Raptor Electrocution

ENV 213

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Raptor Electrocution

Introduction

Chantler (2003) Studied raptor electrocution and found that most of the electrocutions occur in the winter season. Because of a raptors feather structure, during wet months you see more electrocutions due to wet feathers. Raptors tend to spread their wings in an attempt to dry out their feathers and in turn touch two wires or one and something that is grounded (Raptors).

Perching is a major part of a raptors hunting regime. The raptors use the power lines as perches since they provide an advantage point for them. The raptors wingspan is just big enough to reach across and touch two different wires at the same time, making the wire ground, causing an electrocution. The power industry is growing and the demand for more power lines causes a concern for an increasing rate of electrocutions of not just raptors, but other birds such as waterfowl. Depending on the results of this study, the US Fish and Wildlife (USFW) might consider putting the power lines underground to keep the raptors from being electrocuted.

Electrocution of raptors occurs when there is a connection between two wires, or one wire while the bird is touching an object that is grounded. The other threat that power lines pose to birds is while a bird is flying it may strike the line and die on impact (UWC).

At the Tule Lake National Wildlife Refuge there is a power line that runs along two sides of the wetlands. There is also a grass field adjacent to the wetlands making it a

perfect hunting site for raptors. These power lines provide a perch for raptors while waiting for prey, such as field mice, and while waiting for waterfowl to become an easier target. It is tough to quantify the exact number of birds killed this way every year, since the possibility of them being scavenged. The USFW are able to attend to some of the raptors, but not all due to the numbers. For two decades prior to 1998, the service documented more than 1,000 raptors electrocuted in the eight-state Mountain-Prairie Region alone (Gleason). The problem with the power lines is that there have been instances of raptors being electrocuted while perched on them. The USFWS Division of Law enforcement has documented the electrocution of 1,030 migratory birds. (Protection)

Methods and Materials

The USFW chose a section of power lines for this particular raptor study. (See maps) To get to the specific power line, a government vehicle was provided to the researcher for transportation throughout the data collection process. Each power pole is marked with its own identification number. Every bird found dead along a specific section of power lines was identified and collected to determine the cause of death. Plastic bags, gloves and a backpack were used in the retrieval of dead birds. The researcher also marked and documented any feather piles location, size, date and color of feather. The feather piles were marked with spray paint so an individual feather pile was not counted twice. Feather piles are important because, electrocuted may be carried away by a coyote or other small animal feeding on the carcass. the following questions were answered for each bird found:

Species Identification (using USFW protocol)
Weight
Sex
Color

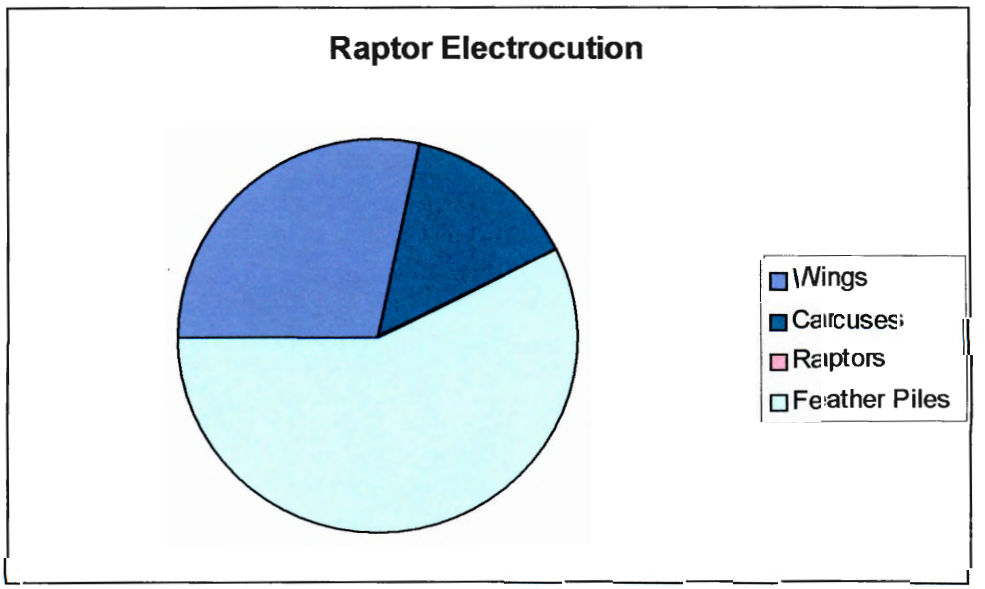
Location
State of decomposition
Approximate date of death
Method of death

- Electrocution
- Fly by striking

The data was recorded on a form provided by the USFW specifically for this raptor study to ensure complete data collection on each bird. The USFW protocol for species identification is knowledge of bird types and a species identification book. To insure quality assurance, quality control the surveyor brought back any dead birds and the biologist at the Tule Lake Fish U.S. and Wildlife Headquarters identified the species. A phone was provided in case of any emergencies.

Results

Out of all the days I went out and collected data I found four different species, four individual wings, two carcasses, zero raptors, and eight different feather piles. For more detailed data see Data Sheet.



Discussion

The decision to put the power lines underground needs a significant number of raptor electrocutions or some kind of mortality due to the power lines and poles is determined by the Biologist at the USFW. The Biologist has predicted why there are such a high number of feather piles and individual wings found were because of the avian cholera out break. The April 2&7, 2003 bird counts in the lower Klamath Lake National Wildlife Refuge (LKNWR) and the Tule Lake National Wildlife Refuge (TLNWR) brought back the following results LKNWR had 40,500 Snow geese and the TLNWR had 80,000 Snow Geese. The count for Avian Cholera in the TLNWR as of March 2003 was 920 dead Snow Geese (Hainline). Having a Cholera outbreak gives raptors an opportunity for easy food. There wasn't a Cholera count in the LKNWR, but as you see by the data sheet there wasn't individual wings found there. Included are maps of the TLNWR and the LKNWR, and an aerial picture of LKNWR. The highlighted is the location of each section of power lines.

Conclusion

In conclusion, the data collected has helped the USFW determine whether or not it is necessary for the power lines to be put underground, considering the time and expense of the project. Further information will be needed to make a decision. In the future, if this project is repeated, it is recommended that while collecting the data the researcher should go out in the field multiple times a day everyday to better insure there are no birds being carried off by coyotes or other small animals preying on the carcasses. The time of year the project is preformed should be done during the winter migration.

Works Cited

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Gleason, Karen, 2003. "Protecting raptors from electrocution"
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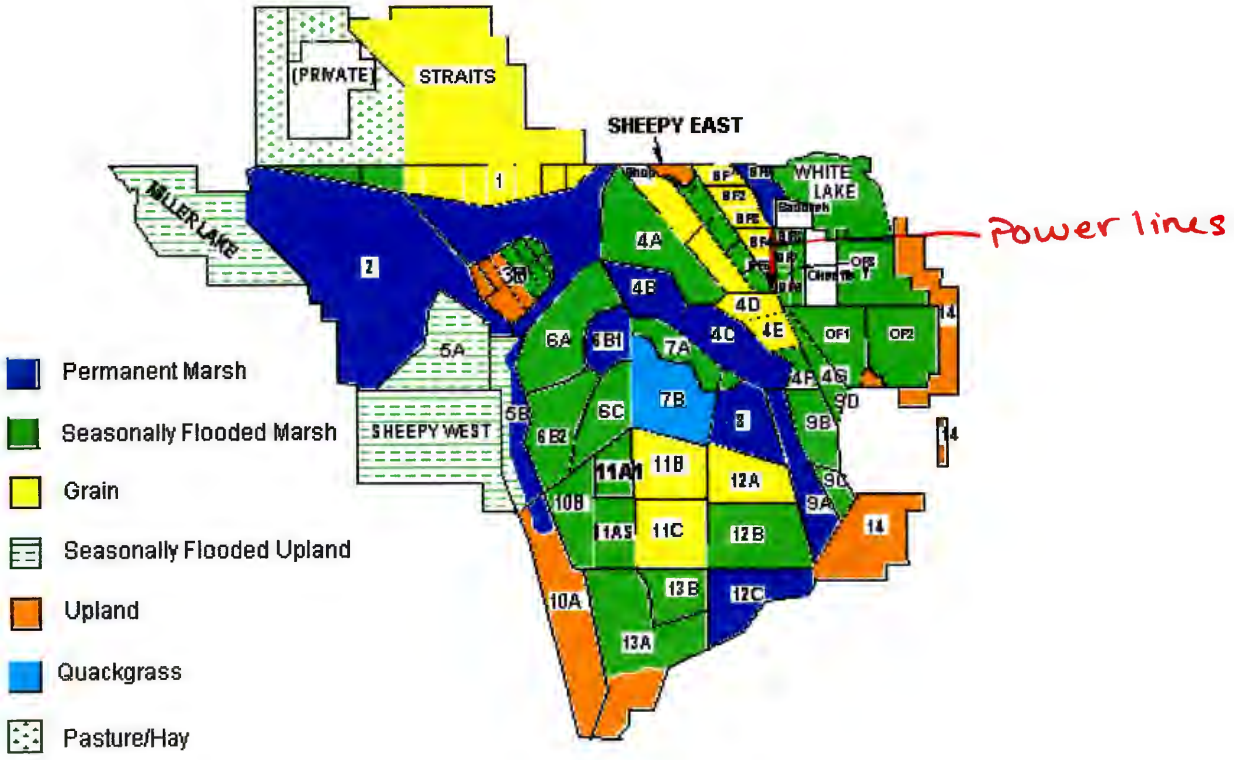
LOWER KLAMATH NATIONAL WILDLIFE REFUGE
HABITAT 2002

Revised 2/20/02



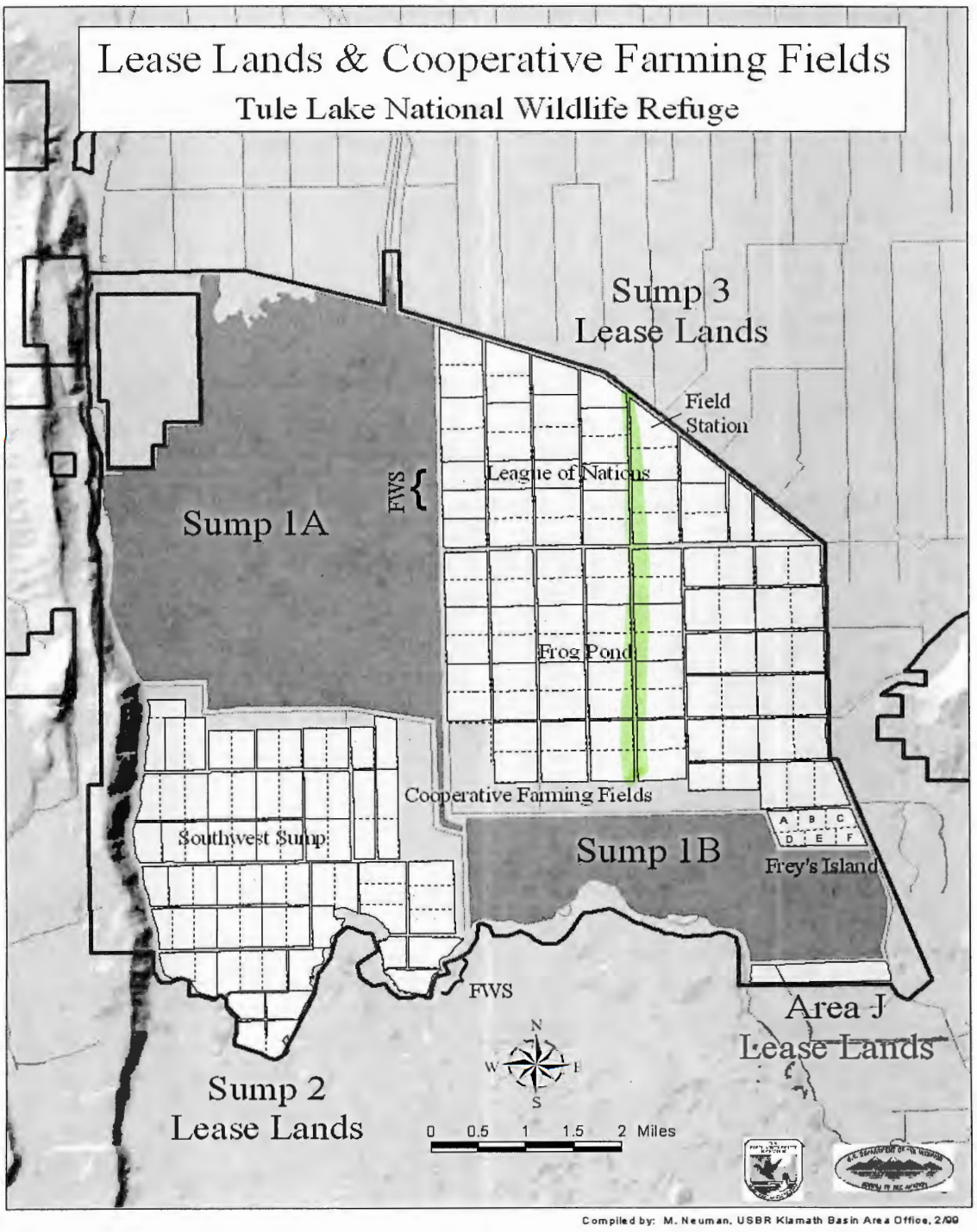


Figure 1.1 Tule Lake National Wildlife Refuge, California

power lines

PACIFIC POWER & LIGHT COMPANY

BIRD MORTALITY REPORT

Instructions: Personnel observing any bird mortalities under powerlines should complete this report. Report should be as complete as possible. If uncertain of information, leave item blank. Forward completed copy of report to District Line Superintendent. UNDER NO CIRCUMSTANCES SHOULD PERSONNEL REMOVE OR TRANSPORT BIRD MORTALITY! Use the reverse side of this report for additional information if necessary.

OBSERVER: Name _____ Title _____

Address/Agency _____ Phone Number: (_____) _____

_____

DATE: Discovery Date _____ Estimated Mortality Date _____

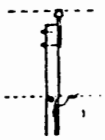
DISCOVERY LOCATION

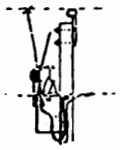
State District/County _____

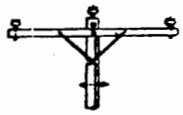
Legal Description/Locale _____

Pole Type/Line Configuration: *Check one*

☐ No Crossarm ☐ No Crossarm, But Transformer Present ☐ Crossarm(s) ☐ Other — *Describe on Reverse Side*







Line Voltage

Pole Number

Position of Mortality: Distance from carcass to: Pole _____ ft. Nearest Rd. _____ ft.

IDENTIFICATION

Species/Type _____ **Age** ☐ Adult ☐ Immature **Sex** ☐ Male ☐ Female

Wing Span _____ Weight _____ Remarks: _____ _____

VISUAL SIGNS OF DEATH

Trauma
- ☐ Gunshot
- ☐ Burns
- ☐ Broken Bones
- ☐ Open Wound
- ☐ None

Body Condition
- ☐ Fresh
- ☐ Decomposed
- ☐ Swollen
- ☐ Diseased

Feet
- ☐ Constricted
- ☐ Swollen
- ☐ Poxed
- ☐ Normal

Remarks:

_____
_____
_____
_____
_____

HABITAT

Vegetation
- ☐ Shrub/Grass
- ☐ Streamside
- ☐ Forest
- ☐ Farmland
- ☐ Pasture
- ☐ Urban
- ☐ Other (describe)

_____
_____

Topography
- ☐ Hilly
- ☐ Flat
- ☐ Steep
- ☐ Cliff

DOCUMENTATION

☐ Photographs Describe: _____

Signature _____ Date_____

MEASURES Do not write below:*(To be completed by Environmental Services, ESD).*

Recommendations: _____

Corrective Action: Type _____ Date _____

Agency Contract: Individual _____ Date _____ Disposal/Tagging _____

☐ Computer Entry ☐ ESD Review Date _____

If you have any questions, please contact **Pacific Power & Light, Environmental Services Department,** 920 S.W. Sixth, Portland, Oregon 97204, (503) 243-4222, or 243-4219. In Wyoming Region call 1-800-442-3951.

Raptor Electrocution Results Sheet

Lower Klamath Wildlife Refuge	Species	Date	Distance from pole	Feather Pile	Color of feathers	Other
	unknown	4/8/2003	80 feet	no	bluish grey/ gold	wings w/ some bones
	Snow Goose	3/3/2003	100 feet	yes	white and black	
	duck	4/8/2003	90 feet	yes	speckeled brown	
Feather Piles						
		4/2/2003	between 5929& 5930	yes	white	
		4/2/2003	at pole 5929			

Tule Lake National Wildlife Refuge	Species	Date	Distance from pole	Feather Pile	Color of feathers
	coot^	3/31/2003	2 feet	no	dark grey
	pelican^	4/2/2003	60 feet	no	white
CARCUSES	duck	4/7/2003	80 feet from road	no	
	snow goose	4/9/2003	120 feet from road	no	
Feather Piles		3/31/2003	between pole A2808&2809	yes	white
		3/31/2003	at pole A2836	yes	white w/ few black
		4/3/2003	15 feet from A 2738	yes	white
					* mostly down feathers
		4/7/2003	50 feet from A 2784		
		4/9/2003	60 feet from A 2784	yes	white
		4/16/2003	under pole A 2408	yes	white
Individual Wings	snow goose	3/31/2003	10 feet from A 2835	no	white w/ black
	snow goose (2)	4/4/2003	20 feet from A 3009	no	white w/ black
	snow goose	4/4/2003	on road		

TOTAL	Species	Wings	Carcuses	Raptors	Feather Piles
	4	4	2	0	8

^ = collected

* = Found because field was burnt