



# WILD Kids



## WHAT IS A RESEARCH BIOLOGIST?

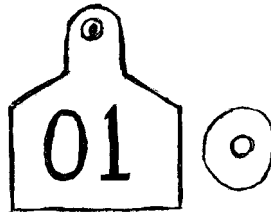
A research biologist is someone that studies wildlife. It's their job to learn about how and where animals live. Through research, biologists can find out how many animals live in a certain area, what they're doing, and if the habitat provides enough food, water, shelter, and space. To do their

research, biologists must know how to use different types of tools (some are shown below). Biologist must also be observant; they need to watch carefully and write down what they see. Perhaps a research biologist's most important tools are their eyes and a pencil and paper.

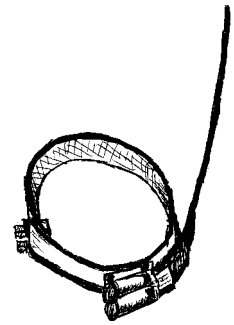
## TOOLS OF THE TRADE



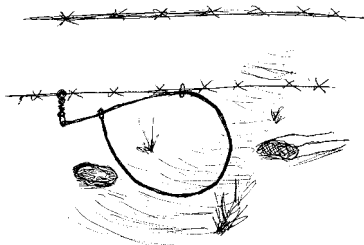
**Leg Band** - a metal band placed on the leg of a bird (although bats are banded on the forearm) as a way of marking captured birds. Bands usually bear an ID number and return address.



**Ear Tag** - a locking tag made of plastic or metal that is placed in the ear of an animal to mark and identify captured mammals.

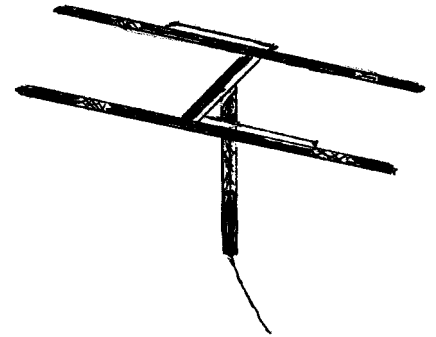


**Radio collar** - a collar, placed around an animal's neck, that contains the radio transmitter.



**Snares** - used to capture animals, snares are designed to tighten around the leg or body of a mammal and hold it until the biologist returns. Biologists check snares often so animals are not injured.

**Radio transmitter** - used to *track* (follow) animals, the radio transmitter is attached to a collar or glued to the wing of a bird. The transmitter sends out "beeps" that can be picked up by the receiving antenna. The problem with transmitters is that animals often bite or pull them off.



**Receiving antenna** - used to pick up the "beeps" sent out by the radio transmitter. As the biologist gets closer to the animal wearing the transmitter, the beeps get louder.

## The Effects of Wildfire on Black Bears

by Arizona Game and Fish Dept. research biologist, Stan Cunningham

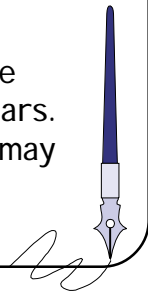
The goal of this research project was to answer the question, "What are the effects of the Lone Fire on black bears?" The Lone Fire occurred in central Arizona in April of 1996. The fire burned for 16 days and destroyed most of the plant life in the area. Fire can be good for black bears because it causes the growth of many types of plants black bears eat. But the Lone Fire burned so much vegetation that biologists thought bears would have trouble finding food.

Biologists studied bears in the burned area during the years 1996 through 2000. To capture bears, snares were set out. The captured bears were identified as male or female, aged, and marked with a numbered ear tag. Each bear was also fitted with a radio collar, then released. From an airplane, and on foot, biologists tracked the bears' movements. A receiving antenna was used to pick up "beeps" sent out from the transmitters in the bears' radio collars. The

bears were tracked at dawn and dusk, when they are most active looking for food.

During the study period, 39 black bears were captured. Biologists counted 4 times as many male bears as female bears. (In unburned areas, the ratio of males to females is closer to 1 to 1.) The low number of female bears in the study area is likely due to the fact that they could not compete with male bears. Females did not raise any young during the study period because of lack of food and shelter. However, the number of adult male bears was similar to that in unburned areas. The adult males were able to find areas missed by the fire, which still provided good food and shelter.

Overall, biologists found that the Lone Fire had negative effects on black bears. But the long term effects of the fire may not be known for some time, so more research is needed.



## How to do Your Own Research Project

1. First, decide **what** you would like to find out. (In the bear study above, what did the research biologist want to find out?)
2. After you have decided what you would like to find out, write a question that states what you hope to learn from your project. (What question did the bear research biologist ask?)
3. Decide **where** you will do your research. (Where was the bear research done?)
3. Next, think about **when** you are going to do your research. (During what time period was the bear research done? During what time of day was the research done?)
4. Now, decide **how** you will do your research. (Which tools were used in the bear study? How was the information collected?)
5. Record all important information. (What types of information were *recorded*, written down, during the bear research project?)
6. After you have written down all your observations, it's time to study your findings and decide if more research should be done. (What did the research biologist learn from the bear research project? Did he find an answer to the question, "What are the effects of the Lone Fire on black bears?" Did he think more research should be done? If so, why?)

(To learn more about AZGFD research projects, go to [www.azgfd.com](http://www.azgfd.com), click on Wildlife and Fish, then click Research Papers.)