

# The Lesser Antillean Iguana National Actions Plan

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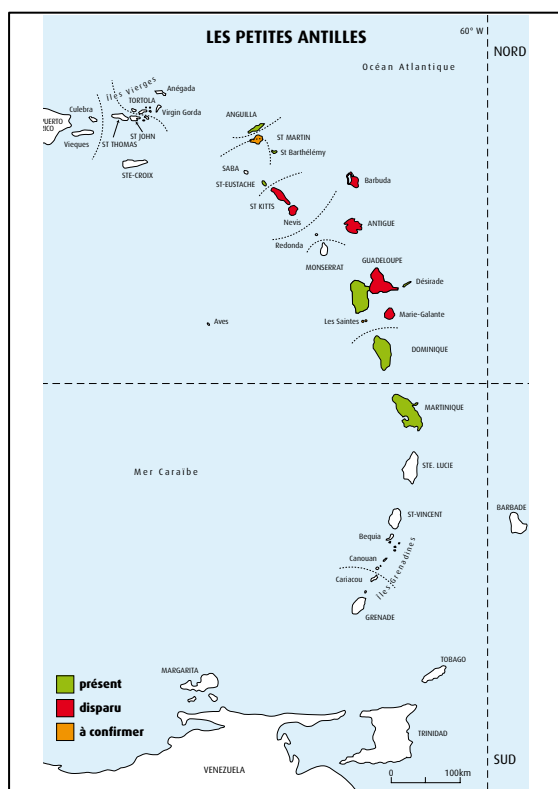
Picture 1: *Iguana delicatissima* female (photo by Vincent Arenales Del Campo, DIREN)

Since 1980, the erosion of biodiversity is recognized as a worldwide environmental problem. Despite the presence of international conventions on species and habitat conservation, biodiversity remains threatened. The French Overseas Departments and Territories are particularly concerned because they include islands with very different environments and markedly fragile biodiversity.

The Lesser Antillean Iguana (*Iguana delicatissima* Laurenti, 1768) is one of the “emblematic” species whose vulnerability is manifest in the French West Indies. Recognized as Endangered by the IUCN Red List of Threatened Species in 2010, this iguana is now only found on eight islands: Anguilla, Saint-Barthélemy, Saint-Eustache, Basse-Terre (Guadeloupe), La Désirade, Petite-Terre, Dominique, and Martinique (see map 1). It is feared these remaining populations may disappear in a very short time, as was the case in Les Saintes and in Saint-Martin. A National Actions Plan for the Lesser Antillean Iguana must enable conservation of the populations that still exist in the French West Indies and restore environments that are positive for the species.

## The first steps

Since 1993, local and national authorities have been alerted to the threat caused by the proliferation of the Common or Green Iguana (*Iguana iguana*) in the West Indies. In April 2006, the French State initiated the implementation of a restoration plan that later became a National Actions Plan in 2008, covering the regions of Martinique, Guadeloupe, and the collectivity of Saint-Martin. In the same year, the National Committee for the Protection of Nature (CNP) asked for the implementation of a control plan for the Green Iguana in the French West Indies. In June 2010, when the Lesser Antillean Iguana National Actions Plan was presented to the CNPN, they again asked that implementation of a Green Iguana control plan be a priority in the Actions Plan.



**Map 1: The Lesser Antillean Iguana distribution (map credit: Biotopé)**

### **A complete report**

The National Actions Plan synthesizes knowledge on the biology and ecology (habitat, life history, home range, diet, reproduction, etc.) of *Iguana delicatissima*, describes its distribution in the West Indies and trends in population size, identifies threats, lists action steps for the next five years, and presents an implementation methodology.

Each action step is described as a discrete unit and encompasses an implementation schedule, the technique planned to realize the action, indicators for results, and a budget estimate. A priority rating (from 1 to 3) is assigned to each action step.

For more information, download the Plan at:

<http://www.martinique.developpement-durable.gouv.fr/>

### **A long-term view**

The long-term objective of the Plan is to maintain and reinforce populations on islands where the Lesser Antillean Iguana still exists. The Plan also aims to progressively increase the number of individual iguanas and occupied regions. Above everything, safeguarding the remaining *Iguana delicatissima* populations requires that proliferation of *Iguana iguana* is stopped. Beyond this main issue, it is essential that the species' environments are protected and better managed. Habitat management requires knowledge of the species' optimal needs, and therefore research projects on the biology and ecology of *Iguana delicatissima* need to be implemented very quickly. The impact of introduced species on iguanas is also an important issue in need of greater understanding. Indeed, this knowledge will enable recommendations for control of these species at sites where the Lesser Antillean Iguana is particularly threatened or where there is potential for *delicatissima* translocation. Lastly, public education and awareness is a necessary conservation tool that cannot be ignored for protection of the Lesser Antillean Iguana.

### **An essential partnership**

Designated as the Plan's coordinator and financial administrator, the Direction Régionale de l'Environnement (DIREN) of Martinique entrusted the ONCFS of Martinique with the writing and organization of the Plan. The latter is also responsible for creating a network and generating enthusiasm among partners to facilitate better exchanges between islands and to support regional actions. Through an impetus given by the ONCFS, steering and scientific committees will govern this network. The Plan brings together many partners from Martinique, Guadeloupe, and Saint-Martin.

Considering the distribution of the Lesser Antillean Iguana, actions of the Plan must be in synergy on islands throughout the range. Indeed, the long-term objectives are reliant on an international strategy that combines management efforts across the whole divided area of the species.

### **A five-year plan**

The National Actions Plan spans five years, terminating at the end of 2015. Annual reports are expected and will enable possible adjustments to the actions. At the end of the term, a complete assessment will analyze the progress or accomplishments of each action step and will enable strategy realignment for action in subsequent years.

The main strategic themes of the Plan are:

1. Improve knowledge of *Iguana delicatissima*.
2. Preserve *Iguana delicatissima* populations and limit the threats to them.
3. Communicate.

The Plan is comprised of fifteen action steps aimed to produce measurable short to mid-term results.

#### **1. Improve knowledge of *Iguana delicatissima***

##### **A) Survey populations of *Iguana delicatissima* and *Iguana iguana* in the French West Indies.**

Because of the rapid, relatively recent changes in the distribution of both iguana species, most notably the expansion of *Iguana iguana*, it is of utmost importance to redo repartition maps of the two species and hybrids. Within this action, it is foreseeable to incorporate genomic sequencing to study gene flow for the two species and hybrids.

##### **B) Study the biology of *Iguana delicatissima* populations.**

Improving knowledge of species' biology, ecology, and endangerment status for subpopulations is a major issue. Results of these studies will allow identification of the species' optimum needs, upon which subsequent actions will be based. The Plan foresees the study of population structure and dynamics (population size assessment, for example), habitat use, and breeding parameters.



**Picture 2: Radiotelemetry is used to study iguana movements and its use of habitats (photo by ONCFS).**

C) Study the impact of major threats from invasive alien species.

The impact of predation by rats and mongooses on iguana eggs and juveniles will be studied. Action steps also include analysis of the interaction between *Iguana delicatissima*, *Iguana iguana*, and other alien species in terms of habitat alteration and the competition for food, nesting sites, and retreats. Additionally, elimination of species uniqueness through the threat of hybridization between the two iguana species will be investigated.

**2. Preserve *Iguana delicatissima* populations and limit the threats to them**

A) Conserve *Iguana delicatissima* populations which are threatened by *Iguana iguana*.

Controlling the proliferation of *Iguana iguana* will require enacting new legislation concerning *Iguana iguana*. To enable this process, a control plan needs to be written describing the situation and guide partners in regulatory actions. A draft of this document is in progress.

B) Create new populations of *Iguana delicatissima*.

*Iguana delicatissima* individuals should be translocated to new isolated sites to expand the number of locations and subpopulations in their range. Translocation to environments that are optimal for the species and beyond the current invasion of *Iguana iguana* can be a viable conservation tool as previously tested in Martinique on Islet Ramiers (*picture 3*).



**Picture 3: Nine Lesser Antillean Iguanas were introduced on Islet Ramiers (Martinique) in July 2006 (Photo by DIREN).**

C) Reinforce captive breeding programs.

Develop a partnership with international institutions (Jersey, UK; Memphis and San Diego zoos, USA) that have had experience in captive breeding of *Iguana delicatissima* in order to: 1) improve the knowledge on reproduction parameters of the species, 2) share knowledge of captive husbandry with West Indian facilities, and 3) have *Iguana delicatissima* from several geographic origins as a safeguard against catastrophic loss of some of the remaining insular populations.

D) Preserve the environment of *Iguana delicatissima*.

Actions in this area include:

- introduce an adaptive management strategy.
- reinforce the recognition of the ecological needs of the species in protected sites.
- improve existing actions, such as restoration of nesting sites.
- propose new actions for localized management plans (creation of new nesting sites, vegetation restoration, exclosure fences to protect territories occupied by *Iguana delicatissima*, e.g.).

### 3. Communicate

A) Education and awareness for schools, institutions, and general public.

The objectives for education are numerous. At a minimum, outreach will introduce the Lesser Antillean Iguana and its biology, bring attention to its endangerment status and the threats to the species, explain legislation, and introduce the Actions Plan and the partners involved. A communication plan was developed to guide partners in the creation of communication tools and projects to reach these objectives. Examples in the Plan address development of regional and national education programs for schools, residents, and visitors using a broad range of media, and creation of publicity materials for airports and ports to reduce further translocations of *Iguana iguana*.



Picture 4: Education exhibit on *Iguana delicatissima*  
(Photo by D. Laffitte, ONCFS).

B) Collaborate with regional and international islands.

The National Actions Plan for the Lesser Antillean Iguana was developed for the French West Indies and must now join forces with the IUCN SSC Iguana Specialist Group and partners from other islands seeking to protect the species.

*Partners in Conservation: Direction Régionale de l'Environnement (DIREN, Martinique and Guadeloupe), National Hunting and Wildlife Agencies, (Martinique and Guadeloupe), International Union for Conservation of Nature (IUCN, French committee), general and regional councils, Local authorities, National Forest Office, Martinique Regional Park, Guadeloupe National Park, game reserves (Petite-Terre, Saint-Martin), Littoral Conservatory, Regional Scientific Committee for Protection of Nature (Martinique and Guadeloupe), National Museum of Natural History (MNHN, Paris), Université des Antilles et de la Guyane (UAG), Iguana delicatissima group of Guadeloupe (non-profit organizations such as Le GECIPAG, L'AEVA, etc.), Tourism Committee of Martinique, IUCN SSC Iguana Specialist Group, and volunteer workers.*