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Waterfowl Population Trends, Pariette Wetlands, Utah 1980--2010

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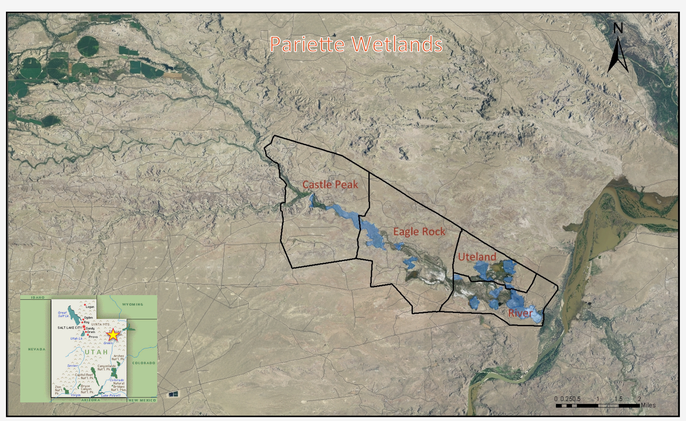
I. Introduction and Study Area

Pariette Wetlands is a high desert refuge for waterfowl located in Uintah County in Northeastern Utah. It also provides important habitat for other species of concern such as the Uintah Basin hookless cactus.

Environmental groups are paying close attention as drilling pressure increases in and around the Pariette Wetlands. Understanding and mitigating the impacts of energy development to wildlife is among the top priorities defined by The Wildlife Society.

In this study we analyzed 30 years (1980-2010) of census data collected by the Bureau of Land Management (BLM) to evaluate the population trends, occupancy and richness of 17 waterfowl species.

The results of this study will provide crucial data for the development of a waterfowl management plan at Pariette Wetlands by the BLM. It will also provide important baseline information to study the impacts of energy development on wildlife and changing habitat conditions.



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II. Methods

We entered and verified 13,000 lines of data. We then used a number of statistical analyses to determine population trends for 17 waterfowl species.

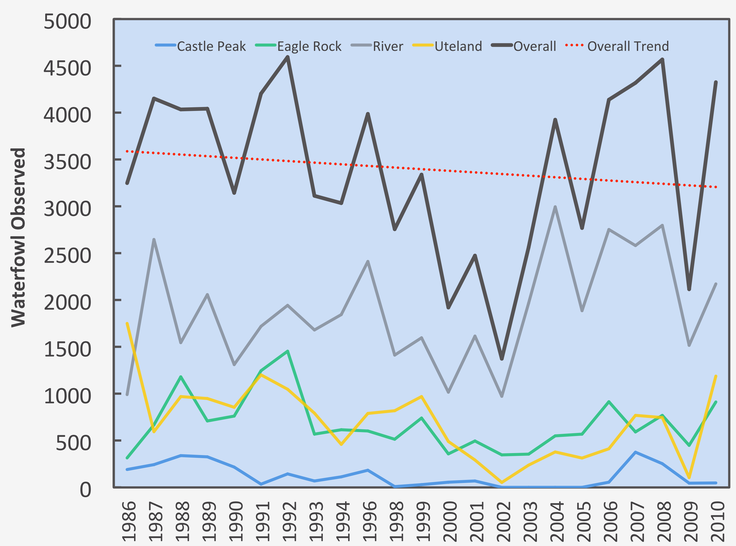
We calculated population trends for all waterfowl (geese and ducks), all ducks, all diving ducks, all dabbling ducks, and geese.

We also calculated the probability of occupation for each species in each unit, and month.

To determine annual waterfowl species richness trends at Pariette Wetlands we summed the number of species present during each survey and then calculated overall averages for each month along with standard deviations.

To calculate average species richness, we summed the number of species that were present each year and then calculated a yearly average and standard deviation.

Figure 1 – Waterfowl population trends at Pariette Wetlands, March through June, 1986-2010.



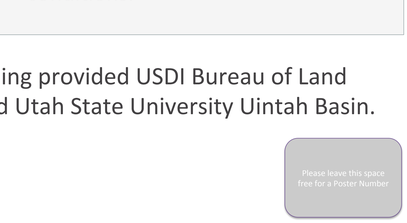
III. Results

Overall waterfowl populations are decreasing slightly over time although this trend is not statistically significant (figure 1).

The common goldeneye and American wigeon are increasing significantly while the common merganser and green-winged teal are decreasing.

Waterfowl species richness was highest in April and lowest in August (see bar graph).

Probabilities of occupancy were highest for mallard and gadwall and lowest for common goldeneye and canvasback.



IV. Conclusions

With increasing energy development the habitat conditions at Pariette Wetlands are changing and may cause population trends of waterfowl to shift in the future.

Each pond within Pariette Wetlands has undergone changes in the last 30 years that may have altered waterfowl populations.

The results of our study are being used to distinguish what changes have been beneficial and which changes have been detrimental to waterfowl populations.

We recommend that long term population monitoring continue at Pariette Wetlands. We also believe that monitoring of habitat conditions should be implemented. This will allow experiments to evaluate the linkages between population fluctuations and habitat conditions.

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