

THE PLIGHT OF THE DESERT TORTOISE

A SURROGATE FOR SOCIAL CHANGE

by

Cliff Gardner

The Problem

Today, here in the United States, there are great injustices occurring because of the Endangered Species Act. Unfortunately, in most instances the Act is not being implemented to protect species, but rather as a tool to further the goals of those who would have government control all resources.

There is no better example of just such a situation, than is the listing of the Desert Tortoise as a threatened species, as it involves the people and deserts of Southern Nevada.

There is no historical or scientific evidence to support such a listing, yet our government is imposing regulations, grabbing land, and extracting millions of dollars from innocent people on a wholesale basis, all in the name of protecting the desert tortoise.

There can be no other definition for this situation other than fraud and extortion.

Background

The Environmental Movement is based on the assumption that all was optimum prior to the coming of white man, that grass was tall, lakes and rivers were crystal clear and wildlife was evident at every turn.

But, historical records and first hand accounts indicate otherwise. When Jedediah Smith, Peter Skeen Ogden, and John Fremont first made tracks throughout the West, they found the rivers muddy, the grass poor, and game hard to find.

The truth is, these men and others like them, in order to survive, learned to live as the Indians lived, relying at times on insects, and dog, and horse meat in order to survive.

Once white man began settling the region many changes began to occur. First, these people from far off lands had been exposed to ideas and practices developed throughout the world. They had knowledge of agriculture, cloth, metal and gun powder. They had domestic animals; horses, cattle, chickens, and pigs. Rather than spending their time moving from place to place they took up land, remained in one place, dependent on their agriculture. Their greatest need then was to protect their crops; their pigs, their chickens and their livestock. And this they did with guns, traps, or by whatever means.

By the turn of the century every country store across America was selling reasonably priced 22 caliber rifles. Stevens, Winchester, Savage, Marlin and Remington were making 22 rifles that sold for \$1.98 to \$7.00 a piece, depending on the make and model.

Every boy, white and Indian, along with their fathers and many of their sisters were controlling predators. By the 1920's large numbers of men in every community were trapping during the winter months. School age boys, too, had trap lines that they tended going and coming from school. Coyotes, bobcats, badgers, skunks and weasels, nearly all fur-bearers, were fair game. Crows, magpies, and chicken-hawks were shot on sight. Then in 1912 there was a major outbreak of rabies in central Nevada. So bad was the epidemic, that rural families had to keep their children and dogs locked up or fenced in.

By 1914 the rabies epidemic had spread to nearly all the Western States. It became a National health problem. In July of 1916, Senator Key Pittman of Nevada sponsored a bill through Congress appropriating \$125,000.00 for rabies control.

In the 1930's toxins, (primarily strychnine) and airplanes were being used to control predators. The results were phenomenal. Coyotes, skunks, and crows and other predators became few, while deer herds exploded. In many areas sage chickens could be harvested "by the gunny sack full". Ducks and other waterfowl clouded the skies and song birds were everywhere.

It was at this very same time that the greatest numbers of tortoises were also seen.

So why then have tortoises decreased?

It was in the 1950's when our government began reducing predator control, first by discontinuance of bounty systems, and by requiring absolute proof that predators were destroying livestock before action could be taken, then later by outlawing the use of toxins, reductions in predator control funds and by not allowing predator control on Wildlife Refuges and Wilderness Areas.

Such measures have had a profound effect. Not only has the curtailment of predator control helped put thousands of families out of the sheep business, but deer, duck, upland game, song bird, and desert tortoise populations have decreased as well.

But predation is not the whole story, reductions in livestock grazing has had negative effects as well.

As Vernon Bostick has so ably explained in his Thesis, ECOLOGY OF THE DESERT TORTOISE IN RELATION TO CATTLE GRAZING:

Cattle are adapted to grazing grasses. They have no front teeth in their upper jaw. They graze by wrapping their tongue around a clump of grass and slicing it off with their lower teeth, they can't graze plants as closely as animals can that have incisors in both jaws.

The survival of annuals from year to year depends on producing seed. The plant must shoot up as quickly as possible, flower and mature seed before the soil moisture is depleted, a period of about 40 days. The usefull part of the plant to tortoises grows out of reach verry quickly. But if a cow comes along and happens to graze a plant of the few species used by the desert tortoise, it will put food on the table for the tortoise.

An annual plant will not give up the race to produce seed because a cow nipped off the terminal shoot. The plant orders a lateral bud to develop into a new shoot, but the plant lacks the authority to designate which lateral bud will develop. So four or more buds will develop new shoots. These all produce tender tips and day-old leaves within easy reach of a tortoise.

...Toothless Tortoises can use only tender leaves close to the ground, they can't climb; they don't stand erect and stretch their necks out like a gerenuk to get leaves out of reach...

Tortoises have no teeth, no gizzard, no way of masticating their food. They are light and very picky eaters. They select the most tender and most nutritious parts of the plants on which to feed; these are the tender tips and day old leaves.

This is not theoretical. This phenomenon has been known for many years. It is called stooling. Grazing winter wheat will make the plant produce extra stems and thus increase the grain yield. Flowers of some plants are the part preferred by tortoises. If a cow grazes this plant, it will produce many more flowers. Florists are well aware of this; they cut chrysanthemums back several times during the early part of the growing season. Each time they cut the plant back, it increased the production of flowers four or five fold.

[But the beneficial aspects of grazing do not end here.] On the Nevada Test Site where cows have been excluded for many years, tortoises have a tough time making it every year. The greatest death loss in Nevada in 1981 [a severe drought year] was in a pasture (Crescent Valley Allotment) where cows had been excluded all year. On the adjoining Christmas Tree Pass allotment which was grazed all year long, the tortoises were relatively unaffected by the severe drought.

...The (reason) is very simple: Cows provide tortoises with both food and drink. In doing so they not only prevent die-offs in dry years but they relieve the multiple and continual stresses which affect all tortoises "Protected" from cattle Grazing.

Let's first see how cows provide water to tortoises when it is not raining, and on the desert that is most of the time. A favorite food of desert tortoises is fresh cow dung... In flat country... cattle will range as much as four miles from water, thus, from one watering place, cows can distribute water to tortoises on over 50 square miles. A cow distributes 12 cow-pies each day. The more cows on the range, the more watering places there will be for tortoises, and the more likely it will be that a tortoise will find a life sustaining cow-pie...

A crust forms on cow-pies which retards evaporation; the interior dries out very slowly... Cows can, therefore, supply water to tortoises for several weeks after they leave the range. ...

Cows contribute to tortoise nutrition in another and maybe even more important way. Tortoises have no teeth and no gizzard for grinding food. With no way to masticate food they have to be very picky eaters--like people who wear dentures would be if they came to dinner without their dentures. There are times in dry seasons and especially dry years when there is no forage available that tortoises will or can eat. Cows on the range solve this problem for the tortoises.

Cows drink up to 20 gallons of water a day and so can make use of dry grass. If there are no perennial grasses, cows will browse on shrubs. They spend a lot of time masticating this woody food source and the microflora in their intestinal tract aids in breaking it down and making it more digestible. Cows are not able to assimilate all of the nutrients in their food, so a lot of good nutrients are voided with the cow-pie. With cows to harvest it, masticate it and partially digest it, the coarse perennial forage on a range becomes available to tortoises.

There is nothing new or unique about this. With other animals, it has been known all over the world for ages. For example: The only food source for the six species of fish that inhabit Mzima Spring in Kenya is the coarse sedges that grow on the margins of the pond. Without the help of hippos, this food source would not be available to the fish...

If you find it hard to believe that solid animal waste can be a valuable food resource, I refer you to Western Regional Extension Publication No. 39, "By-Products and Unusual Feedstuffs in Livestock Rations." (included as a part of this presentation.) It is common practice for feed mills to add up to 20 percent animal feces to their prepared feeds to increase the nitrogen analysis. California law limits them to 20%. The millers generally use chicken droppings because they retain the nitrogen lost as urine with steers, and thus for equal weight give a bigger boost to the feed analysis.

Cow manure is 12 percent protein. This is twice the protein content of green grass and five times the protein content of dry grass. Nagy and Medica emphasize the deleterious affects of an excess of potassium in the tortoise diet.¹ Tortoises don't excrete potassium in urine as other animals do because they retain their urine to conserve moisture and avoid dehydration. They could precipitate potassium and get rid of it as solid waste, but this takes eric acid and uric acid requires protein and their diet is deficient in protein. The required protein would have to come from catabolizing their tissues. If cows are on the range, they can supply tortoises the needed protein.²

Misinformation

Perhaps it was Kristin Berry more than any other person who laid the groundwork necessary for the listing the Desert Tortoise as a threatened species. In an article titled "Tortoises for Tomorrow" published in the Nature Conservancy News in 1979, Dr. Berry wrote:

The Desert Tortoise ...was once widespread in the southwest deserts of California, extreme southwestern

Utah, Southern Nevada and western Arizona. Until the 1930's and in some places until the 1950's, population densities of several hundred tortoises per square mile could be found in parts of it's geographic range. Long time desert residents in California noted extraordinary densities that could have been as high as 2000 per square mile. Colbert Exraud, now the owner of Colbert's Old Indian Museum near Palm Springs, remembers this era. He lived on a ranch in the Western Mohave Desert when he was young, and travelled with his uncle to drill wells for water from 1921 to 1931. In those days he could find 20 to 30 tortoises within a half-hour. Toby Johnson, now a County Supervisor in Sacramento, spent the spring and summer of 1933 working as a recorder for the U.S. Geological Survey in Antelope Valley, when the tortoises "were everywhere...all over the ground." He saw over 100 in one place at one time. Roberta Starry, an historian, author, and naturalist, recalls seeing 150 to 200 at one time in a small valley near her home in western Mohave Desert in the early 1950's.³

Although Dr. Berry does not actually say that tortoises were forever abundant before white man came on the scene, she projects that conclusion. And for those who believe that all resources should be managed by government, such language once in place, and being recognized as that of a leading tortoise authority, was enough to justify a listing.

Then on following pages, Dr. Berry went on to name those she thought were responsible:

Habitat deterioration and loss is by far the most serious danger to the desert tortoise. Agriculture, urban development, creation of dirt and paved roads, military maneuvers, off-road vehicle use, and mining and energy development all threaten the existence of these slow moving, shell-backed creatures...

The impact of roads and trails on tortoise terrain is dramatically obvious, but the subtle effect of livestock grazing cannot be underrated as a danger. Cattle and sheep have browsed desert ranges since the 1850's in Nevada, Arizona, and Utah, and since the 1870's in California. Consequently, the land has deteriorated and is now in fair to poor condition. More than 90 percent of the land where tortoises make their home also provides food for livestock. In the resulting competition for food, burrows are trampled, young tortoises crushed, and habitat generally downgraded.⁴

The injustice of the above statements is in Dr. Berry's failure to tell the whole truth. Yes, tortoises were abundant in the late 1920's and into the late 1950's, but not for reasons suggested by Dr. Berry. In truth the great abundance of tortoises found during those years was a product of man and his technology.

And for Dr. Berry and others of her ilk to take advantage of their positions and promote a situation that so alters and destroys the lives and freedoms of so many people, is no less then criminal, particularly in view of the fact that all indications are that it has been government itself, through it's constant reductions in both predator control and livestock grazing that has caused downward trends in tortoise numbers since the 1950's

Research was begun early in 1989 to determine and define all benefits of private agriculture to wildlife. This research has included not only the scientific aspects of that question but the historical aspects as well.

Nearly all of the forgoing conclusion is based on that research, a great part of which has been summarized in three short essays titled, Mountain Man, A Summary Of The Earliest Recorded Western Exploration, ----- The Truth About Wolves In Alaska, Testimony Of Concerned Alaskans, and ----- True Effects Of Predator Control, A Collection of Testimony. All three essays are included as part of this presentation.

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A Historical Perspective

Anyone pursuing the truth needs only to review existing historical records of the Mohave and Sonoran Deserts to understand that desert tortoises were nearly extinct in that region prior to the 1920's.

From Escalante and Garses in 1776, to the journals of Sharlet Hall as she toured the Arizona Strip in 1911, including dozens of accounts given by trappers, explorers, traders and immigrants, comprising a period of over 130 years, nowhere is there mention of desert tortoise being sighted.

Nor is there but one mention of Desert tortoise being used as food, which fact is extremely significant, for in that area and at that time hardship and hunger was the norm and not the exception. The natives of that region except for the best of seasons and the very best years, were forced to live on lizards, grass and grass seed. Their utter poverty attested to by dozens of accounts where Indian parents chose to sell their children into slavery so that they might have a horse to eat.

The earliest explorers, trappers, and traders, and even the settlers wrote continually of harsh circumstances. Even on the best planned excursions, when sheep or cattle were driven along for food, nearly always, before reaching their destinations the parties were forced to live upon the flesh of their mules and horses.

Certainly under such trying conditions, if tortoises had been evident, someone would have mentioned them being used for food.

As Vernon Bostic said "the reason the pioneers did not mention tortoise was because they never saw any."

Sources of Information

More than any other, the book "Old Spanish Trail" by LeRoy R. Hafen and Ann W. Hafen, presents the earliest and most complete historical record of the southwestern region of the United States.

Dr. and Mrs. Hafen did a superb job of research and summary involving dozen of letters, journals, diaries and even court cases, including the accounts of such men as Silverestre Escalante, Francisco Garces, George Yount, Jedadiah Smith, Kit Carson, Ewing Young, Peter Skeen Ogden, William Wolfskill, Antonio Armijo, Thomas Rowland, Dr. John Marsh, John C. Fremont, and Orville Pratt.

Another excellent source of information, is the book, Jacob Hamblin by Paul Baily. Jacob Hamblin, often called the buckskin apostle to the Indians, was called by Brigham Young, in 1848 to serve as Mormon Missionary to the Indians. Jacob Hamblin was instrumental in the settlement of Southern Utah, Southern Nevada and Northern Arizona, and is credited with making peace among the Paiute, Ute, Hopi and Navajo people.

A third example is the book "Sharlet Hall" a diary of a journal through Northern Arizona in 1911, Edited by C. Gregory Crampton. Sharlet Hall was a spunky little lady, born of a pioneering family in Arizona, who in 1909, was appointed Territorial Historian of Arizona. After her appointment, Sharlet spent well over a year traveling the State by horseback and wagon "getting acquainted and obtaining oral history". Then in 1911, after hiring Al Doyle, a retired rancher, as guide, Sharlet set out with light team and wagon, to see the Arizona Strip "that little known region North of the Colorado River."

Actual Accounts

The following excerpts, most of them taken from the above mentioned texts, are presented here to further illustrate our contention that the Great Southwest was no more than a barren and gameless range prior to settlement. The earliest explorers, trappers, and immigrants had a tough time of it. In every instance at some time, somewhere along their way each was to learn first hand what it was like to suffer for want of food and water. The West was tough, tough on men, tough on horses and even tough on the native Indians.

William Becknell in 1824.

William Becknell, sometimes called "Father of the Santa Fe' Trail" in writing of his experiences while trapping "West of the Colorado" in 1824, wrote:

We suffered every misery incidence to such an enterprise ... The flesh of a very lean horse, which we were constrained to break our fest with, was, at the time, pronounced excellent. But when the bones were afterwards served up as a matter of necessary, they were not as well relished ... we subsisted two days on soup made of rawhide we had reserved for sealing our moccasins ... 5

Jedadiah Smith in 1827.

After passing through today's "Escalante's Desert", and while traveling down the Santa Clara River, Smith wrote:

Passing down this river some distance I fell in with some Indians who call themselves Pa-Ulches (these Indians as well as those last mentioned, wear rabbit skin robes) who raise some little corn and pumpkins. The country is nearly desolate of game of any description except a few hares.⁶

Kit Carson in 1829.

The year Kit Carson turned eighteen he joined Ewing Young in a trapping exhibition that eventually led across the central part of Arizona to the Mohave Villages on the Colorado, and on to southern California by way of the Mohave River.

Many years later Kit told of the country and their experiences as they traveled through the western half of today's Arizona, (somewhere between today's Phoenix and the Mohave Villages on the Colorado River.):

"Game was very scarce. After remaining three days continually on the hunt to procure necessary supplies we found we had killed only three deer..." [Then later] "There was no water to be found during this time, and we suffered extremely on account of it. On the fourth day we arrived on the Colorado of the west, below the great canyon. Our joy when we discovered the stream can better be imagined than described. We also suffered greatly for want of food. We met a party of Mohave Indians and purchased from them a mare, heavy with foal. The mare was killed and eaten by the party with great gusto! even the foal was devoured."⁷

William Walfskill prior to 1830.

The people who ventured into the wilderness regions of the west soon learned that in order to survive it was wise to take along various livestock to sustain their parties. As recorded in William Walfskill's overland ledger (in partnership with George Yount and Ewing Young seeking furs on the Colorado River and its branches.):

Beeves were driven along for food. The free trappers were charged: "To his part of 4 beeves \$2.25." When the beeves were gone, the party resorted to horse meat, the account book showing a charge against each independent: "To his part of 2 horses \$4.50."⁸

↕ Antonio Armijo in 1829-30.

Antonio Armijo is credited as being the first trader to take a trading caravan from Santa Fe' New Mexico, all the way through to California. But unlike those who were to follow, Armijo traveled south of the route that was to become known as the Old Spanish Trail, along the northern edge of the Arizona Strip.

Armijo, after crossing the Colorado, and upon encountering the "Payuche" (paiutes) people described them as "Liv[ing] on grass seeds, hares, and rabbits using the skins of the latter to cover a small part of their body."

By the time the Armijo's party had reached the eastern portion of the Majave River, provisions were exhausted. A small party was sent ahead to procure supplies from the first station in California and return to rescue the company. Until their return Armijo's men sacrificed their mounts for food. Armijo's diary read: Jan. 23: "We ate a horse, " Jan 24: "Ditto." Jan, 25: "Ditto." Jan. 26: Ditto: " We ate a mule." The next day the reconnaissance party returned with supplies..

The Workman, Rowland Company, 1841.

In 1841 Four men, Hampton, McClure, Given, and Toomes from Missouri traveled to St. Louis to join the famed Bartlson-Bidwell party in their attempt to reach California via the Platte and Humboldt river. Failing to connect with that party, they joined a New Mexico caravan and traveled to Santa Fe'. There they united with the Workman-Rowland company to reach California by the Old Spanish Trail.

The manner in which early caravans that traversed the southern region in order to survive the desolate and gameless region between Santa Fe' and California was well described by Given in later years.

We supplied ourselves at Santa Fe', with an abundance of provisions, consisting of groceries, flour, hard-tack, dried beef, and buffalo meat, prepared after the manner of the trappers when fitting out an expedition for the mountains - by salting, drying thoroughly in the sun, then pulverizing and packing in buckskin sacks. When we reached the Mexican Village of Abicue (Abiguiu), at the crossing of the Rio Grande, we purchased one hundred and fifty head of sheep, to furnish a supply of fresh meat on our Journey...10

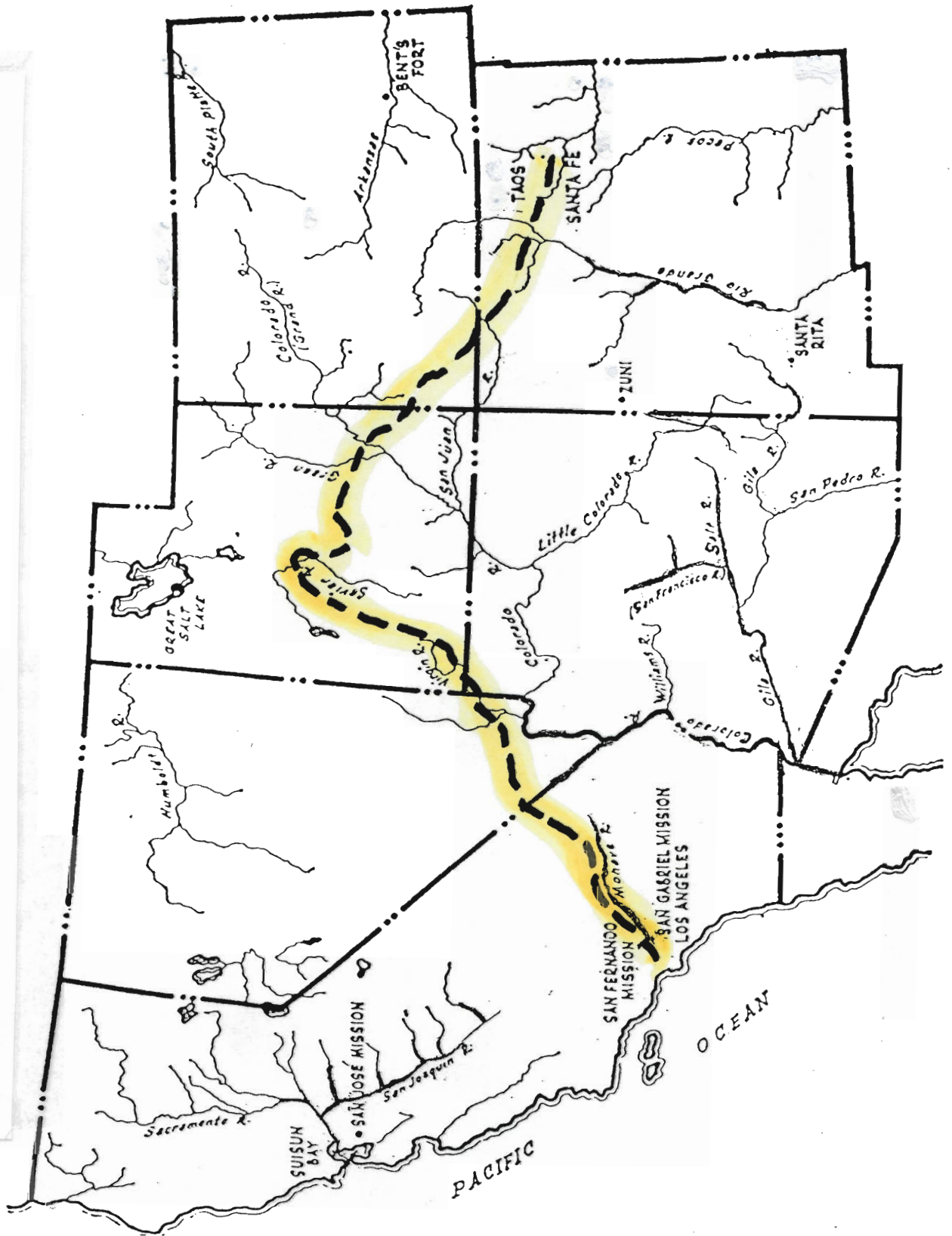
Mormon Settlers 1848.

In the spring of of 1859 a group of Mormon explorers, seeking areas for settlement in Southern Nevada, encountered a lone Indian at his desert camp. One of the party recorded the visit:

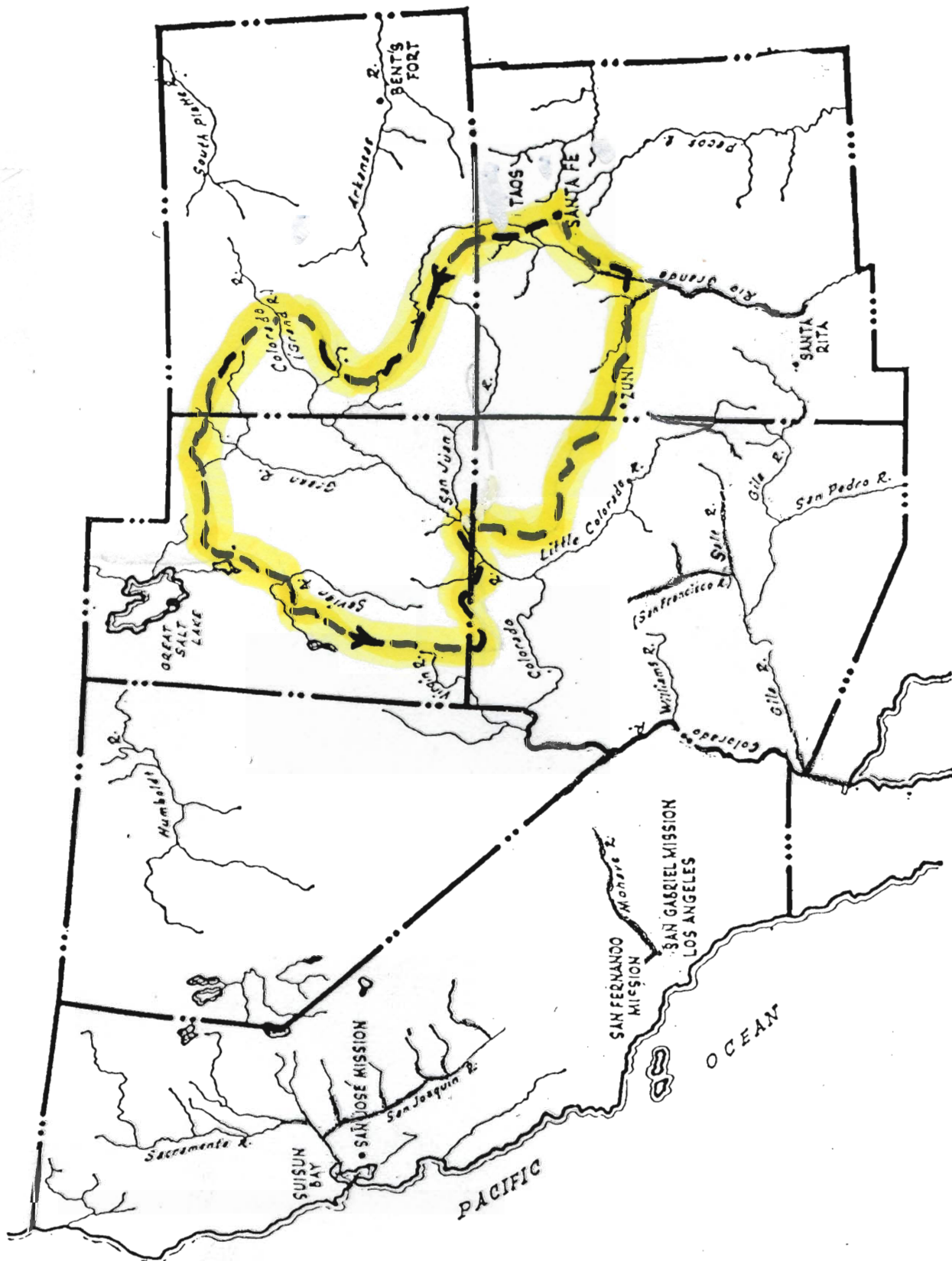
...We gave him food enough to last him, as we supposed, four or five days; but he began to eat and did not cease until none was left. Then he brought out his own store: a mouse, two fild rats, a blue lisard, a foot long, and four rattle snakes. He buried all of these, except the mouse which he took whole, in the hot embers of the fire, and, when roasted, began to eat them... His harrid feast continued until he had finished every thing.... The previous winter hundreds of these Indians had died, living as long as they could upon grass and the inner bark of ceder and juniper trees.11

A hand-drawn map of California, oriented with North at the top. The map shows the state's outline and major geographical features. A large, irregularly shaped area in the central and southern parts of the state is shaded in yellow, representing the Spanish mission system. This shaded area includes the San Joaquin River valley, the San Francisco Bay area, and the coastal region around San Diego. Key locations labeled within the shaded area include San Jose Mission, San Gabriel Mission, San Fernando Mission, and Los Angeles. Major rivers shown include the Sacramento River, San Joaquin River, Colorado River, Little Colorado River, San Juan River, and San Pedro River. Other labeled features include Great Salt Lake, Mono Lake, and the Pacific Ocean. The map is drawn with simple lines and includes a grid of latitude and longitude lines.

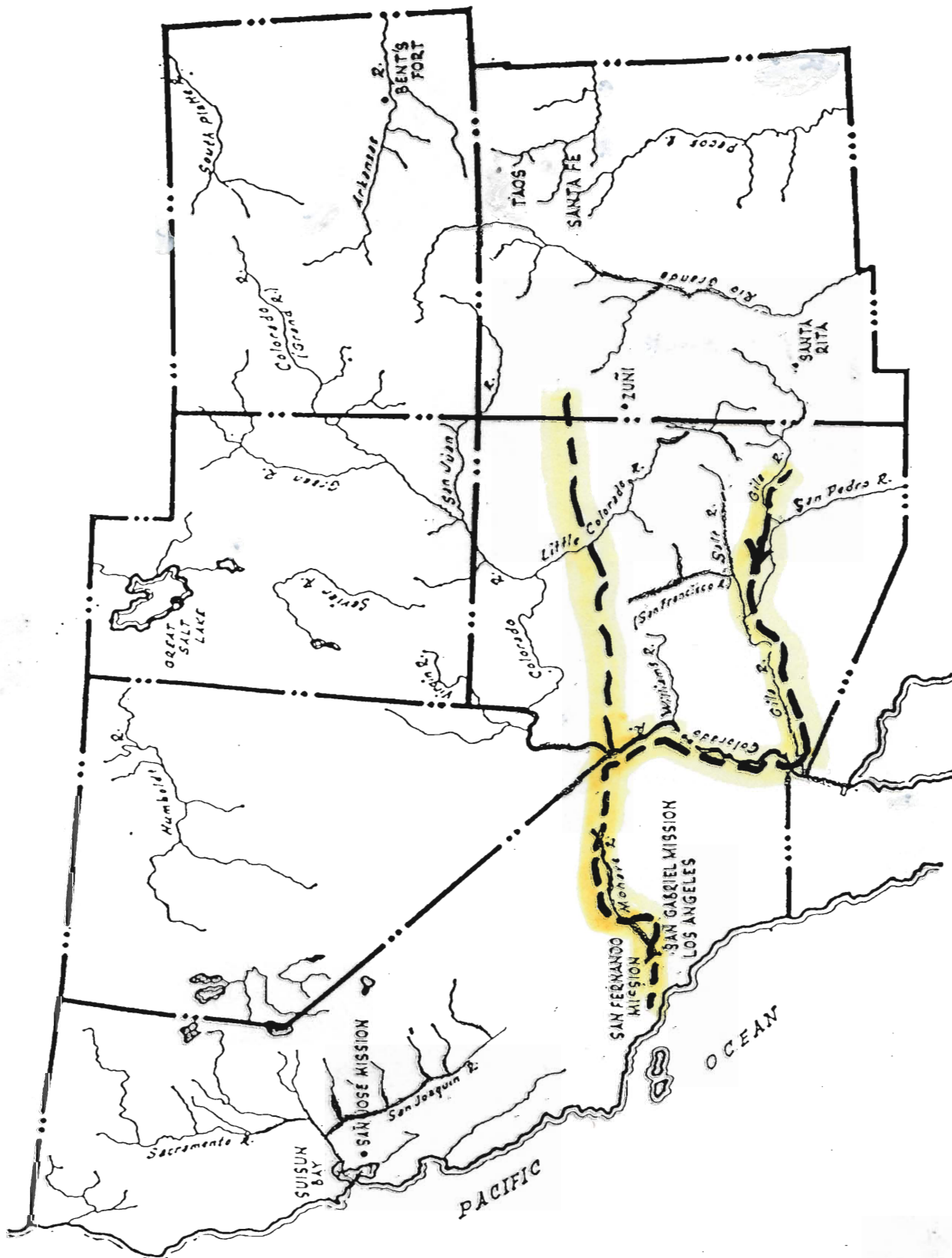
THE OLD SPANISH TRAIL - SANTA FE to LOS ANGELES



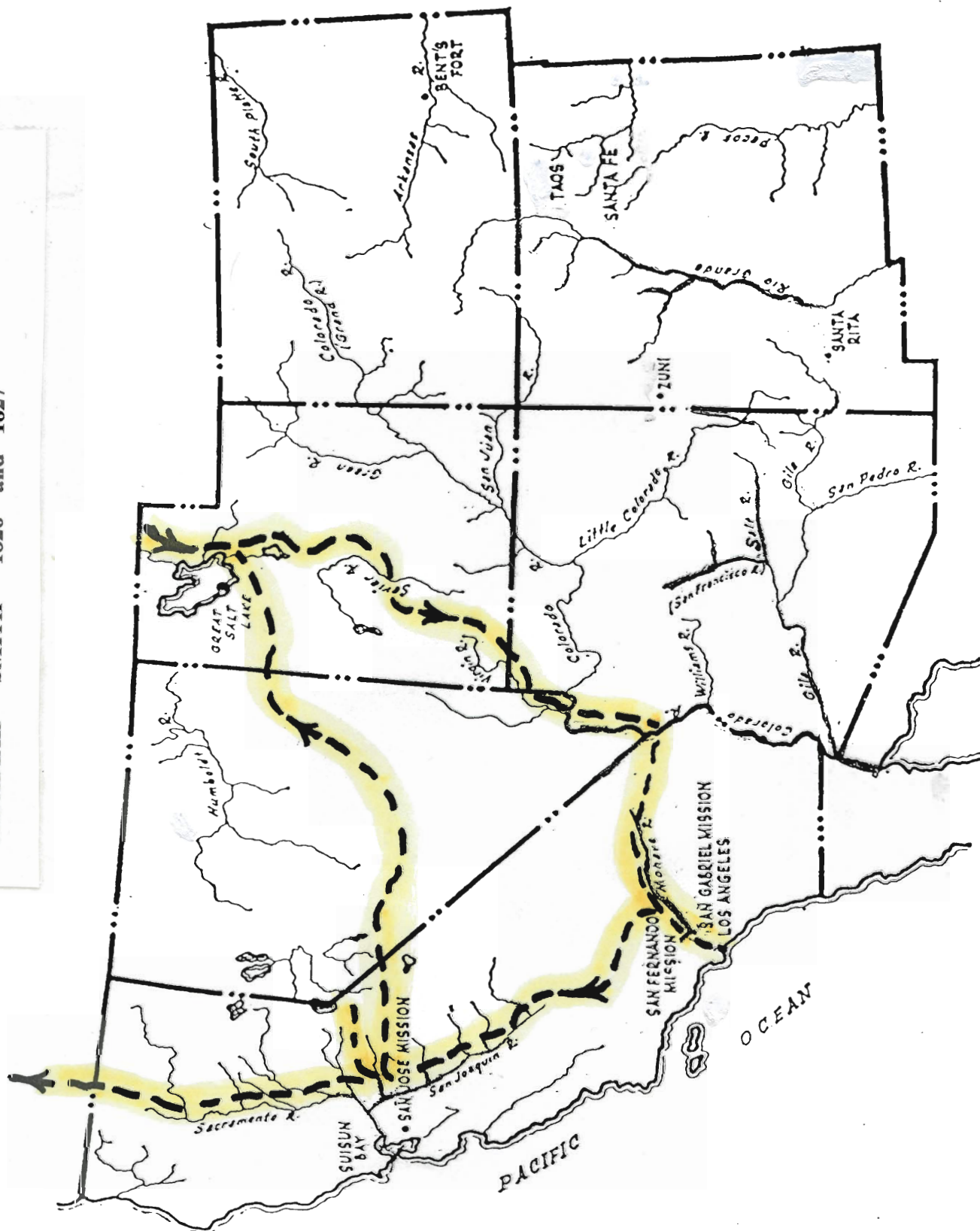
ESCALANTE ---- DOMINGUES 1776

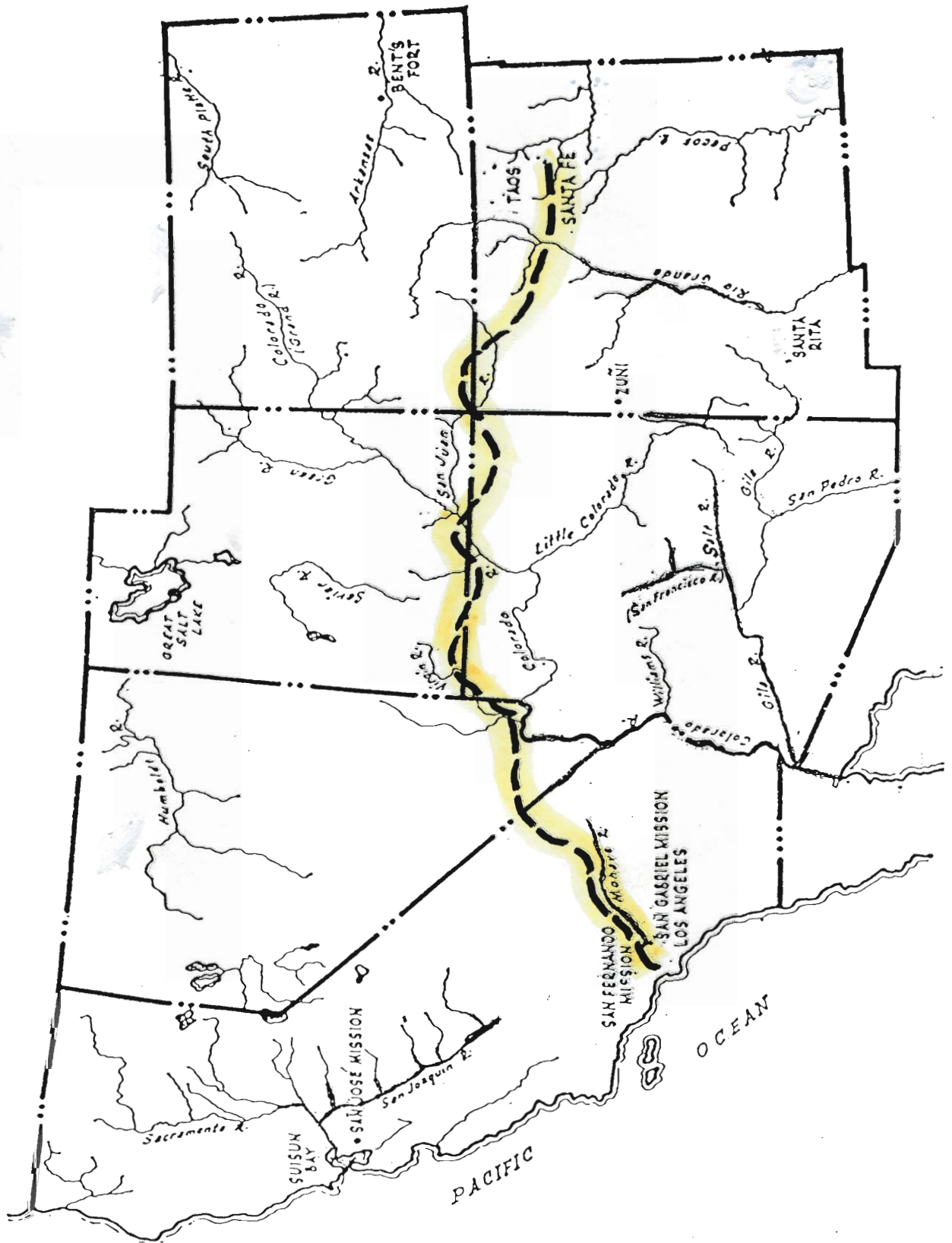


FRANCISCO GARCES 1776

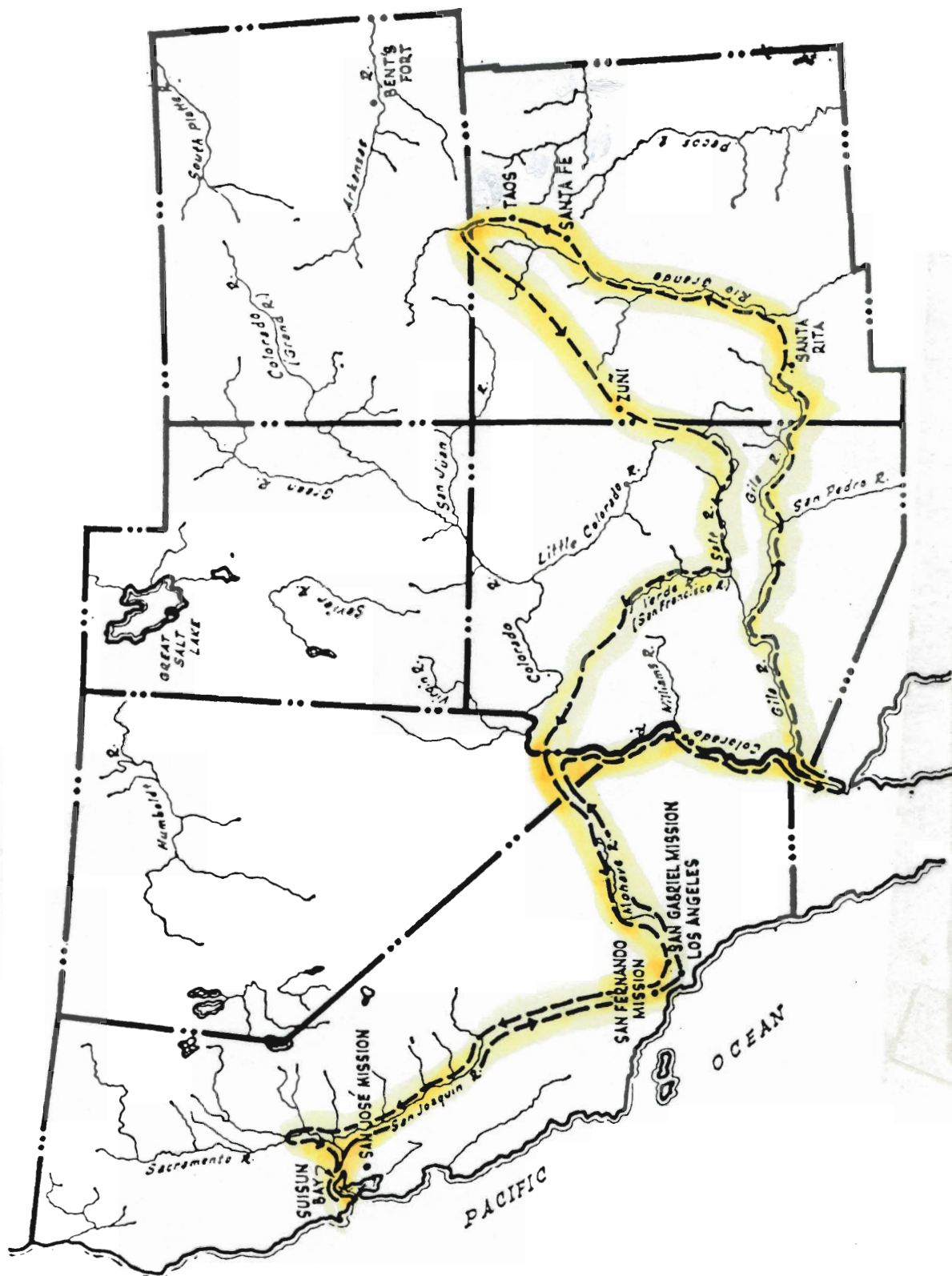


JEDADIAH SMITH 1826 and 1827

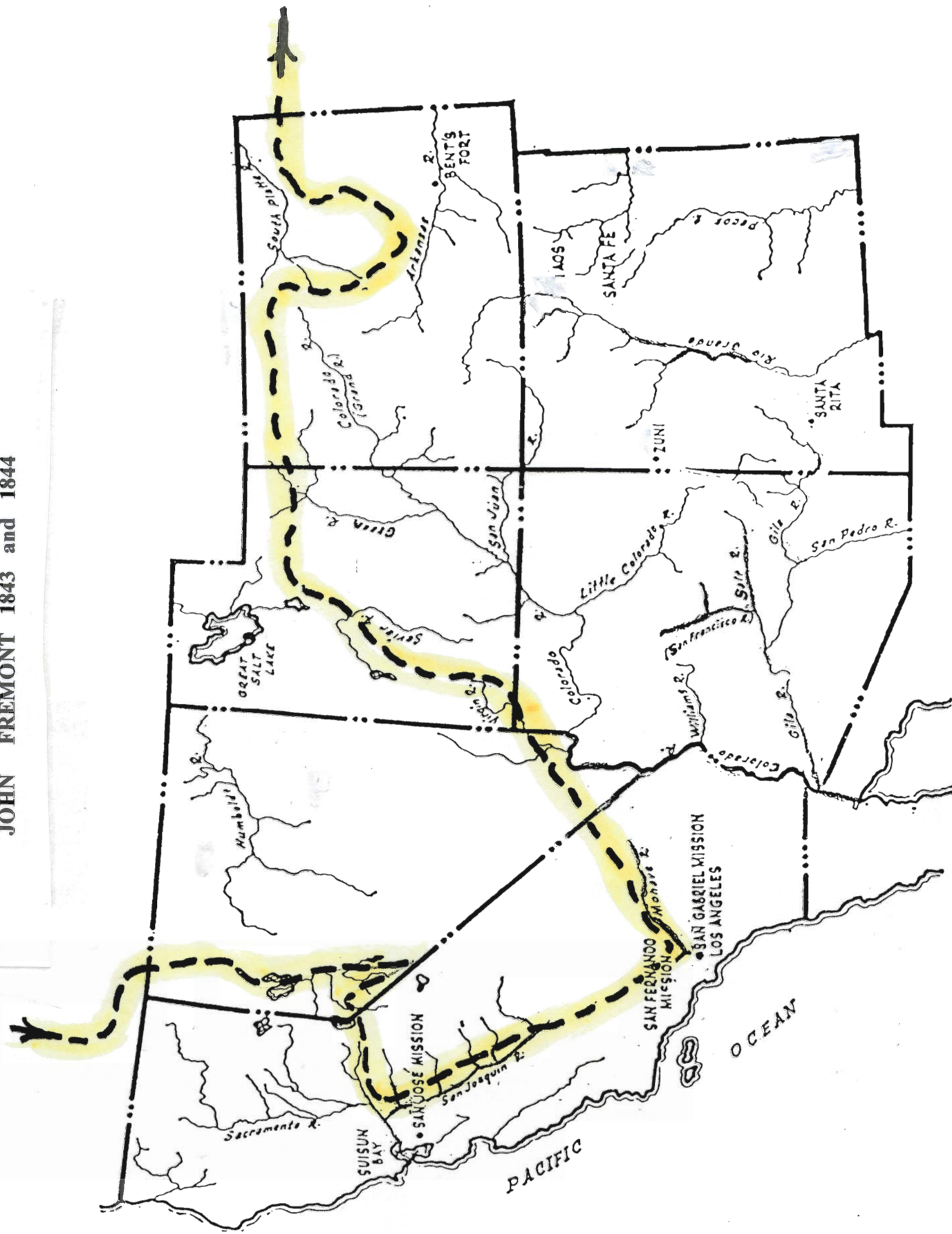


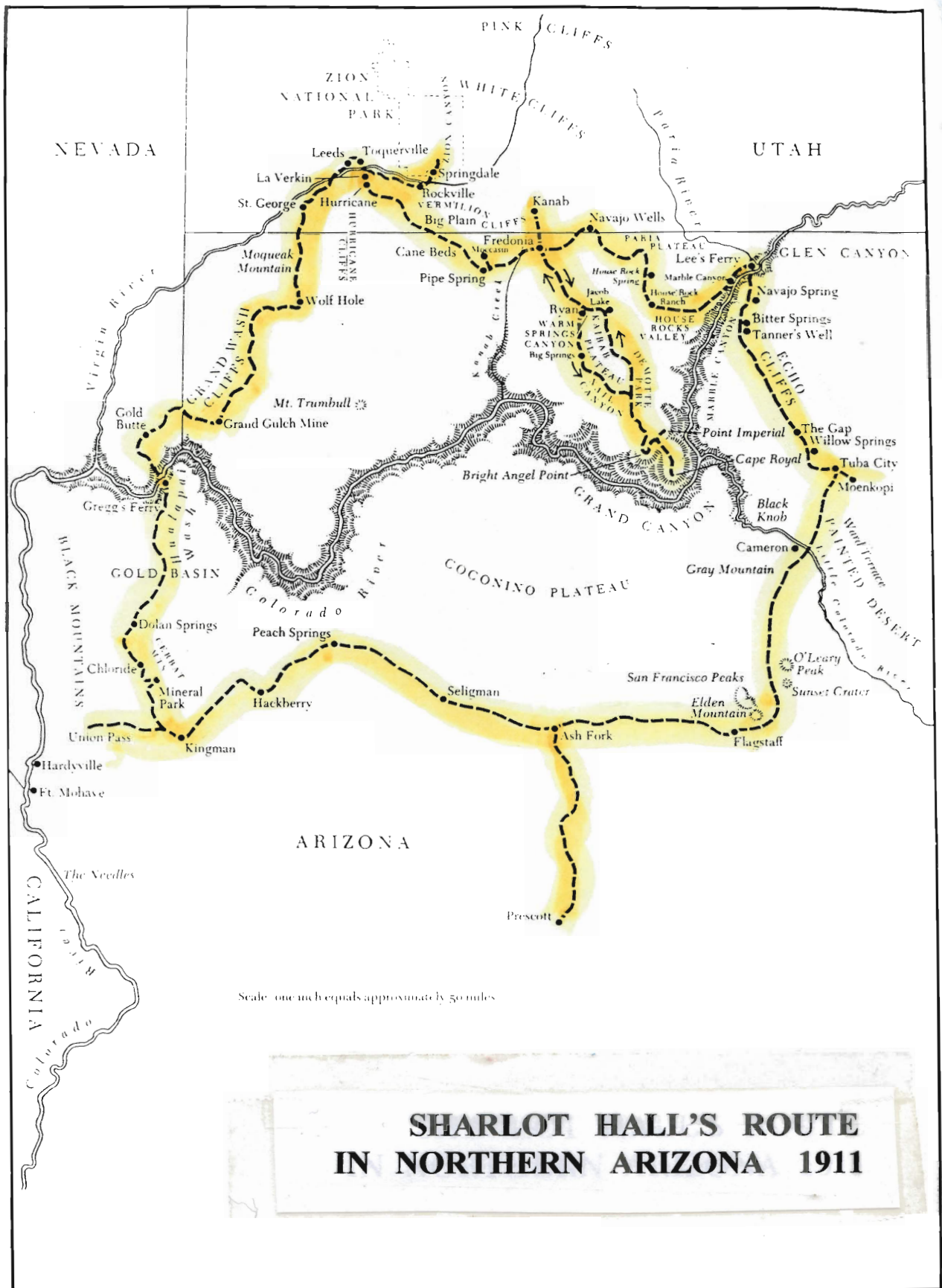


Trapping with Ewing Young, 1829



JOHN FREMONT 1843 and 1844







Note.

In all research thus far accomplished by those of us concerned with the injustice of recent government action as it relates to this issue, in only one instance have we found any indication that someone may have seen a live tortoise. In Antonio Armijo's list of stopping places is "the little spring of the turtle" (indicated as being located 17 miles or so southwest of today's Las Vegas).¹²

The only actual discussion of tortoise found was that of Henrick Mollhausen in 1848. At the time Mollhausen was attached to an Exploration Party, led by Lt. Ameil W. Whipple, which was then searching for a southern rail route between Fort Smith Arkansas and Los Angeles Calif. While camped at Pa-Ute Spring (located a few miles west of the tip of today's Nevada) Mollhausen wrote in his diary:

"Wherever we have found water we found also the remains of turtles, but we did not succeed in obtaining a single living one: a proof how eagerly they are pursued by the Indians".¹³

But were these men always
traveling in tortoise country?

It is true that many of the above mentioned travelers were passing through the deserts at a time of year when tortoises normally stay below ground, or may have, in certain instances traveled only for very short periods over true tortoise habitat.

But when all is considered, the repeated descriptions of just how poor and desperate the desert people were, that they often sold their own children into slavery in order to secure any little food for the remainder of their families, that they were greatly dependant upon the lizards and other reptiles of the deserts as a primary source of food, that even the trappers and pioneers themselves were repeatedly forced to eat their own horses and mules in order to survive their long trips across the deserts, certainly if there had been tortoise seen, they would have been mentioned.

We must remembered too, that as the first explorers and trappers embarked upon new areas they were greatly dependent upon the Native People to show them, or tell them of the traditional routs of travel, and where the water holes were. The Indians also showed the trappers where they could find game and how to harvest and prepare native plants and animals.

If tortoises had been in evidence, certainly the trappers would have been aware of them, and would have relied upon them for food in the event of emergency. This following account presents a good illustration.

While crossing the Colorado River somewhere near today's Laughlin, Nevada in 1827, Jedadiah Smith and his party were attacked by Mohave Indians, killing ten of the eighteen men. Upon reaching the safety of the western bank of the river, Smith threw such articles as would sink in the river, and spread the rest out on the sand bar. He later related:

I told my men what kind of Country we had to pass through [they were following the same route Smith had taken the previous year] and gave them permission to take such things as they chose from the bar. After making their

selection, the rest were scattered over the ground knowing that whilst the Indians were quarreling about the division of the spoils we would be gaining time for our escape. We then moved on in our almost hopeless endeavor to travel over the desert Plain, where there was not the least probability of finding game for our subsistence.
(underline added)14

Consider well what Smith said "...where there was not the least probability of finding game for our subsistence." Certainly if the desert tortoise had been as abundant as so many would like us to believe, (200 tortoises or more per. sq. mile.) someone would have seen them or endeavored to dig them from the ground.

The use of tortoise eggs as food should also have been mentioned. It only stands to reason that if there were great numbers of tortoises at that time, there had to be a great number of eggs to be found. And people accustom to the wild, as the mountain men were, could quickly learn to spot favored nesting sights, and like the Indians, dig for them as they made their way across a country.

Consider the following:

Tortoises enter hibernation in September and October, and emerge any time from late February to early April, but have been sighted during every month of the year.

Female tortoises lay from 4 to 12 or more eggs, the size and shape of a ping-pong ball. They excavate a nest at the entrance to a burrow or near the edge of a shrub. Eggs are usually laid in late spring, from May through June. The time required for hatching depends upon the warmth of the nest. Eggs usually hatch after two or four months, but may take up to six months.

It was in August that Jedediah Smith set out to cross the Mohave Desert. So most tortoise eggs had only been in their nest for about sixty days.

Predation

The primary reason tortoise were non evident prior to the coming of white man was of predation. There were simply too many species dependent on the desert tortoise as a food source, including the Paiutes and other tribes native to the region.

Very few tortoises live to maturity even under ideal conditions. Perhaps only 2 to 5 out of every 100. New tortoises are about 2 inches in length and are very fragile. The shell is thin, like a human finger nail, because there is no underlying bone.

Many natural predators eat hatchlings and young tortoises. Snakes, like the red racer, gopher, glossy and rattlesnake eat them easily. Roadrunners and particularly ravens peck open the shells and eat them. Kit fox, skunks, badgers and coyotes can swallow them in one bite.

It takes an average tortoise in the wild up to 7 years to reach 4 or 5 inches in length. After that point they are somewhat less vulnerable to predation but even after becoming an adult

tortoise they remain vulnerable to coyotes, kit fox and eagles and even groups of ravens. Tortoise eggs too provide food for a great many of the above mentioned predators.

The Indians Impact on Tortoises

The Indians probably had as much to do with the demise of the tortoises as the predators did. The native people of the Great Southwest were exceedingly poor. For much of the year they lived on lizards, grass, and grass seed. They were basically scavengers, spending most of their time scouring the countryside in search of food.

Certainly if lizards and grass seed were the norm then tortoises must have been a delicacy. And who could doubt that these people of the deserts, age 6 to 60 became extremely proficient at gathering tortoises and tortoise eggs.

Yetta Jake, a Paiute lady now living in Enoch, Utah (in telephone conference) told of yearly trips made in the late 1920's, from the Moapa Indian Reservation to the town of St. Thomas. (The town site of St. Thomas is now covered by Lake Mead.)

"There would be several families traveling with teams and wagons, and when we would get near the bottom of the valley, where lake Mead now covers the land we would stop and rest, and while the older people were fixing something to eat, they would send us kids to hunt for turtle eggs. The turtle nests are not hard to find if you know what to look for. They usually bury their eggs under small bushes where the soil is right for them. It's not hard once you do it for a while."

Raven Predation

In 1990 the Bureau of Land Management came out with a Draft Raven Management plan and Environmental Impact Statement for the California Desert Conservation Area.

They recognized the harmful effects that increasing numbers of ravens were having, not only on the desert tortoise population but on song birds, waterfowl and even the endangered condor. (Ravens had been observed stealing condor eggs on several occasions during the 1980's.)¹⁵ It was their intent to instigate raven control.

In researching the issue they found that ravens were uncommon in the deserts of California in the first half of the 20th century. When Eugene Cardiff, Curator of Natural History at the San Bernardino County Museum, first began searching for ravens in the Western Mojave Desert in the early 1940's he looked for about two years before he could locate a raven to collect for the Museum.¹⁶

Ravens were also very scarce in the deserts of eastern California between the 1920's and 1940's. D.H. Johnson, M.D. Bryant and A.H. Miller found in a survey of the area encompassing the Providence, Clark, and New York Mountain, very few ravens. In fact, they saw so few ravens over a several year period that they noted that the raven was only a summer resident.

Then, in 1975 and 76, while James Van Remsen was conducting bird surveys in the eastern Mohave Desert, he determined that ravens were much more common than they had been in earlier decades.

BLM Estimates are, that in the Mohave Desert of California, Southern Nevada, and extreme southwestern Utah, raven populations have increased approximately 14.9 % annually between 1968 and 1988. This amounts to a 15-fold or 1528% increase in a 20-year period.¹⁷

Eugene Cardiff's comments were, that there had been such increases in ravens in recent years, he has observed on several occasions, flocks of 100 to 400 bird in the Harper Dry Lake and marsh areas near Barstow. Mike Phillips and Mark Hagen, biologists at Edwards Air Force Base, reported flocks at 100 to 200 ravens at the Base's landfill in 1988. Large numbers of ravens, ranging to over 100 birds, have also been observed at the desert communities of Boron, Apple Valley, Victorville, and Baker.¹⁸

Effect on Tortoises

According to an article published in the May 4th, 1988 edition of the Elko Daily Free Press, the officials at the Desert District, BLM office (Riverside, California) believe that, due primarily to raven predation, there has been a 50% drop in tortoise population in some areas, and 90% drop in others, just in the last four to seven years.

To give a idea of just what has been observed, as reported by Kristin Berry in 1985. Remains of juvenile desert tortoises can be found at the base of transmission towers, at isolated fence posts, at mining claim stakes, next to road barricades, under Joshua trees, at the bottom of wash embankments, on hilltops, and elsewhere in the deserts of California.

One nest, found on a transmission line tower in Ward Valley, had a total of 87 tortoise shells below or near it. Another nest found in Piute Valley, had 61 tortoise shells near it.¹⁹

In addition Farrell (pers. comm.) documented an instance where tracks and a freshly killed adult tortoise indicated that an apparently healthy animal had been attacked and killed by a group of ravens.

Dr. David Morafka, California State University, Dominguez Hills, (pers. comm.) told of similar attacks on adults tortoises by groups of ravens.²⁰

Coyote Predation

The actual effect of coyote predation on Desert Tortoise populations is not well documented, but from personal observation, individual testimony and documented studies, we do know that since the abandonment of the use of toxins in 1972, coyotes have been responsible for the destruction of many area populations of deer, antelope, sage grouse and waterfowl throughout the West.²¹

We know too, from personal testimony, that coyotes were so thick on the Arizona Strip, the Mormon Mesas and the Virgin Mountain in the 1970's and 80's that they nearly annihilated the deer herd in that area.²²

When the Nevada Department of Wildlife did their composition counts on the Mormon Mountain and Virgin Mountain in 1989 they found only 2 does and 1 fawn.²³

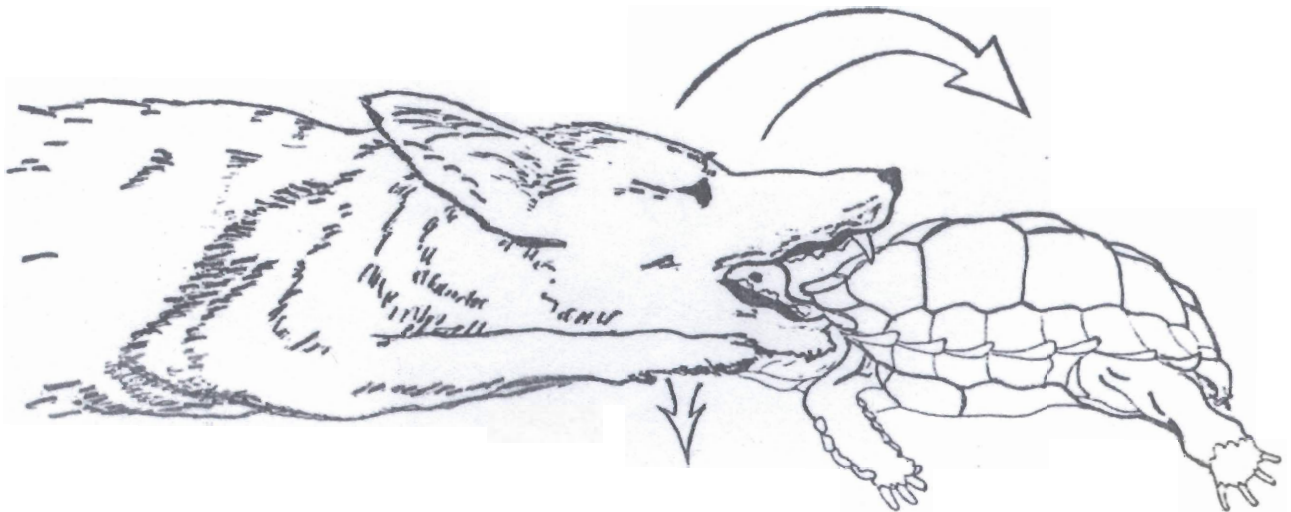
It is also noted in James L. Jarchow's "tortoise mortality report" completed in 1987, (on the Beaver Dam Slope) that local

In 1983, Craig Mortimore and Paul Schneider conducted a study in Piute Valley titled, POPULATION STUDIES OF THE DESERT TORTOISE IN THE PIUTE VALLEY STUDY PLOT OF SOUTHERN NEVADA.

During the course of the study 101 tortoise remains were located of which predator chew marks were noted on 16 (14.7 %) of the carcasses.

Another (15.6%) of the tortoise mortalities exhibited a broken pattern (broken shell) along the surface of the carapace. Coyotes were suspected.

Reference was made, the Berry (Pers. Comm.) had noted this same pattern of breakage before in California, and that she suspected



Appendix VI: Tortoise shell breaking technique employed by the coyote (Cams latrans).

Rancher Duane Blake had mentioned that because of increasing numbers of coyotes, his spring calf crop had declined 50% in recent years.²⁴

With this knowledge, coupled with an understanding of just how resourceful coyotes can be, there is little doubt that coyotes have had a great impact on tortoise populations in recent years.

Grazing Impacts

The myth that cattle are destructive to range and grasslands has gained widespread acceptance throughout our Nation in recent years. Everyone seems to believe that cattle and cattlemen are bad.

Things have certainly changed. Remembering back to the time when I was a boy, driving cattle along our valley road, it seemed that nearly everyone that came by would stop and give us a good and encouraging word. They would usually comment on how good the cattle looked, or ask how the feed was doing before going upon their way.

These days things are different, as often as not when we meet people on the road we get a scowl, or maybe a remark about how dirty the cows are making the road. Why is it that people's attitudes have changed so much. Is it because the American People have finally awoke to the fact that cattle are bad, or is it the things they're being told these days.

I know if I had been raised in town and had been exposed to all the repeated misinformation now being disseminated throughout our nation, how livestock were destroying our wetlands and overgrazing our public lands, I'd be concerned. And I've got an idea that the next time I went camping I'd notice the very symptoms I'd been told about and come home convinced that something should be done.

So how do we in the cattle business explain the importance of livestock impact? It's difficult, but let me begin this way. If old plant material is not removed from year to year by grazing or cropping, it interferes with new growth; primarily by restricting the amount of sunlight that would otherwise be available to newly formed leaves. In addition, many competing plants, smaller in size or stature, may receive no sunlight at all.

So what happens when this is allowed to occur for more than a year or two? Some of the more important plants, beneficial to both livestock and wildlife, such as forbs, legumes, and finer stemmed grasses, simply die out. Plant diversity is lost, and insect production often declines as well.

For those of you that live in town, think of how your yards would look if you failed to mow your lawn or trim your shrubbery. Plants, whether they are in your yard or in the country, in order to remain healthy need to be hedged. And in the wild hedging is accomplished best by cattle.

Cattle and horses by nature like to congregate near water holes or other favored spots to fight flies during summer months, and in so doing, often create bare spots or "sacrifice areas".

Like ourselves, animals like to congregate in comfortable and familiar areas, particularly if the ground has been made soft by large animals rolling and dusting themselves, or by bulls throwing dirt over their backs.

But, is this all bad? Not necessarily. For many species such areas are critical habitat. Take the Killdeer as an example, they

nest right in the middle of the most bare and abused areas they can find. You would think that their nest would be trampled by the large animals, but not so.

More than once I've watched in fascination as a mother killdeer would raise herself just above her nest and vibrate her wings in a manner that let the large animal know she was there.

And when her young come off the nest what is it that they need the most? Closely cropped wet meadow areas within close and easy access where insects can be found. And what situation creates such diversity or critical habitat? Livestock grazing.

The needs of waterfowl are very similar, When cattle tromp aquatic vegetation into the mud they create open feeding areas for ducks and other birds, providing among other things, visibility necessary for defence against predators. I have long observed that there is something about the trampling and mixing of mud, cow manure and sunlight that creates almost perfect habitat for insects. Vernon Bodtack (pers. comm.) explains why:

Phytoplankton (microscopic algae) is the base of the food chain in aquatic habitats. Zooplankton (microscopic animals) feed on phytoplankton. Infertile waters are clear but they are devoid of life. Fertile waters are murky with plankton, but they are teeming with life. All animal life in or about a pond--birds, fish, amphibians, insects, crustaceans and mollusks--are dependent directly or indirectly on phytoplankton. Phytoplankton and all other aquatic vegetation are dependent on sunshine and nutrients--primarily phosphorus and in the arid West especially nitrogen. Cattle droppings, especially urine, supply these nutrients. Wetland habitats are more productive for all wildlife when they are grazed by cattle.

Then too, cattle trails act as roads for young birds, allowing them to move from one type of habitat to another, or from the nest to a critical feeding areas right after hatching. In addition, vegetation that has been grazed or impacted early in season sprouts anew in late season providing tender and nutritious feed for ducks, geese, sage grouse and other wildlife.

Closely cropped meadows and rangelands also produce more insects, beneficial to a broad variety of wildlife. Rodents too prosper when lands are grazed. Mice, gophers, rabbits, prairie dogs, and ground squirrels are always found to be more abundant wherever livestock are grazed on a regular basis.

Although the above examples are of wildlife and habitats associated with the central or northern part of the west, the principles apply nearly everywhere, be it in the desert or on the plains.

When the great herds of buffalo moved through the plains in bygone years, they would leave vast areas trampled and beat. Buffalo trails and wallows would deepen with each passing herd, and when the winds blew, great dust clouds would rise across the plains. But then, as the rains returned or Spring would come, the plants would burst with great life and vigor.

The same buffalo wallows that were eye sores during the dry season all of a sudden were water holes important to wildlife and Indians alike.

In Africa, there are areas with seasons so extreme, they support lush tropical vegetation during part of the year, yet become nearly void of vegetation at others. Dry season "elephant wallows" become lush tropical ponds with fish, frogs, and lily-pods during the monsoon season. How do the fish and frogs survive? Scientist have recorded every detail. When the ponds begin to dry, both fish and frogs burrow into the mud and hibernate until the rains return. This is a natural process.

When Lewis and Clark traveled up the Missouri River in 1804 and 1805, wherever they found large number of buffalo they nearly always found antelope, deer, elk, and other wildlife. But as soon as they left the buffalo country and crossed into the Bitterroot Valley, animals became scarce.

While traveling over the Lolo Pass they fell to eating their horses. At one point they feasted on a crow they were able to kill. They even ate on the head of one of the horses they had slaughtered. All the way down the Columbia River and back, both going and coming, their primary diet was that of dogs and salmon traded from the Indians.

In the years that followed, as the Mountain Men, Trappers, and Explorers crossed the Rocky Mountains and made their way through the valleys of the West, they found very little wildlife. Only in the San Joaquin Valley of California, where the Spanish were already running vast numbers of horses and cattle did they find abundant game.

It was not until large herds of cattle and horses began to appear across the West, that wildlife began to increase. In fact it was in the 1940's and the 1950's, (at the very time our western range lands were alleged to be in their poorest condition) that we had the greatest number of mule deer, sage grouse, ducks, and even song birds.

Even though large numbers of cattle often appear to be destructive to range or grasslands (the sloughing of stream banks, deep and dusty trails, loafing grounds or buffalo wallows) common sense tells us they are not.

So what really happened when white man put millions of cattle onto the Western rangeland? The same thing that was occurring when buffalo ran on the great plains, hundreds of wildlife of every description began to appear.

Consider the following history of California:

Once decided upon, the project to colonize Upper California was carried out in typical Spanish fashion, soldier and friar marching side by side to found the twin outposts of presidio and mission... Expeditions were to proceed both by land and by sea.

Two small vessels, sent from Lower California in 1769 were loaded with men and supplies for the new enterprise. Agricultural implements, seeds, tools, provisions, and church paraphernalia were taken aboard.

The land contingent was formed in two parties. The first, led by Captian Rivera, comprised Spanish soldiers and Christian Indians who drove along some 400 animals...

Portola and Sierra, with the second land party, followed the Rivera Trail and reached San Diego on July 1st [1769]...

Conditions were not heartening. Ninety-three of the would-be colonizers had perished on shipboard or since landing... Of the nearly 300 who had undertaken the venture only 126 [remained]...

Frantically, one ship was sent back for supplies. While Portola, true to his orders, pushed northward by land with most of the able-bodied men for Monterey... Portola and his men succeeded in their heroic march to Monterey, and on the journey accidentally discovered important San Francisco Bay. Supplies ran low on the return trip, writes Partola:

I ordered that at the end of each day's march, one of the weak old mules which carried our baggage and ourselves, should be killed. ...we shut our eyes and fell on that scaly mule (what misery!) like hungry lions, we ate twelve in as many days,... At last we entered San Diego, smelling frightfully of mules.

[Upon his return] Portola found things in a deplorable state. Numbers of the sick had died; hostile Indians had pillaged the camp; provisions were running low. Some urged the abandonment of the venture... Finally the relief ship came; to the friars it was an answer to their novena, a nine-day vigil of prayer.

It is hard now to understand how, in a land of such bountiful natural resources, there was then such poverty in California and such utter dependence on the importations of food and supplies from elsewhere. But crops were not raised successfully during the first years, and it took time for domestic animals to increase.²⁵

By 1820, 40 years after livestock has been introduced into southern California, horses had grown so numerous they were a nuisance and had to be controlled. Jose del Carmen Lugo, native of Los Angeles, recalled:

When I was eight or ten years old, that is, from 1821 to 1824, there were great numbers of wild and very troublesome horses. They would come to the very outskirts of town and eat the pasturage, leaving the gentled horses without food even often coaxing them away. The government finally decided, in agreement with the pueblo [Los Angeles], to have a general killing of these wild horse.²⁶

By 1841, California had changed dramatically. A Frenchman, Duflot de Motras making an inspection for his government described Los Angeles:

The pueblo of Los Angeles is extremely rich,... within an area of 15 or 20 square leagues, local residents own over 80,000 cattle, 25,000 horses, and 10,000 sheep. Vineyards yield 600 barrels of wine, and an equal amount of brandy...²⁷

In late October of that same year, the Bidwell-Bartleson party (recognized as the first American immigrants to reach California by way of the Great Basin) had reached the upper San Joaquin Valley. The passage over the Sierras had been extremely hazardous; The whole company was gaunt and worn.

On October 30th as the party was descending the west side of the Sierras:

Bidwell was only too happy to breakfast on the wind-pipe and lights-lungs-of a fat coyote shot by one of the company. By nightfall, however, he was able to turn to his Journal in almost a delirium of delight: "...Joyful sight to us poor famished wretches!! hundreds of antelope in view! Elk tracks, thousands! Killed two antelopes and some wild fowls, the valley of the river was very fertile and the young tender grass covered it, like a field of wheat in May."²⁸

In May of 1844 as Fremont traveled South through the San Joaquin Valley, he noted the favorable environment and abundant animal life about them:

Flowers and oaks were only part of the wild beauty of this Valley. There were vast herds of wild horses and cattle, tule elk, pronghorn antelopes, and blacktail deer. Overhead there were flights of ducks and geese that passed like small storm clouds... [And Later]: They crossed the Tuolumne, Merced, Kings, and Kern Rivers,... In this part of the San Joaquin Valley the wild horse herds were larger than any the men had ever seen. Horses roamed the grassland like herds of buffalo on the Great Plains...²⁹

Slave Catchers Traffic in Women and Children

The extreme poverty under which the desert tribes of Southern Utah, Nevada, and California lived is well attested to by dozens of accounts explaining how these tribes traded their own children into slavery in order to secure any little food.

Theft of women and children was common among nearly all the tribes of the West during the 1800's. Ute Chief Ouray's only son was stolen by enemies and never recovered. Ouray's sister, Susan, was a captive, though she escaped. The son of Chief Little Raven of the Arapahoe was stolen. The famous guide of Lewis and

Clark, Sacajawea, was stolen from the Shoshone when she was a young girl.³⁰ And when the southern tribes offered to trade stolen children to the Spaniards for horses and white man goods, a new field of commerce was opened. The Indians could raid camps of enemies, or even of neighbors, and trade the captives to the white men. Strong bands attacked weak ones. The poor and hungry tribes of the Nevada desert country were the most commonly raided and their children carried away. More often these depraved people sold their own children to sustain their own miserable lives.³¹

White men too, went on raids. In Thomas J. Farnham's account of his trip across the Colorado Rockies in 1839 he writes of the Indians living on the Sevier River of Utah:

These poor creatures are hunted in the spring of the year, when weak and helpless, by a certain class of men, and when taken, are fattened, carried to Sante Fe and sold as slaves during their minority.³²

But the greatest traffic in women and children began soon after the opening of the Old Spanish Trail (between New Mexico and California). Daniel W. Jones observed how the slave business was conducted on the trail by New Mexico traders:

They would set out with a few goods, he says, which they traded on the way to Navajos or Utes for horses. These used up horses were brought through and traded to the poorer Indians for children. The horses were often used for food, this trading was continued into lower California, where the children bought on the down trip would be traded to the Mexican-Californians for horses, goods or cash. Many times a small outfit on the start would return with large herds of California stock. All the children bought on the return trip would be taken back to New Mexico and then sold, boys fetching on an average \$100, girls from \$150 to \$200. The girls were in demand to bring up for house servants, having the reputation for making better servants than any others. This slave trade gave rise to the cruel wars between the native tribes of this country, from Salt Lake down to the tribes in southern Utah. [Ute Chief] Walker and his band raided on the weak tribes, taking their children prisoners and selling them to the Mexicans. Many of the tribes, inhabiting the southern deserts, would sell their own children for a horse and kill and eat the horse.³³

An 1865 Congressional investigation found:

...the custom has long existed here of buying Indian persons, especially women and children; the tribes themselves have carried on this kind of traffic.

Destitute orphans are sometimes sold by their remote relations; poor parents also make traffic of their children...the prices have lately ranged very high, a likely girl of not more than eight years old, healthy and intelligent, would be held at a value of four hundred dollars, or more. When they grow to womanhood they sometimes became mothers from the natives of the land, with or without marriage. Their children, however, by the custom of the country, are not regarded as property...they grow up and are treated as having rights of citizens. They marry and blend with the general population.³⁴

William R. Palmer, of Cedar City, Utah, authority on the Paiutes and a student of the Old Spanish Trail wrote:

I asked an old Indian once why they traded their children away and he said it was the only way they could get horses and guns. He said they could make more children, but they had nothing else to trade for horses and guns. I ask how the Indian women felt about the slave traffic and the old man said they were scared to death. When a Spanish party was in the country, the women tried to take their children and run away and hide. They were as much afraid of their husbands as of the Spaniards while the party was in the country. Only the old and crippled women stayed in camp, for the Spaniards would not trade for them. In all the slave traffic, many of the Indians, especially the women, were not as heartless as would appear. Some of them followed the caravans for days seeking an opportunity to steal their children back.³⁵

In December, 1854, Sanpitch, a brother of Chief Wakara, (of the Ute tribe) went to the Paiutes on the Santa Clara in southern Utah and did some trading, Jacob Hamblin, Mormon missionary, writes:

He stayed eight or ten days, bought three girls, giving one horse and three guns for them, and many beads. The father and mother of one of them cried much on seeing their daughter go, but they had nothing to give her to eat, and the gun, her price, would help them to get food. From the oldest girl, aged about 12, as she was carried off, I beheld the tears falling fast and silently, and my heart was pained to think that she might become a slave to the Mexicans.³⁶

As late as 1860 Dr. Garland Hurt, Indian Agent in Utah, wrote:

Between the Utahs proper and the Py-eeds there is a species of traffic which I believe is not known among any other tribes upon the continent. I allude to the bartering of children. So abject and degraded are the

Py-eeds that they will sell their children to the Utahs for a few trinkets or bits of clothing. The Utahs carry these children to New Mexico.³⁷

More than any other thing, it was the Mormon influence in southern Utah that put a stop to the slave trade, first by encouraging the Indian people to grow potatoes and other foods, then later through direct intervention.

In 1844 Jacob Hamblin wrote, "I felt heartsick to see them dragged from their homes to become slaves - the poor or widowed squaws relinquishing possession simply because they had no means of feeding them."³⁸

The following year when the Ute chieftains returned to barter for children the Indians of the Tonaquints refused, saying, "Jacob told us not to."

Later the Ute Chief Ammon told Jacob, "You are right about children, Ammon wants peace..."³⁹

Lizard Sticks

The purpose of this summary of testimony is to project an understanding of just how desperate for food the Desert Tribes were, and to explain how important the "Lizard Sticks" were to the Indians at that time.

During the Mexican war, Kit Carson was ask on three different occasions to carry military dispatches from California to Washington.

In September 1846, Kit took the Gila route (to today's Yuma Arizona and then east along the Gila River and north to Santa Fe), but before he had reached the headwaters of the Gila:

He met General Kearny, who ordered him to join the troops and guide them to California. Thomas Fitzpatrick, Kit's old Mountain Man companion, [who had until then been acting as guide] took the California dispatches on to Washington. Within a Month after his arrival in Las Angeles Kit was again sent east with mail. He... set out in late Feb. 1847, took the Gila Route, and reached Washington in June. Under orders from Washington he [then] returned to California with dispatches in the fall of that year and traveled the Old Spanish Trail.⁴⁰

On describing his return trip to California, Carson wrote:

At the Muddy Creek, a tributary of the Virgin River, we came upon about 300 Indians, who wanted to come into my camp. I refused to admit them, telling them that they had killed seven Americans the fall before, that they were treacherous characters who could not be trusted, and that I would not allow myself to be deceived by them

... and if they did not retire, I would fire on them. I was compelled to fire, and one Indian was killed. The others withdrew, and we had no more trouble on the road, except that we ran out of provisions and had to eat two of our mules.⁴¹

On his last trip as dispatch bearer in 1848, Carson was accompanied by Lieutenant George Brewerton who gave a lively report of the trip. On route (before reaching today's Nevada, California Border) Brewerton wrote:

Carson who was laying beside me, suddenly raised himself upon his elbow, and turning to me, asked: "Do you see those Indians?" at the same time pointing to the crest of one of the gravelly, bluff like hills with which we were surrounded. After careful examination of the locality, I was obliged to reply in the negative. "Well", said Kit, "I saw an Indian's head there just now, and there are a party of at least a dozen or more, or I am much mistaken." Scarcely were the words out of his mouth when a savage rose to his full height, as if he had grown from the rocks which fringed the hill top; this fellow commenced yelling in a strange guttural tongue. At the same time gesticulating violently with his hands; this he intended as a declaration of friendship; and Kit rising up, answered him in his own language. "tigabu, tigabu" (friend, friend). After a little delay, and an evident consultation with his people, the old Digger came, at first rapidly and then more slowly, towards us, descending the steep hillside with the agility astonishing in so aged a being... but it was not until the old man had been presented with some trifling gift that he seemed fully at his ease, and yelled to his companions to join him. This they did with evident caution, coming into our camp two or three at a time until they numbered upward of a dozen. The old man had evidently been sent as a sort of a forlorn hope, to fall victim should we be inclined to hostility. Our Indians visitors soon gave us to understand that they were hungry;... [We] presented them with what little remained of our dried beef, which having got wet was now both spoiled and mouldy. This, disgusting as it was, they ate voraciously;⁴²

Brewerton then went on to describe the routine of the council and numerous habits of these "most degraded and miserable beings who inhabit the continent."

Some of the Indians had brought lizards with them into the camp and ate them raw after jerking off reptile's tail. Many of them carried with their arms a sort of hooked stick, not unlike a long cane, which they used in capturing the lizards resting in their holes... "five or six of these Indians will sit around a dead horse and eat until nothing but bones remain."⁴³

Fremont also mentioned lizard sticks.

On the Muddy River, which the Spaniards called the Rio de Los Angeles and the Indians, the Moapa, the Fremont party remained a day to recuperate... Paiutes swarmed into camp, threatening lives and property... With long hooked sticks the miserable Diggers pulled lizards from their holes, and roasted them on the white man's fire.

Eager to be rid of these Indians on the milk-colored Muddy, Fremont's men climbed the sandy hill to the top of the mesa, (the Mormon Mesa), and pushed across the twenty flat miles that stretched to the valley of the Virgin River,...

Wrote Fremont:

"The most dreary river I have ever seen- a deep rapid stream almost a torrent, passing swiftly by, and roaring against obstructions." The rampant river was roily with spring flood. The pale, prickly salt-grass afforded poor grazing, and the last three of the steers that had been driven along for food, "being entirely given out" were butchered.⁴⁴

Ogden too mentioned lizard sticks.

After obtaining "first hand" information from "Old Smith" about Jedediah's 1826 and 1827 trips down the Rio Virgin to California, Peter Skeen Ogden set out from the Columbia in 1829 to follow Smith's trail. Although the journals which he kept of the trip were lost in a whirlpool at the Dalles on his return. Having reached the Mojave Villages on the Colorado, Ogden later recalled:

On the day following our appearance among them, they swarmed about camp, every man carrying in addition to his proper arms, a long stick on his shoulder, in division of the manner in which we carry our guns.⁴⁵

Scientific Studies

There is a good deal of evidence indicating that whenever livestock grazing has been eliminated or reduced on a range, tortoises have declined as well. Vernon Bostick in his work mentions three such instances.

1. Between 1941 and 1977 livestock grazing was reduced 85% on the Beaver Dam Slope. During this same period, as censused by Angus Woodbury and Ross Hardy in 1948 and then again by E. Coombs in 1974 tortoises declined 74%.⁴⁶

2. A study conducted in 1981 by Paul Schneider and Robert Turner examined relative tortoise densities on six separate areas in southern Nevada, the Desert National Wildlife Range, Blue Diamond, Valley of Fire State Park, the Lake Mead Recreational Area, Paiute Valley, and the Goodsprings-Ivanpah Valleys near Jean.⁴⁷

Only moderate populations of tortoises were found in all study plots with the exception of Paiute Valley where, at that time Karl Weikel was still running cattle in a traditional manner. Of Paiute Valley the authors wrote, "[Paiute Valley] represents the largest area of high density tortoise population known in Nevada." 48

Interestingly, when discussing the Desert National Wildlife Refuge where their study had indicated very low densities, 0 - 20 tortoises per square mile, the authors wrote:

"No areas of moderately high or high tortoise density were found within the DNWR. However, high density areas were found within the proposed annex area along the eastern boundary (Garcia et. al. 1982). The tortoise population in these areas, Hidden Valley and between the Sheep Range and Delmar Ranges, would be afforded greater protection by annexation of these parcels into the Wildlife Range.49

It never ceases to amuse me, even when their own studies indicate that resources or wildlife are doing better outside Refuge boundaries, they go right on with their agendas of grabbing more and more land.

3. In 1986 Kenneth Nagy and Phil Medica completed a report on a ten year study conducted on the Nevada Test Site, (Rock Valley), where livestock had been excluded since 1941. It was found that the tortoises there were under almost continual stress. They were suffering from a scarcity of water, insufficient nitrogen (protein) in their diet, and an excess of potassium in their systems, a nearly identical situation as found by Dr. James Jarchow when he examined five tortoise from the Littlefield Plot (Beaver Dam Slope) in 1987, (an area where livestock had been excluded for many years.)50

Three other study plots of interest, as reported in the March 17-19, 1989 issue of "The Desert Tortoise Council" were conducted in California within the Desert Tortoise Natural Area. These were the Chuckwalla Bench, Shadow Valley and Chemehuevi Valley Plots.

1. At the Chuckwalla Bench Plot where traditional sheep use had been eliminated in the 1960's tortoises declined 50 to 70% between 1979 and 1988.

2. At Shadow Valley where both man and livestock have been excluded since 1976 tortoises have declined 50% between 1979 and 1980.

3. Only at the Chemehuevi Valley Plot, where there has been unauthorized cattle use in recent years by reservation cattle, Dave Fisher (pers. comm.), was there no decline in tortoise numbers between 1979 and 1988.

Also, a report produced by Resource Concepts Inc. in 1969, involving the Johnson Valley Allotment, now part of the California Desert Conservation Area, where there has been no livestock use for 18 years also saw a 70% decline in tortoises.⁵¹

Conclusion

What most people don't realize is that, although unwritten, the primary objective of both the Forest Service and the BLM has been, and continues to be, the elimination of all private interest on federally managed lands. And nowhere, have they been more successful than right in Clark County.

According to the current May 1992 Draft Stateline Resource Management Plan and Environmental Impact Statement, of the original 55 separate grazing allotments once active in the Stateline Resource Management Area only 23 remain active today. And of those 23, only five remain as year-around permits.

Of those five, two owners are now in negotiation with the Nature Conservancy for possible sale, while a third operator has indicated he will be forced out of business this spring.

What it boils down to is, that even though the original goal of the BLM as stated in the Taylor Grazing Act, was to stabilize the livestock industry, they have made it so difficult and expensive to operate, that most ranching families have been forced to abandon their permits.

So how do they get away with it? Mostly by using false propaganda. If they (the government) and their supporters can spread disinformation (lies) critical of private interest long enough and often enough, in time they gain the needed support for their actions.

And who benefits? Why, the agencies of course. Their budgets and land holdings are growing daily. In Clark County as of this date the agencies in cooperation with the Nature Conservancy, have in effect acquired all but one of the original ranches that once existed in the southern tip of Nevada, (south of Las Vegas). And the one ranch left has been sold to Viceroy Gold, who in turn has given the Nature Conservancy an option for purchase.

And if all goes according to plan, now that the BLM has issued a "Full Force and Effect Decision" to force the remaining year long permittees from the range from March 1st to May 30th, there is no question that within months the environmental organizations and governmental agencies will own each and every ranch that ever existed in Clark County.

But that's not the whole of it, the everyday shakedown that is now putting literally millions of dollars into environmental organizations and agency pockets should in itself be a National scandal.

Within the "Final Draft, Short Term Habitat Conservation Plan, For the Desert Tortoise", is the estimate, that between 1991 and 1994 there would be roughly 22,352 acres developed in Clark County, (homes etc.). At 500 dollars an acre, which is the average mitigation fee now being assessed per acre by the various Cities in Clark County, that equates out to \$5,587,500.00, a pretty good chunk of money to protect an animal that doesn't need protecting.

Add that to the \$5,285,927 received in Section 7 mitigation fees collected as of 4/24/92, (mitigation fees paid by those involved in construction projects). Plus a 2.5 million dollar settlement received by the various agencies at the close of the first legal conflict, and it gives the local, state, and federal agencies over 16,000,000 dollars of the peoples money that they wouldn't have had otherwise, not to mention all the added cost of compliance brought about by ridiculous and unfruitful building or construction requirements.

In the end, the tortoises suffer, honest and hard working citizens are forced to pay exorbitant and illegal mitigation fees. Ranchers and other enterprise are put out of business without benefit of due process or just compensation. Recreationist and sportsmen are forced off of their traditional recreational areas. And for what? So governments can grow in strength and power.

To me, one of the most arbitrary aspects of the Desert Tortoise fiasco is the claim that development (cities and towns) have destroyed thousands of tortoises and their habitat.

In the December 1986 issue of "Rangelands" is a revealing article written by Joseph Ross, Assistant District Manager, Division of Resource Management, Bureau of Land Management, Las Vegas, Nevada.

In the article Mr. Ross quotes Nevada Department of Wildlife estimates of approximately 93,720 tortoise in the State of Nevada. Mr. Ross also writes:

"In addition to these free living populations, there are over 40,000 tortoises kept as pets within Clark County's urban areas." If Mr. Ross's figures are correct, then thirty percent of Nevada's tortoises live in Urban areas.

How then, can the agency people claim that development destroys the tortoise and its habitat? How can these people say that man is driving the species to extinction, when in truth tortoises thrive in an urban environment?

Recently I visited with a young Las Vegas resident that had grown up on the outskirts of town. Ron said that soon after his father had built their home, there were seventeen different tortoises that took up residence in their yard. And why not, everything the tortoise needed was available to them, green and lush feed, plenty of water, and an occasional flower to eat.

Ron said that over time they gave most of the tortoises away to other people, but still have four or five resident tortoises that live in their garage and yard year around.

But no longer are tortoises allowed to remain on the land that is to be developed. Currently, before anyone can build a new home, they must first pay an exorbitant fee for a tortoise expert to come and remove any tortoise that may be on the property. And if I understood the procedure correctly, if the collected tortoises are not adopted in seven days, they are put to death.

So who is really destroying the tortoises? Why doesn't the government just leave the tortoise on the property where both the new owners and the tortoise can live in harmony?

Is the government really protecting tortoises, or are they just forcing people to pay additional money into their already fat coffers?

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