CAVITY NESTERS

Hairy Woodpecker (*Picoides villosus*)

The hairy woodpecker is a fairly common, permanent resident of mixed conifer and riparian deciduous habitats from sea level to 2700 m (0-9000 ft). It occurs the length of the state, but is very scarce in portions of coastal southern California, Central Valley, Salinas Valley, Mojave and Colorado deserts, and Great Basin.

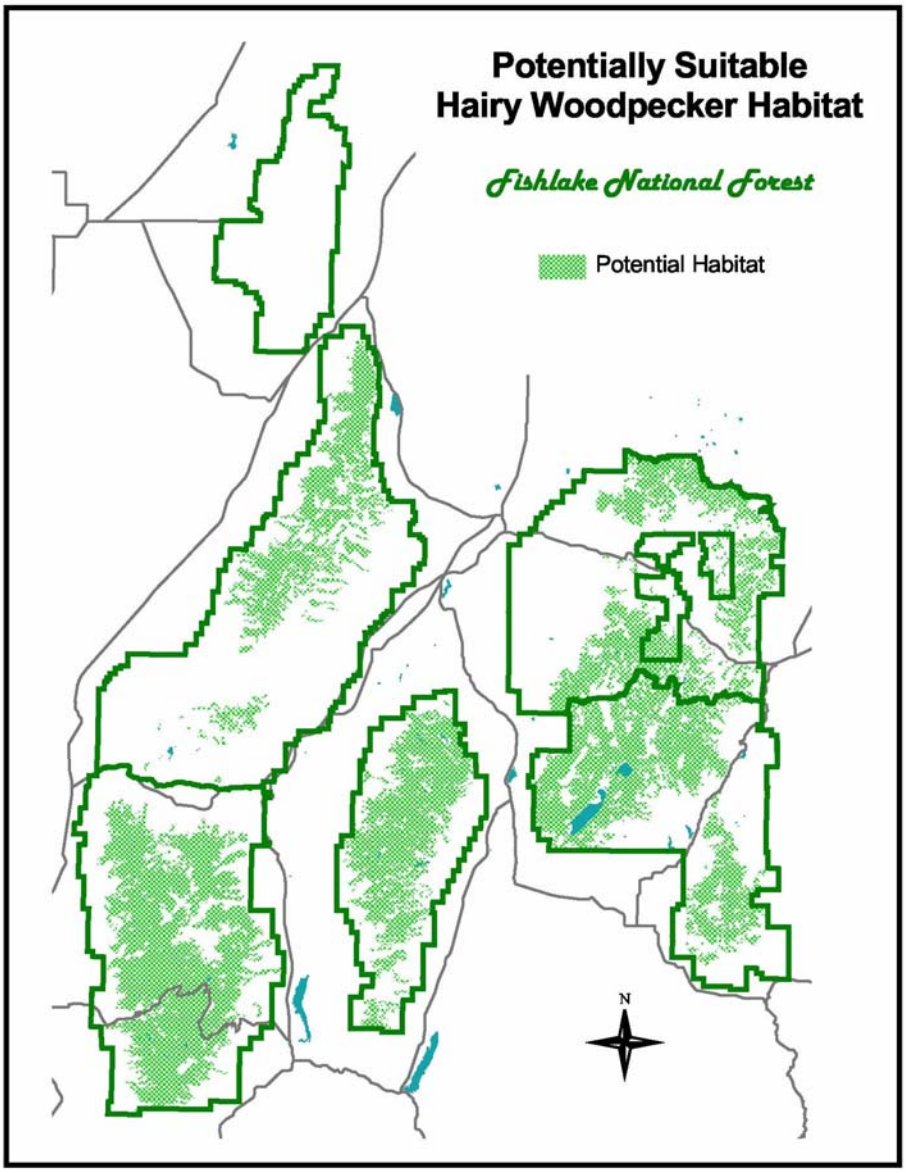
This species uses stands of large, mature trees and snags of sparse to intermediate density. Cover is provided also by cavities. The hairy woodpecker uses relatively open or patchy stands of conifers with adjacent riparian habitats and abundant snags. Tree/shrub, tree/herbaceous, and shrub/ herbaceous ecotones are important. In the Blue Mts. of Oregon and Washington, Thomas (1979) estimated that 446 snags per 100 ha (180 per 100 ac) of 25 cm (10 in) dbh minimum would support maximum populations. In fall and winter, this species may move downslope into valley foothill hardwood-conifer habitats. In a mature conifer forest in central Ontario, Lawrence (1967) found that breeding territory averaged 2.8 ha (7 ac), and ranged from 2.4 to 3.2 ha (6-8 ac). The hairy woodpecker exhibits intraspecific defense of the nest (Dawson 1923), and interspecific defense of feeding sites (Bendire 1895). The male and female may have separate fall and winter territory (Kilham 1965).

The hairy woodpecker excavates a nest cavity from 0.9 to 31 m (3-102 ft) above ground in the soft interior of a snag or dead branch (Raphael and White 1984) in larch, sycamore, willow, fir, or other species (Lawrence 1967). Nest tree diameter (dbh) averaged 44 cm (17 in), and ranged from 34-76 cm (13-30 in) (Lawrence 1967). As with most woodpeckers, the male drums on dry, resonant limbs to attract the female (Ridgway 1914). The hairy woodpecker breeds from mid-March to late August; the peak nesting activity is late May through June. Average clutch is 4 eggs; the range is 3-6. They have one brood per year. Both the male and female dig a cavity, incubate the eggs, and care for altricial young. Incubation lasts about 12 days (Bendire 1895). A pair may remain together for several years (Willard 1918, Carpenter 1919).

Approximately 80% of this species' annual diet is animal matter, arthropods (beetles, ants, caterpillars, spiders, millipedes, aphids, and other larvae). They also eat mast (acorns, hazelnuts, dogwood, cherry, serviceberry, pine nuts) and sap and cambium (Beal 1911, Bent 1939). The hairy woodpecker drills, pecks, and probes in crevices of bark of dead and live trees, logs, and stumps. It often congregates to feed in insect-infested or burned areas (Koplin 1969). The hairy woodpecker frequents riparian habitats.

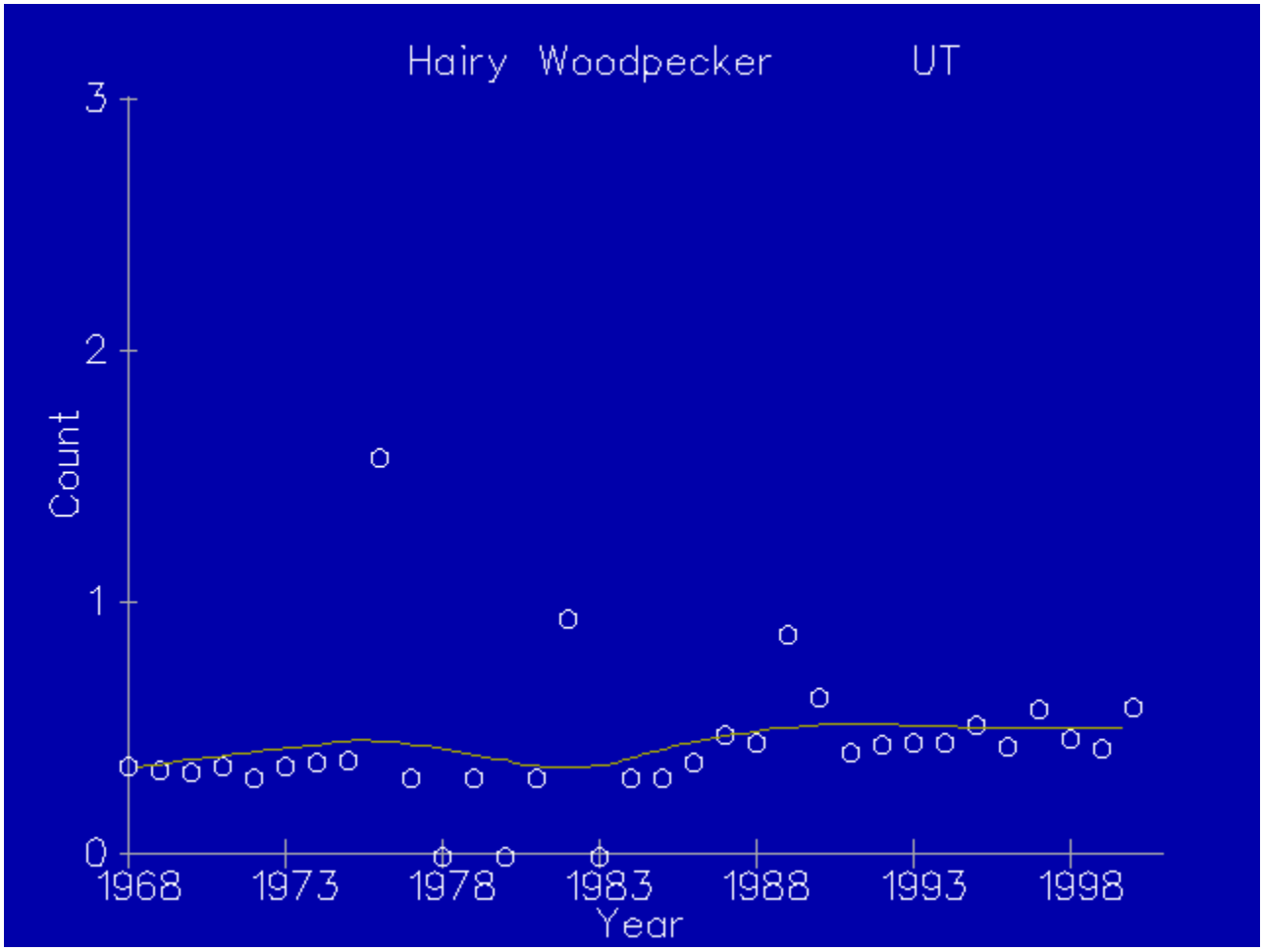
Hairy woodpecker numbers are apparently declining in recent decades (Ehrlich et al. 1988). Interspecific competition for food between hairy and downy woodpeckers is apparently reduced by feeding on different species of tree (Kisiel 1972), and in different locations in same tree. Abandoned cavities provide cover for many other species. Hairy woodpeckers may be important in reducing populations of adult and larval bark beetles.

On the Fishlake National Forest the Hairy woodpecker occurs on all 4 Ranger Districts. This species is wide-ranging and easily detectable. Below is a map that displays potentially suitable habitat across the forest. This area totals approximately 423,432 acres.



Trend

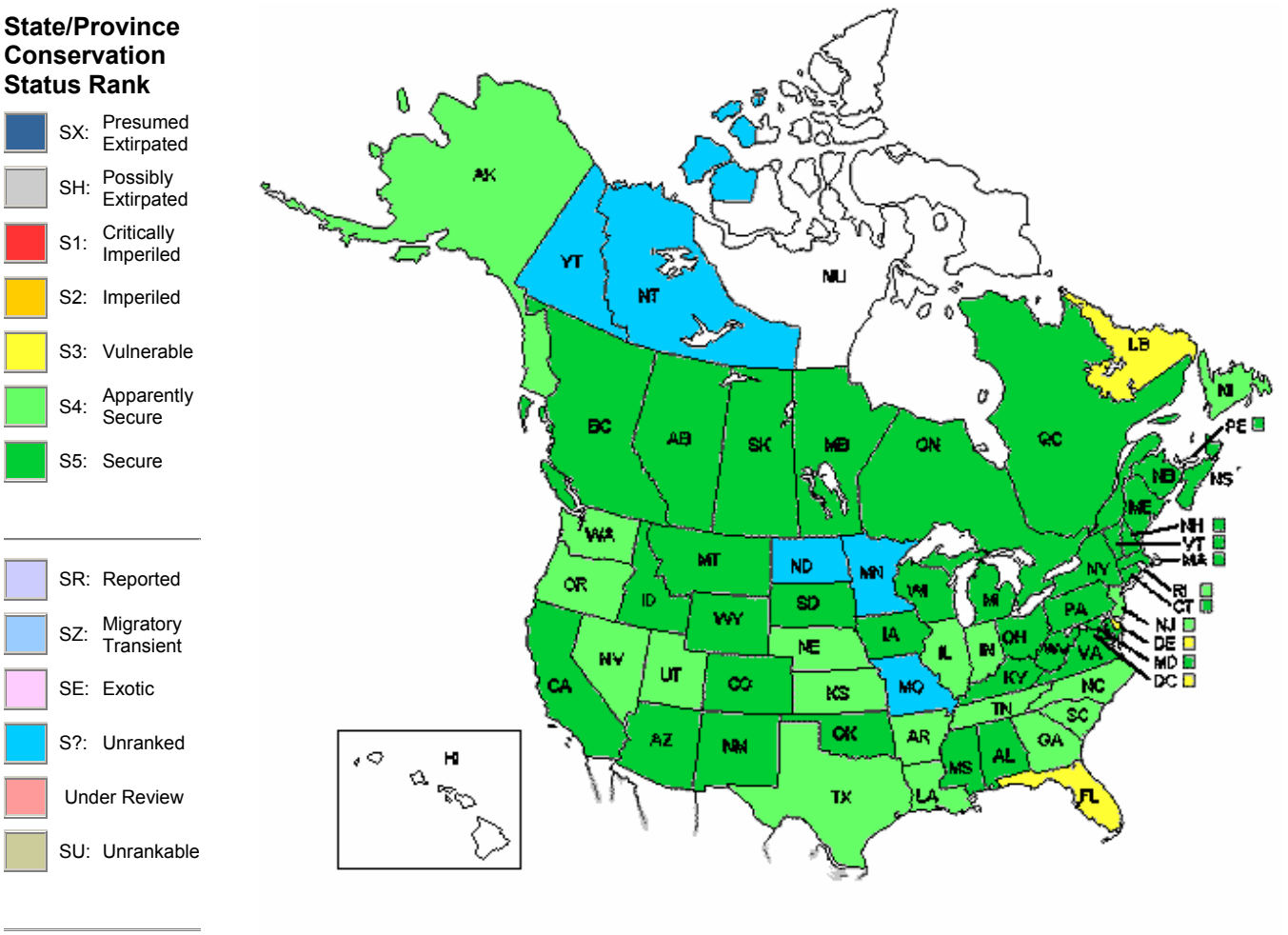
On the Fishlake National Forest woodpecker surveys have been conducted in forest cover types prior to vegetation treatments. Formal forest-wide inventories for this species have been conducted on the Richfield, Loa and Beaver Ranger Districts. As a result of these inventories the nests of several woodpecker species have been located on Monroe Mountain, including the Hairy woodpecker. These monitoring efforts were in conjunction with a study conducted by Brigham Young University.
In addition to these data, the BBS database (www.mbr-pwrc.usgs.gov) displays a stable trend of Hairy woodpeckers in Utah. These data represent a 30-year trend between 1968 and 1998. These data were collected throughout the entire state of Utah, including points on the Fishlake National Forest.



Surveys for avian MIS have been conducted on the FNF since the mid 1980's. Additional studies by "expert birders" were conducted in 1994, 1998, 2002, and 2003. These surveys have targeted cavity nesting species, riparian species, and sage nesting species. All other avian species were also recorded while conducting survey routes. In addition to these data, Utah State University has collected data across the forest in aspen/conifer habitat types. Cavity nesting bird species were the focus of these efforts. These data were collected between 2001 and 2002.

The map below displays the status ranking from the Nature Conservancy database (NatureServe Explorer). The Hairy Woodpecker in Utah has been ranked as "apparently secure".

Hairy Woodpecker (*Picoides villosus*)



Data collected on the forest is increasing, and the BBS data collected; combined with the Nature Conservancy data indicates this species to be stable. On the Fishlake National Forest a large portion of forest habitats are potentially suitable, and currently supply habitat for Hairy woodpeckers.

Data collection specific to cavity nesters has been collected on the forest between 1994-2003. In 1994 there were no observations of Hairy woodpeckers along transect lines in the Burnt Flat area. In 1998, the number of presence/absence observations of this species along each transect line totaled 4. In 2001 a Utah State University cavity nesting study located 13 transects with birds present. In 2002 a total of 8 transects supported hairy woodpeckers across the forest. As a result of these data collected over the past 8 years, this species has increased in overall hits along transects across the forest. Data collected across the Forest has increased the overall total number of hairy woodpeckers to 109 detections. While these numbers are increasing, the data collected across the forest is limited. The BBS data demonstrates a stable population in Utah, which includes transects on the Fishlake National Forest. The Nature Conservancy data describe this species as "apparently secure". Considering all the data presented in this document, and my professional judgment, this population appears to be stable, and likely viable across

the forest. However, due to limited information, additional data gathering is an ongoing process on the forest to continue to monitor viability and trend.

Western Bluebird (*Sialia mexicana*)

The western bluebird is a fairly common year-round resident throughout much of California, excluding the higher mountains and eastern deserts. It breeds in open woodlands of oaks, riparian deciduous trees, or conifers with herbaceous understory. In winter, it uses more open habitats as well. Sparse to open-canopied, mature, valley foothill and montane hardwood and valley foothill hardwood-conifer habitats are optimal. A variety of other coniferous habitats are used, primarily open-canopied mature forests, especially edges. In winter, it leaves higher portions of nesting range and becomes more widespread in lowlands.

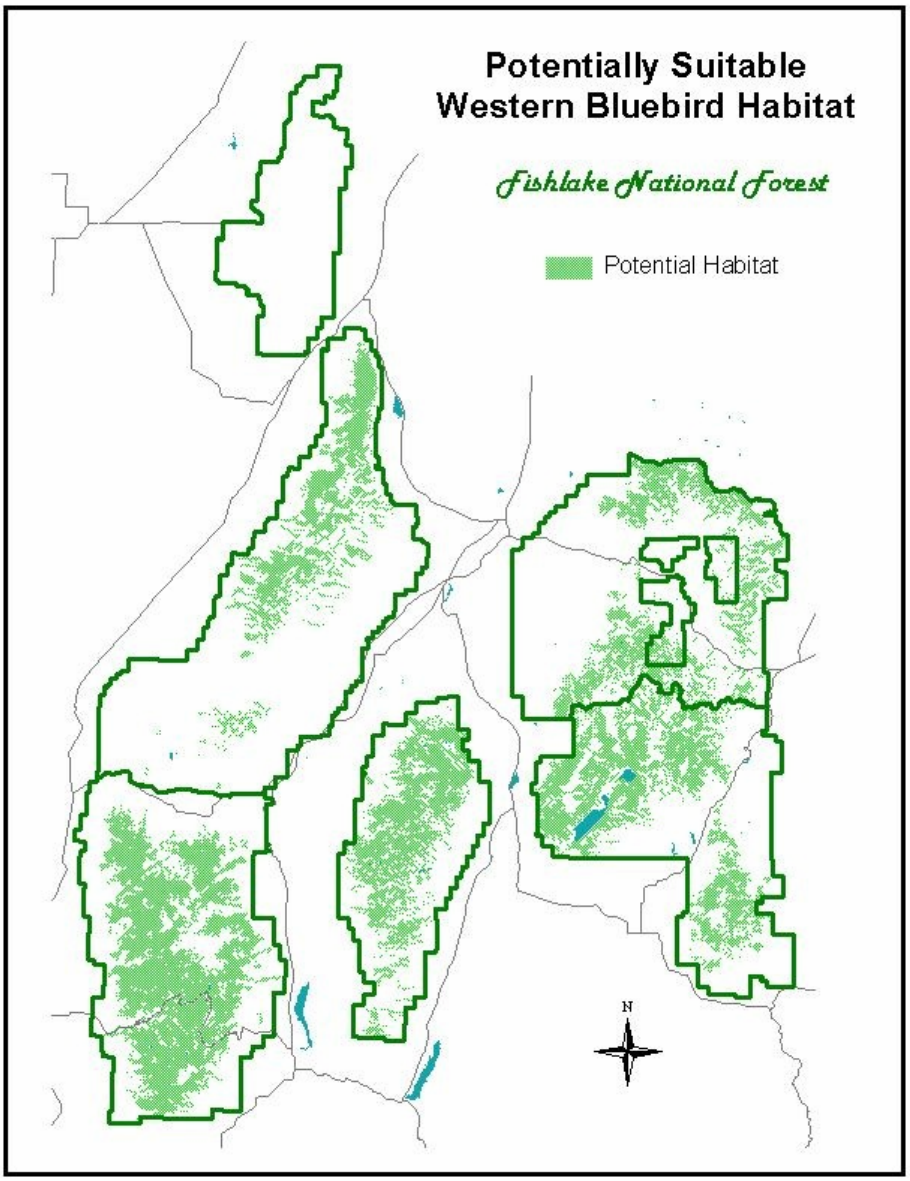
This species requires trees and shrubs for cover. Typically, it rests in a tree when it's not foraging, but it also uses fences or shrubs. The western bluebird is uncommon in habitats without at least a few trees or large shrubs, even in winter. It nests and roosts in the cavity of a tree or snag. It frequents open woodlands. The western bluebird requires suitable nesting and roosting cavity, usually in a snag or tree near open habitat for foraging; it also needs low perches to search for prey. Availability of snags frequently limits population density (Ross 1933, Ehrlich et al. 1988). This species is a resident in much of its California range, but undergoes local and irregular movements in many areas. In Sierra Nevada, small flocks move upslope in late summer and fall (Gaines 1977). The western bluebird withdraws from higher mountains in winter, and may move into lowland areas not occupied while breeding. None were recorded on Farallon Islands (DeSante and Ainley 1980). Home range in Arizona ponderosa pine forest varied from 0.3 to 0.8 ha (0.7 to 1.9 ac) and averaged 0.46 ha (1.13 ac). Breeding density in this habitat was 15 pairs per 40 ha (100 ac) (Haldeman et al. 1973). Wilson (1978) found 37 per 100 ha (15 per 100 ac) at Morongo Valley, San Bernardino Co. in winter. Miller and Stebbins (1964) noted flocks of up to 25-50 individuals in winter at Joshua Tree National Monument. Anderson (1970) reported a wintering population of 8-20 per 40 ha (100 ac) in an Oregon white oak forest.

The western bluebird usually nests in old woodpecker excavated holes in live or dead trees, or stumps. It has been known to also use other cavity or nest boxes (Scott et al. 1977). It occasionally uses nests of cliff swallows or other species (Bent 1949). Nests in Monterey Co. were 1.5 to 12 m (5-39 ft) above ground (Bent 1949). The western bluebird breeds from April into July. It is a monogamous, solitary nester. Clutch size is 3-8, with an average of 5. This species is frequently double-brooded. Incubation lasts 13-14 days. Both parents tend altricial young. The male may tend fledglings while the female re-nests. It probably breeds first at 1 year (Harrison 1978).

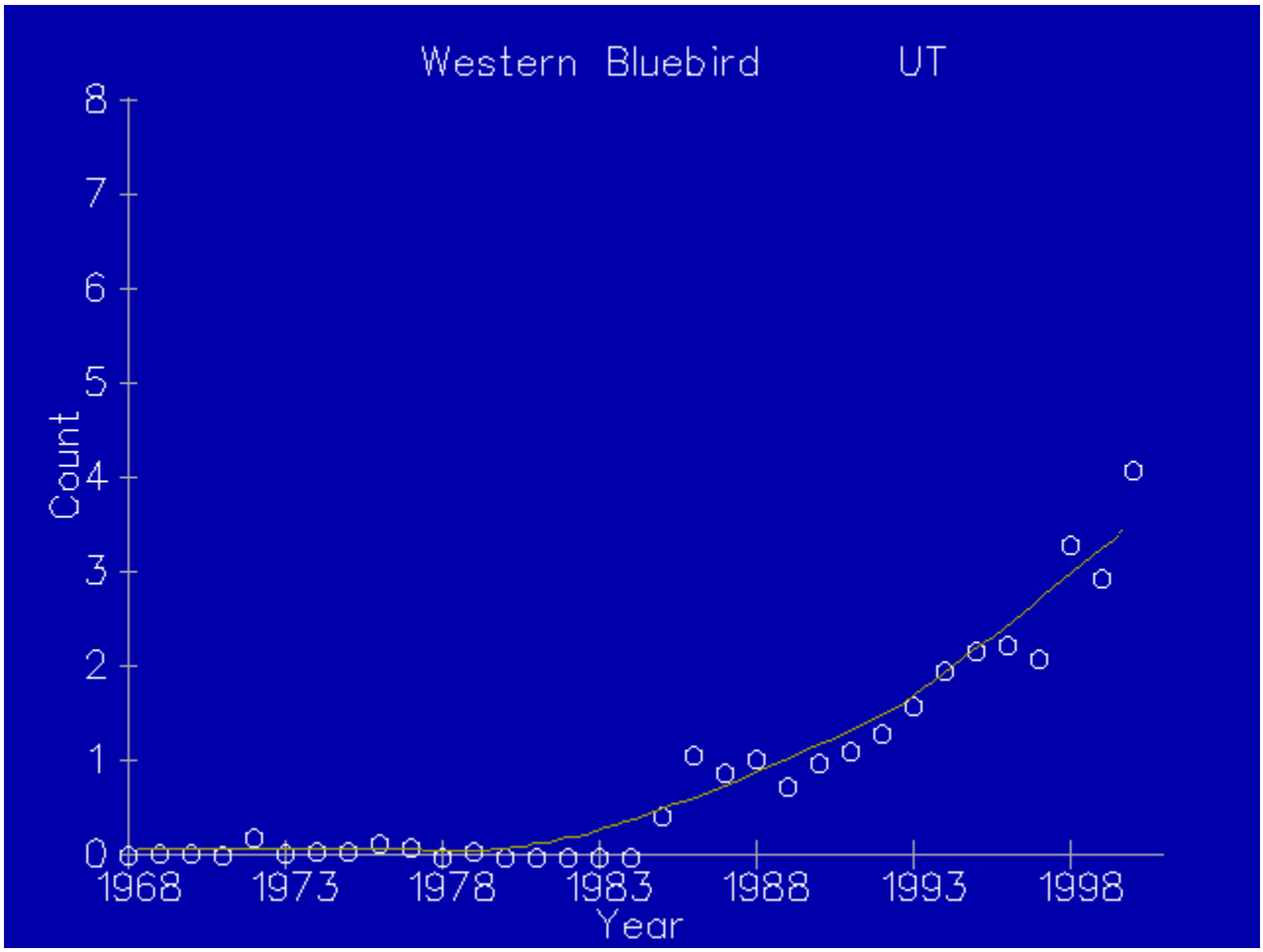
The western bluebird primarily eats insects, including grasshoppers, caterpillars, beetles, and ants; it also eats earthworms, snails, and other small arthropods (Bent 1949). It flies out from a low perch to capture prey on the ground or herbage; it sometimes hovers before pouncing. The western bluebird also hawks aerial insects. It perches on a low branch of a tree or shrub, fence, or tall herb, often adjacent to a medium to large opening in a wooded or brushy habitat. In nonbreeding season, this species supplements its diet with berries of mistletoe, poison oak, elderberry, and other species. The presence of mistletoe berries may govern local occurrence in winter (Grinnell and Miller 1944). The western bluebird drinks water freely and regularly (Smyth and Coulombe 1971), but may not require water when berries are available.

Competition from European starlings and house sparrows has reduced eastern bluebird populations in parts of the eastern U.S., and threatens western bluebirds. Construction of nest boxes with smaller entrance holes (Scott et al. 1977) has allowed a partial population recovery of eastern bluebirds. Western bluebirds also compete for nest sites with violet-green swallows, house wrens, and other native species; generally they are more capable of defending their nest against native species (Bent 1949). Competition with woodpeckers for nest sites may be strong (Miller and Bock 1972).

On the Fishlake National Forest the Western bluebird occurs on all 4 Ranger Districts. This species is wide-ranging and easily detectable. Below is a map that displays potentially suitable habitat across the forest. This area totals approximately 423,432 acres.



Trend
In addition to these data, the BBS database (www.mbr-pwrc.usgs.gov) displays an upward trend of Western bluebirds in Utah. These data represent a 30-year trend between 1968 and 1998. These data were collected throughout the entire state of Utah, including points on the Fishlake National Forest. The overall estimated trend in Utah between 1966 and 2002 has been summarized as a 14.1% increase per year.



Surveys for avian MIS have been conducted on the FNF since the mid 1980's. Additional studies by "expert birders" were conducted in 1994, 1998, and 2002. These surveys have targeted cavity nesting species, riparian species, and sage nesting species. All other avian species were recorded while conducting survey routes. In addition to these data, collection efforts by Utah State University have collected data across the forest in aspen/conifer habitat types. Cavity nesting bird species were the focus of these efforts. These data were collected between 2001 and 2002.

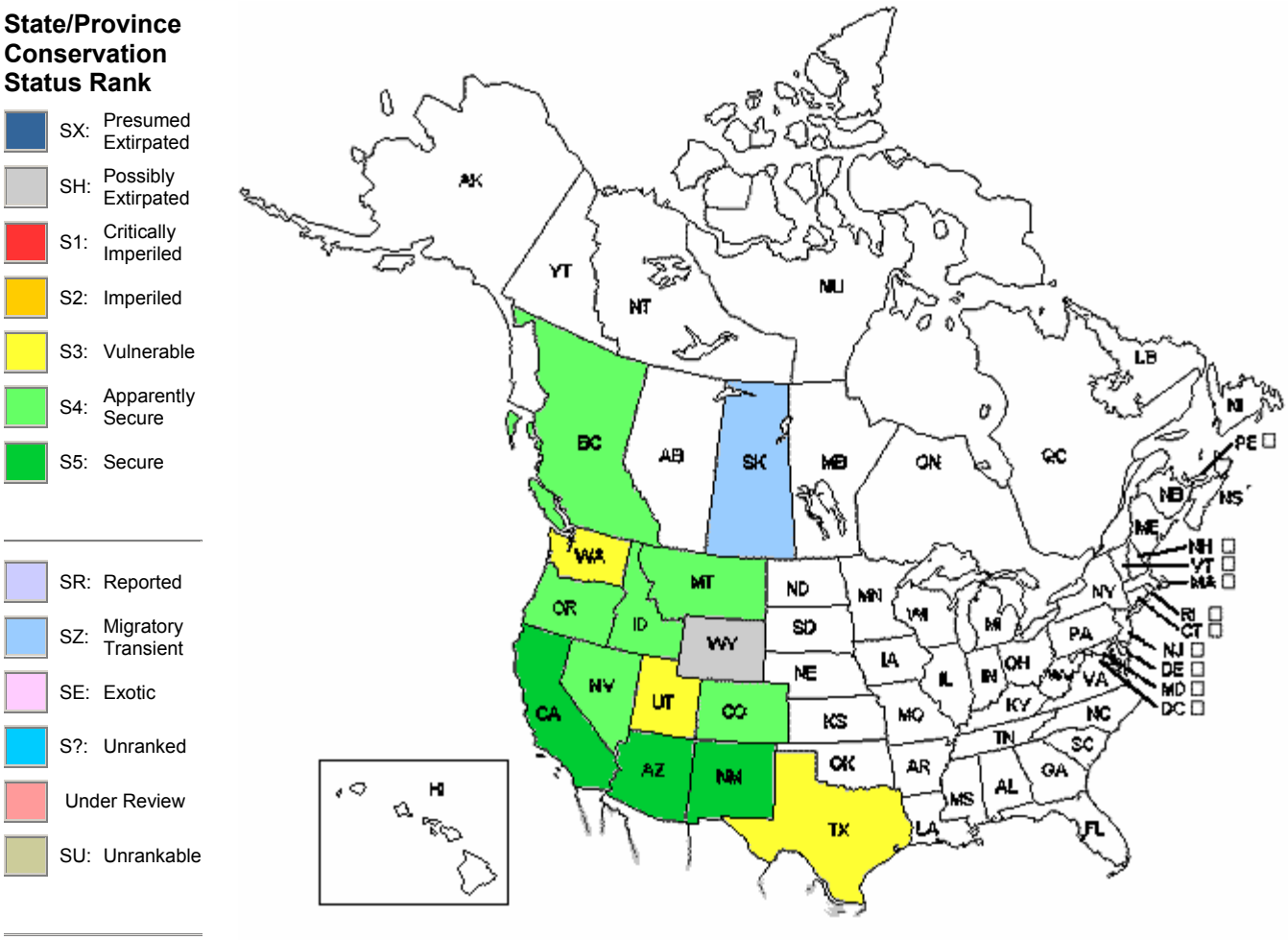
Data has been collected between 1994-2003. In 1994, and 1998 surveys were conducted in the Burnt Flat area, and other areas of the forest. No birds were encountered in this area. In 2001, this species was detected by Utah State University along 3 transect lines while conducting specific cavity nesting surveys. In 2002 the presence of bluebirds was detected along 1 transect line. The number of detections has increased to 14.

As a result of the data presented in this document, few locations have been monitored and additional monitoring sites should be identified. While the numbers collected on the forest are somewhat static, data collected by the BBS indicate a sharp population increase in about 1985. Data presented by the Nature Conservancy demonstrate a "vulnerable" population in Utah. Considering all of the data

presented in this document, as well as my professional judgment, this population is likely stable and viable across the forest. Additional monitoring is needed to continue to evaluate the viability of this species.

The map below displays the status ranking from the Nature Conservancy database (NatureServe Explorer). The Western bluebird in Utah has been ranked as "vulnerable".

Western Bluebird (*Sialia mexicana*)



Mountain Bluebird (*Sialia currucoides*)

The Mountain bluebird is a fairly common summer resident in sparse to open forests and other open habitats from about 1200-3700 m (4000-12,000 ft) in the mountains and foothills of the state. Most individual's winter below 1500 m (5000 ft), withdrawing from higher, snowy portions of breeding range. The mountain bluebird is less numerous and the occurrence is more erratic elsewhere in interior lowlands of state. In some years this species has been known to winter throughout the Mojave Desert, on the coastal plains of southern California, and on Channel Islands (Grinnell and Miller 1944, Garrett and Dunn 1981).

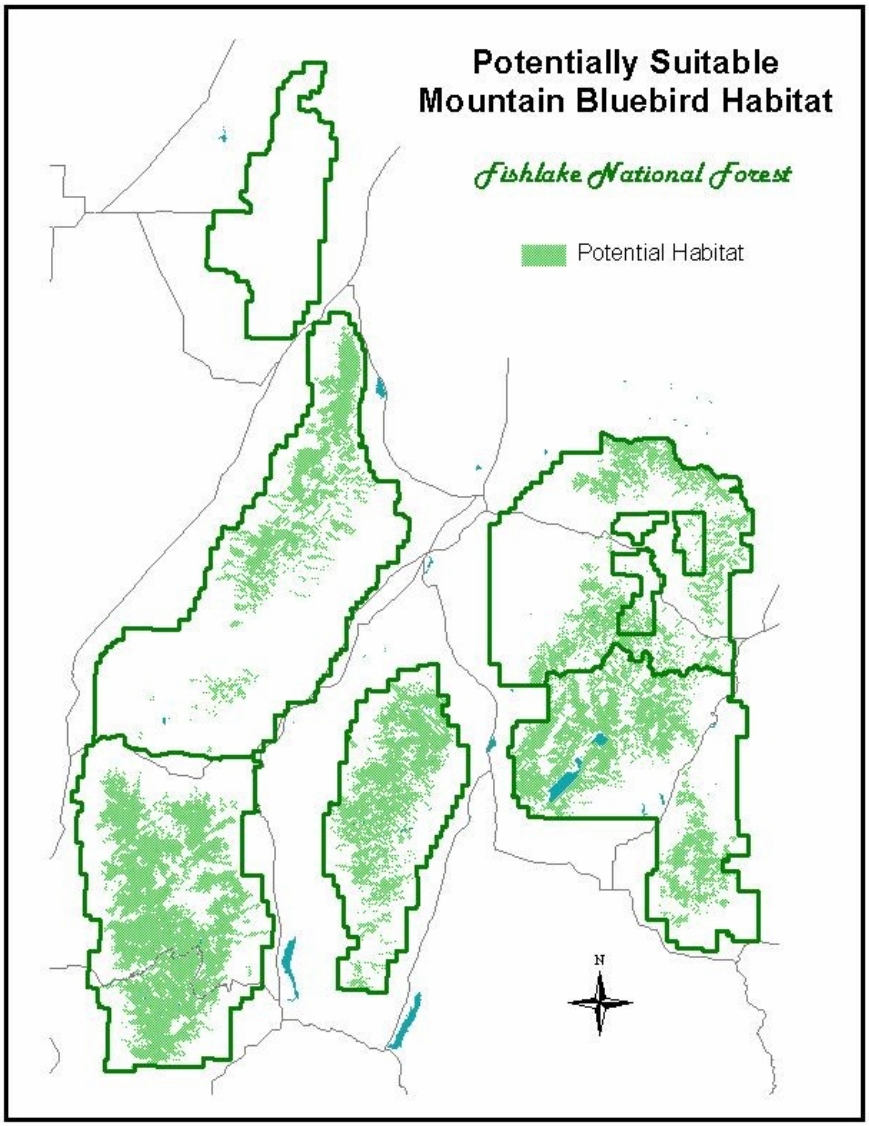
This species prefers open terrain with an occasional tree, rock, fence post, power line, or building, for foraging perch and other cover. It requires suitable cavities for roosting and nesting, usually in a snag or dead portion of tree. Breeders are most numerous where meadows, grasslands, or other open habitats edge on woodland or rock formations affording suitable nesting sites. In winter, this species occurs in virtually any open or sparsely wooded habitat, but shows a preference for agricultural fields and Pastures. Breeders return to higher portions of nesting range March to June, depending on elevation and snow conditions, and depart by October or November. The mountain bluebird usually arrives on wintering areas in November and departs by March. Estimates of breeding density include 30 per 40 ha (100 ac) in Wyoming aspen forest (Salt 1957), 15-18 per 40 ha in Wyoming (Finzel 1964), and 15.2 pairs per 40 ha in Sierra Nevada conifer forest (Bock and Lynch 1970). Power (1966) found territory boundary difficult to determine; it is inferred that 4 territories averaged 4.3 ha each (10.6 ac), and range 1.8-6.8 ha (4.5-16.7 ac). These estimates were minima; some territories "had no clear boundaries at all. "Territory apparently centered on nest and included suitable flycatching perches and a large area of open space. At Mt. Rainier, Washington, Jewett et al. (1953) reported that a nesting female foraged over about 2.6 ha (6.5 ac).

The mountain bluebird builds a nest of herbaceous stems, rootlets, grasses, and outer bark of shrub placed in a natural cavity or woodpecker hole in a snag or dead portion of a tree. Less frequently it nests in a crevice or cavity in a rock, building or other human structure; it also uses nest boxes or the nest of a cliff swallow or other species (Bent 1949). The mountain bluebird is monogamous; it lays eggs mid-April to mid-July, depending on elevation. It may be double or triple-brooded. Clutch is 5-6 eggs. Incubation is 13-14 days by both sexes, and both sexes care for altricial young. Fledging age is 22-23 days (Bent 1949, Power 1966, Harrison 1978).

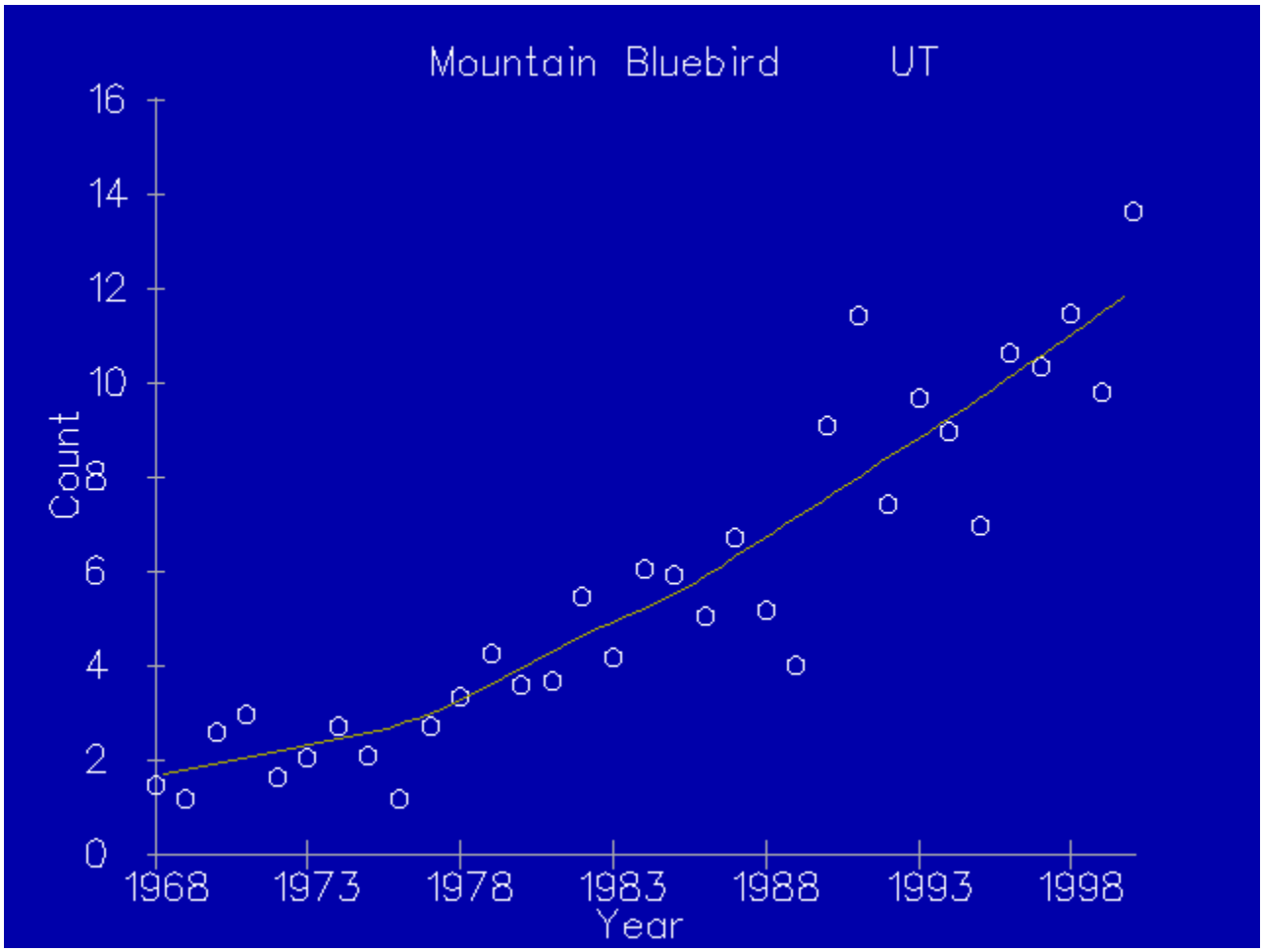
From a low, exposed perch, the mountain bluebird hovers and stoops on insects on foliage or ground, and hawks flying insects. It also eats berries and other small fruits, especially in winter (Martin et al. 1961, Power 1966). Miller and Stebbins (1964) suggested that insect food provided adequate moisture in California deserts.

Tree swallow, house wren, mountain chickadee, European starling, northern flicker and other woodpeckers, and rodents compete for nest sites. Predators include prairie falcon and sharp-shinned hawk (Munro 1940). Numbers have declined in recent decades (Ehrlich et al. 1988).

Potentially suitable Mountain bluebird habitat has been mapped across the Fishlake National Forest, and is displayed below. This habitat consists of approximately 423,432 acres of potentially suitable habitat.



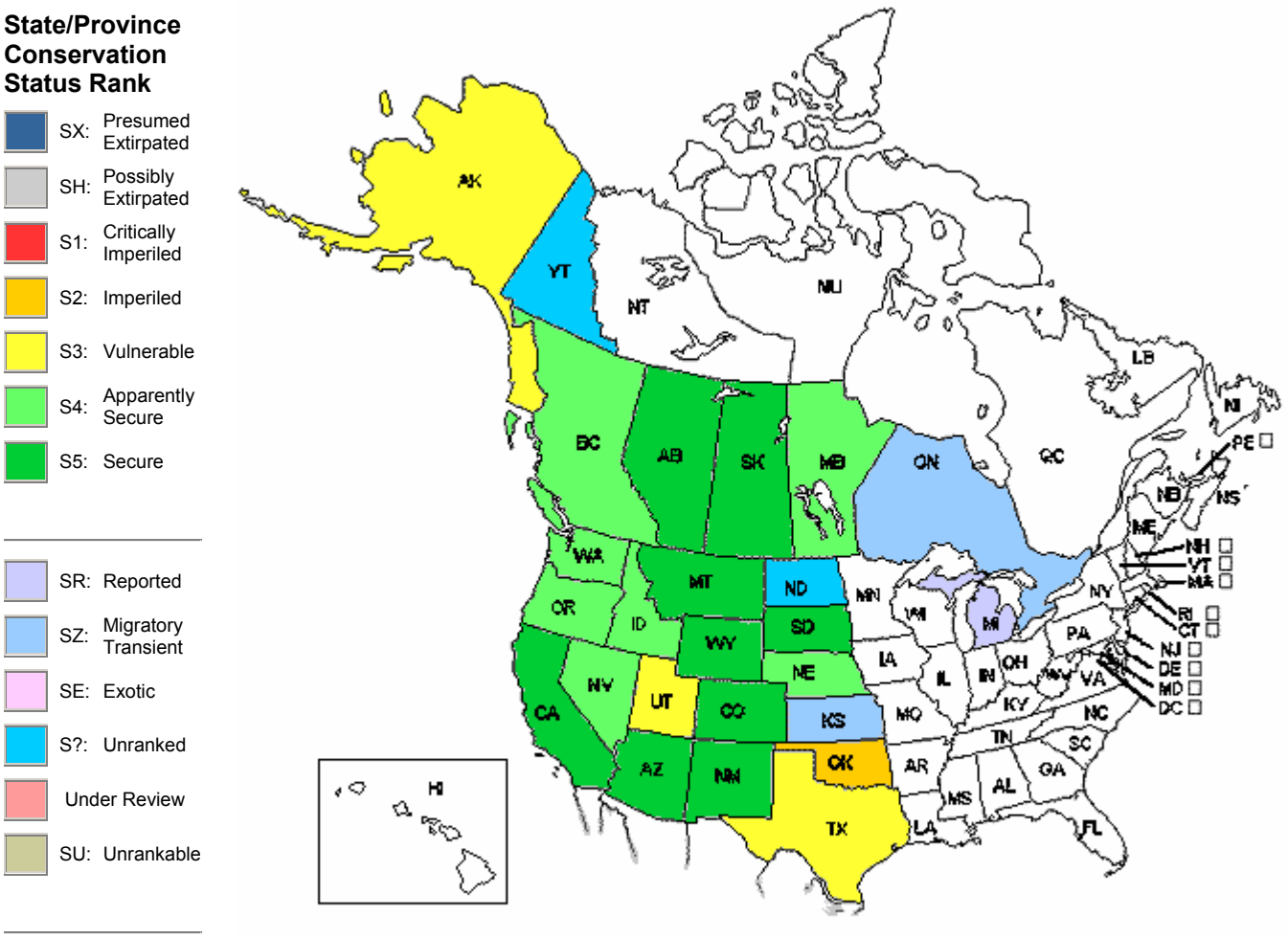
Trend
In addition to these data, the BBS database (www.mbr-pwrc.usgs.gov) display an upward stable trend of the Mountain bluebirds in Utah. These data represent a 30-year trend between 1968 and 1998. These data were collected throughout the entire state of Utah, including points on the Fishlake National Forest.



Surveys for avian MIS have been conducted on the FNF since the mid 1980's. Additional studies by "expert birders" were conducted in 1994, 1998, and 2002. These surveys have targeted cavity nesting species, riparian species, and sage nesting species. All other avian species were also recorded while conducting survey routes. In addition to these data collection efforts Utah State University has collected data across the forest in aspen/conifer habitat types. Cavity nesting bird species were the focus of these efforts. These data were collected between 2001 and 2002.

Data has been collected between 1994-2003. In 1994 the number of presence/absence observations of this species along each transect line totaled 24 in the Burnt Flat area. In 1998 a total of 13 transects recorded this species being present, and in 2002 14 transects recorded this species being present. In surveys conducted in 2001 during a cavity specific survey by Utah State University, 13 transects recorded this species as being present. Mountain bluebird detections have since increased to 73.

As a result of these data collected over the past 8 years, as well as data collected during BBS, and the Nature Conservancy data, the trend for this species is stable, to slightly up on the forest. Therefore, my professional judgment is that this species is viable across the forest.

The map below displays the status ranking from the Nature Conservancy database (NatureServe Explorer). The Mountain bluebird in Utah has been ranked as "vulnerable".

Mountain Bluebird (*Sialia currucoides*)