

PROTOCOLS FOR THE PROCESSING OF OILED WILDLIFE IN THE STATE OF CALIFORNIA



**created for the
PROCESSING STRIKE TEAM
of the OILED WILDLIFE CARE NETWORK**

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by

Point Blue Conservation Science
and
the Oiled Wildlife Care Network

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Table of Contents

Introduction to Wildlife Processing and the Processing Strike Team	1
Introduction to the Oiled Wildlife Care Network	1
Human Health and Safety	1
Wildlife Handling	2
Handling Live Birds	2
Handling Dead Animals:	2
Handling Live Marine Mammals and Turtles	3
Personnel	3
Procedures for Receiving Wildlife at Center	5
Ensuring collection information arrives with the animal:	5
Starting Data Logs and Assigning Log Numbers:	6
Specifics on Receiving Live Birds	7
Specifics on Receiving Dead Birds	8
Processing Procedures	9
An Overview of Live Bird Processing	9
A Note About Long Waiting Periods:	10
An Overview of Dead Bird Processing	11
An Overview of Marine Mammal Processing	11
A Note about Birds Arriving with Federal Bands (Includes Re-strands)	11
Data Collection for the Live and Dead Animal Data Logs	12
a. Log Number	12
b. Date Arrived	12
c. Time Arrived	12
d. Date Collected	12
e. Time Collected	12
f. Collector Name	12
g. Collection Location	13
h. GPS Coordinates	13
i. Field Band/Tag Color & Number (live log only)	13
j. Date Processed	13
k. Time Processed	13
l. Processor's Name	13
m. Species Code	13
n. Temporary Band/Tag Color and Number	14
o. Condition	15
p. Extent of Scavenging	16
q. Oiling Status (dead log only):	16
r. % of Bird Oiled or Sheened (dead log only)	16
s. Depth of Oil (dead log only):	17
t. Where Oiled (dead log only)	17
u. Feather/Oil Sample and Photograph Taken	17
v. Disposition Status (live log only)	20

w. Disposition Date.....	20
x. Disposition Details (live log) and Morgue Box (dead log).....	20
y. Notes	21
Morphometrics	22
Age.....	23
Sex	23
Packaging Carcasses after the Completion of Processing	23
Procedures for Handling Animals that Die While in Rehabilitation	23
Demobilization	24

Appendices

Suggested Equipment List for the Processing Station

Dead Animal Data Log

Live Animal Data Log

Code Key for Live & Dead Animal Data Logs

Photographic Corrections Log

Post Arrival Mortalities Log

Banding Recovery Form

Avian Species Codes and Status

Marine Mammal Species Codes and Status

Oiled Bird Color Band Code Key

OWCN Member Organization Facilities and Acronyms

How to Read Color Combinations (Shorebirds)

Color Combos for Smaller Shorebirds (supplemental document)

PROTOCOLS FOR THE PROCESSING OF OILED WILDLIFE IN THE STATE OF CALIFORNIA

Introduction to Wildlife Processing and the Processing Strike Team

This document is intended to provide operational guidance to personnel as they receive and process debilitated animals and carcasses at Processing Centers during an oil spill response. Wildlife Processing involves receiving wildlife from Wildlife Recovery personnel, identification of species, collecting data and evidence from each bird, and managing all evidence, including carcasses.

The personnel dedicated to this task are referred to as the Processing Strike Team (PST). Within the Unified Command/Incident Command System (UC/ICS), the Processing Strike Team is part of the Care and Processing Group, under the Wildlife Branch. This team is managed by personnel from Point Blue Conservation Science (Point Blue, formerly known as PRBO) under the Oiled Wildlife Care Network (OWCN), and its members are experienced in scientific data collection, data management, and handling and identifying birds. The PST is responsible for processing dead animals, while the responsibility for the processing of live animals varies depending on the size and nature of the spill and may be performed by the Care Strike Team (CST) or through coordination between both teams. In any case, the protocols and the data collection procedures remain the same.

These protocols have been adapted from the draft report, *Protocols for the Oil Spill Wildlife Response Team* (Schuster et al. 1998), prepared by Point Blue (then PRBO) for the California Department of Fish & Wildlife Office of Spill Prevention and Response (OSPR). They have been further refined and updated to reflect changes to the forms and protocols that occurred in 2001, 2003, 2004 and 2009.

Introduction to the Oiled Wildlife Care Network

The Oiled Wildlife Care Network (OWCN) is a legislatively mandated program created by the California Department of Fish and Wildlife, Office of Spill Prevention and Response in conjunction with and administered by the UC Davis School of Veterinary Medicine, Wildlife Health Center. It is a statewide collective of trained wildlife care providers, regulatory agencies, academic institutions and wildlife organizations that works to rescue and rehabilitate oiled wildlife in California. Its mission is to ensure that wildlife exposed to petroleum products receive the best achievable treatment by providing access to permanent wildlife rehabilitation facilities and personnel trained in oil spill response. All of their facilities are maintained in a constant state of readiness, and wildlife caregivers and other responders are available 24 hours per day, 365 days per year. The PST is managed by personnel from Point Blue Conservation Science under OWCN.

Human Health and Safety

The health and safety of the oil spill responders is paramount and is assessed regularly during spill response. All Processing Strike Team members are required to receive health and safety training prior to working at an oil spill facility or handling oiled wildlife. Relevant trainings include

those given during wildlife processing training courses, annual wildlife rehabilitation training conferences, during prior oil spill responses, or when the responder arrives at the center but before engaging in active response. Even if a responder has received training in the past, refreshers may be required during a given spill response to ensure familiarity with proper health and safety practices. Proper personal protective equipment (PPE; e.g. safety glasses, gloves, and protective outerwear) must be worn under all circumstances when handling any oiled wildlife (alive or dead).

Wildlife Handling

This section will provide a brief and basic overview of the techniques for handling marine birds and mammals. It is included here to emphasize worker and animal safety. It is not a substitute for proper training, experience or supervision. More detailed animal handling guidelines may be found in the Oiled Wildlife Care Network (OWCN) documents “Protocols for the Care of Oil-Affected Mammals” and “Protocols for the Care of Oil-Affected Birds”.

Handling Live Birds. A warm, quiet, and dark environment should be created at each center for live birds awaiting processing and/or transportation. All personnel must be trained and have experience using methods that minimize human contact with the animals. Teamwork is essential to minimize stress to oiled birds. Handlers must protect themselves from injury and oil contamination while also protecting the bird from further oil contamination. In addition to appropriate PPE, new gloves must be worn and new towels used for each bird handled, even when birds do not appear oiled.

It is essential to keep live birds under control at all times in order to minimize the risk of injury and keep them calm and safely controlled. One good method for maintaining physical control over a marine bird, depending on the size of the animal, is to wrap the bird in a fresh towel to restrict motion and hold the bird against your abdomen. This can be accomplished with one hand, allowing for freedom of motion with the other. Cover the head and eyes, but be careful not to cover the nares or impede respiration. Most shorebirds can be comfortably held with one hand using the “bander's grip”, which holds the bird's neck between the middle and forefinger and pins the wings against the bird's body with the same hand. Personnel unfamiliar with this method should be trained how to do it by experienced handlers. Larger birds and some species with sharp bills should be carried using both hands near the handler's waist with the head controlled at all times. When restraining a bird, it is extremely important to be sure that the wings are folded in their natural position. This ensures that a bird's injuries are not exacerbated and that new injuries are not inflicted during handling. It is essential for responders to remain calm and alert whenever handling wildlife; a bird that appears passive or relaxed at one moment may exhibit explosive energy the next.

Since most marine birds defend themselves with their bills, it is important to have control of each bird's head at all times during handling. Protective eyewear should always be used, especially with certain species such as grebes, loons, or egrets. Aggressive birds such as raptors, cormorants, and herons can seriously injure handlers. The most important consideration is to restrain the part of the bird that can cause the most serious injury (i.e., raptors should have their legs and talons secured).

Handling Dead Animals: Each specimen is considered to be evidence and should be treated as such. Cross-contamination between carcasses should be avoided by replacing gloves and cleaning

equipment between carcasses. Minimize direct physical contact with contaminated carcasses, and wear PPE (including safety glasses) for protection from oil or biological contaminants. Carcasses should be thawed prior to processing. Working in a ventilated space helps protect personnel from petroleum fumes.

Handling Live Marine Mammals and Turtles. Protocols for handling marine mammals (pinnipeds, cetaceans, sea otters) and sea turtles are standardized and set by interagency agreements among the following trustee agencies: the CDFW, the National Marine Fisheries Service (NMFS), and the U.S. Fish and Wildlife Service (USFWS) (see Interagency Agreements and the Sea Otter Oil Spill Contingency Plan in the Wildlife Response Plan appendices; and see the OWCN Protocols for the Care of Oil-Affected Marine Mammals). In most events, it is likely that all live marine mammal handling and processing will be performed by personnel from the California Marine Mammal Stranding Network (CMMSN) or veterinarians from OSPR or OWCN. However, in larger marine mammal events, the PST will likely oversee the processing of marine mammals and be responsible for data and evidence management. Also see *An Overview of Marine Mammal Processing* below.

Personnel

Processing Strike Team staff will fulfill up to eight basic roles at each Center; Leader, Coordinator, Receiver, Data Collector, Data Recorder, Photographer, Animal Handler, and Data Entry Specialist (see Table 1). Staff can move around among the non-lead positions and stations as appropriate. There can be multiple people in the same role (e.g., if there are many animals at the Center) or a single person can take on more than one role (e.g., if there are fewer animals). Since most of the oiled wildlife are likely to be birds, wildlife receiving and processing should be conducted by biologists trained in the identification and systematic collection of data from dead and live birds. When possible, they should also be familiar with the collection of oil spill data. Data entry can be done by database-savvy volunteers or by members of the PST, while proofing of data will always be completed by PST staff. Additionally, experienced volunteers may help in other critical support roles and in animal handling.

An Overview of Wildlife Receiving and Processing

All debilitated or dead birds and mammals will be brought to a Processing Center, usually located within or immediately adjacent to the primary rehabilitation facility for the response. For most oil spills or incidents (especially small and moderate events, i.e., Level I & II responses) there will be two stations for each Processing Center: one for live animals and one for dead animals. Each station may be made up of several evaluation teams working on different animals, but there will only be one Data Log for each taxon (bird, mammal, other) at each station in order to prevent repetition of log numbers. All data forms must be labeled with the appropriate facility acronym, taxa and station information. Circle the appropriate species identifier (Bird, Mammal, or Other) on the *Data Log*, and record the facility acronym and oil spill name on the top of each log page. This will ensure these Logs are kept separate from others. There will also be a choice on the data logs for new versus re-stranded animals, where re-strands include birds released during an incident and returned, live or dead, during the same incident. In a Level III (i.e., very large and/or extensive spill) response – or one over a large geographic area – the Processing Strike Team may have to set up Processing Centers in multiple locations. In these circumstances, separate logs will be kept for each Processing

Center. See *Assigning Log Numbers* below for how log numbers are handled when multiple facilities are activated, as well as how to assign numbers for non-avian taxa.

The PST is typically responsible for processing dead animals, while the responsibility for the processing of live animals varies depending on the spill and – at the discretion of the Care and Processing Group Supervisor – may fall under the Processing Strike Team, the Care Strike Team (CST), or a combination of both teams. In smaller events, live animal processing may be performed solely by the CST, while in moderate events, it is generally performed by PST in close coordination with the CST. In large events, the PST may be divided into distinct groups: one to process live animals prior to rehabilitative care by the CST; and one (or more) to process dead animals prior to archival storage. Still larger spills may require multiple PST teams at different Processing Centers. Conducting live bird processing in conjunction with the CST medical intake procedures minimizes handling and maximizes the efficient movement of animals through processing and into care. The PST will often assist in this process.

Each station (live or dead) is subsequently made up of two basic parts:

- **Receiving** – all wildlife are officially “received” by the PST from Transporters working with either the Recovery Group or the Field Stabilization Group; log numbers are assigned and collection and arrival information are recorded.
- **Processing** – remaining data are recorded on the *Data Log* and evidence is collected.

Receiving for both live and dead wildlife can take place at the same location but data for live and dead animals must be kept on separate logs. Live birds will be kept in crates or cardboard boxes cushioned by towels or blankets to await medical assessment and processing. There should only be **one bird per container**; those boxes with more than one should be separated upon arrival at the facility until they have been through both processing and intake.

Carcasses should always be kept separate from live birds for health considerations. Carcasses and bird body fragments should arrive individually wrapped in aluminum foil or paper bags. As with live birds, there should only be one carcass per container. If more than one are in the same bag, they should be separated in order to prevent cross-contamination. Recovery personnel should not place them in plastic bags, which are made from petroleum products and therefore must not be placed in direct contact with carcasses. Receiving should not be conducted without PPE and gloves must be changed between each individual animal.

Table 1: Processing Strike Team Personnel

Position Title	Chief Responsibilities
PST Leader	Oversees station communication and acts as point of contact with the Wildlife Care & Processing Group Supervisor; directs all activities of station; requests additional equipment through the appropriate ICS channels; manages data and evidence; and keeps Processing Center running smoothly.
PST Coordinator	Directly leads one of multiple processing teams at the same Center, or when processing is warranted at multiple Centers. Reports to the PST Leader. These duties may be completed by the PST Leader during smaller events.
Receiver	At specified receiving location at primary care center, receives dead and/or debilitated wildlife from Wildlife Recovery Group personnel; gives each animal a unique log number; makes sure each bird is in a separate container; acquires complete collection and collector information from deliverer; confirms oiling status of live birds; organizes order of processing; and assesses priority species or emergency cases among live birds.
Data Collector	During processing, identifies species, assesses condition, collects oiling data, collects oil sample and bands/tags individuals with unique coded markers.
Data Recorder	Keeps accurate and complete records of data collection on the <i>Data Log</i> , records collector's observations, prompts collector for data log information, and assists collector as needed.
Photographer	Photographs all individuals, updates specimen information on photo backdrop, ensures clear photographs with all pertinent information are taken of each individual, and maintains <i>Photographic Corrections Log</i> .
Animal Handler	Assists data collector with bird handling during photography, banding and processing (live station only).
Data Entry Specialist	Enters and proofs all data on the PST logs, looks for obvious mistakes or missing information, corrects any errors encountered, and ensures integrity of database and backups. Proofing must always be done in pairs in which one person reads the raw data while the other checks the computer files for accuracy.

Procedures for Receiving Wildlife at Center

Throughout the course of the response, oiled wildlife will be brought to the Center by personnel from the Recovery Group and/or the Field Stabilization Group. They are responsible for collecting birds from beaches and bringing them to the facility. **Before letting the deliverer leave, the PST personnel receiving dead or debilitated animals must confirm there is collection information for each animal.** Once animals are turned over to the Processing Center, they become the legal responsibility of PST personnel. From that point forward, PST personnel will track, manage and document all specimens.

Ensuring collection information arrives with the animal:

Wildlife Recovery Group personnel should provide the following information for every

animal (typically written on each carcass bag or the green OWCN Animal Collection Tag that is affixed to the carrier box or bag; or in some cases included on the Stabilization Form/orange OWCN Basic First Aid tag accompanying the bird or dictated by the deliverer and recorded directly on the *Data Log* or transport container):

- Collector's name (and phone number if not part of the Wildlife Recovery Group effort). If the collector is unknown, the deliverer's name will be recorded here, preceded by "DEL" to distinguish them from the collector.
- Collection location: general name and GPS coordinates;
- The date the animal was *recovered* from the beach;
- The time the animal was *recovered* from the beach; and
- Field ID number, or preprinted label number or band/tag number, if implemented. A field banding/numbering system that links animals to stabilization documents (i.e., Stabilization Form and Stabilization Census Form) may be implemented by recovery personnel. Field bands will be orange.

This information will be transferred to the appropriate *Data Log*. For dead animals, this can be transferred during processing and not necessarily during receiving. If the collector is unknown, the deliverer's name, preceded by "DEL:", will be recorded on the *Data Log* or initially on the bag/box itself. Note, data on species and oiling status collected by field personnel will not be transcribed to the *Data Log*.

Starting Data Logs and Assigning Log Numbers:

Each animal should be recorded onto its appropriate (live or dead) animal *Data Log* with the facility acronym and spill name written on it and the appropriate options circled. Keep separate *Data Logs* at each Primary Care Facility for:

- live versus dead animals
- birds versus mammals (versus "other" for additional taxa).
- new birds versus "re-strands" (i.e., birds that were released earlier in the same incident and return to the center live or dead).

Consecutive log numbers will be assigned to each individual animal immediately upon arrival at the Processing Center. This unique identifier will be used to track the animal throughout the entire process from intake to either release or archiving in the morgue. All data/evidence collected and all treatment received by this animal (medical evaluations, care, washing etc.) will be referenced by the Log number, so it is critical that each animal is assigned an appropriate number and that it is clearly marked on the box and all relevant forms. Log numbers will have a prefix of "D" for dead animals and "L" for live animals, and will start with D-001 and L-001, respectively. Non-avian taxa should be recorded on separate *Data Logs*, and are given an added prefix according to their taxa (e.g., mammals would be LM-001 onwards). Receivers will write the log number on the *Data Log* and on the box/bag/tag the bird came in.

In Level III responses or ones that cover a large geographic area, the PST may have to establish Processing Centers at different facilities. In this event, an additional standardized 2-3 character prefix (Appendix 11) will be added to the log number to identify the facility, thereby ensuring a unique log number for each animal recovered in the spill event. The full log number,

inclusive of facility prefix, is in most cases only included in the electronic databases (e.g., L-103 becomes SFB-L-103 in database), and it can be added at data entry or post-hoc in batches, so that the records across facilities can be merged. The facility prefix will typically not be added to the band, the data forms, or the evidence. The exception is if an animal is transferred to another facility, upon which it will retain its original log # with full facility prefix (including on the band). Prefixes are not in effect in the electronic database if there is only one primary care facility in use, as all data are affiliated with the same facility.

The next consecutive appropriate log number will be assigned to each animal as it is received and will be immediately be recorded in the *Data Log*, along with the date and time the animal arrived at the facility. The log number will also immediately be written on the transport box containing the live animal, on the green recovery tag affixed to the box, or on the paper bag containing the carcass (or on a tag attached to the carcass where a paper bag is not possible). It is crucial that log numbers are clearly visible as live birds will be processed in order of their arrival (i.e., log number sequence). The exceptions to this are priority species (e.g., T&E or sensitive), special cases, and those needing more immediate medical attention, which may be treated out of sequence. All individuals will then be given to the respective processing station.

Animals collected live but arriving dead at the Processing Center – even those that may have been treated at stabilization centers – are recorded on the *Dead Animal Data Log*. For re-stranded birds (ones released during the same spill event and returning live or dead), use original log number.

To ensure no data are lost, when large numbers of birds arrive at once and it is not possible to record all receiving-related data on the *Data Log* during receiving, the PST receivers will write the deliverer's name, the arrival time and the date on a piece of paper that is attached to each group of birds arriving together (e.g., on a garbage bag the carcasses are in). For live birds this will require more creative organization (e.g., marking on a piece of paper the arrival time, date, and deliverer for birds 110-145 if log numbers are written on the boxes, or marking the beginning and ending of one batch with a piece of paper with these data). Receivers, under the PST Leader, may take whatever approach they determine to be the most efficient in a given situation.

Specifics on Receiving Live Birds

If both live and dead birds are received simultaneously, live birds are given priority to reduce the length of time before the rehabilitation process begins.

Receivers are responsible for the following:

- Assigning log numbers and acquiring all collection data (see above for instructions).
- Determining if the bird is still alive. If it has died in transport - even if it was previously treated at a stabilization facility – it is given the next consecutive **dead** bird log number starting with the prefix “D”. In the notes, record that it was alive when recovered and/or transferred. If during a large spill event there are official remote processing centers where birds are actually assigned log numbers, any bird that dies en route from the processing center to the primary care facility will retain its original (live) log number.
- Ensuring that each box contains only one bird. If there is more than one bird in a box, separate them and be sure to note on the *Data Log* which bird it was with (in case of cross contamination). Each bird gets its own log number.
- Assessing the condition of the bird (for processing and/or medical care prioritization)

- Ensuring that birds are cushioned by towels or other appropriate materials, and are in a large enough box.
- Ensuring that animals are not in cloth bags or pillowcases, and are not covered by their towel as this can impair respiration.
- Checking to see if the bird is actually oiled. Live but unoiled birds should not be added to the spill data logs. Receivers must check each live bird for oil before assigning it a log number. In many cases (check with Care and Processing Group Supervisor) unoiled birds in need of rehabilitation will be sent elsewhere. All unoiled birds should also be checked for federal leg bands to determine if they are re-strands. It may be more efficient to check for federal bands on oiled birds during intake and processing, at which point the bird will have to be reassigned back to its original log number if it is a re-strand.

Prioritize birds for the live processing station according to the following criteria:

- Birds of endangered, threatened or special concern status should be dealt with first. Current special status lists (state and federal) should be downloaded at the time of a spill from (see <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEAnimals.pdf> and <http://www.fws.gov/Endangered/wildlife.html#Species>) and available at the processing stations. PST and CST Leaders should be alerted to the presence of special status species.
- Any bird that appears to be in critical condition or distress should be seen by the animal care staff as soon as possible; alert a veterinarian to its condition and move the animal to the front of the line if multiple birds are waiting to be examined. It may be examined prior to the collection of the rest of the processing data.
- Any birds with medical issues documented on their stabilization form, on their orange Stabilization First Aid tag, or on the green Collection tag should be brought to the attention of the animal care staff. PST personnel should check the forms/tags that arrive with birds to identify such issues.
- All other birds should be processed in the order of arrival, which should correspond with the order of their log number. The log number must be clearly visible on the transport box and the boxes should be ordered accordingly.

Specifics on Receiving Dead Birds

Processing Strike Team receivers will write the next consecutive dead animal log number in permanent marker on each carcass bag received, and will record this in the *Data Log* along with the date and time the carcass arrived at the facility.

Receivers are responsible for the following:

- Assigning log numbers and acquiring all collection data (see above for instructions).
- Checking that carcasses are packaged properly. If any arrive loose or plastic, place them in individual paper bags and transfer any information from the original packaging/tag to the *Data Log*. Also record into the *Data Log* notes that it was initially contaminated by plastic. Ask the collector (if present) not to use plastic if they recover any additional specimens.

- Ensuring that each bag contains only one dead bird; if not, place each extra carcass in its own bag with a unique log number. Be sure to record in the *Data Log* notes that the carcass was contaminated by other dead birds. If it is busy and there is not time to investigate this during receiving, personnel will address this issue during processing and assign the next available log number to the second carcass.

Carcasses that have been through receiving should be stored in boxes or other containers along with other carcasses collected on the same date until they can be processed. It is not always possible to process dead birds when they arrive at the facility, so if they are not going to be processed until a later date or much later that day, they should be stored in a locked freezer.

Processing Procedures

Record all information collected during processing on the *Live Animal Data Log* or the *Dead Animal Data Log* (see Attachments).

An Overview of Live Bird Processing

If the Processing Center and the Medical Intake area of the Primary Care facility are joined or adjacent to one another (as will generally be the case in Level I and Level II responses) it is in the best interest of the bird to combine the preliminary medical examination with processing. To minimize stress to debilitated birds, only one person (an experienced animal handler) should handle each bird during this period, unless the species requires two or more handlers for safe restraint.

Under circumstances where a spill has occurred at a significant distance from a Primary Care facility and the veterinary stabilization facility/facilities close to the spill site does/do not include Processing Centers, live animals will generally only receive first aid (i.e., fluids, warmth) at stabilization centers but will not be processed at these sites. Separate stabilization forms will be used at these sites to indicate these therapies and capture information critical for ultimate processing (capture and location data) and will accompany animals to the Primary Care facility. PST personnel will staple this form behind the *Intake Form* that will be initiated at the Primary Care facility. Another possible option, should large numbers of live and dead animals be collected at a significant distance from the Care facility, is that temporary Receiving Centers (based out of one of OSPR's mobile veterinary laboratories or another temporary structure) may be established at the remote location and staffed by one or more members of the PST to ensure appropriate data collection. If official processing has begun at one of these remote facilities, Chain of Custody forms are required for their transfer to the Primary Care facility (see section on transferring animals and evidence).

During Level I responses, the Care and Processing Group Supervisor will assess whether PST or CST personnel conduct the processing. Additionally, all evaluation and processing steps may be done from the oiled bird intake room at the Primary Care facility. During Level II responses, processing will generally be conducted by PST personnel in coordination with the CST medical intake exam. In Level III responses all processing will often be done by PST personnel before birds receive an intake exam.

The process for Level II responses will generally go as follows, with modifications made as necessary. All data are recorded on the *Live Animal Data Log*.

- PST personnel begin an *Intake Form* for each bird, recording the log number (which was

assigned during receiving and written then on the box and *Data Log*) and collection information on it, and attach any stabilization forms that may have arrived with the animal (also writing the log number on top of the stabilization form). These forms are then affixed to the box containing the bird (e.g., inserted through the handle).

- Once all collection information has been transcribed from the green OWCN Animal Collection Tag to the *Data Log*, the log number is written on the tag that is then filed in a box or envelope in case they need to be referred to later. If too busy, if a bird needs to be immediate veterinary care, or if the pertinent pages of the *Data Log* are in use at the live bird processing station (where photograph, banding, and feather sampling occurs), then this information can be transcribed to the *Data Log* later from the green OWCN Animal Collection Tag.
- PST personnel visually examine each bird in its box, identify it to species (handling it briefly if necessary for this purpose), and write the species on the *Intake Form* and *Data Log*.
- PST personnel organize batches of birds such that care personnel can grab the next consecutive (or otherwise prioritized) log numbered bird to complete processing and conduct an intake examination. It is imperative that in situations where many birds are waiting for intake and processing, they are done in order.
- The CST animal handler takes the next bird out of the box, and brings it to the PST personnel in charge of the photograph, banding, and feather sampling (often in assembly line format if there are many birds present). The time and date of processing are recorded on the *Data Log* at this point, and the name of the processor and oiling status are filled out on the *Intake Form*.
- Any orange field band is removed, recorded on the *Intake Form* and *Data Log*, and replaced with a temporary band labeled with the log number. PST personnel will use an industrial permanent marker to label a temporary band with the bird's log number. Multiple bands can be prepared in advance. Banders will vary the color of the band used (following the guidelines of the OWCN color band key; Appendix 10), even within a batch of birds, so that it is easier to tell individual birds apart from one another. Bands will generally be prepared at the live bird processing station at the same time as the photo and feather samples are taken. Smaller shorebirds (band size 1 through 3) do not get such a temporary band, but instead will be banded with a unique combination of colored plastic leg bands which will not be marked with their log number (see *Temp Band/Tag Color and Number* below for details). Personnel will write the band number or color combination both on the *Data Log* and the *Intake Form*.
- The evidence (photograph and feather sample) is collected, recorded as such on the *Data Log* and *Intake Form*, and labeled and stored as outlined in the processing instructions.
- The animal handler brings the bird to an intake station.
- Care personnel conduct the intake exam. After completion, care personnel confirm that the processing section on the *Intake Form* is filled out before advancing the bird to Pre-wash Care and bring the bird to the processing station if incomplete.
- The bird may now begin the regular rehabilitation process.

A Note About Long Waiting Periods:

All live birds will be processed before being moved to stabilization or removed from their boxes and put in pens. Exceptions will be made if birds need to be treated medically. Also, if the wait will be long before intake and processing can be done (e.g., relatively large spills), birds may be individually housed in standard net-bottomed rehabilitation pens. These birds *must remain separate from the birds in pre-wash care*, and this should be done only with the careful oversight by care and processing leaders. Additionally, birds waiting long periods before intake and processing can be gavaged with fluids in their boxes. Care and processing leaders must be involved in this process so birds can be tracked and not handled immediately after being gavaged. Extreme care will be taken to make sure the earliest arriving birds go through intake and processing first.

An Overview of Dead Bird Processing

Dead birds will be processed in a designated area (or areas) at the center. If needed, multiple dead bird processing teams can be working simultaneously at one center. Dead bird processing is simpler than live bird processing (above) as all data, except those collected upon arrival, are collected at one time. Before processing dead birds, spread a large, clean sheet of heavy duty aluminum foil on the counter where the PST Data Collector is stationed and place the carcass on the foil during processing; upon completion, this foil will be used to wrap the carcass (see below).

An Overview of Marine Mammal Processing

In most cases, live marine mammal handling and processing will be performed by personnel from the California Marine Mammal Stranding Network (CMMSN) or veterinarians from OSPR or OWCN, according to interagency agreements. However in larger marine mammal events, the PST will likely oversee the processing of marine mammals and be responsible for data and evidence management, working closely with the aforementioned groups. In events with few or no live marine mammals, the PST may be responsible for processing dead marine mammals. In either case, the forms identified in this document should be used for consistency in record keeping, with the pertinent data then transcribed onto the appropriate agency paperwork at a later date. See *Feather/Oil Sample* section below for more detailed instructions on collecting oil samples from marine mammals. Note, more comprehensive protocols for marine mammal processing are currently in development.

A Note about Birds Arriving with Federal Bands (Includes Re-strands)

If a live bird arrives at the facility already banded (which will typically be noted at processing), check to see if they are re-strands (returned birds released during same incident). Re-strands are logged on a special “Re-strand” Live or Dead Bird *Data Log* (instead of the normal “New” Live or Dead Bird *Data Log*) with their original log number, and given a new line of data. All re-strands are processed, regardless of oiling status (with “re-strand” written on all evidence), and may be treated at the facility at the discretion of the Care and Processing Group Supervisor. Processing personnel will alert the PST Leader to the arrival of any re-strand. Any carcasses arriving with federal bands will also be checked against banding logs from the incident, and those that are re-strands will be logged on the dead bird re-strand log with their original log numbers. Again, processing personnel must notify the PST Leader of this event. Re-strands will also have their federal band carefully recorded in the *Notes* field. Federally banded birds that are not re-strands will have their federal bands carefully recorded (and double-checked) in the *Notes* field and will later be

reported to the federal Bird Banding Lab by the Care and Processing Group Supervisor or the Processing Strike Team Leader. Both recoveries and re-strands will also be recorded at the time of processing on the *Band Recovery Form*. In order to be able to immediately identify re-strands during processing, wildlife processing personnel will need a system to cross-reference bands from all birds arriving with federal bands against bands put on released birds to date during the event. This may involve modifying a list each morning of pre-release bandings and posting this list, or having access to the banding records to cross reference birds that arrive federally banded.

Data Collection for the Live and Dead Animal Data Logs

A standardized protocol has been developed for all data collection to ensure that techniques and effort involved in information documentation is uniform at all processing centers and among spill events. The order in which items are presented corresponds to either (or both) the *Oiled Live Animal Data Log* or the *Oiled Dead Animal Data Log*. Differences between the *Live* and *Dead Logs* are due to some oiling information (e.g., location, percent, and depth of oiling) being recorded for live animals on the *Intake Form*, negating the need to record the information in both places; or to additional information being captured for dead animals (e.g., scavenging information and carcass condition). Remember that proper PPE and safety procedures should be employed at all times to ensure protection from contamination.

On top of each *Data Log* form, record the spill name, facility acronym, the taxon to be logged (i.e., Bird, Mammal or Other), and whether this log is for new animals or re-strands from the same incident (New vs. Re-strand). The codes used to complete the *Data Log* are detailed herein and are also found simplified in a one-page summary (the *Data Log Code Key*; see Attachments). Data recorders should make sure all fields are filled in with the appropriate code.

The following fields are filled out by receivers upon the animal's arrival (live and dead):

- a. **Log Number:** The unique number used to identify each individual animal; prescribed upon receiving the animal. Use a different sequence in numerical order for each station, beginning with L for live birds and D for dead birds. Note: for re-stranded birds (ones released during the same spill event and returning live or dead), use original log number. See instructions for assigning log numbers above.
- b. **Date Arrived:** Enter the date the animal or carcass arrived at the processing station.
- c. **Time Arrived:** Record the time the animal arrived at the facility in 24-hour military format.

The following fields are recorded by receivers soon after the animal's arrival for live animals, and are generally filled out during processing for dead animals (transcribed from the green OWCN Animal Collection Tag or from writing on the carcass bag):

- d. **Date Collected:** Record the date the animal was collected from the beach/spill area.
- e. **Time Collected:** Record the time the animal was collected from the beach/spill area in 24-hour military format. If there is no data, put a dash in the space provided.
- f. **Collector Name:** Record the first initial and last name of the person who initially captured the animal, as detailed on the bag or box in which the animal arrived. If the collector is not

Wildlife Recovery Group personnel (e.g., if general public), also record phone number. If collector is unknown, record the name of the deliverer, preceded by “DEL:” so it is clear this name does not reflect the collector.

- g. **Collection Location:** Record the beach or other location name where the animal was collected/captured. Further details may be described in the Notes section (see below).
- h. **GPS Coordinates (2 fields):** Record GPS coordinates, if provided, for where the animal was collected/captured. If datum are provided, include in Notes.

The following fields are filled out during processing (live and dead):

- i. **Field Band/Tag Color & Number** (live log only): Provide the temporary band/tag/Field ID number affixed during initial collection or at a stabilization center, with color as the prefix (e.g., O for orange; O-XXXX). For dead birds, provide this information in the Band/Tag field, leaving room to add the Temp Band number; see Temp Band below for instructions on when to remove these from live birds (do not remove from dead birds).
- j. **Date Processed:** Enter the date of processing (i.e., collection of the rest of the data). This is often different from the date collected.
- k. **Time Processed.** Record the time when processing commences in 24-hr military format.
- l. **Processor’s Name:** Record the first initial and last name of the Data Collector on this animal.
- m. **Species Code:** Record the standard four letter code for the species. See the **Avian Species Codes and Status document** in appendix for a list of appropriate codes taken from the standard American Ornithologists’ Union (AOU) four-letter abbreviations; and see the **Marine Mammal Species Codes and Status** in appendix for those standardized names. If the species is not on these lists or you are unable to determine the proper code, assign a code and write the full species name in the Notes section. Great care must be given to the accurate identification of beachcast animals. It is best to identify all animals to the species level. However, this task may be extremely difficult as they are often heavily oiled and/or fragmented, and it is not always possible to identify an animal to species. If an animal is not readily identifiable to species, a more general taxonomic code may be used (i.e. GULL or DUCK or PINNIPED). Additionally, for individuals where all evidence points to it being of a given species or taxa, but some definitive criteria is missing (because of the condition of the bird) that prevents you from being 100% certain, you may record the taxa as the likely 4-letter code followed by a question mark (e.g., “SUSC?”). Put in notes why you thought it was that species and what was missing that prevented a positive identification. If identification is impossible, you may record a BIRD. This is rare and all efforts should be made to identify the specimen to the lowest possible taxonomic level.

A number of field guides are available to aid in the identification of oiled species or carcasses, even when only skeletal fragments remain. The most useful of these is NOAA’s *Beached Marine Birds and Mammals of the North American West Coast: A Revised Guide to their Census and Identification, With Supplemental Keys to Beached Sea Turtles and*

Sharks. Hass and Parrish's *Beached Birds: A COASST Field Guide* is also helpful. Other reference manuals that may be useful are (1) *Seabirds: An Identification Guide* (P. Harrison), (2) *Ducks, Geese and Swans of North America* (Bellrose), (3) *Gulls: A Guide to Identification* (P.J. Grant), (4) *Shorebirds: An Identification Guide* (P. Hayman et al.), (5) *National Geographic Field Guide to North American Birds*, (6) *Peterson's Field Guide to Western Birds*, (7) *Guide to North American Birds* (Sibley), (8) *Marine Mammals of the World* (T.A. Jefferson, S. Leatherwood, and M.A. Webber), and (9) *Skeletal Identification of California Sea Lions and Harbor Seals for Archeologists* (J.C. Kasper). **It is important to become familiar with these guides.**

Threatened or endangered species must be reported and shown immediately to the Processing Strike Team Leader, so that the Care and Processing Group Supervisor may be given this information in a timely matter. Any carcasses that could be from a threatened or endangered species but are in poor condition and difficult to identify should be given extra attention. Documentation of threatened and endangered species carcasses in any condition must be thorough.

Species identifications will be rechecked 1) during morguing or 2) during pre-release banding. This is in an effort to correct any errors caused by oiling or to refine the taxon to which an individual is identified (e.g., if it could not be determined which scaup species it was when it was oiled). A system must be established to ensure this information is passed on appropriately.

- n. **Temporary Band/Tag Color and Number:** Band numbers will be used to track birds throughout processing, storage and rehabilitation, particularly for live birds entering the rehab process.

For Live Birds: All live birds will be fitted with temporary leg bands provided by the OWCN. Generally (except for smaller shorebirds; see below), a single tyvek or plastic color band will be used with the bird's log number written on it using an Industrial Sharpie permanent marker; only the number and not the "L" for "Live" will be written on the band. Colors will be WHITE, PINK, or YELLOW (or will otherwise follow the most current OWCN color band key) and will be varied so that it is easier to tell individual birds apart from one another. The band number will be tracked as the color of the band followed by the number written on the band (e.g., a blue band for Log # 750 will be written as B-750). Any field bands (orange) will be recorded as such but removed from live birds and replaced with temp bands.

However, smaller shorebirds (band size 1 through 3) will be marked by a unique combination of three colored plastic leg butt-end (uncoiled) bands – which will not be marked with their log number – since their legs are too small for the traditional temp color bands. Color combinations are read left leg to right leg, top (closest to bird's body) to bottom (closest to foot), and using same color band abbreviations as listed in the OWCN color band key; e.g., RW/O represents a combination with red over white on the left leg and orange on the right leg (see Appendix 12). A list of available combinations to be shared across all species (e.g., not repeated among species but a single combination used only once in a spill) has been established to prevent duplicate combos and track what has been used; this system

will be carefully managed by the PST Leader and is detailed in a separate document managed by the PST Leader (Appendix 13).

See *Avian Species Codes and Status* in **Table 3** for the appropriate band sizes for most bird species that may be encountered in a California marine oil spill. A few birds that arrive may already be bearing federal bands; first determine if this bird is a re-strand. Put the federal band number clearly in the Notes, taking care to proofread the band number after recording it; and record this info in the Band Recovery Form as well. For shorebirds bearing metal bands, this will also serve as their tracking band number; live birds other than shorebirds arriving with a federal band will still be fitted with a temporary band that will be used as the tracking number while the bird is under care at the facility. Care should be taken to select which leg to apply the colored band to on live animals that may have burns or other wounds on their legs.

If a bird's temporary band is lost during the rehabilitation process, efforts must be made to try to determine the identity of the bird (e.g., may be only one of that species, may be implanted with a subcutaneous transponder, or may be only one that has lost a band), and the bird will then be rebanded with the same band color and number. If this is not possible, the bird will be given a new log number, from a different series, which will be used to follow it throughout the rest of the process. This log number will begin with "UL" (for unknown log #), will be logged onto an *UL Data Log* made for this purpose, and will be banded with a GREEN colored tyvek band to differentiate it from regular log numbers; the prefix "UL" will be written on the band along with its UL number.

For Dead Birds: Write their log number on a PURPLE/VIOLET tyvek band, inclusive of the "D" prefix for Dead (e.g., D001 written on band; record as "V-D001"). If a bird arrives with a field band (often indicating it was collected alive), keep this band on its leg and record it carefully in the band/tag field; in addition give the carcass a temp band with its log number, and record this as well in the same field (for data entry these bands will be entered into separate fields). Bands can be tied with twine or wire to a carcass it does not fit or one that lacks legs. A few birds may arrive already bearing federal bands; put this clearly in the notes, taking care to proofread the band number a second time after initially recording it.

For mammals and sea turtles: Plastic NMFS tags should be fitted on a hind flipper of all phocids (seals) and sea turtles and on the fore flipper of otariids (sea lions and fur seals). If such tags are not available for dead animals, tie a bird band to the carcass. Sea otters will be marked with tags on the rear flippers; live otters will additionally be implanted with a transponder.

- o. **Condition (dead log only):** Indicate the physical condition of the animal at the time of processing according to the following codes.
- 1 = freshly dead with no body parts missing and no scavenging
 - 2 = freshly dead whole carcass (no body parts missing) that has been scavenged.
 - 3 = decomposing whole carcass
 - 4 = body parts only - fresh. This includes birds complete except for missing

heads. The details of the fragment should be described in the *Notes* (e.g., “wing only”)

- 5 = body parts only - decomposing (elaborate on which parts are present in *Notes*.)
- 6 = dessicated, mummified carcass
- 99 = not evaluated

p Extent of Scavenging (dead log only): Indicate the degree and presence of scavenging according to the codes below.

- 0 = no scavenging detected
- 1 = light scavenging (small areas of tissue removed or impacted)
- 2 = moderate scavenging (moderate amount of tissue removed)
- 3 = heavy scavenging (large amounts of body with tissue removed)
- 99 = not evaluated

q. Oiling Status (dead log only): Indicate whether oil or evidence of oiling was detected during processing (data on live birds may be recorded on *Intake Forms* and later transferred over). Note that these codes are hierarchical, meaning that you should choose the first (lowest) numbered code that applies.

- 0 = no, the presence of oil not detected
- 1 = yes, oil visually detected
- 2 = yes, smell oil
- 3 = yes, skin burned
- 4 = unknown, but skin is wet/not waterproof
- 5 = unknown, but plumage is misaligned, parted, or sticky
- 99 = not evaluated

r. % of Bird Oiled or Sheened (dead log only). Enter code for extent of the body surface covered by oil.

- 1 = <2% of body
- 2 = 2-25% of body
- 3 = 26-50% of body
- 4 = 51-75% of body covered
- 5 = 76-100% of body covered
- 6 = oil is detected but extent undeterminable due to state of carcass. This is sometimes the case if the carcass is heavily scavenged (dead bird log only)

- 7 = no oil is detected but this may be due to state of carcass. This could be if carcass is heavily scavenged or excessively wet and sandy (dead bird log only)
 - 99 = percent oiled not evaluated or applicable (use if not visibly oiled).
- s. **Depth of Oil (dead log only):** Record the physical appearance of the oil on the animal and the depth to which it has penetrated the plumage (data on live birds recorded on *Medical Intake Forms*).
- 1 = surface (oil has penetrated $\frac{1}{4}$ of the way or less down the feather shaft)
 - 2 = moderate (oil has penetrated $> \frac{1}{4}$ way down the feather shaft but not to the skin (often penetrating $\sim \frac{1}{2}$ way).
 - 3 = deep (oil has penetrated to skin)
 - 99 = not evaluated or applicable (use this if no external oil is visible)
- t. **Where Oiled (dead log only):** Enter the appropriate code to indicate the location(s) of oil found on the body (data on live birds recorded on *Intake Forms*).
- 1 = bill/mouth area only (look inside of mouth)
 - 2 = body (one spot on body, spot not on waterline)
 - 3 = spotty (more than one spot in multiple areas on body; but not 100% oiled)
 - 4 = waterline (oil from keel downwards)
 - 5 = entire body (100% oiled)
 - 99 = not evaluated or applicable (use this code if no external oil is visible)
- u. **Feather/Oil Sample and Photograph Taken?**
- i. **Feather/Oil Sample Taken:** Record if a feather and oil sample were collected. Oiled feather/pelage samples should be collected on all animals for chemical fingerprinting in order to determine the origin of each sample. Record as:
- Y = yes, a feather/fur/tissue sample was taken
 - N = no sample was taken

For birds, take obviously oiled feathers for analyses. **If no apparent oil is found on the specimen, a sample still must be taken**, from the region (live) or regions (dead) where oil is commonly found, such as the breasts or the flanks. Be sure to avoid contact with human skin, plastic, or equipment (e.g., gloves) that may have been contaminated by a prior specimen. Always clean equipment with alcohol between specimens and wear clean nitrile or vinyl gloves when collecting samples (no latex). For human safety as well as chemical fingerprinting, nitrile gloves are the best choice as nitrile will show a paraffin peak when analyzed; however, while taking the sample try to avoid touching the feather sample with your gloves. Use scissors, hemostat, or foil instead to prevent contaminating the sample.

The Petroleum Chemistry Laboratory requires 5 completely oiled body feathers (~100 mg of oil) to properly analyze the sample. For live birds, the best technique is to pull out several body feathers with clean hemostats (better than tweezers; never use scissors) as body feathers will then be able to grow back. Feathers are removed by grasping the base of each feather with the hemostat and pulling in the direction of feather growth. Never attempt to remove primary or secondary flight feathers from live birds. Pull five of the most heavily oiled feathers for evidence; if the feathers are only oiled at a surface or moderate depth, more feathers must be collected to have enough product for fingerprinting – generally enough to equal 5 heavily oiled contour feathers. Feathers should be taken from more than one location, and if possible above the water line, to minimize waterproofing impacts. For dead birds, remove contaminated feathers with scissors, generally from more than one location. Clean the hemostat/scissors with alcohol between specimens, and make sure no oil is left on them. For heavily tarred birds it may be more efficient to take the feather sample with a disposable scalpel.

Wrap the samples in heavy duty aluminum foil. Carefully fold the foil around the sample; label the sample using a Sharpie pen directly on the foil; place the foil in a small Ziploc bag (for sample protection and to reduce outgassing); and place the bag in a plain letter-sized envelope, sealing the evidence shut with a moist sponge.

The Ziploc bag does not need a label, but label the foil with the following information:

- Log number
- Species
- Date

The envelope must be clearly marked with the following information (the basics of which can be pre-printed onto the envelopes with an available printer or be on pre-printed weatherproof labels for efficiency):

- Log number
- Species (four-letter code)
- Band or tag number (for dead birds that also have field bands, or for live or dead birds that also have a federal band, list both here)
- Facility acronym
- Spill name
- Date of processing
- Collection location
- Collection date

Place the samples in a designated container or in freezer bags. These should be clearly marked as feather samples, along with the processing date, station designation (live vs. dead), and range of log numbers. For preservation, samples must be stored in a locked

freezer (or refrigerator, if a freezer is not available) and newly acquired samples should regularly be moved there. Note: OWCN Chain of Custody forms must be filled out for all feather samples leaving the OWCN facility for any reason (see section on transferring for more information on COC forms).

For marine mammals: For visibly oiled animals (especially live): scrape visible oil from fur with wooden spatula (tongue depressor). Insert oil covered spatula in designated glass jar, and break off the remaining un-oiled portion allowing the lid to close. Fur can be cut from dead animals with visibly oiled fur where this is possible. For animals with no visible oiling: rub potentially affected area(s) with a 4x4 cotton cloth using sterile forceps or hemostats that have been cleaned with isopropyl alcohol, and place the cloth into a designated glass jar. Additionally, a sample of the cloth must be submitted to identify cross contamination. Place the control sample in an additional evidence jar and label accordingly. As with collecting feather samples, avoid touching the sample with your gloves as this may lead to unintentional contamination.

ii. **Photo Taken?:** Record if a photo was taken. All dead and debilitated animals will be photographed using a digital camera (even animals with no apparent oil). If available, a photo scale should be used for each photo.

- Y = yes, photo was taken
- N = no photo was taken

Position the bird so that the oil on the bird is visible in the frame and so that the species can be identified (if possible). The photograph should be taken as close up as possible without excluding any of the pertinent components. For the live bird station at least one animal handler will safely hold the bird in place, while PST or CST personnel take the photograph. The standard photo backdrop should clearly show the following information written in heavy black marker:

- Date of processing
- Spill name
- Facility acronym
- Log number
- Species code
- Temp Band color & number (for dead birds that also have field bands, or for live or dead birds that also have a federal band, list both here)

Date, spill name, and facility acronym are on a semi-permanent backdrop; the log number, species code, and band number will be changed for every new individual, and it is the responsibility of one of the PST personnel to prepare this backdrop (e.g., on a dry erase board) prior to taking the photograph.

Before the animal leaves, the photographer will confirm the photograph was taken properly,

and that all information is clearly visible on the backdrop. If anything is not clearly visible the photo should be retaken. Only personnel specifically trained and authorized by the Processing Strike Team Leader are allowed to delete flawed photographs. Otherwise, any incorrect or otherwise flawed photographs must be retained and recorded in the *Photographic Corrections Log*, which is part of the photographic evidence. Additionally, if a mistake was made in the backdrop but it is not possible to retake the photograph (e.g., the animal has moved on), the details must be recorded in the *Photographic Corrections Log*. Such mistakes include components in the backdrop that were incorrectly written (i.e. wrong log # or incorrect date). They do not include changes to data associated with this individual post-processing, such as species re-identification or re-banding, as those data will be captured in the *Data Log*.

Using established procedures determined by Processing Strike Team Leader and Care and Processing Group Supervisor, digital photographs will be backed up and organized at least once daily. The PST Leader will oversee this process. When the memory card in the digital camera is full, it will be placed in an envelope labeled with the spill name, station ID, date range for photos taken, the range of log numbers for specimens it contains photographs of. The envelope and pertinent backup DVDs will be secured under lock and key. Note: OWCN COC forms must be filled out for all memory cards or DVDs of photos leaving the OWCN facility (see section on transferring evidence for more information on COC forms).

- v. **Disposition Status (live log only):** Record the status of the animal when it leaves the rehabilitation process at the primary care facility. OWCN COC forms are to be filled out if animals leave the primary care facility for another facility.
 - R = released
 - D = died
 - E = euthanized
 - T = transferred
- w. **Disposition Date (live log only):** Enter the date the animal left veterinary care of the Care and Processing Group (transferred over from vet forms or *Live Bird Mortality Log*).
- x. **Disposition Details (live log) and Morgue Box (dead log):**
 - i. **Federal band number (live log only).** Record the federal band number for all birds that are released (carefully transcribe from the banding log). Note, both live and dead birds that arrived already bearing a federal metal band – considered *band recoveries* as opposed to *re-strands* – will have the federal band number recorded in the notes. If that bird is later released, this will also be its release band. All band recoveries will be reported by the Care and Processing Group Supervisor or the PST Leader to the federal Bird Banding Lab at the conclusion of the spill.
 - ii. **Where transferred (live log only).** Record the acronym of the facility to which a bird is transferred (COC required).

- iii. **Morgue box (live or dead log).** Record the Morgue box number where the specimen was stored. All dead animals should be packaged (after processing) into morgue boxes for storage. This is done in order to easily locate certain individuals (particularly special status or unidentified remains) for response- and post-response-related activities (such as verification of species, sex, age, breeding condition, or cause of death). The morgue box number will be recorded in *Disposition Details* in the live log or in *Morgue Box* in the dead log. In some cases (such as if small enough boxes are unavailable), morgue bags may be used to separate individuals within the large boxes for easier retrieval, and both the bag number and box number must be recorded on the appropriate *Data Log*.

Animals are sorted based on the following criteria (also see *Avian Species Codes and Status*), but all are part of a single consecutive series of morgue boxes (i.e., Box A, B, C):

- “Special Status” (Endangered, Threatened, or Special Concern) carcasses that are identified should be placed in morgue boxes that contain only special status species and labeled accordingly. The morgue box number is recorded on the *Data Log*.
- Fragments and carcasses that were *not* identified to species (often due to degree of oiling or scavenging) should be stored in morgue boxes that contain only these kinds of carcasses, and labeled accordingly. The morgue box number is recorded on the *Data Log*.
- All other carcasses that are identified to species are placed in additional morgue boxes. The morgue box number is recorded on the *Data Log*.
- Birds that arrived dead are to be boxed separately from birds that arrived alive and subsequently died (see *Procedures for Handling Animals that Die While in Rehabilitation* below). Labeling systems should be non-overlapping between the two groups; for instance, a numeric series for dead arrivals and an alpha series (A, B, C) for live arrivals that died. Each box should be labeled consecutively.

Morgue boxes should be labeled with the following information on each side of the box:

- Morgue box number
- Spill name
- Facility acronym
- Dead or Live Station and Birds/Mammals/Other (e.g., “Dead Bird Station”)
- Date carcasses first placed in morgue box (as box can span multiple dates)
- Special type of morgue box (e.g., special status; unidentified)

See *Packaging Carcasses after Completion of Processing*, below, for more details.

OWCN COC forms are to be filled out for individual carcasses or morgue boxes leaving the OWCN facility for any reason.

- y. **Notes:** All additional observations (excluding those listed below for the dead animal

Data Log, where there are special fields for those data) are written in the Notes section on the reverse side of the data log. Notes may possibly include any of the following: any conspicuous cause of death not related to oil (e.g., gun shot wound); a note if the specimen was known to have been contaminated by other petroleum products (e.g. if it was wrapped in plastic) or other carcasses; any other observations or measurements; **the federal band number if a bird arrived already banded**; and **on dead birds be sure to always check for and comment if a toe or wing has been clipped**.

The following data will be collected when possible; this will be done during processing for dead birds, and either at processing (if required for species ID), before release, or post mortem (during morguing process) for live birds. Time constraints and animal care needs may prevent processors from collecting these data, at the discretion of the PST or CST Leaders, but measurements should always be taken (and recorded) when required for definitive identification:

- **Morphometrics:** these measurements should only be done by properly trained individuals. They should only be done on birds where the state of the carcass (if dead) allows it. The protocols are taken from Peter Pyle's *Identification Guide to North American Birds, Part I* for passerines and near-passerines (1997, Slate Creek Press) and *Part II* for seabirds, waterbirds, raptors and most other species (2008, Slate Creek Press).
 - i. **Wing** = unflattened (relaxed) wing chord (mm). Do not put any pressure on the wing that might flatten or extend it, and use a ruler with a perpendicular stop at zero. If wing is too distorted to get an accurate unflattened wing, take two measurements (flattened followed by unflattened; e.g., 194/190).
 - ii. **Tarsus** = the length between the intertarsal joint and the distal end of the last leg scale before the toes emerge. There is often a crevice marking the intertarsal joint, otherwise you can generally feel it with your nail; and the distal end of the last leg scale before the toes emerge can also be determined by bending the foot in a natural position and resting the calipers on top of that bend.
 - iii. **Bill depth** = there are numerous species-specific methods for taking bill depth, and for some species multiple methods are useful. The manner in which this measurement is taken for each species should be carefully documented during each spill, and should follow species-specific recommendations in the literature (especially Pyle 2008). One method is the depth perpendicular to the axis of the bill and taken with calipers at the anterior end of the nares (towards the tip of the bill). Place the top jaw of the calipers even with the anterior ends of the nares and the bottom against the lower mandible below that so that the calipers are exactly perpendicular to the axis of the bill. Other methods include at the gonys, at the deepest part of the bill, or at the base of the proximal end of the upper mandible feathering.
 - iv. **Culmen ("bill from nares to tip")** = distance between the anterior end of the nares and the tip of the bill, taken with calipers. Only possible for species with external nares, and only useful for certain species.
 - v. **Exposed culmen** = the length between the posterior tip of the feathering at the top

base of the bill and the tip of the bill, taken with calipers. Taken on most species.

- **Age:** If determinable indicate the age of the individual (Juv = juvenile, Ad = adult, HY = Hatching-Year, AHY = After-Hatching-Year, SY=Second Year, etc.). Note that some ageing may take place post-processing based on the morphometrics collected.
- **Sex:** If possible by breeding condition, plumage, or morphometrics, indicate if the individual is a male (M) or female (F). Note that some sexing may take place post-processing date based on the morphometrics collected.

Packaging Carcasses after the Completion of Processing

Once all data have been collected for a given carcass, it should be wrapped completely in heavy duty aluminum foil so that no part of it is visible, then the foil-wrapped carcass is placed either (1) in the smallest possible paper bag, sealed securely with masking or other freeze-proof tape, and then sealed in a plastic bag such as a large Ziploc, or (2) directly in shrink-wrap plastic using a vacuum-pack system (depending on the protocol being used for the specific spill). This layer of plastic reduces degradation of the foil, which renders the evidence less useful. If using paper bags, the data recorder should prepare this paper bag so that it is ready upon completion of processing. The following information is written on the foil, and duplicated on the outside of the paper bag or plastic shrink-wrapping (the basics which may be pre-printed on weatherproof labels for efficiency):

- Log Number
- Species Code
- Band Number (for dead birds that also had field bands, or birds that also have a federal band, list both here)
- Date of Packaging
- Facility acronym
- Spill Name

If the paper bag is going in plastic bags that are not clear, the information will need to instead go on the outside of the plastic bag. Even if the writing on the foil is visible through the plastic shrink-wrapping, you must also label the outside of the plastic as degradation of the foil may occur.

Procedures for Handling Animals that Die While in Rehabilitation

Animals that die after entering rehabilitation will return to the hands of Processing Strike Team personnel for data, organization, evidentiary and storage purposes. For such animals, the following is recorded on a separate log sheet (the *Post Arrival Mortalities Log*), which helps track and organize these data for both processing and rehabilitation purposes:

- Initials of the person recording the data
- Log number
- Band number (temp band; if it also has a federal band, list both here)
- Species
- Date of death
- Whether they died or were euthanized
- Morgue box number

- Comments (including morphometrics)

Fill out the *Post Arrivals Mortalities Log* before wrapping the carcass. Specifically, check the species identification in case the bird was misidentified or not identified to species due to degree of oiling at time of processing. The band number written on this form should reflect what is on the carcass, and NOT necessarily the bird's original band. Keeping track of these data is often very helpful to animal care staff, as it allows them to more accurately track the fate of their patients. If time allows and as directed by your supervisor, processors will collect morphometric data at this point to be later transferred to the animal's data log form.

These animals are wrapped in foil, placed in paper bags, labeled and morgued following the same process used for birds that arrive dead (see *Packaging Carcasses After Completion of Processing* and *Morgue Box* above). **Be sure to store these carcasses in the "live bird" morgue boxes.** These morgue box numbers and other pertinent data on this log must then be transferred to the *Live Animal Data Log* sheet so that an individual specimen can be easily retrieved.

Transferring animals or evidence (Chain of Custody)

Chain of Custody forms (a standard state form not included herein) must be used whenever live animals, carcasses, or any evidence (e.g., feather samples) are transferred after having been assigned a log number and been processed. This generally refers to when they are transferred out of the primary wildlife center where processing and animal care occur. Contrary to historical protocol, they do not need to be used prior to that point, nor when initially receiving wildlife from delivery personnel. However, in the event of a large spill where official processing is initiated at a stabilization center, Chain of Custody forms will be used when transferring them to the primary wildlife center.

Demobilization

Processing Strike Team demobilization is initiated when the rate of birds and other oiled wildlife washing ashore approaches zero, search and rescue stops, and the number of mortalities within the Care Strike Team is low. Demobilization is complete once all the birds and carcasses are processed and morgued. Due to the unpredictable nature of oil spills, the duration of Processing Center operation will vary. Orders to demobilize will come via the chain of command through the Wildlife Care & Processing Group Supervisor, and standard checkout and demobilization procedures will be followed as outlined in the Wildlife Response Plan and the ICS.

Appendices

- 1. Suggested Equipment List for the Processing Station**
- 2. *Dead Animal Data Log***
- 3. *Live Animal Data Log***
- 4. *Code Key for Live & Dead Animal Data Logs***
- 5. *Photographic Corrections Log***
- 6. *Post Arrival Mortalities Log***
- 7. *Banding Recovery Form***
- 8. *Avian Species Codes and Status***
- 9. *Marine Mammal Species Codes and Status***
- 10. *Oiled Bird Color Band Key***
- 11. *OWCN Member Organization Facilities and Acronyms***
- 12. *How to Read Color Combinations (Shorebirds)***
- 13. *Color Combos for Smaller Shorebirds (supplemental document)***

Suggested Equipment List

Items Needed at the Processing Center

Alcohol, isopropyl – for cleaning hemostats and scissors
Aluminum foil rolls – sizes large and medium, heavy duty only.
Banding Pliers
Band size measurement device
Bird bands - numbered color bands
Bird bands sizes 1 – 4 (BRD aluminum)
Bird carrying boxes, cardboard/plastic pet carriers for live bird storage
Boxes, small for storage
Calipers
Cellular phones or other communication equipment
Chain of Custody forms (DFG form)
Chairs
Cleaning supplies – heavy duty cleaning fluid and sponges
Clipboards (8); including at least 6 legal-sized
Clocks or wrist-watches (2)
Computer, laptop (1)
Copies of protocol
Copies of Species List
Copies of Index to Reference Guides
Cotton balls
Digital Camera (2+) with 1GB memory card each
Dry-Erase boards for photo backdrop
Envelopes, letter-size
Evidence Tape
File boxes for data forms
File boxes for feather samples
Forms (multiple copies): Live and Dead Animal Data Logs, Photographic Corrections Log, Post-arrival Mortalities Log
Glass specimen/evidence jars
Gloves – disposable nitrile or vinyl, all sizes
Garbage bags
Hemostats
Human First Aid Kit
Identification Guides: Beached Bird/Mammal Guide, Sibley Guide, National Geographic, Guide to Gulls, Guide to Shorebirds, Guide to Seabirds, Guide to Waterfowl, Marine Mammals of the Pacific Coast, Pyle Part II, Point Blue identification placards for select species groups
Identification badges
Labels, pre-printed (2 types: for feather sample envelopes and for carcasses)
Manila folders (letter size)
Markers – thick black, thick colored and permanent (Industrial Sharpie)
Paper – 8.5" x 11" and notepad
Paper bags – double-strength lunch-size & grocery size
Paper towels
Refrigeration and freezers for corpses and samples
Rulers – regular and for photographs
Safety glasses

Scalpels, disposable
Scissors – regular (2 pairs) & surgical (1 pair)
Small gauge aluminum wire to secure bands to fragments
Tables, waist-high
Tape, duct, masking (2") & clear packaging
Towels to place in live bird carrying boxes
Tweezers (large)
Twine/String
Tyvek/Kleenguard suits (or other impermeable protective clothing)
Water proof pens
White garbage bags, medium-sized
Wing chord rule – large (300mm or greater)
Ziploc bags (small, for individual feather samples; large, for multiple feather sample envelopes)

OWCN Oiled Animal Data Log: DEAD Animals													
Oil Spill Name:					Facility:	Circle One: Bird Mammal Other				Circle One: New Restrand			
Log Number (D-xxxx)	Date Arrived (m/d/y)	Time Arrived (24 hr)	Date Collected (m/d/y)	Time Coll'ted (24 hr)	First Initial & Last Name of Collector <small>(use deliverer & "DEL:" if collector unknown)</small>	Collection Location (Beach Name)	GPS Coordinates (N)	GPS Coordinates (W)	Band/Tag Color & No. <small>(Field or temp; C-XXXX)</small>	Date Proc'ed (m/d/y)	Time Proc'ed (24 hr)	Name of Processor	Species Code (XXXX)

OWCN Oiled Animal Data Log: DEAD Animals (continued from front side)																		
Oil Spill Name:								Facility:				Circle One: Bird Mammal Other				Circle One:	New	Restrand
Log Number (D-xxxx)	Condition	Scavenging	Oiling Status	% Oiled	Depth Oiled	Where Oiled	Sample/ Photo Taken? (Y/N)	Wing (mm) [unflatt.]	Tarsus (mm)	Bill Depth (mm) [track where taken]	Culmen / Nares to Tip (mm) [proximal]	Exposed Culmen (mm)	Age	Sex	Morgue Box #	Notes (any other observations, including wing/toe clipping , breeding condition, contamination by petroleum products such as plastic or another specimen, the federal band if bird arrived banded)		

OWCN Oiled Animal Data Log: LIVE Animals									
Oil Spill Name:				Facility:		Circle One: Bird Mammal Other		Circle One: New Re-strand	
Log Number (L-xxxx)	Date Arrived (m/d/y)	Time Arrived (24 hr)	Date Collected (m/d/y)	Time Collected (24 hr)	First Initial & Last Name of Collector (use deliverer & "DEL:" if collector unknown)	Collection Location (Beach Name)	GPS Coordinates (N)	GPS Coordinates (W)	Field Band or Tag Color & Number (C-XXXX)

OWCN Oiled Animal Data Log: LIVE Animals (continued from front side)											
Oil Spill Name:				Facility:			Circle One: Bird Mammal Other			Circle One: New Re-strand	
Log Number (L-xxxx)	Date Processed (m/d/y)	Time Processed (24 hr)	First Initial & Last Name of Examiner	Species Code (XXXX)	Temp Band/Tag Color & Number (C-XXXX)	Oiling Status (0-5)	Sample/ Photo Taken? (Y/N)	Disposition Status (R,D,E,T)	Disposition Date (m/d/y)	Disposition Details <small>(federal band # given at release, morgue box, or where transferred)</small>	Notes <small>(e.g., the federal band number if bird arrived banded, morphometrics, age/sex, cross-contamination info)</small>

Code Key for OWCN/Wildlife Processing Unit

Live & Dead Oiled Animal Data Logs

Record incident name, location, and page; circle live vs. dead. Please be sure all fields are filled in with the appropriate code.

The following list of fields are filled out by receivers upon the animal's arrival:

Intake #: Starting with L for live and D for dead, record the sequential i.d. number which animal was given upon arrival.

Date and Time Collected (2 fields): Date and time (24-hour format) of collection.

Collector Name: Record first initial and last name of collector (from bag/box); if public, put phone number as well.

Collection Location: Name of initial collection/capture location. If necessary use Notes on back for overflow.

GPS Coordinates (2 fields): Coordinates of collection/capture location.

Field Band Number: Provide # of temporary band affixed during initial collection/capture; for dead this will be only band.

Date and Time Arrived (2 fields): Date and time (24-hour format) animal arrived at processing station.

The following list of fields are filled out during processing, not during receiving, or are transferred from other forms:

Date and Time Processed (2 fields): Date and time (24-hour format) the rest of processing (data fields below) was initiated.

Processor Name: First initial and last name of data collector for the individual animal.

Species: Standard 4-letter abbreviation; if unknown, indicate lowest taxonomic category determined (e.g. gull; alcid; bird).

Temp Band/Tag #: For birds enter color and number of band (i.e., B198 if Blue band #198) placed on leg (or elsewhere with string as necessary for incomplete carcasses). This is for live birds other than shorebirds, and dead birds not given a field band. For turtles or phocids, plastic NMFS tags should be fitted on the hind flipper. For otariids, tags go on front flipper

Condition: (dead log only) **1**=freshly dead whole carcass with no evidence of scavenging; **2**=freshly dead and scavenged with no body parts missing; indicate in Notes the location (e.g., breast) of scavenging. **3**=decomposing whole carcass; **4**=body parts only - fresh (elaborate on which body parts are present in Notes); **5**=body parts only - decomposing (elaborate in Notes); **6**=dessicated, mummified carcass; **99**=not evaluated.

Extent of Scavenging: (dead log only) **0**=none detected; **1**=light; **2**=moderate; **3**=heavy

Oiling Status: In hierarchical order (choosing lowest number to apply), indicate presence of oil (jet fuel, diesel, gasoline, vegetable oil, fish oil or other) by: **0**=no signs of oil detected; **1**=yes, oil visually detected; **2**=yes, smell oil; **3**=yes, skin burned; **4**=unknown but skin wet/not waterproof; **5**=unknown but plumage misaligned, parted, or sticky; **99**=not evaluated.

% of Bird Oiled or Sheened: (dead log; for live, transferred over from medical forms) **1**=<2% of body; **2**=2-25% of body; **3**=26-50% of body; **4**=51-75% of body; **5**=76-100% of body; **6**=oil detected but extent undeterminable due to state of carcass; **7**=no oil detected but this may be due to state of carcass (i.e., partial); **99**=not evaluated or applicable (use if not visibly oiled).

Depth of Oil: (dead log only) **1**=surface (oil penetrated $\leq 1/4$ way down feather shaft); **2**=moderate ($\leq 1/2$ down shaft); **3**=deep (penetrated to skin); **99**=not evaluated or applicable (use if not visibly oiled).

Where Oiled: (dead log only) **1**=bill/mouth area only; **2**=body (1 spot); **3**=spotty (spots in multiple areas); **4**=waterline (keel downwards); **5**=entire body; **99**=not evaluated or applicable (use if not visibly oiled).

Feather/Oil Sample Taken?: Take a sample from oiled locations. If no apparent oil, take samples from areas frequently oiled. **Y**=feather/fur/tissue/swab sample taken; **N**=no sample taken. Shiny or dull side makes no difference. Record the following on both the envelope AND foil in which sample is placed: intake #, species code, band number, processing date, spill event name.

Photo Taken?: **Y**=yes; **N**=no. Write the time it was taken on photo (if polaroid); see protocols if not polaroid. In photo itself backdrop should clearly show: intake #, species code, band number, date, facility, and spill name (if designated).

Disposition Date: (live log only): Record the date of the disposition (transferred over from Post Mortality Log).

Disposition Status: (live log only): Manner in which live animals left the care of veterinarians at the facility. **R**=released; **T**=transferred for rehabilitation; **E**=euthanized; **D**=died (transferred over from Post Mortality Log).

Federal Band number: Record here any federal metal bands birds arrived with; federal bands given to shorebirds in lieu of temporary plastic bands; and federal bands given upon release. WPU will report recoveries and OWCN newly placed bands.

Morphometrics and Age/Sex: If time allows, during processing on dead birds record the unflattened wing, tarsus, bill depth(s), nares to tip, exposed culmen, age, and sex, as appropriate for the species. Proper training is required; refer to the complete protocols for the Wildlife Processing Unit for a thorough description of how to collect each data type.

Morgue Box #: Box # in which the carcasses is placed. If bags are used record those numbers also. Live and dead are given different series (alpha vs. numeric); Special Status and unidentified birds placed in unique boxes. Live are transferred over from Post Mortality Log.

Notes: Any extra observations, e.g., breeding condition; conspicuous cause of death if not related to oil; contamination by other petroleum products (e.g. wrapped in plastic) or other carcasses; and **detection of toe or wing clipping** on dead birds.

Spill Name: _____

Facility: _____

Page _____ of _____

OWCN Post-Arrival Mortality Log
(Received through Live Intake)

Initials	Log #	Band # (as read on carcass; may not agree with what was originally given)	Species (as identified here)	Date of Death	Died/Euth (Record D, E, or if unknown D/E)	Morgue Box #	Comments and Morphometrics (wing, tar, exp cul; and bill depth, nares to tip <i>as appropriate</i> ; if date of death unknown, record date carcass received as latest possible date of death)

OIL SPILL BAND RECOVERY TRACKING FORM FOR FEDERALLY BANDED BIRDS

SPILL NAME: _____

Federal Band number	Log #	Restrand ? (Y/N)	Spec	Capture Date	Oiling Status	Capture Location (inc cords)	Disposition & Disp. Date	Reported to BBL/Bander/OSPR (to, initials & date)	Details of Original Capture Data (if Known)

last updated November 2009 PRBO

Avian Species Codes and Status – For OWCN/Wildlife Processing Unit

Bird species, 4-letter codes, suggested federal band sizes, likelihood of each to be processed at California wildlife processing centers, and special status (as of July 2012; see state and federal lists at time of spill to verify). *Carcasses of federal or state special status (endangered, threatened, special concern) are to be placed in morgue boxes designated for special status carcasses, and must be reported promptly to your supervisor. All other identified carcasses are to be placed in morgue boxes with no designation.* This table is not exhaustive and is generalized for all of coastal California. You may encounter species not occurring here (e.g., landbirds); see the Bird Banding Lab website for appropriate federal band size and code (<http://www.pwrc.usgs.gov/BBL/manual/bandsizes.htm>). The lowest taxonomic designation that can be made with certainty should be recorded, such as “GULL”, “LOON”; spell this out if not on the list below. It may be necessary to leave the designation as “BIRD” if the remains are too damaged, or if there is not adequate time to make a positive identification out of a degraded carcass. Additionally, for individuals where all evidence points to it being of a given species or taxa, but some definitive criteria is missing b/c of condition of the bird so you can't say this with 100% certainty, record the taxa as the likely 4-letter code followed by a question mark (e.g., “SUSC?”); if likelihood is not high, simply classify as the next taxonomic level of which you are confident. Birds are listed in alphabetical order.

Species	Code	Band	Likelihood	Status ¹
Albatross, Black-footed	BFAL	7B	Rare	No Status
Albatross, Laysan	LAAL	7B	Rare	No Status
Albatross, Short-tailed	STAL	8	Extremely Rare	FE
Alcid, Unidentified	ALCI	n/a	n/a	Unidentified
Auklet, Cassin's	CAAU	3B-3A	Common	No Status
Auklet, Parakeet	PAAU	4	Rare	No Status
Auklet, Rhinoceros	RHAU	6-5	Common	No Status
Avocet, American	AMAV	4-4A ^o	Extremely Rare	No Status
Blackbird, Red-winged	RWBL	2-1A-1D	Rare	No Status
Blackbird, Tricolored	TRBL	2	Rare	S-BSSC
Brant	BRAN	7A	Uncommon	S-BSSC
Bufflehead	BUFF	5	Rare	No Status
Canvasback	CANV	7A	Rare	No Status
Coot, American	AMCO	6-5	Rare	No Status
Cormorant, Brandt's	BRAC	8	Common	No Status
Cormorant, Double-crested	DCCO	8-7B	Uncommon	No Status
Cormorant, Pelagic	PECO	7A-7B	Common	No Status
Cormorant, Unidentified	CORM	n/a	n/a	Unidentified
Curlew, Long-billed	LBCU	6 ^o -5	Rare	No Status
Dowitcher, Long-billed	LBDO	2	Rare	No Status
Dowitcher, Short-billed	SBDO	2	Rare	No Status
Dowitcher, Unidentified	DOWI	2	n/a	Unidentified
Duck, Harlequin	HARD	5	Rare	S-BSSC
Duck, Ring-necked	RNDU	6	Rare	No Status
Duck, Ruddy	RUDU	6-7A	Uncommon	No Status
Duck, Unidentified	DUCK	n/a	n/a	Unidentified
Dunlin	DUNL	1B-1A	Rare	No Status
Egret, Great	GREG	7A-7B	Extremely Rare	No Status
Egret, Snowy	SNEG	6	Extremely Rare	No Status
Fulmar, Northern	NOFU	6	Common	No Status
Gadwall	GADW	6	Rare	No Status
Godwit, Marbled	MAGO	4	Rare	No Status
Goldeneye, Barrow's	BAGO	7A	Extremely Rare	No Status
Goldeneye, Common	COGO	6-7A	Rare	No Status
Goldeneye, Unidentified	GOLD	n/a	n/a	Unidentified
Goose, Canada	CAGO	8-7B	Rare	No Status
Goose, Cackling	CACG	7A		
Goose, Greater White-fronted	GWFG	7B-8	Extremely Rare	S-BSSC
Grebe, Clark's	CLGR	7A-7B	Rare	No Status
Grebe, Eared	EAGR	5	Common	No Status
Grebe, Horned	HOGH	6-5	Common	No Status
Grebe, Pied-billed	PBGR	5-6	Rare	No Status

Grebe, Red-necked	RNGR	7A	Rare	No Status
Grebe, Western	WEGR	7A-B	Very Common	No Status
Grebe, Western/Clark's	WCGR	7A-B	n/a	Unidentified
Grebe, Eared/Horned	EHGR	5-6	n/a	Unidentified
Grebe, Unidentified	GREB	n/a	n/a	Unidentified
Guillemot, Pigeon	PIGU	4A	Common	No Status
Gull, Bonaparte's	BOGU	3-3B	Uncommon	No Status
Gull, California	CAGU	5	Common	No Status
Gull, Glaucous	GLGU	7A	Rare	No Status
Gull, Glaucous-winged	GWGU	7A	Common	No Status
Gull, Heerman's	HEEG	4A	Common	No Status
Gull, Herring	HERG	6	Common	No Status
Gull, Mew	MEGU	4A	Common	No Status
Gull, Ring-billed	RBGU	4A	Common	No Status
Gull, Sabine's	SAGU	3	Uncommon	No Status
Gull, Thayer's	THGU	6	Common	No Status
Gull, Western	WEGU	6	Very Common	No Status
Gull, Western x Glaucous-winged	HYGU	6-7A	Common	No Status
Gull, Unidentified	GULL	n/a	n/a	Unidentified
Heron, Black-crowned Night	BCNH	7A	Rare	No Status
Heron, Great Blue	GBHE	7B	Extremely Rare	No Status
Heron/Egret, Unidentified	HERO	n/a	n/a	Unidentified
Jaeger, Long-tailed	LTJA	4A-4	Rare	No Status
Jaeger, Parasitic	PAJA	4A	Rare	No Status
Jaeger, Pomarine	POJA	5	Rare	No Status
Killdeer	KILL	2	Uncommon	No Status
Kingfisher, Belted	BEKI	3B-3A	Uncommon	No Status
Kittiwake, Black-legged	BLKI	4A	Common	No Status
Loon, Arctic	ARLO	7B	Uncommon	No Status
Loon, Common	COLO	8-9	Common	No Status
Loon, Pacific	PALO	7B	Common	No Status
Loon, Red-throated	RTLO	7B	Common	No Status
Loon, Yellow-billed	YBLO	9	Extremely Rare	No Status
Loon, Unidentified	LOON	n/a	n/a	Unidentified
Mallard	MALL	7A	Rare	No Status
Merganser, Common	COME	7A	Rare	No Status
Merganser, Hooded	HOME	5-5A-6	Rare	No Status
Merganser, Red-breasted	RBME	6-5	Rare	No Status
Murre, Common	COMU	6M	Very common	No Status
Murrelet, Ancient	ANMU	3B-3	Rare	No Status
Murrelet, Craveri's	CRMU	2	Rare	No Status
Murrelet, Guadalupe	GUMU ²	2	Rare	ST ²
Murrelet, Marbled	MAMU	3B-3	Rare	FT, SE
Murrelet, Scripp's	SCMU ²	2	Rare	ST²
Oystercatcher, Black	BLOY	5	Rare	No Status
Peep, Unidentified "Peep" shorebird	PEEP	n/a		Unidentified
Pelican, American White	AWPE	9-9C	Rare	S-BSSC
Pelican, Brown	BRPE	8-8A-9	Common	No Status
Petrel, Mottled	MOPE	3	Extremely Rare	No Status
Phalarope, Red	REPH	1A	Common	No Status
Phalarope, Red-necked	RNPH	1B	Common	No Status
Phalarope, Wilson's	WIPH	1A-2-1D	Uncommon	No Status
Pintail, Northern	NOPI	6	Rare	No Status
Plover, Black-bellied	BBPL	3B	Rare	No Status
Plover, Semipalmated	SEPL	1A-1B	Rare	No Status
Plover, Snowy	SNPL	1P	Rare	FT
Plover, Unidentified	PLOV	n/a	n/a	Unidentified
Puffin, Horned	HOPU	5	Rare	No Status
Puffin, Tufted	TUPU	6-5	Rare	S-BSSC
Rail, Black	BLRA	2-1A-1D	Extremely Rare	ST
Rail, Clapper	CLRA	5	Extremely Rare	FE, SE/ST

Rail, Virginia	VIRA	2-3 ^o	Extremely Rare	No Status
Redhead	REDH	6	Extremely Rare	S-BSSC
Sanderling	SAND	1A	Rare	No Status
Sandpiper, Least	LESA	1-1B	Rare	No Status
Sandpiper, Pectoral	PESA	1A-1D	Extremely Rare	No Status
Sandpiper, Spotted	SPSA	1B-1A	Rare	No Status
Sandpiper, Western	WESA	1B	Rare	No Status
Scaup, Greater	GRSC	6-5	Rare	No Status
Scaup, Lesser	LESC	6-5	Rare	No Status
Scaup, Unidentified	SCAU	6-5	n/a	Unidentified
Scoter, Black	BLSC	7A	Rare	No Status
Scoter, Surf	SUSC	7A	Common	No Status
Scoter, White-winged	WWSC	7A	Common	No Status
Scoter, Unidentified	SCOT	7A	n/a	Unidentified
Shearwater, Black-vented	BVSH	4	Rare	No Status
Shearwater, Buller's	BULS	4	Uncommon	No Status
Shearwater, Flesh-footed	FFSH	4	Uncommon	No Status
Shearwater, Pink-footed	PFSH	4	Common	No Status
Shearwater, Short-tailed	SHOS	4	Common	No Status
Shearwater, Sooty	SOSH	4-5	Common	No Status
Shearwater, Unidentified	SHEA	n/a	n/a	Unidentified
Shoveler, Northern	NSHO	5-6	Rare	No Status
Skimmer, Black	BLSK	4-3A	Rare	S-BSSC
Snipe, Wilson's	WISN	3	Rare	No Status
Sora	SORA	2 ^o	Extremely Rare	No Status
Stilt, Black-necked	BNST	3A-4 ^o	Rare	No Status
Storm-Petrel, Ashy	ASSP	1B	Rare	S-BSSC
Storm-Petrel, Black	BLSP	1A	Rare	S-BSSC
Storm-Petrel, Fork-tailed	FTSP	1B	Rare	S-BSSC
Storm-Petrel, Leach's	LHSP	1B	Rare	No Status
Storm-Petrel, Unidentified	SPSP	n/a	n/a	Unidentified
Surfbird	SURF	2	Rare	No Status
Tattler, Wandering	WATA	3-2	Rare	No Status
Teal, American Green-winged	AGWT	4-4A	Rare	No Status
Teal, Blue-winged	BWTE	5-4A	Rare	No Status
Teal, Cinnamon	CITE	5-4A	Rare	No Status
Tern, Arctic	ARTE	2-1A-1D	Rare	No Status
Tern, Black	BLTE	2-1A-1D	Extremely Rare	S-BSSC
Tern, Caspian	CATE	5-4A	Rare	No Status
Tern, Common	COTE	2	Rare	No Status
Tern, Elegant	ELTE	3	Rare	No Status
Tern, Forster's	FOTE	3	Rare	No Status
Tern, Least	LETE	1A-1B	Rare	FE, SE
Tern, Royal	ROYT	4A	Rare	No Status
Tern, Unidentified	TERN	n/a	n/a	Unidentified
Turnstone, Black	BLTU	2	Rare	No Status
Turnstone, Ruddy	RUTU	2-3	Rare	No Status
Turnstone, Unidentified	TURN	n/a	n/a	Unidentified
Vulture, Turkey	TUVU	8V ³	Extremely Rare	No Status
Whimbrel	WHIM	4	Rare	No Status
Wigeon, American	AMWI	6	Rare	No Status
Willet	WILL	4	Rare	No Status
Yellowlegs, Greater	GRYE	3-3B	Rare	No Status
Yellowlegs, Lesser	LEYE	2	Extremely Rare	No Status
Yellowlegs, Unidentified	YELL	n/a	n/a	Unidentified

Last modified September 2013

¹Federal or state status as of July 2012 (check for updates at beginning of each spill); FE=Federally Endangered; FT=Federally Threatened; SE=State Endangered (CA); ST=State Threatened (CA); S-BSSC=California Bird Species of Special Concern

²Split from Xantus's Murrelet July 2012; codes and status pending at the time this document was updated.

³Cannot be banded with metal bands – special bands only

^o Band above the tarsometatarsal joint only.

Marine Mammal Species Codes and Status – for OWCN

Most commonly encountered marine mammal species, species status, and standardized codes. This table is certainly not exhaustive of all non-avian species encountered during a spill; for other species (e.g., porpoises, sea turtles) not listed, please fill out their full name to avoid confusion. You can also add the species to the list and develop a standardized code for use during the spill event, which can get added to a future version of the protocols as appropriate. The lowest taxonomic designation that can be made with certainty should be recorded, such as “PINNIPED”. Additionally, for individuals where all evidence points to it being of a given species or taxa, but some definitive criteria is missing b/c of condition of the bird so you can’t say this with 100% certainty, record the taxa as the likely 4-letter code followed by a question mark (e.g., “Ej?”); if likelihood is not high, simply classify as the next taxonomic level of which you are confident.

Species	Scientific Name	Code	Status ¹
California sea lion	<i>Zalophus californianus</i>	Zc	No status
California sea otter	<i>Enhydra lutris</i>	El	FT
Guadalupe fur seal	<i>Arctocephalus townsendi</i>	At	FT, ST
Northern fur seal	<i>Callorhinus ursinus</i>	Cu	No status
Northern elephant seal	<i>Mirounga angustirostris</i>	Ma	No status
Harbor seal	<i>Phoca vitulina</i>	Pv	No status
Steller sea lion	<i>Eumetopias jubatus</i>	Ej	FT

Created November 2009

¹Federal or state status as of November 2009 (check for updates at beginning of each spill); FE=Federally Endangered; FT=Federally Threatened; SE=State Endangered (CA); ST=State Threatened (CA); CA-BSSC=California Bird Species of Special Concern



Color Coding Key for Temporary Bands on Oil-affected Birds

Band Color	Color Abbreviation	Use
Orange	O	Field Stabilization
Violet/Purple	V	Dead on Arrival (DOA)
White	W	Primary Care Facility
Pink	P	Primary Care Facility
Yellow	Y	Primary Care Facility
Green	G	Lost Band/Re-band
Blue	B	Research
Red	R	Medical Condition

OWCN Member Organizations/Facilities

#	Member Name (Facility Name)	Location	MOU Date	Facility Completion	Indoor Capacity	Acronym
1	North Coast Marine Mammal Center	Crescent City	Mar-95	Dec-96	15 Pinnipeds	NCM
2	Humboldt State University (Marine Wildlife Care Center)	Arcata	Jun-95	Jan-97	400 birds	HSU
3	The Bird Rescue Center	Santa Rosa	Jul-96	Stabilization		BRC
4	PRBO Conservation Science	Petaluma	Aug-03	Personnel		
5	WildCare	San Rafael	Jun-95	Stabilization		WC
6	Sonoma County Wildlife Rescue	Cotati	Jan-13	Personnel		
7	The Marine Mammal Center	Sausalito	Mar-95	Dec-95	40 pinnipeds; 10 sea otters	MMC
8	University of California at Davis	Davis	Oct-97	Management		
9	International Bird Rescue - North (SF Bay Oiled Wildlife Care and Education Ctr)	Fairfield	Aug-96	Feb-01	1,000 birds	SFB
10	Golden Gate Audubon Society	Berkeley	Jan-10	Personnel		
11	Lindsay Wildlife Museum	Walnut Creek	Jun-95	Stabilization		LWM
12	Farallones Marine Sanctuary Association	San Francisco	Jan-10	Personnel		
13	California Academy of Sciences	San Francisco	Dec-13	Personnel		CAS
14	Peninsula Humane Society	San Mateo	Sep-95	Stabilization		PHS
15	San Francisco Bay Bird Observatory	Milpitas	Jan-10	Personnel		
16	DFG - OSPR (Marine Wildlife Veterinary Care & Research Ctr)	Santa Cruz	None	Jul-97	125 otters, 50 birds, 10 pinnipeds	MWV
17	University of California at Santa Cruz	Santa Cruz	Mar-98	Jun-01	150 birds	SC
18	Native Animal Rescue	Santa Cruz	Sep-95	Stabilization		NAR
19	Monterey Bay Aquarium	Monterey	Apr-97	Stabilization		MBA
20	SPCA of Monterey County	Monterey	Jan-97	Stabilization		MC
21	Pacific Wildlife Care	San Luis Obispo	Jul-96	Jun-01	150 birds	PWC
22	Santa Barbara Wildlife Care Network	Santa Barbara	Sep-95	Stabilization		SBW
23	Santa Barbara Marine Mammal Center	Santa Barbara	Apr-11	Personnel		
24	Santa Barbara Museum of Natural History	Santa Barbara	Pending	Personnel		SBM
25	Channel Islands Marine Wildlife Institute	Ventura	Aug-13	Stabilization		CIM
26	The California Wildlife Center	Malibu	Pending	Stabilization		CWC
27	International Bird Rescue - South (LA Oiled Bird Care and Education Ctr)	San Pedro	Aug-96	Mar-01	1,000 birds	LA
28	Marine Mammal Care Center at Fort MacArthur	San Pedro	Mar-95	Nov-95	20 pinnipeds	FM
29	Long Beach Aquarium of the Pacific	Long Beach	Nov-01	Stabilization		AOP
30	Wetlands & Wildlife Care Center	Huntington Beach	Mar-95	Mar-97	400 birds	WWC
31	Pacific Marine Mammal Center	Laguna Beach	Jun-95	Stabilization		PMM
32	SeaWorld San Diego (SeaWorld Oiled Wildlife Care Center)	San Diego	Apr-96	Jul-00	20 pinnipeds, 200 birds, sea turtles	SW
33	San Diego Humane Society & SPCA	San Diego	Pending	Personnel		
34	Wildlife Assist	San Diego	2003	Personnel		
35	Project Wildlife	San Diego	Sep-95	Stabilization		PW

HOW TO READ COLOR COMBINATIONS (SHOREBIRDS)

While larger birds receive temporary plastic or Tyvek bands with their log number written on them, smaller shorebirds are identified at the facility by a unique combination of three color bands. No other bird at the facility will have that same combination or colors, so it functions as a unique identifier.

Color combinations are read LEFT LEG to RIGHT LEG (the *bird's* left and right, not the bander/observer's), TOP (closest to bird's body) to BOTTOM (closest to foot). A mnemonic for remembering this is "**LEFT-RIGHT-BODY-FOOT**".

A forward slash mark (/) is used to indicate the break between the two legs.

The same color band abbreviations as listed in the OWCN color band key are used.

Therefore the Snowy Plover in this photograph has band combination OG/P.

