



First targeted survey for Black Oystercatcher in California – preliminary results August 2011

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Summary

In June 2011 a network of experienced amateur and professional observers surveyed oystercatchers on approximately 9% of California's coastline (4092 km in length excluding tidal marshes in San Francisco and Tomales bays). This represents at least 20% of potentially suitable breeding habitat, and possibly much more (analysis is pending). 1346 birds and 175 nests were counted. When compared against the total amount of suitable habitat, this preliminary result suggests the total number of breeding oystercatchers in the state may be two or more times higher than the last estimate of approximately 1000-1200 individuals. Further analyses including reproductive success at a number of sites, are pending.

Introduction

Black Oystercatcher distribution and abundance is poorly understood in California. The last systematic count was conducted in 1989 & 1991 as part of a boat-based survey of seabird colonies on California's islands, larger rocks, and headlands resulting in a statewide estimate of 1000-1200 birds. These surveys were not designed to target this species, therefore this estimate has functioned as a placeholder pending further study. Reproductive success has also been measured at a handful of sites in the state in the last ~25 years. To address these information gaps, in June 2011 Audubon California organized the first targeted baseline survey in the state, conducted during the breeding season. Here we present methods and preliminary results.

Methods

In early 2011 Audubon California reviewed the literature and the Black Oystercatcher Rangewide Conservation Action Plan, and consulted with experts from the international working group to identify best approaches for a baseline breeding season survey in California. We used protocols developed, tested and refined by Elise Elliott-Smith and colleagues in Oregon. Key elements of these protocols include a 30-minute survey period per visible area, the use of spotting scopes, and geospatial referencing at all survey sites (lat-long or UTM or a hand-drawn map). We originally intended to conduct a small pilot

survey at a few sites in the greater San Francisco Bay Area. To help select sites in that area, we explored the ebird and Christmas Bird Count on-line databases to identify sites where the species may be persistent and/or abundant. We also obtained a shoreline habitat data layer developed by the state of California, showing the occurrence of rocky intertidal habitat on the mainland, islands, and offshore rocks.

Equipped with these tools, we reached out to Audubon chapter leaders and a small number of expert birders and agency biologists to assess interest in a more expanded survey. The subsequent response was substantial, and the survey quickly scaled up from pilot/regional to statewide. Funding for enhanced survey coverage in the two northernmost counties (Del Norte and Humboldt) was provided by the U.S. Fish & Wildlife Service Region (8). We relied on a network of experienced volunteer leaders and agency biologists to coordinate survey participation in their areas. Some leaders coordinated over 30 participants. Leaders used local knowledge, ebird and coastal habitat layer developed by the state of California to select survey sites and routes. It is important to note that in this first year we did not “assign” routes from the top down, rather, local leaders and participants chose areas. There was a <5% overlap in surveys. Where surveys overlapped, we chose one to include in the results.

We constructed a Google Site to facilitate communications and serve as the central place for information on the species in the state (<https://sites.google.com/site/blackoystercatcherca/home>) and engaged in regular communications with survey leaders and participants in advance of the survey. Participants could choose to survey during two time windows, June 2-5 and/or June 9-12. As of August 7, 2011 all survey results were returned. We calculated percentage of coastline surveyed by combining survey routes and points. For each point we assumed a default 100 meter view area.

Results

Our preliminary estimate of linear distance covered by the survey is 373 km, equal to 9 % of the total California coastline including islets and rocks. Approximately 22% of the coast is classified as “rocky intertidal” which we use as a proxy for suitable habitat for oystercatchers. Based on this assumption, 20% of suitable habitat was surveyed. Pending further analysis this percentage is likely to increase, given that habitats in the south-central and southern part of the state are thought to be less suitable for oystercatchers. Surveys were conducted from the Oregon border through Orange County in southern California. At least 144 people participated. Surveys took place at 12 of the state’s 15 coastal counties. Approximately 15% of participants conducted a follow-up survey at the same site.

The total number of individual birds counted was 1346. On the mainland, high densities of individuals were reported in Sonoma and Mendocino counties, north of San Francisco. These densities reached six or more individuals/km of coast. In one geographic area, Van Damme State Park in Mendocino County (Figure 1), we are confident the survey, which included weekly follow-up surveys for 8 weeks, identified all nests and individuals. There were 19 individuals and 10 nests in ~3.2 linear km., equaling >3 nests/km. At

another area, Sea Ranch in Sonoma County, there were 61 individuals and 12 nests detected in the ~10 km area. Together these areas provide insight into potential maximum densities in the breeding season.

On the North Channel Islands (Santa Barbara, San Miguel, Santa Rosa, Santa Cruz, Anacapa) 62.8 km were surveyed representing 1.5% of total area surveyed in the state. 14% (189 of 1346) of individuals counted in the survey were from the North Channel Islands. This suggests there are higher densities of oystercatchers on the Channel Islands than on the mainland.

The total number of nests counted was 175. Nests were likely dramatically undercounted. They are cryptic, and, excluding the Channel Islands (n=40) surveyors took the conservative approach of only counting positive identifications, and excluding pair behavior suggestive of nesting. Through June 6, chicks were observed from the southern through north-central part of the state but not in the northern part of the state. The vast majority of nests were observed on shelves on tidally separated offshore rocks that provided habitat at least 5 m above the high tide line. The highest densities of nests on the mainland were found at Sea Ranch in Sonoma County and Spring Ranch in Mendocino County. Within these areas, nests were not uniformly distributed. At Sea Ranch there were 12 nests in ~10 linear km., with two sets of nests ~30 m apart. At Spring Ranch in Mendocino County nests were also within 30 m of each other. The southernmost nest record was at Dana Point in Orange County (33.456209°, -117.695722°). (This is also the southernmost point from this year's survey).

At Spring Ranch, the reproductive success rate (chicks per pair) this year was 1.45 (n=16). This compares with a value for reproductive success rate at Southeast Farallon Island of 1.16, generated over 7 years (n=75) (W. Sydeman, unpublished data).

Additional analyses are pending.¹

Human disturbances noted included abalone divers, sea algae collectors, kayakers and pedestrians. Other colony- and surface- nesting species nesting in close proximity to oystercatchers included Western Gulls, Brandt's Cormorants, Osprey, Peregrine Falcon and Canada Goose. Harbor seals and sea lions were noted hauled out on rocks and headlands. Observers frequently noted strong intra- and inter- specific territorial behavior.

By mid-October we will post to the website a dynamic Google Earth Map with all georeferenced data on individuals and nests. We will post a completed report to the site by the end of November.

¹ Pending analyses include: mapping all survey points and results in Google Earth; checking agreement among primary and follow up surveys; calculating densities per area as a function of survey effort; generating new expert-advised statewide estimate based on this and other data plus refined shoreline layer; considering site fidelity and territorial behavior and its implications for double counting in breeding season; threats and possible conservation activities; distribution of birds in the non-breeding season; combined with historic tracking at several locations in California; comparing this with other areas; what might be affecting breeding success here; % nests on mainland vs. tidally separated rocks or islands.

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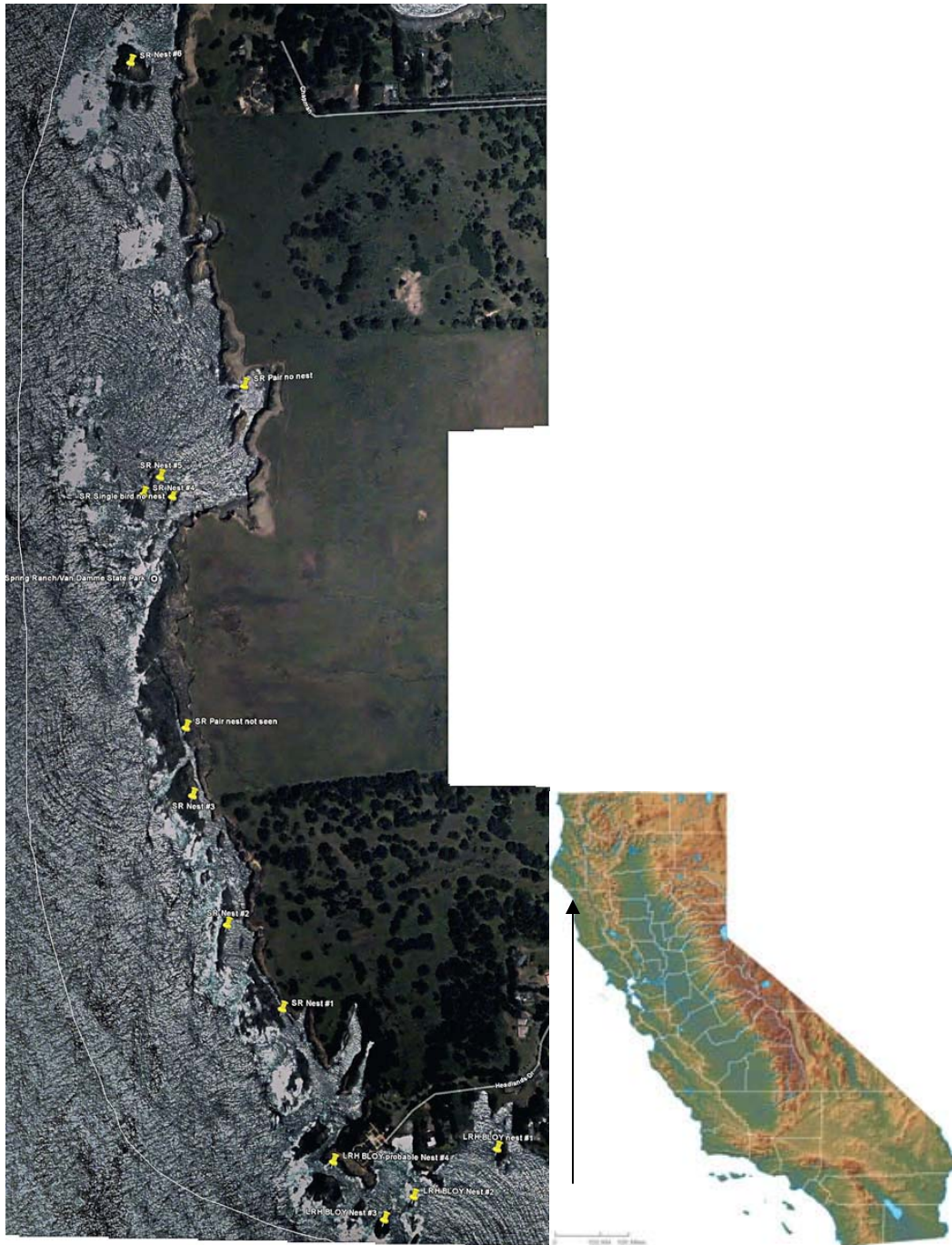


Figure 1. Van Damme State Park. Thoroughly surveyed section showing high nest densities. (R. LeValley)

Located at:

39.292671°
 -123.801516°
 To

39.272983°
 -123.794843°