



COMMITTEES:

Education

Judiciary

Natural Resources, Agriculture & Mining

INTERIM COMMITTEES

Legislative Commission

Legislative Committee on Public Lands

LEGISLATIVE BUILDING:

401 S. Carson Street
Carson City, Nevada 89701-4747
Office: (775) 684-1234
Fax No.: (775) 684-4321
www.leg.state.nv.us

State of Nevada Assembly

February 25, 2012

“I’m not exaggerating, there were thousands”

THE INTRODUCTION OF AGRICULTURE AND ITS IMPACT ON SAGE GROUSE

By all accounts, sage grouse were rare when Europeans first entered the Great Basin, as I documented in two earlier reports.

However, the populations of sage grouse in Nevada rapidly increased following the introduction of agriculture and livestock in the mid to late 19th century. “Clouds” of birds, creating “thunderous” noise as they concurrently rose into flight, are recorded by the 1880’s.

For example, from interviews of “old timers” published by the Northeastern Nevada Historical Society: “Sage chickens (sage grouse) were so plentiful in the 1890’s...they clouded the sky...the birds were always thick in the meadows. As I passed by, they would rise up like a bunch of blackbirds...oh they were thick.” (George Gruell interview of Syd Tremewan, 1964).

Another: “When we lived on Gance Creek (around 1900) there were lots of sage hens. I have seen them fly up the mountain right behind our house...they sounded like thunder...I am not exaggerating, there were thousands.” (George Gruell interview with George Nelson, 1966).

For a more scientific documentation of this huge rise in sage grouse during this time frame, Robert “Bob” McQuivey, a 30 year NDOW biologist, by literally reviewing all of the early newspapers, journals and laws passed in Nevada, has documented this population explosion. I have read some of his extensive research, which I am currently attempting to get published. In a nutshell, it confirms the above observations.

So, what caused this dramatic change, from almost nothing to abundance?

1. Habitat manipulation and expansion, especially meadows and man-made hayfields.
2. The mechanical removal of sagebrush and pinyon/juniper trees for primarily fuel.
3. The introduction of non-native plants, especially common dandelion, alfalfa, and other forbs.
4. Livestock grazing.
5. Stable supplies of water in areas previous dry or intermittent.
6. Predator control.

It should be noted none of the man-made changes were done intentionally to benefit sage grouse. It was simply coincidental.

HABITAT CHANGES. As settlers started to quickly dot the Nevada landscape, one of their first acts was to create a meadow of sorts for their domestic animals. For large ranches it was to primarily grow hay and expand lush grazing areas. Yet even the smallest start-up ranch had horses and generally a milk cow or two. By fencing an existing meadow, finding a level piece of sagebrush covered ground, damming the local spring or stream, and irrigating, meadows were both expanded and created new.

As is well documented, sage grouse have a symbiotic relationship to meadows. They especially relish certain forbs (most of us would call them “weeds”), and insects common on meadows.

However, when meadows are not basically “mowed down”, sage grouse avoid them. Livestock usage, by eating the plants, actually increases sage grouse usage. For example, from “The Relationship of Cattle Grazing to Sage Grouse”, a thesis done at UNR by Carol Evans in 1986: “Klebenow (1982) found that birds tended to avoid meadow areas of dense rank vegetation, but would use the areas once they were “opened up” by grazing. Oakleaf (1971) reported that heavily grazed meadows...were utilized by sage grouse, while succulent areas of ungrazed meadows...were not used as feeding areas. After cattle grazed and left a meadow, sage grouse were observed to concentrate there in greater numbers than before the grazing...” (DeRoucher, 1980).”

This flies in the face of the common misconception that grazing harms sage grouse. As Evans noted: “During the last three surveys, observed use of grazed meadows was significantly higher than expected.”

Why? “Grazing by cattle prior to the cessation of plant growth...increases the quality of the food forb resources for sage grouse. Grazing increases the succulence of forbs by interrupting and delaying maturation. New leaf tissue is higher in crude protein...than mature tissue. Sage grouse appeared to seek sources of succulent forbs by selecting for meadows grazed by cattle.”

NEW PLANTS: non-native plants can be harmful, like cheatgrass, or beneficial. Common dandelion, just like the ones you find in your lawn, is not native to Nevada. The good news: sage grouse love to eat it. Food studies of sage grouse show it to be a primary and dominant dietary item today. As Evans noted: “A study of this unique forb (dandelion) might yield important insights into how the environment for sage grouse has changed and how sage grouse have responded...the distribution of dandelion is closely tied to grazing...it increases with grazing and is noticeably less abundant in communities protected for long periods...dandelion unlike other forbs, retained its succulence long after maturation...dandelion is an exotic and not native to sage grouse habitat...”

Other plants introduced include alfalfa, which also is highly attractive to sage grouse; as are the insects these new man-made meadow complexes attracted. All in all, the huge increase in meadows or meadow- like fields and hay producing areas were the primary catalyst for sage grouse expansion, all done together with livestock grazing.

MECHANICAL REMOVAL OF SAGEBRUSH, primarily for fuel, also benefitted sage grouse by removing older less productive plants and allowing younger more succulent plants to grow. As recorded in 1877: “Sagebrush is about the only fuel in this timber-less country and hundreds of thousands of cords of it are annually consumed...like the grand forests of the Sierras, the wild sage of the Great Basin is rapidly disappearing and as it is a plant of exceedingly slow growth, it is not improbable that it may ultimately become extinct...” (from the “Tuscarora Times Review” as quoted in McQuivey’s work).

This also helps explain why areas recorded by the early explorers as vast seas of sagebrush were later described as grass dominated by the 1890’s. The fear of sagebrush going extinct was obviously grossly exaggerated, and its rapid recovery was a boon for the sagebrush-eating sage grouse, as the younger plants and re-growth were much more productive in the leaves they eat, especially in winter. The removal of Pinyon/Juniper trees over much of Nevada during this same time frame had much of the same effect.

WATER DEVELOPMENT, allowing livestock to graze areas otherwise off limits due to an absence of consistent drinking water, was also a boon for sage grouse. Windmills, stock ponds, spring improvements, earthen dams in strategic spots to catch run-off, and irrigation of formerly sage covered flats converted to hay meadows all greatly expanded habitat availability for sage grouse.

PREDATOR CONTROL also likely boosted sage grouse production. For example, the early Mormons, only two years after arriving in the Great Basin, “...sponsored a contest to kill off the ‘wasters and destroyers’. About 800 wolves [coyotes], 400 foxes, 2 wolverines, 2 bears, 2 wildcats, 37 mink and several thousand hawks, owls, eagles and crows were killed in the hunt. One dollar in titling was offered on a continuing basis for each wolf or fox skin.” (From Arrington, “Great Basin Kingdom”, page 59). Virtually every cowboy, sheepherder, rancher and ranch boy carried a firearm and shot every predator they crossed. While today condemned to a certain extent, this action likely contributed strongly to the rapid expansion of sage grouse into its newly enhanced habitats.

All in all, agriculture and ranching in the Great Basin was the catalyst for the noted huge increase in sage grouse in Nevada. As the small ranch complexes were slowly eliminated from Nevada by economic conditions as well as the Taylor Grazing Act and other government actions, the smaller man-made meadows dried up as well. Grazing, predator control and maintenance of various related stock water developments also declined.

Declined, yes, but not eliminated entirely. (At least not yet). Much of these agricultural improvements remain that still greatly enhance sage grouse habitat, and although down in number compared to the highs described, sage grouse are still significantly above the historic low numbers noted by the first explorers.

While attending a [Nevada] Governor’s Sage Grouse Conservation Team meeting, I asked de-facto leader, Nevada Department of Wildlife (NDOW) biologist Sean Espinosa what in his view is the best sage grouse success story in Nevada since the team was formed in 2000. He stated: “Smith Creek Ranch.”

Considering the fact that many government people have made it clear they feel the livestock industry is the cause of the sage grouse decline, the irony is huge. Smith Creek Ranch in central Nevada is a working cattle ranch and has been for almost a century and a half. (Incidentally, I agree wholeheartedly with Espinosa's opinion; Smith Creek Ranch is loaded with sage grouse. I have personally seen several hundred birds there myself.)

The ranch, as so many Nevada ranches once did, has a man-made reservoir and irrigates about 1200 acres – a man-made meadow complex. I have spent a great deal of time there, and seeing several hundred sage grouse on this meadow is not uncommon. NDOW has documented more than 500 sage grouse on this man-made meadow at one time. When the ranch was purchased by the current owner in the late 1990s, the meadow was “dirt”. By irrigating, a hay/grazing meadow was soon home to hundreds of sage grouse (and cattle), at a spot you would have been lucky to see a dozen birds a decade or so earlier.

Consider: multiply this creation of a meadow and grazing it (to stimulate plant production; gardeners call this ‘pruning’), as early Nevada ranchers did in nearly every canyon with some water starting in the mid 19th century, and you will begin to understand why the populations of sage grouse went from next to nothing to “clouding the sky” in only a few decades. Think of it as Smith Creek Ranch on steroids.

Agriculture and livestock bad for sage grouse? History says otherwise.

Sincerely,
Ira Hansen
Assemblyman District 32