



WILD Kids



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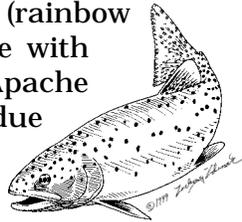
Wildlife Research: The call of the wild

Ask any research biologist why they study wildlife and they will probably tell you it's because they enjoy wildlife and working in the outdoors. Even though another job may offer more money, they would rather spend their time working with wildlife: surveying Apache trout in a cold mountain stream or waking up at 4 a.m. to track desert tortoises in the middle of summer. Being a research

biologist means spending long days and even weeks in the field, packing in supplies which may weigh over 70 pounds, and figuring out how to repair equipment when it breaks down. Sound like a lot of work? It is, but most research biologists consider it well worth it. Because of their work, species have been brought back from near extinction and wildlife habitat has been greatly improved.

Apache Trout - On the Road to Recovery

Arizona Game and Fish Dept. research biologists are currently doing a research study on the Apache trout, which is found only in a few streams in the White Mountains of Arizona. The Apache trout is listed as threatened due to loss of habitat and introduction of non-native trout (rainbow and brown trout), which compete with Arizona's two native trout, the Apache trout and Gila trout. Recently, due to recovery efforts, the Apache trout is making a come back.



The title of one of the Apache trout research projects is "*Evaluation of the Effectiveness of Apache Trout Habitat Protection Actions.*" The goal of the project is to study barriers that have been constructed in streams to prevent non-native trout from intermingling with Apache trout. Biologists are also studying areas with no barriers, to compare with data from areas where barriers have been built. The study area includes streams in the Little Colorado River Basin and the Black River.

An important part of the research project is called GAWS (pronounced "jaws" - clever name for a fish project, isn't it?). GAWS, which stands for General Aquatic Wildlife Survey, involves capturing, measuring, and

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A Study of Lizards, Birds, and Rodents in Tucson

Development of rural lands surrounding metropolitan areas has become a major factor contributing to the loss of natural habitats. As urban development expands, native habitats become fragmented and isolated. Arizona Game and Fish Dept. research biologists conducted a study to learn the effect of urbanization on wildlife in the Tucson Area. The research project was entitled "*Relationships of Birds, Lizards, and Nocturnal Rodents To Their Habitat in the Greater Tucson Area, Arizona.*"

The project goal was to compare the abundance and diversity of wildlife in developed (urban) areas to wildlife in undisturbed areas. Breeding birds were studied March through June, which coincided with nest building activity. Bird censuses (counts) were conducted from 5:30 a.m. to 10:30 a.m., when birds were most active. Birds were identified by sight or sound. Censusing was temporarily stopped when jets flew overhead or when there were human distractions. Wintering birds were censused in January and February, using the same methods described for breeding birds.

Lizards were surveyed mid-July through mid-September, with surveys beginning one hour after sunrise and ending 5 hours after

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(Apache trout, cont.)

weighing native and non-native trout. To capture the fish an electro-shocker is used to stun the fish. Probes from the electro-shocker are put in the water and emit an electric charge which immobilizes the fish until it can be netted with a large dip net. (Fish research biologists wear rubber boots and gloves to avoid being shocked.) A PIT (passive integrated responder tag) is inserted into the belly of each fish. If the fish is recaptured, the ID number on the PIT can be scanned to identify the fish. To limit stress on the fish, they are handled as little as possible and biologists keep their hands wet to protect the mucous coating on the fish's body.

Research biologists are also conducting *bentho-sampling* - surveying small crustaceans and vegetation that make up the diet of the Apache trout. *Riparian vegetation* (vegetation along streams) is also being studied. It provides important shade and shelter where the Apache trout lay their eggs or where they come to rest. This research project is an important step toward the goal of delisting the Apache trout by the year 2003. This will make it the first fish species to ever be delisted from the endangered species list.

(Lizard, Birds, and Rodents, cont.)

sunrise. Censusing involved only identification of lizards. Nocturnal rodents were surveyed by placing traps every 10 meters along trapping lines. Habitat studies were also conducted to measure the percent of land cover that was altered from its native state, and to determine the degree to which it was altered. Aerial photographs were used to measure the percentage of land cover types, which was identified as either Sonoran desert vegetation or non-native vegetation (ornamental plants or weedy growth).

Research results showed that several *native* species of wildlife were sensitive to urbanization. Northern flickers, verdins, whiptail lizards and zebra-tailed lizards were not often seen in developed habitats. This may be explained by the fact that these native species depend on dense ground cover for feeding, nesting and escape cover. Other native species, such as northern mockingbirds and tree lizards, increased in abundance as urbanization increased. None of the four native species of nocturnal rodents were captured in high density residential areas, although all species were captured in areas of natural vegetation. Overall, *non-native* species of wildlife increased as house density increased.

Design Your Own Research Project

1. What is the question you want to answer?
you may discover your equipment was not working properly and all your data is inaccurate.)
2. Once you have stated your question, use the internet and visit the library to search for similar literature that has been written on the topic. Read and record the results of these studies.
3. Design your research project. Start by collecting background information, which will be included in the introduction section of your research report.
3. Locate and evaluate your study area. Is it the best place to conduct your research?
4. Decide which methods you will use to conduct your research by testing different methods. What are the best techniques for your question? Decide how you will collect your data. It's important to evaluate your data as you collect it. (Do not wait until you're done: you may discover your equipment was not working properly and all your data is inaccurate.)
5. Collect and record data. (You might want to design your own data sheets. Also, consider using abbreviations whenever possible.)
6. Analyze/evaluate your data and write up your findings and conclusions.
7. Write your report. It should include an introduction, a description of your study area, methods used, your results, and a discussion section that includes your recommendations (is more research needed?). A glossary of definitions may be helpful to others who read your report. You can also include drawings, tables, or other graphics to illustrate your findings. (Remember to cite literature you have used in your report.)

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