

Geology lessons in massive circle of rock

By **ZACH URNESS**
(Salem) Statesman Journal

FORT ROCK — If the United States descends into anarchy, and roving tribes of armed highwaymen rule the countryside, the place I’m going to start a new civilization is Fort Rock State Natural Area.

Actually, by this time, it would just be Fort Rock.

There would be no state parks in the smoking ruins of what once was called Oregon.

The benefits of Fort Rock as a place to reset humanity are obvious the minute you see it rising like a stone colosseum above the high desert, southeast of Bend.

An enormous circle of jagged rock wall, Fort Rock provides an excellent level of natural protection. The sagebrush prairie extending in every direction means you could see invaders coming from miles away.

A hike through the inside brings you within walls that feel both cozy and expansive, not unlike a professional baseball stadium. The towering rock pedestals, rising in gothic shapes, would make an impressive throne to sit upon while emissaries from neighboring tribes arrived to offer tribute.

Yes, this natural kingdom is the place to be after a full-blown breakdown in society.

The problem, I suppose, would be finding a reliable source of water. It’s an ironic conundrum considering Fort Rock began life — and sustained some of the earliest life in North America — as an island in a gigantic prehistoric lake.

No, really.

Beginning about 2 million years ago — and occurring in cycles — melting glaciers and rain created massive bodies of water in Eastern Oregon called pluvial lakes. The largest, today known as Fort Rock Lake, was over 1,260 square miles and covered the length of the Christmas Valley, according to the Oregon Department of Geology and Mineral Industries.

About 100,000 years ago, a small eruption below the lake’s surface spewed hot basalt magma up through the water, cooling into a stone ring island with gently sloping



In this Sept. 20 photo, the Fort Rock State Natural Area is seen in the distance near Fort Rock. An enormous circle of jagged rock wall, Fort Rock provides an excellent level of natural protection.

sides. That became Fort Rock itself.

The island drew visitors.

In search of the lake’s abundant fish and waterfowl, some of North America’s earliest human inhabitants are believed to have paddled canoes to Fort Rock and lived in the area’s lakeshore caves.

A pair of sagebrush bark sandals were discovered at Fort Rock Cave, about 1.5 miles from Fort Rock, by University of Oregon archaeologist Luther Cressman in 1938. They were dated to some 9,000 to 13,000 years ago and revolutionized the way we understand the development of humans on this continent.

“They’re still the oldest known footwear found anywhere in the world — older than anything found in Egypt or Africa, which is pretty amazing,” said Joe Wanamaker, park manager at Fort Rock. “A lot of other artifacts have been discovered there as well, including spear points.”

Today, evidence of the former lake and its inhabitants can be found by looking in the right places.



In this Sept. 20 photo, a trail winds through the inside of Fort Rock in Fort Rock State Natural Area near Fort Rock.

OPRD offers guided tours of Fort Rock Cave each June, July and August — check their website for 2017 dates. And while hiking in Fort Rock itself — an easy 1 to 3 mile trek — you can peer up the stone walls and spot notches carved by the

ancient lake’s surf, which eroded the former island into the cliffs seen today and breached the southeastern wall.

The ground within Fort Rock is a soft, sandy loam — former lake sediment that makes for easy

walking.

The best time to visit Fort Rock depends on what you want to see. In summer, temperatures can be blistering, but there are the guided tours. Spring is also an attractive time to visit, with wildflowers in bloom.

For me, late autumn and winter has been grand. The cool sunshine and near-complete solitude allows a person’s imagination to drift, creating visions of a post-apocalyptic civilization in a prehistoric landmark.

If you go:

Where: Fort Rock State Natural area is in south-central Oregon, south of Bend. From the town of La Pine, follow Highway 31 east to signs for Fort Rock. Follow County Road 5-10 into the unincorporated town of Fort Rock and stay with signs to a parking area and trail-head.

What to do: There are a collection of trails within Fort Rock that can take visitors on hikes ranging from 1 to 3 miles round-trip.

Other adventures near Fort Rock:

Summer Lake Hot Springs: A glorious resort with cabins starting at \$100 per night and natural hot springs inside a historic bathhouse. Day use is \$10. A must-visit during winter.

Supplies / hotels: The best place to get gas, supplies and find a hotel is Christmas Valley.

Hikes: Hole In the Ground, Crack in the Ground and Derrick Cave are all incredibly cool geological oddities nearby.

Hager Mountain: Hike to this spectacular mountaintop lookout in summer, with views from the Cascade Range to the high desert, or spend the night there in winter. Get a reservation (way in advance) at Reservations.Gov.

Food: Visit this area without stopping at Cowboy Dinner Tree restaurant and you’ll regret it. The meal is true cowboy cuisine: a 26- to 30-ounce top sirloin steak or one roasted chicken with a baked potato. You must call in advance for reservations, (541-576-2426). Also, bring cash. Seriously.

Carp killed at Umatilla wildlife refuge

Project to benefit vegetation, waterfowl

By **GEORGE PLAVEN**
East Oregonian

Dead carp will litter the pond at Whitcomb Island on the Umatilla National Wildlife Refuge for the next several months after the U.S. Fish and Wildlife Service applied rotenone Thursday to kill the invasive species.

Rotenone is a plant-based poison that is lethal to fish, and dissipates quickly in water. The ponds will be safe for people, birds and other wildlife, according to FWS officials.

Carp affect waterfowl in the refuge by eating aquatic vegetation and muddying water to the point where plants can no longer grow. That drives out ducks, geese and swans from the area, in search of other dependable food sources.

Lamont Glass, Umatilla National Wildlife Refuge manager, said they have done numerous other carp removal projects in the area, which have resulted in more waterfowl.

“We’re seeing a lot of waterfowl using these treated areas in the summer,” Glass said. “Before treatment, waterfowl were almost entirely absent.”



Canisters containing the pesticide rotenone sit in the back of a truck in the Umatilla National Forest last October east of Meacham.

The Oregon Department of Fish & Wildlife also recently turned to rotenone to remove invasive goldfish and bullhead catfish from several ponds in the Umatilla National Forest, in order to protect trout fisheries.

All the dead fish at Whitcomb Island will also provide a free meal for seagulls and bald eagles, with no wasted effort on hunting, said Denise McInturff,

visitor service specialist for the refuge.

Whitcomb Island is located on the refuge along the Columbia River, approximately eight miles west of Paterson, Washington.

For more information, call 509-546-8333.

Contact George Plaven at gplaven@eastoregonian.com or 541-966-0825.

BRIEFLY

Scientists try bacteria to halt invading cheatgrass in West

BOISE, Idaho (AP) — Scientists in southwestern Idaho are experimenting to find out if bacteria can stop an invasive weed that is taking over the West.

Cheatgrass gets its name by sending out early roots and cheating other plants of water in the spring.

Then it dries out in the summer, becoming a powerful catalyst for wildfires that kill neighboring plants and destroy habitat needed by sage grouse and other wildlife.

The results are huge, cheatgrass-filled landscapes that cycle through frequent wildfires.

But scientists have discovered some bacteria can stop cheatgrass root growth, and controlled rangeland experiments started earlier this year are testing their effectiveness.

Some results are expected within a year but more will be known in five years.

Oregon hunter injured by antler of elk carcass

PORTLAND (AP) — Authorities say an Oregon hunter has been hospitalized after being impaled by the antler of an elk he had just killed.

KATU-TV reports that Crook County Sheriff’s Office deputies say 69-year-old Gary Heeter of Bend went hunting Saturday and was dragging the elk’s carcass behind his four-wheeler. Deputies say the vehicle flipped, sending Heeter backward onto the elk’s antler.

Hospital officials said Monday that Heeter was in fair condition.

Sheriff’s Sgt. Ryan Seaney says Heeter was hunting with a group and members of his party started first aid before first responders arrived.

Trump win raises questions about U.S. pledge in climate deal

MARRAKECH, Morocco (AP) — The election of a U.S. president who has called global warming a “hoax” alarmed environmentalists and climate scientists and raised questions Wednesday about whether America, once again, would pull out of an international climate deal.

Several scientists warned that Earth will likely reach dangerous levels of warming if President-elect Donald Trump fulfills his campaign pledges to undo the Obama administration’s climate policies.

Many people at U.N. climate talks in Morocco said it’s now up to the rest of the world to lead efforts to rein in greenhouse gas emissions. Others held out hope that Trump would change his stance and honor U.S. commitments under the Paris Agreement.

“Now that the election campaign has passed and the realities of leadership settle in, I expect he will



French Environment Minister, Segolene Royal, delivers a speech during the opening session of the Climate Conference in Morocco on Monday.

realize that climate change is a threat to his people and to whole countries which share seas with the U.S., including my own,” Marshall Islands President Hilda Heine said in a statement. Small island nations fear they will be swallowed by rising seas.

More than 100 countries, including the U.S., have formally joined the agreement, which seeks to

reduce emissions and help vulnerable countries adapt to rising seas, intensifying heat waves, the spreading of deserts and other changes from man-made warming.

“I’m sure that the rest of the world will continue to work on it,” Moroccan chief negotiator Aziz Mekouar said at the climate talks.

Others weren’t so sure, with scientists and envi-

ronmental activists calling Trump’s election a planetary disaster.

“The Paris Agreement and any U.S. leadership in international climate progress is dead,” said Dana Fisher, director of the Program for Society and the Environment at the University of Maryland, said in an email. However, the transition toward cleaner energy is so entrenched in the U.S. it would continue without federal money.

The U.S., under the Bush administration, declined to join the previous climate deal, the 1997 Kyoto Protocol, which greatly reduced the accord’s impact. But President Barack Obama made climate change a priority and was instrumental in making the Paris accord come together.

The goal is to keep the rise in global temperature below 3.6 degrees Fahrenheit, compared with preindustrial times. Temperatures, though, have already gone up by half that amount.

Trump pledged in May to “cancel” the Paris deal.

“Without U.S. action to reduce emissions and U.S. diplomatic leadership, implementation of Paris will surely slow and avoiding a 2 degree warming, the benchmark of danger, would become impossible,” said Princeton University climate scientist Michael Oppenheimer via email.

About 21 percent of the accord’s expected reductions in heat-trapping gases through 2030 were to come from the United States, according to Drew Jones, co-director of Climate Interactive, a group of researchers who model climate emissions and temperatures.

Trump has called for stripping regulations to allow unfettered production of coal, oil and natural gas — a key source of emissions — and rescinding the Clean Power Plan, an Obama strategy to fight climate change.

Trump told an oil and gas conference in North Dakota

he would “save the coal industry” and stop using tax dollars for global warming programs.

But it’s unlikely that Trump’s actions would reopen coal mines or coal-fired power plants. What really killed coal in the United States is much cheaper natural gas from hydraulic fracturing or fracking, said former astronaut Jay Apt, now co-director of the Carnegie Mellon Electricity Industry Center. In a phone interview from Pittsburgh, Apt said it is likely the nation will use even less coal if Trump opens up more drilling and the price of natural gas drops.

The pro-fossil fuels American Energy Alliance said Trump’s victory presents a chance to reset “harmful energy policies” in the U.S.

Before the two-week conference, U.S. officials said they expect other countries to stay the course no matter what Washington decides.