

RESEARCH UPDATE

Decline of the Sandy Cay Iguana

William K. Hayes

Department of Natural Sciences

Loma Linda University, Loma Linda, CA 92350

The Sandy Cay iguana, *Cyclura rileyi cristata*, is one of three subspecies of *Cyclura rileyi*, all of which are endangered. Confined to a single small (15 hectare) cay in the Exumas chain of the Bahamas, it is especially vulnerable to extinction.

As described in the companion article by Carl Fuhri in this issue, my first visit to Sandy Cay was in 1996 with colleagues Ron Carter (Loma Linda University), John and Sheila Iverson (Earlham College), and Sandra Buckner (Bahamas National Trust). At that time we discovered the footprints of a large raccoon on the cay, as well as numerous rats about our camp at night and a handful of adult iguana carcasses. Compared to Iverson's visit to the cay in 1980, numbers of iguanas appeared to be quite low. Naturally, our concern for the iguana was quite high.

I returned to Sandy Cay in May, 1997 with my graduate student, Shawn Fry. Shawn had decided to study the iguana during the reproductive season from early May to mid June. During his first four weeks he was assisted in the field much of the time by myself, Ron Carter, Carl Fuhri, and Charles Radcliffe (Denver Zoo). By the end of May we had captured only 42 iguanas, including three recaptures from the previous year. When these data were combined with capture data from 1996, only 3 females were represented in a sample of 61 sexed iguanas. This highly distorted sex ratio (95% male) was particularly alarming since comparable capture data from 10 other populations of *Cyclura rileyi* sampled at the same time of year (May) yielded more expected sex ratios of 50% male.

To estimate population size we conducted population surveys using a laser rangefinder to measure the distance between the transect line and each iguana found. Our statistics suggested that the number of iguanas that remain in the wild was between 136 and 204, depending on assumptions of how many iguanas we missed while conducting the transects. (We have excellent data from other

populations to base such assumptions on.) We also conducted a Lincoln-Peterson mark-resighting study which considered the ratio of marked iguanas to unmarked iguanas. This technique yielded an estimate of 174 iguanas remaining.

When both sex ratio and population size are considered, the sobering fact is that there may be as few as 10 females left in the wild. By the end of the summer, Shawn had managed to capture only eight adult or subadult females. To our knowledge, there are none in captivity—legally, that is. Accordingly, this creature is one of the most endangered lizards in the world.

We now know that the raccoon has been a major predator on the iguanas. Of ten iguanas that Shawn affixed radio transmitters to, four—including two females—were killed and consumed by the raccoon before he left the cay in mid-July. Iguana parts were conspicuous in the occasional feces that we found. Despite a constant vigil in camp and long hours in the field during both daylight and darkness, only footprints and scats were ever seen of the wary raccoon, which was active almost exclusively at night. For six weeks it repeatedly toyed with but never got captured by a spring trap. In response to pressure from certain individuals in Nassau (the capital of the Bahamas), an effort was made to remove the raccoon alive. At one point the raccoon consumed a large dose of oral anaesthetic, but an overnight rain storm obliterated the raccoon's tracks. Several weeks later, on July 30, the raccoon was found dead; whether the anaesthetic contributed to its death is uncertain.

The rats, however, remain in large numbers on Sandy Cay. Their potential impact is difficult to assess, but even if they do not prey on eggs and juveniles (which some of our data suggest) they may negatively alter the vegetation. 