

just a couple of ruts and consequently, the sidewalls of our big tires took a beating. While we were working in this location, our supervisors drove up from Berkeley to spend time with us but never did find us nor did we know they were coming. Somewhere north of the lake, there was a range rider's cabin, which we had permission to use. It wasn't fabulous but at least it was a roof overhead. We found a couple of old tired bedsteads on which to roll out our sleeping bags. There was a watering trough nearby fed by a windmill. We had a tank for water on the truck but we saved that for drinking and emergencies.

I remember two things about this place. Pat had to go to Reno and, for some reason, I stayed there. He left on Saturday morning supposedly to return that night. He didn't show up until Monday morning. It was solitude for sure—I could hear the coyotes at night, the footsteps of a pack rat, and the constant tapping of something dangling in the breeze on the outside cabin wall. I had two *Time* magazines and I had almost memorized every article before Pat showed up. *Time* magazine was filled with happenings related to the start of World War II.

The other incident occurred a few days later. I was driving and came to a spot where there was a dip in the road and a rock near the center of the road that stuck up some and might cause us a problem. Pat got out to give me guidance, and I steered the pickup according to his directions. Having eased the vehicle to a certain point, he called out, "Give her hell." I stepped on the gas and, as the car moved forward, heard a loud crunch. We crossed the dip but, in doing so, had bent the tie rods so that one wheel appeared to be at about thirty degrees out of line. It wasn't too far to the cabin and we managed to drive there. Pat had some mechanical ability and we had a few basic tools. We jacked the front end up and he took off the tie rod and straightened it as best he could, pounding out the bend with the rod lying on an old railroad tie. It wasn't exactly "Mr. Goodwrench's Wheel Alignment" but it got us back to civilization.

Pat was an outgoing person and a good man for the job. He had fudged his age and joined the army before he finished high school and, no doubt, some of his army experience rubbed off on him. He didn't have a high school diploma but applied for entrance to U.C. Berkeley. They let him take a test for entrance and he passed and went on to get his degree. Soon after the "high center" incident, we got the pickup into Reno for repairs on a Saturday. It was late afternoon before we got everything in order. We were walking by the Palace on the corner of Commercial Row and Center Street in the downtown area. Pat had a little loose change that was burning a hole in his pocket. He went in and put it in slot machine and won about \$15. He said to me, "I'll tell you what, Grant. I will buy your dinner. We will go to the Columbo Hotel to eat." Then he went to the nearest phone and I could hear him making reservations for two, sounding like we were two important

people. The Columbo was only a block away. We appeared before the maitre d' at the appointed time, dressed in our field clothes because that's all we had, and were escorted to a nice table. In those days, \$15 would cover a good dinner for two, assuming that was all you had. Pat seemed knowledgeable about wine and had the waiter bring a special vintage he named. We had a leisurely dinner, and then the dance band began to play. It was about a five-piece orchestra with a vocalist. Pretty soon, Pat was up chatting with the leader and making several requests. The music was good and, I guess, we were an appreciative audience. Finally, intermission came and Pat went up and invited the whole group down to our table for drinks. We had cashed our paychecks earlier and the \$15 was long gone and I was adding some of my money along with his. As soon as the group finished the intermission and started to play once more, I told Pat to stay if he so desired but I was going to get us a hotel room. I went to the Golden Hotel and registered for both of us. Several hours later he came dragging in, poorer but, perhaps, wiser.

A few roads were on the east side of the lake so we opted to use horses. Pat managed to rent some, and we each had a packhorse. I had never used a pack animal, but Pat seemed to know how to make a proper hitch on the horse and secure all our gear. He even showed up with a young fellow who was to be our wrangler but that only lasted overnight. He showed up dressed for the job along with a big guitar. Finally, Pat decided he wanted a working cowboy, not someone to croon "Back In the Saddle Again," as Pat could see it wasn't going to work out. One day, we met one of the Indian range riders. He invited us to come up to what was known as Hell's Kitchen. They had some wild horses they had rounded up in a corral and were going to do some roping. We could leave the packhorses at a nearby corral. We agreed to follow him, as we wanted to look at the area ourselves. Off we went, up this steep mountain trail rising high above the lake. Once over the crest, the terrain was less sloping and we soon arrived at the destination where three other Indians were at work. Inside the corral they would rope the wild horses and manage to get them down and "short hobble them," that is, tie a rope from one hind leg to the opposite front leg. Tied in this manner, the horse could walk but couldn't run, and they would be able to lead them down to their headquarters. The four of them were doing real well and finally roped the last one—a big buckskin stallion. They managed to get him roped and hobbled and were starting out the gate with him when he broke loose somehow. Several of the riders were already on their horses. "After him, after him!" they shouted as the stallion neared our position. We just froze in our saddles as it would mean taking off on a downhill slope among a bunch of rock outcrops—pure suicide for the amateur—so all we could do was wanly wave an arm. But those two Indians took off in a gallop and roped that horse out there in the open. It exceeded any exhibition you could see in a rodeo.

We left the northern part of the lake heading along the east side edge of the lake, eventually working our way to Nixon. There was one place where the only trail was a narrow path along what was almost a cliff and it seemed like several hundred feet almost straight down to the lake shore. I was hoping my horse was surefooted, which he was, but the pack animal I was leading had one hind foot slipping over the edge and, if I had not pulled hard on the lead rope, I think we would have lost him. Fortunately, this hazardous section was only over a short distance. That afternoon, we stopped to spend the night where the Indians had another corral and a small stack of hay. When we got ready to put our sleeping bags on the ground for the night, Pat had the bright idea to get some of the hay and put it under our bed to make it more comfortable. It sounded good to me so we did that and turned in. In the morning as we got up, both of us were itching something fierce and soon discovered the cause. There were little minute critters crawling everywhere—chicken mites! A bunch of chickens had nested in the hay before it was hauled to the site. We went down to the lake and jumped in, clothes and all, and then took off the duds and hung them over the brush to dry. I wore a Stetson western hat, which I liked. Taking it off, I could see those minute forms racing around inside my hat. I tried to rid them by holding the hat over the flames of our campfire. I killed the mites but, sadly, ruined my hat.

Later, down near the lakeshore, we ran into some very young coyote pups. I thought I would try to catch one. I had my jacket off and ready to put over the pup, but that little fellow could just keep out of my reach and, finally, I gave up the chase. I don't really know what I was doing this for other than the challenge.

Finally, we managed to get the pickup out to our work location. We tied the horses up to the pickup and one horse managed to kick out a headlight. Then, one horse got loose and stole away in the night. Fortunately for us, the horse headed straight for home and was there when we checked with the owner. It was unusual though since he had to cross two cattle guards in the process.

It was now about the first of June and we found quarters in Nixon. We had an old house, a two-story affair, which had been made into several apartments. At one time, it served as the residence of the Bureau of Indian Affairs administrator for the reservation. I was able to bring my wife down from Lovelock as we were done with our campouts. She had never been around any Native Americans so it was a novelty to her. She noticed, particularly, the babies in their traditional "Papoose Carrier." Pat even bought one to take home to his wife. I often wondered if they ever used it. Every year there was a big rodeo in Winnemucca around the Fourth of July and the local tribe was practicing their ceremonial dance during some of the

evenings. It sounded so strange at first but we got used to the sounds. There was a cemetery about a half block back of the house and some of the headstones dated back to the Civil War period. It was odd that I was to read in the *Sacramento Bee* newspaper around 1985 that, in doing some excavation work around this cemetery, they uncovered some gold coins dating back to the 1860's.

Now that we had a kitchen, we took advantage of the Trading Post offerings and had a number of good steaks and other good cuts of meat. Pat had checked a book out of the University of Nevada Library regarding Pyramid Lake. It was about the findings of an Army group sent out to make a reconnaissance survey and search for an outlet from what is now the Great Basin to the Pacific Ocean. This was done around 1860 or so, I think. Anyway, it had good sketches of the so-called "pyramids" and other prominent features, descriptions of vegetation, locations of water sources, and an analysis of some of the water from springs. It mentioned that Fremont had passed by the lake at an earlier date and the lake level at that time. We thought we passed near the same spot but the lake level was many feet lower than when Fremont made his observations.

It must have been the year of the rabbit. Traveling from Wadsworth to Nixon after dark was almost sickening. So many rabbits raced across the road under the glare of your headlights only to hit the bumper and wind up as "road kill." This abundance of rabbits no doubt increased the coyote population and probably was followed by a disease, which decimated the rabbit world.

We were busy trying to catch up with some map compilation in the "office" at Nixon. It was almost the last of June. Suddenly, Pat got a telegram telling us to take all of our equipment and leave the reservation and come to Berkeley immediately. We had to be off of the reservation before the first of July. We didn't know the reason for the sudden exodus but orders were orders. We took the pickup back to Yerington and got an earful about the condition of the vehicle but those in the know realized that this was to be expected if you were to do much fieldwork. They wanted me to take another vehicle to Berkeley, so Judy and I went in it and I reported to Stan Cosby at the Regional Office. He explained the reason for our quick getaway from the reservation. Harold Ickes was then the Secretary of Interior and, of course, Indian lands were under the Department of Interior. He could be a feisty person at times and he must have gotten into a squabble with someone in the Department of Agriculture of which the SCS was a part. Perhaps it was with Henry Wallace, the Secretary of the Department of Agriculture. Anyway, he told the SCS head to get its men and equipment off of Interior lands before July 1 or he would see that men and equipment were transferred to the Interior.

We stayed in Berkeley a few days and then found out I was to be transferred to Escondido, Calif. Judy and I caught the train at the Berkeley Depot and went back to Nevada to get our automobile and then would drive to Southern California.

## Detail to Elko, Nevada

*Grant Kennedy*

During World War II, they discontinued Mobile Soil Surveys; at least they didn't have them in the Region where I was working. The Regional Office had been moved to Portland and served California, Nevada, Oregon, Washington, Idaho, and Utah. Then, State Offices came into being and we got most of our orders from this office. Someone, however, thought up the idea of a detail, which in itself was a temporary assignment. In about May of 1947, I was asked to go to Alaska. I balked a bit because I had recently spent a year overseas in the Army and did not want to be away from my family so soon. Then, in 1948, I was asked to go on a detail to Nevada to which I agreed as it was to be of short duration. I was living at Escondido, California at the time, making Conservation Soil Surveys for farms and ranches in San Diego County.

I left Escondido in my government pickup on the 13th of July, 1948. I drove via Hwy. 395, which crossed the Mojave Desert, to Bishop and into Reno, Nevada. I was driving a Chevrolet pickup equipped with a spare gas tank and another tank for water. This vehicle also had boxes on either side of the bed where we could store some equipment and food items. On the 14th, I reported for duty at the State Office in Reno. George Hardman was the state conservationist at the time and Henry Fox was the state soil scientist. I was sent to Elko to report to Royce Hermanson, then the area conservationist, and was told that I would be working under the guidance of Ed Naphan, soil scientist working out of Elko at the time. I knew Ed as we worked on a soil survey together at Julian, California, in 1942. Lou Langan had recently come to work with the SCS and he would be working with me during this short assignment.

At this time, the SCS soils personnel were making Conservation Surveys. I suppose this was to be a method of speeding up the process of getting soils information for planning on individual farms at a time when the number of Soil Conservation Districts was rapidly expanding. Farms and ranches were done as needed for planning and these were usually mostly scattered rather than in blocks resulting in what we used to call "spot surveys." A National and Regional Soil Survey Guide was issued indicating the procedures to be followed. Soil differences were delineated and soil legends had provisions for a code symbol that indicated the depth, texture, permeability, and other features of each soil delineated. The soil symbol itself supposedly described most of the information for the planner's needs. Soil series were not mapped and there was no correlation between soils with like symbols. These surveys served an immediate need but, after a few years, they went by the wayside as legends were lost and, in most cases, it would be hard to determine some properties of delineated soils. It seemed to be the best step at the time, since they were used in "uncharted waters," where nothing had been done previously in the way of soil surveys.

We were using a plane table to make the base map and delineate the soils. Aerial photos were not available at the time, which was understandable. Ranches were widely scattered and interspersed with rangeland. The cost of flying the area was then beyond budget allocations. Photos would have been nice where soil boundaries were intricate or not obvious at ground level. Lou Langan and I alternated at operating the plane table and being the rodman or flagging needed points on the landscape. We carried our sleeping bags and some food, mostly canned items, and stayed out in the field all week sometimes, staying in a bunkhouse and taking meals at the ranch where we were working.

We surveyed several ranches that were a reasonable distance of Mountain City, north of Elko near the Idaho line. We stayed in Mountain City at the hotel when doing this work. Neither of us was acquainted with the hotel when we first registered at the desk. We climbed the stairs and found our room. It was a bare bones situation of an aging hotel. There sat an ancient double bed with those fine woven springs of yesteryear that, when occupied, sagged and assumed the shape of a hammock. Somehow, we hadn't asked anything about the room and I guess we expected to find two bunks in the room. We decided that our camp cots would be better, providing the stern landlady at the desk would permit us to use them in the room. Down to the desk we went, and Lou, carefully selecting his words, asked if we could use our camp cots in the room. We thought we might offend her and she would give us the old heave-ho. It was the only place around and we could get meals there. Besides, down the hall were facilities that included a shower, a highly desirable item after tramping around in the sagebrush all day. Perhaps customers weren't too plentiful and she agreed to our proposal, so we lugged our things upstairs.

The weekends were spent in Elko. We felt luxurious in our modest motel—our employers at that time weren't overly generous with per diem and some even seemed to feel that since you were roughing it, you didn't need much. This was to change for the better, probably, in the sixties. So we cut a few corners to make out. Lou and I got together with Ed and laid out our strategy for the week ahead. On Sunday morning, we always went to a cafe near downtown and had steak and eggs for our breakfast. Sometimes we made a safari to the Commercial or the Stockman's Hotel. We liked the fare at the Star Hotel that served the Basque meals and had some of our meals at this establishment when we were in town. Bing Crosby owned a ranch in Elko County at the time, and he and his sons were supposedly in and out of town that particular summer. The weekends seemed all too short, and, on Monday mornings, we headed out for the week. We were usually faced with the 90-mile drive to Mountain City, with the Dinner Station being the only potential stop along the route.

The time flew, and soon the 60-day detail came to an end. I drove to Reno, leaving there on the 13th of September and arrived in Escondido on the 14th.

## **Individuals Involved in the Nevada Soil Survey Program from 1938 to 1950**

### *USDA Soil Conservation Service*

**Barber, H. N.**

Better Land Use in the White Pine Soil Conservation District, Nevada

**Eckholm, Oke**

Soil Survey of the South Fork Purchase Tract, Lee, Nevada

**Goff, Arthur M.**

Soil Survey of the South Fork Purchase Tract, Lee, Nevada

**Graham, Fred U.**

Soil Survey of the Walker Indian Reservation, Schurz, Nevada

**Holmgren, George**

Conservation Planning Surveys, Washoe County, Nevada

**Houghton, Haley F.**

Soil Survey of the South Fork Purchase Tract, Lee, Nevada

**Johnson, Cale C.**

Soil Survey of the Virgin Valley Conservation District, Nevada

Soil Survey of the Moapa Valley Conservation District, Nevada

**Koch, Edward C.**

Soil Survey of the Mason Valley Conservation District, Nevada

Soil Survey of the Carson Valley Conservation District, Nevada

Soil Survey of the Smith Valley Conservation District, Nevada

**Langan, Lou N.**

Conservation Planning Surveys, Elko County, Nevada

**Leifer, Lewis G.**

Soil Survey of Bottom Lands of the Meadow Valley Conservation District,  
Lincoln County, Nevada

**McCormick, John A.**

Soil Survey of the Mason Valley Conservation District, Nevada

Soil Survey of the Carson Valley Conservation District, Nevada

Soil Survey of the Smith Valley Conservation District, Nevada

Better Land Use in the Moapa Valley, Nevada

Better Land Use, Fernley, Nevada

**Naphan, Ed**

Humboldt East (Paradise Valley), Nevada  
Conservation Planning Surveys, Elko County, Nevada

**Olds, Clarence R.**

Soil Survey of Walker River Indian Reservation, Schurz, Nevada

**Pattengale, Paul S.**

Soil Survey of Pyramid Lake Indian Reservation, Nixon, Washoe County,  
Nevada  
Soil Survey of Walker River Indian Reservation, Schurz, Nevada

**Reveal, Jack L.**

Soil Survey of the South Fork Purchase Tract, Lee, Nevada

**Smith, Ralph T.**

Soil Survey of the Mason Valley Conservation District, Nevada  
Soil Survey of the Carson Valley Conservation District, Nevada  
Soil Survey of the Smith Valley Conservation District, Nevada

**Swenson, John**

Conservation Planning Surveys, White Pine and Elko Counties, Nevada

**Taylor, William D.**

Soil Survey of the Virgin Valley Conservation District, Nevada  
Soil Survey of the Moapa Valley Conservation District, Nevada  
Soil Survey of the Pahranaagat Valley Conservation District, Nevada

**Wallace, Atwell M.**

Soil Survey of Pyramid Lake Indian Reservation, Nixon, Washoe County,  
Nevada  
Soil Survey of Walker River Indian Reservation, Schurz, Nevada

*Soil Survey Technical Support*

**USDA Soil Conservation Service**

**Cosby, Stan**

Regional Soil Scientist  
Berkeley, California

**Fox, Henry**

State Soil Scientist  
Nevada State Office

**Roberts, Ray**

Soil Correlator  
Berkeley, Calif.

**Wohletz, Leonard**

Berkeley, Calif.

**U. S. Department of the Interior**

**Galloway, Fred**

Northeastern Nevada Cooperative Land Use Study

**Jacobsen, Chester**

Northeastern Nevada Cooperative Land Use Study

**Kennedy, Grant M.**

Soil Survey of Pyramid Lake Indian Reservation, Nixon, Washoe County,  
Nevada

Soil Survey of Walker River Indian Reservation, Schurz, Nevada

Conservation Planning Surveys, Elko County, Nevada

Northeastern Nevada Cooperative Land Use Study, Nevada

**Orton, Otis L.**

Better Land Use in the White Pine Soil Conservation District, Nevada

Northeastern Nevada Cooperative Land Use Study, Nevada

**Shipley, Mark**

Northeastern Nevada Cooperative Land Use Study

**York, Charlie**

Northeastern Nevada Cooperative Land Use Study

## The Third Era, 1950 to 1970

Field parties produced many Order 2 soil surveys during this time period. The first of these detailed surveys was the Las Vegas and Eldorado Valleys Area, which was completed in 1957. The possibility of developing land for agricultural uses was the driving force behind starting this survey.

According to Lou Langan, this soil survey had as much utility, if not more, for engineering potential interpretations as for agricultural land potential. Urban development placed increased importance on identifying soils with petrocalcic horizons so that excavation contractors would not lose their shirt planning and installing pipelines across soils with these hardpans.

Jackhammers were first used in 1955 to dig through the extremely hard, indurated petrocalcic and duripan horizons. A backhoe was first used in Nevada a year later to accurately describe soil profiles of soil pits. Ed Naphan and Lou Langan were instrumental in showing the genetic relationships of petrocalcic horizons, and of duripans and their separation. Before using this equipment, these layers were considered equivalent to bedrock. Prior to the late 1970's, Nevada owned and operated its own backhoe. After that time, ownership policy changed and backhoes were rented from that time forward.

The Las Vegas and Eldorado Valleys Area Survey explained why homes had been destroyed because of swelling soils. Salts in the soil became deliquescent at air temperatures of 41 to 45 degrees F. Upon becoming deliquescent, the salts (sodium sulfate) in the soils took on 10 molecules of water in the atmosphere. In so doing, the soil would swell, resulting in a maximum displacement of the house roof as much as 18 inches, and concrete slab floors rose as much as 3 feet. These swelling salts were found in the Land Series. The definition of the Salic horizon in taxonomy started with the Land Series.

Lou Langan was the soil correlator in the Nevada State Office during the latter 1950's. During this time, the third and fourth approximation definitions of soil taxonomy were being tested. Once or twice a year, Lou would travel to the regional office in Berkeley, California, as Lou says "fully prepared," and meet with Guy Smith and representatives of other western states to discuss needed criteria for taxonomic separations. Taxonomic placement problems derived from field mapping in Nevada, such as soil horizons with high temporary water tables and high in salt, were proposed and discussed resulting in a salic horizon. A major accomplishment took place during testing of the third approximation in Berkeley when it was decided that there would be ten Soil Orders. These defined clear-cut separations between soils in the eastern part of the country from soils in the western part. A major accomplishment of the fourth approximation was defining soil families. Soil temperature regimes were also discussed and defined. Spit and polish of the aquic soil moisture regime were applied at these sessions, as well. This provided better representation of the wet soils in Nevada, which are on the "dry end of the aquic spectrum."

The need to recognize very fine and fine textural families came as a result of the final field review for the Lovelock Area. Guy Smith, Lou Langan, Ed Naphan, Bill Johnson, Jack McClelland, and George Harper attended this final field review. Separation of the Humboldt Series and the Ryepatch Series was based on percent clay in the control section. The Ryepatch Series has in excess of 60 percent clay and is placed in a very fine family; the Humboldt Series has 40 to 60 percent clay and is placed in a fine family. Lou is thankful for a molybdenum study conducted by Joe Kubota. The Lovelock Series, which had been determined by field textural analysis to be a silt loam, actually had 70 percent clay, much of which was diatomaceous earth and volcanic ash.

During this time, Ed Naphan was offered a job in Washington, D.C., but declined and stayed in Nevada as state soil scientist. Lou Langan relates that Ed Naphan did more for the soil survey program in Nevada than anyone else did. Lou is thankful for his association with Ed. However, Lou says that when camped in the field, you did not let Ed cook because, if he did, he would fry garlic and that is what you would eat. Also, when Ed chose the campsite, he found the highest, rockiest, driest, windiest place he could find. According to Les McKenzie, Ed said you needed to do that to keep the mosquitoes away.

Conservation planning surveys were still actively being done until the mid-1950's. Les McKenzie was involved with this mapping in Elko County. As range conservationist, Les completed conservation surveys on ranch areas that were dominated by native range. Les indicates that he mapped at a rate of about 1,500 to 2,000 acres per day. Range condition was established by whether the plant community was dominated by increasers or decreasers. Some clipping work was completed to verify range production estimates. It was generally assumed that there were 4 acres per cow per month (AUM) on a typical sagebrush-grass plant community. It wasn't until the mid-1950's before range conservationists in Nevada started to develop range sites.

Les McKenzie remembers, "We started identifying range sites and writing up some kind of description for them in the early 1950's. They had names like Upland Loam, Stony Claypan, Steep South Facing Slopes, etc., that kind of generally described their position and maybe the textures of soil they might occur on. The early site guides were loosely tied to the fractional soil symbols and each had a list of species we thought might occur in them, together with about how much of each would be counted toward the condition rating score. It was more of a consensus thing, developed in a meeting of all the soil scientists, range conservationists, soil conservationists, work unit conservationists, and others that were working with them. Later, we started doing clippings to more closely tie them down. The real "scientific" approach wasn't started until "modern" soil surveys, such as Tuscarora Mountain, were begun."

"In the 1960's, water use-planning money became available and Ed Naphan pursued reconnaissance soil surveys, as the amount of money available was insufficient to conduct Order 2 soil surveys," said Dr. Fred Peterson. "The funds

that were available for these water-use planning surveys were required to go through the University of Nevada, and this is the reason I was hired at UNR.”

Major field work for the Tuscarora Mountain Soil Survey was completed from 1960 to 1966. According to Eddie Spencer, this survey was one of three pilot surveys in the United States that was a cooperative effort with the Bureau of Land Management (BLM). The BLM began evaluating the utility of soil surveys for its programs in Nevada in 1961. In that year, the Elko District assigned a range conservationist to work with the SCS soil survey party in the Tuscarora Mountains to evaluate the correlation of soils with potential vegetation relationships, and to determine if soil surveys would facilitate the BLM range inventories. The pilot survey led to the Bureau’s policy, issued in November 1964, that soil surveys were not needed for the Bureau’s resource management programs. This policy lasted until 1973 when cooperation with the SCS resumed with an interagency agreement for a soil survey of part of the Ely District. <sup>4/</sup>

<sup>4/</sup> Pernerling, James A.; The Soil Survey Program of the Bureau of Land Management Past, Present and Future; United States Department of the Interior, Bureau of Land Management; October, 1980.

## **Individuals Involved in the Nevada Soil Survey Program from 1950 to 1970**

### *USDA Soil Conservation Service*

#### **Alexander, Earl**

Reconnaissance Surveys of Railroad and Dixie Valleys, Nevada

#### **Archer, Warren M.**

Soil Survey of Diamond Valley Area, Nevada

Soil Survey of Tuscarora Mountain Area, Nevada

Soil Survey of Churchill County Area, Nevada

Fort McDermitt, Part of Soil Survey of Humboldt County, Nevada, East Part

#### **Badura, George**

Soil Survey of Surprise Valley-Home Camp Area, California and Nevada

#### **Bagley, Donald G.**

Conservation Planning Surveys, Elko County, Nevada

Soil Survey of Virgin River Area, Nevada and Arizona

Soil Survey of Meadow Valley Area, Nevada and Utah

Soil Survey of Surprise Valley-Home Camp Area, California and Nevada

#### **Borup, Harry J.**

Soil Survey of Meadow Valley Area, Nevada and Utah

Soil Survey of Carson Valley Area, Nevada

Soil Survey of Pahrnagat-Penoyer Areas, Nevada

#### **Candland, David M.**

Soil Survey of Tuscarora Mountain Area, Nevada

#### **Cole, E.**

Soil Survey of Lovelock Area, Nevada

#### **Davis, Elmer**

Conservation Planning Surveys, Eureka and White Pine Counties, Nevada

#### **Dimick, Edwin G.**

Soil Survey of Tuscarora Mountain Area, Nevada

#### **Dollarhide, William E.**

Soil Survey of Fallon-Fernley Area, Nevada

**Downs, Joseph**

Soil Survey of Las Vegas Valley Area, Nevada

**Endo, A.**

Soil Survey of Carson Valley Area, Nevada

**Garlick, Glen W.**

Soil Survey of Carson Valley Area, Nevada

Soil Survey of Tahoe Basin Area, California and Nevada

Soil Survey of Big Smoky Valley Area, Nevada

Soil Survey of Virgin River, Area, Nevada and Arizona

Conservation Planning Surveys, White Pine County, Nevada

**George, C. J.**

Soil Survey of Las Vegas and Eldorado Valleys Area, Nevada

**Harper, W. G.**

Soil Survey of the University of Nevada Valley Road Farm, Nevada

**Kennedy, Grant M.**

Soil Survey of Tahoe Basin Area, California and Nevada

**Langan, Lou N.**

Soil Survey of Las Vegas and Eldorado Valleys Area, Nevada

Soil Survey of Pahrnagat-Penoyer Areas, Nevada

Soil Survey of Carson Valley Area, Nevada

Soil Survey of the University of Nevada Valley Road Farm, Nevada

Soil Survey of Lovelock Area, Nevada

Soil Survey of Humboldt County, Nevada, East Part

Soil Survey of Lincoln County, Nevada, South Part

Soil Survey of Fallon-Fernley Area, Nevada

Hawthorne Naval Ammunition Depot, Nevada

Fallon Naval Auxiliary Air Station, Nevada

Conservation Planning Surveys, Mason Valley, Smith Valley, and Truckee Meadows, Nevada

**Larsen, Leland I.**

Soil Survey of Las Vegas and Eldorado Valleys Area, Nevada

Soil Survey of Tahoe Basin Area, California and Nevada

Conservation Planning Surveys, Elko, White Pine, and Humboldt Counties, Nevada

**Levitt, Dee**

Conservation Planning Surveys, Eureka County

**Link, Victor**

Conservation Planning Surveys, Elko County

**Malchow, R.**

Soil Survey of Surprise Valley-Home Camp Area, California and Nevada

**Mayhugh, R.**

Soil Survey of Lovelock Area, Nevada

**Porter, M. K.**

Conservation Planning Surveys, Elko and Humboldt Counties, Nevada

**Rogers, John H.**

Soil Survey of Carson Valley Area, Nevada

Soil Survey of Tahoe Basin Area, California and Nevada

**Rooke, Lloyd**

Soil Survey of Pahrnagat-Penoyer Areas, Nevada

Soil Survey of Diamond Valley Area, Nevada

Soil Survey of Las Vegas and Eldorado Valleys Area, Nevada

Soil Survey of Meadow Valley Area, Nevada and Utah

**Spencer, Eddie L.**

Soil Survey of Tuscarora Mountain Area, Nevada

Soil Survey of Elko County, Nevada, Southeast Part

**Strong, Richard D.**

Soil Survey of Tuscarora Mountain Area, Nevada

**Summerfield, Harry B.**

Soil Survey of Surprise Valley-Home Camp Area, Nevada

Railroad Valley Area, Nevada

Toiyabe National Forest, Nevada, Central Parts of Eureka, Lander, and Nye Counties

**Townsend, M.**

Soil Survey of Carson Valley Area, Nevada

Soil Survey of the University of Nevada Valley Road Farm, Nevada

Railroad Valley Area, Nevada

Soil Survey of Fallon-Fernley Area, Nevada

**Wilde, Russel**

Soil Survey of Surprise Valley-Home Camp Area, California and Nevada

Soil Survey of Lyon County Area, Nevada

**Williams, Les**

Soil Survey of Surprise Valley-Home Camp Area, California and Nevada

**Yamamoto, Leo**

Soil Survey of Lander County, Nevada, North Part