

Memo line: Grizzly bears in the Greater Yellowstone Area should remain on the Endangered Species List.

The grizzly bear is a familiar animal. Its claws have been traded and its pelts used for blankets. Currently, the bears are used to attract tourists to places like Yellowstone National Park and the state of Alaska as well as keep the balance of the ecosystems that they reside within. Compared to the range they had before the United States expanded westward, they once had a wide range has shrunk and they currently only live in a few parts of the United States and less than half of Canada. These bears should not be removed from the Endangered Species Act because of the effects of habitat loss, legal measures in the individual states, and the need of apex predators in an ecosystem.

Habitat loss for grizzly bears negatively impacts the survivability of the bears.

Habitat loss is a large part of the problem faced by the bears. They once “roamed through the entire western U. S. south into Mexico including the Great Plains and along rivers in the desert” (Grizzly Bear, 2016). Currently their range is “Alaska, Yukon, and Mackenzie District of Northwest Territories south through most of British Columbia and w Alberta to s central Nevada” (John O. Whitaker, 1980). The range difference should be taken into consideration when evaluating the status of the Grizzly Bear. Looking at the population ecology in current population centers paints a small picture. In Denali National Park and Preserve and other national parks, people can get an accurate idea of what the population is doing in a protected area but the loss of range has an impact of the species. According to Patricia Owen and Richard Mace, both researchers at the Denali National Park and Preserve, the average of the results “indicates a population decline of 0.37% annually” (Patricia A Owen, 2006). Some of their individual analyses show stable or increasing populations. The preserve, Yellowstone, and

other pockets of the species may be at its limit for grizzly bear populations (Patricia A Owen, 2006). If the bears population is stable or close to being stable in the protected areas that they are currently in, without current or more stringent regulations and help the species will not grow beyond the ecosystems of the national parks if removed from the Endangered Species List. Though, this is not just an issue for the grizzly bear, habitat degradation “affects 85% of the imperiled species” (Pagel, 2001).

Another consideration is how disconnected the grizzly bear populations are in the states they reside. They live in “Alaska, Wyoming, Montana, Idaho and a potentially a small population in Washington” (Basic Facts About Grizzly Bears, 2016). Their four populations in the lower states are disconnected. The bears in Alaska are connected to the ones in western Canada. “Connectivity is important to recovery because it may enhance demographic and genetic flows that support persistence of peripheral populations” and helps maintain the overall population over time (Carlos Carroll, 2015). With less genetic diversity a disease or parasite is more likely able to do serious damage to the population in a small area with little genetic diversity. Also, when the populations are not interconnected, gene flow is less likely to happen and they may experience genetic drift. If genetic drift occurs, trying to make the populations interbreed will not work. It will not work because they will start to become separate species at this point. At best you get a sterile hybrid, like a mule, that is unable to help the population grow. At worst no offspring will result in attempted interbreeding which wastes the resources that the U.S. and its states are putting into protecting and preserving the animals. To maintain the species as it is now, it should not be allowed to diverge or their likelihood of extinction will increase. The pockets need to be connected somehow so that the bears can naturally interbreed or there will have to be the occasional human interference with the gene pools of the areas that

the bears inhabit. The human interaction would be the transfer of at least a single bear per generation to another location in order to help the species (Carlos Carroll, 2015). Either way the United States has to have a more active role in the restoration efforts of the grizzly bears to ensure a more permanent solution to their low numbers (Carlos Carroll, 2015). The pockets need to expand or humans will need to continue to monitor the grizzly bears to ensure there is some level of interbreeding to ensure the species survival.

A compounding factor to the habitat loss of grizzly bears is the impact of climate change. The temperature overall has been increasing since scientists started recording a month's average temperature (Global Analysis- August 2016, 2016). Warmer temperatures allow bears to stay out of hibernation longer. However, this leads to more accidental shooting by hunters (Threats to Grizzly Bears, 2016). Changes in the climate in recent trends helps blister rust (an invasive species from Asia) and pine beetles. The beetle and the blister rust destroy food sources that the bears typically use. Blister rust affects Whitebark pine, among others (White Pine Blister Rust, 2016). When fall rolls around the bears eat stashes of the cones from these trees that squirrels gathered (Cecily M. Costello, 2015). These pines may not be the most abundant but have a higher calorie count compared to other pine trees. As for the beetle, warmer winters have not been controlling their population as much and therefore are effecting more trees compared to previous years (Forest Health: Mountain Pine Beetle, 2016). The pine rust and the mountain beetle causes the bears to find new sources of food because previous sources are being affected by the previously mentioned plant and beetle to name two examples. When they adapt by going dumpster diving or eating livestock, they "often die as a result" (Threats to Grizzly Bears, 2016). The complete impact of a changing environment has not been completely determined but these changes should be taken into consideration since it impacts the bears' habitat. The warmer it

gets, the more likely that grizzly bears will look for livestock or a trash can, causing more human bear interaction. More human bear interaction, more cost and more fatalities on all sides.

The legal actions within each state will vary resulting in differential treatment.

When the gray wolves were suggested to be removed from the Endangered Species List, Wyoming was the last state that the federal government relinquished control of the management (Jeremy T Bruskotter, 2014). This was due to how strict the federal government wanted the law to be in Wyoming before the control was handed over. In these states, the property owners have different priorities that can change over time. On private land there are few substantive restrictions (Pagel, 2001). Going along with the previous section, few of these legal restraints address the habitat of the animals that they want to protect.

In Wyoming, the “Wyoming Grizzly Bear Management Plan is based on the U.S. Fish and Wildlife Service grizzly bear demographic monitoring and recovery criteria” (Fish, 2016). In Montana has not released a document like the Wyoming plan onto the internet. However, their website states, the plan “focuses on populations and potential populations” without much more than general ecosystem maintenance (Grizzly Bear Management Plans, 2016). Idaho’s plan is similar to the other two states (Conservation Strategy for the Grizzly Bear in the Greater Yellowstone ecosystem, 2016). The three plans focus on preservation of the current state as opposed to a full recovery. They state the status quo and look fairly identical to each other, minus the state specific distribution and geography. No apparent differences in approach arise on paper. This may give rise to problems in Idaho and Montana since the bears’ territory is not within the boundaries of Yellowstone National Park (Maps, 216). The approach should be more proactive in areas not covered federally. All three, but more specifically Idaho and Montana, need to develop more protections and stricter laws on private property.

There is a need for apex predators within the Yellowstone ecosystem.

Each ecosystem has a balance and various niches to fill within it. The system has its own checks and balance system. One of these balances are put in place by the apex predators.

Grizzly bears are an example of this in their habitat. An apex predator is an “adult animal that has no natural predator within its ecosystem” (Smith, 2015). This does not mean importing animals from another areas as this has been shown to do more harm than good (Euan G Ritchie, 2012). Scientists have seen what invasive species can do to native populations due to the lack of defense of the native animals to this new comer. However, original apex predators can buffer against invasive species and “tend to have a lesser impact on native predators than do invasive predators” (Euan G Ritchie, 2012). If grizzly bears remain protected under the Endangered Species Act, then one of the two apex predators will remain protected in the Yellowstone area. This will allow for a more balanced ecosystem for all of the plants and animals which leads to a more stable environment without as much human interference to maintain the balance.

Grizzly bears are an important part of the country and its environment. Protection of this animal is still needed under the Endangered Species Act because of the small percent of the historical range, legal differences that may arise within the three states involved, and the need for a predator that has no natural predators within the Greater Yellowstone Ecosystem to maintain balance.

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