

MANAGEMENT INDICATOR SPECIES

RIPARIAN GUILD

Lincoln's Sparrow (*Melospiza lincolni*)

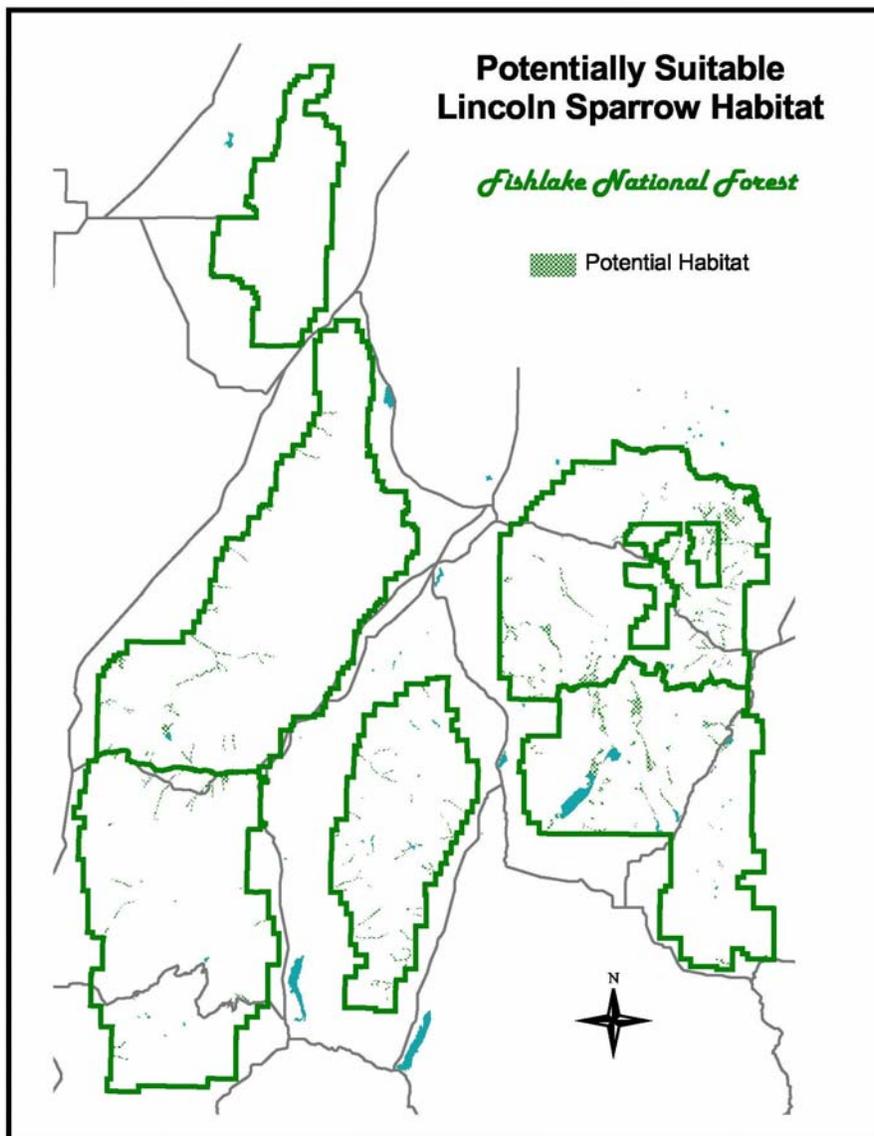
The Lincoln's Sparrow is an uncommon breeding species in Minnesota and is restricted to northern Minnesota. Nest records for this species indicate that it probably breeds sparingly across the northern portions of the state (Janssen 1987). Minnesota is at the extreme southern portion of its range, which extends throughout Canada to Hudson Bay and into Alaska. This species has a western range in the continental United States that extends from the Rocky Mountains to the Pacific Coast. The Lincoln's Sparrow is a short- to long-distance migrant. Some individuals winter in southern portions of the United States, while others over-winter in Central America. Spring migration in Minnesota is from mid-April through late-May and fall migration begins in late July and continues into October (Janssen 1987).

This species occupies a narrow range of habitat in Minnesota during the breeding season. It is found almost exclusively in lowland black spruce (*Picea mariana*) stands where tree density is sparse and height is low (<10 m) (Niemi and Hanowski 1992). Typical breeding densities for this species in the Chippewa National Forest in 1991 were less than one breeding pair/40 acres in seedling-sapling and pole sized lowland black spruce stands. The species was also observed in low densities in seedling aspen (<1 pair/40 acres) and pine (<1 pair/40 acres) stands in northern Minnesota (Superior and Chippewa National Forests) in 1991 (Hanowski and Niemi 1991a, 1991b). The Lincoln's Sparrow also occurs in early successional jack pine stands in northern Michigan (Brewer et al. 1991). This habitat type is more similar to habitats that they occupy in northern and western portions of their range. Based on this information, the species was classified as a conifer dependent species.

The presence of this species in poorly stocked lowland conifer may indicate that the species prefers areas that are in early stages of regeneration. However, this may be misleading because age of stands in the seedling-sapling class of black spruce in the Chippewa National Forest, where the species was found, averaged >65 years. In Minnesota, the species is most abundant in unproductive forest lands (lowland conifer) found in peatland areas of northern Minnesota (Niemi and Hanowski 1992).

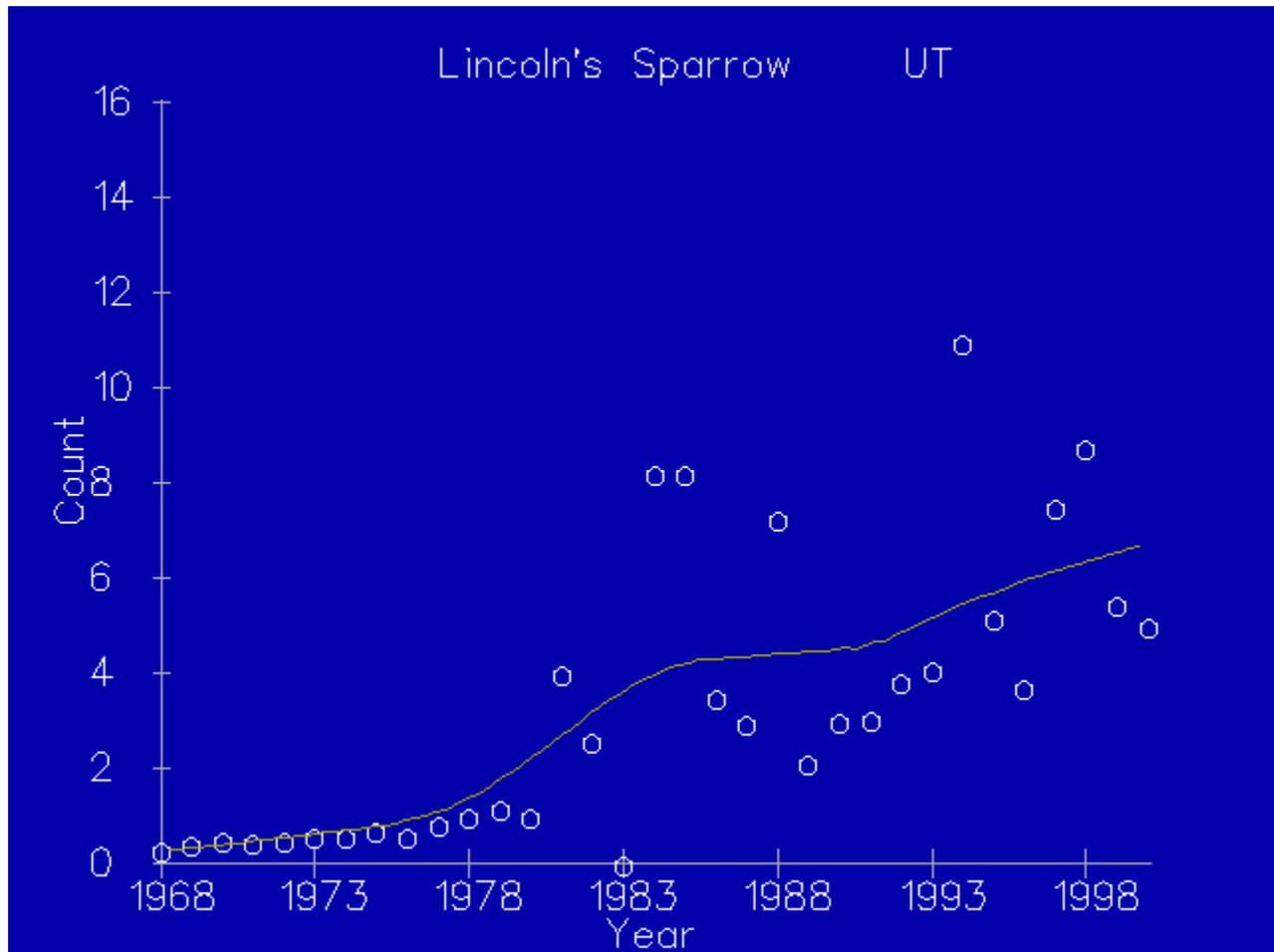
This species nests and feeds (primarily on insects) on the ground. Therefore, a critical habitat need is a well-developed ground cover of Sphagnum and other mosses to provide nesting cover (Brewer et al. 1991).

On the Fishlake National Forest the Lincoln sparrow occurs on all four 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) display an upward trend of Lincoln's sparrows 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 Fishlake National Forest since the mid 1980's. Additional studies by "expert birders" were conducted in 1994, 1998, and 2002. These surveys targeted cavity nesting species, riparian species, and sage nesting species. All other avian species were also recorded while conducting survey routes.

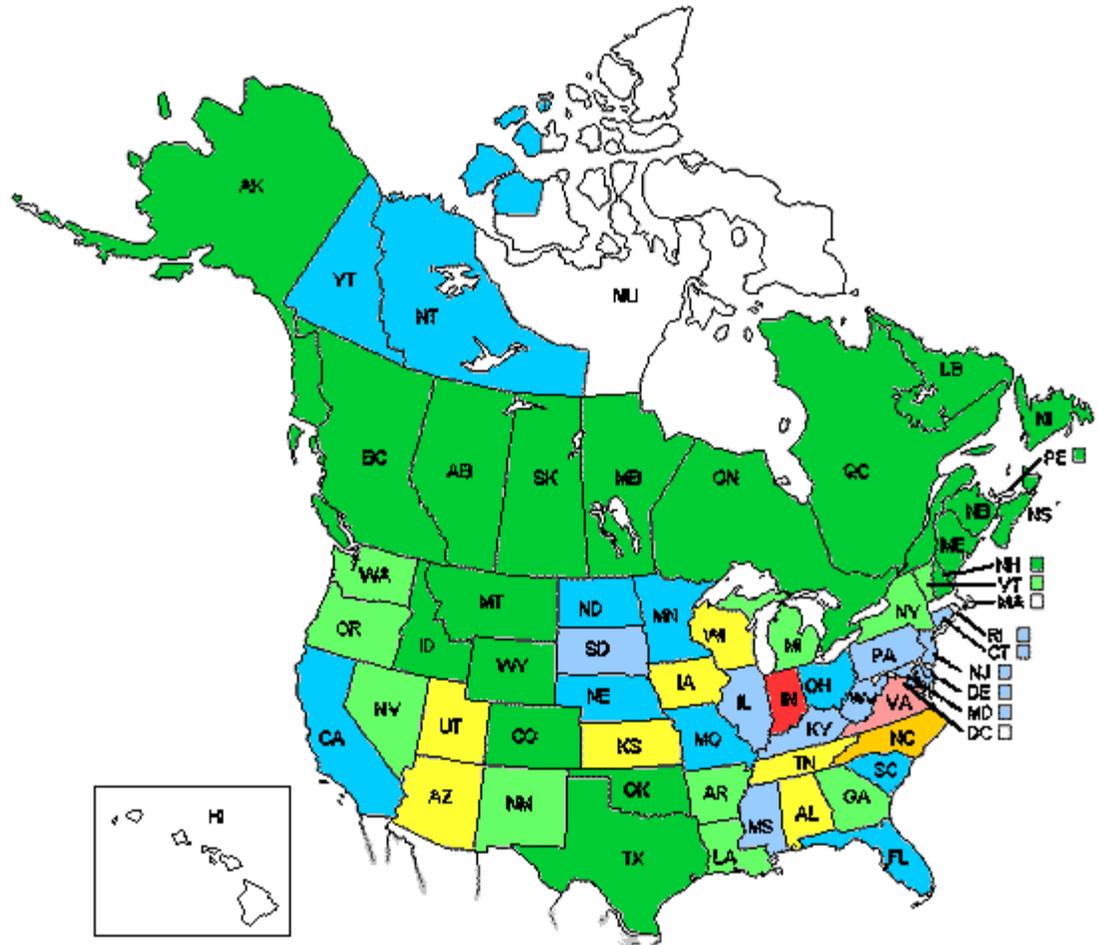
Data has been collected on three different occasions between 1998-2002. No birds were detected in the Burnt Flat area transects during 1994, 3 transects in 1998 and 8 transects in 2002. As a result of these data collected over the past 8 years, this species has increased in the number of presence/absence transects across the forest. While these numbers are increasing they are few. Therefore, further data is needed to continue to evaluate the status of the population on the Fishlake National Forest. Data presented by the Nature Conservancy indicates this species is "vulnerable". However, based on the BBS data which demonstrates a strong increase in trend beginning as far back as 1978, as well as professional judgment, the population across the forest is stable and likely viable.

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

Lincoln's Sparrow (*Melospiza lincolni*)

State/Province Conservation Status Rank

- SX: Presumed Extirpated
 - SH: Possibly Extirpated
 - S1: Critically Imperiled
 - S2: Imperiled
 - S3: Vulnerable
 - S4: Apparently Secure
 - S5: Secure
-
- SR: Reported
 - SZ: Migratory Transient
 - SE: Exotic
 - S?: Unranked
 - Under Review
 - SU: Unrankable



Song Sparrow (*Melospiza melodia*)

The song sparrow is a common resident of most of California, but avoids higher mountains and occurs only locally in southern deserts. In winter, most leave montane habitats; they are more abundant and widespread than in lowlands and deserts. At all seasons, it prefers riparian, fresh or saline emergent wetland, and wet meadow habitats. It breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and in fresh or saline emergent vegetation. The song sparrow also breeds in damp thickets and coastal scrub of northern California and Channel Islands where fog drip and a moist climate compensate for a lack of surface water. In winter in much of northern California, these sparrows also may be found far from water, in open habitats with thickets of shrubs or tall herbs. The song sparrow usually avoids densely wooded habitats, except along forest edges. The song sparrow is an uncommon resident in suitable habitat in southern deserts along western edge (very locally) and in Imperial and Colorado River valleys (Grinnell and Miller 1944, Garrett and Dunn 1981).

This species requires low, dense vegetation for protective cover, usually near water, in emergent vegetation, or in other moist areas. The male typically sings from an exposed perch at moderate height in shrub, tall herb, or low tree.

A single winter home range in New York was 0.6 ha (1.4 ac). In Kansas, Fitch (1958) measured a winter home range of 3.6 ha (8.9 ac), and estimated 29 home ranges as averaging about 2.8 ha (6.8 ac). In British Columbia, home range of an island population averaged 0.05 ha (0.12 ac). Territory in Ohio varied from 0.2 to 0.6 ha (0.48 to 1.4 ac), averaging 0.3 ha (0.7 ac). Breeding territory in salt marshes of Contra Costa Co. averaged about 0.04 ha (0.1 ac) in a year of high density (Johnston 1956b) adults rarely shifted location from year to year (Johnston 1956a). In a San Francisco Bay salt marsh, territory averaged 0.07 ha (0.2 ac) in human-altered linear strips of habitat, and 0.04 ha (0.1 ac) in unaltered habitat. Along Minnesota lakeshores, 4 territories varied from 0.12 to 0.26 ha (0.30 to 0.65 ac), averaging 0.18 ha (0.45 ac) (McCarty 1975). On an island in British Columbia, territory averaged 0.03 ha (0.07 ac).

Most nesters in California are nonmigratory, but numbers are augmented in winter by migrants from the north. Part of the population that breeds east of Cascade Range and Sierra Nevada migrates to more westerly and southerly portions of California in winter. Breeders in montane habitats mostly move to lower elevations for winter, more widespread than in desert riparian habitat. The song sparrow breeds in dense riparian thickets, emergent wetlands, or dense thickets in other moist situations. An open overstory of trees may be present, but is not required. In winter, it occurs in similar habitats, often far from water.

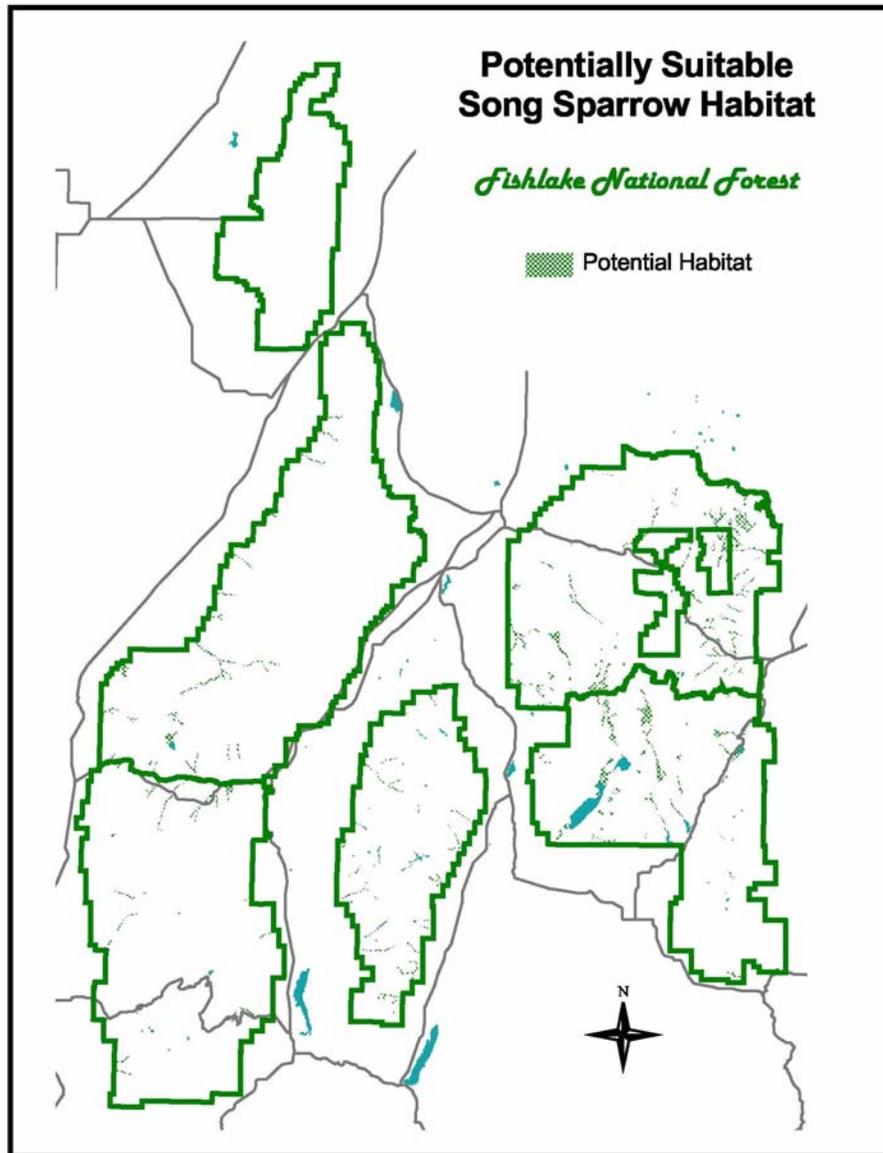
The song sparrow builds its nest on the ground (Bent 1968); however, it also nests in shrub, thicket, emergent vegetation, and small trees, usually within 1.3 m (4 ft) of the ground (Harrison 1978). The ground nest is hidden under low, dense vegetation, usually near water, in emergent vegetation, or in other moist sites. Nesting season usually begins in April. The song sparrow is a monogamous, solitary nester. Clutch size is 3 or 4, rarely 2, 5 or 6. Often double-brooded, sometimes treble-brooded. Incubation lasts 12-14 days. Altricial young tended by both parents, leave the nest at about 10 days and become independent about 25 days later. The song sparrow probably breeds first at 1 yr (Harrison 1978).

Seeds are the most important foods in the annual diet of song sparrows, but insects, spiders, and other small invertebrates, make up almost half of their diet in the nesting season (Martin et al. 1961). Berries and other small fruits are minor foods. The song sparrow regularly takes crustaceans and mollusks along the coast. It usually forages on the ground or in low vegetation, under cover of dense thickets or wetland vegetation. It gleans from the ground or low plants and often scratches in litter. Sometimes the

song sparrow forages a short distance from cover. In more arid regions, the song sparrow nests only along edges of bodies of water. In northern California and Channel Islands, it also nests in coastal fog zone and shaded sites where generally moist conditions compensate for a lack of surface water. In winter, it may be found far from water throughout much of northern California.

Typical nest predators include dogs, cats, and rats. The song sparrow, according to Friedmann (1963), is one of the most frequent, if not the most frequent, host of brown-headed cowbird nest parasitism. It is one of the most variable bird species- 31 races in North America (Ehrlich et al. 1988).

On the Fishlake National Forest the Song sparrow occurs on all four 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.



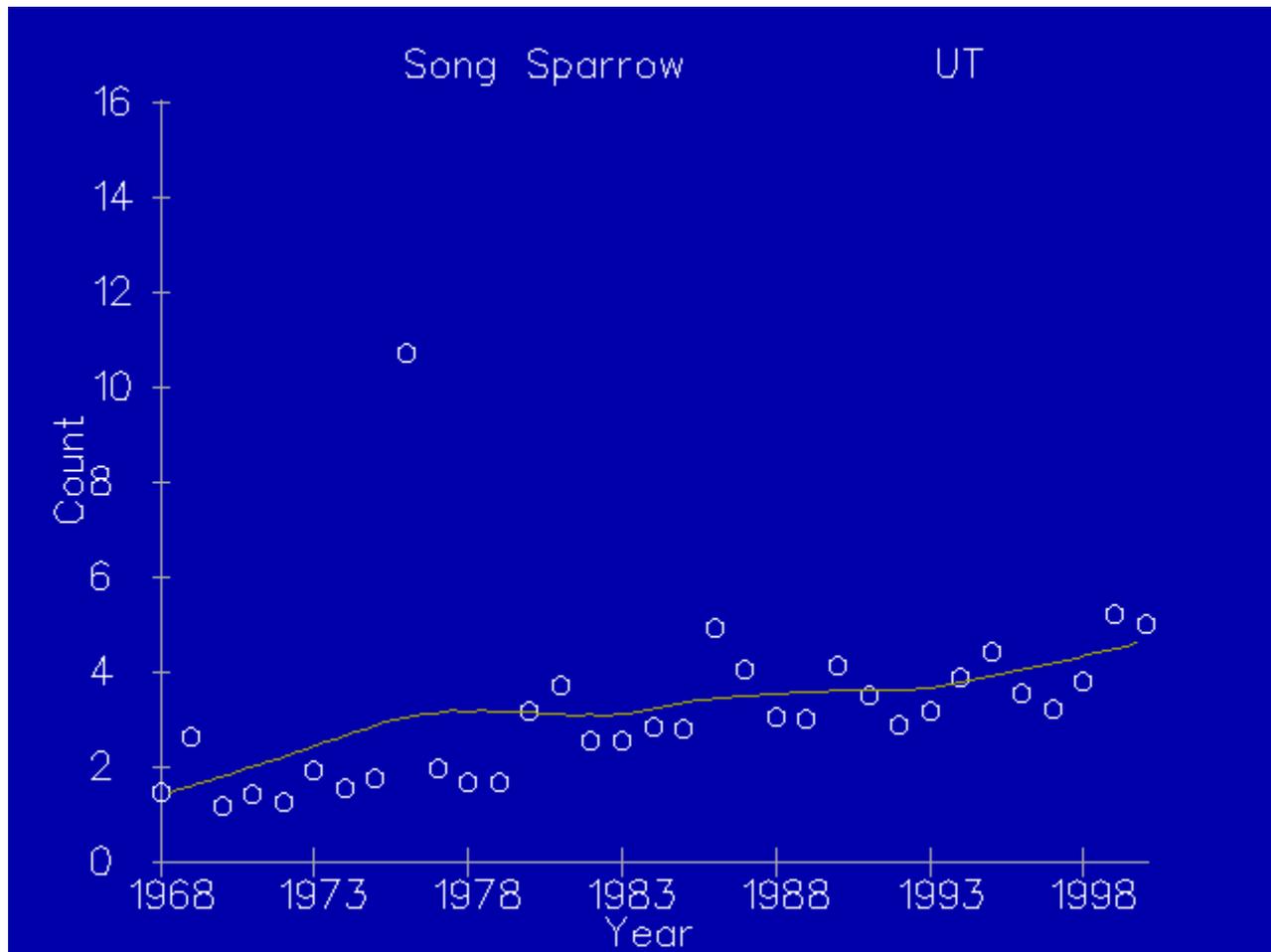
Surveys for avian MIS have been conducted on the FNF since the mid 1980's. Additional studies by "expert birders" have been conducted in 1994, 1998, and 2002. These surveys have targeted cavity nesting species, riparian species, and sage nesting species. All other avian species were also recorded while conducting survey routes.

Data has been collected on three different occasions between 1998-2002. No birds were located during survey efforts in the Burnt Flat area, however in 1998, 6 transects recorded individuals, and 3 transects recorded this species in 2002. As a result of these data collected over the past 8 years, this species has demonstrated a decreased in overall presence along transects across the forest. Although these numbers

have decreased the sample size is small. Therefore, further data is needed to evaluate the status of the population on the Fishlake National Forest. These data differ from that collected by the BBS, which demonstrates a steady increase in song sparrow numbers in Utah, including the Fishlake National Forest. The Nature Conservancy data indicates the population in Utah to be “apparently secure”. Based on all the data presented in this discussion and professional judgment, the population across the forest is likely stable or in a slightly downward trend, however, it is still likely viable.

Trend

In addition to these data, the BBS database (www.mbr-pwrc.usgs.gov) display a slightly upward trend of Song sparrows 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.

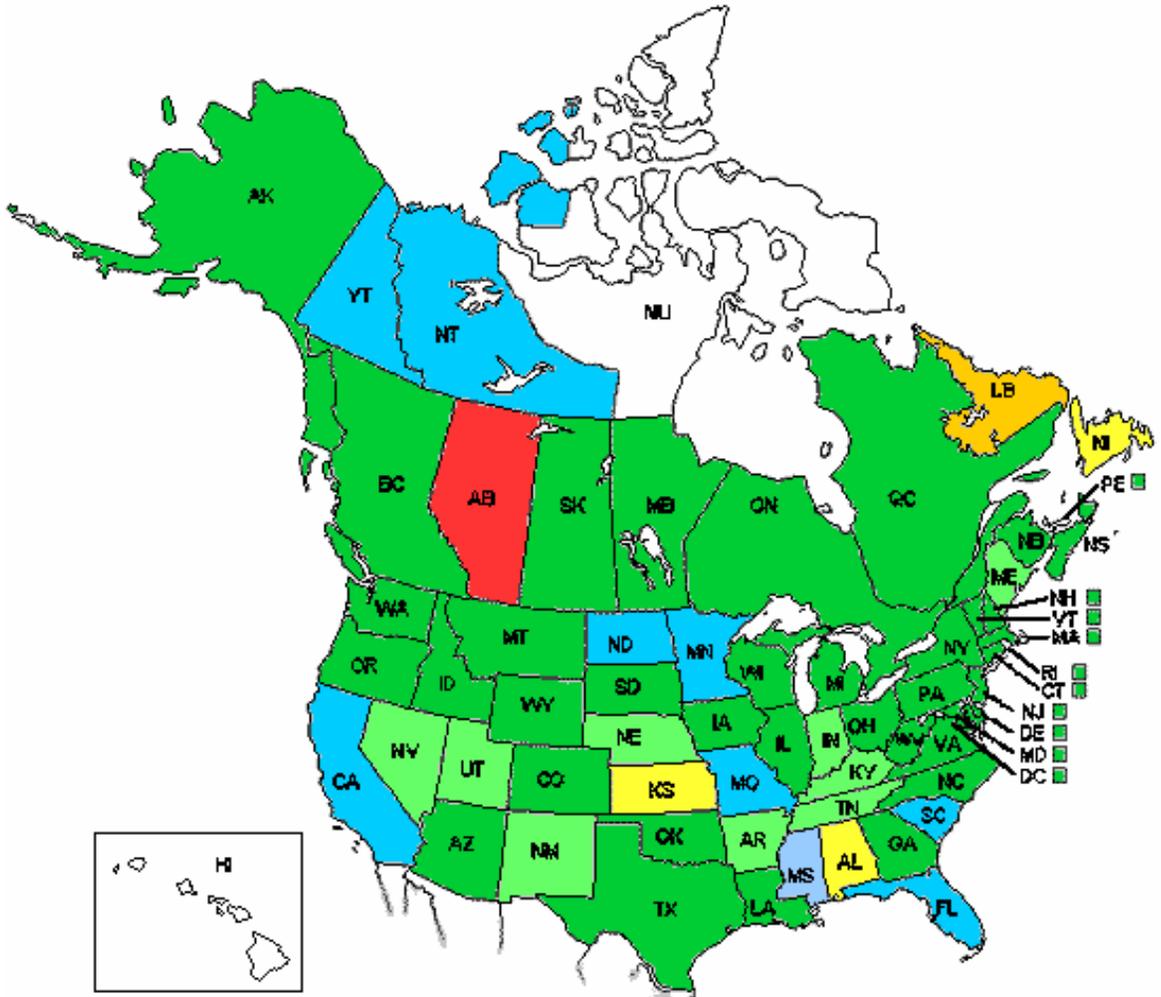


The map below displays the status ranking from the Nature Conservancy database (NatureServe Explorer). The Song sparrow in Utah has been ranked as “apparently secure”.

Song Sparrow (*Melospiza melodia*)

State/Province Conservation Status Rank

- SX: Presumed Extirpated
 - SH: Possibly Extirpated
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 - S2: Imperiled
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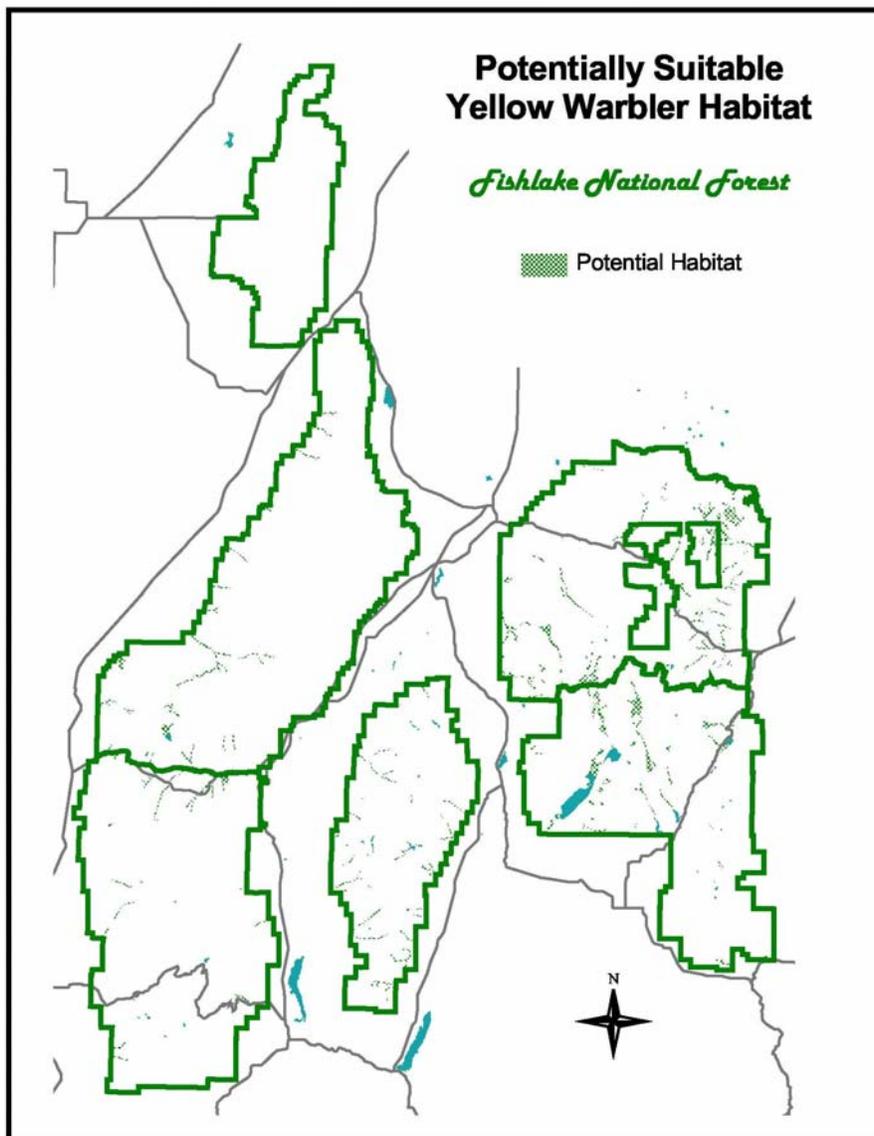
Yellow Warbler (*Dendroica petechia*)

The Northern Yellow Warblers are neotropical migrants that breed within North America and winter from Mexico to northern South America. Within North America they breed throughout most of Alaska and Canada and the lower 48 States except for Texas and the extreme south and southeast. The subspecies of Northern Yellow Warblers are *morcomi* in the Rocky Mountains, *parkesi* and *annicola* in Canada east of the Rockies, *aestiva* in the US and southernmost Canada east of the Rockies, *rubiginosa* in coastal British Columbia and the Alaska Panhandle, and *brewsteri* in the Pacific Northwest and California.

Yellow Warblers nest in shrubby growth by swamps and watercourses, in wet scrub, tree foliage, mangroves, gardens, shrubberies and berry patches. Dense growth may be preferred in order to reduce nest predation and brood parasitism. The males are sometimes polygamous. The female builds a neat, compact cup nest in an upright twig fork 2 to 12 feet up, sometimes up to 40 or even 60 feet. The cup is made of wool, plant down, dry weed stem fibers, and fine grass stems, then lined with plant fibers, cotton, plant down, and sometimes feathers. Incubation of the 3 to 6 (usually 4 or 5) whitish spotted eggs is for 11 days. Both parents tend the nestlings until fledging occurs at 9 to 12 days.

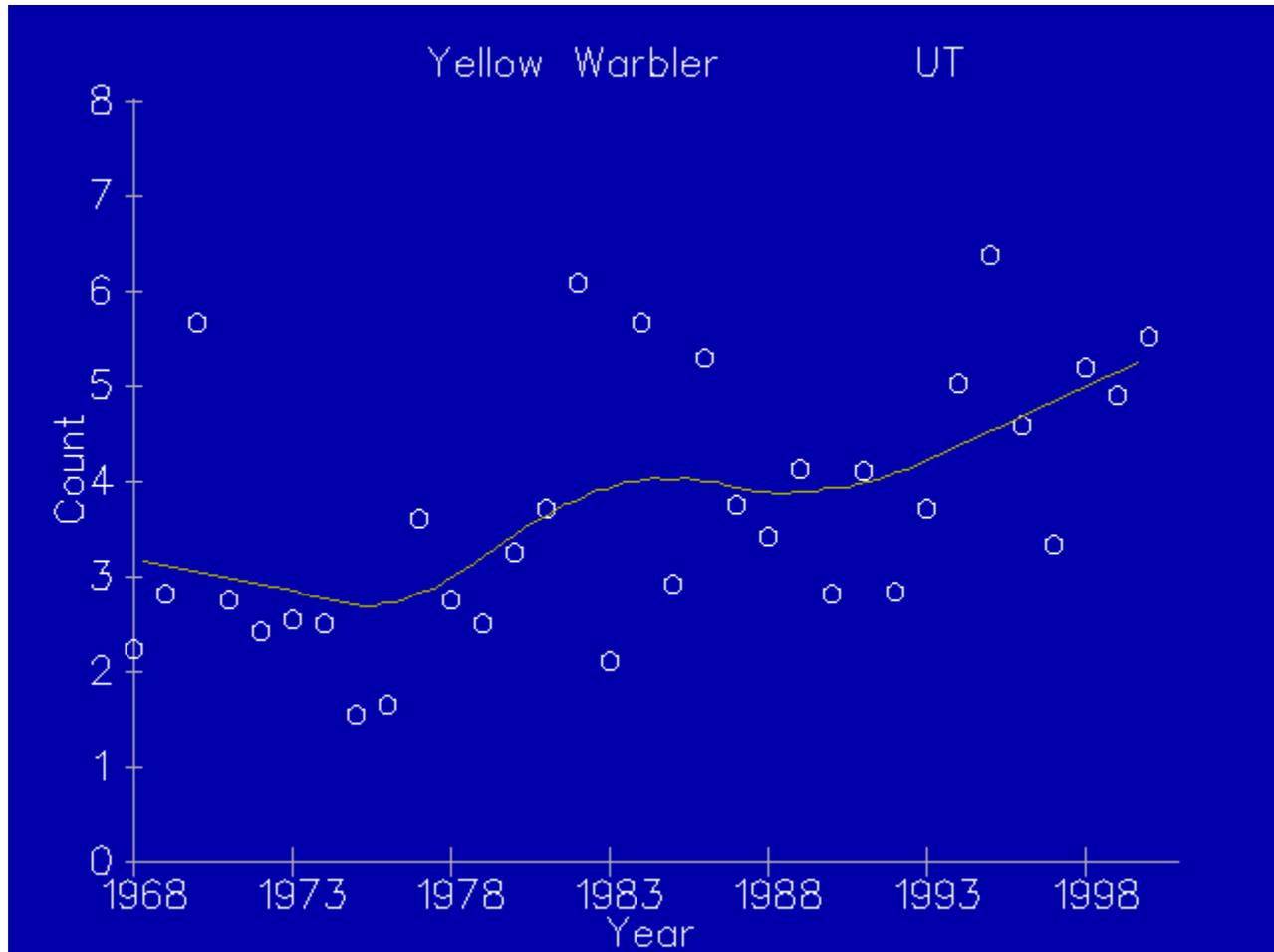
The male Yellow warbler has golden yellow plumage with rusty streaks on the breast and flanks. Wings and tail may have a slight greenish tint. The females have plain yellow plumage and breast streaks are absent or barely noticeable. The bill is thin and pointed and the legs are yellowish. This species is known to occur within riparian areas on the Fishlake National Forest.

On the Fishlake National Forest the Yellow warbler occurs on all four Ranger Districts. This species is wide-ranging and easily detectable. Below is a map that displays 423,432 acres of potentially suitable habitat across the forest.



Trend

This BBS data (www.mbr-pwrc.usgs.gov) displays a stable, to slightly upward trend of Yellow warblers 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 targeted cavity nesting species, riparian species, and sage nesting species. All other avian species were also recorded while conducting survey routes.

Data has been collected on three different occasions between 1998-2002. In 1998 the number of presence/absence observations of this species along each transect line totaled 14. In 2002 the total number of transects recording this species totaled 19. As a result of these data collected over the past 8 years, this species has demonstrated an increased in presence/absence numbers across the forest. While these numbers are increasing, the sample size is small. Therefore, further data is needed to continue to evaluate the status of the population on the Fishlake National Forest. These data differ from that collected by the BBS, which demonstrates a steady increase in the song sparrow in Utah, including the Fishlake National Forest. The Nature Conservancy data indicates the population in Utah to be "apparently secure". Based on all the data presented in this discussion and professional judgment, the population across the forest is in an upward trend and likely viable.

Rydberg's milkvetch (*Astragalus perianus* Barneby)

Rydberg's milkvetch belongs to the pea family (Fabaceae) and is an herbaceous perennial from a subterranean, branching caudex. The stems, 3-12 cm long, are prostrate, short, and leafy. Leaves are 1-3 cm long and have 7-19 leaflets. Flowers are whitish and tinged with pink or purple. The pods are ascending to declined, bladderly, inflated, sessile, ovoid and unilocular. This species occupies harsh sites at upper elevations. Habitat needs are described primarily as openings in spruce-fir, but the species also occurs with vasey sagebrush, black sagebrush, alpine krummholz, and open aspen-fir-mahogany. Substrates include igneous intrusive gravels, volcanic gravel or clayey soils at elevations ranging from 7,200 to 11,500 feet. (Atwood et al. 1991, Welsh et al. 1993)

Tew (1988) provided the following information about this species' description and life history. The flowering and fruiting period extends from June to September, and the pods are water and wind dispersed. Fire does not kill the plants and may even be used to improve habitat for Rydberg's milkvetch. Substrate and elevation appear to be dominant factors affecting distribution. Associated vegetation is typically sparse with an open appearance because of shallow rocky soils.

Astragalus perianus populations could be threatened by off-road vehicle use, grazing, mining, or severe erosion. However, most existing populations do not appear to be in serious danger. Some populations are near salting grounds where grazing and trampling occur. Other individuals of Rydberg's milkvetch may be found growing in the middle of gravel roads where competition has been eliminated. Too much cover has a tendency to crowd this species out of its niche. Mining activities are limited in all areas where the populations are presently known to exist. (Tew 1988)

Rydberg's milkvetch (*Astragalus perianus*) was first collected in the mountains north of Bullion Creek near Marysville, Piute County, Utah in 1905 by Per Axel Rydberg's and Carlton. This plant was not formally described until 1964 when Rupert C. Barneby of the New York Botanical Garden published it in *Memoirs of the New York Botanical Garden* 13: 973. Because of the lack of collections of this plant and general lack of information on its distribution, the Smithsonian Institution noted that this plant could possibly be extinct in their 1975 report (Federal Register Vol. 43, No.81). In June of 1975, Welsh and Murdock collected this species in Garfield County. This population was found on Mt. Dutton of the Dixie National Forest. In 1976, specimens from the 1905 locality in the Tushar Mountains (Fishlake National Forest) were rediscovered and collected (Federal Register Vol. 53, No. 196). On June 16, 1976 (Federal Register Vol. 41, No. 117), Rydberg's milkvetch was proposed for listing as Endangered by the U.S. Fish and Wildlife Service. On March 31, 1978, Stanley L. Welsh published *Endangered and Threatened Plants of Utah: A Reevaluation* in which he recommended listing Rydberg's milkvetch as Threatened. In 1978, Rydberg's milkvetch was federally listed as Threatened by the U.S. Fish and Wildlife Service (Federal Register Vol. 43). At this time, this plant was only known from two populations.

In 1981, Rupert C. Barneby reevaluated specimens of *Astragalus perianus* and a species it closely resembles, *A. serpens*. Upon re-examination, he concluded that several of the specimens previously identified as *A. serpens* were misidentified. Barneby annotated these specimens to *A. perianus*. These collections were from Kane, Iron, and Piute Counties and greatly expanded the distribution of Rydberg's milkvetch. In 1982 and 1983, a management plan for Rydberg's milkvetch was created and approved by the U.S. Forest Service. Inventories and monitoring studies were established and implemented over the next several years (Federal Register Vol. 53, No. 196). "From 1984 through 1987...Twelve major population centers were located and mapped. These populations cover over 2,000 acres in six counties on six major mountains and plateaus in south-central Utah: the Tushar Mountains, Sevier Plateau, Markagunt Plateau, Fish Lake Plateau, Mount Dutton, and Thousand Lake Mountain" (Federal Register Vol. 53, No. 196). In 1986, Rydberg's milkvetch was listed as a Management Indicator Species in the

Fishlake National Forest Land Resource Management Plan. Because it was federally listed as threatened (Fishlake LRMP II-32, Table II-10). At the time the Fishlake LRMP was prepared, only 4,000 individuals were known to occur on the forest (Fishlake LRMP II-29).

On October 11, 1988, delisting of Rydberg's milkvetch was proposed by the U.S. Fish and Wildlife Service (Federal Register Vol. 53, No. 196). This proposal was based on a much wider distribution than previously known for this species. Conservative estimates for the 12 known populations indicated well over 75,000 individuals and could possibly have been closer to 200,000 individuals (Federal Register Vol. 53, No. 196). In 1989, 13 populations of Rydberg's milkvetch had been found with over 300,000 individuals estimated (Federal Register Vol. 54, No. 177). Rydberg's milkvetch was subsequently delisted from its Threatened status on September 14, 1989 by the U.S. Fish and Wildlife Service (Federal Register Vol. 54, No. 177). Rydberg's milkvetch was then immediately placed on the USFS, Intermountain Region Sensitive Species List for approximately 5 years. On April 29, 1994, Rydberg's milkvetch was removed from the Intermountain Region Sensitive Species List.

Trend

As a result of the U.S. Forest Service Management Plan approved in 1983, two Rydberg's milkvetch monitoring transects were established and monitored by Dr. Duane Atwood and Bud Alford. These were located in the Bullion Canyon and Mt. Brigham area of the Tushar Mountain Range, Fishlake National Forest.

The Bullion Canyon transect was read on September 1, 1983. A total of 77 Rydberg's milkvetch plants were counted in monitoring 10 plots along a transect line. All age classes were represented. This transect was re-monitored on August 5, 2002 by Mark Madsen and Jeremy Gwin. A total of 21 young and mature age class Rydberg's milkvetch plants were counted in 10 monitoring plots along the transect line. Two of the designated age classes (seedling and decadent) were absent from the monitoring plots.

The Mt. Brigham transect (on privately-owned land) was read on September 2, 1983. A total of 194 Rydberg's milkvetch plants were counted in 10 monitoring plots along the transect line. All age classes (except for decadent) were represented. This transect was re-monitored on August 6, 2002 by Mark Madsen and Jeremy Gwin. A total of 69 Rydberg's milkvetch plants were counted in 10 monitoring plots along the transect line. All age classes (except for decadent) were represented.

Between 1983 and 2002, Rydberg's milkvetch has declined in numbers along both monitoring transects indicating a downward trend. However, both 5-10 acre populations in Bullion Canyon and Mt. Brigham were noted as having an estimated 100 – 1000 of individuals in each in area 2002. The population in Bullion Canyon was estimated to be between 800 – 1000 individuals in 1983.

A new monitoring transect for Rydberg's milkvetch was established on August 13, 2002 by Mark Madsen, Steve Walters, and Jeremy Gwin. This transect was placed on Fishlake National Forest Land in the Edna Peak area of the Tushar Mountains. A total of 86 plants were counted in 10 monitoring plots along the transect line. All age classes (except for decadent) were represented. The population size was estimated at 10 acres with 500+ individuals.

The following paragraphs documented additional monitoring completed by Terry Miller in collaboration with David Tait, and Robert Campbell.

Surveys were conducted for *Astragalus perianus*, Rydberg's milkvetch, during the months of June and July, 2002. Known populations were relocated and resurveyed in order to establish trend data for the species. Surveys consisted of surveying polygons delineated by previous botanists who worked with the

species. Population visits were documented by completing the rare species element occurrence form and taking photographs and GPS locations.

Populations located on the Richfield District were in the Dry Creek Canyon area (7/29/85, Higgins) and above Willow Spring (7/29/85, Higgins). The Dry Creek Canyon population was estimated to have approximately the same population size (about 2000 individuals) as previously determined. The population above Willow Spring was also found to have a stable population size (at least 10,000+ individuals). A large amount of potential habitat was found for the species in the general area. One new population of this species was located in the general area of Dry Creek Canyon during the current surveys.

Populations were searched for on the Loa District in two separate locations, the Mytoge Mountain area (8/21-22/85, Atwood) and west of Mill Meadow Reservoir (8/21-22/85, Atwood). Population size for the Mytoge Mountain population was estimated to be lower (about 2000 to 3000 individuals) than the estimated 10,000+ individuals located during the delisting process (delisted effective 10/16/89). The recent survey of the population west of Mill Meadow Reservoir did not locate any plants even though a large area at the site was searched. The original estimate of this population size was 1,000-10,000 individuals. Large parts of this area had been chained in 1987 as part of a range rehabilitation treatment. Although given the habitat preference for *A. perianus*, this treatment is not thought to be solely responsible for the disappearance of individuals from this population. Two days were spent surveying for this population.

One day was spent surveying for the population at Lousy Jim Creek on the Beaver District. This small population (about 500 individuals, 8/26/84, Teye) was not relocated. Possibly a more intensive survey could relocate this population. The area contained a significant amount of potential habitat that was not searched during this 2002 survey.

While some populations are stable, others had fewer plants of *A. perianus*. Some populations were not even relocated. However, the dry weather this summer may be a contributing factor to the lower numbers. Populations of other common species seem to be smaller than those expected for years of more normal precipitation (T.R. Miller, personal observations).

The 20 known populations on the Beaver, Loa, and Richfield Districts of the Fishlake National Forest were estimated to contain 95,000+ individuals. Based on the data discussed above, Rydberg's milkvetch is stable and viable across the Forest.