PROTECTING YOSEMITE'S BEARS

Electronic Monitoring Protects Visitors and Keeps Bears Wild

By: Caitlin Lee-Roney, Wildlife Biologist

TOP A Yosemite black bear is monitored by wildlife management staff so that it continues to eat grass, not human food.

Seeing a wild black bear can be the most amazing and memorable part of a trip to Yosemite. Unfortunately, many Yosemite bear encounters happen in developed areas, including campgrounds and parking lots, resulting in property damage or other human-bear conflicts. These types of bear experiences give visitors a distorted impression of these spectacular animals, compared to a visitor who has the opportunity to watch a bear forage naturally in a meadow or forest. Yosemite's bear management has come a long way since the 1930s when bears were fed in the park for public enjoyment, resulting in numerous injuries to visitors. Current bear management goals include keeping a healthy, natural population of black bears as independent from human influence as possible.

By nature, bears are curious and intelligent animals that learn quickly from experiences and have an amazing sense of smell. These attributes not only help bears succeed in the wild, but they can also lead to conflicts with people. Bears naturally forage on a wide variety of foods easily found in the park including

grasses, berries, insects, and acorns but when people allow bears to eat their food either intentionally or by accident, the behavior of a bear will quickly change. A bear that learns to search out human food is referred to as being "food conditioned". Often bears that are food conditioned will begin to lose their natural fear of humans and become "habituated" to people. These behaviors frequently result in damage to vehicles and other property. Bears that become heavily habituated and food conditioned can pose a serious threat to public safety and, unfortunately, must be put down as a last resort. This is why preventing changes in the natural foraging behaviors of bears is crucial to their protection.

The best way to stop bears from learning to seek out human food is to prevent them from ever tasting it in the first place. Throughout the park, there are many signs describing proper food storage. Bear-resistant dumpsters and recycling containers are provided at each frontcountry campground and bear-resistant food lockers are placed in each individual campsite. For overnight backcountry trips, campers are required to carry their food in a bear canister, which can be rented from any wilderness permit station in the park. Still, some people do not get the message or forget about storing their food properly long enough for a bear to discover it. All it takes are a couple bites of a candy bar, a few marshmallows, or some chips for a bear to discover that areas inhabited by people are also good places to find food. Bears are food-driven animals, and once a bear discovers a food source (either natural or unnatural) it is unlikely to forget about that source.

Wildlife managers currently use various tools beyond proper food storage in order to keep bears and humans apart. Bears that enter developed areas become the main focus of the Bear Management Team. Once an untagged bear is seen in a developed area multiple times, the Bear Management Team will set culvert traps nearby. Once captured, new bears exhibiting this behavior are anesthetized, weighed, measured, aged by looking at their teeth, and monitored closely to ensure the bear's safety. Bears are also tagged with one of five random tag colors used for identification, and fitted with a radio collar or ear tag that transmits a signal that can be picked up by a hand-held telemetry receiver. This signal allows wildlife managers to keep track of a bear's general location, and to find the bear if they suspect it is in or near development or people. Bears are typically released in the same place, or near where they were captured. Bears are rarely re-located within the park anymore because they tend to quickly come back, or can cause problems elsewhere.

Without radio telemetry, it is hard for the Bear Management Team to know when a bear has entered a developed area. Bears will often

TOP A tagged black bear is spotted in a tree, part of its natural habitat.

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TOP A wildlife management staff member tests telemetry.

go into campgrounds and other developed areas after dark, and are amazingly quiet and undetectable unless a large spotlight is used, or until they have found unattended food. Each bear wearing a telemetry device is monitored daily by the Bear Management Team, and when found in a developed area, is chased away by trained staff using tactics ranging from yelling and chasing to shooting noisemakers or rubber projectiles designed not to harm the bear, but to scare it from the area. By keeping bears out of areas inhabited by people, the park has been able to limit property damage, reduce unsafe interactions between bears and people, and ultimately keep bears wild.

One of the most useful tools that bear managers in Yosemite currently use to keep bears from spending time in developed areas are electronic monitoring systems (referred to as Monitoring Boxes), used to detect radio-collared bears within five developed areas in Yosemite Valley (currently Upper Pines, North Pines, and Lower Pines Campgrounds, Housekeeping Camp, and Camp 4 Parking Lot and Campground). These systems were originally brought to the park by the National Wildlife Research Center in 2002 and were turned over to the park in 2005 for bear management use. The Monitoring Boxes are run with two car batteries and log data 24 hours a day, 7 days a week from April-November. The boxes collect data, including the times and dates that particular bears are in each area, and immediately alert bear management staff through park radios when a bear is within a monitored area.

At the beginning of each shift, bear management staff turn on the monitoring box alarm systems so they can quickly respond when a bear with a transmitter tag or collar enters a developed area. When a bear is detected by one of the monitoring boxes, a signal is sent through park radios. Bear management staff can then immediately go to the specified location and, with their hand-held telemetry units, quickly find the bear and chase it out of the area. These alarms also help bear management staff to know when specific bears are not in developed areas so they can spend that time talking with visitors and educating them about proper food storage.

This system not only allows bear management staff to respond to a bear's presence in a developed area before a bear is able to obtain human food, but it also allows park managers to come up with future management strategies based on collected data. The data recorded by these monitoring systems have shed light on trends in bear activity cycles as well as the behavior patterns of individual bears. Since 2005, there have been over 200,000 detections of bears in developed areas. From these detections it is known that peak activity of monitored bears is between midnight and 6:00am. By utilizing the data to adapt operations to changes in bear activity,

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TOP A black bear roams in its natural surroundings near El Capitan.

these systems have proved crucial to effectively managing habituated bears and preventing specific bears from obtaining human food.

With 6 years of experience with these Monitoring Boxes, Yosemite's bear management staff is eager to increase the number of monitored areas. In 2012, the aging bear monitoring system technology will be upgraded and expanded to cover up to 12 campgrounds and developed areas through funding provided by Yosemite Conservancy. Additional monitoring systems will be installed in targeted locations throughout the park based on bear activity, and could include campgrounds outside of Yosemite Valley or in parking lots and lodging facilities where bear activity is particularly high. These systems will have the capability of being moved year-to-year, allowing focused attention to be given when and where bear activity is the highest.

Expanding and improving this system will ultimately help the park continue to reduce the number of human-bear conflicts that occur each year. Valuable tools like these make it possible to maintain a healthier bear population in Yosemite, and help provide visitors with positive experiences, like watching bears ripping open a log to eat insects instead of being awakened at 3:00am by a bear in search of food in a campsite or vehicle.▪

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She graduated from the University of California, Santa Cruz with a B.S. in Ecology and Evolution, and a B.A. in Environmental Studies.

Before becoming a permanent Yosemite employee in 2007, Caitlin spent eight summers working for Yosemite's Bear Program as both a volunteer and a seasonal employee. Having grown up in the park with ranger parents, she has a life-long connection to Yosemite, and is committed to protecting Yosemite's wildlife.

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