

**Alberta Conservation Association  
2008/09 Project Summary Report**

**Project name:** *Hay-Zama Wetland Monitoring*

**Project leader:** Ken Wright

**Primary ACA staff on this project (including seasonals):** Ken Wright, Ryan Hermanutz, Oksana Izio

**Partnerships:**

Advantage Oil and Gas Ltd.  
Pengrowth Corporation  
Hay-Zama Committee

**Key findings**

- Waterfowl concentrations were monitored near 16 active well sites during spring and fall periods and did not exceed threshold level.
- The highest numbers of staging waterfowl were observed during the first week of May in spring, and during the 3<sup>rd</sup> week of Sept in fall.
- Northern pintail were the most common duck species observed during spring and canvasback during fall.
- Five active bald eagle nests with a total of 9 eaglets were observed on the complex in 2008. These broods ranged from one to three eaglets.

**Abstract**

The Hay Zama Wetland Monitoring program was developed in response to concerns about the potential impact of oil and gas activities within the wetland complex on waterfowl. As a condition of operation within the Hay-Zama complex, Energy Resources Conservation Board requires oil and gas companies to monitor staging waterfowl and suspend production of a well if waterfowl numbers exceed the level of 600 individuals within 30 m. To monitor waterfowl numbers, I flew weekly aerial surveys during spring and fall migration periods over all producing oil and gas wells within the complex. My weekly surveys also included an established route over the entire complex to estimate the aggregate number of staging waterfowl observed for each survey, which I then use to assess when the bulk of migration has occurred. Peak numbers were observed during the first week of May, and the 3<sup>rd</sup> week of Sept. Waterfowl concentrations did not exceed threshold levels at any well sites during the 2008 migration periods. I also flew a single aerial survey for bald eagle nests within the complex and observed 5 active nests on 9 June.

## **Introduction**

The Hay-Zama Lakes complex is a 48,000 ha collection of lakes, rivers and wetlands with oil and gas well sites located within the complex boundaries. To mitigate the potential impact of this industrial activity, stakeholders devised a program to monitor waterfowl numbers near well sites and suspend extraction activities when particularly high concentrations of waterfowl occur. The Alberta government defined the threshold as 600 individuals (ducks/geese) within 30 m of a well site. ACA's role in this program is to monitor waterfowl numbers and advise the Energy Resources Conservation Board (ERCB) in the event this threshold limit occurs. ERCB has the regulatory role and the authority to initiate cessation of well production activities.

The main objectives of this project were to: 1) Survey waterfowl concentrations at producing oil and gas wells within the complex during spring and fall migration periods and report waterfowl congregations to the ERCB if the thresholds were exceeded; 2) Estimate the number of staging waterfowl within the complex during spring and fall migration periods, and; 3) Conduct a one day survey of bald eagle nests within the complex.

## **Methods**

I flew aerial surveys weekly during spring and fall migration periods (5 to 26 May and 27 August to 8 October). The surveys were flown at approximately 30 m altitude at 60 to 100 km/h over each well site and along established transects (Saxena et al. 1995, Schaffe and Wright 1997) over the wetland complex. I counted waterfowl observed within a 30 m radius of well sites and identified these to species where possible. The protocol includes an immediate notification to the ERCB if the threshold concentration of waterfowl is observed. The ERCB would then determine whether well suspension procedures should be initiated. For staging waterfowl estimates I recorded all waterfowl observed within 200 m of the survey route for a cumulative number of waterfowl observed per survey.

I flew a one day survey searching for bald eagle nests by covering all areas of the complex presumed to have suitable eagle nesting habitat. The number of adults, young, and eggs were recorded, as well as the status of the stick nest for the year: Brooding (eggs or brooding adults present); Rearing (young in nest); Empty (no evidence of current year use); Absent (nest not found at historic waypoint).

## **Results**

I monitored 16 well sites in 2008, with 14 of the 16 having waterfowl within 30 m on at least one survey date. Waterfowl concentrations did not exceed threshold limits over the spring or fall period. The highest numbers recorded at a well site were 117 ducks during spring, and 240 ducks during fall migration.

I observed the maximum number of staging waterfowl within the complex in spring during the first week of May (n=12,666 ducks and 5,756 geese), and during the 3<sup>rd</sup> week of Sept in fall (n=27,796 ducks).

Northern pintails (*Anas acuta*) were the most abundant species I identified during spring and canvasbacks (*Aythya valisineria*) most abundant during fall (Figure 1). Unidentified ducks accounted for 22% of ducks observed in spring, and 18% during fall flights.

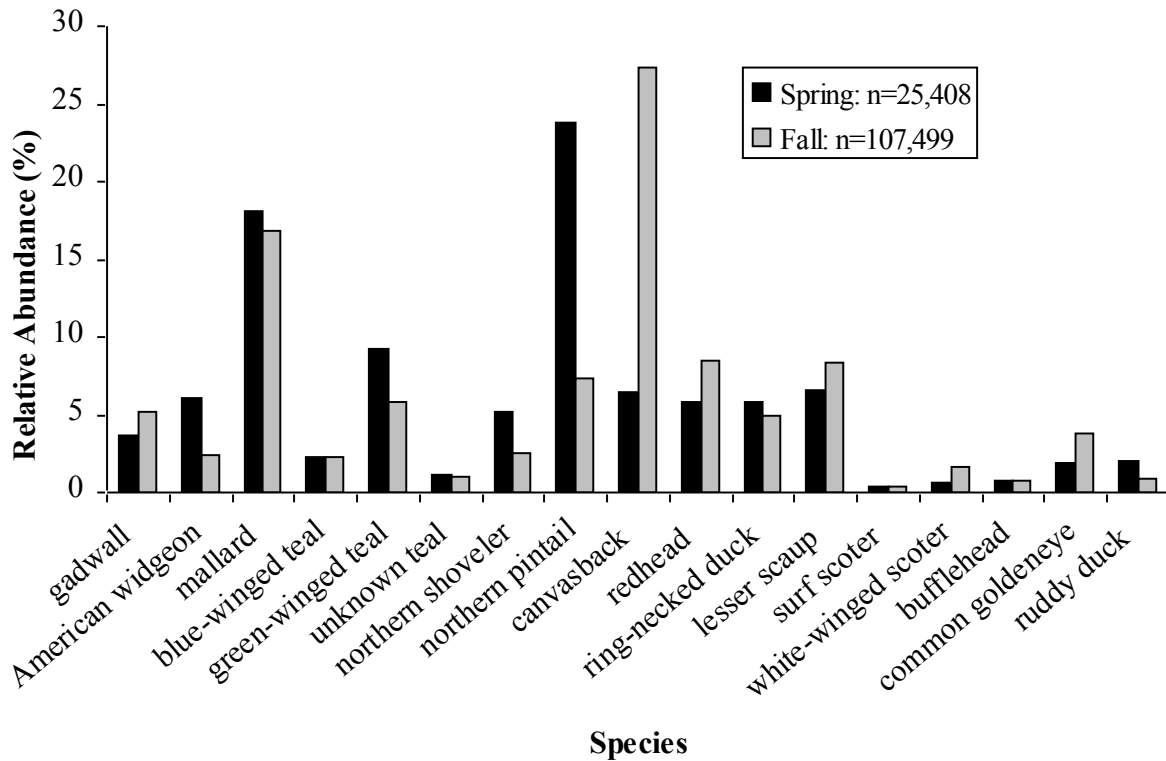


Figure 1. Relative abundance of identified duck species observed during the 2008 spring and fall monitoring flights in the Hay-Zama survey area in Alberta (22.0% during spring and 17.5% during fall were unidentified).

Five active bald eagle nests were located on the 9 June eagle nest survey. Brood size ranged from one to three eaglets and at least one adult eagle was present at each of the five active nests. Two nests commonly used by nesting pairs in past years were absent on the 9 June survey.

**Conclusions**

Waterfowl densities at the well sites remained below threshold levels for 2008 migration periods. Consequently, ERCB did not require suspension of production for any well sites in 2008. The number of active bald eagle nests I observed was within the range of past observations (3 - 7).

**Communications**

- 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.



Ken Wright and pilot, Kevin Cleary with an R-44 aircraft used for aerial surveys on the Hay-Zama Lakes complex (photo: Annette Baker)



Ducks taking flight at an offshore well site on the Hay-Zama Lakes complex. (Photo: Ryan Hermanutz)



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



Hay-Zama landscape (Photo: Ryan Hermanutz)