



BEAR NEWS

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A note from the Executive Director, Shannon Donahue

When I was a child in Massachusetts, I grew up believing the Yellowstone grizzlies would be totally gone by the time I was an adult and might have a chance to visit Yellowstone. I grew up in a state that historically was inhabited by bears, but at the time, in the early 80s, only around 300 black bears populated the state, mostly in the western, mountainous area on the opposite end of the state. I grew up watching episodes of Grizzly Adams on tv, and imagining that one day I might live in the mountains, accompanied by a friendly grizzly bear. At the time, I was unaware that the California grizzly, featured in the story, had gone extinct as a result of overhunting and a shoot-on-sight attitude, back in the 1920s. And, as an adult, my attitude towards keeping wild animals as pets has changed dramatically, but my interest in bears remains central to my life.

In the 1970s and 80s, the future looked grim for wildlife across North America. Grizzly populations were rapidly declining, acid rain was killing off entire lakes, the California condor went extinct in the wild, and the bald eagle came close to extirpation in the Lower 48 states. I grew up with a high level of environmental angst, in the shadows of the controversial Seabrook Nuclear Power Plant, and visiting my grandparents in the Adirondacks while acid rain was killing virtually everything in some of the lakes around them. Meanwhile, the greenhouse effect and the ozone hole were becoming household terms.

Fortunately, these environmental crises were not going unnoticed. There were people who cared deeply about the natural world, and about the importance of environmental health to human communities as well as the bigger ecological picture. Scientists, naturalists, and people from all backgrounds who cared about the environment sounded the alarm. People got together in advocacy groups, neighborhood alliances, conservation organizations, or spoke out independently. Thanks to the US' commitment to the conservation of public lands, there were biologists monitoring wildlife populations, and thanks to interest outside the government, non-government biologists and informed citizens were also keeping track of these things.

The 1970s saw the passage and implementation of some of the strongest environmental legislation in US history. The Clean Air Act (1963) was strengthened by amendments in the 70s that transformed the Act from a law mandating air pollution research and monitoring into powerful legislation that established strict state and federal air pollution regulations, and mechanisms for enforcing them. Another amendment in 1990 addressed the causes of acid rain and ozone layer depletion. But, perhaps most significantly, the Act established standing for citizens to file lawsuits to bring polluters into compliance. That provision has offered citizens an effective way to engage in environmental conservation policy, and to hold the Environmental Protection Agency (EPA) and private industry accountable for maintaining these standards. The Clean Air Act has been a model for effective environmental legislation in the US and

worldwide.

The Clean Water Act (1972) used a similar model to address pollution in the navigable and related waters of the US, implementing clean water standards and regulations to enforce them. It, too, offers citizen provisions, so that any citizen can file a lawsuit against a polluter for violating clean water standards, or against the EPA for failure to enforce those standards. These citizen suit provisions have resulted in active engagement from people and groups concerned with environmental quality, to both monitor environmental issues and play a part in ensuring compliance.

The 1970s saw numerous other important environmental laws passed in the US and other countries, such as the banning of pesticides containing DDT (a major factor in the decline of bird populations including the bald eagle and California condor). That came after the 1960 publishing of Rachel Carson's *Silent Spring*, the book that made the case that DDT was harmful to humans and wildlife alike, and is often credited for galvanizing the US environmental movement. Carson commanded enough people's attention to result in the US, and later Canada, banning DDT in agricultural use. Eventually, DDT was banned worldwide under the Stockholm Convention on Persistent Organic Pollutants, which also banned numerous other harmful pollutants. PCBs, another suite of toxic chemicals that have caused serious health effects for humans and wildlife, including polar bears and other arctic marine mammals, were banned in the US in 1979—we should note that Japan and Sweden had already implemented bans early in the 70s.

The Endangered Species Act (1973) is among the world's most powerful and influential environmental laws. The Act was very carefully written by a team of biologists and lawyers who paid close attention to the language. The Act addresses the protection of not only endangered and threatened species, but also the "ecosystems upon which they depend", opening up the protection mandates to address complex systems of interrelated life, processes, and cumulative impacts. Further, the Act mandates designation and protection of critical habitat, and a clear plan for species recovery. The ESA goes beyond earlier legislation directed at preventing extinction and protects wildlife and ecosystems on both public and private land, allowing for an ecological approach that transcends land designations.

The powerful environmental legislation implemented in the US and worldwide in the 1970s has given us effective tools for addressing, monitoring, and mitigating environmental crises, and it came from concerned citizens speaking up for human health and the natural world. Had people not spoken up and advocated for environmental protection, industries would still be operating unchecked, contaminating the systems that we and our fellow life forms depend on. Environmental degradation continues to be a serious problem, but we can be grateful for the committed people who fought for and implemented the framework of effective environmental legislation that

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Vic Charlo and Charles Jonkel at Kicking Horse Job Corps Powwow, 2014. Photo by Frank Tyro

In Memory of Dr. Charles Jonkel, 1930-2016

You remember teacher singing who Walking Bear
was as you scratch your joy deep in smooth, hard stone
and Walking Bear comes finally home.

-Vic Charlo, "First Polar Bear" for Chuck Jonkel

I am heartbroken to pass on the news that the Great Bear Foundation's co-founder and President Emeritus, Dr. Charles Jonkel passed away in Missoula on April 12, 2016.

It is an emotional time for us at the Great Bear Foundation as we say goodbye to Chuck, but at the same time, I am struck by the impact that Chuck had on so many lives--human, bear, and all living things he encountered and fought for. He leaves behind a legacy of bear biology, conservation, community involvement, social justice, and perhaps most of all, generosity and love.

When I first met Chuck at the University of Montana in the late 90s, I had no idea he would change the course of my life. It is a privilege to carry on his work and legacy through the Great Bear Foundation. I've often tried to pin down the most important impact Chuck has made on me, and it's very difficult. He taught me so much about bears, wildlife, and conservation, but the most important thing he taught me was how to live a good and righteous life, and that is something I will carry with me always.

Chuck inspired, taught, and befriended so many people everywhere he went. He was not afraid to speak his heart and mind, and at times he could be an ornery old bear, but he made his imprint on all of us in the world of bear conservation and in the communities of which he was a part. We will miss him terribly, but with a heart so generous and an impact so great, we'll enjoy his legacy on into the future.

Chuck shared that he hoped to be reincarnated as a polar bear. He had a den picked out on North Twin Island, lined with tundra flowers. When Hudson Bay breaks up this summer, there will surely be another polar bear coming ashore to find that den.

Board President, Dr. Frank Tyro and I have been working for many years now on a documentary film on Chuck's life and legacy. A preview can be found on our website, and I hope that it can be of some solace to those who are feeling his loss. We expect to release the film in 2017.

As the news of Chuck's passing ripples through the communities he's touched, I trust that we will all find ways of honoring and remembering him. The Great Bear Foundation will be paying tribute to Chuck's life and legacy, and celebrating him at Bear Honoring this May.

With a heavy heart,
Shannon Donahue
Executive Director

The news of Dr. Jonkel's death came as this issue of Bear News was going to press. Because of the timeliness of some of the content in this issue, we have chosen to go to press as scheduled. Our next issue will pay tribute to Dr. Jonkel. We welcome submissions of writing and photographs from readers who wish to pay tribute. Our next issue is due out in July—please send submissions by the end of May to gbf@greatbear.org, or by mail to our Alaska office at Great Bear Foundation, PO Box 1616, Haines, AK 99827.

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came out of the 1970s. We must honor their hard work by continuing to work for environmental protection in every way we can—from passing legislation and implementing policy to education and awareness, to research and monitoring.

Today, I can look back on my early concerns about wildlife and environmental conservation through the lens of history, and I realize both how far we have come, and how far we still have to go, both in continuing those existing efforts, and in implementing effective legislation on more recently recognized threats like climate change. But, it's important to celebrate successes. Since the mid-1970s, black bears have reoccupied 44% of their historic range in the Lower 48 states, thanks to better hunting regulations, habitat protection efforts, programs to mitigate bear damage, and changes in attitudes towards bears, all the result of concerted conservation efforts among citizens, conservation groups, and government agencies. That population of black bears where I grew up in Massachusetts grew from around 100 bears in the late 1970s to over 4,000 over the course of my lifetime, and the bears now range across much of the state. Bald eagle populations have rebounded since DDT was banned, and the Endangered Species Act, among other environmental laws, helped foster conditions that allowed the eagle to reoccupy much of its historic range. The Clean Air Act and Clean Water Act helped to improve water quality for eagles, and the ESA prohibited their killing. But, beyond that, the ESA also mandated protection of nest sites and critical bald eagle habitat, which went a long way in promoting their recovery after the threat of DDT waned. The thorough and expansive nature of the ESA has contributed to the success of bald eagle population recovery to the point where the US Fish and Wildlife Service downgraded the status from endangered to threatened in 1995, and in 2007, the bald eagle was removed from the list of endangered and threatened species altogether.

We talk a lot about the Endangered Species Act in this issue of *Bear News* because the USFWS has published a proposal to remove the grizzly bear population of the Greater Yellowstone Ecosystem from the list of threatened species. Looking back on the 41 years of conservation efforts since the grizzly was first listed in 1975, we can be grateful for considerable successes, thanks to powerful and effective environmental legislation and the concerted efforts of biologists, wildlife managers, policy makers, conservation organizations, private landowners, and concerned citizens who work together for grizzly bear conservation. Despite my childhood fears, grizzly bears still exist in the Yellowstone area. But, we're not there yet. The Greater Yellowstone grizzly population still needs protection, as does the wild landscape those bears depend on. We look forward to a day when the Yellowstone grizzly population recovers and thrives, but until then, we'll continue to fight for its protection—right now, that means continued protection under the Endangered Species Act.



GBF Introduces News Polar Bear Field Course

The Great Bear Foundation is pleased to announce the launch of a new arctic ecology field course, Sharing Habitat with Polar Bears: how people and polar bears coexist. In addition to general polar bear ecology, this course takes an in-depth look at community responses to living with polar bears, how Indigenous peoples have historically coexisted with bears, and how we as global citizens share a planet with polar bears in rapidly changing times. This course is designed to stand alone, or as a follow-up to our introductory field course, Polar Bears 101.

Polar Bears 101 is our staple Arctic Ecology Field Course, now in its 32nd year. Polar Bears 101 offers a broad overview of polar bear ecology, biology, behavior, and conservation status, with additional material on photography, northern cultures, climate change, and the Arctic.

Both courses are open to the public of all ages and backgrounds, although families with children may be more suited to Polar Bears 101, as Sharing Habitat with Polar Bears offers a more rigorous curriculum and focus. Both field courses are primarily based in field observations, with guest speakers and classroom programs at night. The sessions are timed to coincide with the peak of the annual polar bear aggregation around Cape Churchill, and we do not anticipate bear activity being greater during one session than the other.

This year, we are also offering a summer field course, Berries Belugas and Bears, timed to coincide with the belugas having their calves in the Churchill River in late July and early August. The summer field course offers opportunities to visit places not accessible in the fall, and to explore the country more freely with less

risk of bear encounter. The summer trip offers the chance to pick berries on the tundra, possibly see the northern lights, and observe wildlife from belugas to polar bears to the abundant migratory birds that visit the area in summer.

Continuing Education Units (CEUs) from Salish Kootenai College are available for each session at no extra cost. Field course price includes train transportation beginning and ending in Winnipeg, accommodations and meals in Churchill, course tuition, and CEUs. We are happy to work with students at educational institutions and their advisors to design independent study projects through their home institution.

Field courses sell out quickly, so visit our website or contact GBF to register today!



Photos this page by Jeremy Patrick

Gleaning Missoula: Reducing Conflict between Local Bears and Missoulians.

Madison Kerns, GBF Spring 2016 Intern

One of the greatest challenges about protecting large, carnivorous species is preventing conflict between us and them; conflict that, more often than not, results in the death of the animal. As human civilization continues to erode the edges of wild habitat, these conflicts rise in frequency. While some more wary species prefer to tuck themselves away into the remaining pockets of suitable habitat, others take the risk of reaping the benefits of human development. One such charismatic creature is the bear.

Drawn into our western town of Missoula by the sweet allure of ripening fruit during the summer and fall months, black bears will follow their noses into neighborhoods on a focused search for high-calorie, low-effort food. Despite the fact that it may be exciting to catch sight of a bear within city limits, it's important to remember that an urban bear will sooner or later become a dead bear if it learns to take advantage of human-related food sources. Acutely aware of this problem, the Great Bear Foundation created the Bears and Apples program to target what many wildlife managers and biologists identify as a major cause of conflict between Missoulians and bears: the bounty of domestic fruit lining the edge of residential areas and wild lands.

As a wildlife biology student at the University of Montana, it is a great interest of mine to explore the possible solutions to these all-too-common conflicts between people and wildlife. I strongly believe that it's our responsibility to hold ourselves accountable for the habitat degradation that at the root of the issue and to repair our damaged relationship to this western land we call home. It is with these interests in mind that the Great Bear Foundation (GBF) caught my attention while seeking

a meaningful internship.

In January, we began a mapping project plotting bear activity from our own records and fruit tree locations within Missoula city limits to determine where GBF's gleaning efforts need to be concentrated due to increased bear activity and in which neighborhoods have shown declines in bear activity reported to us, reflecting our gleaning efforts are making a positive impact. Compiling this information, we plotted the data in the mapping program onXmaps to identify the areas with the highest level of bear activity. The next step is to compile bear reports from Montana Fish, Wildlife and Parks for a more complete picture.

So far, we are finding that the lower Rattlesnake valley, particularly around Greenough Park, has experienced an increase in reported bear activity in the past two years, reinforcing the need for gleaning to prevent human-bear conflict. It's also possible that the increased reports may be due to more people reporting incidents to us as we build relationships and raise awareness—either way, it is critical that we continue our fruit gleaning efforts in this area. Rattlesnake Creek, a small waterway cutting straight through the park, offers an urban refuge with high quality natural food sources, and acts as a travel corridor for the bears as they move down from the mountains in search of food. Our mapping project has shown the efforts of Bears and Apples has been successful in reducing human-bear conflict from the neighborhoods between Van Buren Street and Mount Jumbo.

However, this strategy of gleaning high-density areas of fruit trees, although simple in concept, is laborious and extremely time-consuming for the small number of people behind this important

project. By design, Bears and Apples is very much community-oriented where success is heavily reliant upon public involvement. When the efforts of a few people grow to into a neighborhood-wide effort, this previously daunting task of gleaning Missoula can become more manageable, and perhaps a result in a sweet batch of apple cider as bonus to share with neighbors. The conservation of Missoula's local bear population depends largely on our willingness to actively practice proper removal and storage of these known bear attractants. Although it may be both thrilling to view one munching away in your front yard, remember that what you're watching can be a dangerous habit for the bear.

The Bears and Apples Program is funded by a grant from Yellowstone to Yukon Conservation Initiative and individual contributions. To learn more about GBF's efforts to reduce local human-bear conflicts and what you can do to help, visit <http://greatbear.org/projects>.

Madison Kerns is a student at the University of Montana and spring intern of the Great Bear Foundation.



UPCOMING GBF EVENTS:

Join Us for Bear Honoring, May 20-21

The Great Bear Foundation's Annual Bear Honoring will be held on Friday, May 20 and Saturday, May 21!

Please join us at the Greenough Park pavilion in Missoula Friday night starting at 6pm for guest speakers on bears and wildlife of the area. Our wildlife skulls, tracks, and hides will be out for viewing, followed by a short hike around Greenough Park looking for bear sign, bear foods, and other wildlife. We will have a small array of leafy green bear foods to sample such as fiddleheads, dandelions, and clover.

Saturday, May 21 at noon, we are gathering in Glacier National Park either in the McDonald Lodge or Avalanche Creek parking areas, depending on road closures. We will learn about the cultural and natural history of the region with guest speakers, followed by a stroll up the park road looking for wildlife and enjoying an afternoon in Glacier. We have seen wolves, bears, elk, Harlequin ducks, and eagles in the past.

We hope you can join us as we honor bruins and celebrate the wild and beautiful places of western Montana!



**24 HOUR
GIVING DAY**

Road Transfer Offers Progress for Chilkoot River Management

Alaska State Parks superintendent for the Southeast Alaska Region, Mike Eberhardt announced in February that the state Department of Natural Resources (DNR) would take over management of the Chilkoot Lake Road. The Division of Parks and Outdoor Recreation (DPOR), as Alaska State Parks is formally known, is a division of DNR. The road was previously owned and managed by the state Department of Transportation (DOT).

The announcement came at a Haines Borough Commerce Committee meeting at which Chilkoot River Corridor management was a key agenda item. Eberhardt attended the meeting telephonically, as did Borough lobbyist and former state Senator, Bill Thomas and former state Senator, Albert Kookesh. Thomas secured funding for Chilkoot River bear-viewing platforms in 2011 that have yet to be built. Thomas and Kookesh both expressed concern about delays in the platform construction.

The Chilkoot River Corridor, outside of Haines, Alaska, is a stretch of the Lower Chilkoot River, approximately one mile long, that extends from Chilkoot Lake to Lutak Inlet, popular for sportfishing, bear-viewing, commercial wildlife tours, and a host of other recreational activities. The river is also popular among the brown bears that forage for salmon there, often alongside sport anglers. Alaska State Parks operates a campground at the end of the road, on Chilkoot Lake.

Management of the corridor is complicated by the multiple, sometimes conflicting human uses, and a patchwork of ownership consisting of multiple divisions of the state Department of Natural Resources, private and Native inholdings, and Haines Borough. DPOR has memoranda of understanding (MOU) with the other public entities that place the

Stretch Your Donation through Give Local on May 3

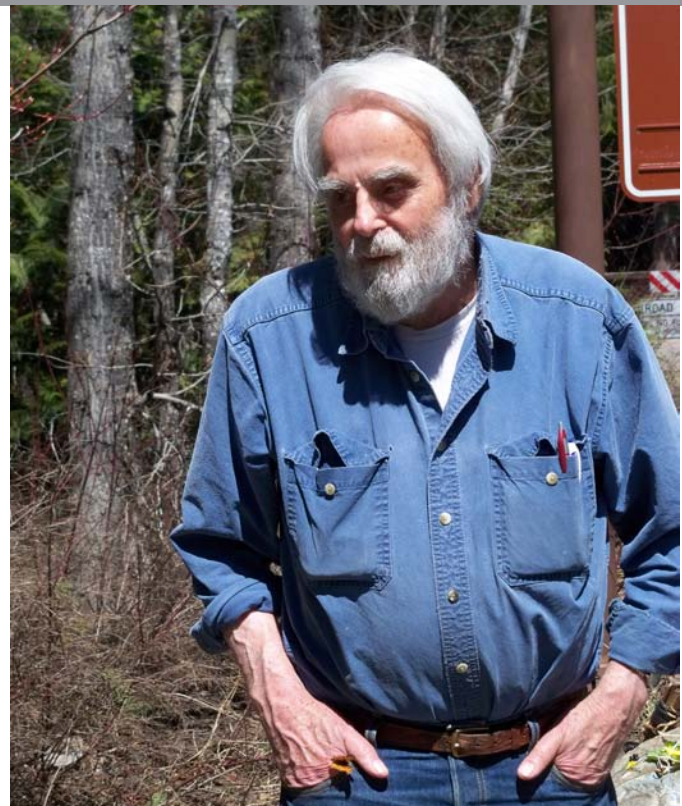
The Great Bear Foundation has an opportunity to stretch donations through a 24 hour online giving event through the Give Local initiative on May 3. No matter where you live, you can visit the Give Local Missoula County website on May 3 to contribute to our programs through this powerful, one-day giving challenge to raise funds for local nonprofits.

Last year, the Missoula Community Foundation's Give Local Missoula County initiative raised over \$270,000 for local nonprofits. The Great Bear Foundation raised \$2285 from 31 donors that day. This kind of giving event is especially useful to nonprofits like us because it allows us to use those contributions where they are needed most, as opposed to grant funds, which tend to be restricted to specific areas. Nonprofits depend on individual contributions and fundraisers to keep our projects and programs running strong.

The Give Local initiative stretches individual contributions with funds from a locally sponsored "stretch pool," making your contribution go further.

Whether you live in Missoula County or elsewhere, it's easy to participate in this 24 hour giving event. On May 3, simply visit the Give Local Missoula County website and find Great Bear Foundation under the Animals category. This link will take you directly to our giving page: <https://givelocalmissoula.org/npo/great-bear-foundation>

Thank you for your support!



Dr. Charles "Chuck" Jonkel at GBF's 2013 Bear Honoring. Note the butterfly on Chuck's right hand. Photo by Shannon Donahue

Chuck Jonkel Complicated My Thinking for Me

By Lance Olsen

A GBF co-founder remembers the organization's beginnings with its beloved former President and world renowned bear biologist

When I picked up the phone one evening in the fall of 1981, Chuck Jonkel was at the other end, telling me that a couple men had walked into his office that day declaring that they were going to start something for the grizzly. By then, Chuck knew I was interested in the bear, so he asked if I might want to help.

When I said sure, I could try, Chuck told me the next step was a meeting with the two men, and a few other people he was going to round up to help sort out some ideas. There may have been 8 or a dozen people in that first meeting, but all I remember with certainty now are Bud Moore, Don Aldrich, Chuck, and the two who had kicked the idea into this first step – Bill Callaghan and Frank Ponikvar.

After that meeting, Bill, Frank, Chuck and I had meetings as frequently as twice a week for the next several months, and when those meetings led to GBF's incorporation and non-profit status in 1982, we were on a course of meeting after meeting over the 10 following years of my term. I remember Chuck and I having our share of disagreements over those years but his cordial side let him shrug and move on to the next topic that had our shared interest, and there were many of those. Likewise with Bill and Frank, we did our share of arguing things out, and we usually moved on with the points we held in agreement.

At the first meeting of the newly established Great Bear Foundation, Frank nominated me to serve as founding president. When elected, I talked to Chuck about bringing me up to speed on grizzly bears. I suppose like many a Montanan, I was aware of grizzlies, and had heard enough to make me think I knew something about them. It hadn't taken long, though, for that illusion to lose its glow.

Chuck agreed to an idea for an independent study. I'd write up what I thought I knew about grizzlies, he'd read it and pass me some homework that might help get me a bit further along. At which point he could expect another write-up from me, and so on, until the end of the U of Montana quarter-long independent study course.

The first homework he assigned was Maurice Hornocker's master's thesis on grizzly distribution around dumps in Yellowstone National Park. It was my first full look at grizzlies as a social animal. A few further steps down the way, he handed me an EIS by a British Columbia

Justice who sorted out the array of impacts that would arise from building an energy pipeline across the Yukon's Mackenzie River Delta. My last homework assignment was a few recent reports from the Border Grizzly Project that Chuck was running on the U of Montana campus. So, one thing I can confidently tell you now is that Jonkel set about complicating my thinking from the get-go.

He never let up. Grizzlies don't stop at the Montana border, he smilingly reminded me one day. There were - and still are - grizzly bears, and some important conservation questions in neighboring Wyoming, Idaho, British Columbia, and Alberta. He was right to give me that nudge. He was teaching me to think as the bear lives, wandering purposely across borders.

It may have been a few weeks or a few months later that he told me the Great Bear Foundation could at least try to do at least a little something for Earth's seven other surviving species of bears. He was right on that count, too, and his prodding led to some results including a *Bear News* reprinting of a then-Bear Biology Association paper on the sun bear. We would publish, among others, a New England biologist's summary of the status of the region's black bears. And Franco Zunino, the park naturalist for Abruzzo National Park in Italy, sent us his summary of goings-on with that park's brown bears --- Italian grizzlies.

Bear News was the first thing GBF launched. I ended up its editor. With zero experience assembling a publication, there was a lot to learn about that, too. Frank Ponikvar had some of that experience, so he walked me through the basic steps, and we worked closely over a period of a few weeks to set up a format for Bill and Chuck to approve.

That done, there was still plenty of learning ahead. For one quick example, I'd found out that if a publication is going to use black and white format for its photos, it should never use originals shot in color film.

So, in planning a Bear News article on the panda, I asked Chuck if he knew where I could find a black and white photo of a panda.

"Is there any other kind?" he asked with that characteristic chuckle familiar to many who've known him.

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The Air We Breathe

by Katie Craney

I live on the edge of the earth's largest contiguous temperate rainforest that connects with over 25 million acres of federally protected wild land. Annual precipitation ranges from 25 to 140 inches along this coastal panhandle. It is here that water defines our identity, our way of life, our values, and our survival. Some would argue it is salmon that defines Southeast Alaska as the bounty of nutrient-rich tidal inlets and glacier-fed rivers and streams have provided ample human habitation for thousands of years. Sacred Tlingit song and dance about salmon abundance and return has been passed down for hundreds of years. Salmon fill our freezers and shelves, fuel our regional economy and culture, feed our families and the bears which ultimately feed the forest to complete an inexhaustible cycle of nutrients.



For Survival, by Katie Craney

As an artist in Alaska, salmon seem an obvious theme to base research on. As I began sifting through the ecological significance of salmon for my own survival, I took a step back to see the larger picture of what ocean processes are needed for salmon to thrive in this environment – all of which can be summed up in two words: marine plants. Specifically plankton, the microscopic ocean drifters

that create a biological pump in our oceans and are indicators of how anthropogenic climate change and ocean acidification will continue to alter the nature of our planet.

As a gardener I've learned the importance of maintaining proper pH levels in the soil to grow my own food. I can add nutrients, including fish fertilizer, what we call 'fish juice,' and organic matter to create the appropriate balance between acidic and alkaline soils. Some plants, such as blueberries and potatoes require more acidic soil, a soil with lower pH levels. Other varieties, like arugula or beets, can tolerate higher pH. The beauty of my garden is I have easy control of nutrient levels and can, in a reasonable timeframe, change the overall soil composition.

That's not the case for maintaining a basic level of pH in the ocean. The ocean acts as a sponge and has absorbed about one-third of human-caused carbon dioxide emissions from the atmosphere. This absorption causes chemical reactions to occur, ultimately dropping the pH level, leading to "ocean acidification." With this environment the lowered pH impacts the smallest members in the food chain – chlorophyll producing marine plants such as phytoplankton and the organisms that feed on those plants to secure the life cycle stasis of Alaska's beloved wild salmon and so much more.

Plankton fall into two main categories: phytoplankton (plants) and zooplankton (animals.) Research suggests that due to their photosynthesis, phytoplankton provide up to 75% of the earth's atmospheric oxygen, providing a significant amount of the oxygen we breathe. Not only do these tiny organisms allow humans to survive at the most basic level, they are the basis of the entire marine food chain. The balance necessary for these plants to exist should be applauded, honored, and respected.

Another factor in marine chemistry is glacier runoff. At the speed of current glacier melt, nitrates and iron levels flushed into marine waters will increase, can harm the productivity of plankton, and have a rippling effect through the food chain from salmon to sea birds and beyond.

As ocean temperatures rise, surface waters where plankton drift will see reduced nutrient levels. This is especially important for plankton survival during the winter months. Think about how a bear hibernates over winter – plankton do the same by slowing down their metabolism and go a long time without eating, however, as surface temperatures warm earlier in the winter season, plankton burn through their fat reserves before regular food sources become available.

* * * * *

**Ongoing research will continue to develop and help us comprehend the breadth of plankton's role in our every day life. This is only a brief description of how I have come to understand and observe changes at a basic level.*

* * * * *

The more I learn about the significance of the ecosystem that surrounds me, the more I want to shout from the rooftops that it's not too late! We can learn and change and encourage responsible clean energy and development while taking care of the 7.5 billion+ people on the planet. Right? I think so. I hope so. Through artmaking, I embrace an ecological perspective towards the biggest challenge we face and hope to encourage others to do the same. By creating a visual statement of what is at stake, I hope viewers of my work will take the time to ask questions and learn that we are all connected and in this together.

The small vignettes I create are my way of interpreting the complicated, long-term social and ecological nature of climate change. By working with wax on small pieces of metal and wood I explore the contrast between the malleability of the wax and the rigidity of the metal, which is symbolic to human – animal relationships within an ecosystem. Working with reflective metal allows for the viewer to be directly included in the composition to challenge boundary lines, barriers, and misunderstandings of how Alaska is changing.

When there are moments of discouraging

news I recall Aldo Leopold's philosophy that the things we understand, can see, feel, love, or have faith in, will determine how we treat the land. For me, the place I call home is all encompassing and easy to love and treat respectfully. Though my art I hope others sense this passion and engage in conversations in their own communities to bring change. My friend Kim Heacox said it best in his book *The Only Kayak: A Journey Into The Heart of Alaska*, "We must pass through the prism of our own destruction to see a new and better light."



For Plankton, by Katie Craney

Inspired by the mountains, glaciers, rivers, and ocean that surround her, Katie Craney's work reflects the juxtaposition of natural and human landscapes and her understanding of what it means to rely on the land for survival. Craney's work can be found in the Museums Alaska permanent collection and is currently exhibited at the John Michael Kohler Arts Center in Sheboygan, Wisconsin, and at the Museum of Art & History in Lancaster, California. Katie Craney lives, writes, and creates art in Haines, Alaska.

Reprinted from <https://artistsandclimatechange.com/2016/03/26/the-air-we-breathe/>

COP 21 and the Paris Agreement on Climate Change

By Elissa Chott, GBF Education and Outreach Specialist

The United Nations Climate Change Conference was held in Paris in late November and early December of 2015, attended by 196 parties. The twenty-first session of the Conference of the Parties (COP21), as the conference is known, resulted in the Paris Agreement and proved that world leaders are prepared to address the imminent risks of climate change. The Paris Agreement recognizes climate change as a "potentially irreversible threat to human societies and the planet..." and acknowledges it as "a common concern of humankind." The agreement aims to limit global temperature rise to 2°C above pre-industrial levels, with a goal of 1.5°C. While developed countries produce most of the world's greenhouse gas pollution, the effects of climate change are felt disproportionately in developing nations, particularly those of small island developing states where rises in sea levels are forcing many citizens to relocate. Developed nations proposed USD \$100 billion per year until 2020 to aid developing nations in mitigating and adapting to the effects of climate change. In order for the Paris Agreement to enter into force, it must be ratified by at least 55 countries

responsible for 55% of global emissions. Signing closes on April 17, 2016 in New York, with the official ceremony being held on International Mother Earth Day, April 22, 2016.

Agreements such as that which emerged from COP21 are not legally enforceable on an international level. There is no worldwide international law that guarantees strict compliance. Each country must set its own standards and is responsible for compliance within their borders. Countries are recognizing the need for a speedy response to climate change if temperatures are to be kept below 2°C, but can the goals actually be met? Objectives vary by country, with some stating they will meet their emission reduction targets by 2030 and others 2050. The UK has set lofty goals, stating that emissions cannot increase at all given the imminent threat of climate change. Denmark produced a record breaking 42% of the country's electricity from wind power in 2015. Many countries are converting to partial reliance on renewable energy in the face of climate change, but shifting from electricity generated by fossil fuels to renewable sources requires time

and a huge financial commitment.

The United States introduced the Clean Power Plan (CPP) to limit emissions as the centerpiece for climate action. Unsurprisingly, the CPP was swiftly challenged by 29 states and agencies with large fossil fuel corporations citing immediate harm to their industries if stringent caps are placed on emissions. The plaintiffs sought a stay of the Environmental Protection Agency's final rule of the CPP but were denied by both a district court and the D.C. Circuit Court. On Tuesday, February 9, 2016, the U.S. Supreme Court granted the stay sought by the 29 states and agencies, marking the first time the Supreme Court has interfered with a lower court before the lower court issued its final decision. This stay halted adoption of the CPP. The trial in the D.C. Circuit Court is set for June.

On March 31, 2016, the U.S. and China issued a joint statement with both countries' intent on signing the Paris Agreement on April 22. Emissions from the U.S. and China contribute to one-third of the total greenhouse gas emissions. Ratification by the top two contributors of global emissions ensures that the Paris

Agreement will enter into force, a huge victory for the climate movement.

To mitigate climate change, including sea level rise and mass extinctions, it is essential that all countries reduce their dependency on fossil fuels. Emissions and temperatures will continue to rise unless governments enforce stringent standards for all industries. Technology exists to create clean energy, now we need the executive support required to make the transition.



Photo by Jeremy Patrick

A Primer on Population Viability in a Warming World

By Lance Olsen

When I first got to wildlife conservation in 1981, experts told me that polar bears were looking fairly secure, because there were maybe as many as 30,000 of them. The assumption here was that there's safety in numbers. But the demise of the American passenger pigeon and the near-extinction of the nation's bison had already demonstrated that numbers aren't enough to provide viability for birds or mammals.

I now think we could improve our analyses of population viability with a simple but more robust 5-part formula wherein *n* (number) is only one part of predicting population viability, and where four basic components of habitat -- *h1*, *h2*, *h3*, and *h4* -- provide the other parts.

This of course a skeletal model, but I think the bones are solid. It's only briefly annotated below, but the annotations serve well enough to establish basics that others could readily expand upon in great detail, simply by adding the multitude of peer-reviewed references for each of the following list of variables. As expressed below, however, it is useful for introducing the topic of population viability to interested people who are not already steeped in the science of population viability in a warming world.

n is numbers – Numbers do matter. It's obvious, for example, that one plant or one animal is not enough to assure the viability of any species. Nor are two animals of the same sex. *N* for a viable population of wild animals can run up into many thousands.

h1 is space – The simple amount of space available to a species places a limit on its viability. Whether it's the gaur of SE Asia or the grizzly of North America, a bedroom closet is not enough space to support a viable population. A goldfish bowl isn't sufficient to support a viable population of Atlantic cod or Pacific salmon.

h2 is productivity – Productivity is typically measured as the Net Primary Productivity (NPP) of plants. NPP (here, *h2*) is critical to the viability of animals and is another limit on the viability of an animal species. No matter how spacious it might be, an asphalt-covered parking lot will not support a viable population of animals. Obviously, soils matter greatly to *h2*, but water in the form of rain and snow is another heavyweight in *h2*.

h3 is security – The viability of any wild species depends on the security a species can find from human disturbance, harassment, and killing. *H3* is greatest where the human population is least dense, is reduced where housing and roads have

sprawled, and is best protected where wilderness or wilderness-like conditions have been maintained. And because security increases with distance from points of danger, *h1*, space, interacts directly with *h3*, security.

h4 is temperature – Because every species has thermal limits, temperature is a key component of habitat. Species live only in the regions where the range of temperatures (a.k.a. isotherms) is livable for them. Isotherms are thus habitat, and isotherms are already shifting toward higher latitudes and elevations, forcing species to follow or die.

This aspect of habitat is a challenge to conservation in that it demands new understanding of familiar concepts such as "critical habitat." Until recently, it has been commonplace to define habitat, including critical habitat, as place-based. But because isotherms are themselves critical habitat, places can lose importance as rapidly as their familiar isotherms move away, pulling species along with them. The shifting of isotherms also challenges the familiar notion of native and non-native species because, while species can be native to a place, they are also native to the now-shifting isotherms that will no longer characterize that place.

The above formulation covers biological, physical bases for population viability. But a fifth kind of habitat exists, and I owe thanks to Canadian biologist Brian Horesji for reminding me of this other, crucial form of habitat.

H5 is sociopolitical habitat – No species, wild or domestic, commonplace or endangered, can remain viable without sufficient public support and responsive policy and politicians.

Socioeconomic/political habitat can change precipitously, in the form of sudden swings in social mood, opinion, behavior. Recent years have provided case histories in car sales trends that illustrate rapid change of opinion and behavior.

After a drop in gasoline prices, gas-guzzling SUVs were pretty quickly selling like hotcakes, and the efficient rigs finding very few buyers. Business Week reported that this precipitous shift in the market caught the auto industry by surprise. Then the trend just as quickly turned reversed (SUVs sitting on the lot and efficiency outfits selling best) in response to the next price jump at the gas pump. Recently, another round of cheap fuel has fueled another surge in consumer willingness to snap up the guzzlers, once again demonstrating public capacity for precipitous change of perception and behavior.

Road transfer, cont. from pg. 3

human behavior, prevents bears from associating humans with a food source, and minimizes human impacts on bears. Most areas managed for bear-viewing in Alaska and coastal Canada are in remote locations that do not overlap with residential areas, so bears that become habituated to humans do not typically wander over to residential areas as they do in more accessible locations like the Chilkoot.

The Chilkoot Lake Road transfer offers some hope for better management in the coming season, as it bolsters the State Park ranger's authority on the road and streamlines management. When asked by Great Bear Foundation executive director, Shannon Donahue about hopes for increased staffing on the corridor and reinstatement of the Chilkoot River Bear Monitor position (a position held by Donahue in 2010 and 2011, that was eliminated after her resignation), Eberhardt responded that State Parks had no intention of increasing staff or reinstating the

position. As in years past, local volunteers organized and trained by the Alaska Chilkoot Bear Foundation will help to educate visitors about bear-safety.

The Great Bear Foundation has monitored brown bears' foraging activity and human-bear interactions on the Chilkoot River Corridor since 2014, using a combination of motion/infrared sensor video cameras and in situ observations performed by GBF staff and volunteers. The goal of GBF's Chilkoot River Brown Bear Project is to monitor trends in bears' fishing success and access to the river as well as human-bear interactions to help inform the management of the corridor and to address larger questions regarding human-bear interactions on multiple-use salmon streams in general.

Visit the Great Bear Foundation's website, greatbear.org to learn more about the project. You can help out by volunteering or donating to the project.

Meet the Board of Directors

In the last issue of *Bear News*, we introduced three of our board members. In this issue, we introduce two more. Our board members are Frank Tyro, President, Mark Robertson, Vice President, Jenny Rasche, Secretary, Jeff Stetz, Treasurer, and John Chott, Board Member.

Mark Robertson, Vice President

Growing up outside of NYC and Boston I worked in Glacier National Park after High School. I fell in love with the Park and the Bears. After visiting from the East over sixteen times, my wife and I decided to move to Hungry Horse, MT (actually it's on the GNP map). I first met Chuck Jonkel on a class with the Glacier Institute where he announced that the Great Bear Foundation was organizing a trip to Hartley Bay, BC to visit the elusive Spirit Bear. It had been a dream of mine to see this extraordinary bear. The mission of the trip was to stop the logging of the old growth forest off the coast of British Columbia and to protect the habitat of the bears. Chuck introduced me to the chiefs of the local First Nations tribes which allowed me to return in the future. Since 2002, my wife and I have returned to Harley Bay 8 times. We've seen many Spirit Bears and developed a deep respect and love for the native people and their culture. We hope to plan a trip through the

Great Bear Foundation to bring people to this special place and experience the Spirit Bear. Details of the trip TBA.

I consider my role on the Board of Directors as an honor. It is a privilege to work with the dedicated staff of GBF and to be a part of this organization.

Jenny Rasche, Secretary

I am honored to be serving on the Great Bear Foundation's board. I have been involved with GBF since 2004, when I started as a volunteer in the office. Chuck adopted me as one of his extended family, as he did with all of us. I spent most of my time at GBF working in the office and going out to schools to present our Bear Basics programs. I also had the privilege of going on many adventures with Chuck, looking at bear sign, watching bears, learning about ecology, and making the least impact possible. I know that all of the board members will adhere to Chuck's vision for GBF. I look forward to GBF carrying that vision into the future.

Bears Emerge from Hibernation

It's that time of year again--bears are beginning to leave their dens and emerge from hibernation after their long winter sleep. In the first week of April, Montana Fish, Wildlife and Parks had already found that all but one of the bears they radio collared on the Rocky Mountain Front are up and about--including 6 females. Female bears are typically the first to enter the den in the winter and the last to emerge in the spring, especially those with dependent young; baby bears require extra energy and protection! Bears sometimes emerge from the den temporarily for a mid-winter walkabout, and if they're lucky they might come across a welcome meal, like a winterkilled carcass, but they generally try to conserve their energy as much as possible during the winter months. Our Haines, Alaska office has had reports of bear activity since early March, after an exceptionally mild winter.

During this critical time of the year, it is very important to remember to practice bear safety, both at home and the outdoors. Remember, bears emerge from their dens very hungry and a garbage bin put out the night before pickup provides an easy, yet deadly, meal for a bear. Birdfeeders attract bears, too, so please take your birdfeeder in for the season if you live in bear country. A bear found in a residential area is given only one chance. It's first time caught, it's ear-tagged and relocated, but the second time, the marked bear is euthanized. It's

up to us to make sure this doesn't happen! Remembering bear safety is especially salient this week with the horrible news coming out of Florida: several black bears have been euthanized after a woman was attacked by a bear digging through her garbage. We don't need to see this happen in Montana (or in any state!). By taking extra precautions with garbage, pet food, compost, and gardens, we can keep bears (and people) safe and out of trouble.

Also, don't forget to carry bear spray while hiking, especially since it has been proven to be 98% effective in bear attacks. GBF encourages the use of Counter Assault brand bear spray, which comes out in a large cone shape that creates a cloud for the bear to enter. Dr. Jonkel, GBF's co-founder, was involved in this spray's testing and knows it's efficacy first-hand.

After preparing to keep bears and yourself safe, please join us in welcoming bears back from their winter slumber at Bear Honoring! This year's event differs from previous years' schedules and will occur on Friday, May 20 and Saturday, May 21. We'll have an evening bear program at the Greenough Park Picnic Shelter at 6:00 PM, and we'll take a walk in Glacier National Park on Saturday to look for bears, meeting at the Avalanche Gate if the road is plowed that far, or the Lake McDonald Lodge parking lot if the road is still snowy.



2015-09-04 10:29:12

Image taken from video footage of GBF's Chilkoot River Brown Bear Monitoring Project, Haines, AK

The Litigation Behind Delisting Grizzlies

By Elissa Chott

Decades of widespread eradication across the western United States diminished the grizzly bear population so significantly and the species inhabited such a small portion of its historic range, the Environmental Protection Agency listed grizzly bears of the conterminous US as threatened in 1975 under the Endangered Species Act (ESA). This listing provided much needed legal protection for the bears, curtailing the slaughter and providing legal support to conserve habitat. The grizzly bear population has since grown, but species protection and conservation of habitat in the face of climate change is still a necessity for grizzly bears to continue to recover.

Since the U.S. Fish and Wildlife Service (FWS) first proposed to delist the Greater Yellowstone Ecosystem (GYE) grizzly bear population in 2005, the topic has been controversial and much debated by environmentalists and government agencies alike. The FWS listed the GYE grizzly population as a distinct population segment (DPS) under the policy Regarding the Recognition of Distinct Vertebrate Population Segments. Two factors must be considered when determining whether a population can be designated a DPS: 1) discreteness of the population segment in relation to the remainder of the taxon to which it belongs and 2) the significance of the population segment to the taxon to which it belongs (61 FR 4722). Since GYE grizzly bears occupy the southernmost portion of North America's current grizzly habitat, FWS found that the GYE grizzlies are significant and discrete because the loss of the Yellowstone area bears would create a gap in the taxon, and therefore this population of grizzlies met the definition of a DPS. As a DPS, the Greater Yellowstone Ecosystem grizzly bears are considered an individual population and can be listed and delisted from the ESA separately from populations such as the nearest grizzly bears 200 miles north that occupy the Northern Continental Divide Ecosystem, which extends from Missoula, Montana to the Canadian border, including Glacier National Park.

FWS published their final rule for delisting Yellowstone grizzlies in the spring of 2007 following the required public comment period, and the Greater Yellowstone Coalition (GYC) filed a lawsuit on November 13, 2007. The Great Bear Foundation was among a coalition that filed a similar, related lawsuit in Idaho at the same time, also represented by Earthjustice. In the Montana lawsuit, GYC's challenges were: a lack of regulatory mechanisms offering adequate protection once delisted, consideration of habitat loss was based on the current range of grizzlies and disregarded the species' historic range, climate change and the subsequent loss of whitebark pines was not adequately addressed, and the GYE's grizzlies lack genetic diversity sufficient to sustain a viable population. The District Court of Montana ruled the FWS was arbitrary and capricious in its consideration of whitebark pine and climate change, and the proposed methods of regulation were not legally binding. The FWS appealed. Criteria for finding a rule as arbitrary and capricious must include at least one of the following: 1) that it has no legal standard to apply, 2) an agency has evidence, but does not put it in the record, 3) an agency lacks evidence to support its decision, or 4) an agency uses incorrect evidence.

On November 15, 2011, the Ninth Circuit Court of Appeals reversed the lower court's decision that the regulatory mechanisms put in place by the rule were not legally enforceable. The Ninth Circuit

Court affirmed that the FWS was arbitrary and capricious in considering the effects of climate change and whitebark pine. In the 2007 proposal prepared by FWS, whitebark pine seeds were listed as one of four important food sources for GYE grizzlies, and the agency did concede that whitebark pine numbers were diminishing due to climate change. However, the agency's rule did not address the correlation to such an important food source's decline and their finding that it was not likely to have a substantial impact on the grizzly bear population. Thus, the Ninth Circuit Court of Appeals found FWS to be arbitrary and capricious and vacated the final rule for delisting grizzlies. Grizzlies of the GYE remained on the EPA's list of endangered and threatened species.

Following the Ninth Circuit Court's opinion, the Interagency Grizzly Bear Study Team (IGBST) began research on GYE grizzly bears, whitebark pine, and climate change. The current proposal to delist GYE grizzlies released on March 11, 2016 was in part meant to readdress the analysis found as arbitrary and capricious in the 2011 lawsuit. FWS has acknowledged the rapid decline of whitebark pine, but rather than including it as one of four important food sources as stated in the 2007 rule, FWS merely claims it *can* be a significant food source, severely deemphasizing whitebark pine's role in a grizzly bear's diet. FWS has found grizzly bears' selection of whitebark pine seeds has declined since 2000, but the agency fails to acknowledge the causal connection of stark and rapid declines of whitebark pine populations being a limiting factor for grizzly bears using it as a food source. The service reports that one-third of grizzly bears do not have whitebark pine in their home range, but does not elaborate to clarify if a lack of whitebark pine is because the species does not grow in those regions or if those populations have been decimated by beetles and blister rust. As in the 2011 case, the FWS does not fully address the issues concerning grizzly bear reliance on whitebark pine, climate change's effects on whitebark pine populations, and what the decline of such a significant food source will mean to the vitality of a grizzly population in the Greater Yellowstone Ecosystem. We cannot promote nor support delisting the grizzly when climate change leaves so much to speculation.

If you wish to submit a public comment, please visit <https://federalregister.gov/a/2016-05167> for more information. Substantive comments are an important component of public involvement, as each requires a response from the agency on how they have taken explicit concerns into consideration. Substantive comments propose flaws in report analysis. The more specific a comment is, the more potential it carries to be useful in the litigation process. Comments that do not address specific flaws in the FWS analysis are usually disregarded. The public comment period ends May 10, 2016 at 11:59 pm for electronic submissions and any correspondence via mail must be postmarked on or before May 10.

<https://federalregister.gov/a/2016-05167>

Greater Yellowstone Coalition v. Servheen 2011



Photo by Jeremy Patrick

Delisting Timeline

December 28, 1973: US Endangered Species Act signed into law by President Nixon

July 28, 1975: Grizzly bears listed as threatened in the contiguous 48 states under the Endangered Species Act (ESA)

Early 2000s: Whitebark pine numbers start to decline in epidemic proportions due to a combination of climate change, pine beetles, and blister rust

November 17, 2005: FWS proposes designating the Greater Yellowstone Ecosystem (GYE) grizzly bears as a Distinct Population Segment (DPS) and remove them from the list of threatened species.

March 2007: FWS publishes final rule for delisting GYE grizzlies.

November 13, 2007: Greater Yellowstone Coalition files suit against FWS on grounds that the rule is unlawful and arbitrary and capricious. Great Bear Foundation, along with a coalition of other groups, files a related lawsuit in Idaho.

September 21, 2009: District Court of Montana rules against FWS on two of four points in *Greater Yellowstone Coalition v. Servheen*, FWS appeals.

November 15, 2011: Ninth Circuit Court of Appeals affirms in part and reverses in part the lower court's decision to vacate the final rule delisting grizzlies in the GYE; grizzlies are returned to the list of threatened species under the ESA.

March 11, 2016: Federal Register publishes the updated proposed Rule for delisting the GYE grizzlies, opening the 60 day public comment period.

April 11, 2016: Public hearing in Cody, WY. Public informational meeting from 2-4pm; public hearing from 5-8pm.

April 12, 2016: Public hearing in Bozeman, MT. Public informational meeting from 2-4pm; public hearing from 5-8pm.

May 10, 2016: public comment period ends

YOUR VOICE COUNTS, SPEAK UP FOR GRIZZLY BEARS!

Comments can be sent via U.S. Mail or hand-delivery to:

Public Comments Processing
ATTN: FWS-R6-ES-2016-0042
U.S. Fish and Wildlife Service
Headquarters, MS: BPHC
5275 Leesburg Pike
Falls Church, VA 22041-3803

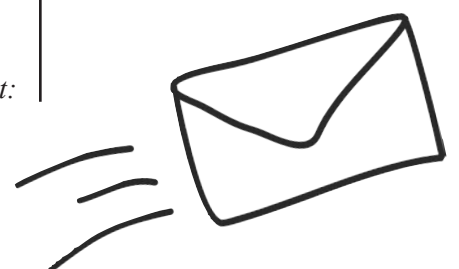
or submit comments electronically at:

<http://www.fws.gov/mountain-prairie/es/grizzlyBear.php>

and click on "Comment Now!"

Continued from right, p. 7

trends, combined with the loss of key food resources, demand a more cautious approach. You can be part of the process that determines whether GYE grizzlies maintain their ESA protections. Submit your comments on delisting to the USFWS by May 10, 2016, and be sure to provide a substantive argument.



Decoding the Delisting

by Shannon Donahue

What does de-listing the grizzly mean?

In 1973, amidst a crisis of mass extinction and environmental degradation, the US Congress passed the Endangered Species Act (ESA) to protect critically imperiled species and the ecosystems upon which they depend. The ESA is one of the most powerful and effective environmental laws in US History, and a big driver of worldwide conservation policy. Crafted by a team of scientists and lawyers, the science-based ESA carefully and explicitly outlines processes for designating a species for protection, monitoring populations, and implementing a clear path to recovery, effectively protecting and restoring wildlife populations and habitat for the benefit of biological diversity, ecological health, and human communities.

Under Sec.3.20, Sec.4.a of the law, a threatened species is “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The more severe classification, “endangered” is defined as “any species which is in danger of extinction throughout all or a significant portion of its range” (Sec.3.6, Sec.4.a). In 1975, the grizzly bear populations of the Lower 48 United States were among the first species prioritized for protection under the ESA, and the populations were “listed” under the act’s “threatened” status.

When the grizzly was listed as threatened, the USFWS, the agency responsible for implementing the Act, designated six Grizzly Bear Recovery Zones that we now refer to as The Greater Yellowstone Ecosystem (GYE), North Cascades, Selkirk Mountains, Cabinet Yaak, Northern Continental Divide Ecosystem, and the Bitterroot Recovery Zone. Under the Act, because the USFWS has found the Greater Yellowstone Ecosystem (or GYE) grizzly population to be a Distinct Population Segment (DPS), separate from other populations, they can legally alter the protection status of the GYE grizzly population without changing the status of the other populations.

On March 11, 2016, a petition by the USFWS to “delist”, or remove the Endangered Species Act protections for the GYE grizzly population was published in the Federal Register. USFWS believes that the population has recovered to the point where it no longer needs federal protection. The current petition to delist applies only to the GYE grizzly bear population, and not to the other Lower 48 grizzly bear populations. Many in the conservation community disagree with the USFWS’s position and oppose delisting. **Members of the public have 60 days to comment on the proposal, with a deadline of May 10, 2016.** Comments must be substantive, addressing flaws in the USFWS analysis, to be considered.

For a legal analysis of the delisting proposal, see Elissa Chott’s article in this issue.

Why is the GYE grizzly population threatened?

For many people, Yellowstone and grizzly bears are inextricably linked. The US’s first national park has long been famous as a place that draws visitors from all over the world to see grizzly bears, sometimes even along the park’s heavily trafficked roads. It may be surprising to learn that Yellowstone and its environs are not actually high quality grizzly habitat, compared to areas like the Northern Continental Divide, further north. Why does it support grizzlies? Grizzly bears continue to persist in the Yellowstone area

because Yellowstone Park is protected, offering the bears, and the plant and animal species they depend on thousands of square miles of healthy, protected, remote country. While the GYE refers to an area larger than the park itself, Yellowstone National Park offers a crucial, solid core of protected habitat.

By the time the grizzly was listed under the ESA in 1975, grizzly bear populations in the Lower 48 had been reduced to the point where they occupied less than 2% of their historic range, and the GYE population was estimated at about 136 bears. Grizzlies were legally hunted outside the boundaries of the park, and the GYE population found refuge in Yellowstone, where park rules prohibit hunting.

Food resources are not particularly abundant in the Yellowstone area, compared to other areas like the Northern Continental Divide Ecosystem, which includes Glacier National Park, or the coastal areas of Alaska and British Columbia where grizzly/brown bears grow large and their populations thrive on diverse, high quality food sources like salmon and abundant berries. While grizzly/brown bears are opportunistic, generalist feeders that can usually adapt to changes in food resources, the GYE food sources are limited, and the most important food sources, whitebark pine nuts and westslope cutthroat trout are disappearing fast or almost extinct in the Yellowstone area. Numerous studies from the 1980s through the early 1990s (i.e. Mattson et al., Gunther, and Reinhart) demonstrated the importance of the trout to the segment of the grizzly population that concentrated around Yellowstone Lake, where Reinhart and Mattson (1990) estimated approximately 44 autonomous bears feeding on westlope cutthroat trout. For those bears, according to Mattson et al. (1991) westslope cutthroat trout were the predominant food source for a two month period. In 1994, westslope cutthroat trout started to decline significantly due to competition from nonnative lake trout, and those bears were forced to adapt to other food sources.

Grizzly bears are able to adapt to changing food resources in places of abundant diversity, but the alternatives for the Yellowstone area grizzlies are limited, and the most tempting ones may be domestic cattle and sheep—a recipe for disaster for people, grizzlies, and livestock. Especially when restrictions on killing grizzlies are ultimately loosened, and funding for prevention measures may decline with a waning impetus. If GYE grizzlies are delisted, it will be imperative that the states consider these factors in their management plans. Concerned readers should take note that members of the public will have opportunities to raise these issues with the states of Montana, Wyoming, and Idaho during public comment periods.

Although some populations, like the NCDE population, are expanding outside the designated Recovery Zones thanks to conservation successes and relatively productive habitats, a combination of geographical barriers and land designations separate the GYE population from the others. Rapid growth around the perimeter of Yellowstone Park further degrades the available habitat, adding pressure to the grizzly population. With the rate of private land development and residential growth in Montana, this is not likely to improve without some massive changing in land management and protection strategies. Private land, residential areas, and high speed, high volume highways stand in the way of connectivity.

What does the USFWS say about all this?

The USFWS claims that the population has recovered, at over 700 animals. The agency plans to manage the GYE for a target population of approximately 675 grizzly bears, which they estimate to be the average population between 2002-2014, the years the agency says saw the population stabilize. The target number the Grizzly Bear Recovery Plan set for the GYE grizzly population in 1992 was 500, so the USFWS estimate exceeds that number.

We argue that the simple number of bears in a population does not necessarily indicate a stable or healthy population. Stable and healthy populations are determined by genetic diversity, the proportion of females of reproductive age, population trends, and the quality of habitat. However, in the last decade, the GYE has essentially lost all its whitebark pine to the combination of the non-native blister rust and enormous outbreaks of mountain pine beetle, both exacerbated by climate change. Meanwhile, droughts and competition from non-native lake trout have extirpated westslope cutthroat trout from Yellowstone Lake. While many bear populations may adapt to climate change fairly easily, the GYE grizzlies are losing so many crucial food resources at the same time. Grizzlies are among the slowest reproducing land mammals in North America, and it can take a long time for declining populations to recover, especially with decreasing food resources. Due to declines in key food sources and with loss and degradation of available habitat, we oppose the removal of the GYE grizzly population from the list of threatened species at this time.

Weren’t the GYE grizzlies already delisted?

After the GYE population was delisted in 2007, the delisting was overturned in the 9th Circuit District Court of Appeals in 2009 on the grounds that the proposal failed to take into account the loss of whitebark pine and westslope cutthroat trout. Until the 2009 decision, government research, including that of the USFWS, consistently found that whitebark pine was a disproportionately important food source for the GYE grizzlies. As USFWS prepared for the next attempt at delisting since 2009, Interagency Grizzly Bear Study Team (IGBST) and USFWS studies started to move toward making a case against the importance of whitebark pine in the GYE, as in Bjornlie et al. 2014. The timing of the shift toward discounting whitebark pine’s importance, could suggest possible political motivations. Louisa Willcox pointed out in a 2010 blog post at switchboard.nrdc.org that the IGBST was publishing these studies at the same time that they issued a press release warning the public that the particularly poor whitebark pine productivity that year may put grizzly bears in more contact with humans, as they sought food at lower elevations.

What’s so special about pine nuts and trout?

Contrary to what USFWS is currently suggesting, all foods are not equal. Whitebark pine nuts are a high protein food source that once was abundant in the GYE and offered a concentrated food source requiring low caloric output. While bears are amazingly adaptable omnivores, they depend on abundant food resources to sustain them through both the months when they are active and through winter hibernation. There is no readily available alternative equivalent to the whitebark pine nut in the GYE. At the same time,

grizzly habitat is turning into residential subdivisions, ranches, and resorts, and as grizzlies set out to explore food resources in other areas, they meet up more and more with humans, often to their own demise.

Army cutworm moths, are another key food source that could potentially serve as an alternative, but they live high in the alpine, and their populations are vulnerable to climate change and exposure to pesticides.

Threats from the Two-legged Bears

When GYE grizzlies ultimately are delisted, the states of Montana, Wyoming, and Idaho will take over their management from the federal government, setting their own policies. States will have to fund their own management programs, without the benefit of the federal funding associated with the ESA listing. Sport hunting under these plans must be managed extremely carefully to prevent adverse effects on the population, and regulations should be based on fair chase ethics and population biology.

Already, the ESA allows people to kill grizzlies in defense of life and property, meaning that it’s legal, and not uncommon, to kill a grizzly that threatens someone’s backyard chicken. We are trading grizzly lives for chickens, even under strict legal protections. Without ESA protections, it will be even easier to kill grizzly bears, reducing the incentive for people to bear-proof their homes. Bears become even more vulnerable to human threats when their staple food sources decline. A 1992 study by David Mattson and others, published in the Journal of Wildlife Management, found that in years of low whitebark pine nut production, Yellowstone area grizzlies ranged closer to humans, displayed higher levels of habituation to humans, and were more often killed by humans.

The high tourist visitation of the nation’s first and most famous National Park, combined with NPS management practices and heavy human influence around the front country results in an unusually high level of habituation to humans for an interior grizzly bear population. This means that bears that spend time around humans learn to tolerate humans at a close distance without necessarily feeling threatened. This works to their benefit in many cases, as it allows grizzlies to take advantage of food resources in the front country, without spending unnecessary energy stressing out over humans. However, once a bear leaves the park, without ESA protections, it becomes more vulnerable to human-related threats including human-bear conflict and poaching. The majority of bears leaving the park will likely be young bears that should have many years of healthy reproduction ahead of them—these bears are the future of the GYE population, and their loss may impact the population significantly.

Prematurely delisting the GYE grizzly population could result in significant declines in the population, while three sparsely populated states with limited resources bear the burden of managing the grizzly bears. Grizzlies that share habitat with people can require intensive management that places a heavy burden on the states.

The Great Bear Foundation looks forward to a day when the conservation efforts we’ve been part of are successful enough that the Greater Yellowstone Ecosystem grizzly population is recovered to the point where ESA protections can be safely lifted. Currently the population

*Continued on opposite pg,
bottom right*



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Photos by Jeremy Patrick

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