



Resource Management and Research Division: Wildlife Management Program, 2014

Introduction

The Resource Management and Research Division oversees both natural and cultural resources in Zion National Park, Cedar Breaks National Monument, and Pipe Spring National Monument. The division includes seven programs: Wildlife Management, Vegetation Management, Physical Sciences, Cultural Resource Management, Environmental Planning, Geographic Information Systems, and Museum and Curatorials. The resource programs administer numerous research activities that are conducted by outside universities and other agencies. Additionally, we receive support for long-term monitoring by the Northern Colorado Plateau Network. (Visit <http://science.nature.nps.gov/im/units/ncpn/> for more information about what this program is doing in each park.) The resource programs are involved with various outreach projects, including Zion Canyon Field Institute courses. This handout describes the Wildlife Management Program and many of the on-going projects for the 2014 field season.

Mexican Spotted Owl Surveys

Zion has the greatest density of Mexican Spotted Owl (*Strix occidentalis lucida*) in Utah and the entire park is considered 'critical habitat' for this species. These owls are a federally listed threatened species, and have been monitored regularly in Zion since 1995. Repeat visits to previously inhabited nesting and roosting sites allow for the determination of occupancy and productivity for a large percentage of the park's population of this species. In 2012, Mexican Spotted Owls were found in 16 of 21 territories monitored. Productivity of sites with known nesting outcomes was similar to previous years, with a mean of 1.5 fledglings per territory.



Agassiz's Desert Tortoise Monitoring

Zion and the adjacent town of Springdale share a population of federally threatened Agassiz's desert tortoises (*Gopherus agassizii*). This population is at the northeastern extreme, as well as the elevational extreme, of desert tortoise distribution. The wildlife program has been monitoring seasonal movements and activity of the tortoises using radio telemetry since 2008. A total of 33 tortoises have been marked, including 14 females. Yearlings, hatchlings, and broken egg shell fragments have also been observed evidence of a breeding population.

Because tortoises are found in town as well as the park, and private land containing tortoise habitat is continually under development, educational outreach is crucial to the survival of the species. Since 2008, the Zion National Park Wildlife Program has held the annual Desert Tortoise Birthday Bash in an effort to raise awareness of this threatened species.





Example: Peregrine Falcon



Example: California Condor

Peregrine Falcon Monitoring

Although the Peregrine Falcon (*Falco peregrinus*) was removed from the Endangered Species List in 1999, the U.S. Fish and Wildlife Service (USFWS) mandates continued population monitoring to track recovery. Zion has over 25 years of monitoring data for peregrines, one of the most complete datasets in the western U.S. In 2014, 7 of 9 historic Peregrine Falcon territories monitored showed occupancy. Six pairs were determined to be breeding, and 13 young were fledged, with 100% nesting success. This is consistent with previous years, with the last nesting failure being in 2007. All monitored sites were occupied by peregrine falcon pairs with a productivity of 1.5 falcons/pair. This rate exceeds the Falcon Recovery Plan goal of 1.25 young/pair.

California Condor in Zion National Park

California Condors were listed as an endangered species in 1967. In 1987, the last known wild California Condor was captured and placed in captivity with the other 26 remaining condors in the world. Due to the success of a captive breeding program, condors were released back into the wild starting in 1992 in southern California and then in 1996 in Arizona. There are currently over 400 California Condors in the world, with about 232 of those in the wild (76 in the AZ/UT population in 2014).

All of the condors in the AZ/UT population spend some time in Zion National Park during the year. Most condor observations in the park are in the Big Bend/Angels Landing area, but condors can also be seen on the east and west sides of the park as well as in Kolob Canyons. The AZ/UT population is managed by The Peregrine Fund. They attempt to capture each individual on an annual basis for lead testing, and administer chelation treatments to condors with dangerously high blood lead levels.

Lead poisoning is the most significant challenge to the recovery of this endangered species. California Condors are exposed to lead in the form of spent ammunition in big game carcasses and gut piles. Lead bullets fragment into many hundreds of pieces upon entering game animals and are incidentally ingested by condors. As scavengers, they consume primarily carrion but have also tuned into the local hunting seasons. Most lead exposure occurs during and after the deer and elk hunting seasons.

Sadly, a pair of Zion's most well-known California Condors died last year. This pair, male tag #99 and female tag #A3, were observed regularly on Angels Landing. They displayed courtship behavior in both 2011 and 2012, raising hopes that they would nest in the park. In May of 2012, the pair had to be kept in captivity while 99 received chelation treatment for lead exposure. A3 died of lead poisoning on January 16th, 2013 and 99 died on

December 30th, 2013. We are still waiting for necropsy results for 99, but lead poisoning is suspected due to his history of lead exposure.

To combat lead poisoning issues, the state wildlife agencies in Utah and Arizona have developed voluntary non-lead ammunition programs in the California Condor's current range. Educational materials are distributed to big game hunters in these areas and raffles are conducted for participants in the program. Non-lead ammunition is provided directly to hunters in Arizona and rebates for free ammunition are provided to hunters in Utah. These programs focus on reducing the amount of lead available in the environment and may have contributed to last year's lead testing results, which yielded the lowest number of condors at toxic lead levels in nine years.



Desert Bighorn Sheep

Desert bighorn sheep (*Ovis canadensis*) were likely extirpated in Zion National Park by the 1950s. Through a cooperative reintroduction effort with Utah Division of Wildlife Resources (UDWR) in the 1970s, 12 bighorn sheep from the River Mountains in Nevada were reintroduced to the park. The bighorn sheep were kept in an enclosure in the park for several years in an attempt to increase their numbers before release into the wild, and after two mostly unsuccessful releases during this period, the reintroduction was considered a failure. However, in the 1990s observations of bighorn sheep began to increase. Population estimates showed a steady increase throughout the decade, with an estimate of 74 individuals at the end of the decade. In 2008, aerial surveys began in the park through cooperation with UDWR. The bighorn sheep found in Zion are part of a larger herd that also uses BLM land southeast of the park. This entire area (the Zion Unit) was surveyed in both 2009 and 2013 yielding total population estimates of 617 and 840 respectively.

Although this indicates a successful reintroduction, the increased population and dispersal of bighorn sheep causes great concern for the health of the herd. Healthy domestic sheep and goats carry pathogens that can lead to pneumonia epidemics in bighorn sheep. The potential for disease transmission from domestic sheep and goats almost certainly increases with dispersal. Die-offs related to this pathogen exposure have been observed throughout the western United States in both desert and Rocky Mountain bighorn sheep. Initial mortality rates may be up to 90%, after which reduced lamb recruitment may persist for decades, preventing recovery to previous numbers and potentially leading to extirpation of the population.

UDWR is actively working to reduce bighorn sheep density on BLM land in the Zion unit in hopes of reducing the risk of disease transmission. Bighorn sheep removed from these areas are used to augment existing populations or to establish new populations in suitable habitat identified in Utah's Bighorn Sheep Management Plan. UDWR has also proposed a plan to reduce density within the park. Zion National Park is currently conducting an Environmental Assessment of this proposed action.





American Pika

The American pika is a small herbivorous mammal that inhabits high elevation talus slopes. It is a close relative of rabbits and hares. Zion is at the southernmost edge of American pika distribution in Utah and has a limited amount of marginal habitat that was historically occupied by this adorable animal. There are historic accounts of pika calls heard from the Lava Point overlook and informal surveys were conducted from 2010 to 2012. Old scat and hay piles were located during these surveys but no pikas were detected.

Recently, pika specialist Erik Beever was in the park to visit the habitat around Lava Point and provide guidance on future surveys and research. He is very interested in the habitat in Zion because pikas recently occupied this habitat but appear to have been extirpated. Environmental conditions at these locations could provide data to further advance our understanding of how this species will ultimately fair in our changing climate. As in previous surveys, old

scat and hay piles were observed but still no sign of current occupancy. Zion wildlife specialists are currently looking into the possibility of having the scat radiocarbon-dated to determine when the habitat was last occupied. They plan to conduct additional surveys and place temperature/humidity sensors within the talus to contribute to Erik's important research.



Human-Wildlife Interactions

The Zion Wildlife staff maintains a database of wildlife sightings, disease, and human-animal interactions reported by visitors and employees. These data, together with inventories, research and monitoring, are used to support updates of our certified species list. This information is used to develop management strategies that protect the health and well-being of both humans and wildlife in the park.

Sighting wildlife in parks is exciting, but it is advisable to keep a safe distance. At least 100 yards for bears, mountain lions, and bighorn sheep; 50 yards for condors, and 25 yards for other species. These distances are recommended to protect both park visitors and the wildlife. It is requested that all wildlife sightings of interest be reported to the park. Bears, mountain lions, and any other species not included on the Northern Colorado Plateau Network's certified species list (<http://science.nature.nps.gov/im/units/ncpn/SpeciesSelect.cfm>) are especially important to note and report.

Example of human-wildlife interactions: this ground squirrel is extremely overweight! Please don't feed the animals.

