2010 Summary of Wildlife Research at Withrow Wind Power Project

Michael A. Schroeder (Michael.Schroeder@dfw.wa.gov)
Matt Vander Haegen (Matt.VanderHaegen@dfw.wa.gov)

Washington Department of Fish and Wildlife, 19 August 2010

Introduction

The purpose of this research is to examine the potential impacts of the new Withrow Wind Power Project (WWPP) in shrubsteppe-dominated habitat north of Withrow, Washington. Because the WWPP is scheduled to be built no earlier than the summer of 2011, it was certain that 2010 (at least) would offer an opportunity to collect data prior to development. The three major goals of this research were to:

1) Assess the effects of turbines and related infrastructure on occurrence and relative abundance of passerine birds breeding on the study area.

2) Assess the effects of turbines and related infrastructure on attendance at leks by greater sage-grouse at points relatively near and far (>10 km) from the project area.

3) Assess the effects of turbines and related infrastructure on use of habitats by greater sage-grouse on the study area.

Study area and methods

The WWPP is centered approximately 8 km NNW of Withrow and 15 km WSW of Mansfield. The project area straddles the terminal moraine of the Okanogan Lobe of the Cordilleran ice sheet. The area was historically shrubsteppe, but is now shrubsteppe (~25%), wheat (~50%), and Conservation Reserve Program (CRP, ~25%). The habitat of the area is highly fragmented, largely due to the rocky substrate of the glacial moraine and the area north of the moraine.

Wildlife data were primarily collected in reference to gridded points on the WWPP site and on adjacent control sites. In 2010 a grid containing approximately 700 points spaced at 300 m intervals was designed to encompass the WWPP site and adjacent shrubsteppe and/or CRP habitat (outward approximately 5 km from WWPP). By the end of the 2010 field season, 298 points had been established (staked and flagged). The remaining points on the potential grid were 'rejected', primarily because the habitat was dominated by wheat and thus not favorable for wildlife. Individual points were 'adjusted' up to 50 m to improve visibility for data collection. Each point was marked with a fiberglass stake and at 50 and 100 m in each cardinal direction with a bamboo stake; these 50 and 100 m stakes provided reference points for breeding bird surveys and pellet counts.

Breeding bird surveys were conducted at 199 of the 298 established points that were on, or within 1.5 km of the WWPP site. All birds detected during a 5-minute survey period were recorded and their locations noted by distance category from the center point of a 100-

meter fixed-radius circle (marked with fiberglass stake). Surveys were conducted on three separate occasions between 26 April and 22 June. Habitat use by greater sage-grouse on and near the WWPP site also was evaluated. Pellets were counted and removed within circular 200 m^2 plots centered on all eight of the 50 m and 100 m bamboo stakes radiating outward from each of the 298 established points (including 99 points that were not used for breeding bird surveys). In addition, the greater sage-grouse population was monitored by recording the maximum number of males detected on traditional breeding sites (leks). This technique has been used since 1955 and has been shown to effectively document population responses to management practices such as the CRP.

Results

We detected 30 species of birds during breeding bird surveys on 199 fixed-radius circles. The Brewer's sparrow, vesper sparrow, western meadowlark, horned lark, and grasshopper sparrow were detected most frequently. The Brewer's sparrow was the most common with an average of 2.5 birds detected per fixed-radius circle. The abundance of Brewer's sparrow was further illustrated by the incidental discovery of 37 nests.

We detected pellets from 12 species in 2,384 pellet counts (8 pellet counts for each of 298 points). Pellets of mule deer and cottontail were the most common, but pellets were also detected for relatively uncommon species. For example, pellets were detected on 13 of 2,384 counts that resembled those of Washington ground squirrels. Five of these 13 observations were on the WWPP site and the others were east of Highway 172. All of these observations were in patches of native habitat, none were in CRP. Although we could not be 100% certain that these pellets were from Washington ground-squirrels, the locations are precise enough to be examined more closely in early spring 2011.

Greater sage-grouse pellets were detected on 450 of the 2,384 plots (19%). Counts of male sage-grouse on leks in Douglas County showed that no males were on the WWPP site. These data were consistent with data obtained prior to 2010. Five leks were monitored within 10 km of the nearest proposed turbine with a maximum male attendance of 15 (5 km), 52 (7 km), 7 (8 km), 33 (9 km), and 21 (10 km); average of about 26 males/lek. Thirteen additional leks with 299 males total were monitored in Douglas County further than 10 km from the WWPP site (average of 23 males/lek).

Future

2010 was a pre-treatment year for the WWPP site. Data in subsequent years will be collected at the same points. Research techniques were designed to maximize the potential for detection of effects of the development, if any effects exist. In this context, the first year of this study was successful. Breeding bird surveys illustrated that some species of birds are abundant throughout the project area (in both treatment and control sites). Similarly, the abundance of sage-grouse pellets, anecdotal observations of sage-grouse, and lek counts demonstrated that sage-grouse are currently using the WWPP site and adjacent areas. The first year of research appears to have provided a solid foundation for the research to follow.