Sea Otter Project Aviation Study Plan

Mission: Sea otter surveys on Kodiak Archipelago.

Project Date: July 2014

Start Time: Sunrise **End Time:** Sunset

Project Plan Prepared By (Name and Title): McCrea Cobb, Wildlife Biologist

NOTE: Signature by the preparer verifies that all personnel have the required training for the mission. Attach map, clearly showing the areas to be flown; aerial hazards must be indicated.

Project Plan Prepared by: _____ Date: 6/30/2014
Project Supervisor: McCrea Cobb

Project Plan Prepared by: _____ Date: 6/30/2014
Pilot: Taj Shoemaker

Project Plan Prepared by: _____ Date: 7/1/14
Project Supervisor: Bill Pyle

Project Plan Reviewed by: _____ Date: 7/1/14
Deputy Refuge Manager (acting): Hans Klausner

Project Plan Approved by: _____ Date: 7/2/14
Refuge Manager: Anne Marie La Rosa

2014 Sea Otter Survey Project Plan

Purpose and Objectives

The southwest sea otter (*Enhydra lutris kenyoni*) distinct population segment (stock), which extends from Kodiak Island across the Aleutian chain, is considered threatened with extinction because of historically declining numbers (U.S. Fish and Wildlife Service 2004). The highest priority step in recovering this stock is conducting annual surveys in each management unit to estimate population sizes and trends (U.S. Fish and Wildlife Service 2010). Because of their wide population ranges, the current guidelines for estimating sea otter abundances in Alaska generally call for aerial surveys.

The objective of this survey is to estimate the abundance of sea otters that inhabit the Kodiak Archipelago. We will be following an established method (Bodkin and Udevitz 1999) developed for estimating sea otter population sizes from a single engine fixed-wing aircraft platform on floats that includes an estimate of sea otters missed during the survey (sightability). The method calls for strip transects that vary in intensity depending upon *a priori* estimates of sea otter densities in the habitats being covered. To estimate sightability, samples of the sea otter sightings are more rigorously counted by circled in the aircraft (intensive search units or ISUs). The survey will cover near shore marine waters near Shuyak, Afognak and Raspberry Islands, and northern/central portions of Kodiak Island.

Participants

Wildlife Biologist, McCrea Cobb, and Clearwater Air Pilot, Taj Shoemaker

Project Time Frame

July 2014

Base of Operations

Kodiak, Alaska

Communications

Communications between Scout aircraft (907-301-3311) and refuge headquarters will be via cell phone, when in cell phone range, and a portable satellite phone, when out of cell phone range. Communications between the Clearwater Air Scout aircraft and other commercial charter carriers will be made on frequency 122.8 (CTAF) when operating outside of Class D airspace. When operating within Class D airspace, communications will occur on frequency 119.8, Kodiak tower.

Emergency Evacuation

In the event of an emergency, all personnel will be required to follow the Kodiak NWR Interagency Mishap Response plan, signed in January 2014.

Fuel Management

There are three areas that the aircraft can be refueled: Sea Hawk Air at Trident Basin, FWS fuel tank at Lilly Lake, and FWS fuel tank at Camp Island on Karluk Lake.

Aircraft Management

The aircraft to be used will be an American Champion Scout. The pilot and aircraft are both carded for low level survey work. All flight operations will be in accordance with OAS and OPM guidelines.

The pilot will obtain daily briefings from the Federal Aviation Administration (FAA) and local charter organizations for weather conditions in the vicinity of the area to be surveyed. The wildlife biologist will have obtained the necessary training (B-3 training courses, Water ditching training) prior to conducting the survey.

Risk Analysis

METHOD

Is there a method that would accomplish the mission more safely and/or more efficiently?

> No, utilizing both charter aircraft and pilot is the most efficient use of resources available. The Refuge survey aircraft (Aviat Husky) was deemed unsafe for this survey because its wing configuration does not safely perform tight circling at low levels, which is required of this survey. Additionally, the survey requires a pilot with prior sea otter survey experience.

Is the selected method approved with specific guidelines for safe operations?

> Yes, low level surveys are approved by OAS and DOI agencies. The survey follows published survey protocol (Bodkin and Udevitz 1999) that has been used by the Service's Marine Mammals Management office for over 10 years to assess sea otter abundances in Alaska.

Have adequate flight following and communications methods been established?

> The aircraft is equipped with automatic flight following (Spider Track), which will be monitored by Refuge staff at headquarters throughout their mission. The pilot calls dispatch before takeoff with pertinent information, i.e. time off, people on board, fuel on board, mission objective and estimated time enroute. The pilot will check-in with dispatch multiple times throughout the flight to inform them about the status of the flight.

MEDIUM

Can factors, such as terrain, altitude, or weather, be mitigated to ensure the success of the mission?

> Yes, weather will be monitored before each flight and flights will not be conducted when ceilings, visibility and/or winds will make the flight unsafe. Surveys will not commence when winds (ground) are greater than 15 knots, and surveys will be suspended if winds aloft exceed 20 knots.

Will the mission be conducted at low (below 500' AGL) altitudes?

> Yes, to conduct sea otter surveys, flights will need to be conducted within 500' AGL.

Is there a conflict with airspace?

Yes, there are high traffic areas (Map 1 and 2) along certain routes used by commercial carriers. These areas are scattered along Kodiak Island. The main high traffic area is located within a 10-mile radius of Kodiak airport. This area is composed of arrival/departure routes for all single and multi – engine land and single – engine sea aircraft operating around Kodiak Island. There is aircraft separation within a 5-mile radius, due to Class D airspace, with the Kodiak tower. Outside of the high traffic areas aircraft maintain communications on CTAF 122.8.

MAN

Is the pilot properly carded for the mission to be conducted?

Yes, the vendor pilot is carded by OAS.

Will the flight be conducted within the pilots' flight time/duty day requirements and limitations?

Yes, these flights normally occur during the middle of day.

Have the minimum number of personnel necessary to accomplish the mission safely been assigned and do they meet AMD qualifications and experience requirements?

Yes, the pilot and passenger are qualified to conduct low-level sea otter surveys.

Will adequate personnel and pilot briefings be conducted prior to each flight?

Yes. Because FWS does not have an American Champion Scout in their fleet, the biologist will request a safety briefing from the vendor pilot prior to the onset of the mission. In addition, the biologist will inspect that proper documentation is carried by both the pilot and in the aircraft. The safety briefing will be conducted by the pilot to ensure that the biologist is familiar with the aircraft (i.e. location of first aid kit, remove seat belts, location of emergency exits, remote emergency locator beacon switch, etc.).

Are all personnel aware that the pilot-in-command has the final authority over any operations conducted involving the aircraft or its occupants?

Yes, all personnel have been briefed that the pilot has the final authority while operating the aircraft. Also, all personnel have knowledge that they have the right to deny or cancel any flight that they seem unsafe, and they can report any hazardous situations to their respective supervisor.

MACHINE

Is the aircraft capable of performing the mission in the environment (altitude, temperature, terrain, weather) where the mission will be conducted?

Yes, the Scout has the capability to accomplish survey missions on Refuge lands.

Is the aircraft properly carded for this mission?

Yes, the Scout is carded by OAS.

Risk Assessment

Each of the hazards identified above has been analyzed to determine:

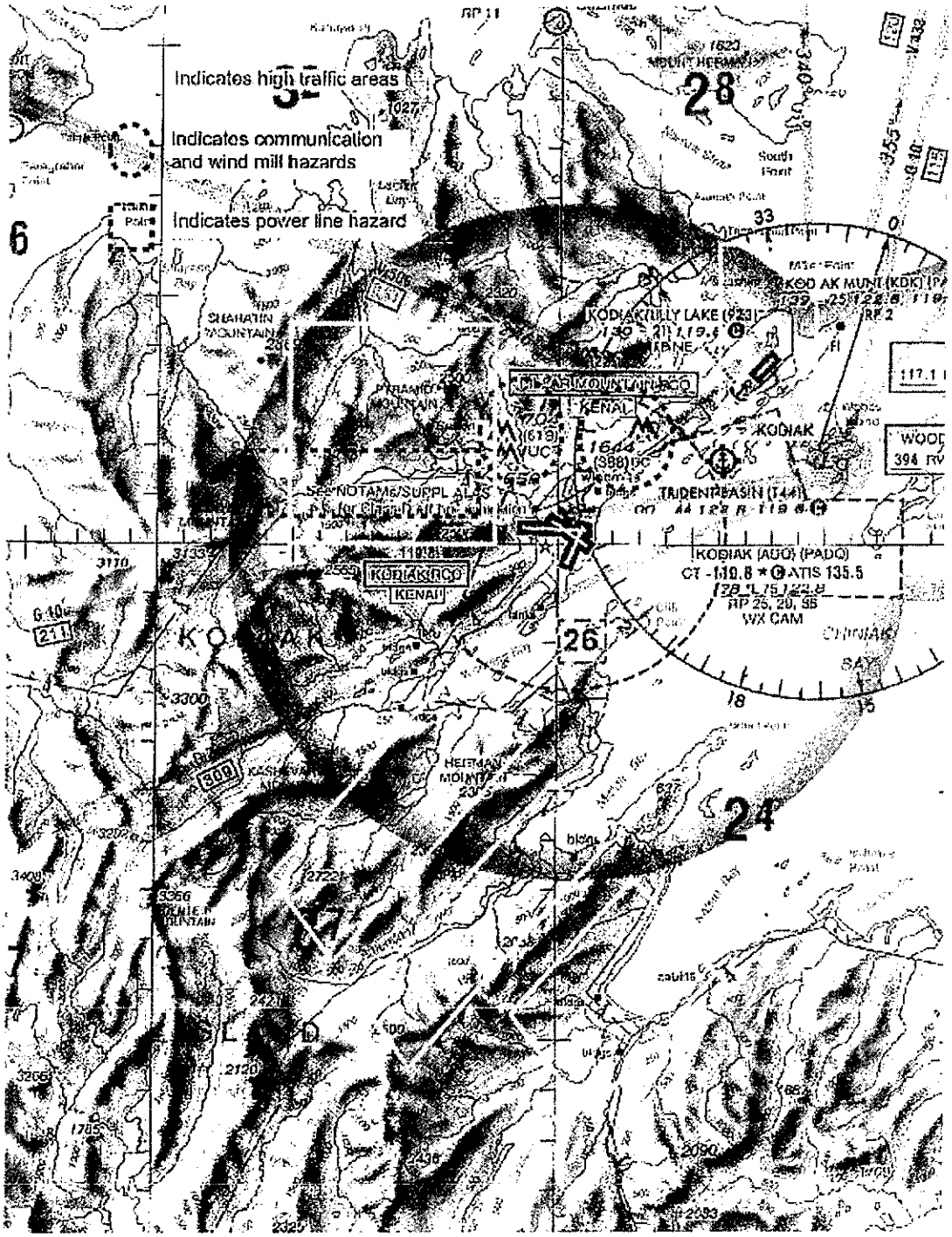
1. The effect on personnel and equipment should the hazard be encountered, and
2. The probability that the hazard will be encountered according to the following definitions and matrix.

Definitions

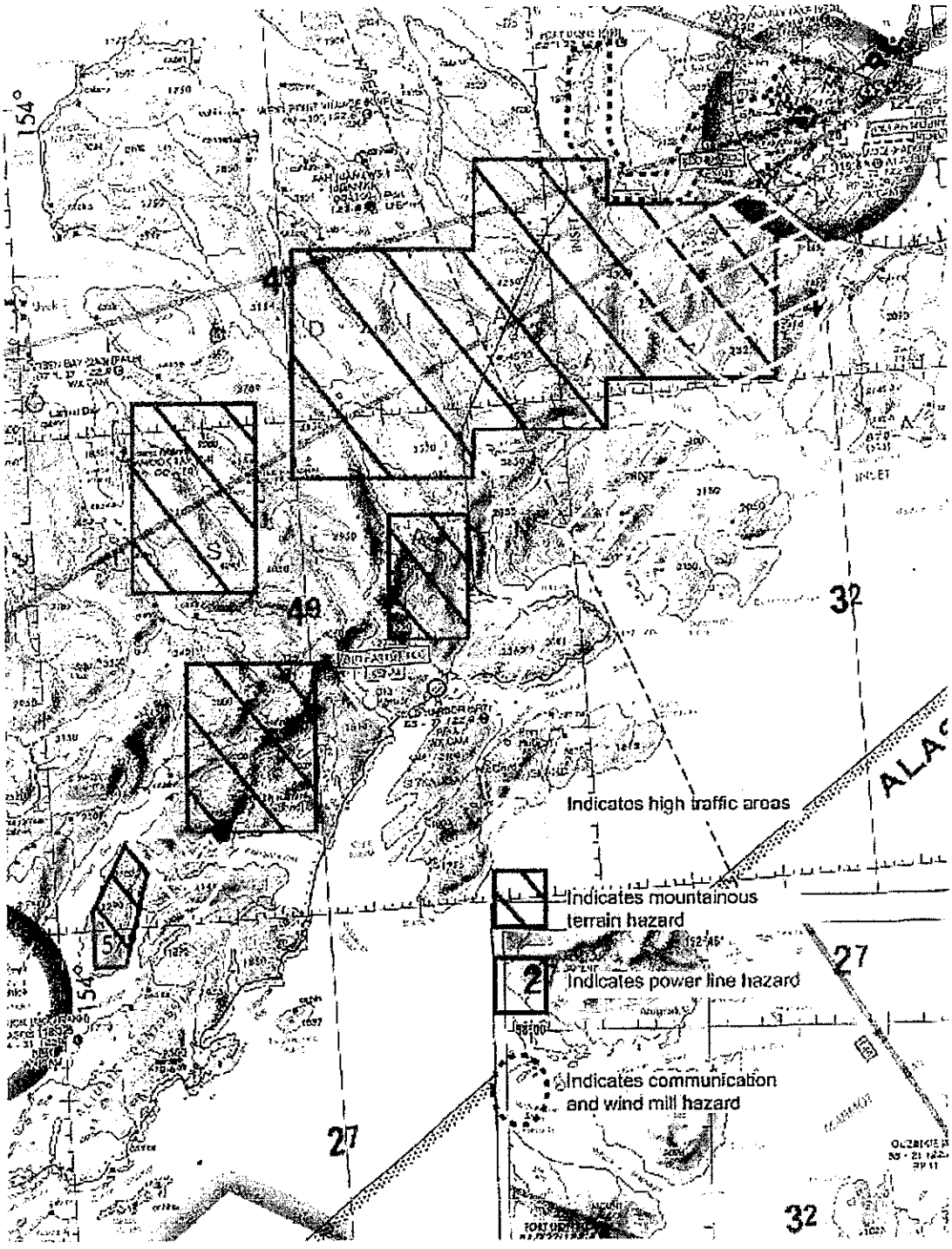
Effect	If the hazard is encountered during a flight mission or aviation operation, the effect may be:
Catastrophic:	Death or serious injury; a system/equipment loss (aircraft or ground accident)
Critical:	Serious injury; damage to equipment
Moderate:	Mission can be accomplished though there may be adverse effects on mission efficiency (extra cost, delays, etc.)
Negligible:	No effect on mission accomplishments
Probability	The probability of encountering the hazard during the flight mission or operation may be:
Frequent:	May be continuously or often encountered during each mission
Likely:	May be encountered several times during the course of many missions
Occasional:	May be encountered sporadically during the course of many missions
Seldom:	May be encountered frequently, but chances are remote
Unlikely:	May be encountered only rarely, chances are possible, but improbable

Rick Assessment Matrix

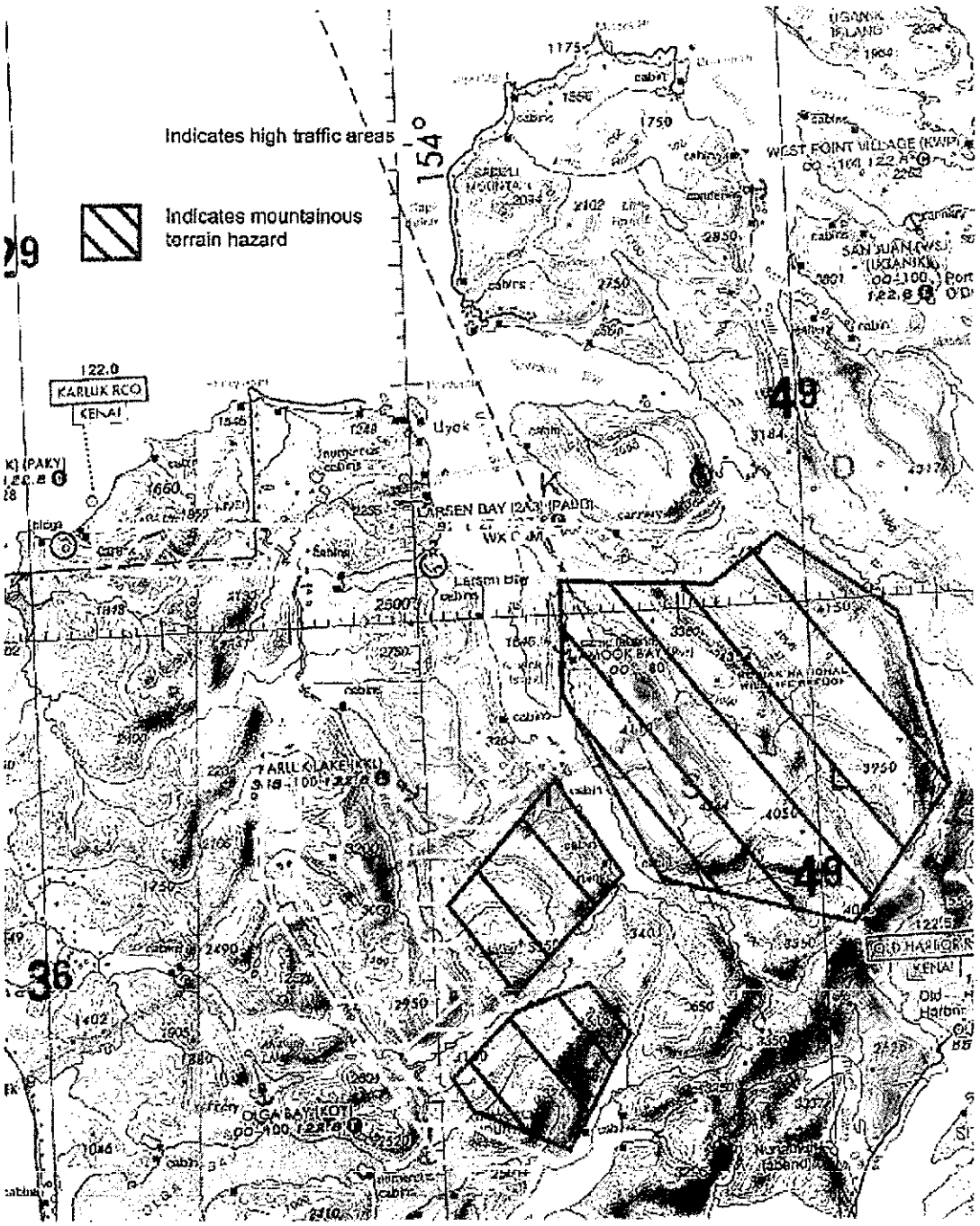
Effect		**Probability**				
		Frequent	*Likely*	*Occasional*	*Seldom*	*Unlikely*
		A	B	C	D	E
Catastrophic	I			HIGH	HIGH	MEDIUM
Critical	II		HIGH	HIGH	MEDIUM	LOW
Moderate	III	HIGH	MEDIUM	MEDIUM	LOW	LOW
Negligible	IV	MEDIUM	LOW	LOW	LOW	LOW



Map 1: High traffic areas and hazards associated with flying in and around Kodiak



Map 2: High traffic areas, mountainous terrain hazards, power line and communication towers and wind mill hazards.



Map 3: High traffic areas and mountainous terrain hazards.