Job Aid 7

Wildlife Spotting During Aerial Dispersant Operations

Job Aid 7 Inclusions **Page**

7.a Key points

- A condition of the NMFS and USFWS consultations under Section 7 of the ESA require wildlife spotters to be over the dispersant application site before and during dispersant spraying;

- Given the sensitivity of dispersant use over areas with high populations of sensitive wildlife, the use of CDFW-OSPR contracted wildlife spotters for dispersant operations may take priority over routine wildlife surveys, *but to minimize impact to other critical wildlife surveys, these platforms and personnel may be limited to initial opportunistic observations only*;

- Expectations are that additional platforms and observers, likely sourced from federal (e.g., CG, NOAA, Sanctuaries, USFWS, NMFS) and/or non-OSPR state and other resources (e.g., CDFW Marine Region, Monterey Bay Aquarium, consultants, industry) may be required to address sustained dispersant wildlife spotter needs;

- CDFW-OSPR contracted dispersant wildlife spotter resources, if available, will be notified / activated by the OSPR Wildlife Branch Director (WBD), in coordination with the OSPR ART Lead TS and/or the ART Operations Liaison;

- Initial inquiries of wildlife spotter availability are not made via ICS 213RR. The OSPR ART Lead TS asks the Wildlife Branch Director about the availability of contracted observers. This inquiry is made via mobile phone or email if the ICP has not yet been established. These communications are recorded on an ICS-214 and followed later with ICS 213RR requests for wildlife spotters once the ICP is established.

- Operations will stress the need to minimize the number of aerial platforms involved in dispersant operations while still allowing each dispersant function to optimally perform its task.

  Ideal use of aircraft when supporting the wildlife dispersant spotter function:

  Aircraft 1: Broad area aerial dispersant application (e.g., with C-130, Boeing 727)
  Aircraft 2: Dispersant spotter directing dispersant spray plane (e.g., in King Air)
  Aircraft 3: SMART Tier 1 dispersant efficacy observer (e.g., in helicopter)
  Aircraft 4: Dedicated dispersant wildlife spotting plane with pilot, navigator/data recorder and (2) additional wildlife spotters (e.g., in Partenavia). (See 7.g.ii)

7.b Overview

During initial phases of an oil spill response, information on wildlife Resources at Risk (RAR) can be gathered from a variety of sources, including GIS layers in ERMA that show historic seasonal distribution of marine birds and mammals off California (see also Job Aid 6). However, at-sea distribution of marine birds and mammals is never entirely predictable, and it is necessary to get the best available real-time information on geographic distribution of wildlife at risk when considering the use of dispersants for a substantial marine spill.

Ideally, the Environmental Unit within the Planning Section can work with the WBD within the Operations Section to help arrange wildlife overflights required per the RRT IX Dispersant Use Plan for California. The ART Operations Technical Specialist/Liaison assigned as part of DIS-3 in the DUP can assist with or lead this task. The ART Operations TS/Liaison will coordinate closely with the ART Lead TS in Planning, Air Ops, OSROs, and the Wildlife Branch Reconnaissance Group Supervisor regarding these flights (see discussion below), and research other sources of dispersant wildlife spotters and spotting platforms as necessary.

7.c Standard oil spill response Wildlife Branch surveys

Some excerpts from the CDFW-OSPR Wildlife Response Plan appear below. That plan is available in its entirety at https://wildlife.ca.gov/OSPR/Science/Wildlife-Response.

- Standard Wildlife Branch surveys provide the Environmental Unit and the Unified Command with an overview of potential wildlife distribution in the spill area;
- Observations can inform the initial dispersant use discussions and frame the operational tactics that will minimize wildlife impacts.

While **the standard survey approach is not directly used for dispersant-related wildlife spotting** (standard surveys are more detailed and specific than necessary for dispersant-related wildlife assessments), they are briefly described below because the observation platforms, data recording tools and trained aerial wildlife observers are recommended for use in dispersant wildlife spotting as well.

i. Wildlife Reconnaissance: Aerial Survey Strike Team

The Aerial Survey Strike Team Leader, who reports to the Wildlife Reconnaissance Group Supervisor, coordinates, conducts, and supervises aerial reconnaissance surveys of wildlife at the spill site and in areas at risk from the spill. Observations are reported to the WBD through the Wildlife Reconnaissance Group Supervisor, who in turn coordinates with the Air Operations Branch (typically through the WBD), and coordinates with other Trustees regarding any flight altitude restrictions. Using a standardized protocol, the Aerial Survey Strike Team will characterize the abundance, distribution, and species identities of on-water birds and mammals, in or near the spill area.

OSPR has a contract with pre-trained experts at UC Santa Cruz to perform aerial surveys for wildlife reconnaissance during oil spills. A CDFW Partenavia Observer (P-68) airplane is usually used for these flights. While in the air or immediately after landing, oral summaries or text messages of bird and mammal observations are reported to the Reconnaissance Group Supervisor who relays the information to the WBD, and electronic files are conveyed (e.g., via email) to the GIS Specialist who can prepare maps of survey results.

Current standardized protocols for surveys over the ocean or other large bodies of water involve the use of two trained observers who each survey a 75-meter strip transect on either side of the plane, and a navigator who helps direct the pilot to appropriate transects and enters data called out by the observers into a real-time data entry and mapping program (dLog) on a laptop computer. Flights are conducted at an altitude of 200 ft; low overflights of bird colonies and pinniped rookeries are avoided to prevent disturbance. Transect locations/layout vary

depending on the size and location of the spill. These flights complement, but do not replace, operational overflights for mapping oil (typically conducted by NOAA). It is useful to have a qualified biologist participate in overflights for mapping oil, to report back on any large concentrations of wildlife. Although these flights are typically conducted at higher altitudes (making species identification difficult), they may occur before the Aerial Survey Strike Team has arrived on site. Helicopter overflights may also be useful for locating concentrations of oiled wildlife in areas with difficult access.

ii. Notifications/Activation

The WBD or Wildlife Branch Reconnaissance Group Supervisor normally requests an initial aerial wildlife survey by trained observers for response actions. If timely, the results of this survey can be used as a Pre-Decision Survey to inform the FOSC and RRT IX discussions of dispersant use.

The decision to activate the Aerial Survey Strike Team will be made by the WBD in consultation with the SOSC. As noted in the Wildlife Response Plan, "…the UC [Unified Command] may anticipate that OSPR will mobilize its wildlife response resources and begin operations (starting with Reconnaissance) immediately upon notification of a significant spill."

iii. Initial opportunistic survey

Depending on the status of CDFW airplanes and pilots (e.g., if planes are being serviced), it could take 6-12 hours for the trained aerial survey team to arrive on site. In this case, qualified wildlife observers (including trained members of the UC Santa Cruz survey team or other experienced state or federal aerial wildlife observers, if available) could participate in any opportunistic aerial surveys (e.g., by helicopter) to gather a general overview of wildlife distribution.

iv. Low-level transects

Standardized aerial surveys for wildlife are typically conducted from a Partenavia P68, which offers optimum visibility, slow speed, and safety. CDFW owns three Partenavias, one each in Redding, Sacramento, and Hemet, CA. If there is a need for an additional Partenavia, one can be chartered from Aspen Helicopters in Oxnard. The DeHavilland Twin Otter CDH-6 is also a suitable aircraft for low-level aerial surveys, although it is slightly less maneuverable than the Partenavia. Twin Otters may be available from NOAA for spill response. Current contact information for flight services can be obtained from the OSPR Wildlife Response Coordinator.

Marine response wildlife surveys in California are typically flown at an altitude of 200 ft and a speed of approximately 90 knots. In most cases, surveys are conducted as strip transects. Two experienced observers each continuously survey a 75-meter strip on either side of the plane. A third person acts as navigator and data entry person, recording wildlife, spatial and ambient data (called out by the observers in the rear seats) onto a laptop computer connected to a Global Positioning System (GPS).

Offshore surveys usually consist of multiple long legs running perpendicular to the shoreline (typically east-west north of Point Conception, and north-south to the south, usually spaced

apart by 5 degrees of latitude. For dispersant related wildlife flights, the sub-region of concern may be sampled using parallel lines spaced as closely as 1 km apart. The survey route and transect design is established just prior to the flight to accommodate the specific areas, issues and species of concern for a spill.

A map with a grid of pre-identified east-west transect lines can be used to help communicate proposed flight paths and resulting wildlife observations. It is typical to plan for several missions of 2-4 hours each, with a total limit of 8 hours of flight time per day. With a 90 knot flight speed, it is possible to survey more than 500 km of transects in 3 hours. It is also necessary to consider commuting time in the place form the airport of origin; the Aerial Survey Strike Team Leader can provide information to the Reconnaissance Group Supervisor regarding flight time limits for a given day.

Currently, the software program dLog running on the laptop records the latitude/longitude position, time, and other data at designated intervals, and displays a map of the survey area with a real-time picture of the survey route. Real-time display of the trackline is critical because it allows navigators to quickly and accurately change the survey route depending on weather, spill updates, wildlife distribution, etc. Observers (in rear seats) call out their observations of wildlife within the transect over the intercom, and the navigator enters those real-time observations into dLog.

Aerial wildlife observation apps currently in development by CDFW-OSPR (e.g., “Otter Spotter”) may in the future replace dLog.

7.d Survey methods and adaptations for dispersant use

i. Notifications/Activation

When dispersant use is considered, the OSPR ART Lead TS and/or the ART Operations TS/Liaison within the Environmental Unit are responsible for working with the WBD within the Operations Section, and other state and federal trustee agencies and contracted resources as necessary, to arrange wildlife overflights. They will work closely with the WBD to determine if OSPR contracted resources will be available for dispersant wildlife spotting.

If able to use the OSPR contracted resources, the Wildlife Response Coordinator and/or WBD help arrange the logistics. If the OSPR contracted resources are not available, then the OSPR ART Lead TS and/or the ART Operations TS/Liaison will need to resource alternative spotters and viewing platforms using other state and federal trustee agencies and contracted resources as necessary.

These alternative dispersant wildlife spotter resources will need to be provided at the time of the incident, which may delay the dispersant response.

Once resources have been identified, the Art Operations TS/Liaison will determine what the on-going needs and time schedules will be for initial and on-going dispersant wildlife spotters, and how incoming dispersant spotter information will be received, reviewed, and distributed.

ii. Observer qualifications

For wildlife spotting during dispersant operations, it is only necessary for observers to spot at the guild (or higher) level. The possible need to identify wildlife to the species level would only be necessary if in an area of expected special status species (e.g., marbled murrelets at sea during their breeding season).

CDFW personnel participating in aerial surveys should have previously been trained in Helicopter and Aircraft Safety/Situational Awareness. Federal employees conducting aerial surveys at altitudes under 500 feet (such as Pacific Strike Team observers) are required to have a current certification for underwater egress. Any personnel flying in a Federal agency plane may be required to complete a Basic Aviation Safety course. In all cases, the pilot will provide wildlife spotting personnel with a safety briefing before each flight. For offshore flights, all personnel must wear inflatable PFDs and a life-raft must be carried onboard the aircraft.

iii. Aerial observation platforms

As mentioned above, Operations will stress the need to minimize the number of aerial platforms involved in dispersant operations. Nevertheless, with wildlife spotting during dispersant operations now a condition of the ESA Sec. 7 concurrence letters, obtaining the additional observation platforms to optimize those spotting operations is now a priority. Alternatively, the NMFS and USFWS may be contacted for ESA emergency consultation that could modify the requirement to have wildlife spotters on scene before and during initial dispersant spray operations.

The strongest advice is to proceed with the ideal functional aircraft combination noted in section 7.a above.

Other options could consider:

Aircraft 1: Broad area aerial dispersant application (e.g., C-130, Boeing 727)

Aircraft 2: Dispersant spotter directing dispersant spray plane (e.g., King Air or helicopter); *Dispersant spotter <u>also</u> determines SMART Tier I dispersant efficacy*.

Aircraft 3: Dedicated dispersant wildlife spotting with pilot, navigator/data recorder and (2) additional wildlife spotters (e.g., Partenavia)

Aircraft 1: Broad area aerial dispersant application (e.g., C-130, Boeing 727)

Aircraft 2: Dispersant spotter directing dispersant spray plane (e.g., King Air);

Aircraft 3: Dedicated dispersant wildlife spotting with pilot, SMART Tier I observer, and (2)additional wildlife spotters (e.g., Partenavia). *The wildlife spotters would need to find a way to both make <u>and</u> record their observations.*

iv. Dispersant pre-application wildlife spotting

1. Conduct a pre-application survey no more than 1 hour before spraying;
2. Survey the general dispersant operation box;

3. Conduct survey at a slightly higher altitude (e.g., 500-1000 ft) to maximize the area searched, as species-specific identification of animals will generally not be necessary for dispersant wildlife spotting purposes.
4. Identify visible and avoidable groups of mammals, sea turtles, birds, schooling fish and sea nettles;
5. Communicate sightings to the dispersant spotter plane so that the dispersant aircraft can be directed by the dispersant spotter to areas of the dispersant operation box that appear most clear of wildlife;

- Survey results could be as simple as “there are two whales in the southeast corner of the survey area.”
- If working from a dedicated wildlife spotting Partenavia with (3) wildlife spotting and recording personnel, a grid (e.g., 1 km by 1 km) could be prepared that covers the spray area. This grid could be used as a base map in the Wildlife Spotter’s laptop computer, running dLog. The grid cells could be numbered, and as each cell is flown through, the Wildlife Spotters could record (presumably on paper) the status/information for that cell. This could be along the lines of a low/medium/high sensitivity rating for each cell, or specific information could be noted such as “whale in cell 9”. The dispersant spotter plane would have the same grid/cell map and be able to interpret the results.

v. Wildlife spotting activities during dispersant spraying

1. The wildlife spotting plane stays in the air after the pre-application spotting, at a slightly higher altitude, and trails the dispersant spotter and spraying aircraft to record wildlife inadvertently appearing within the spraying swath.
2. Ensure that dispersants are applied according to the RRT IX authorized wildlife avoidance conditions and/or best management practices (BMPs). These <u>will</u> include:
    a. Avoid spraying within (a minimum of) 100 m (328 ft) of visible aggregations of marine mammals, sea turtles, surface schooling fish and brown sea nettles. These buffer distances were established as part of pre-spill Section 7 consultations with the NMFS but could reconsidered and altered as part of an of incident-specific emergency consultation. For sea nettles that may be visible outside and adjacent to the slick but not under the slick, operators should to stop spraying within 100 m of the slick edge;
    b. Avoid spraying within 1000 ft (305 m) of seabird groups. This buffer distance was established as part of pre-spill Section 7 consultations with the USFWS, but could reconsidered and altered as part of an of incident-specific emergency consultation;
    c. No dispersant spraying with 1 mile of anadromous streams and rivers, even if otherwise authorized within three miles of shore;
    d. No dispersant spraying 3-5 miles offshore within marbled murrelet north coast breeding habitat and breeding season (March 24-September 15), regardless of zone type, without consultation with the USFWS and incident-specific authorization from the RRT.

Other wildlife avoidance conditions/BMPs may include:

e. Avoid plane, helicopter or vessel intrusion on or over bird rookeries (e.g., offshore islands) and pinniped haul out areas;

f. Avoid spraying over large larval retention areas;

g. If dispersants are applied by vessel rather than from the air, those vessels will maintain speeds of less than 10 knots, and protected species observers will be available (preferably also from air) to observe wildlife within that operational area.

FOSC or RRT IX authorized conditions/BMPs are shared with Operations before commencement of each day of authorized dispersant application (including test sprays). They are also noted on the reverse side of the signed dispersant authorization form.

3. Document the spraying operation, including any inadvertent spraying of wildlife.

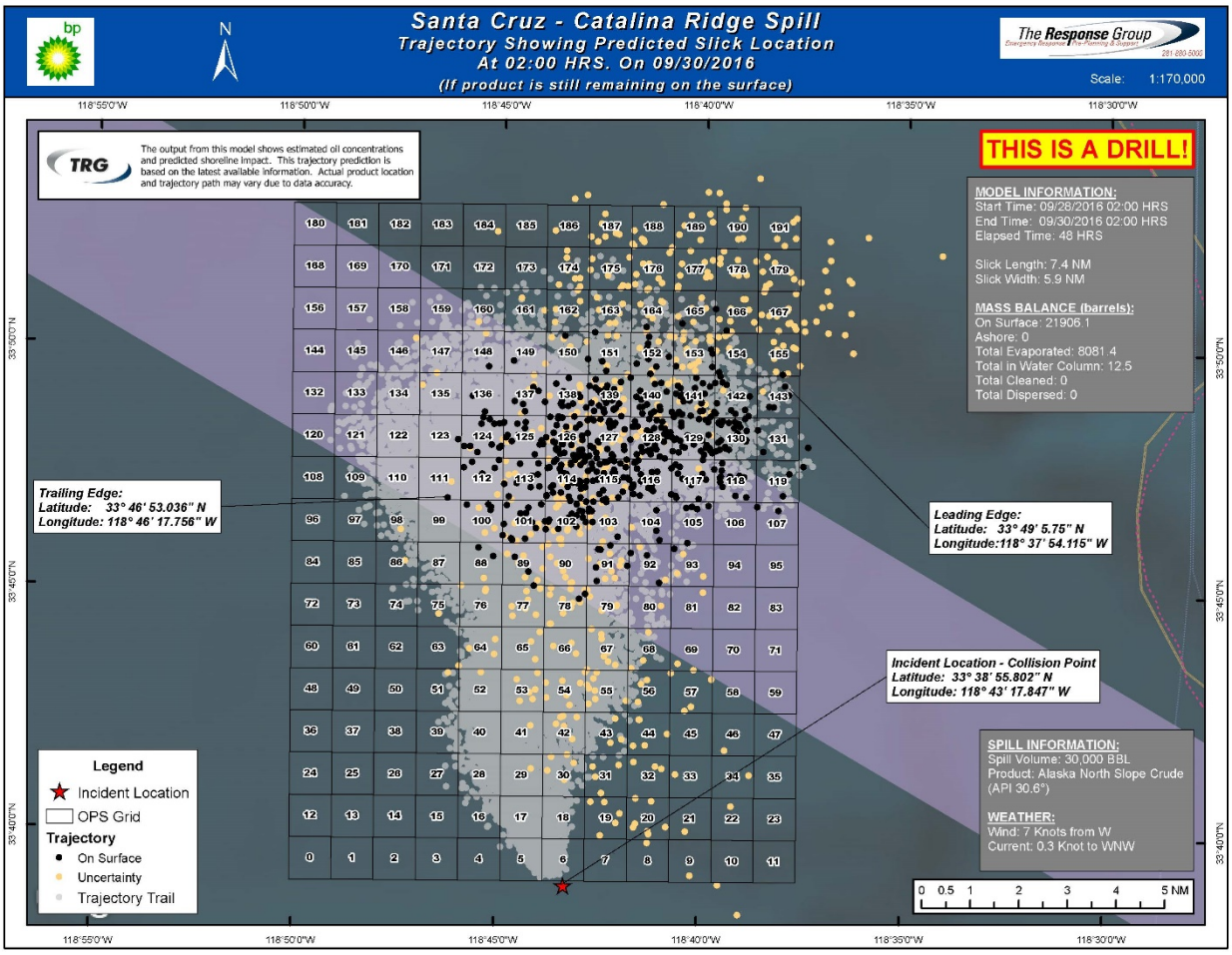
vi. Mapping

1. Real-time mapping

Upon landing, the survey team leader can communicate summary findings to the Reconnaissance Group Supervisor or the ART Operations TS/Liaison by phone. In addition, if using the real-time data entered by the navigator via dLog, summary files of the survey results can be transmitted to GIS staff at the Command Post (or elsewhere) upon landing (assuming internet access is available). These files include ArcGIS-compatible shape files showing the trackline of the survey aircraft, and a database of observations that includes the location, number, and guild of each group of animals seen by the observers. GIS technicians working at the Command Post can use these data to generate maps of animal distributions, and to overlay distributional data with other environmental or spill related features. The Reconnaissance Group Supervisor can work with the GIS staff to decide which survey results are most appropriate for mapping. In most cases, the map will include, at a minimum, the survey trackline and all observations combined, shown with symbols scaled to the number of animals. Special status species may be reported and mapped separately.

2. Incident-specific mapping layer

If enough time is available at the start of an incident in which dispersants may be used, or if a data layer exists in ERMA (Environmental Response Management Application) that can be tailored specific to an incident, a gridded underlay similar to product below can be 1) imposed over the oil spill trajectory, 2) outline the dispersant application “box” as it moves relative to the trajectory, and 3) be used to report relevant wildlife aggregations.



7.e Alternate Dispersant Wildlife Spotting Aerial Survey Forms

If dLog or other wildlife spotting data recording applications (e.g., Otter Spotter) are not available to dispersant wildlife spotters, the paper form on pgs. 11-12 may be helpful.

Page provided for spacing purposes

1. Sample Wildlife Aerial Survey Form

Incident name:		Flight #:	Survey #:
Date: Flight time period:		Survey page: of:	
Survey crew member:	Organization:	Survey equipment:	
Flight information:		Physical conditions:	
Aircraft type:		Winds (kts): From direction:	
Survey altitude range (ft):		Cloud cover (%):	
Survey start time:		Sea state:	
Survey end time:			
Overall sighting conditions: ◯Excellent ◯Very good ◯Good ◯Fair ◯Poor			

Please note any observed wildlife in the table below. Copy and use as many of this 2-pg form as necessary to cover the survey mission. If an underlying 1' x 1' numbered grid has been produced, use that as well or in addition to lat/long locations. Provide this information to the Resources at Risk Unit.

	Sighting specifics			
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa
	Local time:	Long:		Species/ancillary ID info
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		

	Sighting specifics			
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		
Sighting #	Number of animals:	Lat:	Grid #	Taxa:
	Local time:	Long:		Species/ancillary ID info:
	Current altitude (ft):	General location:		

◯Yes ◯No Was the dispersant operations "box" broadly surveyed before spray operations began to determine where marine birds, mammals, turtles or surface schooling fish may have been?

◯Yes ◯No Did dispersant spraying subsequently focus on parts of the operational "box" that had fewest pre-spray wildlife sightings?

◯Yes ◯No Were wildlife, surface schooling fish or sea nettles sighted in the spray area during or immediately after spraying began? If so, of what type and roughly how many:

◯Yes ◯No Were videos/photos taken of the spray operation? If so, note video/image identification info and who is in possession:

◯Yes ◯No Per your observations, did it appear the dispersant spray operation met the RRT conditions of approval and/or observe all other best management practices related to minimizing wildlife disturbance or contact?

Any other comments or recommendations (related to avoiding or minimizing wildlife disturbance and/or contact with spray) that may improve future dispersant spray operations: