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1957-2006

I graduated from Cal Poly, San Luis Obispo in March of 1957. I returned to Nevada on a ranch (Fairfield Ranch) that I had been working at during summers since I was 13 years old. That ranch was located at Topaz Lake on the Nevada-California border. I worked there again until September 1957, when I went to the University of Nevada to do a masters degree in range livestock nutrition.

I finished the M.S. degree in June of 1959 and was offered a temporary job at UNR doing nutrition research, which I accepted. It wasn't long before I was asked to start teaching classes, Feeds & Feeding, along with several other classes that I developed for graduate students. I traveled all over Nevada at every opportunity that I could find. I was interested in Central Nevada, primarily because little was known about livestock production there. I made contact with the owners of the RO Ranch, (Zimmerman family) because I wanted to use their operation as a model for my teaching efforts. That ranch was located in Smoky Valley, Monitor Valley and Tonopah Flat. They had excellent range resources, much high country on the USFS, good spring and fall range on the BLM, as well as a good winter permit on Tonopah Flat. They also put up a lot of hay, both grass and alfalfa. I had been stressing how important alfalfa hay was in my teaching, and using the RO model, it became even more obvious that alfalfa was very important in the overall nutrition of Nevada's beef herds. I visited most of the RO alfalfa fields, mostly in Smokey Valley, with one in Monitor Valley that was called the Monitor Ranch and was irrigated solely by Stoneberger Creek.

Throughout this period of my life I became more and more interested in resource management, even though by training I was considered an Animal Scientist, and more specifically, a Nutritionist. One of the things that always struck me as interesting was the many alfalfa fields that invariably existed at the end of the creek, such as Stoneberger. While working at the Fairfield Ranch, I was involved in establishing a 120 acre alfalfa field, using furrow irrigation from a water well. That experience taught me rather clearly how important a sustainable season long water source is in establishing, and maintaining, an alfalfa field. Yet throughout Nevada there were numerous alfalfa fields only irrigated by creek water. I am not sure when the discussion first came up about how important it was to maintain creek water, and the problems that were occurring, but I believe it was in the late 1960's. It may have been with the Zimmerman's or someone else in the central Nevada area. I went on a tour of ranches with the extension veterinarian (Earl Drake) and the Austin Extension Agent (Archie Albright). We visited just about every ranch in the area and I clearly remember hearing the opinion being expressed that keeping creek water maintained was becoming an increasing problem. I heard that the history of the area included periodic burning of canyon brush, and that more recently herbicides had been used in this regard. It was becoming very apparent, however, that this practice was not being appreciated by the USFS, and the BLM to a lesser extent. I can't recall if any citations had been given, but I am sure ranchers were warned that the practice of brush management on federal canyon lands was no longer tolerated.

I left the University in 1984, coinciding with the destruction of the College of Agriculture by President Joe Crowley and Dean Bernard Jones. I established a business in Elko, known as Great Basin Agriculture, and became successful in mine reclamation, along with other activities. I also became involved in land management, managing the 25 property at Battle Mountain for Echo Bay Mining Company and the Dean Ranch in Crescent Valley for Security Bank of Utah. One of the things that I noticed during that period was the amount of brush invasion that seemed to be occurring on all streams not only on these properties, but throughout northern Nevada. I was puzzled by this phenomenon, but there really weren't any more competent range ecologist at the University to turn to, so I just more or less accepted the fact that these things were just happening.

It was about 1986 when I was contacted by Carl Hass of Smokey Valley to do some consulting for the RO Ranch. Carl had actually owned the Ranch prior to the Zimmerman's, however, they had in

turn sold it to a California couple who didn't know very much, but seemed to have an inexhaustible supply of money. They had run into a real problem with the USFS, concerning water rights, historic use, ditches, etc. So I was asked to do a complete surface water survey, which I did. This included an exhaustive study of approximately 28 different watersheds. I determined the potential water production, water loss, legal water use and other factors on each watershed. Additionally, I walked and photographed each watershed. This included among others, Stoneberger Basin.

All of the drainages were heavily impacted with brush, including willows, roses and other water using shrubs. Of the 28 drainages, usable water actually occurred from only two, North and South Twin Rivers, at that point in time. However, it was very obvious that historically this had not always been the case, as hay fields, often alfalfa fields had at some point in time existed at the mouth of these canyons. Stoneberger offered a good study site, as a USDI gauging station had existed for some time on the creek, and Stoneberger was in a direct northwest/southeast line of sight with Austin, which is considered the most reliable historic Central Nevada weather station. I have traversed Stoneberger Creek from the Monitor Ranch to the upper meadows by foot, a distance of about 12 miles on several occasions during the study period. It was very obvious that the brush community was young, healthy and in an explosive stage of development. In many areas the exact historic channel was difficult to find due to the density of brush. I collected all the available data from the USDI gauging station and the Austin weather station to ascertain if I could get a better picture of exactly what was happening. Through the use of statistics I was able to show that water production from Stoneberger Basin had decreased an average of 29 acre feet every year since 1978, when precipitation at Austin was held constant. By the time I was doing this study, 1987, no water reached the fields, thus no irrigation occurred and obviously the 80 – 100 acre alfalfa field that existed on my first visit to the area was long gone. The increased acreage of solid brush stands within the basin easily accounted for the loss of water that my analyses indicated was occurring.

All of this was particularly disturbing to me, both from an agricultural production standpoint as well as a recreational standpoint. In the 1960's my family and I had actually camped in lower Stoneberger and caught trout. That same area only ran water intermittently by 1987, and in quantities totally insufficient to support any kind of a fishery.

Since the RO work I have done a similar study for Wayne Hage involving the Pine Creek Ranch, and I found similar situations and results on all the other creeks within Monitor Valley. I only have visited Stoneberger once since that time, that was around 1992 or 1993, when I was doing a related study for the RO. The brush invasion had not subsided; in fact it was even more obvious that Stoneberger Creek was no longer even a reliable source of stock water in its lower reaches. I have not been back there for over ten years, but have no reason to believe the situation has improved. I have briefly discussed Stoneberger with people that have seen it more recently, and I am assured that my observation continue to be correct.

I am satisfied that the trend of brush encroachment on mountain streams is a significant problem in regard to the production of usable water from Nevada's many watersheds. The economic impact of this process has already been felt on several ranches in Central Nevada. The process generally seems somewhat slower throughout Northern Nevada. Nevertheless, the process is occurring on the Santa Rosa Mountains in Humboldt County, the Bull Run, Independence, Jarbidge and Ruby Mountains of Elko County. Numerous ranges throughout Lander, Eureka and White Pine Counties also are exhibiting the same trend. What might be the final impact to Nevada's livestock industry? There are close to 250,000 mother cows in Elko, Humboldt, Eureka, Lander, White Pine and Nye Counties. Essentially all of these cattle consume harvested winter forage to one degree or another. Furthermore, essentially all of this forage is irrigated by surface waters generated from these many watersheds. One can only guess at what the final impact might be. It is generally accepted that each producing range cow generates annually around \$800 into Nevada's economy, when both direct and indirect impacts are considered. If decreasing surface water production were to cause a further reduction of 25% in

Nevada's beef cow herd, this would cause an annual economic impact to Nevada's economy of around fifty million dollars. The significance of this figure is further amplified in that two of these six counties are currently either bankrupt or facing bankruptcy. The economic viability of the other four are currently sound only because of the booming gold industry, which does have a finite life. Any factor affecting the destruction of Nevada's beef herd will ultimately be fully realized throughout both the rural economy, as well as the entire State's economy when the gold mining industry finally mines its last reserves.

Today, 2006, I am not actively involved in this type of work, with the exception of the Wayne Hage case. However, I remain convinced that all water rights occurring from a surface water source originating on federal lands are ultimately in jeopardy based on the federal government's current land management policies. Some streams seem to survive rather nicely; some seem to continue to be impacted. As a separate observation, during the recent years when range fires have become so dominate due to insufficient livestock grazing, a number of drainages have been completely burned out. More than one down stream property owner has become overwhelmed by the sudden reoccurrence of surface water levels never seen by the present generation. One can begin to understand why the pioneers were so successful in establishing and maintaining alfalfa fields on these drainages. It would essentially be impossible to duplicate that feat today.