

**Ferruginous Hawk**

*(Buteo regalis)*

**State status:** Threatened, 1983

**Federal status:** species of concern

**Recovery Plan:** State, 1996

The ferruginous hawk is the largest North American buteo. Adults have a wingspread of 48-56 in, with females averaging larger and heavier than males. Ferruginous hawks inhabit semi-arid, and prairie ecosystems of western North America. Nests are built on cliffs, rock outcrops, small trees, transmission line towers, and artificial platforms. Territories often contain more than one nest, which allows the pair to relocate if disturbed early in the nesting cycle.



Figure 1. Ferruginous hawk (photos, left to right, by Jim Watson, and Jerry Liquori)

Washington state is on the northwestern edge of the species breeding range (Bechard and Schmutz 1995). In Washington, nests have been found in steppe or shrub-steppe habitat. Franklin and Benton counties together host about 60% of the ferruginous hawk territories, and Grant, WallaWalla, Adams, and Yakima counties also have had 13 or more territories each (Richardson 1996).

**Population status.** The ferruginous hawk population in North America is thought to be stable or to have declined somewhat in recent years. However, Alberta, which has had one of the largest concentrations of nesting ferruginous hawks listed them as endangered in 2006. Washington historically supported a substantial population (Richardson et al. 2001). Of 241 cumulative known total territories, the highest number occupied since surveys began was 69 in 1996. Increasing fragmentation of shrubsteppe habitats from agricultural conversion and residential development has been a factor contributing to the decline and listing of the ferruginous hawk as a state Threatened Species. Declines of shrubsteppe mammals, such as black-tailed jackrabbits (*Lepus californicus*) and the Washington and Columbian ground squirrels (*Urocitellus washingtoni*, *U. columbianus*), have contributed to dietary shifts of ferruginous hawks to smaller mammals, insects, and gulls (*Larus* spp.) (Leary et al. 1996, Richardson et al. 2001). Changes in prey and increased distance to foraging ranges may be affecting population numbers by reducing juvenile hawk survival (Leary et al. 1998, Richardson et al. 2001).

In 1981, the Department surveyed all known ferruginous hawk territories in the state. Follow-up surveys and searches for additional nest sites were undertaken in 1987 and again from 1992 to 1995. Surveys conducted by WDFW in 2003 found ferruginous hawks occupied 64 of 231 historical territories checked in the state and produced an estimated 92 young (Table 1). The ferruginous hawk has not shown signs of recovery since listing as threatened in Washington, and evidence suggests further decline. Surveys in 2010 indicated the lowest number of active and successful territories on record; only 19% of the historical nesting territories were occupied and many historical sites have remained vacant for years.

Table 1. Ferruginous hawk pairs and productivity in Washington, 1996, 2003 and 2010.

	1996	2003	2010
Number of Territories Checked	173	231	192
Number of Territories Occupied	70	78	36
Young produced	115	92	24

Ferruginous populations can exhibit numeric responses to changes in cyclic prey such as ground squirrels (Schmutz and Hungle 1989) or jackrabbits (Woffinden and Murphy 1989). Woffinden and Murphy (1989) reported a ferruginous hawk population crash concurrent with the local jackrabbit population in Utah. They speculated that the proliferation of cheatgrass has contributed to longer term declines of jackrabbits. As noted above, significant loss of hares and ground squirrel species in Washington and dietary shifts to insects and smaller mammals suggested the declining population trend of ferruginous hawks may continue.

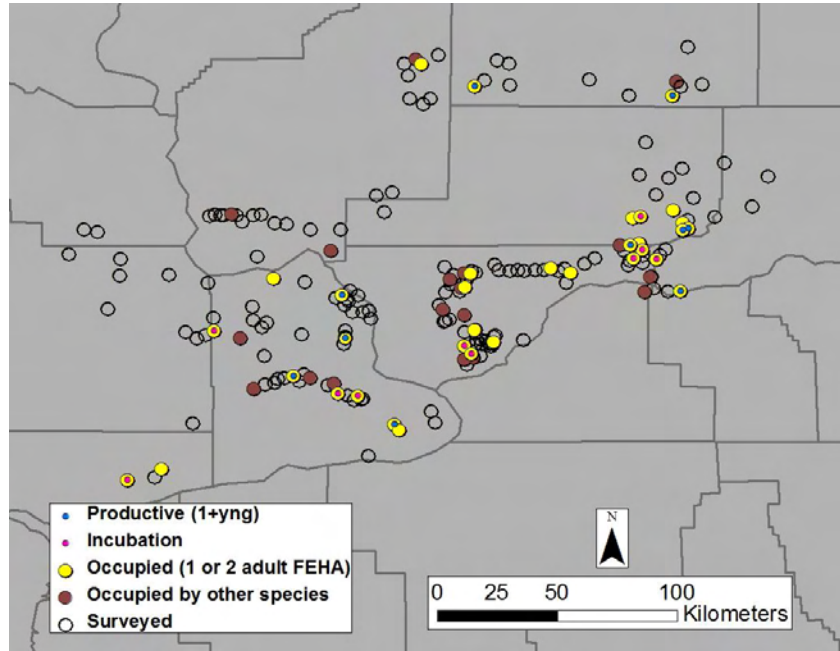


Figure 2. Occupancy and success of ferruginous hawk territories surveyed in Washington, 2010.

**Migration study.** WDFW conducted a study of Ferruginous Hawk migration, range use, and survival. Between 1999 and 2003, 13 adult and 15 juvenile ferruginous hawks from Washington were monitored with satellite telemetry (Watson 2003). The hawks generally migrated in two stages, often moving east to the front range of the Rocky Mountains by August, and from early August to early October to the plains of North Dakota, Nebraska, and Oklahoma. Some individuals relocate to northeast and central Oregon by late fall. Ferruginous hawks from Washington seem to migrate to where an abundance of ground squirrels and prairie dogs are available.

Six adults monitored for 2 years repeated similar migration patterns, and returned to the same wintering area. They all returned to breeding territories. Young and adults from the same nests migrated independently, and followed dissimilar migration patterns. Two young migrated over 2,000 km less to winter ranges in their second year, compared to the first year. In their first year, juveniles wandered an average of 6,139 km throughout western North America for three months prior to settling on winter ranges in California, the Central Plains, or

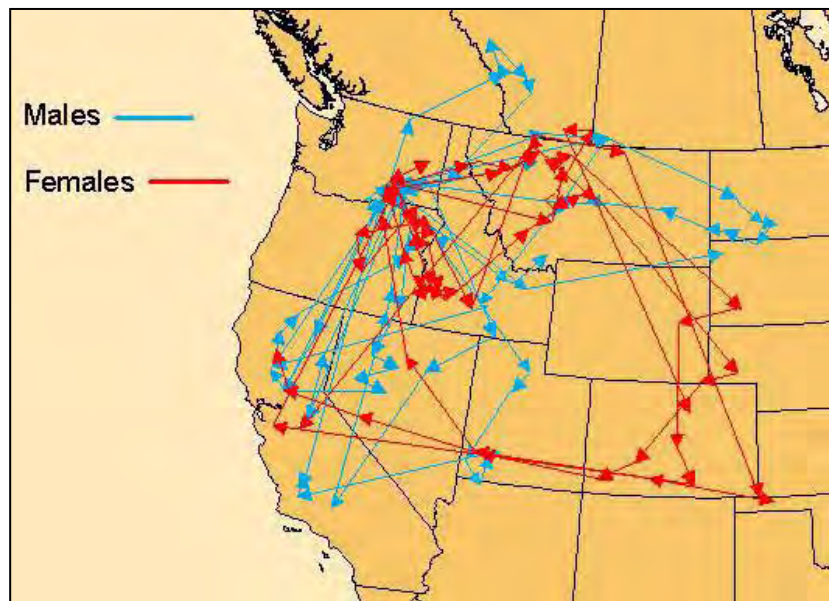


Figure 3. Migration patterns of 13 adult ferruginous hawks from southcentral Washington (Watson 2003).

Mexico.

The Washington hawks ranged widely during half the year. Recent evidence suggests shooting mortality and exposure to West Nile Virus are important fall/winter mortality sources for ferruginous hawks from the Pacific Northwest. Maintenance of prey and habitat resources, principally in the Northern Plains and central valley of California, are important to sustain hawks through the winter and replenish adult fat reserves for reproduction the following spring. Widespread agricultural conversion and urbanization are significant threats to these habitats. Juvenile survival, although less important than adult survival to population maintenance, is most impacted by poor foraging conditions in Washington, likely a result of depressed prey populations and drought.

**Recovery plan.** WDFW completed a recovery plan for the species in 1996 (Richardson 1996). The recovery objective is 60-plus breeding pairs (measured annually by number of nests with eggs) for a five-year average, distributed throughout the historic range. However, surveys needed to compute the 5-year average are not done annually due to other priorities.

**Conservation.** The ferruginous hawk SAFE (State Acres for Wildlife Enhancement) is a new initiative in 2012 allocating up to 20,000 acres within ferruginous hawk territories in Benton, Franklin and Adams Counties. SAFE is a special program under the U. S. Department of Agriculture's Conservation Reserve Program (CRP). The initiative is a state and federal partnership designed to meet state wildlife priorities for high value species on private land. It is part of the Farm Service Agency's Conservation Reserve Program (CRP) and is implemented in cooperation with the Washington Department of Fish and Wildlife. SAFE is a voluntary program, in which cooperating landowners receive rental payments, establishment and maintenance cost-share, and incentive payments in return for entering a contract to provide specific wildlife habitat.

Active farm fields within the 3.3 miles of active or recently active ferruginous hawk nest sites will be eligible for sign up. Outreach will specifically target lands adjacent to the most recently active nests. Sign-ups will be available after Congress passes a Farm Bill. The SAFE program is a 15-year contract. The requirements for SAFE fields are stricter than they are for regular CRP, and provide better habitat for species of interest.

**Partners and co-operators:** Woodland Park Zoo, BLM Spokane District, Hanford Reach National Monument, Farm Service Agency.

### Literature Cited

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