

Trail Log 2012

January 6, 2012. Day in Rocky Mountain National Park, after recovering from a long chest cough. Mostly puttering around. Magpies, ravens, one cottontail. Three deer, 13 deer at Deer Mountain trailhead. Walked around Moraine park, and a little at Bear Lake, but too slick. Walked a little at Glacier Gorge Trailhead. No elk seen at all. Nice day, nice weather. Some reasonably warm days lately.

January 22-27, 2012. Richmond. Science and Religion seminar, Sunday evening, Monday, Tuesday morning, then to Ann Bryant's for Tuesday afternoon. Saw Mary Blum Davis, Davenport on Wednesday. Jim Somerville, son of Jim Somerville, and pastor of First Baptist Church, came to Ann's for lunch Thursday. Flew home Friday. Blooming in Ann's yard:
Veronica sp. Speedwell. lots at the seminary
Periwinkle - *Vinca minor*. lots at the seminary
Henbit - *Lamium amplexicaule*.
Apple japonica, two kinds, one pink, one white.

February 25. One crocus in bloom. Edge of porch. I found it after pulling away six inches of leaves covering it over.

Yellowstone wolves March 2012

March 11, 2012. Sunday. Left 7.00 a.m., just switching over to daylight time.

Foggy on I-25 north toward Wyoming line, then clear, scattered clouds for the rest of the day.

Uneventful drive, though I had to nap twice.

landscape mostly clear, with snow drifts scattered.

Reach Hardin, Montana, 4.30 p.m, Super 8

March 11, Monday. Off at 7.00 a.m., good drive, but another nap.

Reached Yellowstone Park at noon.

Lunched down below, just south of Gardiner.

6 bighorns

8 buffalo

beyond Mammoth Hot Springs, not far

12 bison
50 elk
3 elk

6 wolves in scopes, just west of Hellroaring, at great distance, but once I saw six walking close together, mostly gray, one black. This is the Blacktail Pack.

Others claimed to have seen a grizzly bear, and pointed to a speck in the trees above the wolves, but I saw nothing I could claim to be a bear.

And no bears later, so I saw no bears this time.

6 bison
2 bison

Reached Lamar Ranch, 3.30 p.m.

Wolf week leaders are Brad Bulin, whom I had last year.

John Harner

My cabin mate is John Whedon, New Hampshire.

Supper and group meeting that evening.

Tuesday, March 13. Up at 5.15 for 6.00 a.m. breakfast, and out at 7.00 a.m. Plenty of space on the vans, which was nice.

Went east, toward Soda Butte.
4 bighorns, seen nicely.

Then went west, to Specimen Ridge area, Little America.

Wolf team was there. We first heard howling. Then four wolves were nicely seen. Wolves were leaving, going away from us, and climbing toward the top. This is the Agate Pack.

Often seen crossing snowpatches. Full profiles and quite a good view, well seen at maybe 30x.

One quite white, the dominant female.

Black one, alpha male.

Last seen, all four on the ridge skyline, moving up the skline, with blue sky and a few clouds behind them. Great sight, aesthetically the best minutes of the week.



photo by one of the group

Stopped at Boulder Creek pull out. Nothing seen.

Luch at the Yellowstone Picnic area, and I fell at the toilet, slipped on ice, under what looked like just water. Not hurt, but it was a hard fall.

I went with Brad after lunch. In the morning I was with John, but he took a group on a snowshoe climb.

We hiked into see a bison carcass. Also there was an old iron trap there, which probably went back to the days when carnivores were still trapped.

Returned, drove to a viewpoint, and I saw the last wolf of the Agate Creek pack.

To another viewpoint, from which we could see a carcass, through scopes, with six golden eagles and one immature bald eagle.

I saw a wolf from the Blacktail Pack a few times, reasonably well seen, walking, a gray wolf.

Back to Lamar Ranch about 3.00 p.m. Shower and nap.

Supper

Evening program by George Bumann. (pronounced with a long u) , who was one of my leaders in May 2010. He is from the east, went to school in New York, did some work, a Master's Degree in wildlife biology, at VPI, and came west. He does wildlife art--sculpture.

In May, I recall that he proved to be as good as anyone I have ever been with identifying bird calls.

snow flurry at bedtime.

March 14, Wednesday.

Rain during the night, not hard.

Breakfast

Drove east to see nothing.

Then to Rick's pullout, Yancey's Hole, and saw 4 grey and black wolves, some with mange, one with a naked "pencil tail."

Rain turning to pellets.

Coyote at the river in Lamar Valley.

Hot chocolate at the Ranch.

drove east.

3 otters in the river, nicely seen profiled against the snow.

At the base of Norris Mountain, we found the Lamar Valley Pack, in the Soda Butte area.

At some distance off, but nicely profiled against the snow, I saw six wolves. One of these was presumably the Alpha 06. She has now been collared and is technically known as 832. Others said they counted ten, the whole pack.

Coyote digging something like a bone out of the snow.

Once saw a wolf carrying some meat in its mouth.

Lunch, in the van.

3 bighorns on the hill, seen from where we had lunch.

A walk over rough snow to see willows browsed by beaver and elk.

Pebble Creek and saw nothing.

Dipper, seen in snow alongside the river.

Ice pellets, graupel, or whatever, off and on all day long, though sometimes also cloudy bright after lunch.

Back to the Ranch.

shower, nap.

Supper

Evening talk, Colby Anton.

2011 Executive Summary of wolf project

At the end of 2011, at least 98 wolves in 10 packs (8 breeding pairs), with 2 loners occupied Yellowstone National Park (YNP). This is the same population size as 2010 (97 wolves) so represents a stable population. Breeding pairs were also stable at eight. The wolf population has declined approximately 60% since 2007 mostly because of a smaller elk population, the main food of northern range wolves.

The interior wolf population has declined less, probably because they augment their diet with bison. The severity of mange continued to decline in 2011, although some packs still showed signs of the mite. There was no evidence of distemper being a mortality factor as it was in 1999, 2005 and

2008.

Pack size ranged from 3 (Agate Creek) to 19 (Mollie's) and averaged 10.2 equal to the long-term average (10). Nine of 9 (100%) packs that we had information on (we could not assess the reproductive status of Bechler) had pups. The average number of pups/pack in early winter for packs that had pups was 4.1 approximately equal to 4.8 pups/pack in 2010, but higher than 2009 (3.8). A total of 34 pups in YNP survived to year end, four less than in 2010.

Project staff detected 343 kills (definite, probable, and possible combined) made by wolves in 2011, including 267 elk (78%), 15 bison (4%), 18 deer (5%), 1 moose (<1%), 2 pronghorn (<1%), 2 bighorn sheep (<1%), 2 badgers (< 1%), 1 jackrabbit (<1%), 14 coyotes (4%), 1 raven (< 1%), 7 wolves (2%), and 13 unknown prey (4%). The composition of elk kills was 27% calves, 3% yearlings, 44% cows, 18% bulls, 3% adults of unknown sex, and 6% of unknown sex and age. Bison kills included 5 calves, 1 yearling, 2 cows, 6 bulls, and 1 unknown sex adult.

Twelve wolves were captured and collared in 6 packs. At year's end 17% of the wolf population was collared.

Wolf management activities included den site closures, several hazing events, and one removal of a food conditioned wolf. Staff continued to manage wolf viewing areas in Slough Creek and Lamar Valley and other hot spots where wolves were frequently sighted leading to 25,000 people observing wolves and 17,635 visitor contacts by Wolf Project staff. Wolf Project public outreach included 241 talks and 84 interviews.

March 15, Thursday.

Up the road east, and nothing

and soon back to Lamar Ranch, where a huge bull elk was surrounded by the Lamar Pack, in the middle of the valley, this side of the river.

We watched this all day, a kind of stand off. The wolves would come in closer and the elk would charge at a wolf, and it would retreat.

The wolves would lie down and sleep some distance away.

The Alpha 06 female mostly slept, but got up a few times and went toward the elk. The elk seemed to be standing in a branch of the river and wolves don't want to attack in the river.

After lunch the elk walked further across the flats and out of water. Eventually the wolves came and eight surrounded the elk, but none went in for a kill.

Nice viewing, well see profiled against snow at 15 x, 30 x.

2-3 p.m, a talk inside the bunk house by Rick McIntyre

Bald eagle overhead, with a fish in its talons.

4-6 p.m., stand off continues, with a few attempts by wolves to get in closer.

Supper

Evening program by Brad and John

I was wondering why ten wolves had not already taken down the elk, maybe they weren't as good as we thought. But Brad and Rick said they would get it, it was just a matter of time. Maybe the wolves knew the elk was weakening, or maybe it had been bitten already in the rear, and they were waiting for it to weaken. They were biding their time.

Went to bed wondering.

raining, not snowing

March 16, Friday.

Up for breakfast, 6.30 a.m.. Wolves howling when I got up.

The elk has been killed in the night, right where it was most of the day yesterday.

The carcass cannot be seen, because it is behind logs and stumps. Other said from higher up and a better vantage point, they could see part of it, or at least the antlers.

I saw one black wolf, nicely profiled against the snow. Others had seen 4-5 wolves coming and going from the carcass, Apparently all ten were there, most had eaten and were lying down, a hundred yards away from the carcass, not always easy to separate from rocks.

Wolves have to eat, but I had a strong sense of pity for the kill of a such a majestic elk, that had struggled all day to defend its life.

Packed up and left.

At times hard rain.

Mammoth Hot Springs at 9.30 a.m.

Rain off and on in Paradise Valley. Livingston at 11.00 a.m.

The Global Sim doesn't work anywhere, doesn't connect in to the AT&T network, even though it gets a signal.

Drove to Bozeman and camera store.

Uneventful drive to Hardin.

Reached Hardin, 4. 00 p.m.

March 17, Saturday.

Left Hardin, 6.15 a.m., and drove forty minutes in darkness and twilight.

Good drive home.

10 antelope
24 antelope
6 antelope

Home by 3.15 p.m.

Overcast/sunny day.

April 2-5, 2012. Utah Valley University, Orem Utah.

Apr 2. Monday. Flew to Salt Lake, and had evening dinner with Giles and Candy

Apr 3. Tuesday. Spoke at Utah Valley University. Host David Keller. Wasatch Mountains are clear and spectacular. Snow on upper one-third. Bare below. Met David's father, a retired M.D., a radiologist.

Apr. 4, Wednesday. Thought a session at the University of Utah had failed, although it turns out that Keller got his wires crossed. So I missed it and stood the audience up.

We drove out to Bear River Migratory Bird Refuge, north of Ogden, about an hour's drive up the interstate. Wasatch Mountains remain spectacular, and David knows all the peaks and has climbed nearly all of them.

Fresh-water wetlands, now rather closely managed for migratory birds, including goose hunting. The Bear River is fresh water and this is about where it reaches the Great Salt Lake, which is nearby.

coots - a thousand of them

avocets, a few
swallows
mallards
Canada geese

Best event of the day was pelicans, a marvellous display of their flight in formation, about two dozen, soaring to gain elevation in a thermal, turning together and silhouetted this way and that. White, with black wing tips, against a blue sky.

Western grebes - many
black necked stilt - two dozen
great blue heron
yellow headed blackbirds
redwing blackbirds

The Refuge is the place about which Terry Tempest Williams wrote *Refuge: An Unnatural History*

of Family and Place, 1991. She was raised near here. Keller gave me a copy and I read it during the trip. Excellent writing about events, wildlife, and people on the refuge. The book interweaves memoir and natural history, recounting her mother's diagnosis with ovarian cancer along with the concurrent flooding of the refuge, which she knew in childhood. The book's epilogue has been often reprinted, "The Clan of One-Breasted Women," explores whether the high incidence of cancer in her family might be due to their being downwinders during the above-ground nuclear testing in the 1950s and 60s.

When the lake rises the refuge can be flooded and underwater, and once it was mostly destroyed, later rebuilt.

Keller says she now says she earns her living speaking, and wants \$ 14,000 as an honorarium for a speaking event.

Dinner with David and his wife, Anina Merrill, twice. She is an M.D., with patients from HealthSouth. I was here before in April 2008, when I went to his father's cabin just south of Arches National park.

Apr 4, Thursday. Flew home.

April 10. Tuesday. Took the grandchildren for a walk in Red Fox Park, did the loop, then went across into the Fisher Natural Area, and saw a fox. Quite mottled, some red, some grey, some black

May 12, Saturday. Very small fox no bigger than a large cat crossing Laurel about the vicinity of the Danforth Chapel. Ran to middle of street, hesitated before traffic and then made it to the green area edge of campus. Might have been born this year.

June 10, Sunday. Fox in front of CSU administration building, President's Office, as I was coming out of Johnson Hall. Not far away and not that much concerned about me, though evidently alert. Brown with black patches. Nice sighting.

June 10 and following. Huge High Park fire west of town, in Stove Prairie Area. Burned 80,000 acres. Started by lightning strike, that seems to have smouldered a few days, then flared up. There was a thunderstorm a couple days ago with 338 recorded lightning strikes to the ground in a couple hours. 2nd largest fire in Colorado history. Smoke was visible from town all week, sometimes spectacularly so. Up to 2,000 fire fighters. Linda Steadman, sister of Vivian Steadman, was burned to death in the fire, on a ranch where she had lived for 42 years near Stove Prairie. Though advised to evacuate, she seems to have decided to stay trying to protect her livestock, some thirty cows and some horses.

John got home from a trailer trip to Alabama, with family, and was immediately sent to fight the fire. Spent some time in Pingree Park at the Forestry Camp, and did some loading of water from the river into tankers that re-distributed it to smaller fire trucks.

High Park is up the Twin Cabin Gulch on the Buckhorn Canyon Road. I hiked in here May 28, 1980. Again, January 3, 1981, I hiked up the gulch to High Park with the children and we had a picnic lunch in a tepee, canvas gone, but rug and big wood stove and many tools, pots, pans, etc. Children thought it was a great spot for lunch.

June 12. Curt Meine sent me a digital copy of the letter Leopold wrote to his mother, with mention

that he had shot two wolves. Written September 22, 1909. I am gathering materials prospective to a late July trip to find the site.

June 12-15. International Society for Environmental Ethics conference at Allenspark. Led the local nature walk on Wed., June 13, and led a hike in Wild Basin on Thursday, June 14. I only went as far as Calypso Cascades, though the rest of the group went on to Ouzel Falls. Nice day. The usual flora. One nice group of Green Bog Orchid, *Platanthera aquilonius* (formerly and variously *Platanthera hyperborea* (= *Habenaria hyperborea* = *Limnorchis hyperborea*), the latter now said to be not here but in Greenland.

June 30, 2012. Trail Ridge Road, with Rolston. Left 9.30 a.m. and drove into park. Main event of the day for me was right at the start, in lower end of Horseshoe Meadows, a wild turkey right in the middle of the road and so close I had to brake to avoid hitting it. First time I have seen turkeys in the park, though on asking I understand they were rare ten years ago, but have been becoming more common.

Drove to Lake Irene, for lunch, in mixed sunshine and rain. Picnic there, and walked down to the lake, starting in sunshine and ending in rain. Did a bit of walking at Milner Pass, then hiked for a hour, maybe an hour and a half, on the Poudre River trail. With memories of doing it a few years ago, and many years ago.

Drove out, with a major elk jam, at the place where the old Hidden Valley Ski lift came out, a hundred cars stopping one by one to grab a photo of the big bull elk. One other big bull seen and no other elk.

Rolston slept most of the way home.

July 1, 2012. On walk with Ellie in Red Fox Meadow, we saw two bucks, one with nice antlers and one a spike buck. They were bounding across the meadow bottom, well seen, and graceful. Brought in Prairie Coneflower, *Ratibida columnifera*, and keyed it testing my new computer multiple access plant key.

July 21, 2012. GPS Seminar in Rocky Mountain National Park. Whole day, morning in the Center and afternoon in the field. Instructor: Steve Reiter, USGS in Denver. Good seminar, but I think GPS is more than I need. Distracting gadget in the field.

One coyote when set marking a trail, in Upper Beaver Meadows.

Three turkeys in Horseshoe Park.

After the seminar, I went to the YMCA and got Caleb Johnson, grandson of Bob Crumby, and took him out to supper. He, and his girl and her parents, were planning to climb Long's Peak the next day.

July 30-Aug. 2, 2012. Arizona - Green Fire Site - Apache National Forest

July 30, Monday. Left home 6.45 a.m. Picked up Dean Biggins at US Geological Survey parking lot. Picked up Phil Cafaro.

Biggins is biologist, does black-footed ferret recovery, which involves maintaining prairie dog food base. Ranchers don't like prairie dogs. Also both ferrets and prairie dogs are highly susceptible to bubonic plague, which is his main problem in recovery work.

Plague is also in many rodents, mice and rats in the wild, how much is unknown, but he also thinks this is disruptive of wild ecosystems, prey base.

Drove south all day on I-25, to Socorro, NM. Arrive about 6.00 p.m., in Super 8 Motel.

Drove out to Bosque del Apache National Wildlife Refuge, about 18 miles south of town. 57,000 acres at the northern tip of the Chihuahuan desert. Wetlands and birding. Area has good possibilities, and apparently many birders come here during migration, especially for sandhill cranes. Pelicans. Double-crested cormorants, yellow-headed blackbirds, black-necked stilt. Saw nighthawks several times come in close to the open water and catch something, or perhaps just take a drink.

Teal, probably. mallards. green heron, ravens, western kingbird, egret.

Back to Socorro after dark. Dean and I ate in McDonalds, Phil in a Mexican restaurant.

July 31, Tuesday. Up at 5.00 a.m. Breakfast in motel.

Called and set up to see the Socorro isopod.

Met at a Chevron gas station near the motel by Rick Griego and Ruben Amaro, whom we followed out to the ponds. My contact was City of Socorro Water Department Director, Lloyd Martinez, cell 575-650-0545

Eventually through some locked gates at the waterworks, maybe three miles out of town, and then on 4WD road half a mile or more back in the brush were two small enclosures, concrete about half the size of a bathtub protecting spring fed semi-natural pools. Several hundred isopods easily visible on one of them, only a dozen or so in the other.

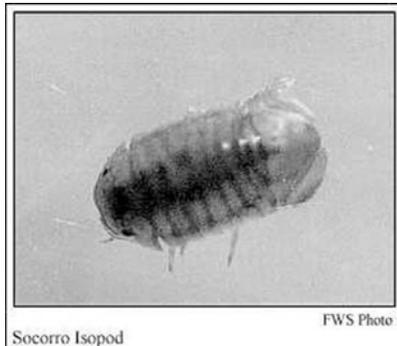
This is about like a roll-up bug, or pillbug, but a fresh-water isopod. Most are marine.



http://www.biologicaldiversity.org/campaigns/esa_works/profile_pages/SocorroIsopod.html

The Socorro isopod (*Thermosphaeroma thermophilum*) is one of only seven freshwater species in what is otherwise primarily a marine family [1]. Its historical distribution likely includes Cook, Socorro, and Sedillo warm springs which together fed a marsh extending for a half mile to the east of Cook Spring. Cook and Socorro Spring were capped and their water diverted to the city of Socorro, New Mexico. The marsh no longer exists. However, the species has only been observed in Sedillo Spring which in the late 1970s was diverted to a hot spring spa, confining the isopod to 50 meters of habitat containing two small concrete pools and a narrow stream below the pools.

The Sedillo Spring population remained stable between 1978, when it was listed as an endangered species, and August 1988 when all isopods in the pool were nearly extirpated by invasive root growth which blocked the spring outflow [2]. Flows were restored a month later, perhaps flushing a small number of native isopods from the underground plumbing into the pool. These were successfully augmented with isopods that had been housed at the Biology Department of the University of New Mexico.



In response to the near extinction, the Socorro Isopod Propagation Facility was established in 1990. The facility consists of two separate systems of four artificial pools connected by pipes. Six hundred isopods (75/pool) were introduced in 1990. By 1995, the south branch of the propagation facility was extirpated while the north branch had stabilized. In 1999, the north branch was extirpated due to two accidents. 400 isopods were introduced to the south branch (100/pool) in 1999 and continued to exist through at least 2003. A third captive population was established at the Albuquerque Biological Park in 1998 [3]. The two facilities have increased the total size of the population, the total extent of available habitat, and the number of independent populations [2].

Ongoing threats to the species include disruption of thermal groundwater discharge from surface and sub-surface explosive tests on Department of Defense lands immediately west of the natural spring, vandalism, and other human-caused modification of spring flows [3]. Between 1995 and 2002 vandals removed a valve and a protective culvert controlling flow to the spring, diverted and occluded the surface flow, removed the concrete wall lining the spring pool, dumped a junk car immediately adjacent to the spring, and removed vegetation from the propagation facility pools [3, 4]. Captive populations at the Socorro Isopod Propagation Facility have diverged morphologically and genetically from the native population, probably in response to different habitat structures which altered the intensity of (1) natural selection caused by adult cannibalism on juveniles and adults, and (2) sexual selection caused by increased male body size and changes in female spatial distributions[5].

[1] U.S. Fish and Wildlife Service. 1982. Socorro isopod (*Thermosphaeroma thermophilum*) Recovery plan. U.S. Fish and Wildlife Service, Albuquerque, NM.

[2] Lang, B.K., D.A. Kelt and S.M. Shuster. 2006. The role of controlled propagation on an endangered species: demographic effects of habitat heterogeneity among captive and native populations of the Socorro isopod (Crustacea: Flabellifera). *Biodiversity and Conservation*, 15(no. 2):3909-3935. DOI: 10.1007/s10531-005-2094-4

[3] New Mexico Department of Game and Fish. 2004. Threatened and Endangered Species, 2004 Biennial Review, Final Draft Recommendations. New Mexico Department of Game and Fish, Santa Fe, NM.

[4] New Mexico Department of Game and Fish. 2002. Threatened and Endangered Species, 2002 Biennial Review. New Mexico Department of Game and Fish, Santa Fe, NM.

[5] Shuster, S.. M., M. P. Miller, B. K. Lang, N. Zorich, L. Huynh and P. Keim. 2005. The effects of controlled propagation on an endangered species: Genetic differentiation and divergence in body size among native and captive populations of the Socorro Isopod (Crustacea: Flabellifera). *Conserv. Genetics*. 6: 355-368.

We were there perhaps an hour and they were informative and cordial hosts.

Drove west to Springerville, AZ.

Drove by the Very Large Array - astronomical configuration of huge antennas.

Built 1975-1980. The total cost was \$78,578,000 (in 1972 dollars), roughly \$1 per taxpayer at the time. This is a facility of the National Science Foundation.

The VLA is an interferometer; this means that it operates by multiplying the data from each pair of telescopes together to form interference patterns. The structure of those interference patterns, and how they change with time as the earth rotates, reflect the structure of radio sources on the sky. These patterns are used with Fourier transforms to make maps. The VLA is used primarily by astronomers. It is occasionally used for atmospheric/weather studies, satellite tracking.

Each antenna: 25 m (82 ft) in diameter, 230 tons. The array: there are four configurations, ranging from 36 km to 1 km. The telescopes are switched between these configurations every four months or so.

Resolution: 0.04 arcseconds. The resolution of the VLA is set by the size of the array. At the largest array and highest frequency (43 GHz) this gives a resolution of 0.04 arcseconds: sufficient to see a golf ball held by a friend 150 km (100 miles) away.

Crossed a low, not-at-all obvious continental divide. Wide open semi-arid country.

Deer - doe with two spotted fawns, seen roadside.

Reached Springerville about 11.30 a.m. Bought groceries at Safeway, also gas.

Drive to Alpine, south in Route 191, arriving about (what we thought was) 12.15 and phoned Don Hoffman to find that Arizona does not go on daylight time, so there it was 11.15 a.m.

Alpine is 8,000 feet, and much greener. There was a big fire last year, 550,000 acres burned. Called the Wallow fire. But it burned very unevenly and some hillsides were burned out, but others

trees burned some but quite alive and green.

The Wallow Fire, named for the Bear Wallow Wilderness area where the fire originated, was a wildfire in eastern Arizona and a small part of western New Mexico, United States, in the White Mountains near Alpine. It was started by an abandoned campfire. As of 26 June 2011, it had burned about 841 square miles, the biggest fire recorded in Arizona. Nearly 6,000 people were evacuated. The fire was started accidentally by two men who were camping. They cooperated with prosecutors and pleaded guilty to misdemeanor charges relating to mismanagement of their campfire.

The communities of Alpine, Blue River, Greer, Nutrioso, Sunrise, Springerville, Eagar in Arizona, and Luna in New Mexico were evacuated. In addition to other aircraft, a converted DC-10 Very Large Air Tanker ("VLAT"), capable of dropping up to 12,000 gallons of fire retardant in seconds, was deployed to help fight the fire.

On June 12, evacuations were lifted for Eagar, Springerville and South Fork. On June 14, the Wallow Fire became the largest fire in Arizona history, passing the Rodeo-Chediski Fire, which burned 732 square miles (1,900 km²) in 2002. On June 18 and 20, evacuations were lifted for Alpine.

On July 3rd, the fire was 95% contained. The Wallow Fire was declared 100% contained as of 6 p.m., July 8.

Four commercial buildings were destroyed; 36 outbuildings were destroyed and one damaged; 32 residences were destroyed and 5 damaged. The estimated cost was \$109 million. Thick smoke was seen in NASA satellite images, with some detected, "a smog blob," reaching into Texas and Oklahoma, even up into the Great Lakes region, affecting air quality for large areas east of the Rocky Mountains.

A little rain around Alpine. Lots of warnings about not entering some roads if there was flash flooding.

Stopped at the Ranger Station, and got information. This is Mexican wolf recovery area.

The Apache-Sitgreaves National Forests are administered as one national forest. Together they are over two million acres. The Sitgreaves National Forest was named for Captain Lorenzo Sitgreaves, a government topographical engineer who conducted the first scientific expedition across Arizona in the early 1850's.

The Sitgreaves contains the Mogollon Rim. The Rim (pronounced: muggy-own) extends two hundred miles from Flagstaff into western New Mexico.

The Apache National Forest ranges in elevation from 3,500 feet to nearly 11,500 feet and is named for the tribes that settled in this area. The area from Mount Baldy east to Escudilla Mountain is often referred to as the White Mountains of Arizona. From the edge of the Mogollon Rim south of Hannagan Meadow the land drops precipitously into the high desert around Clifton.

Continued south on Route 191, to Beaverhead, then on good gravel road (Route 26), some 12 miles to junction with Route 24, then north maybe 4 miles to Buffalo Crossing, then west on Route 25 to sign for Caldwell Cabin.

Perhaps a mile in the the cabin. Locked gate with both a combination lock to open the gate and a key to the cabin door in with the combination lock. Hard to figure out, but we got in.

Arrived maybe 12.30.

Nice cabin, formerly a ranger fire station. Overlooking a big meadow. Porch, then enter kitchen, large living room with open fireplace, one "bedroom" with decent lower bunk and small overhead bunk.

Pull out bed from the sofa in the living roomn. Two fold down beds one in the living room and one in the kitchen. I slept in the bedroom. Dean on the pull out sofa bed, and Phil on one of the pull down beds.

To our surprise there was both refrigeration and electricity, though we had been told there was not. Propane refrigerator did quite well. Solar panels down below cabin, kept themselves aimed toward the sun automatically. Inverter somewhere gave us 110 volts. Modest but decent electric lighting, flourescent, in all the rooms.

Don Hoffman arrived 2.00 p.m.

Don Hoffman
P.O. Blox 529
Alpine, AZ 85920
d.hoffman@frontier.net
www.blueriverretreat.com

He was forest ranger maybe 25 years, once on fire duty from this cabin. Later was Executive Director, Arizona Wilderness Coalition, now runs a tourist marine retreat.

We drove out in his jeep to the alleged site. This was on a 4WD road that takes off from the road by which we came in and swings back around above the cabin and out to the rim. The road is drawn in on my Hannagan Meadow 7.5 minute topo, n.w.corner.

Took about 20 minutes to get there.

With discussion en route of ponderosa pine in two forms.

blackjack ponderosa

yellow pine ponderosa

lumbermen's terms that reflect how young ponderosa has blacker bark and the tan bark does not appear until the ponderosa is some age.

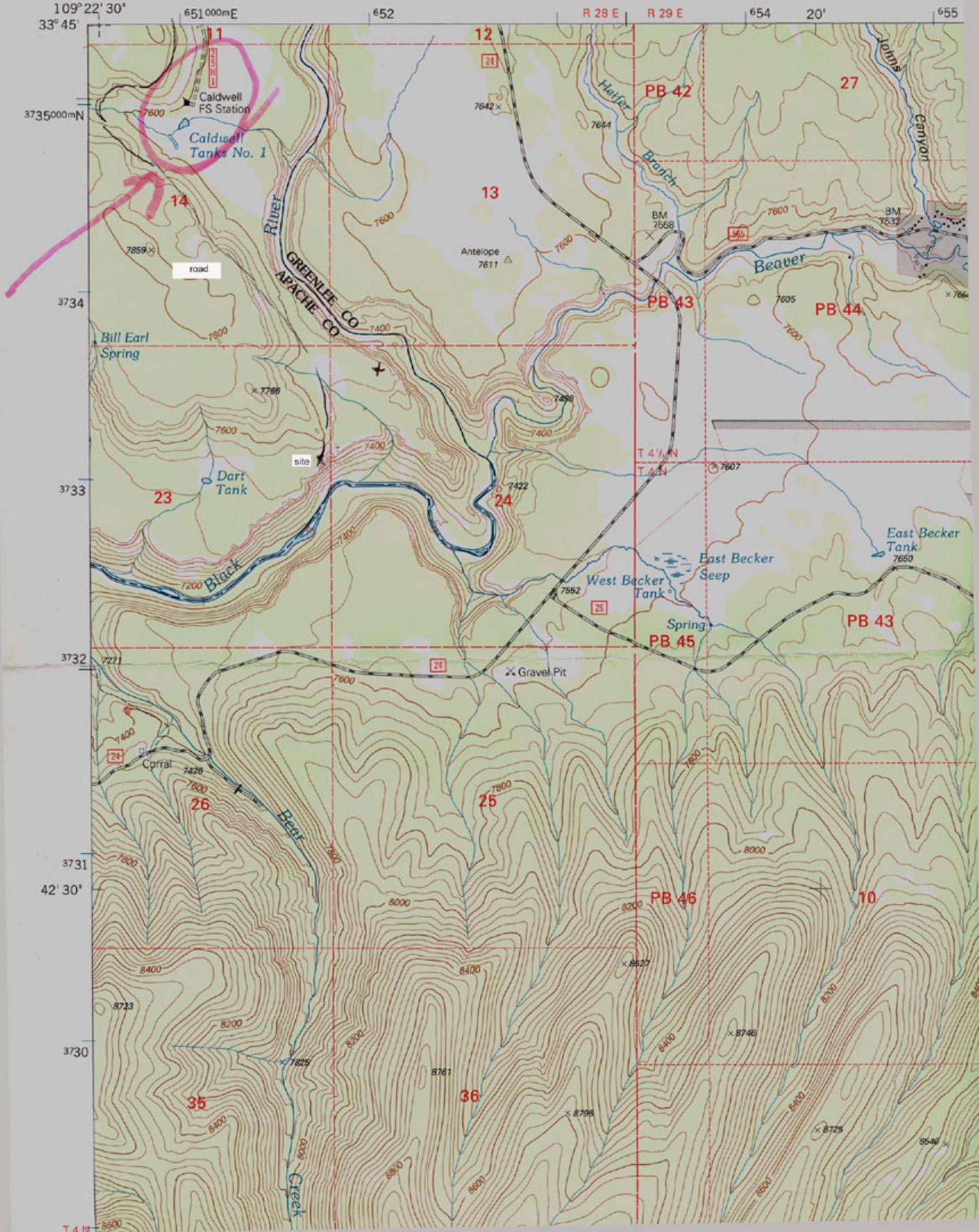
Biggins had been explanining that good grass can outcompete young ponderosas, which explains the extensive meadows here. The forest is largely ponderosa (almost looking like what I would





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Hanagan Meadow Quad. AZ showing
Caldwell Cabin and Green fire overlook



think of as lodgepole pine forest in Colorado).

Reached the site, a fine overlook of the Blue River, with various explanations why Don Hoffman thought this the best possibility.

There perhaps an hour or more.

Leopold shot the wolf on Sunday, Sept. 19, 1909. His account is in the essay, "Thinking Like a Mountain," in *A Sand County Almanac*.

We read the "Thinking Like a Mountain" essay passing Don Hoffman's copy around and each of us reading a few paragraphs at a time.

Hoffman's memories:

" spent my first two summers at Caldwell as the fire station foreman – certainly among the most memorable assignments of my USFS career. I have copied this message to Curt, Susan and Steve and Ann Dunsky (the Greenfire directors/producers) – all of who visited the site with me in 2009. I hope you don't mind.

I read the *Sand County Almanac* for the first time while sitting on the front porch of the Caldwell cabin. My immediate reaction to reading the "Thinking like a Mountain" essay was that the setting of the essay was right here. Our crew frequently practiced repelling from some nearby bluffs above the river that seem to fit the description perfectly. At that time I didn't realize that Leopold was first assigned to lead timber reconnaissance nearby along the Black River. I first met Curt in 1989 at the Gila Wilderness celebration, and he later contacted me to see if I could help find a location in the Blue Range (where I live and spent much time at work). My immediate response to him was that I really couldn't place the description in the essay on the Blue River, but I knew of a place on the Black River that fit the description perfectly. I actually can't remember why Curt was focused on the Blue River, but I'm sure it was based on a well educated hunch.

Well in 2009 a 1909 letter surfaced in a Leopold relation's safe deposit box which documented shooting a wolf while on a hike, or more likely horseback trip, on his day off with his USFS colleague Ranger Wheatley. In this letter, written home to his family, Aldo actually described precisely where his work camp was which was at the Paul Slaughter Ranch – a place I knew well and less than one mile from the Caldwell. So when Curt and Susan visited in September 2009 I took them to the PS Ranch and then to the site that most closely resembles (nearly perfectly) the setting in the essay. It is less than one mile from the Caldwell cabin (which wasn't there in 1909) and about two miles from his camp at PS Ranch. So the specific site of the shooting had to occur some where in the vicinity of the bluff that I identified, but that bluff certainly best resembles the setting of the essay. Wouldn't it be cool to find a 30-30 shell that matches the Winchester rifle he had at the time! I hope that helps you." (e-mail of May 17, 2012)

Photo of Leopold and horse is from University of Wisconsin-Madison archives, # S08841, taken at Springerville, AZ about 1909. My contact there was Vicki L. Tobias, Images and Media archivist. It appears, in poorer quality, in David E. Brown and Neil B. Carmony, eds., *Aldo Leopold's Southwest*. Albuquerque: University of New Mexico Press, 1995.

Returned and went to the PS Ranch. Paul Slaughter. We had already passed it on the way in,

Camp No. 2

Mulligan Cursga Sec. 19 T. 49 R. 28E

September 22, 1909.

my dear mama-

Ranger Wheatley went to Blue after our mail yesterday - I sent with him a so-called note telling you I was very much alive - he returned this evening and brought me just two "letters with stamps", one from you and one from Dad. Of course there were bales of

government envelopes from headquarters, but they are not letters.

I don't know where to begin on this job, it is so long since I've written. I can't possibly tell you all that has happened, but I will try and give you the main points.

The Apache Reconnaissance Party left Springer^{ville} in state on Sept. 8, and splashed 3 days through the rain up slippery hills, arriving at Slaughter's Ranch, the last outpost of civilization, on Sept. 10. When we got

there we tried to pull both wagons up a little rise to get a dry place to camp, and both teams of horses sunk in their tracks, exhausted. We camped in the mud, and work began next day.

The next day - Thanks be to all the Angels - the rainy season died the death. It cleared, and there has hardly been a white fleck in the sky since. It freezes hard every night, and every morning I get up I look at the fading stars and thank the Lord.

This town is the only surveyed town of the 360 sections covered by this job, and I wish to the devil it weren't.

The surveys are 35 years old (where there are any at all) and all the bearing trees have to be chopped out with an axe to read the old blaze-inscriptions. It takes more patience skill and cussedness to find and identify a corner than to solve a Chinese puzzle.

Moreover the country around Slaughter's is full of magnetic (in one case 38° in 50 paces) so that the needle is useless and all lines must be laboriously run by backsights. Moreover every mile there is a bound-for-China Canyon with a river to sweep down a steer in the bottom, ripping and roaring and gnashing its teeth for to swallow some poor cruiser who loses his footing. But Hell! the weather's fine, and who cares! Bally crickets, the Lord made the country and so be it! Scenery? If one had time he could spend weeks just gaping at canyons and mountains.

We finished up the north part of the team Sept. 17th and moved 5 miles south here to Mulligan Cerega at the foot of the north slope of the Blue Range. (Bow down and take of your hats, gentlemen. Of all the country under Heaven, this the devil himself would let

alone to the last). It is the prettiest country I have ever heard tell of. But wait till you cruise it!

One of our men - King - has given out absolutely and has not worked for two days. Luckily (for us and for him) his time is up tomorrow.

and now just let me add - in reply to a solicitous phrase in Dad's letter pertaining to my health. that any man, short of 100% husky and well would just plumb evaporate working the way we are working. We start by sunrise, and for the last three days I haven't gotten in until three hours after dark, up and down and up and down all day, through thickets and burns and up slopes that bump you on the nose, and over precipices into torrents of ice-water --- well, I tell you three months ago I would have lasted just about 1 hour and 13 minutes on this here job. But now,

I can wear the legs off the bunch during the day, write official letters most of the night, get up and take a little hunt in the twilight next morning, and then repeat the performance. A sick man had might as well clear out of this country and go to Albuquerque or some other quiet restful place.

So far I have had pretty poor support from the Office. My appropriation is \$500 and I need \$2500, and I haven't been able to get a letter. Tomorrow Smith & King leave for Springerville to return to School, leaving only Langwell and Pritchard. Pritchard is Guard on the Forest and has just joined us. I need 4 more men, and damn quick, or else the cost of this job will reach 2¢ an acre. You see our Cook and pack outfit costs \$8 a day, and that counts up.

Today Sutherland arrived to see how things were going, and to my great satisfaction approved all the steps I had taken on my own hook in lieu of the lacking orders from Albuquerque. I think he is quite pleased with the job - he certainly is giving me all possible support.

Our work has been greatly helped by Ranger Whalley, who knows the country, and besides is a pleasant fellow and a gentleman.

I'm afraid this gives you only a poor idea of the work, but I honestly can't write any oftener. Even now it is cold as the devil in this tent. But please let me keep on hearing from you all - you don't know what a letter is until mail comes once a week by special messenger, and you are bucking the universe cussing and planning and fighting

and working all the while. Then a letter from a gentle peaceable place like home comes like a message out of another world. Maybe you all think

I have forgotten because I don't say very much, but I tell you no. Every night when all the others are snoring

in their beds, I finish my letters and then go outside and sit over the embers of the fire till they die, smoking

my pipe and thinking. But now has come to me

the greatest of sorrows - I have lost my pipe. I

would lay down a ten-dollar bill to have it back.

It happened the other day, when I hurriedly stuffed

it in my pocket to shoot a Turkey. By the way, since

the 15th you may guess my Sundays have been

busy. Wheatley and I have killed 2 Timber Wolves

and 2 Turkeys and a lot of grouse, but no deer.

Somewhat we have had luck. The party has seen

39 deer but nobody yet has gotten a shot at a buck
 does & fawns are against the law. Our luck and
 break seems, or else I'm a hoodoo. I go out every
 morning before breakfast.

I am mostly congealed now - it is freezing
 cold you know - so goodnight. Will write as soon
 as I can, - meanwhile don't worry if you don't
 hear. Always Your Aldo.

P.S. By the way, somewhere flying around loose in our
 house are a black silk & a red silk neckerchief that
 have been around for years and nobody ever uses. I
 can use them fine if you can send them. There was
 also a white one which I pinched and am wearing
 every day. It is just right.

A. L.

9.

P.S. Ask Dad whats the news about the gun?
I have ordered shells, and ~~except~~ expect to use it
in November when I get back to Springer. Tell
Dad if he did not send the scabbard please to fold it
up and do so, to Springerille, marked "Hold until
return."

A.L.



Leopold's Winchester Rifle leo0732 in Univ. Wisconsin archives

not knowing what it was. This was where Leopold was camped. A long-standing building was probably there when Leopold was there in, but Leopold seems not to have stayed in the ranch-house, but to have camped nearby. That building burned in last year's fire, and the burned ruins were evident. Too bad. USFS people used it over the years, with lots of parties and much alcohol there.

turkey vulture
osprey
red crossbill
northern goshawk - probably, out over the canyon
prairie falcon
kestrel
mourning dove
flicker
western kingbird
raven
violet green swallows
mountain bluebird

nighthawk heard
great horned owl heard.

August 1, Wednesday.

We walked the rim, going east across the meadow to the rimrock, and then south to a point around which the river curves, then returning west along the rim, to the spot where we were yesterday.

Exploring for what might have been other likely sites. You needed a good view of the river, willows, slide rocks (which the limping wolf crawled into), a feasible way down to the river, and other things.

whitetail deer spooked in the woods. Saw her run away clearly.

And, at one point, to our pleasant surprise, we saw a sizeable doe cross the river - as Leopold first thought he was seeing.

We went too far, not at first recognizing yesterday's site, and had to realize we were wrong. Phil thought it was ahead and went on. Dean and I turned to try to find the road - which also we couldn't find.

But I had talked to a fellow and his wife in an all-terrain vehicle a half hour before so I knew the road was back behind us. Made our way along a fence and reached the road - and a huge mudhole at a gate, which we knew we didn't cross yesterday.

Still we had trouble re-locating the yesterday site, and weren't really sure until we replayed photos taken yesterday and matched up trees and rocks with photos then taken.

Ate lunch there. Phil returned while we were eating.

With a nap after lunch.

Walked back along the road over which we drove yesterday. I was getting tired.

Lovely group of yellow columbines.

rabbit

Leopold recalls "We were eating lunch..." when they saw the wolves, and here we were eating lunch also at perhaps the same site.

rock squirrel

canyon wren

We left the road in sight of the cabin and cut across the meadow to the cabin. Back about 3.00 p.m. I was getting some tendency to cramp.

Naps.

Phil and Dean took the Jeep and went out to do some exploring.

August 2, Thursday.

Up at 5.00 a.m., and off at 6.15 a.m.

We reached Alpine, now trying to figure out Escudilla, a mountain about which Leopold has an essay, and which is supposed to be a commanding mountain on the horizon. We were seeing nothing of it.

But we figured it out east of Nutrioso, where it indeed becomes prominent and is commanding from then north. We had been seeing it on the way in and did not know what it was.

Reached Springerville.

Reached Socorro.

couple of antelope

Reached Albuquerque. Lunch at an Arby's, and saved half our sandwiches for supper.

gas in Raton

hard rain around Pueblo, had to go very slowly.

ate leftover lunch for supper around Colorado Springs.

Home about 10.00 p.m. Long drive.



Mount Escudilla

Learning how to think like a mountain

By Holmes Rolston III
For the Coloradoan

"Shoot! They're wolves, not deer! See her shake that big tail coming out of the river."

Rifles emptied, the mother wolf was down. One yearling pup was dragging a leg past some willows into bushy rocks. The others had vanished.

I was standing on a rimrock bluff high over the Blue River in the Apache National Forest of Arizona, about where Aldo Leopold shot those wolves a little more than a hundred years ago on Sept. 18, 1909. This was to become the most iconic wolf kill in conservation history.

"We saw what we thought was a doe fording the torrent, her breast awash in white water. When she climbed the bank toward us and shook out her tail, we realized our error. Grown pups joined her. In a second, we were pumping lead into the pack."

I saw no wolves. However, I did see a mule deer doe crossing that same river below and thought that maybe I could hit her with a telescopic sight but not with the iron sights Leopold had.

We might still see a wolf. This is the recovery zone for the Mexican wolf.

I recalled the excitement Leopold still recalled when three decades later he penned his "Thinking Like a Mountain." It is one of the most influential essays in conservation literature.

Leopold scampered from bluff down to river to encounter green fire in the wolf's dying eyes. I looked for a route by which he might have gone down. Not there, too steep. Maybe there, that does come out where there are willows and slide rocks.

"We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes — something known only to her and the mountain."

What happened in minutes in this then-remote wilderness in Apache National Forest was a shot heard round the world. Leopold's "Sand County Almanac," with this powerful essay, has sold 2 million copies and has been translated into 12 languages.

As Leopold reached the dying wolf, holding his rifle between himself and the wolf, "the wolf gnashed out and grabbed the rifle butt in its teeth," according to memory that comes though his son Luna, who still had the scarred gun.

Leopold's rifle was a Winchester .30.30 model 1894, a short carbine. It looks like this might have been a shot of 125 to 150 yards. Leopold and another ranger named Wheatley emptied their guns and hit only two wolves.

My granddaddy also had a '94 Winchester saddle rifle. I had that gun on my mantel for a half century. As Leopold said, it's hard to shoot downhill. I couldn't have hit anything with it at this distance.

"I've known this country for most of my life," said our guide Don Hoffman. "I first read Leopold when I was a ranger firefighter on the porch of that cabin you are staying in. Read the green fire essay so many times I could recite it from memory. I've read the reports Leopold filed and right here is as likely a spot as any on the river."

Hoffman was guiding myself, Phil Cafaro, a colleague who teaches environmental ethics, and biologist Dean Biggins, who oversees recovery efforts for the black-footed ferret.

"Thinking Like a Mountain," was not penned until 35 years later. There was no evidence of a kill in the otherwise extensive reports filed at the time, required by Leopold's duties. Skeptical critics wondered if the

account were not poetic license, a fictional literary device.

But no more. In 2009, a letter surfaced (thanks to the research of Susan Flader) probing into letters in the bank box of a relative.

Toward the end of a nine-page letter to his mother Leopold wrote, "Wheatley and I have killed two Timber Wolves and two Turkeys and a lot of grouse, but no deer."

He laments their bad luck with deer, the loss of his pipe, and also that it is getting cold. There is no epiphany here, but this leaves no doubt that this kill actually took place. He later recalls it seared into his memory.

Leopold had graduated from Yale University earlier that year and moved from the Ivy League to the boondocks. The 22-year-old was only a couple of weeks on the job "young and full of trigger-itch. Many a hunter, growing older, has less trigger-itch and kills with a pang of sorrow," he wrote.

In the dateline of his letter, Sept. 22, 1909, Leopold locates his camp at Slaughter's Ranch, setting camp there on Sept. 10. The wolf kill was on Sept. 18, his day off, when he was turkey hunting. The rim rock situation he describes best fits the place where I was standing, maybe two miles from his camp. If not here than somewhere close by.

We spent a day exploring the rim for other possible sites: rimrock to rimrock, river below, talus-slide slopes and willows on this side of the river. The terrain made a lucky shot possible with a feasible route down often steep canyon walls by which Leopold could have hurried down to the river. An overlook spot appeared to be a place he might have chosen for lunch with a view. There was a decent turkey habitat on the rimrock above.

It took time for the green fire to burn deeper. A few years later, Leopold was still (officially, on the job, at least) advocating exterminating not only the wolves, which were already few, but also the (mountain) lions, plentiful enough to kill thousands of deer. Thinking like a mountain, he saw wolves regulated the deer population and contributed to good hunting.

Yet he was uneasy and came later to regret "my sin against the wolves." Leopold's experience here, he later said reflecting on its impact across his life, "constitutes one of the milestones in moral evolution."

Nevertheless, he spent the rest of his life hunting and, as game manager, trying to produce more game to kill.

I spooked a deer here today, close enough to see her eyes as she looked up just before she ran off.

Leopold seems never to have seen fire in any deer's eye. He shot ducks and late in life recalls his youthful joy without remorse as one fell and landed belly up "red legs kicking."

The mother wolf that Leopold shot here cared for her pups but also cared only to put out any fire in the eyes of a deer. Both she and Leopold could only see meat to eat in a deer.

Leopold, and maybe even the wolf, enjoyed the killing. Maybe the dying green fire in the eyes sees in the hunt-

er and hunted something of the tragedy of life. Killing and eating is the law of life in zoology.

Thanks to what happened here — Leopold's misgivings when he saw the fire in the dying wolf's eyes — I have seen far more wolves than Leopold ever did. The restoration of wolves to Yellowstone, over a decade and a half ago, was one result of Leopold's starting to think like a mountain. I have seen perhaps a hundred wolves alive and alert, most-

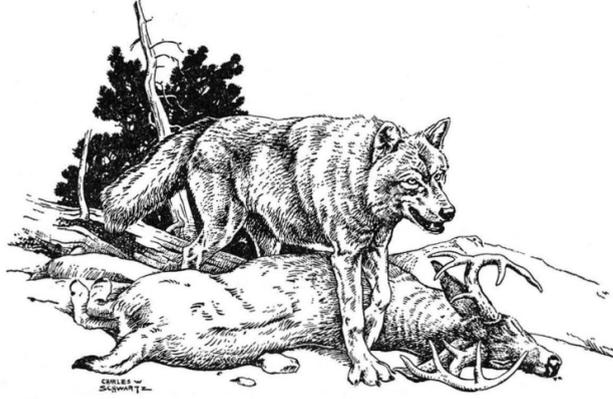
ly in Yellowstone, some in Minnesota. Leopold never records seeing another wolf alive.

Leopold came to focus on ecosystems, which he epitomized as "thinking like a mountain." What moved him on this spot though, was green fire in the eyes of the wolf he had just shot. Maybe we need them both: the self-transforming encounter with a particular wild other that triggers the thinking big about the big outdoors.

I have found walking in Leopold's steps, that reflection about who I am, where I am and what I ought to do happens in wildness as much as in town.

Leopold found himself on a moral frontier on the western frontier. He urged "a sense of kinship with fellow-creatures; a wish to live and let live; a sense of wonder over the magnitude and duration of the biotic enterprise."

Here I am in the same



TRAVELER'S NOTEBOOK

Readers are encouraged to send Traveler's Notebook submissions. The submissions should be no longer than 1,000 words, unless pre-approved by the editor. Please include images of the trip, including ones of yourself either at the location or a head-and-shoulder shot and a short bio, including what you do and how long you've lived in Fort Collins. Traveler's Notebook appears periodically in the Xplore section. Send submissions to Miles Blumhardt via email at milesblumhardt@coloradoan.com or send to The Coloradoan, attn. Miles Blumhardt, 1300 Riverside Ave., Fort Collins, CO 80524.

place, overlooking the gorge a century later, trying to think like a mountain, still on the hunt for the ethic he launched.

Holmes Rolston III is a Fort Collins resident and university distinguished professor emeritus of philosophy at Colorado State University.



Holmes Rolston III is pictured standing on the spot in the Apache National Forest of Arizona where Aldo Leopold might have shot the wolf with the green fire in its eyes. COURTESY OF HOLMES ROLSTON III



Aldo Leopold COURTESY PHOTO

Arizona, about 1909. University of Wisconsin archives

August 22, 2012. Medicine Bows with Fred Johnson.

Met him at Watson Lake at 7.30 a.m., and drove to Centennial and to Medicine Bows. Drove to Libby Lake Picnic Area and on past half mile to trailhead. Hiked to South Gap Lake, about 3/4 mile, roundtrip maybe 1.5 miles. Overcast day, and windy, but not bad. Flora mostly gone, but some lingering in flower, and we could spot a number in fruit and from foliage. Lunched on a crest overlooking South Gap Lake, nice view and pleasant. Spectacular scenery even on overcast day. Little snow pack in sight but a little. Two deer seen.

yarrow, *Achillea millefolium*

Pineapple weed, *Matricaria discoidea*

Tundra dandelion, *Taraxacum officinale ceratophyllum* (in Ells)

Tansy Aster, *Machaeranthera pattersonii*

Broadleaved arnica, *Arnica latifolia*

Fireweed, *Epilobium angustifolium*

Alpine clover, Parry clover, *Trifolium parryi*

Harebell, *Campanula rotundifolia*

Alpine sandwort, *Minuartia obtusifolia*

Elephantella, *Pedicularis groenlandica*

Rosecrown, Queen's Crown, *Sedum rhodanthum*

Old man of the Mountains, Woolly Tetraneurus, *Tetraneurus acaulis casepitosa* (= *Hymenoxys*)

Marsh marigold, *Caltha leptosepala*

Fendler's sandwort, *Arenaria fendlerii*

Alpine sorrel, *Oxyria digyna*

Sibaldia, *Sibbaldia procumbens*

Golden currant, *Ribes aureum*

Agroseris, *Agroseris aurantiaca*

Arctic gentian, *Gentiana algida*

Bearberry, Kinnikinnik, *Arctostaphylos uva-ursi*

Moss campion, *Silene acaulis*

Black-headed daisy, *Erigeron melanocephalus*

Sulfur flower, *Eriogonum umbellatum*

Rayless Arnica, *Arnica parryi*

Gray's Angelica, *Angelica grayi*

Returned and took the old road on the way back.

Hairy Goldenaster, *Heterotheca villosa*

Ragwort Dandelion, *Senecio taraxacoides (Ligularia)*

I brought in the last two and keyed them with my new Flora XID, multiaccess key.

Home about 5.30.

August 24, 2012. Bear in town, captured in tree in western part of town, not so far from us. Yearling bear hanging around several days because of apple and pear trees in the area. Darted and taken back to mountains. Story in *Coloradoan*, August 25, A3.

August 28, 2012. Saw and heard Barak Obama speak in Monfort Quad at CSU. Had to get a ticket ahead of time, and long line to get it, quarter of a mile, but it moved quite fast, about as fast as I could walk. Security screened, somewhat casually, and then found a place to stand, far enough away from the loud (and terrible) music to wait.

Waited about an hour through some warmup speeches (Ken Salazar, Secretary of Interior, Governor Hickenlooper) and then Obama spoke. Through binoculars I could see him reasonably well, recognize his face, see his mannerisms, etc. Featured what he had done for students, and his green energy achievements. Audience was perhaps 60% students, 40% others.

This is the first sitting president I have seen, though as a youth I did see Dwight Eisenhower, on the back of a train in Charlotte, waving as he went through. He was then running for president.

September 28, 2012. Afternoon in Rocky Mountain National Park, with Jane and Ellie Jane. Lovely day, and best color in aspen I recall. Saw about 150-200 elk in Moraine Park and Horseshoe Park, and heard maybe four dozen good bugles, mostly at some distance but clearly. Some quite nice bulls, and one up quite close roadside. Managed a rather pleasant picnic about 5.00 p.m. at once of the tables in Moraine Park, not too windy or cold.

October 3-5, 2012. Drive to Salt Lake City and return to fix Giles' problems. Antelope seen rather regularly going over, but not so many coming back. 65 going over. Great weather, and quite nice, but cool coming back, with an impending storm promised overnight after I safely got back about 3.15 p.m.

October 26-28, 2012. Anti-Anthropocene event in Denver. Drove down with Phil Cafaro for Friday evening meal. Stayed in Curtis Hotel. Organized by Weeden Foundation, Don Weeden, Director (based on his grandfather's money). Hot and bright group of two dozen concerned about too much enthusiasm for entering the Anthropocene and giving up on conserving wild nature. Fox on return, entering into Lexington Green.

December 10-14, 2012. Drive to Salt Lake City, with Jane, to work out new housing for Giles. Bought him a trailer and a truck. I-80 was surprisingly easy. Worst part was putting in gas in Rock Springs, where it was so windy I could hardly stand up to handle the pump. Otherwise ok., and on return trip very little wind. Lucky with the weather. Wasatch Mountains often nicely visible from Salt Lake, with good snow cover. A little snow in town.

Late December. Great horned owl heard calling several times in the trees coming out from Johnson Hall.

end 2012.