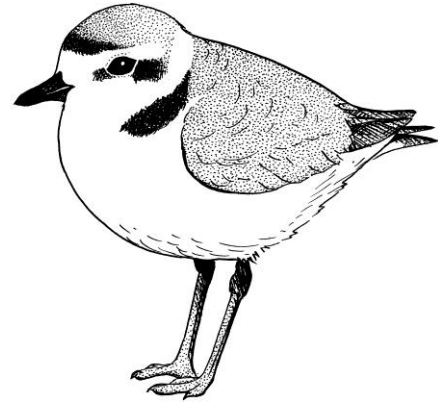


***Western Snowy Plover Survey
California Least Tern
Volunteer Survey Protocol
Rev. Jan. 2024***

**By Thomas Ryan, Stacey Vigallon,
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[This document is adapted from the “Western Snowy Plover Winter Window Survey Protocol” (Elliott-Smith & Haig 2007a) and Western Snowy Plover Winter Breeding Survey Protocol” (Elliott-Smith & Haig 2007b) and modified based on Ryan et al. (2010) and Ryan et al. (Sept. 2020).]

The Pacific Coast population of the Western Snowy Plover (*Charadrius nivosus nivosus*) (plover or SNPL) was listed as Threatened in 1993 under the U.S. Endangered Species Act. Since then, population recovery status has been assessed annually through range-wide breeding and winter season window surveys. In 2007, the Santa Monica Bay Audubon, Palos Verdes/South Bay Audubon, and Los Angeles Audubon Chapters, together with local biologists and agency staff (survey coordinators) instituted a program to attempt to determine the winter and breeding status of the Western Snowy Plover in Los Angeles County. In 2013, these surveys expanded to include Orange County with Sea and Sage Audubon.

The California Least Tern (*Sternula antillarum browni*) (tern or CLTE) was listed as Federally Endangered in 1970 and State Endangered in 1971. Only 564 pairs were counted during their first monitoring survey in 1947, currently there are over 4000 pairs nesting in California along with several hundred at colonies along the coast of Baja California in Mexico. Like the plover, it nests on sandy beaches. They are migratory and arrive in California in early April and depart in September and October. Their wintering area is unknown but is thought to winter off the coast of Mexico and Central America, as far south as Peru and northern Chile. There are several nesting colonies in Los Angeles and Orange Counties at Malibu Lagoon, Venice Beach, Seal Beach NWR, Bolsa Chica Ecological Reserve, Huntington State Beach, Santa Ana River, and Upper Newport Bay Ecological Reserve. They mostly occur around these areas. However, they are known to form pre-nesting roosting flocks and disperse to other beaches and estuaries following nesting. Here we attempt to increase our knowledge of these areas, attempt to track marked terns, and evaluate potential nesting habitat away from known colonies.

The goals are:

- 1) coordinate the survey effort.
- 2) ensure that participants receive training in bird identification and survey methods.
- 3) ensure that beaches are surveyed consistently from year-to-year.
- 4) coordinate with local beach managers to increase protection and attempt to restore wintering and nesting habitat through modifying existing management techniques.
- 5) produce an annual report for beach managers and coordinate an annual meeting among beach managers to evaluate and improve annual efforts.

In 2017, continued to survey Los Angeles and Orange County beaches four times during the year to determine year-round beach use patterns. We are expanding these surveys to cover observations of terns and evaluate areas with potential habitat. Results of counts can then be compared across the population range and between years, to detect trends over time. In 2017, this study will include:

1. **Beach-wide Surveys.** We will coordinate county-wide surveys at all suitable beaches in support of the USFWS winter and breeding season plover window surveys, and supplement these with two additional periods in the spring and fall. The goals of these *beach-wide surveys* will be to 1) determine the overall status and distribution of the plover in the county during these periods and compare these numbers to data collected similarly in previous years, and 2) to attempt to detect roosting and/or nesting least terns, identify marked individuals and evaluate beaches for potential nesting habitat.
2. **Nesting Surveys/Roost Size Study.** Project biologists will be checking the main roosts once per month on months where there is no beach-wide survey. They will evaluate the sites for their potential for additional least tern colonies and count roosting terns. Surveyors must be specially trained and permitted for the nesting surveys. Project biologists will be surveying roosting areas during each of the months that beach-wide surveys are not conducted. Volunteers are invited to attend to receive additional training and help out.

BEACH-WIDE AND PLOVER ROOSTING BEACH SURVEYS

Beach-wide surveys will follow the same protocol as in 2013-2020. Our schedule will be contingent on USFWS scheduling, but as in previous years we plan to conduct county-wide surveys in January, March, May, and September. The Volunteer Coordinator will send out announcements via email about scheduling and beach assignments.

Project Primary Biologist Contact Information

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Project Volunteer Coordinator Contact Information – Orange County

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All beaches with suitable plover breeding and non-breeding habitat and areas with potential tern roosting and nesting habitat will be surveyed. We will attempt to assign four volunteers to each of these beaches so that they can be covered throughout the year by the same individuals. Beach assignments will be made by the Volunteer Coordinator based on volunteer interest, with priority

given to those who have previously surveyed a beach, and geographic location of the volunteer. We require that all volunteers attend a training session or undergo alternative training (see volunteer coordinator).

Volunteer safety is the most important factor. Sites may be difficult to access, particularly during winter high tides, as waves often can sweep over the entire beach, creating dangerous situations. Therefore, surveys should not be attempted if the surveyor's safety is in jeopardy (i.e., difficult passage through a narrow or rocky region during incoming tide). Additionally, being an urban area, surveyors should try to work in teams if possible, and during the daylight hours. Volunteers should not confront anyone engaging in illegal activity on the beach. Instead, volunteers should leave the area and contact local law enforcement when it is safe to do so.

SURVEYOR EDUCATION AND PREPAREDNESS

Equipment: Required equipment includes a good pair of binoculars (suggested magnification at least 8x), waterproof field notebook or clipboard and data sheets, site map, pencil, and timepiece. A GPS is very helpful and recommended. Most phones are capable of performing this function. For Android phone GPS Essentials allows you to mark and download waypoints. For iPhone, Trimble Terrain Navigator Pro allows you to mark and email waypoints. Google Maps will allow you to drop a pin and move the pin to a precise location then record the coordinates. A spotting scope is optional. A spotting scope and tripod may be helpful in reading bands, but can be heavy and cumbersome when walking in sand, it is your choice. Suggested equipment includes a cell phone, contact list, rain jacket, and rain pants. FRS radios would be very helpful on wide beaches where teams of 3 or more people are surveying. Site maps and survey materials are available for download at www.seaandsageaudubon.org *Conservation surveys*.

Qualifications and training: Required qualifications for plover and tern surveyors are the ability to walk several miles in dry sand, have good vision, and be familiar with identification of Snowy Plovers and Least Terns and other similar species (Semipalmated Plovers, Sanderling, Killdeer, Forster's Tern, Common Tern, Elegant Tern). The following suggested training complies with recommendations and regulations set forth in the Western Snowy Plover (*Charadrius nivosus*) Pacific Coast Population Draft Recovery Plan and has been adapted to include terns. Topics to be covered include:

- Biology, ecology, and behavior of Snowy Plovers and Least Terns
- Identification of adult plovers and terns, their young, and their eggs
- Threats to plovers and terns and their habitats
- Survey objectives, protocols, and techniques
- Regulations governing the salvage of carcasses or eggs
- Special conditions of the existing recovery permit
- Other activities (e.g., reading color bands, tracking, predator identification)

Surveyors without prior experience with identifying these species and their habitats should first receive field instruction with other experienced volunteers or project biologists.

SURVEY METHODS

To maximize detection surveys should be conducted during good weather and high visibility. On sunny days, visibility is best early in the morning or close to sunset; visibility may be good at any hour on an overcast day. Cold, foggy, rainy, or excessively windy (15 mph or greater) conditions are not suitable for surveying, however a light drizzle or strong breeze (5-10 mph) is acceptable. Contact your survey coordinator immediately if it appears that survey conditions will prevent you from conducting your survey during the survey window.

All surveys will be conducted on foot. If another method is used contact the volunteer coordinator and specify this on your data sheet. At most sites, a minimum of two surveyors is recommended to complete each survey; one surveyor will suffice at very narrow beaches (less than 50 m wide). Reading band combinations should be attempted after the birds encountered have been tallied and recorded, and only if band-reading does not detract from the accuracy of the bird count. The following methodology should be applied:

1. All beaches should be covered in the same manner - in one pass. There should be one very careful pass to tally the number of birds on each beach segment, as this is the most consistent approach over long periods.
2. Surveyors should walk in unison along the entire length of site as designated on the survey map. One surveyor should walk along the wrackline (high tide line) while the second surveyor walks along the upper beach or base of the foredune (if present). The person surveying the upper beach should always walk ahead of the surveyor at the wrackline (approximately 25 m). If only one person is conducting the survey, walk the wrackline along the survey length and in a zigzag pattern through wider portions of route, to ensure complete coverage.
3. Surveyors should alternate between walking and scanning for Snowy Plovers and Least Terns with binoculars. While walking, surveyors should scan the area 20m ahead and to either side. Every 50m surveyors should stop and scan at least 100m ahead of them with binoculars (distance may be shorter based on site-specific conditions). This way habitat is searched at least twice and from different angles, increasing the chances of detecting birds. If one observer has a spotting scope, they should follow the binocular scan with a scan through the scope as far ahead as possible. If a bird is sighted far ahead, look for distinguishing landmarks that will enable finding its location. Birds may hide as they are approached, making them difficult to see.
4. Surveyors walking the upper beach should watch the ground carefully for plover tracks while walking. Their ability to search is much more constrained than the person's at the wrack line. Consequently, the pace of the survey needs to be slow enough to allow the person surveying the upper beach to watch the ground and make frequent short stops to look ahead for plovers and terns.

5. If there is a very broad area of beach, the person walking the upper beach should walk in a zigzag pattern through that location. Alternatively, two or more observers could walk parallel through the area. If dunes are encountered that are low and/or gently sloping, hummocky areas with little or no vegetation should also be checked for plovers.
6. A one-way pass of the survey route is considered sufficient, and surveyors may either exit the beach at the same access point or at a different access point from the one used to enter beach.

DATA COLLECTION / DATASHEET INSTRUCTIONS

Data collection must be standardized for all surveys and for all sites. Field data should be collected on a datasheet, and presence of plovers and area covered **must be marked on a map or aerial photo provided by the survey coordinators.** Data sheets and maps can be sent to the Volunteer Coordinator in the following ways. **(1-preferred) Handwrite your results in the Data Form and immediately after the survey scan and or take a photo of it and send it to the Vol. Coordinator.** Please ensure the photos are clear and legible. ALWAYS, no matter what method you use, please keep a backup copy of your data sheet until the next survey. (2) If you are able to type your results into a form, save it and email it to the Volunteer Coordinator within 24 hours of your survey. Always keep your original written data form and your save your typed form.

The following methodology should be used at all beach segments.

1. At the beginning of the survey the recorder should fill out preliminary portions of the data sheet including: Location (beach name and number), observer information, date, site, start time, amount of preparation time (includes any time spent preparing for or driving to the beach segment), weather, temperature, cloud cover, precipitation, approximate wind direction and speed, and the nearest high and low tide time.
2. While it is best for one member of the team to act as official recorder, all members of the team should have a pencil and data sheet or field notebook so that they can record sex for each bird.
3. Record stop time upon ending your survey.
4. Record total time spent on the beach (this would include your walk back to a vehicle)

Section 1: Sightings

1. Upon sighting a group of snowy plovers (SNPL) or least terns (CLTE), first count

the total number in the group and enter it into the datasheet and the time observed. Then mark the location of the individual/group on the field map using a circle around the area observed and a number to identify the location, enter this number as the Map # on the data sheet. If possible, please record coordinates using a smartphone, transportable navigation system for your car, or a GPS unit.

2. Record information about the location: any nearby landmarks (such as cross streets, lifeguard towers, or buildings), general habitat characteristics, distance from the water/dunes, location within the beach
3. Record band and color band information (as instructed below).
4. If possible, record the sex of the plovers as male (M), female (F) (terns are undistinguishable). Age should be recorded as Hatch Year (HY); chick or juvenile, appearing similar to adult but edges of back feathers and wing coverts are pale), or unknown (U). Hatch year plovers reach adult status by Jan 1. Least terns have two juvenile plumages, obtaining adult plumage in their third year. Unless the surveyor is confident they can make the determination between hatch year, juvenile or adult status based on plumage, it is not necessary to distinguish these on data sheets. *Note: it may not be possible to determine sex and age of plovers in winter plumage.*
5. If no snowy plovers or least terns were observed during the survey, please indicate that on the datasheet.

Section 2: Beach Use & Predator Monitoring

We wish to learn more about the interaction between the Snowy Plovers, recreational activities, and human-influenced predators. We request that you record information on beach use and observations of potential predators during the one pass of your survey. Tally/count each activity in the appropriate box as you observe an individual and sum them at the end of your survey. We recommend that you tally each activity as observed, being careful not to double count, particularly crows and ravens foraging along the beach or joggers with their dog returning the opposite direction.

We also wish to assist beach managers with monitoring for speeding vehicle, which are a known threat to Snowy Plovers. Beach vehicles are limited to 10 mph in non-emergency situations. One easy way to estimate vehicle speed is to observe how far the vehicle travels during a one second interval to do this:

1. Start when the front end of the vehicle passes a fixed object on the beach, such as a trash can or lifeguard tower.
2. Count, "One thousand and one" (takes about one second).
3. If *more* than half of the vehicle passes the object, estimate it as a *fast-moving* vehicle (10 mph or faster). If *less* than half of the vehicle passes the object, estimate it as a *slow-moving* vehicle (less than 10 mph). [*Adapted from U.S. Military Training Exercise*]

If the vehicle is not obviously involved in an emergency situation (light/siren), please record the following information: time, location, vehicle make (i.e. Ford) and model (i.e. F-150) or type of vehicle (van, pick-up, SUV), any markings identifying the company or agency, any identifying numbers, license plate. Please **do not** make any attempt to stop, signal, or confront the driver in any way. Records of speeding vehicles will be reported to beach managers and local law enforcement officials for any needed action.

Record any additional wildlife seen, particularly other potential predators such as owls, foxes, skunks, raccoons, opossums, or rats. If a surveyor is familiar with mammal tracks, predator tracks can also be reported.

Please report the following occurrences **immediately**:

1. Any illegal activity to law enforcement
2. Any illegal activity to the appropriate state or federal agency if the activity is in violation of any state or federal laws concerning protected species (i.e., Migratory Bird Treaty Act, Endangered Species Act)
3. An injured Snowy Plover to a lifeguard or Beaches and Harbors representative, a wildlife rescue agency, and the volunteer coordinator or primary project biologist
4. Snowy Plover eggs or chicks to the volunteer coordinator or primary project biologist

Right after you return home from your survey please report the following to the volunteer coordinator or primary project biologist:

1. If you observe a bird in an area where they have not been seen in recent years. (providing band combinations if known)
2. Snowy Plovers with bands and/or uncertain band status immediately after the survey to the lead person designated as the one to whom observers report color bands combinations in each survey region. It may be necessary for biologists to schedule a visit to the site to check or re-check bands.

Section 3: Habitat Information

Habitat information: Please check all of the habitat types that are present during your survey. At the end of your survey, circle the most common habitat type. Also estimate the total width of the sandy beach habitat (if present); place a check mark by the average or most common width category on your beach and circle the minimum and maximum beach widths you observed. Then note any changes from your previous survey such as heavy beach erosion, increased seaweed or trash, etc.

COLOR BANDS – SNOWY PLOVERS AND LEAST TERNS

Throughout the Snowy Plover's range, all sites have the potential to have color banded birds. Historically terns have also been color banded. There is a new project to place field readable alphanumeric bands on both plovers and terns. Color bands allow biologists to keep track of population numbers, productivity, movement patterns, and survivorship. Aluminum bands, provided by the U.S. Fish and Wildlife Service, are used in addition to plastic bands; both are usually covered with colored tape.

Most banded plovers have two color bands on each lower leg. Both the bands on a leg may be the same or different colors. Birds sometimes lose bands so that they could have only one band on one leg and two on another, or only one band on either leg. Some birds have a single band of two colors on one leg. These are created by wrapping a thin strip of tape that is different in color from the underlying band on the top, bottom, or center of the color band. Thus, a single band could be described as white over red or if the red tape were in the middle as white/red/white (W/R/W).

Colors frequently seen are lime (L, light green), aqua (A, light blue), red (R), yellow (Y), dark blue (B), dark green (G), and white (W). Other colors used on the Pacific Coast but not as frequently seen in Oregon are: orange (O), violet (V), pink (P), brown (N), and black (K). Tape occasionally peels off revealing metallic (silver) band (S).

Color bands are read top down from the belly to the foot of the bird (Figure 1). Colors on the birds left leg are read first, and then the colors on the right leg are read. For example, if a bird has two aqua bands on its right leg and a white band on top of a red band on its left, its combination would be: white, red, aqua, aqua. This combination would be recorded WR: AA.

The surveyor(s) may attempt to read bands only after birds at a given location on the survey route have been accurately counted and recorded. When reading color bands, the following methodology should be used:

1. When a plover or terns is sighted at close range, check for color bands and record combination if present before notifying other observers. If a plover is seen at too great a distance for reading color bands, notify other team members immediately by radio, hand signals, voice, or by walking towards them. While keeping track of plover, coordinate with team members and try to approach the bird from different angles. This will increase the likelihood of color bands being visible to at least one observer.
2. Unless the surveyor is very experienced in reading color bands and is able to read a particular combination with confidence, the other surveyor(s) on the team should try to read each birds band combination; this is an important accuracy check. This may be done by using a spotting scope if available, or by approaching birds closely and using binoculars.
3. Please avoid disturbing the plovers in an effort to determine color bands. If roosting birds stand up at your approach, please back away.
4. After determining color band combination, carefully walk around birds and continue the survey.

ALPHANUMERIC BANDS – SNOWY PLOVERS AND LEAST TERNS

Least terns have been marked with alphanumeric bands with a white background and black lettering. If these are sighted, record the presence of a bird with this type of band, if possible try

and read the letter and number printed on the band. Follow the other procedures above.

OPTIONAL BIRD SURVEY

If you wish to participate, we would like volunteers who are interested to complete a survey of all birds detected on your beach. In order to do this, we request that you use the data form provided. As with the plover survey, you will survey one pass concurrent with your plover survey.

Live Bird Survey. You will need to identify and count all bird species observed sitting or flying over the beach and sitting or flying over the water within 100m of shore (about 2x the distance from the breaking waves to the shore). For each individual or group encountered, you will record the species, the number observed in each group observed, and whether it was on the beach or ocean. For any rare or unusual species, we request you map the location and write a detailed description of the bird (photographs are even better). This year, we have been asked to encourage volunteers to record information about Heermann's Gulls, in particular the number of adult birds vs. the number of juvenile and sub-adult birds observed. If you decide to take on this added survey challenge, please make sure that you are confident in your ability to distinguish between adult and sub-adult Heermann's Gulls, especially when adults are in non-breeding plumage.

Beachcast Marine Bird and Mammal Survey. For this survey, you will need to bring a digital camera (or use your camera phone), rubber gloves, and a ruler (small, plastic, and cheap! is best). When you encounter a dead bird on the beach, record its location on the map (or GPS coordinates if you have an app on your phone or a separate GPS unit), photograph it from the front and back (using the rubber gloves to turn it over) with the plastic ruler visible in the photo. Note the photograph number on your camera and the map number on the back of your data sheet.

Please note if the bird appears to be oiled, and if so, contact the Volunteer Coordinator. Also, if you find a rare bird species, you may collect it in a Ziploc or heavy duty trash bag and bring it to the Los Angeles County Museum of Natural History. *Be sure to include a slip of paper in the bag or attached to the bag with the date, location, identification, and collectors name.* It will be up to each volunteer to transport collected specimens. You should also note that while it is legal to collect and transport a dead bird to a museum, it is not legal to collect and store or keep dead birds in your possession without proper state and federal permits. The Wetlands and Wildlife Care Center in Huntington Beach will also accept rare birds for collection for the Los Angeles County Museum of Natural History. **If you find a dead snowy plover, contact the volunteer coordinator immediately.** If you find a marine mammal, photograph it from all angles possible and call the Volunteer Coordinator immediately.

EDUCATING THE PUBLIC ABOUT SNOWY PLOVER CONSERVATION

We view your role in this project as two-fold. Volunteers are firstly community-based scientists, gathering important information to help monitor a federally threatened species. Whether they

intend to or not, volunteers also serve as impromptu public outreach docents at Snowy Plover and Least Tern habitat. While public outreach may not be your primary interest in the project, you are probably some of the most knowledgeable people on the beach when it comes to the theme of Snowy Plovers and Least Terns. Most beachgoers are completely unaware that they are sharing the beach with wildlife, federally threatened and endangered species included. While conducting your surveys, it's not uncommon to be asked by fellow beachgoers what you're doing. This is an excellent opportunity to share some basic information about Snowy Plover and Least Tern conservation, and we're happy to provide you with a small illustrated, laminated plover "cheat-sheet" to facilitate this. Your interaction with curious beachgoers does not need to be lengthy or elaborate, but the idea is to make sure that volunteers have enough background information to feel confident in answering the public's questions or directing them to where they can find more information.

As a volunteer for this project, you likely place a high value on wildlife and conservation. While conducting your surveys, you will probably encounter behaviors by fellow beachgoers that you may view as harmful or disrespectful to wildlife. We'd like to emphasize that volunteers are community-based scientists and educators - they are **not** the Plover/Tern Police. As exasperating as the behavior of some beachgoers can be, our goal is to be a positive force and not a punitive one. Please remain cool, calm, and collected. If you observe illegal behavior, harassment of wildlife, or anything else you deem inappropriate, please do **not** confront the people involved. Alert the appropriate authorities and notify a lifeguard.

If you'd like to get involved in more targeted public outreach activities surrounding Snowy Plover conservation, please contact the volunteer coordinator!

ENCOUNTERING MARINE MAMMALS

During the spring and summer months it's not unusual to encounter young marine mammals on the beach, even on some of LA County's most heavily used beaches. Here are some guidelines to follow should you encounter one you think is stranded:

- 1) Remain at least 50 feet away. The Marine Mammal Protection Act prohibits members of the public from approaching or touching marine mammals. Good intentions may actually be viewed as "harassment" under this law.
- 2) Alert a lifeguard and/or Beaches & Harbors employee.
- 3) Call a rescue hotline Pacific Marine Mammal Rescue Center (949) 494-3050

Seal pups that appear abandoned may actually have a mother out in the open water foraging. If the pup is surrounded by people, the mother may be too intimidated to come back to fetch it and will wait until people disperse - hence the importance of alerting a lifeguard to problem.

USEFUL RESOURCES – TAKE THIS PAGE WITH YOU IN THE FIELD

Law Enforcement Phone Numbers

In an emergency situation always first dial 9-1-1.

Orange County Sheriff's Department: (714) 628-7170

- For North County residents: (714) 647-7000
- For South County residents: (949) 770-6011

Orange County Lifeguards: (949) 276-5050

Orange County Park Ranger: (714) 973-6855

State Beaches (Southern CA): (951) 443-2964

If you find sick or injured wildlife

Pacific Marine Mammal Rescue Center – Seals/Sea Lions, Stranded Dolphins (949) 494-3050

Wetlands and Wildlife Center – Birds or small mammals (714) 374-5587

If you see oil or find oiled birds

Oiled Bird Network 1-877-823-6926

California Department of Fish and Game Office of Spill Response 1-800-852-7550

Apps

GPS Tracks

Tide Alert

Online Resources

Tide charts to help you plan your survey –

<http://www.saltwatertides.com/dynamic.dir/californiasites.html>

Volunteer Coordinator – call if nest or chicks are found or other questions

Cheryl Egger

714-319-3660 – cell phone, text ok

Call or text any time during survey or with questions regarding survey

Email: OCSNPLSURVEY@gmail.com

Project Primary Biologist Contact Information – call if nest or chicks are found

Tom Ryan - Ryan Ecological Consulting

Email: tryanbio@gmail.com

Phone: (949) 923-8224

IDENTIFICATION TIPS FOR SNOWY PLOVERS

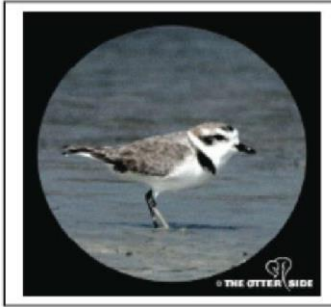
By Lucien Plauzoles, Santa Monica Bay Audubon

The most frequently encountered small shorebird species along the beach is the Sanderling. It sometimes shares the same space as the Snowy Plover. Here are some notes on how to differentiate them.

The first field mark on which to focus is the bill; app. 1.5” at the tip on the Sanderling but a stubby 5/8” on the Snowy Plover. The legs of the Sanderling seem longer, the overall “look” of the Sanderling is longer, that of the plover is rounder. Here are some further identifying characteristics.

1. **Shade, or color.** Most of the “peeps” at the shore are Sanderlings. As the fall progresses they lose almost all their brown and reddish breeding plumage feathers and take on a “scaly” gray and white appearance. The plover when not in flight has a uniform color on the back and wings, of a light brown shade, not gray.
2. **Sounds.** Little sound is heard from these birds, but when flushed, Sanderlings emit a (not loud) “kip” sound that is noticeably sharper than the whispered, lisped “kweep” communication of the alarmed plover.
3. **Stance** has as much to do with leg length as with attitude of the body. The plover is chest-heavy, closer to the sand with relatively short legs. The Sanderling runs and browses on stilts—reminiscent of Willets or Godwits. When resting or roosting, Sanderlings often stand on only one foot, tucking the other into belly feathers. The Snowy Plover seeks small depressions in the sand and rests with feathers down on the sand sometimes invisible until an observer is less than 20 feet away.
4. **Socializing, or flocking.** Simply put, Sanderlings roost, fly, and often feed closely. They roost in often-large (20-80) groups, just three inches away from each other. Snowy Plovers require more personal space, and usually at Santa Monica Beach, roost at least a foot away from each other, never sharing a small depression, and occasionally chasing other Plovers away.
5. **Snacks, or feeding habits.** Snowy Plovers are primarily interested in surface invertebrates and rarely put their relatively short bills into the sand to probe like the Sanderling. Even though they will frequently join Sanderling on the wet sand to feed, they rarely wade in the receding surf and almost never “chase” the foamy waterline. Ask people to picture a sandpiper in their minds and most will imagine a Sanderling, especially their behavior of running in and out with the waves. Snowy Plovers tend to take 5-15 steps and then pause, often with one leg “cocked”. Sanderling may run 50-100 feet between stops. On the other hand, the Snowy Plovers often feed in loose groups on the wrack of kelp and sea grasses left on the beach by tide and surf. Sanderlings also feed there, however, less frequently and usually only as occasional individuals.

Western Snowy Plovers and Their Look-Alikes



Western Snowy Plover

Size: 5- 13-cm

Description: A small whitish plover with pale brown upper parts; black legs, slender black bill and small black mark on each side of breast.

Black band around neck does not meet at the breast as does band of semipalmated plover. This small sand-colored plover has a perfect camouflage on sandy shore.

Habitat: Flat sandy beaches, salt flats and sandy areas with little vegetation.

Range: Resident along Pacific Coast from British Columbia to Mexico and along Gulf Coast from Texas to Florida panhandle.

Nesting: 2 or 3 buff egg spotted with black in a sandy depression lined with a few shell fragments or bit of grass.

Feeding: Along the coast they take crustaceans and beach flies.



Sanderling

Size: 8-20cm

Description: Chunky body, short straight black bill. black legs and prominent white wing snipe. Breeding adults have rusty head and neck. Winter birds have gray head and look almost white.

Habitat: Breeds on tundra. Winters are spent on ocean beaches, sandbars, mudflats and lake and river shores.

Range: Breeds from Baffin Island westward to Alaska. Winters from Massachusetts and British Columbia southward to southern South America. Also found in Eurasia.

Nesting: Four olive egg often with brown markings are found in lichen-lined hollow on the ground.

Feeding: Feeds in wash zones on sandy beaches. Follow retreating waves, probing and for crustaceans, mollusks, and flies.



Semipalmated Plover

Size: 6-8 15-20cm

Description: A brown-backed plover with white under part and one complete black breast band. Bill stubby, yellow-orange, with dark tip. Immature has all black bill and brownish breast band.

Piping plover similar but much paler above.

Larger killdeer has two black breast bands.

Habitat: Breeds on sandy or mossy tundra. Dmin^o migrations found on beach mud flats, shallow pools of salt marsh, and lake shore.

Range: Winters regularly from California south and Carolina south along Gulf Coast. rarely found farther north.

Feeding: Like other plovers, the semipalmated forages in hot burrows. Feed mainly on small crustacean and mollusks.

Figure 1. Band colors used on Snowy Plovers from the Monterey Bay Area.

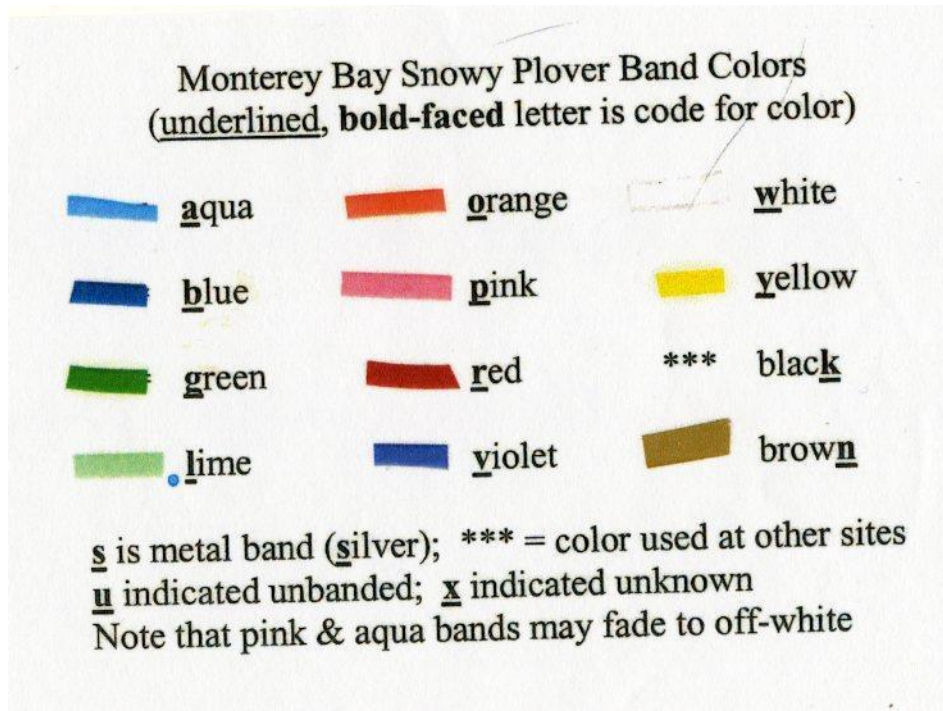


Figure 2. Example of banded Snowy Plover. In this picture, the bird has a yellow band (y) above a red band (r) on its left leg and a blue band (b) above an aqua band (a) on its right leg. This combination should be recorded as yr: ba

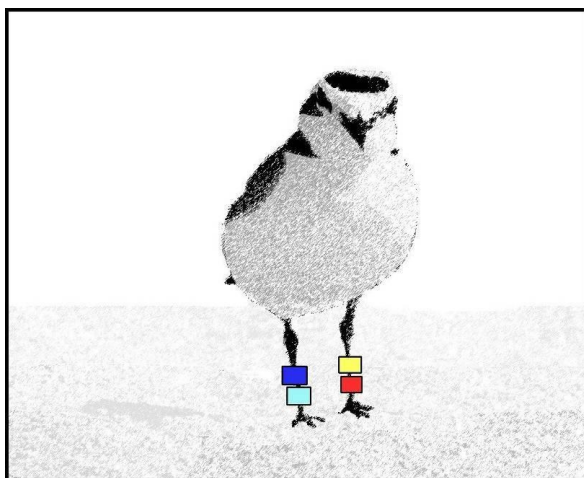


Figure 3. Least Tern with an Alphanumeric band.

