NATURAL RESOURCE DAMAGE ASSESSMENT
PRE-ASSESSMENT WORK PLAN FOR DETERMINING INJURY TO BALD EAGLES FROM THE DEEPWATER HORIZON (MC 252) OIL SPILL
(BIRD STUDY #9, PART 2)

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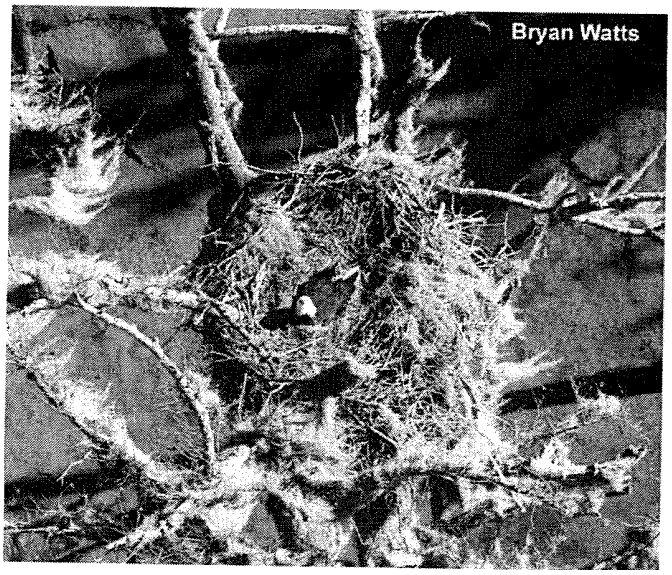

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INTRODUCTION

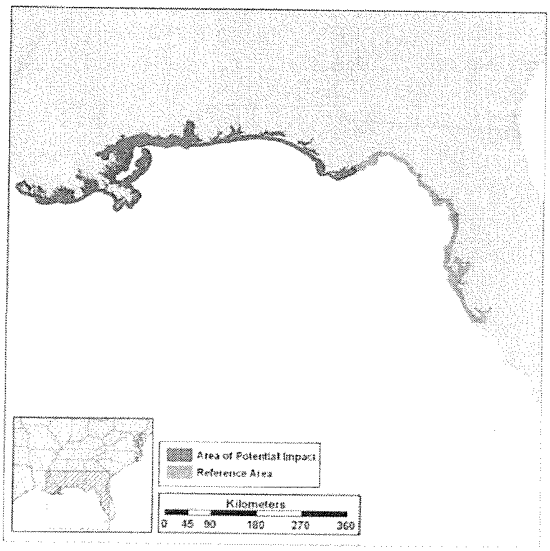
The Deepwater Horizon (MC 252) oil spill began on or about April 20, 2010. Oil spill-related injury to wildlife is of major concern to BP, the Natural Resource Trustees (Trustees) and the American public. The Trustees for this oil spill that have particular interest in birds include, but are not limited to, the U.S. Fish and Wildlife Service (Service), the National Park Service (NPS), and the natural resource agencies of the States of Texas, Louisiana, Mississippi, Alabama, and Florida.

This data collection plan specifically seeks to estimate breeding numbers and measure demographic parameters for Gulf Coast populations of bald eagles (*Haliaeetus leucocephalus*). These measures may inform estimates of any potential spill-related changes in the number of nesting pairs and offspring produced by Gulf Coast breeding bald eagles. The bald eagle has been chosen as a focal species for this data collection effort for two reasons. First, relative to the 35 to 40 raptor species that use the Gulf of Mexico (Gulf), bald eagles have a relatively high potential for exposure due to their use of aquatic and estuarine habitat and prey. Second, bald eagles have been studied throughout their respective ranges and within the Gulf of Mexico. These studies have been used to inform the current data collection effort and may provide useful information regarding baseline conditions.

GEOGRAPHIC SCOPE:

Two areas have been identified for the purpose of the bald eagle data collection effort: the Area of Potential Impact (API), and the Reference area (REF). The extent of oiling in these habitats is subject to re-evaluation as data are analyzed.[1] There will be a buffer zone of approximately 40 km at the interface of these two areas in which nests will not be assessed. The API includes nearshore waters from Atchafalaya, LA to Apalachicola Bay, FL. The REF includes nearshore waters east of Apalachicola Bay, FL to Charlotte Harbor, FL (Figure 1).

Figure 1. The API includes nearshore waters from Atchafalaya, LA east to Apalachicola Bay, FL. The REF includes nearshore waters from Apalachicola Bay, FL east to Charlotte Harbor, FL.



[1] Evidence from other studies conducted to date indicates that, contrary to expectations when this Plan was originally developed, MC 252 oiling west of Terrebonne Bay likely did not occur; therefore, Atchafalaya has been considered to be a reference area for other investigations.

DWH-AR0199173

Background:

The northern Gulf of Mexico supports populations of bald eagles including:

1. Breeding populations that include breeding pairs, subadults, and associated young including known occupied territories in AL (77), FL (1133), LA (243), MS (31), and TX (156). These figures represent the most recent survey data available from these states as maintained by the U.S. Fish and Wildlife Service under the national monitoring plan. They do not necessarily reflect the same time frame or survey efforts and so should be considered minimum estimates.
2. Birds from the Great Lakes breeding population that spend the winter along the Mississippi Flyway.

Bald Eagle Objective 1: Estimate Breeding Population within Area of Potential Impact (API) and Reference Area (REF)

Aerial surveys will be used to estimate the number of active nests within the API and REF. Both the API and REF will be systematically surveyed by using a standard 2-flight approach. The first flight will optimally be scheduled during the period of peak incubation. Aerial surveys will be conducted from a Cessna 172 with two observers. The aircraft will be maneuvered between the shoreline and a distance of 3 km inland to cover the most probable breeding locations. Bald eagle nests located will be mapped using GPS-enabled notebooks, given unique 3-element codes, and evaluated for adult activity. Each nest will be mapped with high spatial accuracy but geo-referenced photo documentation will not be made. Such a task is not feasible given the techniques being employed (low altitude, high speed flights) and the number of nests (approximately 500) being surveyed.

Standard activity types include, but are not limited to, adults present, evidence of eggs (eggs observed or adult in incubating posture), and chicks present.

Eagle laying dates in the Gulf are fairly well documented though there remains year-to-year variation and also latitudinal variation even within this confined area. Eagles have a long incubation period (35 d) and there is pair to pair variation in laying. The objective is to survey late enough that all birds would have a high probability of laying eggs. The consequence of flying once too early is that some pairs would not have laid eggs yet. The consequence of flying too late is that early failures would lead to undocumented breeding attempts since the nest would typically be empty by the time the late survey was flown. Since this is a three survey project, the likelihood of missing an active nest is small. Birds with early failures will likely make a second attempt which will be documented.

Nests with no eagle activity will be considered unoccupied. Nests with eagle activity will be considered to represent an "occupied territory." Nests with evidence of eggs or chicks will be considered "active nests" following standard definitions in use for raptor populations.

Bald Eagle Objective 2: Measure Eagle Productivity

Aerial surveys will be used to estimate productivity within both the API and REF study areas during the 2010/2011 breeding season. All territories determined to be occupied under eagle objective 1 will be checked in the late winter or early spring to determine reproductive rate (chicks fledged per breeding attempt), brood size (chicks per successful nest), breeding success (pairs fledging $\geq$1 chick per breeding attempts), and productivity (fledgling produced per breeding pair). During the overflights, observers will count chicks in the nest and broods will be aged to the nearest seven days based on plumage and stage of development. Some nests may be excluded due to airspace restrictions.

GENERAL OPERATING PROCEDURES

State and Federal Permits –The Contractor will acquire all permits that may be required for overflights, although none are anticipated at this time.

Coordination of Flights - Flights will follow National Park Service (NPS) and National Wildlife Refuge (NWR) and State protocols when flying over their lands. All flight operations will be coordinated in accordance with the DWH MSC252 protocols for flights.

Access to Property – It is not anticipated that access to any lands will be required; overflights will be conducted at an elevation of 300' to 500' in open airspace.

Written Standard Operating Procedures – Data-collection details and protocols for performing this assessment are detailed in the written Standard Operating Procedure (SOP), entitled "Bald Eagle Aerial Nest Survey Standard Operating Procedures."

Data Handling - Chain-of-custody procedures will be observed at all times. All samples and data sheets will be transferred with appropriate chain of custody forms. Note that it is unlikely that any samples will be collected as part of this study.

All data collection will occur during aerial surveys conducted by the Contractor, likely without BP or trustee representatives present in the aircraft. Those data (data sheets, track logs, photos) will be e-mailed or mailed to the USFWS Fairhope, Alabama field office within 2 weeks of collection. The USFWS will subsequently send copies to BP and Louisiana within 1 week of data receipt.

All data will be collected, managed and stored in accordance with US EPA Good Laboratory Practice regulations (GLPs) to the extent practicable. In accordance with GLPs, all field work, and the calibration and use of field equipment (e.g., hand held GPS devices) shall be conducted in accordance with Standard Operating Procedures (SOPs) available for that equipment. The appropriate training on particular equipment or in the conduct of specific field studies for all personnel involved with the project shall be documented and those records kept on file by the implementing entity for the duration of this project. The Contractor is responsible for entering data into the ERDC database.

Safety – Field teams will comply with all existing training and safety protocols as applicable to operations. Prior to commencement of field activities, the Trustees will agree upon a person or

persons to whom study participants may report any safety concerns. Such person(s) will take immediate action to address and resolve reported concerns.

Disposition of Durable Equipment --All durable equipment (such as cameras, GPS, etc.) purchased for this study will be returned to USFWS at the conclusion of their use for this study. The USFWS will return BP-purchased equipment to BP, unless otherwise agreed.

Bald Eagle Aerial Survey Form, Deepwater Horizon MC-252, NRDA Raptor Work Plan, Bird Study #9

Date:_____ Observers:_____

Nest Code											Nest Condition	Fresh Lining (Y/N)	No. Adult	Adult 1 Activity	Adult 2 Activity	No. Eggs	No. Chicks	Chick Age (weeks)	Nest Access	Notes
State		-	County		-	Territory			-	alpha										
		-			-				-											
		-			-				-											
		-			-				-											
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		-			-				-											

Observer 1 Signature:_____ Date:_____ Observer 2 Signature:_____ Date:_____

Data entered (date): ___/___/___ Database entry person (name): _____ Database entry person (signature):_____

Nest Condition
1 Remnant (<1/3 present)
2 Damaged
3 Intact/Building
4 Intact/Complete

Adult Behavior
1 None
2 Eagle on nest
3 Eagle within 200m
4 Incubating position
5 Brooding position
6 Feeding young

Nest Access
1 Easy
2 Moderate
3 Difficult

DWH-AR0199177

NATURAL RESOURCE DAMAGE ASSESSMENT (NRDA) WORK PLAN FOR ESTIMATING IMPACTS TO RAPTORS RESULTING FROM THE DEEPWATER HORIZON (MC 252) OIL SPILL / BIRD STUDY #9

****Approval of this work plan is for the purposes of obtaining data for the Natural Resource Damage Assessment. Each party reserves its right to produce its own independent interpretation and analysis of any data collected pursuant to this work plan.*

APPROVAL

5/13/11

Trustee NRDA Bird Group Lead Date

FOR ROLAND GUIDRY

5/20/11

State of Louisiana Trustee Representative Date