://coaloilpoint.ucnrs.org/SnowyPloverProgram.html>>. (Accessed 16 Nov 2014).

¹⁸⁸ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

¹⁸⁹ *Ibid.*

¹⁹⁰ *Ibid.*

¹⁹¹ *Ibid.*

¹⁹² *Ibid.*

¹⁹³ *Ibid.*

¹⁹⁴ *Ibid.*

brooding, incubating, and foraging behavior of adult western snowy plovers and cause chicks to become separated from their parents.¹⁹⁵ Pet owners frequently allow their dogs to run off-leash even on beaches where it is clearly signed that dogs are not permitted or are only permitted if on a leash.¹⁹⁶ Enforcement of pet regulations on beaches by the managing agencies is often lax or nonexistent.¹⁹⁷

Debris Collection-

Central to southern California beaches are naturally littered with marine debris, wood fragments, and rocks. These habitat elements provide numerous benefits to snowy plovers. Abundant coastal debris appears to help camouflage birds and hide movements to nests.¹⁹⁸ Objects also may serve as landmarks to snowy plover or disrupt their predators.¹⁹⁹ Moreover, vegetation or debris may create windbreaks or shield birds.²⁰⁰ Research has shown that western snowy plover nest sites, density, and success are strongly correlated with the presence of debris.²⁰¹

Driftwood in particular can be an important component of western snowy plover breeding and wintering habitat. Driftwood contributes to dune-building and adds organic matter to the sand as it decays.²⁰² Additionally, driftwood provides western snowy plovers with year-round protection from wind and blowing sand.²⁰³ Often, western snowy plovers build nests beside driftwood, so its removal may reduce the number of suitable nesting sites.²⁰⁴ Driftwood removed for firewood or decorative items can result in destruction of nests and newly-hatched chicks that frequently crouch by driftwood to hide from predators and people.²⁰⁵

Conversely, driftwood beach structures built by visitors provide perch sites for avian predators of western snowy plover chicks.²⁰⁶ Elevated perch sites increase hunting efficiency (i.e., greater chance of prey detection and attack success) of avian predators

¹⁹⁵ *Ibid.*

¹⁹⁶ *Ibid.*

¹⁹⁷ *Ibid.*

¹⁹⁸ Page GW, LE Stenzel, CA Ribic. 1985. Nest site selection and clutch predation in the snowy plover. *Auk* 102:347–353.

¹⁹⁹ MacDonald B, T Longcore, S Dark. 2010. Habitat suitability modeling for Western Snowy Plover in Central California. The Urban Wildlands Group, Los Angeles, California, 129 pp.

²⁰⁰ *Ibid.*

²⁰¹ *Ibid.*

²⁰² Washington Department of Fish and Wildlife. 1995. Washington state recovery plan for the snowy plover. Olympia, Washington. 87 pp.

²⁰³ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²⁰⁴ *Ibid.*

²⁰⁵ *Ibid.*

²⁰⁶ *Ibid.*

because the elevated perches provide increased visibility of the surrounding area.²⁰⁷ This increase in hunting efficiency can impact prey populations, potentially to the point of local extirpation, especially in places (e.g., coastal habitats) where few elevated, natural perches exist.²⁰⁸

Other Sources of Anthropogenic Disturbance

Other anthropogenic sources of disturbance that adversely affect snowy plovers are fishing, kite flying, and littering. The improper disposal of offal (waste parts of fish) and fishing bait attracts crows, ravens, and gulls, which are predators of western snowy plover eggs and chicks.²⁰⁹

Biologists believe plovers perceive kites as potential avian predators.²¹⁰ The reaction of western snowy plovers to kites at Ocean Beach in San Francisco, California, “ranged from increased vigilance while roosting in close proximity to the kite flying, to walking or running approximately 10 to 25 meters (33 to 82 feet) away and resting again while remaining alert.”²¹¹

Placement of litter, garbage, and debris in the coastal ecosystem can result in direct harm to western snowy plovers and degradation of their habitats.²¹² Litter and garbage feed predators and encourage their habitation at higher levels than would otherwise occur along the coast, making predators a greater threat to western snowy plovers.²¹³

PREDATION

Predation, by both native and nonnative species, has been identified as a major factor limiting western snowy plover reproductive success at many Pacific coast sites.²¹⁴

Predation, while predominantly a natural phenomenon, is exacerbated through the introduction of nonnative predators and unintentional human encouragement of larger populations of native predators (e.g., by providing supplemental food, water, and nest sites). Elevated predation pressures result from landscape-level alterations in coastal dune habitats that, in turn, now support increased predator populations within the immediate vicinity of nesting habitat for western snowy plovers.²¹⁵

²⁰⁷ Lammers WM, MW Collopy. 2007. Effectiveness of Avian Predator Perch Deterrents on Electric Transmission Lines. *Journal of Wildlife Management* 71(8):2752-2758.

²⁰⁸ *Ibid.*

²⁰⁹ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²¹⁰ *Ibid.*

²¹¹ *Ibid.*

²¹² *Ibid.*

²¹³ *Ibid.*

²¹⁴ *Ibid.*

²¹⁵ *Ibid.*

Domestic and feral cats are widespread predators. The threat of predation of western snowy plovers by cats increases when housing is constructed near western snowy plover breeding habitat.²¹⁶ As natural-appearing beaches continue to be surrounded by urban areas, western snowy plovers will increasingly be subjected to this predator in the future.

Signs

Signing and fencing of restricted areas on the beach may provide perches for avian predators of western snowy plover adults or chicks.²¹⁷ Although signs and fences are important conservation tools in many areas, land managers need to be aware that modifications to them may be necessary to deter use by predators.

Case Studies Substantiating the Effects of Disturbance

Numerous studies have demonstrated that human activities are affecting the survivorship, numbers, and activity patterns of western snowy plovers. Escofet and Espejel (1999) concluded the abundance and overall performance of the snowy plover was significantly lower at an urban-backed beach than at a dune-backed beach.²¹⁸ They also concluded that human encroachment has caused nesting snowy plovers to disappear from many coastal breeding locations in California.

For example, snowy plovers commonly bred at the Coal Oil Point Reserve (Reserve) in Santa Barbara County until the site was opened to public recreation in 1967. Lafferty (2001) estimated that public access to the beaches at the Reserve has resulted in a 16-fold increase in the rate of disturbance to snowy plovers compared to protected beaches.²¹⁹ Snowy plovers immediately stopped breeding at the Reserve when it was opened to recreation, and after three decades of increasing recreation, they permanently abandoned the site for wintering.²²⁰

Page et al. (1977) observed western snowy plovers' response to human disturbance at two coastal beaches where normal beach use ranged from light to heavy.²²¹ When humans

²¹⁶ *Ibid.*

²¹⁷ Hallett CE, BR Casler, MA Platt, MA Stern. 1995. Snowy plover distribution and reproductive success along the Oregon coast. Submitted to Oregon Department of Fish and Wildlife, Portland, OR; Coos Bay District, Bureau of Land Management, North Bend, OR; and Oregon Dunes National Recreation Area, Reedsport, OR. 40 pp.

²¹⁸ Escofet A, I Espejel. 1999. Conservation and management-oriented ecological research in the coastal zone of Baja California, Mexico. *Journal of Coastal Conservation* 5(1):43-50.

²¹⁹ Lafferty KD. 2001. Human disturbance to wintering western snowy plovers at a southern California beach. *Biological Conservation* 10:1-14.

²²⁰ *Ibid.* See also University of California, Santa Barbara Natural Reserve System. 2001. Snowy Plover Management Plan (SPMP) – 2001. Available at: <<http://coaloilpoint.ucnr.org/SnowyPloverProgram.html>>. (Accessed 16 Nov 2014).

²²¹ Page GW, JS Warriner, JC Warriner, RM Halbeisen. 1977. Status of the snowy plover on the northern California coast. Part I: Reproductive timing and success. California Department of Fish and Game

approached western snowy plovers, adults left their nests 78 percent of the time when people were within 50 meters (164 feet) and 34 percent of the time when people were over 100 meters (328 feet).

Warriner et al. (1986) studied 189 snowy plover nests near a beachfront development at the Pajaro River mouth on Monterey Bay.²²² People destroyed 26 of the 189 nests, all but one of them on the beach, by driving over them, stepping on them, or by taking the eggs. Twelve nests were lost to wind and four were lost to an unknown cause. Seventy-five percent of the clutches lost to wind, and all those that were lost to unknown causes, disappeared on weekends and holidays, although these days made up only 30% of the time nests were in existence. Because most human use of beaches occurred on holidays and weekends, the researchers believed people indirectly or directly caused many of the losses that were attributed to wind or unknown factors.

Ruhlen et al. (2003) examined the effects of human disturbance on snowy plover chick survival at Point Reyes National Seashore, California.²²³ Chick loss on weekends and holidays was 72% greater than expected in 1999 and 69% greater than expected in 2000. This suggested that increased human recreation on Point Reyes beaches over weekends and holidays negatively affected snowy plover chick survival.

Interaction Effects

Threats to sandy beaches seem imminent: sea-level rise as a response to global climate change will affect beach dynamics, diminish their width, and threaten ecosystem functionality.²²⁴ Processes that would be a natural response to a rising sea (cliff erosion and shoreline retreat) may not be able to keep pace in creating new beaches. Armored shores and other infrastructure built to constrain rising sea levels may destroy many remaining sandy beaches. Pacific Coast western snowy plovers and many other shorebirds rely on sandy beaches, and any historic habitat on sand and gravel bars within major river floodplains that could function as potential replacement habitat has in most instances already been eradicated by urban development.²²⁵

The southern Monterey Bay shore is on average the most erosive sandy shore in

Nongame Wildlife Investigations, Sacramento, CA. 6 pp.

²²² Warriner JS, JC Warriner, GW Page, LE Stenzel. 1986. Mating system and reproductive success of a small population of polygamous Snowy Plovers. *Wilson Bulletin* 98:15-37.

²²³ Ruhlen TD, S Abbott, LE Stenzel, GW Page. 2003. Evidence that human disturbance reduces snowy plover chick survival. *Journal of Field Ornithology* 74(3):300-304.

²²⁴ Schlacher TA, J Dugan, DS Schoeman, M Lastra, A Jones, F Scapini, A McLachlan, O Defeo. 2007. Sandy beaches at the brink. *Diversity and Distributions* 13:556-560.

²²⁵ MacDonald B, T Longcore, S Dark. 2010. Habitat suitability modeling for Western Snowy Plover in Central California. The Urban Wildlands Group, Los Angeles, California, 129 pp.

California.²²⁶ Despite the high erosion rates, beach widths along unaltered portions of the shoreline have not narrowed over time.²²⁷ Generally, on a natural shore, as the shore erodes, beach width is maintained.²²⁸ However, when structures are built on an eroding shore, passive erosion occurs in which the beach in front of the structure becomes drowned over time as the adjacent shore continues to erode.²²⁹

Cumulative Effects

Three other projects have been proposed for the coastal zone in the vicinity of the Project site:

1. The Collection at Monterey Bay Project (development of a 342-room coastal resort on a 26.46-acre site located west of State Route 1 in Sand City).
2. A new campground at Fort Ord Dunes State Park (development of 100 campsites, parking areas, an internal trail network with beach access, and various other infrastructures).
3. The California-American Slant Well Project (construction, operation, and decommissioning of a temporary test slant well, four monitoring well clusters, and related infrastructure within an extensive coastal dune complex in the City of Marina).

The Project, in conjunction with these other projects, would result in cumulative impacts to the western snowy plover and its critical habitat.

A comprehensive strategy for the conservation of western snowy plover breeding and wintering locations has not been incorporated into the Sand City General Plan, Local Coastal Program, or their implementing ordinances. The USFWS has expressed concern about the aforementioned projects being addressed in a piecemeal fashion, which does not allow an adequate assessment of their cumulative effects.²³⁰ As a result, the USFWS and others have recommended the preparation of a habitat conservation plan (HCP) to adequately address cumulative effects.²³¹ The City of Sand City, City of Marina, and the Applicant each committed to preparing an HCP for the western snowy plover. None of these entities have fulfilled their commitment. Indeed, although the Applicant originally indicated it would prepare an HCP for the Project, it instead decided to prepare a much less rigorous “habitat protection plan” (HPP). To date, no drafts of the HPP have

²²⁶ ESA PWA. 2012. Evaluation of Erosion Mitigation Alternatives for Southern Monterey Bay. Technical Report prepared for Monterey Bay Sanctuary Foundation and The Southern Monterey Bay Coastal Erosion Working Group. 216 pp.

²²⁷ *Ibid.*

²²⁸ *Ibid.*

²²⁹ *Ibid.*

²³⁰ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²³¹ *Ibid.*

addressed the Project's contribution to cumulative impacts, nor have they proposed a strategy for conserving snowy plovers in the region.

Attachment 1: May 11, 2015, comment letter.

May 11, 2015

Mr. Steve Kinsey
California Coastal Commission
45 Fremont Street, #2000
San Francisco, CA 94105

Subject: Monterey Bay Shores Resort Project—Compliance with Coastal Development Permit Conditions (Dispute Resolution for CDP A-3-SNC-98-114)

Dear Mr. Kinsey:

This letter contains my comments on Security National Guaranty's (Applicant) compliance with the special pre-issuance conditions associated with the Coastal Development Permit for the Monterey Bay Shores Resort Project (Project). Specifically, I address the special conditions that have implications on effects to the western snowy plover, which is a federally threatened shorebird known to occur on the Project site.

I am an environmental biologist with 21 years of professional experience in wildlife ecology and natural resources management. To date, I have served as a biological resources expert for over 100 projects throughout California. My experience in this regard includes assisting various clients with evaluations of biological resource issues, and preparing comments (or testimony) on projects undergoing environmental review. My educational background includes a B.S. in Resource Management from the University of California at Berkeley, and a M.S. in Wildlife and Fisheries Science from the Pennsylvania State University.

The comments herein are based on an extensive review of scientific literature, documents in the administrative record, the analysis and associated exhibits provided by Coastal Commission staff on 30 April 2015, and the knowledge and experience I have acquired during more than 21 years of work in the field of natural resources management.

Dune Protection Plan (Special Condition 3)

Provisions to Enhance Snowy Plover and Smith's Blue Butterfly Habitats

Special Condition 3 requires Dune Restoration Plans that have been approved by the Executive Director prior to issuance of the CDP. The Dune Restoration Plans must contain special provisions to explicitly enhance snowy plover and Smith's blue butterfly habitats as part of dune restoration activities (Special Condition 3[d]). The Applicant claims the provisions for snowy plover and Smith's blue butterfly are not a required condition, and that they are a part of the Habitat Protection Plan ("HPP") that will be

submitted after sign off on the pre-issuance conditions.²³² In my opinion, the Settlement Agreement makes it clear that provisions for snowy plover and Smith's blue butterfly habitat enhancements are prior-to-issuance ("PTI") requirements. Nevertheless, I reviewed the Applicant's HPP and found nothing in it that would provide more than a superficial benefit to the snowy plover and Smith's blue butterfly. Similarly, I found nothing in the HPP (or Dune Restoration Plans) that ensures the Applicant's proposed measures would result in "self-functioning, high quality habitat in perpetuity," as is required by Special Condition 3(a).

Monitoring and Maintenance Plan

The Applicant's Dune Restoration Plans are supposed to contain a plan for monitoring and maintenance of snowy plover and Smith's blue butterfly habitat areas for the duration of the development agreement. Special Condition 3(h) identifies requisite components of the monitoring and maintenance plan. They include the schedule, proposed monitoring studies, study design, and adaptive management procedures. The Dune Restoration Plans submitted by the Applicant do not describe how the Applicant intends to monitor and maintain enhanced habitats such that they provide a long-term benefit to the snowy plover and Smith's blue butterfly.

Reporting and Contingency

Special Condition 3(i) outlines the reporting and contingency program needed to ensure the performance standards specified in the Dune Restoration Plans are met. The Applicant's Dune Restoration Plans do not identify any performance standards. This is a significant flaw, because without performance standards there is no assurance that restoration activities would be successful, or that they would have any value in conservation of the snowy plover and Smith's blue butterfly. Moreover, the performance standards identified in the HPP are entirely inappropriate because they are based on vegetation goals, and not on the response of the target species (i.e., snowy plover and Smith's blue butterfly).

Consistency with State and Federal Agency Requirements

The Applicant misleadingly contends it would implement measures "consistent with known and accepted applicable state and federal agency requirements for [western snowy plover]."²³³ It is important for the Commissioners to understand that the U.S. Fish and Wildlife Service (USFWS) already has concluded (by letter dated 2014 Apr 7) that the Project would likely cause take of western snowy plovers, that the provisions of the Applicant's current (unapproved) HPP are not sufficient to avoid this take, and that it is unlikely that the take of western snowy plovers would be adequately mitigated on-site.²³⁴

²³² Staff Exhibit 7, p. 14.

²³³ *Ibid.*

²³⁴ USFWS, 2014 Apr 7 letter to the California Coastal Commission, p. 8.

The Applicant has refused to prepare an HCP or apply for an incidental take permit. Furthermore, the Applicant has ignored the requirements of the pre-issuance conditions relating to enhancement of snowy plover habitat and instead deferred habitat enhancement issues to the HPP it is required to prepare after permit issuance.

In summary, although the Applicant asserts the PTI requirements of Special Condition 3 would be satisfied, there is no evidence in the administrative record supporting that assertion. As a result, I concur with staff that the Applicant's Dune Restoration Plans are not in compliance with PTI requirements of Special Condition 3.

Habitat Protection Plan

I recognize the Applicant is not required to have an approved HPP before the CDP is issued. However, several of the special conditions that *are* required before the CDP is issued are dependent on the HPP. For example, Special Condition 2(e) requires pre-construction surveys for sensitive species including western snowy plover, and Smith's blue butterfly, *consistent with the HPP*. However, neither the existing draft of the Applicant's HPP nor the construction plan identifies the methods that would be used to ensure the efficacy of the pre-construction surveys. Moreover, the existing (unapproved) HPP specifies the need for pre-construction surveys for snowy plovers only if construction is expected to begin or continue during "prime plover nesting season."²³⁵ This issue is confounded because the HPP does identify what the Applicant considers to be the "prime plover nesting season." To reduce the potential for take, pre-construction surveys for plover nests, and precocial young, need to be conducted throughout the *entire* breeding season. In my opinion, the pre-construction survey requirements described in the draft HPP (together with the absence of survey protocols set out in the construction plan) do not satisfy the intent of Special Condition 2(e).

Lighting (Special Condition 1(m))

The Applicant's lighting plan includes more than 100 lights of various sizes and lumens on project pathways and roadways. Seventy-four lights would be on the proposed pathways seaward of the planned development. I concur with staff's assessment that the lighting scheme is not wildlife friendly, and that even low lighting of the dunes can subject vulnerable species, such as western snowy plover, to increased predation by attracting predators. This is significant because the Applicant intends to install lighting in the immediate vicinity of snowy plover nest sites.²³⁶

Public Access Management Plan and Resort Pathways (Special Conditions 5 and 11)

According to staff, the Public Access Management Plan has not been updated. In addition, the Applicant has proposed resort pathways that extend into an area historically

²³⁵ HPP, p. 4-13.

²³⁶ Data obtained from Point Blue Conservation Science, Petaluma (CA).

used by western snowy plovers. Because anthropogenic disturbance is the primary threat to the western snowy plover, the location of the resort pathways and the content of the Applicant's Public Access Management Plan have direct implications on Project impacts to the species.²³⁷

Conclusion

As staff notes, “[t]he special conditions were imposed to ensure that the approval conforms to LCP and Coastal Act development standards, including that it...restores and protects dune habitat on the site [and] enhances habitat values for listed species...” Based on my review of the administrative record, including plans and other documents provided by the Applicant, it is my conclusion that the Project, as currently proposed, would not restore and protect dune habitat, nor would it enhance habitat values for the western snowy plover.

Sincerely,



Scott Cashen, M.S.
Senior Biologist

²³⁷ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751. *See also* Brindock KM, MA Colwell. 2011. Habitat Selection by Western Snowy Plovers During the Nonbreeding Season. *Journal of Wildlife Management* 75(4):786-793.

Attachment 2: August 13, 2015, comment letter.

August 13, 2015

Mr. Steve Kinsey
California Coastal Commission
45 Fremont Street, #2000
San Francisco, CA 94105

Subject: Monterey Bay Shores Resort Project—Compliance with Coastal Development Permit Conditions (Dispute Resolution for CDP A-3-SNC-98-114)

Dear Mr. Kinsey:

This letter contains my comments on Security National Guaranty's ("SNG") Dune Restoration Plan ("DRP"), which is required prior to issuance of a Coastal Development Permit for the Monterey Bay Shores Resort Project ("Project"). Specifically, I address the portions of the DRP that have implications on the western snowy plover, which is a federally threatened shorebird known to occur on the Project site.

I am an environmental biologist with 21 years of professional experience in wildlife ecology and natural resources management. To date, I have served as a biological resources expert for over 100 projects throughout California. My experience in this regard includes assisting various clients with evaluations of biological resource issues, preparing biological resource assessments, and submitting comments (or testimony) on projects undergoing environmental review. My educational background includes a B.S. in Resource Management from the University of California at Berkeley, and a M.S. in Wildlife and Fisheries Science from the Pennsylvania State University.

The comments herein are based on an extensive review of scientific literature, documents in the administrative record, and the knowledge and experience I have acquired during more than 21 years of work in the field of natural resources management.

Proposed Habitat Enhancement and Restoration Measures

Special Condition 3(d) requires Dune Restoration Plans that contain special provisions to explicitly enhance snowy plover habitat as part of dune restoration activities. By definition, habitat enhancement benefits the species of interest. One of the overarching flaws with the DRP is that it fails to provide scientific evidence demonstrating the measures proposed by SNG would benefit the snowy plover. According to the DRP:

“[t]he western snowy plover typically nests on flat, barren to sparsely vegetated sandy substrate and nests are frequently located near objects such as grass clumps or pieces of driftwood... This plan will implement measures to enhance plover habitat on site including by achieving the habitat features described above.”²³⁸

²³⁸ DRP, p. 4.

Thus, SNG indicates it will enhance plover habitat by “achieving” flat, barren to sparsely vegetated sandy substrate, with opportunities for nesting near objects such as grass clumps or pieces of driftwood. However, those conditions currently exist across most of the Project site (Figure 1). Achieving conditions that currently exist is not habitat enhancement. Although iceplant removal is a habitat enhancement and restoration measure, the Project would still result in a net loss in snowy plover habitat, in part due to the extensive grading and construction that would occur in the foredune and secondary dune area. The habitat “enhancement” measures proposed in the DRP do not offset the Project’s contribution to snowy plover habitat loss.



Figure 1. Google Earth imagery of the Project site (demarcated by red lines).

In the “Western Snowy Plover” section of the DRP the author states:

“[t]he management program includes approximately 20.38 acres restored to foredune, secondary dune, back dune management areas (Figure 1). Of the 20.38 acres to be restored to native coastal habitat, about 14.18 acres around the periphery of the development will be protected in perpetuity by recorded conservation/open space easements and protected, as depicted on Figure 3.”²³⁹

²³⁹ *Ibid.*

This statement is misleading for several reasons. First, it implies 20.38 acres of the site require “restoration” to provide native coastal habitat. However, much of the Project site currently contains native coastal habitat that is used by plovers. The DRP fails to provide scientific evidence that SNG’s proposed “restoration” activities would improve habitat conditions for snowy plovers in those areas.

Second, the DRP’s claim that 20.38 acres would be restored appears to be overinflated. According to the DRP, restoration activities would occur in Management Area 2 (6.86 acres) and Management Area 3 (9.88 acres).²⁴⁰ That equates to 16.74 acres.

Third, some of the 16.74 acres that would be “restored” would be surrounded by infrastructure (e.g., parking lot, roadways) on the east side of the resort.²⁴¹ Consequently, those areas will be unsuitable for plovers no matter how successful SNG’s restoration efforts are. “Restored” areas in the southern portion of the site also would be unsuitable for plovers because the resort and planted vegetation would present a barrier (e.g., impair beach access). The U.S. Fish and Wildlife Service’s (“USFWS”) Recovery Plan states: “Page and Stenzel (1981) found that nests were usually within 100 meters (328 feet) of water, but could be several hundred meters away when there was no vegetative barrier between the nest and water. They believed the absence of such a barrier is probably important for newly-hatched chicks to have access to the shore.”²⁴²

Lastly, installation of a biofiltration basin does not qualify as restoration, as suggested on page 7 of the DRP.

Topographic Undulations

The DRP indicates: “[s]mall sand mounds and topographic undulations (no greater than 4 feet) will be incorporated into the gradual slope with the intent of creating planting areas for strand vegetation and providing some newly created refuge for western snowy plovers that may use the area for nesting.”²⁴³ The DRP does not provide any scientific evidence substantiating the proposed measure as being biologically meaningful to snowy plovers. According to literature published by SNG, the contouring would be designed to create “sheltered hollows that provide protection from the sea winds for visitors and wildlife alike.”²⁴⁴ Contouring that attracts visitors would not benefit the snowy plover (and could possibly function as an ecological trap).²⁴⁵

²⁴⁰ *Ibid*, pp. 7-8.

²⁴¹ *Ibid*, Figure 4.

²⁴² United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. p. 12.

²⁴³ DRP, p. 7.

²⁴⁴ SNG. Monterey Bay Shores [web site]. Available at: <http://www.montereybayshores.com/PDF/Eco_Overview.pdf>. (Accessed 2014 Dec 6). p. 8.

²⁴⁵ An ecological “trap” an area where an animal settles to breed because conditions at the time of settlement seem appropriate. However, either because natural conditions change, or humans change them, the animal has made a mistake and either dies or has reduced reproductive output. Thus the animal is, in

Avoidance and Minimization Measures Are Not Habitat Enhancement

The DRP discusses SNG's intent to remove iceplant from the Project site. The DRP then claims that it has incorporated "[a]dditional special habitat restoration and enhancement provisions" to accomplish seven objectives that apply to the snowy plover.²⁴⁶ However, nowhere in the DRP could I find the "additional special habitat restoration and enhancement provisions," nor could I find evidence substantiating the likelihood that the seven objectives would be met. The subsequent section contains my comments on the seven objectives listed in the DRP.

"Prevent take of the Smith's blue butterfly and western snowy plover ensured by on-site monitoring by the approved biologist and implementation of immediate measures to protect any species identified on site;"

- Monitoring (of limited scope and duration) by one project biologist, and implementation of the proposed protection measures (e.g., fencing), does not ensure take is prevented. As the USFWS has pointed out in its two letters (April 2014 and May 2015), the Project is expected to result in take of plovers because it would exacerbate numerous threats (e.g., increased human presence and types of disturbance) that are known to cause take of plovers. As a result, I concur with the USFWS that SNG's proposed avoidance and minimization measures would not prevent take of snowy plovers.

"Assist in the recovery of those species on site, in the Sand City area, and regionally;"

- Page 26 of the DRP is less certain about SNG's assistance in plover recovery. It states SNG's biologist: "*may* also participate in larger patrol/resource management efforts focused on plover recovery in Sand City and the Monterey region." Moreover, the almost all of the techniques listed in the DRP are avoidance and minimization measures, which are very different from recovery measures. Ultimately the DRP does not identify specific actions that demonstrate SNG would assist in the recovery of the snowy plover.

"Avoid, if feasible, or, if not, minimize significant damage or degradation to western snowy plover critical habitat so that any such habitat impact does not rise to the level of "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3;"

- This is an avoidance and minimization measure only, not a habitat restoration and enhancement measure as the DRP suggests.
- There is considerable scientific evidence that the activities associated with the

essence, lured into what turns out to be poor-quality habitat. See Robertson BA, JS Rehage, A Sih. 2013. Ecological novelty and the emergence of evolutionary traps. *Trends in Ecology & Evolution* 28:552-560.

²⁴⁶ DRP, pp. 4-5.

Project would impair essential behavioral patterns,²⁴⁷ especially because the avoidance and minimization measures proposed in the DRP are not consistent with those from the scientific community. As a result, SNG's claim that it would avoid and minimize impacts to essential behavioral patterns is not credible. This issue is confounded because the DRP lacks a monitoring component to determine whether essential behavioral patterns are being impaired by the Project.

“Minimize grading in western snowy plover critical habitat by limiting grading to 90 days in the construction period, conduct pre-grading surveys by a qualified biologist (to insure no plovers nest in the area), and avoid grading, if feasible during the breeding season;”

- This is an avoidance and minimization measure only, not a habitat restoration and enhancement measure as the DRP suggests. Moreover, it does not prevent grading during the snowy plover breeding season if SNG determines it is not economically feasible to do so. Thus the DRP allows SNG to grade critical habitat during the breeding season, which increases the probability that take will occur.

“Restore and enhance western snowy plover critical habitat so that it provides enhanced characteristics and features designed to be attractive to plovers for breeding and nesting;”

- The DRP fails to provide scientific evidence that the measures proposed by SNG would make the Project site more attractive to plovers. This issue is confounded by the DRP's incorporation of inappropriate success criteria (discussed below).

“Employ an approved on-site biologist to survey and monitor plover and butterflies and to implement plan measures to protect, restore and enhance their respective habitats;”

- This is an avoidance and minimization measure only, not a habitat restoration and enhancement measure as the DRP suggests.

“Implement the predator management plan ... to protect the western snowy plover from take by predators, the greatest present threat to the plover;”

- The proposed predator management plan lacks substance and provides few assurances that it would be effective in protecting plovers (discussed further below).

The “Sensitive Species” section of the DRP concludes with the statement that: “[m]easures will be undertaken prior to, and during, grading and construction, as part of dune restoration and enhancement activities, and during long-term protection, maintenance, and monitoring tasks. These provisions are consistent with applicable state and federal agency requirements for these species.”²⁴⁸ The CCC, USFWS, Pt. Blue, and others all have concluded that the Project is likely to result in the “take” of snowy

²⁴⁷ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²⁴⁸ DRP, p. 5.

plovers, despite SNG's preparation of a Habitat Protection Plan ("HPP").²⁴⁹ Consequently, the USFWS has advised SNG to prepare a Habitat Conservation Plan ("HCP") and apply for an incidental take permit.²⁵⁰ SNG has refused to prepare a HCP and apply for an incidental take permit. SNG's HPP, as currently presented, is not a viable substitute for a federally approved HCP and a federally issued incidental take permit. The avoidance measures set forth in the DRP (and HPP) will not prevent take, and thus the Project would not comply with provisions of the Endangered Species Act.

Surveys

The DRP indicates the approved biologist will conduct surveys for western snowy plover prior to, and throughout, the breeding season (March through September) and prior to, during, and after construction and annually thereafter.²⁵¹ However, the DRP does not identify the survey methods, including search techniques, search area, timing, frequency, and level of effort. Because the DRP does not specify the survey protocols, it is impossible to assess the value of the proposed surveys in protecting snowy plovers and their nest sites.

Protection Measures

Seasonal Nesting Protection Zones

The DRP provides for two seasonal nesting protection zones on the lower beach strand.²⁵² The DRP does not identify the size of the nesting protection zones, nor does it map them (as claimed on page 22 of the DRP). Nevertheless, nesting protection zones designed to protect nest sites from Project disturbance activities do not qualify as a habitat enhancement measure.

Although the DRP fails to identify the size(s) and location(s) of the nesting protection zones, SNG's draft HPP indicates the protection zones would be 1 to 2 acres in size and designed to attract nesting snowy plovers while allowing for lateral access along the beach.²⁵³ Scientific evidence indicates 1 to 2 acres is insufficient to protect nesting snowy plovers. Muir and Colwell (2010) studied the response of incubating plovers to an observer approaching the nests. Incubating plovers ceased incubation and left nests when

²⁴⁹ California Coastal Commission. 2014. Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. p. 6. *See also* USFWS, 2014 Apr 7 letter to the California Coastal Commission, p. 4. *See also* USFWS, 2015 May 13 letter to the California Coastal Commission, p. 3. *See also* Point Blue Conservation Science, 2014 Apr 1 letter to the California Coastal Commission, pp. 1 and 2.

²⁵⁰ *Ibid.*

²⁵¹ DRP, p. 10.

²⁵² DRP, p. 21.

²⁵³ HPP, p. 4-15.

an observer approached to within a mean distance of 80 ± 33 meters.²⁵⁴ This led Muir and Colwell to conclude that fencing erected to minimize human disturbance should be placed such that people cannot approach closer than 100 meters (328 feet). This conclusion has two important ramifications on the Project:

4. a “nesting protection zone” must be at least 2.47 acres to prevent human disturbance to incubating plovers;²⁵⁵ and,
5. the Project design precludes the ability to establish a 2.47-acre “nesting protection zone”—or even a 1-acre “nesting protection zone”—that is ≥ 100 meters away from the resort pathways.²⁵⁶

The DRP states: “if necessary, additional expansion areas [protection zones] of up to two acres will be provided within the area bounded by the 10 MSL contour line on the sandy beach and the two resort beach trails on the north and south (with a 25 foot buffer), respectively, while facilitating lateral and vertical beach access.”²⁵⁷ As discussed above, scientific evidence indicates a nesting protection zone needs to be at least 2.47 acres to prevent human disturbance to incubating plovers. Therefore, SNG’s proposal for a 2-acre protection zone is insufficient to prevent take of plovers. Furthermore, SNG’s proposed measure does not appear to be feasible because: (1) the property contains only 4.03 acres of beach and coastal strand above the mean high water mark; and (2) the Project site is not big enough to allow lateral and vertical beach access while also providing at least three nesting protection zones free from human disturbance.

Regulation of Beach Activities

According to the DRP, SNG would “[a]uthorize the biologist to monitor and, in coordination with the construction manager, resort operator or property owner, regulate activities that may significantly and adversely affect the snowy plover during the breeding season (e.g., redirect lighting away from plover nesting).”²⁵⁸ This measure is too vague to be considered an effective mitigation strategy. The DRP needs to identify the suite of activities that would be subject to potential regulation (e.g., dog walking, fishing, pedestrian access) besides lighting (which SNG has already claimed would not affect plovers).

According to the DRP the approved biologist will establish pet restrictions.²⁵⁹ The DRP provides no information on the restrictions that might be established, the variables that

²⁵⁴ Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. *Condor* 112(3):507-510.

²⁵⁵ $328 \text{ ft} \times 328 \text{ ft} = 2.47 \text{ acres}$

²⁵⁶ Maximum distance between resort pathways leading to the beach is 708 ft, which leaves a 52-foot wide sliver of beach that is ≥ 328 ft from a pathway. $52 \text{ ft} \times 124 \text{ ft}$ (distance between high tide line and bluff) = 0.15 acre.

²⁵⁷ DRP, p. 23.

²⁵⁸ *Ibid*, p. 10.

²⁵⁹ *Ibid*, p. 22.

would trigger pet restrictions, and the enforcement mechanism that would ensure compliance. Dogs on beaches can pose a serious threat to western snowy plovers during both the breeding and nonbreeding seasons.²⁶⁰ Unleashed pets, primarily dogs, sometimes chase snowy plovers and destroy nests.²⁶¹ Repeated disturbances by dogs can interrupt brooding, incubating, and foraging behavior of adult western snowy plovers and cause chicks to become separated from their parents.²⁶² Pet owners frequently allow their dogs to run off-leash even on beaches where it is clearly signed that dogs are not permitted or are only permitted if on a leash.²⁶³ Enforcement of pet regulations on beaches by the managing agencies is often lax or nonexistent.²⁶⁴ For example, managers of the Coal Oil Point Reserve in Santa Barbara County noted that posting of the leash law and attempts to educate pet owners were ineffective at reducing disturbance to snowy plovers.²⁶⁵

The DRP indicates beach-raking will be prohibited during the western snowy plover breeding season.²⁶⁶ Beach-raking and debris (e.g., driftwood) collection remove habitat features for both plovers and their prey, and precludes nests from being established.²⁶⁷ Therefore, allowing beach-raking during the non-breeding season would adversely affect plovers during both seasons (breeding and non-breeding).

Litter Control

The DRP states: “a litter control plan is required as part of this plan and the predator management plan.”²⁶⁸ However, the DRP does not include a litter control plan. The only information provided in the DRP is that: (a) SNG will install signs informing visitors that they are required to “pack out” their garbage; (b) trash receptacles would be inaccessible to wildlife; and (c) there will be “regular” trash removal. These measures are insufficient to prevent direct harm to snowy plovers and their habitats due to the accumulation of litter. Any attempt to maintain snowy plover habitat must include periodic sweeps of the Project area to remove litter.

Adaptive Management

²⁶⁰ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²⁶¹ *Ibid.*

²⁶² *Ibid.*

²⁶³ *Ibid.*

²⁶⁴ *Ibid.*

²⁶⁵ University of California, Santa Barbara Natural Reserve System. 2001. Snowy Plover Management Plan (SPMP) – 2001. Available at: <<http://coaloilpoint.ucnr.org/SnowyPloverProgram.html>>. (Accessed 16 Nov 2014). *See also* Lafferty KD, D Goodman, CP Sandoval. 2006. Restoration of breeding by snowy plovers following protection from disturbance. *Biodiversity and Conservation* 15:2217-2230.

²⁶⁶ DRP, p. 22.

²⁶⁷ United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²⁶⁸ DRP, p. 22.

The U.S. Department of the Interior defines adaptive management as “a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood.”²⁶⁹ In discussing adaptive management, Morrison (2002) added:

5. “The concept of adaptive management or adaptive resource management is centered primarily on monitoring the effects of land-use activities on key resources and then using the monitoring results as a basis for modifying those activities to achieve the project’s goals (Walters 1986; Lancia et al. 1996).”
6. “Adaptive management is not a trial-and-error approach.”
7. “Attempting to fix a problem after implementation is quite different from developing an action plan prior to the start of a project.”
8. “Regardless of the specific approach, adaptive management offers a structure whereby clear goals are established and then monitored—and specific actions for responding to deviations are planned at the *outset* of the project.”²⁷⁰

The “adaptive management” approach outlined in the DRP violates each of these concepts, and thus it does not constitute true adaptive management. Furthermore, the purpose of adaptive management is to improve long-term management outcomes, by recognizing where key uncertainties impede decision-making, seeking to reduce those uncertainties over time, and applying the lessons learned to subsequent decisions.²⁷¹ SNG has no basis for deferring to adaptive management as the solution because there are no *key uncertainties* to address; the response can already be predicted with reasonable certainty. For example, there is substantial scientific literature that documents how snowy plovers respond to habitat fragmentation and anthropogenic sources of disturbance; therefore there is no need to implement adaptive management to figure that out. If SNG continues to point to adaptive management as the solution it must apply the concept correctly by developing specific hypotheses, thresholds that trigger changes in management practices, and other means for implementing the feedback loops that define the concept.

Construction Minimization Measures

SNG claims that the Project has been designed to avoid grading within Management Area 1, “the only area in which plovers have been sighted during the last 20 years.”²⁷² SNG’s claim is misleading and incorrect:

²⁶⁹ Williams BK, RC Szaro, CD Shapiro. 2009. Adaptive Management: The U.S. Department of the Interior Technical Guide. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

²⁷⁰ Morrison ML. 2002. Wildlife Restoration: Techniques for Habitat Analysis and Animal Monitoring. Island Press: Washington (DC).

²⁷¹ Walters, C. J. 1986. Adaptive management of renewable resources. Macmillan, New York, New York, USA.

²⁷² DRP, p. 15.

- Survey efforts have been limited primarily to Management Area 1. Therefore, the relative lack of nest site detections in Management Area 2 may be largely a function of survey effort.
- Plovers *have* nested in Management Area 2 over the past 20 years. In 2014 a nest was discovered on the bluff-top portion of the Project site.²⁷³ Furthermore, one of the nine nesting attempts documented on the site in 2015 occurred as a recently hatched brood, suggesting it may have been from a nest in Management Area 2.²⁷⁴
- Even if most nest sites occur in Management Area 1, plovers use Management Area 2 for sheltering and foraging.²⁷⁵

Contrary to SNG's claim that it would avoid grading previously occupied snowy plover habitat, CCC Staff concluded all historic nesting habitat for snowy plovers would be removed by the Project.²⁷⁶

Construction Protection Measures

The DRP allows grading to occur during the snowy plover breeding season. To protect plovers outside of the grading area SNG proposes a temporary fence and signage that will be erected "no more than 20 feet beyond the limit of grading in order to assure that construction activities do not encroach into habitat areas except for the limited habitat area within Management Area 2 for a period not to exceed 90 days in the construction period."²⁷⁷ Allowing construction activity within 20 feet of a snowy plover nesting area would undoubtedly result in nest abandonment, disturbance, or another form of take.²⁷⁸ Furthermore, a temporary fence has little value as a take avoidance measure because snowy plovers have precocial chicks that leave the nest within hours after hatching.²⁷⁹ Snowy plover chicks from nests on the Project site or adjacent areas would be susceptible to direct (e.g., crushing) and indirect (heightened vigilance that precludes normal foraging activities) impacts from Project construction activities. The only reliable way to prevent those impacts is to prohibit construction activities during the entire snowy plover breeding season.

Coordination with Sand City and State Parks

²⁷³ USFWS. 2015 May 13 letter to the California Coastal Commission, p. 2.

²⁷⁴ Personal communication with Carleton Eyster, Pt. Blue Conservation Science.

²⁷⁵ *Ibid.*

²⁷⁶ California Coastal Commission. 2014. CDP Application Hearing, Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. p. 97.

²⁷⁷ DRP, p. 20.

²⁷⁸ Muir JT, MA Cowell. 2010. Snowy Plovers Select Open Habitats for Courtship Scrapes and Nests. *Condor* 112(3):507-510. *See also* Rodgers JA Jr, ST Schwikert. 2002. Buffer-Zone Distances to Protect Foraging and Loafing Waterbirds from Disturbance by Personal Watercraft and Outboard-Powered Boats. *Conservation Biology* 16(1):216-224.

²⁷⁹ Precocial chicks are well developed, feed themselves, run about, and regulate their body temperature.

According to the DRP: “[t]he Permittee will coordinate with Sand City and State Parks in the management, protection and recovery of plovers along the Sand City coastline.”²⁸⁰ I concur that coordination with the City and State Parks is necessary to assure appropriate protection and management of snowy plovers and their habitat. Scientific studies have shown that the abundance of a species within a habitat patch can be dependent not only on the processes within the patch, but also on the processes in the surrounding matrix.²⁸¹ This is especially true for the western snowy plover, which has broods that may travel along the beach as far as 6.4 kilometers (4 miles) from their natal area.²⁸²

State Parks has expressed concern about indirect impacts of the Project to snowy plovers that breed at Fort Ord Dunes State Park (Park). State Parks believes the Project could result in greater enforcement needs at the Park, and that the Project may inhibit its ability to meet the conservation goals and thresholds identified in its pending HCP.²⁸³ Despite these issues, the only stated requirement of the Applicant’s coordination program is: “evaluation of the feasibility of obtaining conservation easements or other habitat protection agreements with neighboring landowners designed to enhance the existing plover protection and recovery.”²⁸⁴ SNG’s proposal to evaluate the feasibility of obtaining conservation easements does not constitute an effective coordination program. As a result, the DRP must identify definitive actions SNG will take to assist State Parks and Sand City in protecting the regional snowy plover population.

Success Criteria

The DRP establishes inappropriate success criteria as a way to excuse SNG from meeting the goal of having plovers occupy the site after Project development. It states:

“Success criteria establish standards for species and habitat conservation goals. Here, documented plover nesting on the lower beach and strand area at numbers above those recorded since 2008 (2-3 nesting attempts and the fledging of 1-3 juveniles per year) within five (5) years after the resort is opened would be considered successful in increasing active plover use of the site. However birds are highly mobile and may not return to a site on their own volition, regardless of habitat restoration efforts.

Therefore, habitat restoration efforts should be evaluated by an alternative criterion. For the purposes of this plan, if snowy plover are not observed using

²⁸⁰ DRP, p. 24.

²⁸¹ Baillie SR, WJ Sutherland, SN Freeman, RD Gregory, E Paradis. 2000. Consequences of Large-Scale Processes for the Conservation of Bird Populations. *Journal of Applied Ecology* 37(Suppl. 1):88-102.

²⁸² United States Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Sacramento, California. xiv + 751.

²⁸³ California Coastal Commission. 2014. CDP Application Hearing, Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. California Department of Parks and Recreation, 2014 Apr 1 letter to the California Coastal Commission.

²⁸⁴ DRP, p. 24.

the restored habitat areas within five (5) years after construction, success of the habitat restoration effort will be defined by documenting that the proposed native coastal strand vegetation goals for Management Areas 1 and 2 have been established.”²⁸⁵

The purported success criteria for snowy plover are entirely inappropriate. The DRP first suggests that the specific goal is to increase plover use of the Project site. It then identifies the success criteria as more than 2-3 nesting attempts and the fledging of 1-3 juveniles per year within 5 years after the resort is opened. However, the Plan immediately discredits these success criteria as being appropriate because: “birds are highly mobile and may not return to a site on their own volition, regardless of habitat restoration efforts.” This is a spurious argument. As the DRP acknowledges, the western snowy plover typically nests on flat, barren to sparsely vegetated sandy substrate.²⁸⁶ Therefore, there is no scientific basis to use the vegetation goals (which include an increase in vegetation cover over time) as an index of habitat restoration “success” for snowy plover—especially because habitat suitability is dependent on many factors beyond vegetation.²⁸⁷ As reported by Morrison (2002): “*the success of a restoration project should be judged by how wildlife species respond to it.*”²⁸⁸

Snowy plovers are highly faithful to breeding and wintering sites across years.²⁸⁹ As a result, a 5-year span without snowy plovers successfully nesting on the site would not only demonstrate failure to meet the stated goal of increasing plover use of the Project site, but also would demonstrate a decline from existing conditions. In no way could this be considered a contribution to regional recovery efforts for the western snowy plover in the Monterey Bay Area, as the DRP suggests.²⁹⁰

Predator Management

SNG’s Predator Management Plan (“PMP”) states: “[t]he approved biologist will monitor the site for predation, identify predators that are impacting the plover, and record any avian or mammalian predator behavior as a basis for determining the appropriate control measure.”²⁹¹ The potential efficacy of this measure cannot be evaluated because the PMP

²⁸⁵ DRP, p. 32.

²⁸⁶ DRP, p. 4. [emphasis added].

²⁸⁷ Morrison ML, BG Marcot, and RW Mannan. 2006. *Wildlife-Habitat Relationships: Concepts and Applications*. 3rd ed. Washington (DC): Island Press. 493 p.

²⁸⁸ Morrison ML. 2002. *Wildlife Restoration: Techniques for Habitat Analysis and Animal Monitoring*. Island Press: Washington (DC). p. 1.

²⁸⁹ California Coastal Commission. 2014. CDP Application Hearing, Staff Report Addendum for W10a Application A-3-SNC-98-114 (Monterey Bay Shores Resort). Prepared April 8, 2014 for April 9, 2014 Hearing. USFWS, 2009 May 6 letter to the California Coastal Commission, p. 94. *See also* Warriner JS, JC Warriner, GW Page, LE Stenzel. 1986. Mating system and reproductive success of a small population of polygamous Snowy Plovers. *Wilson Bulletin* 98:15-37.

²⁹⁰ DRP, p. 6.

²⁹¹ DRP, p. 59.

does not identify the methods that would be implemented to accomplish the aforementioned tasks.

The PMP indicates a biologist will evaluate the effectiveness of predator monitoring and control methods; however, there is no information on how the evaluation would be accomplished.²⁹² The PMP then states: “[s]pecific quantitative success criteria for predator monitoring and control cannot be defined because the types and numbers of predators may vary widely from year to year. There are a number of other factors that contribute to the success or failure of plover nesting attempts, including food availability or natural elements such as wind, tides, and rain.”²⁹³ This is an indefensible argument and an excuse for SNG to avoid implementation of an effective predator control plan. The affect of variables mentioned in the PMP (e.g., variation in predator abundance and climatic variables) could be distinguished through statistical analysis and a sampling scheme that incorporates control sites. Doing so would enable success criteria, such as:

3. Nest depredation by predators at the Project site will not exceed 10% of that at control sites.
4. Predator control efforts at the Project site will reduce the mean abundance of predators X, Y, and Z by 50% over baseline levels within 5 years of implementation.

Conclusion

The DRP lacks substance and fails to provide evidence that it would result in “self-functioning, high quality habitat in perpetuity,” as required by Special Condition 3(a). It also fails to provide scientific evidence that it would explicitly enhance snowy plover habitat, as required by Special Condition 3(d). These issues are confounded by the lack of appropriate success criteria (Special Conditions 3[h.3] and 3[i]); specific survey protocols (Special Condition 3[h.3]); and adaptive management procedures (Special Condition 3[h.4]).

Based on my review of the administrative record, including plans and other documents provided by SNG, it is my conclusion that the Project, as currently proposed, would not restore and protect dune habitat, nor would it enhance habitat values for the western snowy plover.

Sincerely,



²⁹² DRP, p. 63.

²⁹³ *Ibid.*

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