



*Oak savannah at the Appleton-Whittell Research Ranch Sanctuary.*

## **The Appleton-Whittell Research Ranch Sanctuary of the National Audubon Society**

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The Research Ranch was established in 1969 by Ariel and Frank Appleton and their four children. Its goal was to promote ecological research, conservation, and education. At the time of establishment, domestic cattle were removed from the Ranch's 7830 acres, and they remain excluded. In 1980, with a grant from the George Whittell Foundation dispersement, the National Audubon Society purchased the Research Ranch and incorporated it into Audubon's sanctuary program. The Research Ranch Foundation returned the purchasing money to Audubon and it serves as the sanctuary's endowment. Interest from this endowment is used to maintain the facility, but it does not support individual research projects.

The Sanctuary is located in Santa Cruz County, southeastern Arizona, in the foothills of the Huachuca Mountains. Its rolling hills are covered

with a combination of semidesert grassland and oak savannah. Several riverine areas are present as well; these are lined with large, deciduous trees, including Wright's sycamore (*Platanus wrightii* Wats.), Fremont cottonwood (*Populus fremontii* Wats.), velvet ash (*Fraxinus velutina* Torr.), and Arizona walnut (*Juglans major* Torr.) Heller. This region of the state has a Chihuahuan climatic regime with a winter rainy period and a summer *monsoon*, the latter accounting for about two-thirds of the annual precipitation. The long term mean annual precipitation is just under 45 cm (data from R. Sang). Much of the land in southeastern Arizona is public, commonly held either by the U.S. Forest Service or the State of Arizona. Bureau of Land Management land is less common in this region. The Sanctuary reflects this ownership pattern; its holdings are made up of U.S. Forest Service, State of Arizona, and deeded portions. The most common land use for this region is cattle ranching, although real estate development for sun-belt residences may be more important economically at this time and is a growing industry.

When the Research Ranch became an Audubon sanctuary in 1980, the original goals of research, conservation, and education were maintained. Major long-term research goals for the site were established

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in consultation with land managers, landowners, and scientists familiar with the environment of the Southwest at a conference, sponsored by the Bureau of Land Management, which was held on the site from March 2-4, 1981. The overall research goals for the Sanctuary were defined as follows:

1. The Sanctuary should continue in its role as an ecological control area. This role as a control is by far the most important function of the Sanctuary and has been central to its program since the inception of the Research Ranch. These lands act as a control for comparison with many land use experiments which are being carried out in southern Arizona at present. Notable examples are ranching, housing development, road building, mining, and small-scale farming.
2. Non-manipulative research on any aspect of the local environments is to be welcomed and encouraged as facilities permit.
3. Long-term monitoring of patterns of post-grazing ecological succession are to be continued and expanded. Livestock grazing at present continues to be the major human impact on Southwestern grasslands, and there is a critical need to determine its impacts on these ecosystems. Such research also should involve comparisons with grazing on other parts of the western U.S.
4. Riverine (streamside) habitats are of extraordinary importance to wildlife. There is widespread and justified concern about the loss of these fragile Southwestern habitats. The Sanctuary should be involved in studies of its own and other similar habitats.
5. Re-introduction and/or propagation of endangered

or threatened species should be undertaken, where such activities are compatible with overall Sanctuary goals.

6. There is much debate about how important fire's role may have been in shaping the past and present vegetation of the Southwest, particularly in its grasslands. This is a complex area for study because lands subjected to grazing often lack the levels of fuel (dead vegetation) sufficient to carry a fire. The Appleton-Whittell Research Ranch is in a unique position in this regard, and it should become a center for fire research.

7. The Appleton-Whittell is the only sanctuary of the National Audubon Society whose primary stated purpose is basic research. Therefore, activities at this Sanctuary must increase the Society's contribution to overall basic ecological knowledge in addition to contributing to other, better-known functions of the National Audubon Society.

Recent work at the Sanctuary includes studies in plant and animal ecology in riparian, grassland, and savannah habitats. Other studies under way include palynological surveys, dendrochronology of several species, analysis of geomorphological processes, fire's effects on plant and animal distributions, and population genetics of selected species. The research is supported by several public and private funding sources, with the facilities provided by the National Audubon Society.

Our conservation ethic and working space necessitate accepting only a few researchers at a time. The atmosphere is often intellectual and always mutualistic. Up to nine visiting scientists can be accommodated in addition to the scientists on the staff. Our facilities for visitors include a four-bedroom, three-bath house (the dorm) and a two-bedroom, one and one-half bath (the guest house). Visitors are asked to furnish their own linens and a low daily room fee is charged. Questions about visits, facilities, and fees should be directed to the resident manager of the sanctuary, Dr. Mark Stromberg (phone 602-455-5522). Questions about research protocol and activities can be sent to the authors.