

ENDANGERED SPECIES AND SPILL RESPONSE: CONSULTATION CHALLENGES, SOLUTIONS, AND RECOMMENDATIONS RESULTING FROM THE BOUCHARD B. NO. 120 SPILL¹

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ABSTRACT

In late April 2003, the Bouchard B. No. 120 spilled 98,000 gallons of No. 6 fuel oil into Buzzard's Bay, Massachusetts just prior to the spring arrival to their breeding habitat of state and federally listed threatened piping plovers and endangered roseate terns. One of the most important roseate tern breeding islands in the North Atlantic was oiled, as well as the majority of piping plover beaches in the Bay. Extensive shoreline clean-up response efforts were undertaken, establishing a difficult dynamic of removing oil while protecting listed species. Efforts to implement the pre-spill planning components of the National Contingency Plan-Endangered Species Act Memorandum of Agreement (MOA) had commenced in the region, including specific consideration of the roseate tern islands in Buzzard's Bay. However this planning was not finalized when the spill occurred. While the MOA provided guidance for implementing an emergency consultation under Section 7 of the Endangered Species Act (ESA), the different terminologies and cultures of the organizations presented challenges in the formal consultation following the emergency. This spill response afforded a number of lessons that can be applied to pre-spill planning and future spill response, and this paper reviews these lessons and our recommendations.

BACKGROUND

On the afternoon of April 27th, 2003, the Coast Guard was notified that the Bouchard Transportation Company, Inc. tank barge B. No. 120 was trailing a slick in Buzzards Bay, Massachusetts from damaged cargo tanks following a grounding. The barge was towed for approximately ten miles before it stopped to begin

source control and containment actions. Due to wind and currents, the oil was patchily dispersed over an area roughly 10 miles long by two miles across covered by patches of oil by the next morning. Approximately 98,000 gallons of No. 6 fuel oil were released², ultimately oiling 90 miles of shoreline.

Bouchard Transportation Company conducted the cleanup through contracted staff and worked in conjunction with the Federal On-Scene Coordinator (FOSC) from U.S. Coast Guard Marine Safety Office Providence (USCG) and the State On-Scene Coordinator from the Massachusetts Department of Environmental Protection (MADEP). Together, the USCG, MADEP, and Bouchard formed the three-member Unified Command to oversee the agencies and organizations conducting the extensive cleanup that lasted until early September 2003 and cost nearly 40 million dollars (U.S. Coast Guard, 2004).

The B. No. 120 spill presented challenging response objectives given the significant natural and public use resources of the Buzzard's Bay shoreline. However, the response was further complicated by the occurrence of three federally listed species in the affected area: the endangered roseate tern (*Sterna dougallii*), threatened piping plover (*Charadrius melodus*) and endangered Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*). Twenty-six piping plover beaches, two islands occupied by approximately 40% of the roseate tern breeding population³, and one Northeastern beach tiger beetle site were located within the spill area. Following the spill, 12 oiled beaches supported 55 piping plovers and three oiled islands supported 1712 pairs of roseate terns, of which 557 pairs nested on the more heavily oiled and cleaned Ram Island (Coley and McCollough, 2004).

As a result of difficulties encountered in during the formal Section 7 consultation during the 1999 New Carissa spill in

Oregon, the federal response agencies and listed species services recognized the need to improve plans and response procedures. In 2001, the USCG, Environmental Protection Agency, Department of the Interior, U.S. Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA) signed the "Interagency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities Under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act" (MOA) ⁴. Initial planning steps taken by the USCG under the MOA prior to the B. No. 120 spill aided in prompt emergency consultation and resulting actions to protect listed species from oil and removal efforts. Successful cooperation and coordination between the USCG and the USFWS was evident during the response. However, there were challenges encountered. In this paper, we provide our "lessons learned" and recommendations, as this was the first significant response since completion of the MOA.

DISCUSSION

The Endangered Species Act of 1973 (ESA), enacted to conserve and recover threatened or endangered species, is administered by the USFWS and NOAA Fisheries. Section 7 of the ESA requires federal agencies to consult with the two Services on actions they take, permit, or fund. During emergencies, such as disasters, casualties, national defense or security emergencies, and response to oil spills, the ESA has provisions for emergency consultation during the event, with formal consultation occurring after the event if necessary.

The consultation provisions of the ESA are logical when completed prior to an action being taken; the action agency must formally consult if the response actions may adversely affect listed species. Non-discretionary reasonable and prudent measures may be developed to avoid and/or reduce adverse effects to listed species. However, in emergencies, formal consultation takes place after the emergency and after the federal actions are taken, so the services provide recommendations to the action agency for implementation during the emergency, instead of the usual reasonable and prudent measures. After an emergency action, it can be a challenge to separate the effects of the emergency (such as a fire, hurricane, or oil spill) from those of the action itself; only the latter are subject to ESA Section 7. The impacts of the emergency may be lessened by the response action (i.e. "beneficial effects"). However, formal Section 7 consultation focuses on the federal actions that may adversely affect listed species, requiring a biological opinion (BO) and incidental take statement even when the net effects of response efforts are positive.

The MOA affirms the applicability of ESA Section 7 during oil spill responses and instructs Area Committees to adjust plans to minimize and/or avoid adverse effects to listed species. Also, complete programmatic consultations on these plans can be completed to streamline or minimize consultations on individual incidents. In New England, programmatic consultation between the USCG, USFWS and NOAA Fisheries had begun under the auspices of the Regional Response Team (RRT) prior to the B. No. 120 spill, but was not complete. Additional species-specific planning efforts had also been initiated in Massachusetts at the Area Committee for the endangered roseate tern and the threatened piping plover.

ESA SECTION 7 CONSULTATION

As the lead federal agency responding to this spill, the USCG was responsible for complying with Section 7 of the ESA for *all* response actions taken under the Unified Command's oversight, including actions of contracted cleanup organizations and those actions recommended and undertaken by the USFWS.

Because of the presence of listed species and their habitat, the USCG initiated emergency consultation with the USFWS (assisted by Massachusetts Division of Fisheries and Wildlife [MADFW]) within 24 hours of the spill to seek advice on measures that would minimize the effect of the planned response on listed species. Actual and potential habitats were mapped and distributed in the Incident Action Plan in an attachment entitled "Immediate Response Action: Treatment and Completion Recommendations." The listed species portions of this guidance document were cooperatively developed with USFWS and MADFW and included guidance for how to conduct cleanup on the roseate tern nesting islands and the piping plover beaches. In response to daily reports from the USFWS and MADFW, adjustments were made in response actions to avoid or minimize adverse effects on listed species.

Ram Island, a critical roseate tern breeding island hosting approximately one quarter of the breeding population of the entire US east coast, was initially oiled two days into the spill despite protection efforts. Hazing operations recommended by the USFWS were implemented to prevent landing of the in-migrating roseate and common terns on the oiled island. Hazing was conducted by USFWS and MADFW from May 3rd to May 29th under the auspices of the Unified Command. Hazing reduced the likelihood of oiling of roseate terns as they returned to their nesting habitat. Bird and Penikese Islands, also roseate tern nesting habitat in the bay, were lightly oiled and were cleaned within two weeks without hazing operations. Roseate tern island cleanup procedures were prescriptive in nature, with clearly defined response techniques and endpoints (Coley and McCollough, 2004).

In contrast, guidance for cleaning piping plover beaches was more adaptive than prescriptive, reflecting different challenges. Plovers were present and nesting throughout the response and adjustments to response activities occurred throughout the season. A Wildlife Unit was setup under the Incident Command System that included trained shorebird monitors working for non-governmental organizations (Massachusetts Audubon, Lloyd Center for the Environment, and The Nature Conservancy) under the direction of the USFWS and MADFW. The shorebird monitors were assigned to plover beaches to monitor and document the effects of the spill on piping plovers. Daily discussions between the monitors and division supervisors were established to allow local minor operational adjustments and accommodations to be made, and significant concerns were raised to the Unified Command via the Wildlife Unit. The cleanup consisted of removing surface oil and buried oil while shorebird monitors ensured minimal disturbance to the plovers. Some buried oil was left for natural attenuation or removal after plover out-migration when it was deemed that cleanup would cause stress or harassment.

Because of prompt emergency consultation, the only North-eastern beach tiger beetle colony was promptly marked with symbolic fencing and protected from cleanup activities. The Tiger beetle larval habitat was generally not impacted by oil; adults were not present at the time of the response operations and the beach did not require extensive removal activities.

The MOA and its associated Guidebook (Ecosystem Management & Associates, 2002) were used by the USCG as a framework to coordinate the emergency consultation during and after the response effort, and as guidance for the formal consultation. During the emergency phase, the USCG and USFWS regularly communicated in order to proceed efficiently through the Section 7 consultation. As recommended by the MOA Guidebook (Ecosystem Management & Associates, 2002), consultation support was added to the Pollution Removal Funding Authorization (PRFA) to cover the costs of a USFWS Biologist to support the USCG's Section 7 obligations. We jointly gathered information in support of Appendix B of the MOA resulting in a Biological Evaluation (BE) in preparation for formal Section 7 consultation.

The BE was written after the USCG concluded gross oil removal and closed the incident command post on September 1, 2003, the end point of our emergency consultation. The BE concluded that the oil spill response adversely affected piping plovers and roseate terns and likely did not adversely affect the Northeastern beach tiger beetle. The response actions that produced adverse effects were conducted in close coordination with the USFWS to minimize such effects while still conducting the removal necessary both for species protection and accomplishment of other response objectives. The conclusions on adverse effects were confirmed by the USFWS in the Biological Opinion (U.S. Fish and Wildlife Service, 2004).

LESSONS LEARNED AND RECOMMENDATIONS

In the course of supporting our agencies' efforts to complete the Section 7 consultation for the B. No. 120 spill, we documented a number of important lessons and offer recommendations to facilitate future spill response efforts and agreements between our agencies. The primary sources for these "lessons learned" were a discussion between the co-authors and other USFWS representatives following completion of the BE, a USCG-hosted post-response debriefing, and input from the Department of the Interior Regional Environmental Officer.

Utilize Specialists Experienced in Both ESA and Spill Response

Spill responders must recognize that the information demands of the Section 7 consultation process differ from National Contingency Plan and Incident Command accounting procedures and should consider hiring trained staff to assist in response involving listed species, including required documentation of the response and its effects. In the B. No. 120 spill, the limited experience of response personnel with Section 7 consultation procedures resulted in initial misperceptions regarding the extent of documentation and detail of impact assessment required to fulfill Section 7 responsibilities.

The limited information in Appendix B of the MOA proved deceptive to those not familiar with the ESA and formal consultation; this misperception was reinforced by conversations with some who were involved in writing the MOA. At the end of the spill response, the USCG, using PRFA funds, hired an experienced USFWS endangered species biologist (not involved in the drafting of the BO) to assemble the necessary information and write the BE. However, it would have been more beneficial to integrate the Service consultant into the response earlier. The USCG wrote a broad statement of work lacking the detail of the PRFA Statement of Work language suggested by Appendix D of the MOA. We suggest that the MOA and guidebook highlight this Appendix in more than a single footnote to ensure it receives adequate attention in the early phase of a response, and that the NRT website be expanded to include all contents of the MOA CD. For future spills, we recommend hiring a Technical Specialist who is given significant latitude within the Incident Command to access or obtain site specific response and/or listed species data. This individual might be Coast Guard personnel familiar with Section 7 consultations, Service staff familiar with Section 7 consultations and spill response (but not the endangered species biologists responsible for coordinating protection efforts), or a private contractor.

Plover and tern monitors were hired to provide information for the damage assessment phase and worked with response personnel to reduce adverse effects on piping plovers. However, because the USCG lacked training and experience in the effects determination under the ESA, and the USFWS endangered species personnel inexperience with the MOA and spill response, there were misunderstandings between the USCG and the Service as to the Section 7 consequences of adjusting response activities in

order to minimize impacts on the listed species. It was not made sufficiently clear during the emergency consultation, that 1) net benefits resulting from response activities do not "cancel out" adverse effects; 2) take under the ESA means more than injury or mortality of an individual; 3) the threshold of 'take', in particular harm and harassment, is low and may be difficult to avoid; and 4) the threshold for adverse effects on listed species considered in Section 7 evaluations is different than "take" as defined in ESA.

Early discussion of the data needed for formal consultation will ensure that any differences in opinion regarding data collection and effects analyses are ironed out early and explicitly so post-emergency debate is eliminated or minimized. Ultimately, for the B. No.120 spill response, the USCG brought in a reservist with experience in both spill response and ESA consultation to review the emergency consultation process and assist with the formal consultation.

Recognize Triggers to Formal Consultation

During emergency consultation, discuss what the effects of response operations are likely to be, and what information should be collected to determine the level of effects (harm, harassment, injury, mortality). It was easy and appropriate for response discussions to focus on minimizing net oil and response impacts. However, these discussions can overshadow assessment of the response actions alone necessary for the consultation. We would have benefited from an early resolution to our differences in interpretation on the level of data necessary to determine incidental take after the emergency. It is vital to have a clear understanding of the thresholds for adverse effects resulting from response operations as soon as it is determined that response activities will occur in endangered species habitat. During the B. No 120, we described the best course of action for the situation, but did not focus well on documenting the effects of the response operations alone on listed species from the perspective of a Section 7 consultation. In the future, we recommend early definition and discussion of adverse affect thresholds (typically take via harm and harassment in response). Individuals involved in consultation during the emergency response should review the Response flowchart in the MOA (second flowchart in Appendix A) as well as the flow chart for consultation in Chapter 4 of the Section 7 Consultation Handbook⁵ (USFWS and NOAA Fisheries 1998). We have also provided a list questions in Table 1 to facilitate alignment between the FOSC and the involved Service on topics important to the listed species aspect of response and post-emergency consultation.

Table 1. Points for Service/Coast Guard discussion and alignment if response may affect listed species.

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- Do the Service and the FOSC believe that planned response actions will minimize the net effects of the oil and the response actions on the listed species?
 - Are Service and response personnel aware of what adverse effects may result from response actions? Are the thresholds of response-related take, especially by harm or harassment, understood?
 - If the response actions alone will have adverse effects, is the FOSC is aware of this take and its role in the net benefit equation?
 - If response actions are not minimizing net effects, is the FOSC is aware of the additional response-related take in accomplishing other response objectives?
 - Is data being collected to document any response generated adverse effects? Who is collecting this data? Are the spatial resolutions, frequency, and detail sufficient to document incidental take in formal consultation?
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Collect Sufficient and Appropriate Data for Consultation

Emergency consultation procedures allow the action agency to incorporate listed species concerns into their response to an emergency. This is accomplished by *thoroughly discussing response and wildlife data sets early during the emergency to determine adequacy in detail, frequency, and spatial coverage for formal consultation and create datasheets specific to the Section 7 consultation if necessary.* We recommend the development of a daily datasheet for both response and wildlife personnel that is specific to the listed species and its habitat. Ideally, a prototype should be available prior to a spill occurring (requires preplanning). Important parameters to document within the specified listed species habitat include: 1) a detailed description of response activities; 2) shoreline cleanup recommendations and their implementation and 3) species specific data relating to feeding, breeding and/or resting behavior and habitat. Ensure that the geographic extent is appropriate for the listed species, as Incident Command geographic divisions and shoreline cleanup segments may differ from the habitat area. Table 2 provides a list of data fields that should be considered for a response affecting listed shorebirds, such as piping plovers.

Table 2. A suggested dataset specific to the habitat areas for listed shorebirds in oil response, to be collected daily by both response management and wildlife management personnel for each habitat area.

Data topic	Comment
Staff	Number of personnel operating within the habitat area
Actions taken	Cleanup actions taken
Equipment used	Details of equipment being used in the process of cleanup (important equipment such as ATVs, Gators, etc.)
Time working Checkboxes for weather (sunny, cloudy, etc.)	Duration of actual operations Weather influences the behavior of the species.
Wrack (wet seaweed at high tide line) removed? (Y/N)	Information helpful due to relationship to food sources. Volumetric and percent information potentially helpful would be difficult to interpret.
Comments/detail regarding response/species interaction	Particular details on response actions and listed species behavior, both positive (response was not disturbing), and negative (nest scrapes were abandoned) are useful.

Cooperatively Set and Calibrate on Cleanup Termination Endpoints

Seek alignment on cleanup endpoints and recalibrate as cleanup progresses toward conclusion. Cleanup termination endpoints served as a point of divergence between response personnel and endangered species biologists (state, federal, and academic). Joint development of pre-spill cleanup methodologies and termination endpoints, by consensus of resource managers and specialists and removal advisors, is important. Working through these oil weathering and toxicity questions is challenging during response. This is an issue we intend to address further in continued species-specific planning efforts. Additionally, calibration of experts to the agreed-upon standards can be difficult, but is critical to a consensual cleanup termination.

Foster Strong Communications

We cannot stress enough the importance of clear communication given the different terminology and procedures of the NCP and the ESA. Properly placing experienced personnel in the correct response locations helps to foster this. Clear communication channels between the USCG and USFWS during the B. No. 120 spill ensured that listed species resource recommendations were integrated into the response. Our response was improved as a result of the communication that took place prior to the spill, both for the programmatic consultation as well as for the roseate tern response strategies. The tension points that occurred were more often related to information interpretation rather than information flow. While the links were good, the communicators often lacked an appreciation for the nuance and detail of the other's issues. For this reason, we recommend employing a dedicated Technical Specialist experienced in both ESA consultation and oil spill response, acting as a liaison between the resource and response communities.

Develop Practical Pre-Spill Plans

Programmatic Consultations have not been completed in Region I/ New England. However, we feel from reviewing other completed consultations from other regions that there are tradeoffs between the level of detail and the frequency that consultation will need to be re-initiated. As we proceed with programmatic consultation, we intend to strive for a tool that will be simple and practical for FOSCs to implement. We do not want to develop an overly detailed or prescriptive programmatic consultation, as too many details or caveats will result in a programmatic BE too cumbersome to implement during spill response. This may result in more frequent reinitiation of consultation during spills, but believe that the most critical steps and management practices will be more easily and swiftly implemented as a result.

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B120 Spill in Buzzards Bay, Massachusetts. New England Field Office, Concord, NH.

PRESENTER'S BIOGRAPHY

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ENDNOTES

- 1 The views expressed in this paper are those of the authors and not necessarily those of our employing agencies
- 2 There is some disagreement over the volume spilled.
- 3 A third island, Penikese, affected by the response was a historic breeding colony for the roseate tern
- 4 A copy of the MOA can be found at [http://www.nrt.org/Production/NRT/NRTWeb.nsf/AllAttachmentsByTitle/A-259ESAMOU!\\$File/ESA-MOA.pdf](http://www.nrt.org/Production/NRT/NRTWeb.nsf/AllAttachmentsByTitle/A-259ESAMOU!$File/ESA-MOA.pdf)
- 5 A copy of the Handbook can be found at <http://endangered.fws.gov/consultations/s7hndbk/s7hndbk.htm>

