AGGREGATIONS OF BARN OWLS IN ABANDONED DESERT MINES

by Robert Salter

NORMALLY WHEN ONE THINKS OF owls, a picture of a solitary sentinel of the forest or desert comes to mind. This is often the case with predators. Large groups of owls are rarely found in the wild under normal circumstances.

In the abandoned hard-rock mining districts of southern New Mexico, large groups of Barn Owls (*Tyto alba*) can be observed at their day roosts and nest sites. The reason for this seemingly anomalous behavior is an abundance of secure nesting and roosting habitat provided by dozens of abandoned mine shafts as well as an ample prey base.

Barn Owls have long been known to show a preference for man-made roosts and nest sites. In most areas, barns and abandoned buildings are chosen. In the Southwest, abandoned mines have provided what may be the best available roosting and nesting habitat for this species.

The hard-rock miners of 80 to 100 years ago blasted vertical mine shafts down surface outcrops of ore veins, and drove horizontal drift workings when the veins widened sufficiently to justify the effort. Where the bodies of ore spread through the native rock matrix, the miners removed it, leaving a complex cavity called a stope, with countless ledges and shelves. It is these horizontal drifts and stopes leading off the vertical shafts, that have provided sites for Barn Owls. In most cases, the owls have chosen mine shafts with lateral workings located within 50 feet of the surface. Some Barn Owls, however, have roosts and escape routes extending over 200 feet deep into complex mine workings.

This scarred old veteran clings to a narrow perch about 15 feet down a 75-foot mine shaft. Another owl remained hidden just to the left until both flew to lower drift workings. Photograph/Robert Salter.

The number of owls in local clusters varies, but nearly every mining district in the southern half of New Mexico has its own resident group of owls and other native wildlife that have adopted this man-made underground habitat. The largest group of owls I have located thus far is in the Victorio Mining District between Deming and Lordsburg, New Mexico, just south of Interstate 10 in the Chihuahuan Desert. This district alone harbors at least 25 Barn Owls in an area of about one square mile. These owls are so secure in their mine-shaft roosts that they are very reluctant to leave them even when a camera-wielding wildlife biologist appears on the surface.

They typically crouch down hard against the rock giving an occasional furtive glance toward the shaft collar to see when the intruder departs. If the interloper persists, the owls usually spread their wings and glide slowly to a lower level of the mine where they are out of sight and out of harm's way. Occasionally when an owl is roosting near the surface of a shallow shaft with no lower workings, it bursts forth from the shaft collar at the sound of approaching footsteps. No matter how carefully I tried to prepare myself for this possibility as I approached a shaft location, I never managed to get a picture of this magnificent emergence. A more common photographic problem was capturing an image of an owl perched as much as 50 feet down the side of a dark and dangerous mine shaft without

falling in myself.

Photography aside, observing these beautiful owls in their roosting habitat at close range was very rewarding. I was also impressed by the quantity and age of owl pellets visible in and around the mine shafts. Clearly the group of owls in the Victorio District consumes large numbers of rodents and has done so for many years.

Outside of the abandoned mining districts of the Southwest owls are not uncommon, but are rarely found in such dense groupings. The prey base around the mining districts is not appreciably greater than it is in other places in the Chihuahuan Desert. The only habitat factor that facilitates such large groupings seems to be the presence of abundant secure nesting and roosting sites provided by the mine workings. An owl nest located as much as 50 feet down a vertical mine shaft is safe from virtually all natural predators. While coyotes do prowl the mining districts, they haven't yet figured out how to climb down the sheer vertical sides of a mine shaft. Even snakes find most shaft nest sites inaccessible. This reduced predation greatly increases the number of chicks that successfully fledge each year. Because of this, large stable populations of Barn Owls have built up in the mining districts of southern New Mexico.

But these owl sanctuaries are not without threat. A variety of human activities are adversely affecting the mining districts. Urban development in Phoenix and Tucson has already spread into mountain mining districts that were once remote. Prospectors and mineral hunters no doubt cause some disturbance to the birds.

In New Mexico,the greatest threat to these unique groups is a government mine safety program. The National Abandoned Mine Land (AML) Program is funded by a federal tax levied against operators of active coal mines. The principal purpose of the program is to reclaim coal mines abandoned prior to passage of the Surface Mine Control and Reclamation Act of 1977. To enforce this law, a new branch of the Department of the Interior, the Office of Surface Mining was created. This is the agency that awards reclamation grants to states like New Mexico with approved abandoned mine land programs.

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In New Mexico, this program has long since eliminated its problems with abandoned coals mines. Now, in order to keep the funding spigot open, New Mexico has turned toward the abandoned hard-rock mining districts in the southern part of the state. In their haste to spend, the need to fully assess the potential impact on wildlife of completely backfilling whole mining districts has largely been overlooked. This is occurring even though the National Environmental Policy Act requires a full environmental assessment for all major federally funded projects. An honest environmental assessment would probably show negative impact on owls and other resident wildlife in the mining districts.

The need to ensure public safety in parks and recreation areas is no small matter, but, with careful planning this can be accomplished without the loss of important wildlife habitat. Death Valley National Park in California has probably been the most effective in this regard. Even with a large number of visitors,in a park containing many abandoned mines, the managers of Death Valley National Park have found ways to protect the public while still preserving important cultural and wildlife resources. This has been accomplished by using a variety of restrictive devices such as fences, steel nets, and gates that inhibit human entry, but still allow most birds and bats to enter and use the underground habitat. The use of such security systems in New Mexico would achieve the expressed goal of enhancing public safety and would preserve the unique wildlife that lives in these man-made caves.

The full impact of the loss or diminution of such large groups of predatory birds is difficult to calculate. Owls in general and particularly the Barn Owl are thought by many to be among the most effective controllers of rodents. The loss of even a single owl could alter a local predator-prey balance.

Further work should be done in the unique habitat provided by these abandoned mines. Among other research needs, a determination of both species diversity and of numbers of individuals should be undertaken. While Barn Owls may be the most spectacular and visible inhabitants of the mining districts, many other creatures, such as illusive and sometimes rare bats, find useful habitat in these areas as well.

Field work undertaken soon would facilitate knowledge of the full value of this habitat and help determine its future use. ■

–294 Ojo de la Vaca
Santa Fe, New Mexico, 87505