

Climate Change

&

wild - life



climate change - so what? I like the heat!

A habitat is not an ecosystem. 'A habitat patch must be large enough to provide equal input and output features to sustain a population. It is not just size but structural components. – From forests to lakes and everything in between, it is vital to maintain a healthy habitat.' - McComb. A habitat must have 7 components to sustain life: heat, food, shelter, air, light, soil, water. An ecosystem is a 'household' of organisms and its environment. Humans are part of the household.

"For if one link in nature's chain might be lost another might be lost, until the whole of things will vanish by piecemeal." - Thomas Jefferson

In times past: Chicago was once a swamp – full of vegetation and marsh birds, fish and amphibians. Guinea Pigs were once wild species inhabiting the Andes. They were domesticated and now extinct in the wild. Settlers hunted & domesticated the Wild North American Turkey to near extinction. A Mexican race (subspecies) had to be imported. The true Eastern Turkey has a brown tail tip, whereas the Mexican has a white tail tip.

The 1968 International Union for the Conservation of Nature and Natural Resources (IUCN) reported fewer than 10 bird species vanished in the 1600's, 21 in the 1700's, 75 in the 1800's, 54 to the mid 1900's. Well over 300 bird species alone are considered endangered.

Current reports show the rising temperatures are causing the tundras of the north are shrinking; giving rise to fields. The species that have inhabited it for generations are starving. The marshlands (which provide Moose a food source and a means to alleviate the biting insects as well as respite from the hot sun) are changing into forests. The Moose population in the North East – Great Lakes area has declined greatly. The speculations from experts include climate change, ticks and consequential hypothermia due to hair loss and 'toxin' ingestion.

"Many of the noblest animals had disappeared from New England leaving him but a tamed & as it were emasculated nature." - Henry Thoreau

Did you know? The Wolverine population decline is shown in regions where wolf population has also declined. They rely upon each other. Documentary 2008 from 'Lords of Nature' – 'life in a land of great predators'.

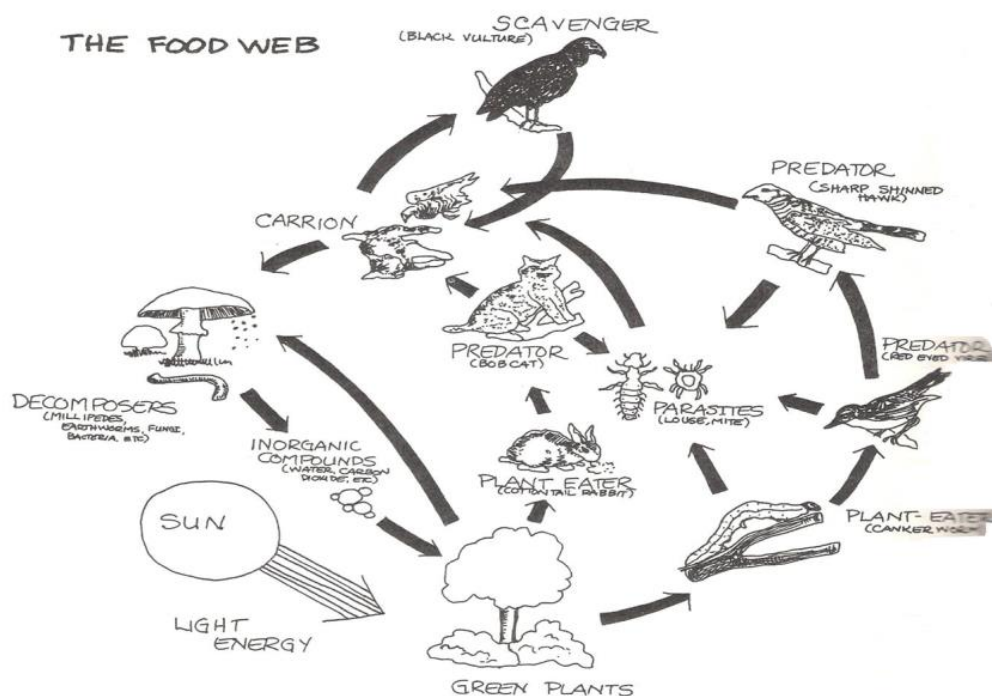
“When man tugs at a single thing in nature, he finds it attached to the rest of the world” – John Muir

Grizzly bears remain in the cool high country (altitude of 6 – 7000 feet) in late summer/fall to feast on the Army cutworm moth (who feeds on the high alpine native flowers: lupine, daisy, & paintbrush). The insects hide in rock crevices during hot days in high country. Moths do arrive in high summer alpine countries from the wheat fields of the plains. They are following the wild flowers which are full of nectar and pollen. The problem is there are fewer moths due to pesticide use. These moths provide protein for the bears during winter hibernation. 40,000 insects are consumed (at 1 calorie each) in one day!

The White Bark Pine trees – grow mainly in higher elevations have seeds that are spread by Clarks Nutcracker but Pine Squirrels cache them but are raided by the bears. A good crop keeps the bears in high country so no people confrontation for garbage. The problem is disease and insect infestation is destroying this vital tree population.

The future of the species relies on food, water, shelter. The threats are interlinked: The native cut throat trout is killed by the introduced Lake Trout (Mackinaw). Pesticides kill insects. Humans dig up (illegally) native wild flowers. Warming trends take bug shelter away. Trees will take over if rise in temperatures continue. Therefore fewer flowers will be present. Blister-rust is invading White Pines therefore no seeds to provide food for the bird, squirrels, bears. No chance for future tree growth. Without the high protein of the nuts the bears do not have sufficient calories for hibernation and successful breeding. The more aggressive the predator the lower the baby survival rate; the parent gone to get food and young vulnerable.

“the loss of animal species is like the loss of a gallery of masterpieces.” -Theodore Roosevelt



Researchers began their study in response to rising numbers of human-bear conflicts and the changing climate

Article by Bruce Finley, Amy Brothers and RJ Sangosti of the Denver Post April 2, 2017. Excerpts follow:

Warmer temperatures near their rocky den that shorten hibernation. “We could see a ratcheting down of the (black) bear population,” said CPW biologist Heather Johnson, leader of the research, who used radio collars and monitored movements of 40 bears at a time.

“Human development is really expanding,” she said. “There’s shrinking safe space for these wild bears to be.”

“the key driver of bear populations is going to be the carrying capacity of the environment. And that is going to be related to soil moisture and plant productivity — which is directly related to the climate. You cannot change policy overnight on accumulation of carbon dioxide in the atmosphere, rising temperatures and changes in precipitation. We will want to be addressing these ultimate factors that are driving wildlife populations.” – Colorado State University conservation biologist Barry Noon.

“If bears are denning less, they’re active longer. They’re interacting with people more. It’s going to change the numbers of interactions people have with bears. We should expect our rate of interactions with bears to really increase.” conflicts happen because bears wander into cities looking for food when natural foods aren’t available during dry years, which with climate change is expected to happen more often. – Johnson

Beyond foraging, CPW researchers focused on hibernation. They determined that bears hibernate seven days less for every 1.8-degree temperature increase at their dens. In addition, for every 10 percent increase in overlap of foraging terrain with urban development, hibernation decreased by three days.

“As the average temperatures in this state increase,” Johnson said, “we should expect our bears will sleep less.” That means bears probably will be more active, leading to more potential encounters with people.

The end result? Bears lost out, because even though human food helped them reproduce, fewer were able to survive. From 2011 to 2016, CPW researchers documented a drop in the female bear population to 84 from 200, mostly due to a dry year in 2012 that drove more bears into Durango. The population didn’t bounce back.

“Look deep into nature, and then you will understand everything better” – Albert Einstein

An Oregon State University horticulture research study reported on the decline of Aspen in Yellowstone. They discovered in that National Park (and several others) that the loss of top predator is directly related to the decline of streamside trees. The intricate network of connectivity is astounding!

The aspens in Wyoming declining causes bank erosion. The lack of shade also causes rise water temperature. The warmer temperatures cause small creatures (fish, amphibians, reptiles, insects) demise. There is also less songbirds – example being the Pine Grosbeak makes up to 20% of its diet with the buds of willow, aspen, poplar trees. Without the top predators, there are increased prey species. These animals require large quantities of vegetation; the loss of trees and bank vegetation causes erosion and alters the quality of the

stream. In Yellowstone, the top species affected are the Wolf and Elk and White Tail Deer. In Utah's Zion National Park the decline of the cottonwood trees directly affects the cougar and mule deer.

"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community." - A. Leopold



We know that the white man does not understand our ways. One portion of the land is the same to him as the next, for he is a stranger who comes in the night and takes from the land whatever he needs. The earth is not his brother, but his enemy, and when he has conquered it, he moves on. ...the air shares its spirit with all life it supports. ...(I) do not understand how the smoking iron horse (locomotive) can be more important than the buffalo that we kill only to stay alive.

What is man without the beasts? If all the beasts are gone, man would die from a great loneliness of spirit. For whatever happens to the beasts, soon happens to man. All things are connected. You must teach your children that the ground beneath their feet is the ashes of our grandfathers. So that they will respect the land, tell your children that the earth is rich with the lives of our kin. Teach your children what we have taught our children- that the earth is our mother. Whatever befalls the earth soon be falls the sons of the earth. If men spit on the ground, they spit on themselves. Whatever befalls the earth befalls the sons of the earth. Man did not weave the web of life; he is merely a strand of it. Whatever he does to the web, he does to himself.

Even the white man, whose God walks and talks with him as friend to friend, cannot be exempt from common destiny. We may be brothers after all. We shall see. One thing we know, which the white man may someday discover, our God is the same God. You may think that you own Him, as you wish to own our land, but you cannot. He is the God of man, and his compassion is equal for the red man and the white. This earth is precious to Him, and to harm the earth is to heap contempt on its Creator. The whites too shall pass, perhaps sooner than all other tribes. Contaminate your own bed and you will one night suffocate in your own waste. But in perishing, you will shine brightly, fired by the strength of God, who brought you to this land and for some special purpose gave you dominion over this land and over the red man. That destiny is a mystery to us, for we do not understand when the buffalo are all slaughtered, the wild horses are tamed, the sacred corners of the forest heavy with the scent of many men, and the view of the hills blotted by taking wires. Where is the thicket? Gone. Where is the eagle? Gone. The end of living and the beginning of survival. - Chief Seattle 1854 statement excerpt

Joseph Wood Krutch felt and stated that *'Man's assumption that the earth can be treated as belonging to man alone and can pursue his immediate aims without regard to the fact that he is no less than the humblest animal and is part of an interrelated complex to which he must adjust himself.'*



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