

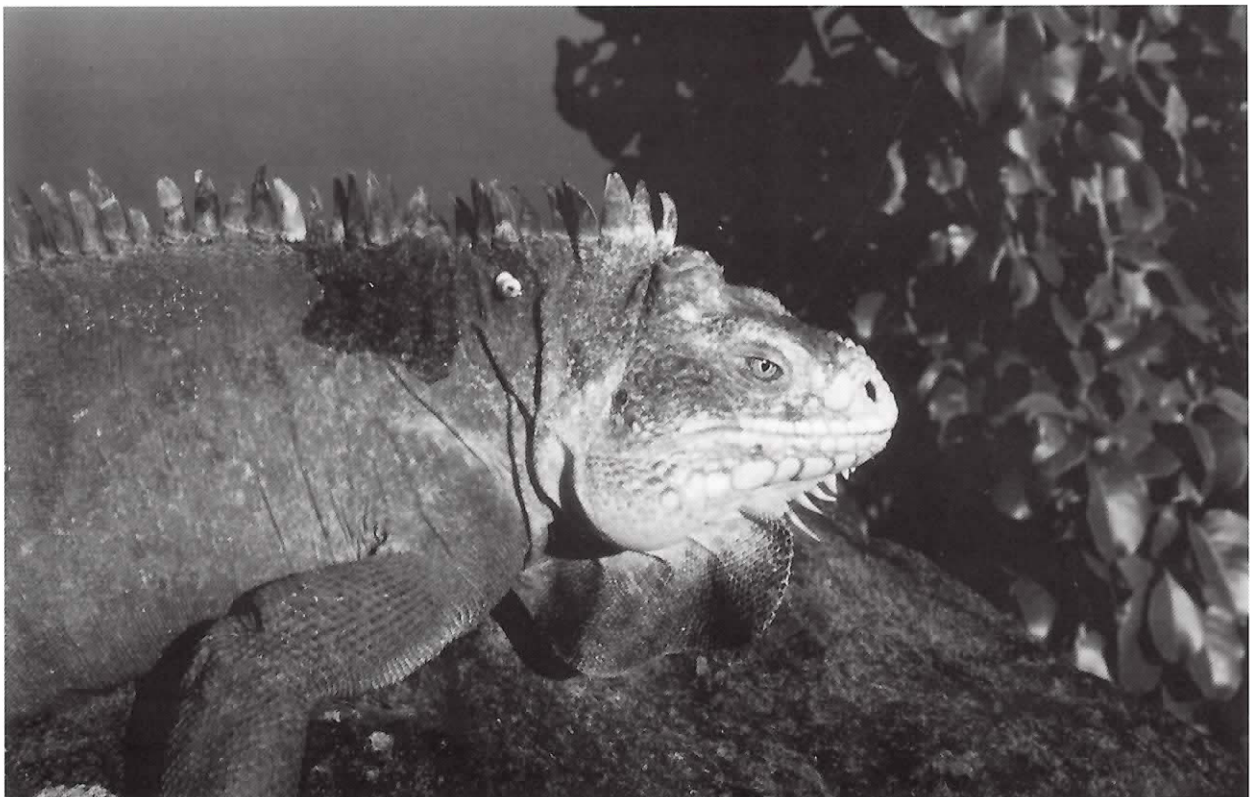
# The Status of the Lesser Antillean Iguana on Sint Eustatius

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“Huge colonies swarm on the Ile Fourche, Les Iles Fregate, and the Ile Chevreau...” That’s how herpetologist James Lazell described the population of Lesser Antillean iguanas, *Iguana delicatissima*, on the small islands just north of St. Barts, in the early 1960’s. Thirty years later they were gone, victims of overhunting by man and overgrazing by an introduced population of goats. Similar problems are occurring throughout the range of this iguana, prompting a status survey and conservation assessment of the population on Sint Eustatius. Last November, a group of biologists interested in this species carried-out the first of what will be a series of studies on Sint Eustatius (“Statia”). Participants were Dr. Steve Reichling (Memphis Zoo), Brian Leysner (CARMABI,

Curacao), Glenn Gerber (Univ. of Tennessee), Catherine Malone (Texas A & M Univ.), and Jaap Begeman (SteNaPa). The survey was funded by the Memphis Zoological Society Conservation Action Network. The following are some preliminary observations.

Six males and five females were captured in the field, and an additional 1.4 captives were examined. Adult females exhibited the gray dorsal coloration and pink or red jowl pigmentation often attributed to males exclusively. In this way the population on Sint Eustatius (representing the St. Kitts bank) resembles the one on Anguilla (the northernmost bank in the species’ distribution) and differs from populations at the southern end of the distribution (e.g. Dominica). We were fortunate to



*Iguana delicatissima* in situ on St. Eustatius. Photograph: Steve Reichling



Juvenile *Iguana delicatissima* on St. Eustatius. Photograph: Steve Reichling

find one hatchling, something rarely seen, and marvelled at how very different in coloration and pattern it was compared to juvenile green iguanas.

All sixteen iguanas actually handled were permanently marked with passive-integrated transponders (courtesy of Fauna & Flora Intl., Mark Day), and by attaching a unique color combination of glass beads to the base of the nuchal crest. In this way, future researchers will be able to individually identify each iguana and measure growth rate, changes in pattern and color, and movements—things we know very little about for this species.

Our primary objective was to estimate density by mark-resight or distance survey methodology. Unfortunately, densities were too low to be quantified by either technique. During approximately 116.5 man hours over 12 days, searching throughout the island, only 23 animals were caught or sighted in the wild! I had visited Statia once before, in 1992 with my wife Ann, and we found the iguanas to be quite abundant at that time. On my return six years later, I was unable to find any

iguanas where they had previously been so dense as to attract attention when escaping through the brush—even when I wasn't specifically looking for them! Clearly, the Lesser Antillean iguana is profoundly less common on Statia than it was six years ago, but we still don't really know just how many remain. A previous population estimate, based on similar experience by Day and Leysner in 1992, was approximately 300 animals. There are probably fewer on Statia today.

Relative densities were estimated as hours searched per iguana seen. The island was subdivided into seven zones which appeared to offer distinct habitat types to iguanas: Quill crater, outer slopes of Quill, foothill scrub around base of Quill, Island Estate development, Cultuurvlakte (central plain), foothills and guts bordering northern hills, and northern hills (Boven, Gilboa, Little Mountain). No iguanas or signs of recent presence were observed in four zones: Quill crater, outer slopes, foothill scrub, and Cultuurvlakte. Hours searched per iguana were: Boven Hills 2.75, bordering foothills and guts 7.3 and island Estates 1.8.

Despite the small sample size, a clear pattern emerged regarding the distribution of Lesser Antillean iguanas on Statia. All iguanas were encountered in one of three areas: the Boven Hills region, the foothills and guts at the margin of these hills, and in the Island Estates development area on the NW slope of the Quill. These localities encompass the most inaccessible parts of the island from the standpoint of threats to the iguanas. Boven Hill and surrounding peaks are physically difficult to access due to the lack of roads and steep slopes with thick, thorny vegetation. Reaching the areas where iguanas live probably requires more motivation than most iguana hunters can muster. The Island Estate properties are retirement villas owned by American citizens, with lushly landscaped yards that are fenced and off limits to local residents hunting iguanas, as well as goats. An effort to search systematically throughout the island was made. Areas where iguanas were easily found in 1992 by Day and Leysner and independently by Reichling, such as the cliffs along Smoke Alley Beach, English Quarter, and the foothill scrub at the SW base of the Quill seem devoid of lizards now. Occasional sightings in these areas by

residents indicate that some remain, but the numbers must be extremely low.

Human predation on Lesser Antillean iguanas for food continues to threaten the population on Sint Eustatius. The problem of feral goats which was noted in 1992 has gotten worse, with over 8,000 animals ranging free over the 11.8 square mile island (a goat to human ratio of 4:1). Reduction of the goat population and corralling the remainder is a sensitive issue which has resisted attempts at being addressed in the past. A feral cat problem, which was not apparent during earlier field work, has developed and may be preventing recruitment of juveniles, although we saw no direct evidence of this. However, the cat population, and its negative influence on iguanas, can be expected to grow unless action is taken. An introduced plant locally known as corallito or coral vine, *Antigonon sp.*, is slowly blanketing large parts of the island, covering native vegetation in a way reminiscent of kudzu in the southern U.S. This plant may represent a serious threat to the total ecosystem of Sint Eustatius, and specifically to iguanas by competing with food plants.



Jaap Begeman examines an adult *Iguana delicatissima* on St. Eustatius. Photograph: Steve Reichling



Venus Bay, St. Eustatius—*Iguana delicatissima* habitat. Photograph: Steve Reichling

Blood samples were collected from 16 iguanas. These will be incorporated into the phylogenetic analyses of the genus *Iguana* and the West Indian iguaniines by Catherine Malone and Dr. Scott Davis (Texas A & M Univ.). Femoral pore samples from males were collected for use by Dr. Allison Alberts (San Diego Zoo) in her analyses.

Three positive developments in the conservation of Lesser Antillean iguanas on Sint Eustatius occurred between the 1992 surveys and the present study. ANGO, the Sint Eustatius National Parks Foundation (SteNaPa), has been established with the responsibility of managing and supervising the marine park and protected lands. SteNaPa Manager Jaap Begeman is a bright and dedicated biologist well-informed on the iguana issue and very interested in the species' protection. In March 1997 a law was passed making it illegal to hunt and kill iguanas on Sint Eustatius, punishable by a 5,000 guilder fine (approximately U.S. 2,860.) However, the law is not universally obeyed. Enforcement of the law usually occurs only when the staff of SteNaPa report a violation. The crater of the extinct volcano, the Quill, and the outer slopes of the old cinder cone above 250 meters has been designated a National Park. More relevant to iguanas was the designation of the Boven-Gilboa Hill/Little Mountain area as a "protected landscape," with further development prohibited. This area appears to support the great-

est number of iguanas on the island. However, goats overrun this region and the landscape is considerably degraded. SteNaPa is currently finalizing a management plan for the Quill, and will then begin to develop one for the Boven Hills area.

When the Sint Eustatius field work was being planned, we hoped to find one of the last healthy populations of Lesser Antillean iguanas in need of protective measures and

management to maintain the situation. Instead we found a dwindling remnant population with good protective measures on paper that are not being effectively implemented. The survey team believes that the most effective target for future efforts should be education and public relations on the island in an effort to inform the local residents and government of the status of their iguanas and need for protection, proposing alternatives or modifications to common practices that are sensitive to the needs of the people. Similar efforts have been carried out successfully through the coordination of Fauna and Flora International.

As the only extant population of *Iguana delicatissima* on the St. Kitts island bank, the Sint Eustatius iguanas are important to the genetic diversity of the species. The current situation on the island is worsening, but there is reason for optimism due to the commitment shown by SteNaPa and the local government in protecting the species. A carefully planned and deftly delivered education campaign will be the key to the long-term survival of iguanas on Sint Eustatius, and implementing this campaign will be a high priority goal among conservationists concerned for this iguana. 