

Alberta Conservation Association 2007/08 Project Summary Report

Project name: Hay Zama Wetland Monitoring

Project leader: Ken Wright

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Partnerships:

Alberta Tourism, Parks and Recreation
Hay-Zama Committee
Pengrowth Corporation
Sound Energy Trust

Key findings

- Waterfowl densities were monitored on 16 well sites with a maximum of 108 and 219 individuals observed at a single site during spring and fall periods, respectively. These observations were below the threshold of 600 individuals defined by ASRD as a risk for extraction activities.
- Seven active bald eagle nests with a total of 14 eaglets were observed on the complex in 2007. Eagle broods ranged from one to three eaglets.
- The greatest aggregate waterfowl density observed on Hay Zama complex in 2007 was 0.801 IBB/ha. The greatest aggregate count of moulting individuals observed on the complex in 2007 was 25,589 birds.

Introduction

The Hay-Zama Lakes complex is a 48,000 ha collection of lakes, rivers and wetlands characterized by extreme seasonal and annual water level fluctuations. Oil and gas well sites are located within the complex boundaries. In an effort to mitigate potential impacts of these industrial activities on waterfowl, stakeholders devised a program to monitor population densities around each well site and cease well production if threshold densities are encountered. Alberta Sustainable Resource Development (ASRD) defined a threshold of 600 ducks and/or geese within a 30 m buffer of a well site as the concentration of birds at which well production is to be suspended. The Alberta Conservation Association's (ACA) role in this program is to monitor waterfowl numbers and advise Energy Resources Conservation Board (ERCB) in the event this threshold is breached. ERCB has the regulatory role and the authority to initiate cessation of well production. In 2005, the basic monitoring process was expanded to include a three year inventory of breeding and moulting waterfowl densities across the entire Hay Zama complex. The primary objectives of this program are to: 1) monitor waterfowl densities near oil and gas well sites on the complex during spring and fall migration periods; 2) quantify the number of nesting bald eagles and eaglets; and 3) estimate waterfowl population densities across the complex for breeding and moulting seasons.

Methods

We flew aerial surveys weekly starting 30 April until 28 May for spring migration, and from 27 August to 9 October for fall migration. Surveys were flown in a Bell 206 or R-44 rotary wing aircraft at an altitude of approximately 30 m with ground speeds between 60 to 100 km/h following previously established routes (Schaffe and Wright 1997; Saxena et al. 1995). Routes included all producing oil and gas wells. We counted all waterfowl observed on a well site or within a 30 m radius on the water adjacent to a well site, and identified birds to species, where possible. If the total number of waterfowl observed at a well site exceeded a threshold level of 600 birds, we notify ERCB who then determines whether well suspension procedures should be initiated. For the waterfowl density estimates, we flew surveys over transects set 800 m apart on 19 distinct cells within the complex during breeding and moulting seasons. We recorded all waterfowl observed within 200 m of the route. Waterfowl observations were grouped into social class to calculate indicated breeding bird (IBB/ha) densities (U.S. Fish and Wildlife Service / Canadian Wildlife Service 1987).

A single bald eagle nesting survey was flown during early June, covering all areas of the complex with suitable eagle nesting habitat. We recorded numbers of adults, eggs or young, and nest status classified as brooding (eggs or brooding adults present), rearing (young in nest), empty (no evidence of current year use) or absent (nest not found at the historic location).

Results

We monitored 16 well sites in 2007, with 14 of the 16 having waterfowl present on at least one survey date. Densities of waterfowl did not exceed threshold limits during the 2007 migration periods; the highest numbers recorded at a well site were 108 ducks and geese combined during spring migration, and 219 ducks during fall migration.

Most duck species common to Alberta were observed during well site monitoring, with mallards (*Anas platyrhynchos*) the most abundant during the spring, and widgeons (*A. americana*) the most abundant during the fall of 2007 (Figure 1). During spring migration 58.6% of ducks observed were unidentified and during fall migration 40.9% were unidentified.

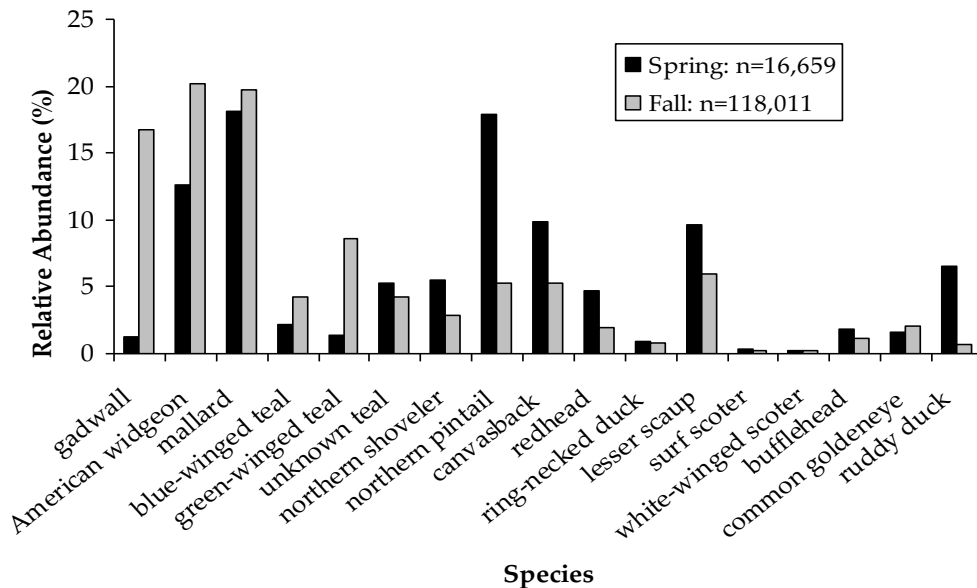


Figure 1. Relative abundance of identified duck species observed during the 2007 spring and fall migrations in the Hay-Zama study area in Alberta (58.6% of ducks were unidentified in spring and 40.9% were unidentified in the fall).

We observed densities of breeding birds ranging from 0.001 (green-wing teals) to 0.082 (canvasbacks) IBB/ha. Total breeding bird density for all species combined was 0.801 IBB/ha. Maximum moulting population observed on the complex in 2007 was 25,589 birds.

Seven active bald eagle nests were located on the 7 June eagle nest survey. Brood size ranged from one to three eaglets and at least one adult eagle was present at each of the seven active nests.

Conclusion

Waterfowl densities at the well sites remained below threshold levels for 2007 migration periods. The number of active bald eagle nests observed was within the range of past observations (3 - 7). Preliminary analysis indicates a breeding bird density of 0.801 IBB/ha for 2007. Upon further analysis, a breeding bird density will be determined for the three year study period (2005 - 2007). The maximum moulting population observed on the complex in 2007 was 25,589 birds.

Communications

- A summary of spring well site monitoring results was posted on the Hay-Zama Committee website. See <http://hay-zama.org>
- Presentations were provided to the Hay-Zama Committee at their annual spring and fall meetings.

Literature cited

- Saxena, A.J., A. Bentz, and D. O'Leary. 1995. Wildlife monitoring program, 1994, Hay-Zama Lakes, Alberta. Prepared by Geowest Environmental Consultants Ltd. for Granisko Resources Inc., Edmonton, Alberta, Canada. 99 pp.
- Schaffe, C.M., and K.D. Wright. 1997. Hay-Zama Lakes biological study. Alberta Environmental Protection. Peace River, Alberta, Canada. 16 pp.
- U.S. Fish and Wildlife Service / Canadian Wildlife Service. 1987. Standard operating procedures for aerial waterfowl breeding ground population and habitat surveys in North America. U.S. Department of the Interior and Environment Canada, Laurel, MD, U.S.A. 103 pp.



Offshore wells on the Hay-Zama Lakes complex. (Photo: Ryan Hermanutz)



Ducks taking flight. (Photo: Ken Wright)



Ken Wright, Pat Cabezas (Hay-Zama Committee Co-Chairman) and Babtiste Metchooyeah (Dene Tha' First Nation) stopping for fuel during an aerial survey. (Photo: Pat Cabezas)