Hawk habitat on grazed rangelands reconfirmed at the Zumwalt Prairie

If privately owned rangelands in a large remnant of native prairie are grazed for 25 years with good grazing management, will grassland raptor nesting populations and their habitat remain stable?

That is one of the questions Oregon State University (OSU) researchers posed as they re-created a 1979 study of hawks and hawk habitat at the Zumwalt Prairie in northeastern Oregon.

In 1979, OSU student Marcy Cottrell Houle documented a very dense concentration of hawks on private rangelands that are part of the prairie. Two of the hawks found at the Zumwalt Prairie, ferruginous and Swainson's, are species of national conservation concern.

In the original study, Cottrell Houle determined the high concentration of red-tailed, ferruginous, and Swainson's hawks was most likely due to an abundance of Belding's ground squirrels.

In her book *The Prairie Keepers*, Houle attributed the high numbers of raptors to the "good condition" of grasslands of the Zumwalt that supported high prey populations and suitable nest substrates (trees and rock outcrops). She credited good range management practices by local landowners, who she said maintained the prairie in good to excellent condition.

"We had a rare opportunity to compare findings in a 2003 to 2006 study with those in 1979," says Dr. Patricia Kennedy of Oregon State University. "This second snapshot more than 25 years later found that territory occupancy of the three hawk species on the Zumwalt has been stable. The majority of hawks have nesting territories in the northern portion of the prairie, the area with the most nesting substrates in the most remote portion of this landscape."

The grasslands are diverse, dominated by bunch grasses, perennial forbs, and very few shrubs. Isolated patches of tall shrubs and trees, primarily aspen, occur in mesic sites; conifer forests are found on the steeper north-facing slopes.

The most recent study, aided by the cooperation of 28 landowners, found that aspen are the preferred nesting substrates for hawks at Zumwalt. However, aspen have declined by 20 percent since 1979. Ponderosa pine and large shrubs such as hawthorns have increased by 62 percent and 67 percent, respectively. Use of hawthorn and ponderosa pine as nest substrates has increased since 1979.

Research results indicate the three species may be shifting their use of nesting substrates, perhaps in response to these landscape changes.

"Grassland raptors, as well as other grassland birds, have been in decline across North America for decades," says Kathryn Boyer, a fisheries biologist with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) in Portland, Oregon, who facilitated the study. "This study helps us offer grazing program recommendations that benefit raptors."

Funding for the 4-year study was provided by the NRCS Agricultural Wildlife Conservation Center (AWCC), The Nature Conservancy's Northeast Oregon Office, and the Eastern Oregon Agricultural Research Center of OSU. The Oregon Department of Fish and Wildlife provided logistical support. The AWCC, located in Madison, Mississippi, is a fish and wildlife technology development center.

Photos by Terry Sohl

Ferruginous hawk (*top left*); Red-tailed hawk (*bottom left*); Swainson's hawk (*right*)

Photo by Andrea Lueders

Nesting habit in Aspen, CO

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