



Progress Report

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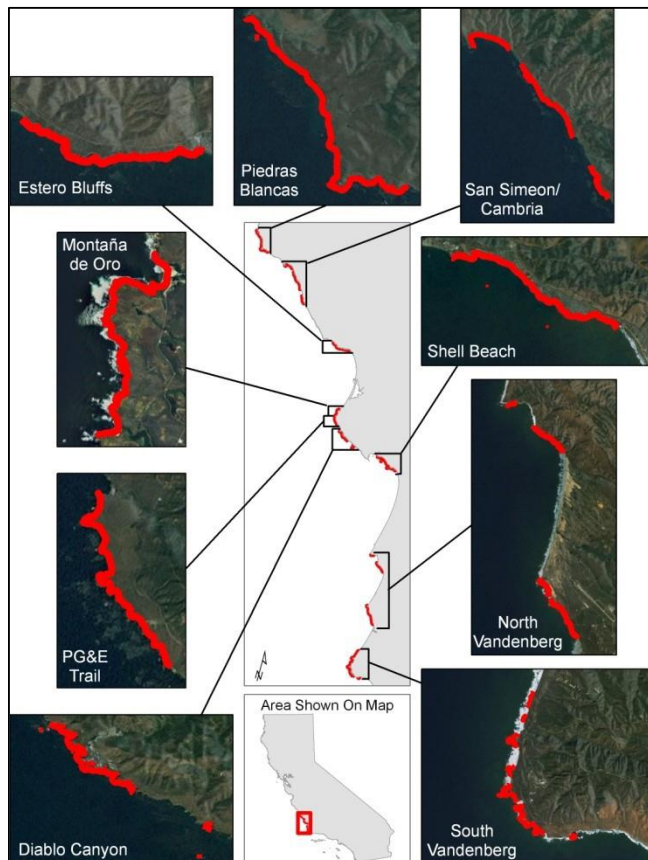
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Summary of Baseline Monitoring Within the Point Sur to Point Mugu SPN Chapter Region

In July 2012, PRBO Conservation Science (PRBO) completed Year 2 of monitoring for the Point Sur to Point Mugu (PSPM) chapter of the Seabird Protection Network. PRBO used the same protocols as Year 1 and covered the same nine areas between Piedras Blancas and Vandenberg Air Force Base (see map below). Data were collected on seabird population size and distribution, roost utilization, breeding



Main Points

Population:

Population size and distribution was similar among years for all species.

Roost Utilization:

Roost utilization was more variable than population, but distribution was similar among years.

Disturbance Rates:

Disturbance rates were markedly different among years. Some differences are due to changes in population and roost utilization. We attribute some of the decrease to outreach at Shell Beach.

productivity, and rates of human-caused disturbance. The focal species were Brandt's Cormorants, Pelagic Cormorants, Double-crested Cormorants, Pigeon Guillemots, Western Gulls, and Black Oystercatchers. Additionally, roost utilization by California Brown Pelicans was recorded as this species spends significant time within the chapter area after dispersing from breeding grounds in the summer.

Herein, we present data summaries completed to date. Data have been summarized for population size and distribution, roost utilization and rates of human-caused disturbance. **All data within this progress report are preliminary.**

Breeding Population Sizes and Distribution

Overall population distribution was similar between years, with most species showing population changes at only a few sites. The Brandt's Cormorant population decreased at the largest two colonies in 2012. Pelagic Cormorants experienced a slight increase in population at

Diablo Canyon. Double-crested Cormorants decreased at San Simeon, but increased at Shell Beach. Pigeon Guillemots increased at South Vandenberg only. Western Gulls showed decreases at the largest colonies – PG&E Trail, Diablo Canyon, and Shell Beach. Finally, Black Oystercatchers were the most variable with increases at Estero Bluffs and Shell Beach and decreases at Piedras Blancas, Montaña de Oro, PG&E Trail and North Vandenberg.

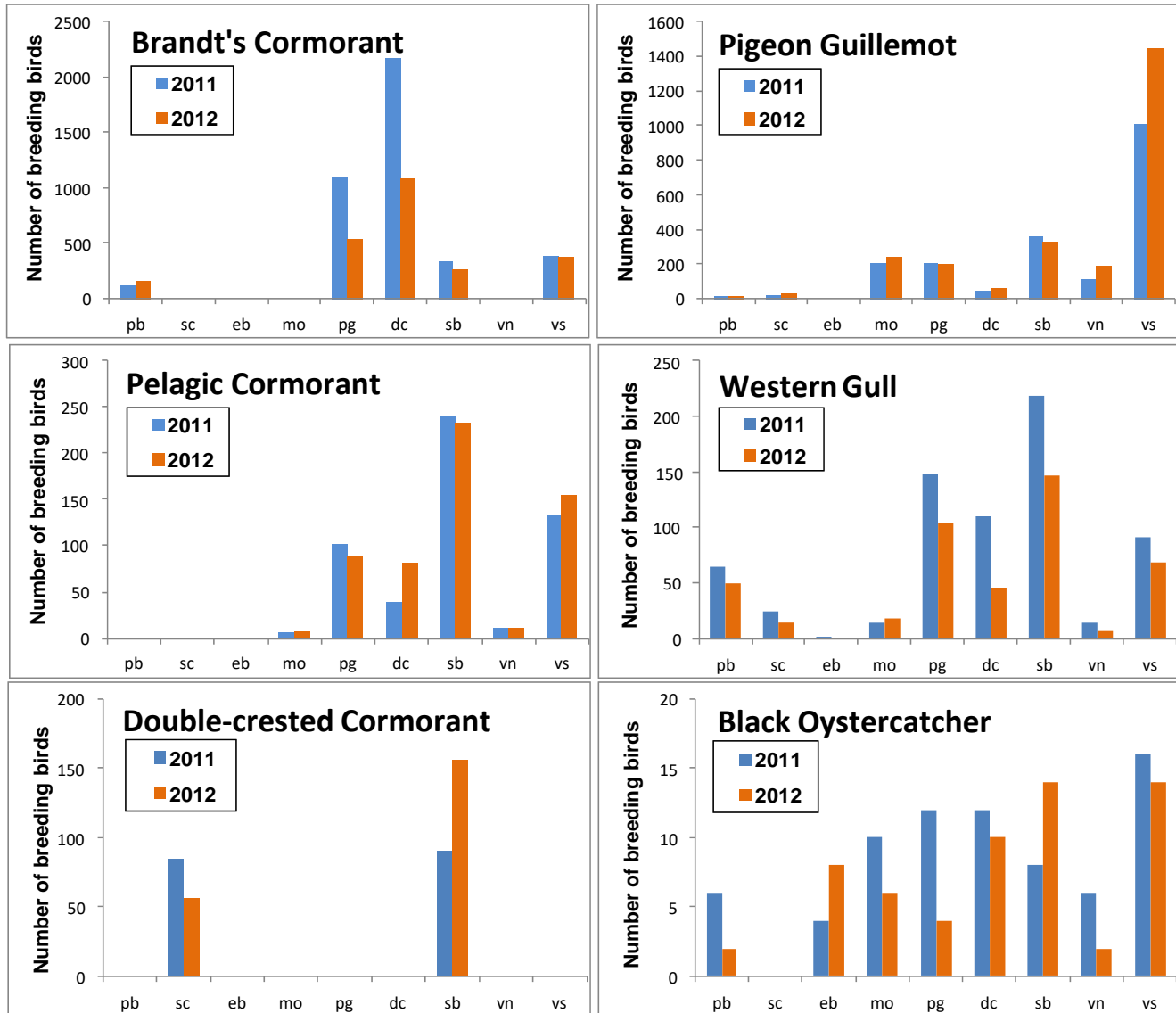


Figure 1. Population sizes and distribution for the six focal species breeding within the PSPM chapter area. pb = Piedras Blancas, sc = San Simeon/Cambria, eb = Estero Bluffs, mo = Montaña de Oro, pg = PG&E Trail, dc = Diablo Canyon, sb = Shell Beach, vn = Vandenberg, North, and vs = Vandenberg, South. See map on page 1 for locations of each site.

Seabird Roost Utilization

As with breeding population, the distribution of roosting birds was similar between 2011 and 2012. However, roosting numbers were more variable than breeding numbers as would be expected. Seabirds are not committed to roosting sites like they are with breeding sites. Overall, distributions of roosting birds were similar to distributions of breeding birds. One important exception is Estero Bluffs where no cormorants and very few gulls bred, but large numbers of birds roosted.

Roosting numbers for Brandt's Cormorants were highest at PG&E Trail, Diablo Canyon, and Shell Beach. Numbers decreased at Diablo Canyon in 2012 and increased at Shell Beach. Pelagic

Cormorants and Western Gulls were more widespread throughout the chapter area. Pelagic Cormorants showed decreases at Estero Bluffs and Shell Beach and increases at PG&E Trail and Diablo Canyon. Western Gulls showed a decrease at Shell Beach. Double-crested Cormorants roosted mostly at Shell Beach and San Simeon with moderate numbers using Estero Bluffs in 2012. There was a decrease in roosting at Shell Beach in 2012. Brown Pelicans were much more variable in their roosting patterns as would be expected for a migratory non-breeder. Numbers were highest at Diablo Canyon and Shell Beach and there was a large increase at Shell Beach in 2012. However, variability (i.e., standard error) was very high at Shell Beach illustrating how use of this area was not consistent throughout the spring and summer.

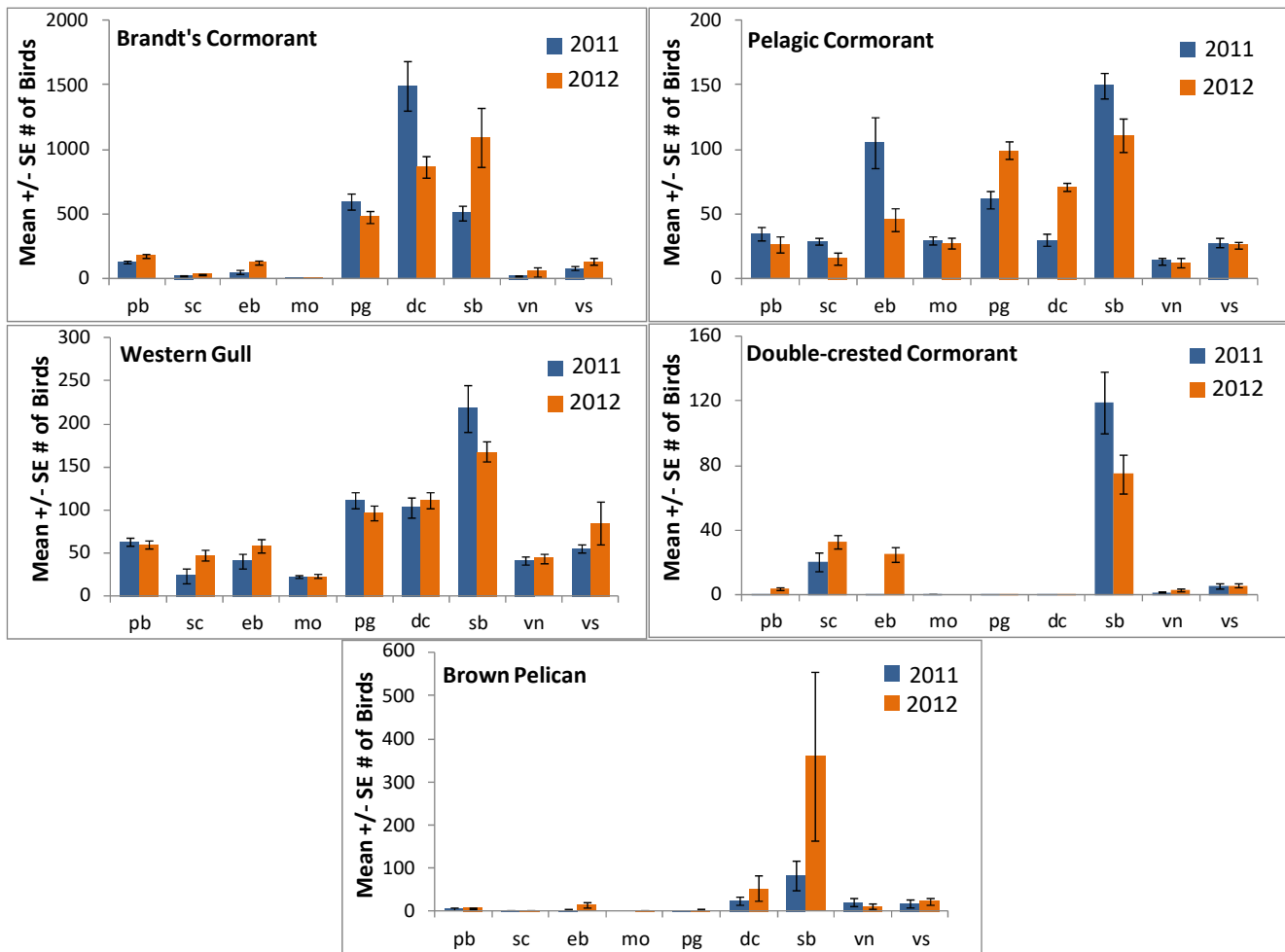


Figure 2. Mean \pm standard error abundance and distribution of roosting birds for five PSPM focal species. See Figure 1 for location abbreviation definitions.

Human-Caused Disturbance

While we documented disturbances to all of the PSPM focal species, we focused on cormorants in this summary for two reasons. First, cormorants nest and roost in more open areas and thus tend to be more susceptible to disturbances. Second, because of the above and their tendency to occur in larger numbers, it is easier to detect disturbances to cormorants than the other focal species. As we continue to study disturbance rates, we may find that cormorants are a good surrogate for investigating disturbance rates for all of PSPM focal species.

Disturbance rates were markedly different in both magnitude and distribution between years. Overall, disturbance rates were lower in 2012. This was especially true for all three cormorants at Shell Beach and for Pelagic Cormorants at Estero Bluffs. However, there were increases in disturbance rates at San Simeon and Estero Bluffs for Double-crested Cormorants and at Diablo Canyon for Brandt's Cormorants. Some of

these differences are likely due to differences in how these areas were used by seabirds. For example, there was a decrease in roosting Pelagic Cormorants at Estero Bluffs in 2012, but an increase in roosting Double-crested Cormorants. There were also decreases in roosting by both Pelagic Cormorants and Double-crested Cormorants at Shell Beach in 2012. However, the breeding population of Double-crested Cormorants increased at Shell Beach in 2012 and there was little difference in Brandt's Cormorant breeding and roosting at Shell Beach between years. We attribute at least some of the decreased disturbance at Shell Beach to outreach efforts with the Seaweed Express, a small tourist boat that caused much of the disturbance at Shell Beach in 2011. While the Seaweed Express was consistently present in 2012, disturbance rates caused by this one source were much lower. Thus, outreach efforts appeared successful at Shell Beach but are likely not the sole reason for differences observed at Shell Beach. It will be important to continue monitoring these sites to obtain a better understanding the sources of annual variability in disturbance rates.

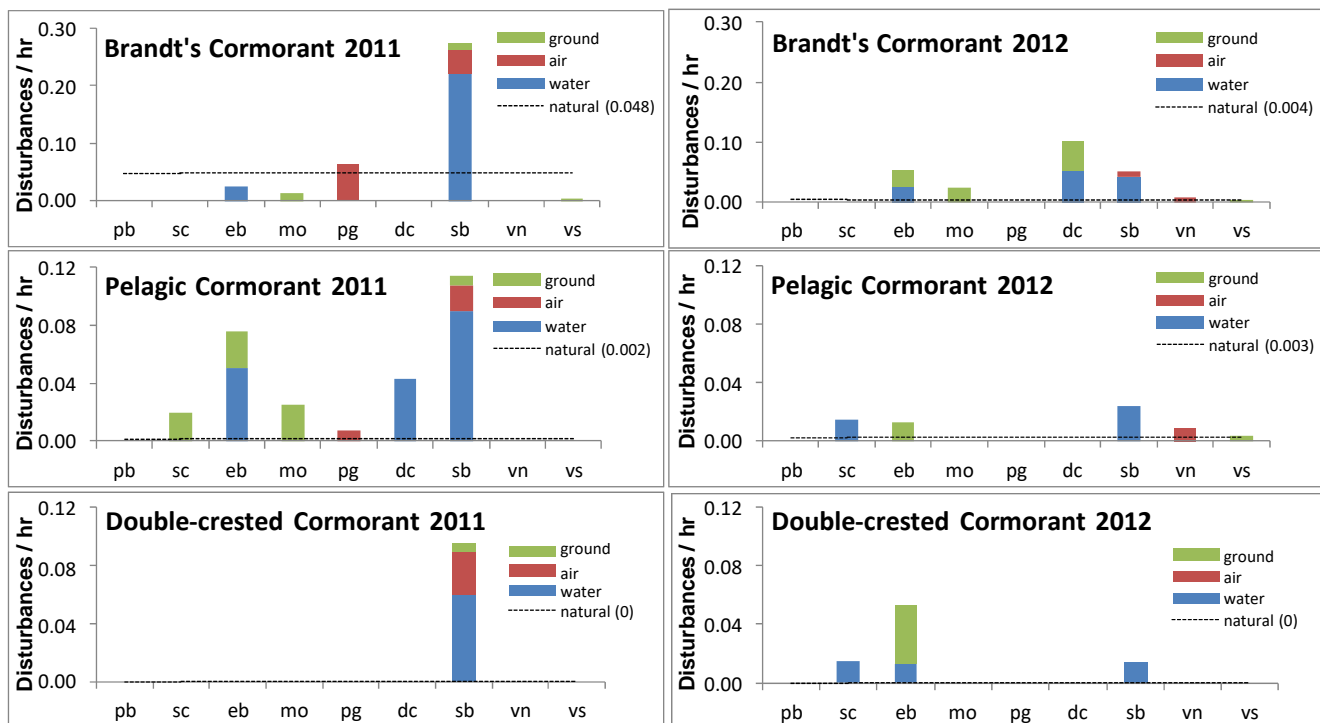


Figure 3. Disturbance rates for Brandt's, Pelagic, and Double-crested Cormorants in 2011 and 2012. See Figure 1 for location abbreviation definitions.