Oversight Hearing on "Increasing Carbon Soil Sequestration on Public Lands."

Wednesday, June 25, 2014 at 2: 00 p.m. in room

Subcommittee on Public Lands and Environmental Regulation

1324 Longworth House Office Building, Washington, D.C. 20515.

Statement of Tommie Cline Martin, Gila County Arizona Supervisor, District One

Chairman Bishop, Ranking Member Grijalva, distinguished members of the Public Lands and Environmental Regulation Subcommittee. I very much appreciate the invitation to present this written testimony to your House Natural Resources Subcommittee on Public Lands and Environmental Regulation Hearing on *'Increasing Carbon Soil Sequestration on Public Lands'*, June 25, 2014.

INTRODUCTION

Let me begin by sharing a John F. Kennedy quote, "The great enemy of the truth is very often not the lie - deliberate, contrived and dishonest, but the myth - persistent, persuasive and unrealistic".

In the carbon sequestration conversation, there IS a real, a simple, an economically positive alternative to our current Cap and Cut regulatory approach to the atmospheric carbon dioxide problem – and that is a Capture and Convert or Collect path through photosynthesis.

Photosynthesis is the natural process of taking carbon and water and sunlight and making plant mass. Both forests and grasslands sequester carbon – forests mostly store carbon above ground in their woody tissue but not so much through their fairly shallow, lateral root systems. Healthy grasslands, on the other hand, have a very dense and very deep root system, and use it to store carbon in the soil as organic material and humus (see figure 1 – Tree Roots; figure 2 – NRCS Prairie; and figure 3 – Calif grass).

However, in the last 200 years our soils have lost ½ of their carbon reserves because nearly every practice we have brought to the land - be it deforestation, the plow, the annihilation of the buffalo, the fencing up of the land, you name it – the cumulative effect has been carbon loss in soils of all types.

By the same token, for almost 50 years we have had the knowledge and the expertise to reverse this loss and refill these reserves with atmospheric carbon dioxide. For at least the last 30 years, many of the elements have been proven through research and replication.

Our soils represent both a short and long term carbon storage medium. Even in their depleted state, soils still contain more carbon than is in all of the existing terrestrial plants AND in the

current atmosphere combined – and STILL have the capacity to store at least half again as much in just replacing the loss of the last 200 years.

While soils beneath forests and rainforests can be very fertile, the world's deepest, richest soils evolved as grazing land. Because forests mostly store carbon above ground in their woody tissue and grasslands store carbon in the soil, in a fire, forests release most of their stored carbon to the atmosphere, but in grassland fires most of the carbon remains in the soil.

Now for the myth – when all is said and done, we are not dealing with a carbon problem, but with a people and their myths problem. To begin to manage our lands to intentionally reverse their carbon loss and to re-sink carbon into their reserve space, we must shift our collective worldview and land management path from our current mechanistic one to a holistic one.

From a holistic perspective, it is easy to recognize, appreciate and work with the symbiotic, evolutionary relationship between grazers and grasslands. Once we re-attain the bone deep understanding that the grass needs the grazer for survival every bit as much as the grazer needs the grass, we then begin to understand how - together and managed holistically - they CAN restore atmospheric carbon dioxide to pre-industrial levels and in a fairly short timeframe.

So far, we've looked at this option as real and simple. Now let's briefly touch on economically positive.

Our public land forests, by any honest measure, are either decadent or dying or dead and they are in these conditions, in my opinion and experience, due to 100 years of failed federal policy. Also in my opinion, the only real way out of this dilemma is to be able to return industry to the forests and allow them to profitably reduce the massive fuel loads – which to industry represent products – and do so catering to both the environmental dictates of a desired future condition and the economic dictates of industry. Holistic, adaptive management driven by monitoring results of both sectors need to guide the process.

The task of returning sustainable health, functioning and productivity to our public lands forests is enormous, imperative and almost too late. For many years we have acted as though we could buy our way out with subsidized federal programs of one sort or another. It is my firm belief that there IS NOT enough money in the Treasury to solve this critical situation … but that there IS enough money in the Economy.

Since 2006 in Arizona we have been trying to make just this scenario happen through our 4 Forest Restoration Initiative (4FRI) on the Apache-Sitgreaves, the Tonto, the Coconino and the Kiabab Forests.

As for our grasslands and rangelands, I would turn your attention to Deseret Ranch, a 202,000 acre public and private land ranch in northeastern Utah, that has been practicing and helping develop these holistic management principles since the late 1970's/early 1980's. I am sure you know it well, Mr. Chairman, since it is in your congressional district. For any member who might be interested I know we can go visit so you can see for yourselves that every known environmental need for every possible plant, animal, fish, amphibian or bird species is being

met on that ranch – and carbon has and is steadily being sunk into the land. And they are doing so while netting $3 million per year – or $14.85/acre.

By contrast, the Arizona County I represent, Gila County, is comprised of 3 million public land acres and our ranching community – following mechanistic rules and regs – not only may not be meeting the environmental needs of any species, they quite literally net approximately $0.05/acre – yes, a nickel. They, too, need to be allowed to follow these holistic principles targeted specifically at capturing, converting and collecting carbon, catering to both the environmental dictates of a desired future condition and the economic dictates of industry.

Their profit would come from the products of meat, milk, hair, wool, etc. and, again, Holistic, adaptive management driven by the monitoring results of both sectors would guide the process. They would move from federally subsidized ranchers to profit centers – again, a "money from the Treasury vs. the Economy" conversation.

Let me now try to translate these ideas into some examples I have been involved in.

PERSONAL HISTORY

For context, I was born and raised on a Public Land (USFS) cattle ranch near Payson, Arizona which is in the center of the state. My mom and her folks were also born and raised around Payson and my dad and his folks were from the Young, Arizona area a bit of east of Payson. My great-grandparents had come into the area beginning in the late 1800's.

My folks claimed they could not hire the help needed to run the ranch, so they raised it. As a result, early on I had an extensive and thorough working knowledge of all aspects of the land-animal-plant-human and/or environmental-social-economic interactions of ranching – and particularly of public land ranching. Getting a college education was a given in my family, and I came out of Arizona State University with an Agri-Business Management Degree.

My employment path led me to go to work for and with Allan Savory in 1985 at his Center for Holistic Resource Management. In the late 1970's, I had visited several ranches within Arizona who were working with him and getting very interesting early improved land and animal health and productivity results and in 1980 I heard him make a presentation to the New Mexico Cattlemen's Annual Meeting – and found what would become my favorite windmill to tilt! I'm here today, in fact, tilting that same windmill.

More than anything else, Allan gave me the language I needed to talk about the land-plant-animal relationships that I and my family intuitively knew and actively worked with; and with the early results coming out of the Holistic Model, he gave us the impetus to refocus on developing and catering to land-plant-animal dictates rather than calendar-clock dictates.

However, ultimately, this led us to selling our ranch some 15-20 years later because it just became too painful to have proved to ourselves what should and could be; to not be allowed to do it because of increasingly rigid and mechanistic federal rules and regulations; and to know that these federal rules and regs, when followed, force ranchers into wholesale overgrazing and puts us in a position of being the instruments of our own demise.

EARLY DEMONSTRATIONS

While working with the Center, one of my areas of responsibility was as the area representative for the Great Basin and the Southwest. I have a sister and brother-in-law, Jerrie and Tony Tipton, who ranch on public land (USFS and BLM) in Nevada. After teaching and consulting on Holistic Management for several years, I began wanting to turn the more theoretical elements of the process into results – because when all is said and done, if I can't translate the theory, the research, the intellectual ruminations into results through practical application, I begin to think I'm furthering the problem and not the solution.

Something Tony and Jerrie and I had long been interested in – and pushed the envelope of – was soil fertility. This led us to digging up many plants in many soils types looking at root responses in different soils and under different grazing patterns. It led us to experiment with and observe free choice mineral use by the livestock and to record dramatic positive changes in pastures as livestock, through their mineral selection for elements missing or scant in the pasture, put those minerals back on the ground through their urine and manure – and pastures start the transition from a wheatgrass monoculture to a highly diverse native grassland. It also led us to the Soil Food Web work of Elaine Ingham's and that whole piece of the soil biology puzzle.

I had long conversations with Tony and Jerrie about the whole federal soils classification efforts, where their land managers based their management dictates and direction solely on the chemistry and physics of soil types (and still do) … with NO consideration given to the biology of soil or to the dramatic difference its presence or absence brings to sustainable soil health, functioning and productive.

Those of us involved in these early efforts were learning the hows and whys of vastly improving a pasture through planned grazing, and doing so fairly quickly, but there were no discussions at the time on how to get the process started on the vast tracks of bare ground so prevalent on western public lands and played out farm ground.

This, and more, led the three of us to decide we wanted to take a closer look at the Carbon Cycle of carbon plus water plus sunlight equals photosynthesis which translates into plants of all types – food, feed, grass, trees (and so seeds, nuts, fruits and so on) - to learn if and how we could 'jump start' it, what influence that might have on the water cycle and the energy flow, and to better understand the use of animal impact as a powerful tool.

In the middle of Tony and Jerrie's ranch was a mining operation called the Austin Gold Venture, with Inspiration Copper and FMC (Food Manufacturing Corp) the principles in the venture. Part of their mining process was a fenced Cyanide Leach pond behind about a 15 acre dam of virtually sterilized soil, that was about 3 stories (30 ft) tall with a northern, western and southern aspect, and a 1-1 ½ slope (steep slope).

This was in the fall of 1989, and they had a 600+ head herd of cows and big calves that needed moved from the northern end of the ranch to the southern end and which would take them by this site. We got agreement from the mine manager to use the herd to incorporate carbon,

brought in from off-site in the form of organic meadow hay, into the dam face to feed the near-sterile soil and see what would happen (the mine was in the process of winding down their operation over the next several years and were interested in possible reclamation potential since what we were about to do had not been tried on any land, much less mine spoils land – although what we did has since been widely duplicated on mine spoils, burned areas, depleted farm land, etc.).

So on October 1, 1989 the three of us, and a man we hired to help, began to feed 32 ton of organic meadow hay (all we could afford) to 600+ head of cattle on the dam face of that cyanide pond over a 6 day period and then moved them on to First Canyon. In the next 12 months, the valley in which this pond was located received 6" of moisture in the form of some snowfall and some rainfall. We returned to the site in October of 1990 (one year later) and clipped and weighed over 3 ton/acre of organic meadow grass and forbs that had grown and covered the dam (see figure 4 – AGV #1; and figure 5 – AGV #2).

When we got to First Canyon with the herd we decided that before we would turn them loose to disperse into the canyon that we would have them impact an area of very decadent and dying sage brush. We wanted them to incorporate what they could of on-site carbon (vs off-site) into the soil and generally open up the area so sunlight could get below the dense sagebrush canopy and create more open inner spaces between the pinyon trees in the area.

As you can see in the pictures, one of the most unexpected but exciting results of the next fall's monitoring of that site was the pinyon nut size and dark brown color from the trees nearest the site as compared to nuts picked in the same canyon but away from the impacted area (the browner the color, the more viable the nut, indicating that every nut had nut meat in it … grey/white ones have no nut meat, just shell) (see figure 6 – 1st Canyon #1; and figure 7 – 1st Canyon #2).

My reason for sharing these two demonstrations with you is to first show you a couple of real life examples of the application of the principles mentioned earlier and then to point out that they were done 25 years ago – this is not new knowledge. In the intervening 25 years, some form of these two intensive carbon applications have been used and demonstrated worldwide on degredated lands of all types.

You should also know that after we got the first year's monitoring data we 'danced' to the USFS and BLM, beginning in Nevada and ending here in DC, saying LOOK LOOK LOOK, let's DO this!! – and at every level we got mild interest, frowns and a new ration of rules and regs to keep THAT from happening again on public land!

I am reminded of an experience I had some 7 years later in Somalia where one of my consulting partners and I had spent several trips over several months to a village (Buran) to help them learn how to apply these principles to regenerate the commonly used valley they depended upon to feed their livestock (another whole story). We had had our lessons and our field trips and our late night discussions and had put together the Holistic plan of action and were finally ready to implement. They had decided we should start by building some small check dams on the sides of a very steep, bare, rocky and eroding hill feeding into this valley.

With everything in place and just before we left the classroom, I looked at the villagers and asked them who we now needed to go ask if we could proceed. After a long silence, one of the old men asked, “Mrs. Tommie Martin, is this good for the land?” Yes”, I said. “Is it good for the animals?” “Oh, yes.” “Is it good for the people?” “Yes.” “Is it good for the village?” “Yes.” And then he asked, ”In your country would you still have to ask someone for permission?” And I said, “Oh, yes! And 99 times out of 100 the answer would be ‘NO’.” After another long pause, the old man asked, “Mrs. Tommie Martin, what kind of a country do you live in?”

GILA COUNTY EXAMPLES

Now to Gila County and our up-close and personal unhealthy forest challenges. Since 2004, I have represented the citizens of District One on the Gila County Board of Supervisors. Gila County, Arizona, located in the center of Arizona just northeast of Phoenix, is a rural county with a population of 53,144, of which 12% are unemployed and 21% are living at or below 200% of the federal poverty level. Within the County’s boundaries of 4,795.74 square miles, there is the Tonto National Forest with seven Federally-designated wilderness areas totaling 920 square miles and one Wild and Scenic River (the Verde), and three Federal Indian Reservations (Tonto Apache, San Carlos Apache and White Mountain Apache), all of which total about 96% of the County’s total land base.

Gila County's landscape runs the gamut from Saguaro desert vistas to Ponderosa Pine covered mountains. The elevation ranges from 2,123 feet at Roosevelt Dam to 7,920 feet in its north at both Promontory Point and Myrtle Point, on the edge of the Mogollon Rim. Over one half of Gila County is Federal public land, managed by the U.S. Forest Service. The San Carlos, Tonto, and White Mountain Apache Nations encompass an additional 37 percent of the land within the county.

The Gila County government operates under the economic constraint that 96% of the land in Gila County is outside of our tax base as federal and tribal land. These lands are under federal and tribal management and exempt from local taxation. Of the remaining 4% of the land base, 2.5% is property used for mine tailings and taxed at a significant reduction. We operate on a tax base of only 1.5% of the land.

Of the 1.5%, the 1% lies in the desert and rangelands of the southern part of the county and the ½% lies in the northern forested section. The heavily forested northern ½% represents up to 70% of the county’s total assessed valuation and is 100% at risk from catastrophic wildfire. In a bit, I will discuss how we as a County have been involved since 2006 in mitigating this risk.

In Gila County, we recognize and understand the importance of protecting our natural resources while providing access for multi-cultural activities, access and recreation opportunities to the public, as well as access to those whose livelihoods depend on resources located on federal land. Historically, our economy and our residents have depended heavily on both resource-based industries and recreation opportunities on federal land. We appreciate that we must take care of the land, but we need to be able to use the land to take care of ourselves. Over-

protective federal land policies have created an unsustainable environment for our western culture and economy.

Not only must we deal with the steep challenge of managing a wide range of local governmental needs on such a limited tax base, we must also deal with the complications presented by the land management decisions made by our federal land management agency neighbors. For example, the risk to our citizens from wildfire grows annually. While we work closely with the US Forest Service to better manage the resource under their control, we are severely constrained in our ability to influence outcomes.

When my ancestors came to Gila County in the later part of the 1800's, the now densely forested lands were described to me by my great-grandmother as "open, rolling, grassy hillsides with stringers of trees in the upper elevations and stringers of chaparral in the lower climes. She drove the wagon that her family came to the area in and said that she could take that wagon in any direction and the boys could run a horse in any direction in what she talked about as a "pine savannah". Never once did she describe it as a forest – she said there may have been 30 trees to the acre in the most forested areas (we now have up to 3,000 in the same area she was describing). (see figure 8 – 80 years of change)

The streams were perennial and full of a native brown trout (since my grandfather's day we have lost over 1,000 miles of these same streams) and the forest was full of now long-gone birds and wild animals like wild canaries, grizzly bear and wolf.

My family homesteaded and ran free-range livestock on the homestead permit, they owned a sawmill and logged and they prospected and located mines. Once the United States Forest Service (USFS) was established, we ranched on leased federal lands, all the while bringing cattle, goats, and pigs to eat the understory and grasses and naturally till the soils. The animals constantly moved to maximize the grazing and avoid stressing any one area, because the pioneers, with their nomadic style of livestock handling, knew intuitively that overgrazing was caused by time and not animal numbers.

Finally there is researched science to support this approach, but back then it was common sense. They understood that they needed the land to support them, and they had to take care of the land. Lightning strikes caused fires in the summer when the land was drier than during the wetter winters, but because the animals – wild and domesticated – grazed the land and reduced the potential fuel for the fires, the forest fires were not the deadly threat they are today. In fact, such fires served to maintain the forest ecosystem.

With the advent of the USFS came two of their dictates that became particularly devastating to our dry forests and rangelands (as opposed to the wet forests and rangelands of the eastern seaboard and the western peninsula of the US, and much of Europe) – a situation they neither recognized nor understood. They both stopped an historic, almost ever-present fire within the forested areas and then they fenced up the open land stopping the nomadic livestock use of the browse and grasses that mimicked the historic use by wildlife. They also changed the wildlife free-range with these fences and have devastated whole wildlife herds through time.

And so began 100 years of rule upon rule, policy upon policy (that continues to this day) to make these initial dictates “work” in an environment that has and will continue to die because of them. We are seeing the end game in our forests now, in fact.

And over time, our ability to use the federal lands to support our families became severely limited. Logging, mining, and grazing on federal lands in Gila County has been all but completely eliminated. Environmental regulations and lawsuits created a business environment that shut down the industries that supported our families for generations.

In the name of “science,” the logging mills are gone – that is both the infrastructure and the capability. As the federal leases for grazing were eliminated or severely curtailed, families that ranched for generations lost their herds and their livelihoods and sold out to folks that could afford a ranch for a lifestyle and did not have to depend upon them for a livelihood.

As the forests were allowed to grow unchecked, streams dried up and the water table was taxed due to 100 times as many “straws” taking up water – an acre with 30 trees vs. an acre with up to 3000 trees turns every little dry spell into a drought. The drier conditions, and the artificial droughts, stressed the dense forest and laid the trees open to pests and disease.

And the wildfire fuel build-up is unprecedented. The threat we live in – virtually a sea of gasoline – is unfathomable and completely created by 100 years of failed federal policy. The stress on the ecosystem by this burden created by federal land management decisions over the last 10 decades, now compounded by a warming climate, must be addressed. We must start to restore our western landscapes for their own sake – for their health, functioning and productivity.

But we must also restore them because they ARE our nation’s basic wealth source – and our ONLY renewable wealth source. Managing renewable natural resources should NOT cost our nation money – it should in fact make money for our nation. Managing them as our federal government now does in fact squanders our basic wealth source – either we do not add wealth to the country’s coffers or we outrageously cause cost in areas like ‘management’, fire suppression and subsidized thinning.

CHALLANGES

As described above, we face many challenges living and surviving in our current environment. These challenges are both environmental and public safety oriented, and economic. In order to meet the challenges posed by a grossly-overgrown disease-laden forest, we must look at the environmental and economic causes together.

This land was healthy and thriving not that long ago, and adding to the nation’s treasury through the economy. It can be restored. But the needed restoration will require a major overhaul of federal land management policy and implementation – again, a shift from a mechanized to a holistic worldview with adaptive management driven by monitoring results.

The following is a short list of the major reasons I see for the serious decline in our forests’ health and the related health of the communities dependent on the forests for their livelihood:

- A halting of timber sales, and the related reduced payments to the counties of 25% of the value of the sales. The timber sales put people to work and helped support our local governments.
- Insufficient funding for thinning, combined with no timbering, allows chronic overgrowth and buildup of wildland fire fuel that presents a terrifying threat to our county's residents.
- Hijacked use of the National Environmental Policy Act (NEPA) requirements to delay needed thinning efforts and the return of industry. We have been witness to the Forest Service and the environmental groups battling over tree diameters while we burn. This cannot continue.
- Entrenched bureaucracy limits the flexibility needed to reach the creative solutions our landscape requires. The willingness to work collaboratively that is so uniformly and positively discussed in Washington needs to be effectively implemented in the field.

I would like to note for the record, however, that over the years I have had the opportunity to work with many agency people who "get it." They know what the right things to do are and want to do them. But if they try it can affect their careers. Some act very courageously. There are some good people in these agencies, but the "institutional culture" too often dictates unwise and unscientific policies. The result is the kinds of negative consequences I have outlined.

Opportunities

While the challenges are steep, there are a number of positive movements that can help guide more effective federal land management and best practices of local governments. Here are a few examples:

- Collaboration is critical to restore forest health. We cannot afford to keep fighting about who has the right approach. My world-wide, multi-cultural experiences and my involvement with both 4FRI and the Forest Service's Collaboration Cadre has shown me that we can save time and money in making land management decisions with all parties around the table from the beginning of the process to the end having an open and respectful dialogue.
- Stewardship contracts can allow the forests to pay for their own restoration. This is an effective mechanism to put the forests back to work. To best implement stewardship, I believe that the contracts must be self-sustaining, that is, not dependent on federal or state subsidies to make the business work. From my experience working around the White Mountain Stewardship contract, as well as 4 FRI, the Forest Service must cultivate and ultimately chose self-sustaining businesses to contract with, but I am not sure the Forest Service has the expertise to evaluate business viability. I recommend that Congress require that the Forest Service evaluate – or cause to be evaluated by a qualified entity, in an open manner, the economic health of the potential contractors, as well as that of their proposals.
- Continue to include cellulosic targets in EPA biofuel standards. On Forests like the Tonto, where there is little high quality lumber, but lots of "fuel," the option of turning the growth thinned from the Forest for biofuels is very attractive. Recently, attention is

turning towards creating an economically viable cellulosic ethanol process. As in all developing industries, federal targets help create a market. If a cellulosic biofuel market can be developed, the Tonto Forest's thinning program could become self-sufficient.

GILA COUNTY'S RESPONSE TO CATASTROPHIC WILDFIRE

Finally, let's visit about Gila County's response to having 70% of its assessed value being 100% vulnerable to wildfire –

The geographical area known as Arizona's "Rim Country", which is northern Gila County, has experienced several massive and destructive forest fires over the years – beginning with the 25,000 acre Dude Fire in 1990 - which at the time was the nation's first 'mega-fire'. While the Yellowstone Fires of 1988 burned far more acres, the Dude, because of its size, because 6 firefighters were killed fighting it, because it burned 60 homes and because it displayed examples of extreme fire behavior ever witnessed, was considered a mega-fire.

Add to that the 467,000-acre Rodeo-Chediski Fire of 2002, the 119,500-acre Willow Fire of 2004, the 243,950-acre Cave Creek Complex Fire of 2005 and the 538,000 acres of the Wallow Fire of 2011 and you might have a sense of the impending doom we feel as we sit in some of the only remaining, but highly fire-vulnerable, belt of forest along the Rim.

And so, following the 4,000+ acre, $3 million, "February Fire of 2006" north of Payson, Az (the earliest major fire in that area's known history), I approached the local Ranger District of the US Forest Service to see if there was any way the County could help mitigate what was shaping up to be the area's worst fire season up to then. Then and now, the USFS has no resources for first-strike response. Only after a fire gets to a certain level of involvement can they bring the nation's resources to bear.

The Forest Service suggested the best help Gila County could give would be to figure out how to locate or provide "enough sources of adequate water that are helicopter-available for first strike resources so that all small fires can become non-fires and all medium fires can be held in place long enough for additional fire fighting resources to arrive."

To make a long story short, Gila County used what we call our "redneck ingenuity". Our Public Works Department bought 20,000 and 50,000 gallon fuel bladders from Desert Storm military surplus. We had about 80 feet of surplus 10-foot diameter culvert which we then cut into 10-foot lengths, plumbed with a 3 inch pipe and drain plug, welded on a steel bottom, hose-clamped used 3 inch hard plastic pipe around the top (to protect helicopter buckets and snorkels) and produced what we call a "Hick's tank" that holds another 6,000 gallons of helicopter-available water. We bought five 11-horsepower Honda pumps and several hundred feet of 4" soft hose to connect the bladder to the tank. (see figure 9 – Tank)

The various local Fire District Chiefs then took on the responsibility of "manning" the bladder-tank set-ups in each of their Districts to make sure the pumps were hooked-up, the bladders and tanks stayed full for initial helicopter use, and the County notified when more water was needed. The USFS committed at least one type-2 helicopter to be available at the Payson Airport all fire season (there are usually several).

We use our County 12,000 gallon construction-water-tank to draft and hold water from creek locations designated by the USFS as water suitable for fire fighting. We then use our 4,000 gallon water trucks to haul the water and fill both the bladders and Tanks so that there is +/- 26,000 gallons total of helicopter-available water in multiple locations. The idea is to have any spot in the Rim Country within about a 5 minute helicopter turn-around water haul (the initial 10 locations have grown to become 44 with most areas being within a 1-minute water turn-around). (see figure 10 – Dip Sites)

These set-ups are located behind locked gates and are signed "Wildfire Protection Water – Do Not Disturb. Our ability to help protect your safety depends upon your helping us protect the safety of this water source." The Sheriff's Posse makes regular rounds to check on them.

When all was said and done, the 25 set-ups have cost us right at $750,000 from our General Fund (property tax dollars from that very limited pool of 1 ½% private land in our County) and we spent another $250,000 of those same dollars to match 5 local communities in establishing a fuel break on their prevailing wind southwest sides for fire defensible space. While not completely protected from the tinderbox that our surrounding forest has become after 100 years of failed federal policy, our communities now do have a fighting chance of battling and surviving a forest fire. And we hope the odds of this County losing 70% of its assessed value in one fire are substantially lessened for now.

We also hope that we have bought enough time for Industry to come back into play and let the products of the forest pay for its restoration. Again, we DO NOT have enough money in the Treasury to solve this problem – but we do have enough money in the Economy. We MUST figure out how to use the Economy to pay for this restoration while also providing the environmental goals of a sustainably healthy, productive and functioning forest.

But I digress - since initial placement in 2006, the dip tanks have been used hundreds (probably thousands) of times by helicopters extracting water to fight fires. (see figure 11 – C Creek Fire; and figure 11 – Poco Fire)

One of our success stories happened on June 20, 2010. That was the same day the Schultz Fire started in Flagstaff. With the same fuel loads and the same weather conditions and within the same hour the Shultz Fire started - a fire began near Kohl's Ranch. Helicopters dipped out of a bladder-tank system placed just weeks before at the Zane Grey site. That fire was held to 4 scorched acres while the Schultz Fire burned 15,000 acres, has caused extensive flooding each rainy season and has caused at least one death.

We now have dozens of these stories – each year our 'fire-water system' is used to put out hundreds of fires. Our most recent success was the Poco Fire north of Young in the summer of 2012. By their own admission, the USFS predicted they had another 500,000 acre fire on their hands due to terrain, fuel load, weather conditions and time of year. Again, by their own admission the fact that they were able to hold it to +/-30,000 acres was due entirely to Gila County's fire-water set-up and its commitment to minimize every fire.

Eventually, I believe minimized fire danger needs to be accomplished with what is called "environmental economics" whereby the clean-up of the forest pays for the restoration and minimizes the overall fire danger. This leads into discussions about social, economic and

environmental sustainability (or the “triple bottom line”), biomass industries, economic development, and so on. This is where the Four Forest Restoration Initiative (4FRI) comes in – and needs to succeed eventually.

But for now, our bottom line is that we have experienced over 100 fire-starts each fire season since 2006. Eighteen of them were classified “catastrophic potential” by the USFS. One of them burned 150 acres up the face of the Mogollon Rim before it was put out. One became the 800 acre Water Wheel Fire when a local fire helicopter was reassigned to a fire in Texas. The Poco grew and was held at +/-30,000 acres. ALL of the rest were held to 15 acres or less. There have now been thousands of helicopter water dips taken out of these tanks.

Gila County’s current thrust is to continue to try to bring biomass industry to our area to profitably and sustainably clean out the forested area so as to restore and maintain our forest’s health, functioning and abundant productivity. We know that what we have done with our bladder-tank and fire-break efforts is a brief stop gap that will either need to be expensively re-done and maintained continually or engage industry to profitably do so.

We also know that, long-term, there is not enough money in the pockets of the local citizenry to solve this problem, either – but that there is most certainly enough money in forest products for industry to do so. It is past time to stop being so willing to let our forests and watersheds catastrophically burn, and start being willing to let them earn. (see figure 12 – Smokey burning)

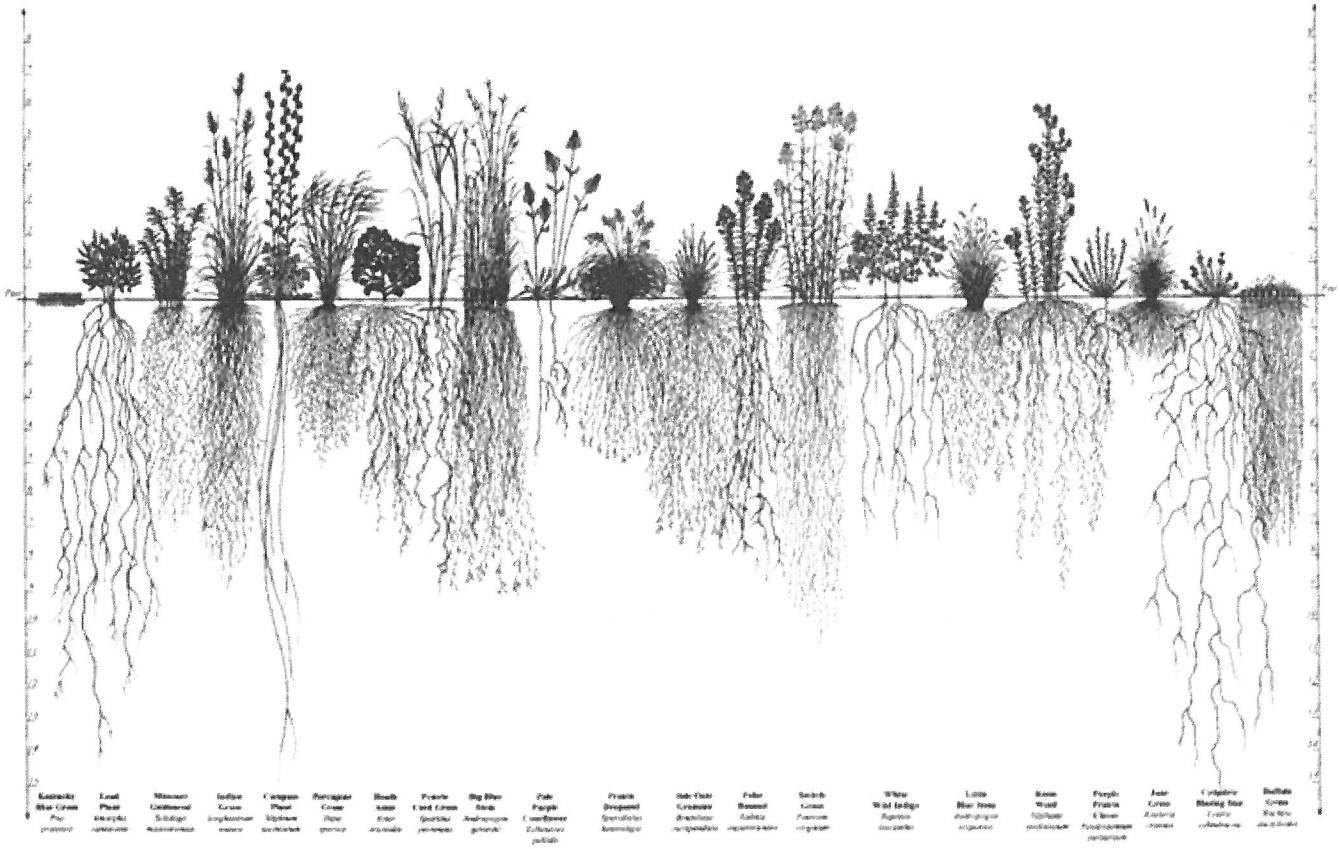
We are happy to share our data, pictures, ideas and personal stories with anyone interested in this type of cooperative, first-strike response, catastrophic fire prevention.

In summary, Mr. Chairman, let me speak directly to the issue being considered in these hearings. There is immense potential to sequester vast amounts of carbon in the soils of the public grasslands and the public forest lands. Acting to increase carbon sequestration on forest lands increases a double carbon benefit. By improving forest health through the steps I have outlined here, we make it less likely that fires will occur, especially mega-fires. That means that the carbon currently locked away in the forests will not be released in these fires. At the same time, these healthier forests would also sequester much more carbon in the soil.

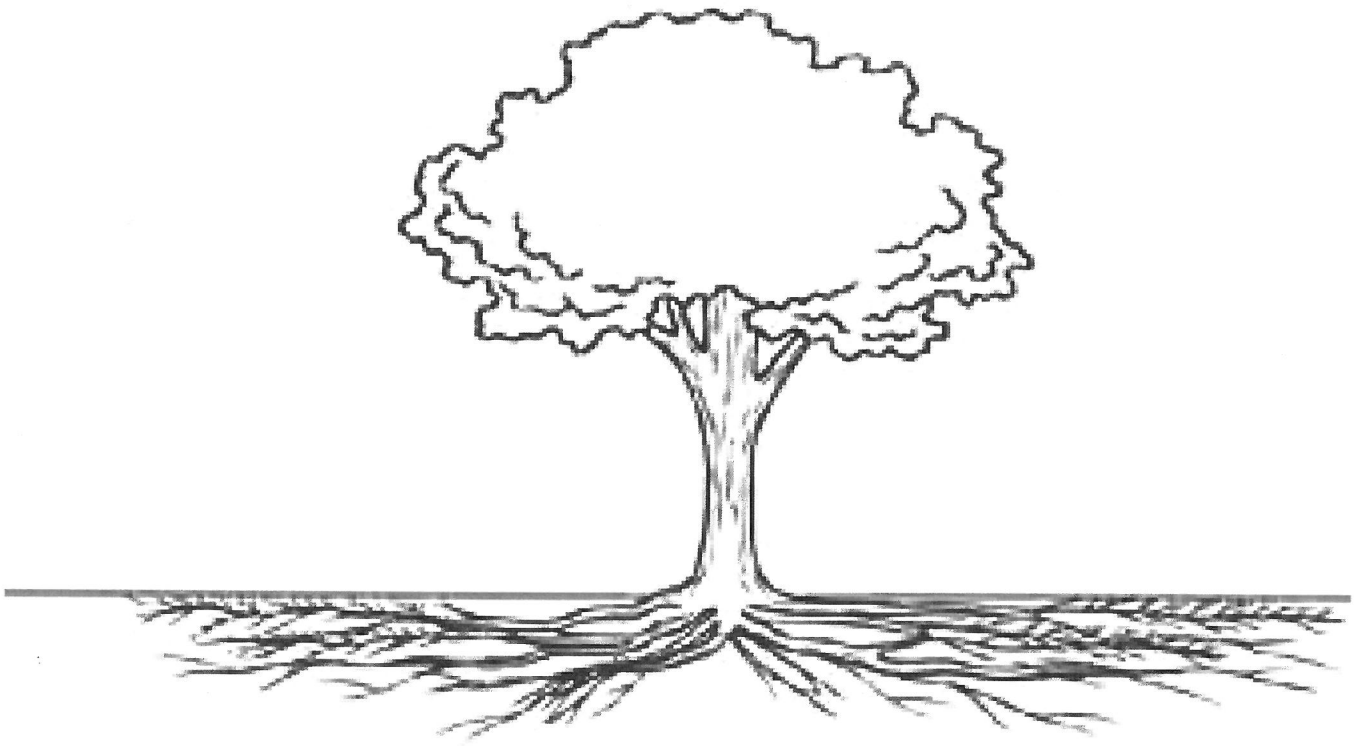
One of my business partners maintains that Paradise is not lost, it is merely disassembled … and the pieces are lying around in plain sight. This testimony points out many of those pieces. Another partner claims “if it is to be, it is up to me!” In this case, if these pieces are able to be reassembled, it will have to be with the help of Congress.

Again, thank you for the invitation to present this information to you.

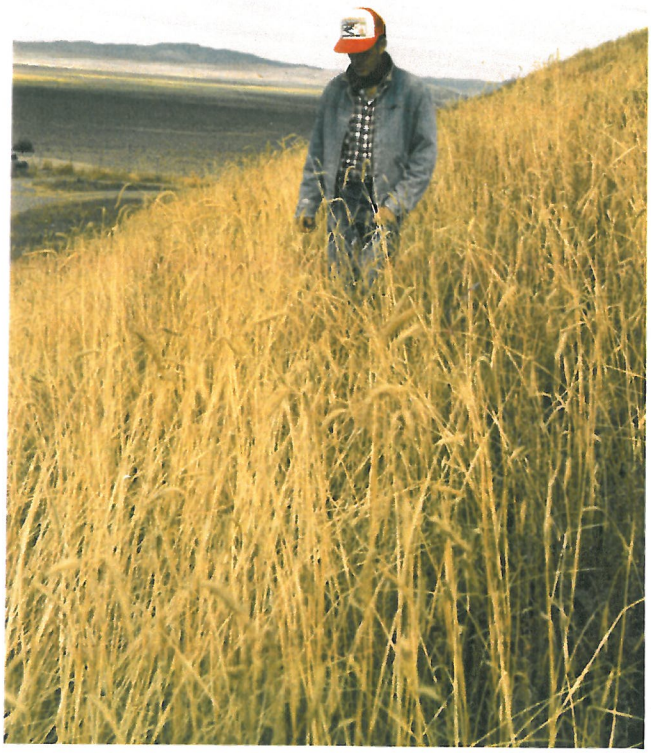
California oatgrass (Danthonia californica) plant with roots at the Oakland Museum. Photo courtesy of Mark Stromberg.




188
UNDER CONSTRUCTION
34 MILES AHEAD
EXPECT DETOURS-DELAYS
SPEED LIMIT
55



The roots of a tree extend far from the trunk and are found mostly in the upper 6 to 12 inches of soil.



78N

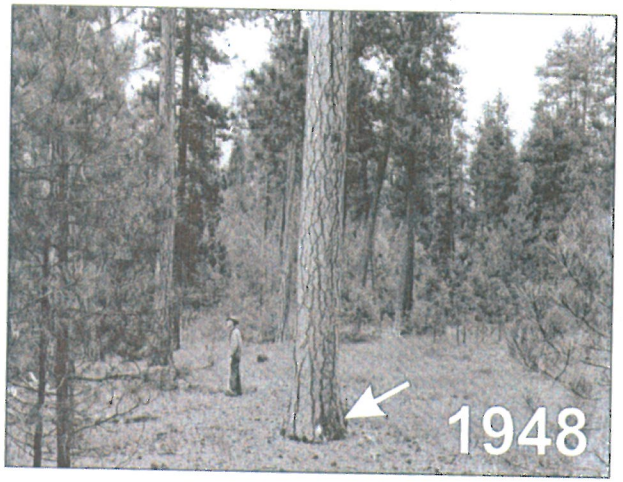
GILA COUNTY
GILA COUNTY


WILDFIRE
PROTECTION WATER
DO NOT DISTURB
OUR ABILITY TO HELP PROTECT YOUR SAFETY DEPENDS UPON YOU HELPING US PROTECT THE SAFETY OF THIS WATER SOURCE
PROPERTY OF GILA COUNTY
WARNING
NO TRESPASSING OR PROPERTY DAMAGE. VIOLATORS WILL BE PROSECUTED UNDER A.R.S. 13-1603. GILA COUNTY SHERIFFS OFFICE

80 Years of Change in a Ponderosa Pine Forest

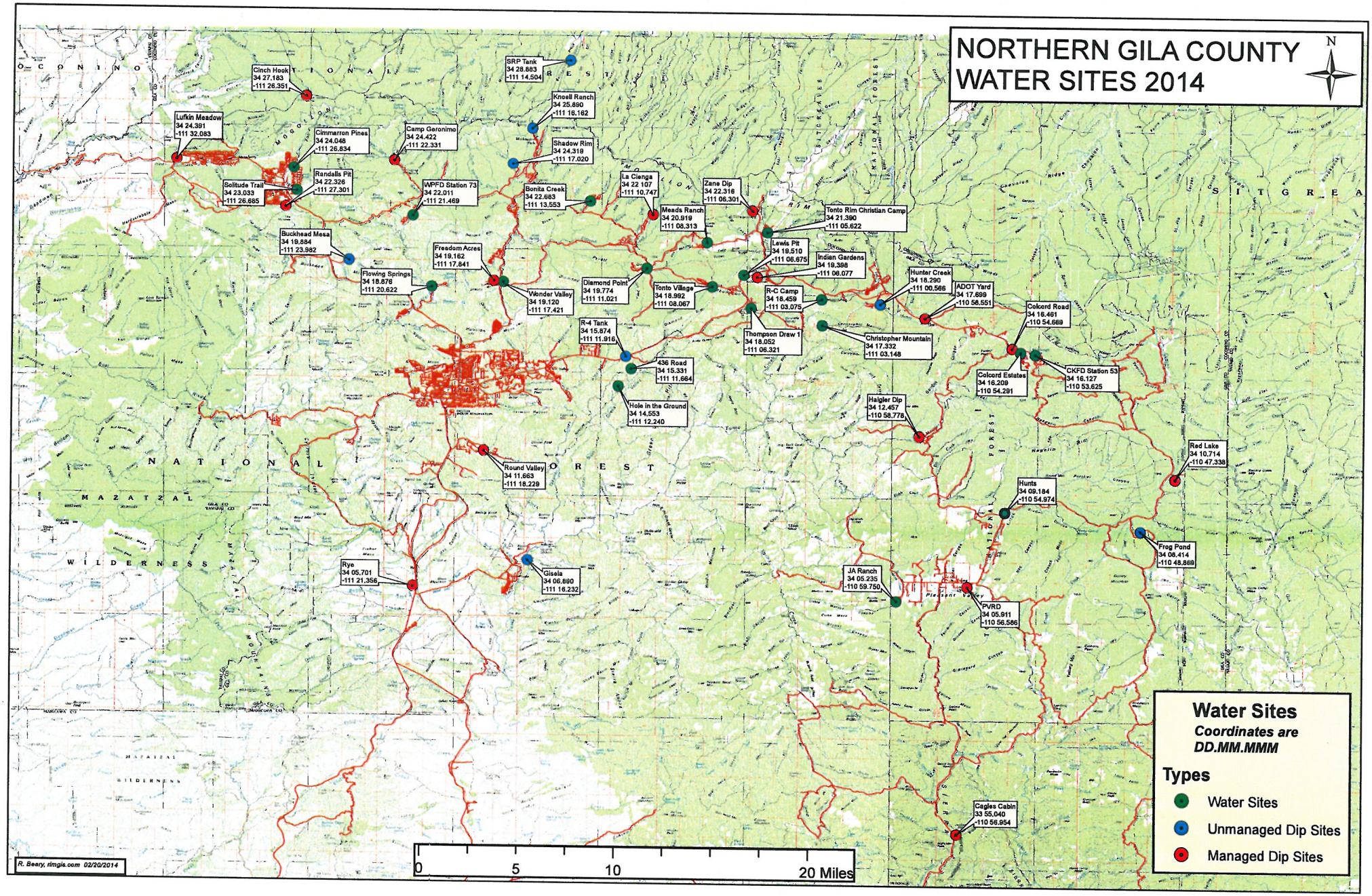
These photos, all taken from the same point, show changes resulting from fire exclusion and harvesting of large pines. Fire scars show that, between 1600 and 1895, low-intensity fires burned through this forest every 3 to 30 years. Fires have been excluded from the area since 1895.

About half of the large pines were harvested from this site before this photo was taken.



About a third of the remaining large trees were harvested in the 1950's, including this large pine.

The photo point is on the Bitterroot National Forest, in western Montana. For more information about this forest, see "Eighty-eight years of change in a managed ponderosa pine forest," RMRS-GTR-23, from U.S.D.A. Forest Service, Rocky Mountain Research Station (970-498-1392)


NORTHERN GILA COUNTY
WATER SITES 2014
N
Clinch Hook
34 27.183
-111 26.351
Lufkin Meadow
34 24.391
-111 32.083
Cimmarron Pines
34 24.048
-111 26.834
Solitude Trail
34 23.033
-111 26.685
Randalls Pit
34 22.326
-111 27.301
Camp Geronimo
34 24.422
-111 22.331
WPFD Station 73
34 22.011
-111 21.469
SRP Tank
34 28.883
-111 14.504
Knoell Ranch
34 25.890
-111 16.162
Shadow Rim
34 24.318
-111 17.020
Bonita Creek
34 22.663
-111 13.553
La Cienga
34 22 107
-111 10.747
Meads Ranch
34 20.919
-111 08.313
Zane Dip
34 22.316
-111 06.301
Tonto Rim Christian Camp
34 21.390
-111 05.622
Lewis Pit
34 19.510
-111 06.875
Indian Gardens
34 19.398
-111 06.077
Buckhead Mesa
34 19.884
-111 23.982
Freedom Acres
34 19.162
-111 17.841
Flowing Springs
34 18.876
-111 20.622
Wonder Valley
34 19.120
-111 17.421
Diamond Point
34 19.774
-111 11.021
Tonto Village
34 18.992
-111 08.067
R-C Camp
34 18.459
-111 03.075
Hunter Creek
34 18.290
-111 00.566
ADOT Yard
34 17.699
-110 58.551
Colcord Road
34 16.461
-110 54.569
Thompson Draw 1
34 18.052
-111 06.321
Christopher Mountain
34 17.332
-111 03.148
R-4 Tank
34 15.874
-111 11.916
436 Road
34 15.331
-111 11.664
Hole in the Ground
34 14.553
-111 12.240
Colcord Estates
34 16.209
-110 54.291
CKFD Station 53
34 16.127
-110 53.625
Haigler Dip
34 12.457
-110 58.778
Red Lake
34 10.714
-110 47.338
Round Valley
34 11.663
-111 18.229
Hunts
34 09.184
-110 54.974
Frog Pond
34 08.414
-110 48.869
Rye
34 05.701
-111 21.356
Gisela
34 06.890
-111 16.232
JA Ranch
34 05.235
-110 59.750
PVRD
34 05.911
-110 56.586
Cagles Cabin
33 55.040
-110 56.954
NATIONAL FOREST
WILDERNESS
MAZATZAL
Water Sites
Coordinates are
DD.MM.MMM
Types
Water Sites
Unmanaged Dip Sites
Managed Dip Sites
0
5
10
20 Miles
R. Beary, rimgis.com 02/20/2014