

# Factors influencing the Ecology of Greater Sage-Grouse on the Bear Lake Valley, Utah-Idaho

Current Research Progress and Future Research Plans

Casey J. Cardinal

Utah State University

Advisors: Terry Messmer- USU and Jack Connelly- IDFG

Project is supported by the:

IDFG, UDWR, BLM, Idaho OSC, Berryman Institute- USU, USFWS

# Purpose

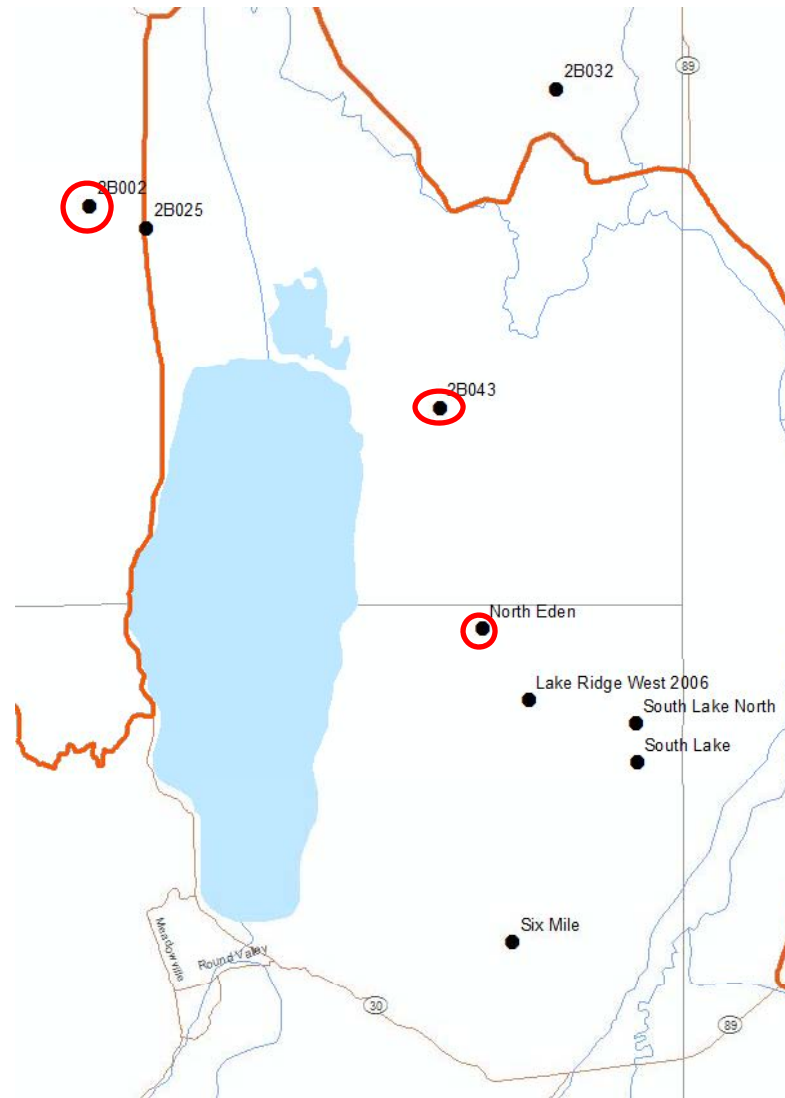
- Describe the ecology of the sage-grouse populations inhabiting the Bear Lake Region
  - Vital Rates
  - Seasonal Movements
  - Effects of Land Use
- Provide recommendations for the development of a tri-state management plan

# Study Area



Google Maps

# Capture Leks



# 2010 Grouse Captures

Capture Location	Adult Male	Yearling Male	Adult Female	Yearling Female
SPRING CAPTURES				
Idaho- 2B043 Lek	9	6	3	4
Idaho- 2B002 Lek	0	0	1	0
Utah- North Eden Lek	9	0	4	4
FALL CAPTURES				
Idaho- Not on Lek	0	0	6	1
Total for 2010= 47	18	6	14	9

Table 1. The distribution of collars deployed on sage-grouse in the Bear Lake Study Area during 2010.

Note: An additional 4 adult males in Utah and 4 juveniles in Idaho were captured, banded, and not radio collared

# Locations

- Marked Birds
  - During 2010, 174 female locations and 205 male locations were recorded. The majority of these locations were taken from June 1<sup>st</sup> till September 15<sup>th</sup>.
  - Because intensive field work did not start until 1 June, no nests were found from collared females; only one collared female was observed with a brood of 2 chicks.

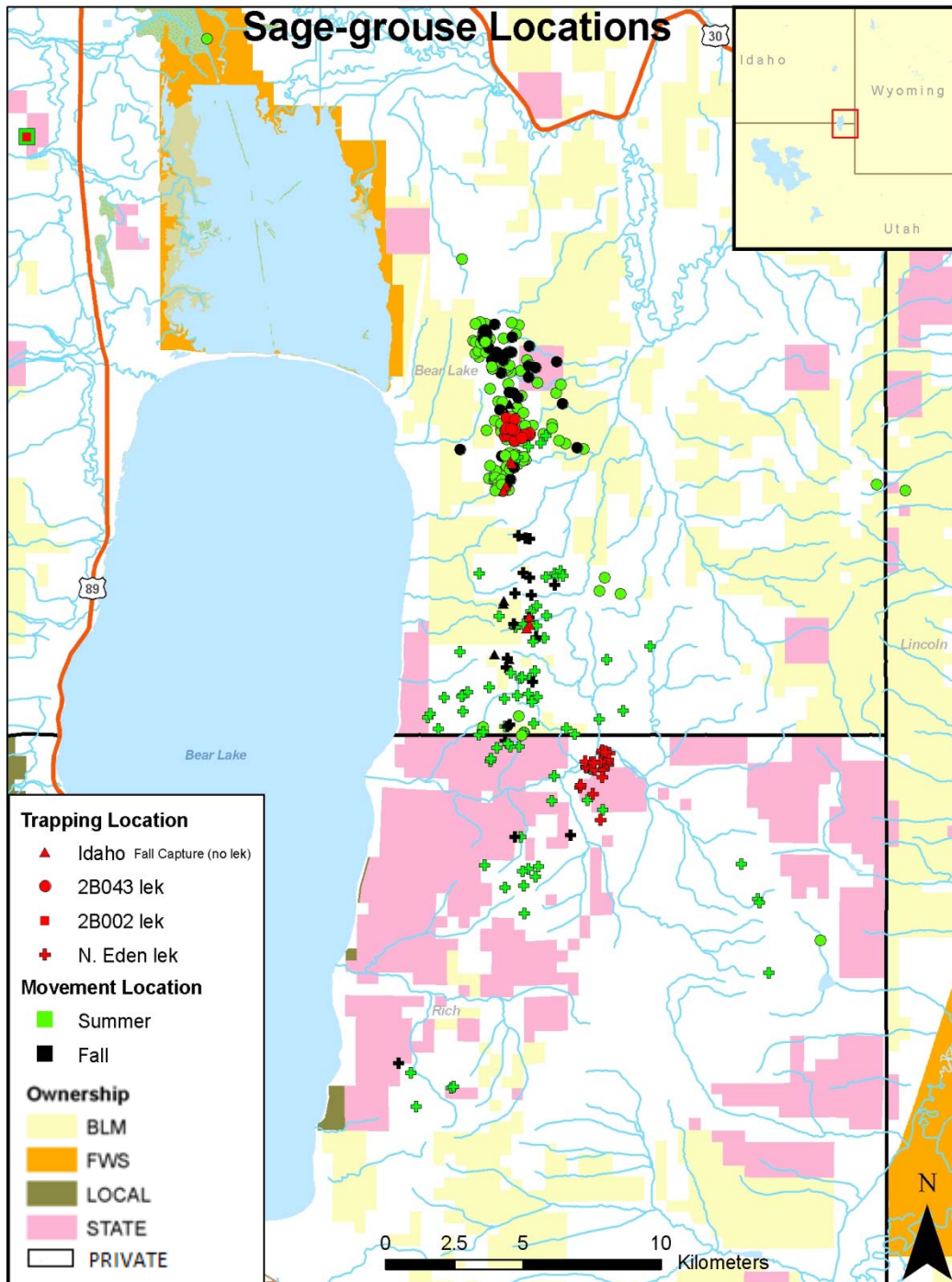


Figure 1. Distribution of sage grouse locations for 2010.

- Locations were given a symbol by Trapping Location.
- Colors symbolized trapped location (red), summer (green), and fall (black).

(Ownership boundaries acquired from the National Integrated Land System Map)

# Unmarked Locations

- Unmarked Birds
  - 12 unmarked females were observed with broods during late spring and summer.
  - Throughout 2010, I recorded locations taken for 614 unmarked birds in 131 different locations.

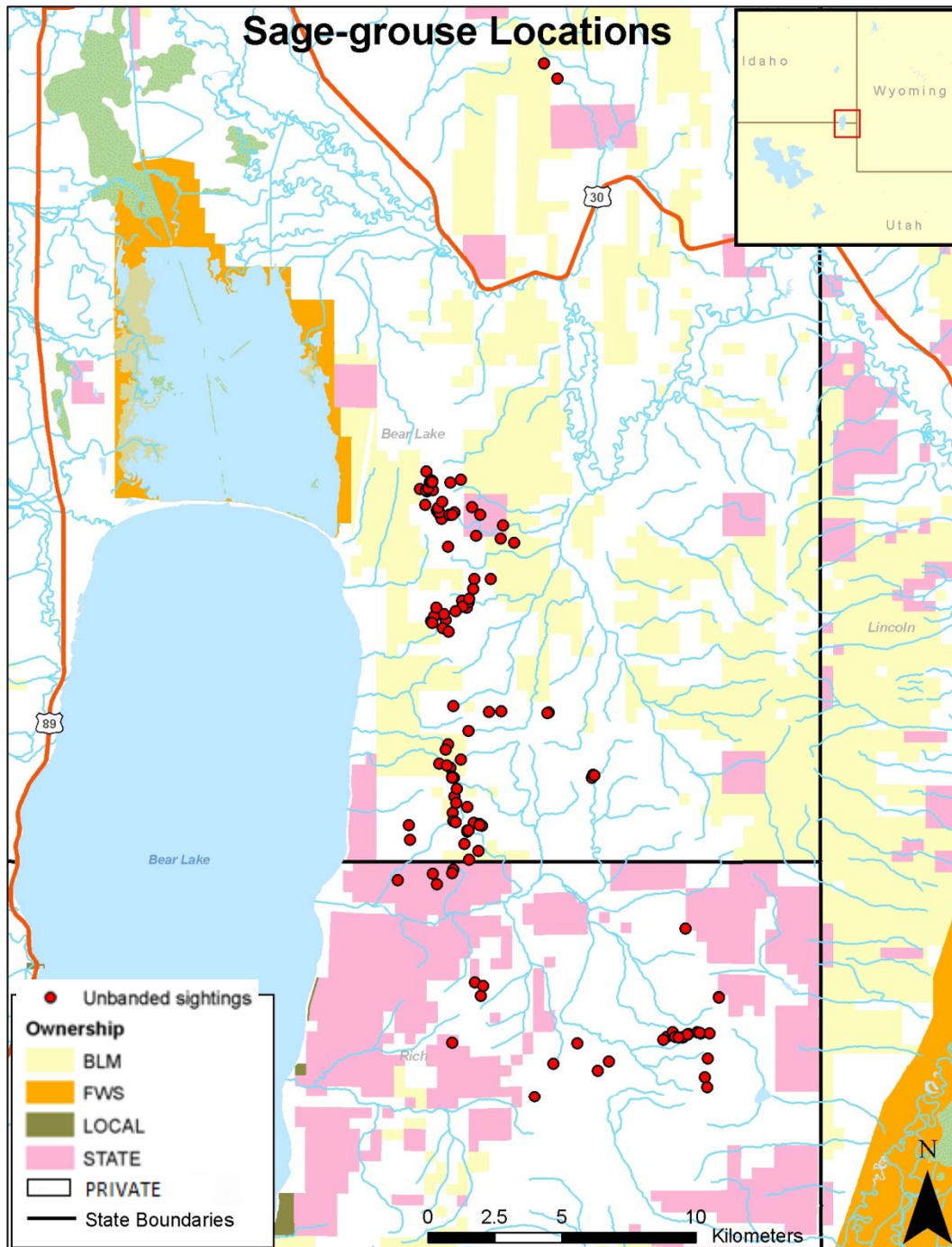
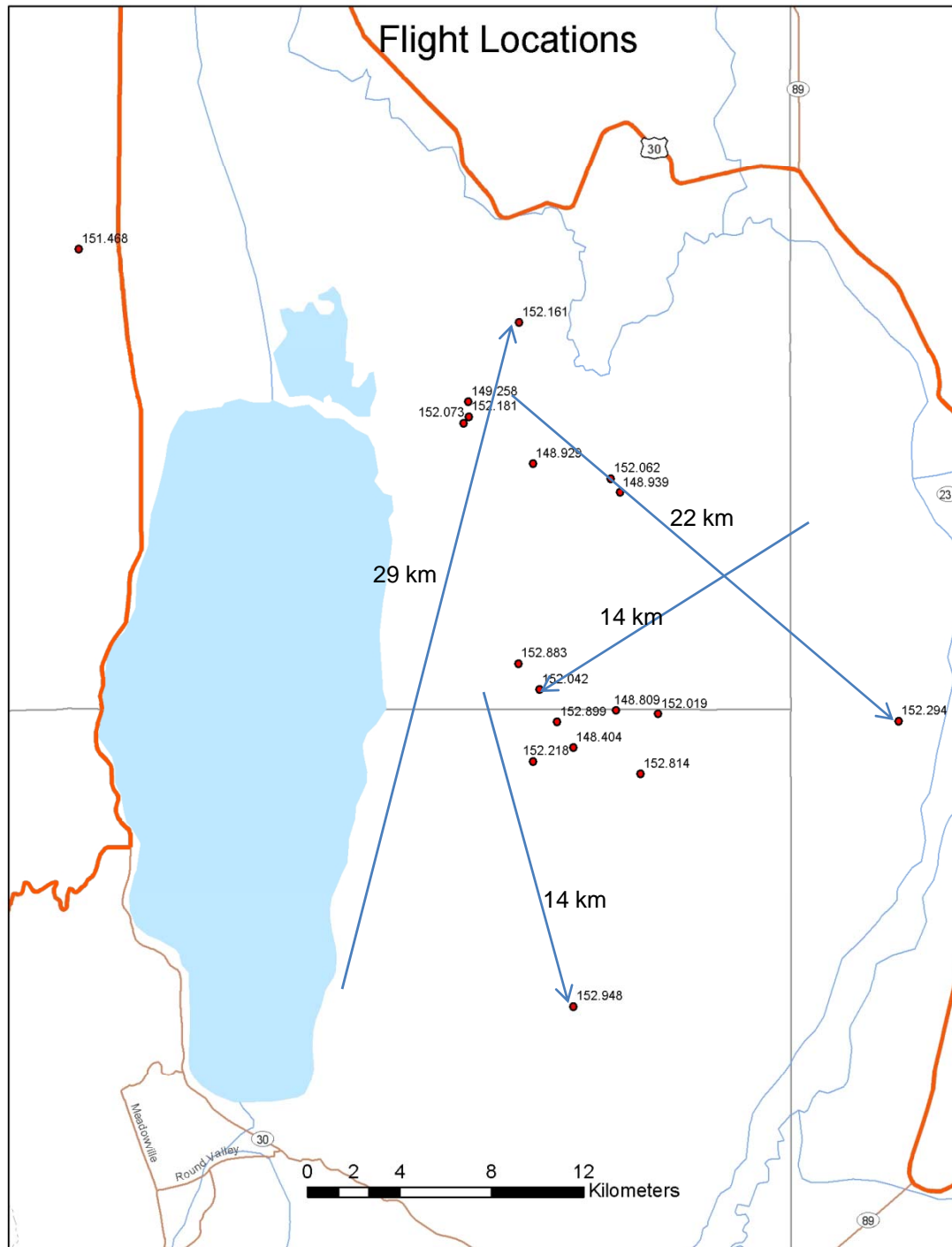


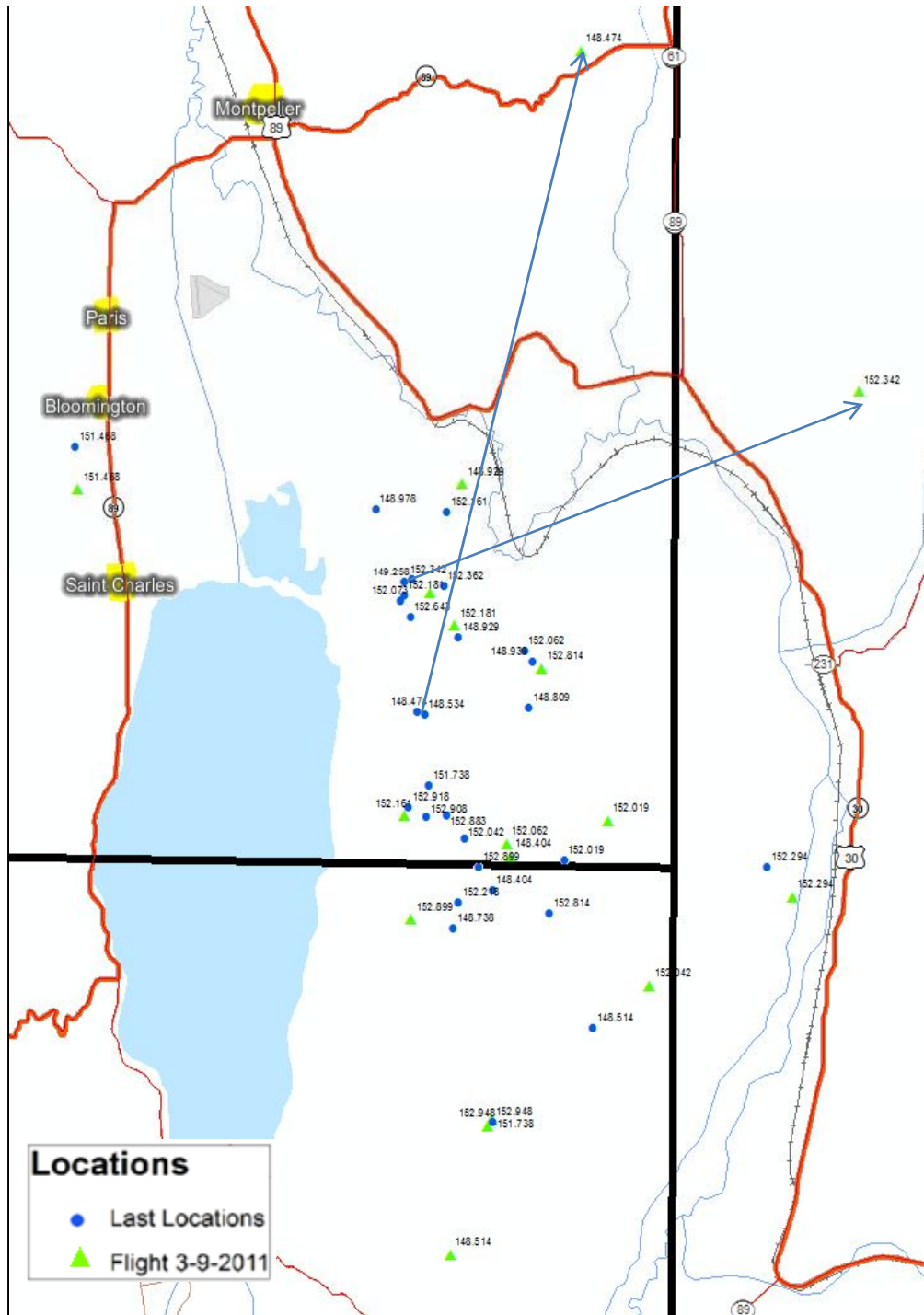
Figure 2. Recorded locations of unbanded sage-grouse for 2010. (Ownership boundaries acquired from the National Integrated Land System Map)

# Mortalities

- Five collars deployed on males in Idaho were retrieved due to mortality;
  - 4 suspected avian and 1 suspected mammal
- Additionally, three collars deployed on females in Idaho were retrieved due to mortality;
  - 2 suspected avian and 1 unknown
- Six collars deployed on males in Utah were retrieved;
  - 2 suspected avian, 2 suspected mammal, 1 appeared to be a fence collision, and one dropped collar
- Finally, two collars deployed on females in Utah were retrieved due to mortality;
  - 1 suspected mammal and 1 unknown



Locations  
from  
Flight on  
1/21/2011

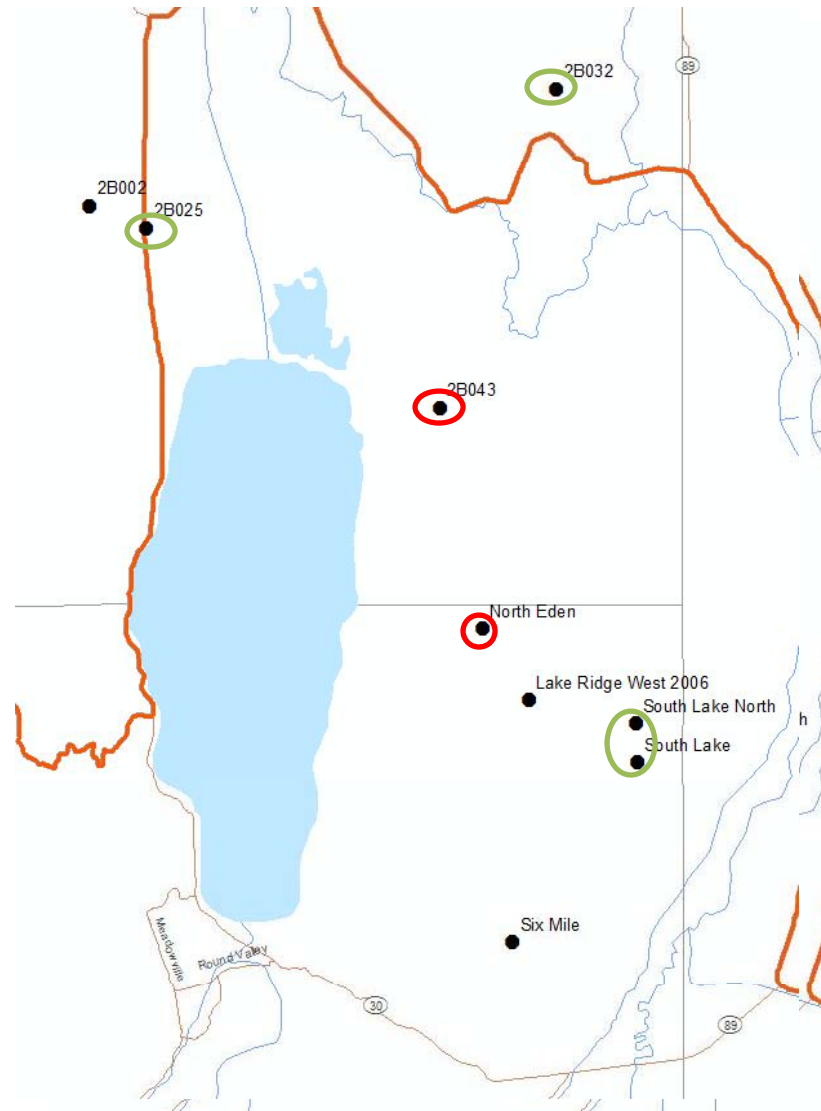


## Flight 3-9-2011 Locations vs. Last Locations

# Plans for 2011

- I will continue to study ecology of the sage-grouse around Bear Lake. In the spring, I will attempt to deploy 55 more collars around the study area with more emphasis on the west and north sides of the lake.
  - Lek Validation
  - Vital Rates
  - Nest and Brood Success
  - Habitat Analysis (Fragmentation Indices)

# Plans for 2011



# 2011 Trapping Progress

Capture Location	Adult Male	Yearling Male	Adult Female	Yearling Female
Idaho- 2B043	7	1	3	4
Idaho- 2B025	2	3	0	1
Idaho- 2B032	3	0	0	1
Utah- North Eden	10	1	0	0

# QUESTIONS?

