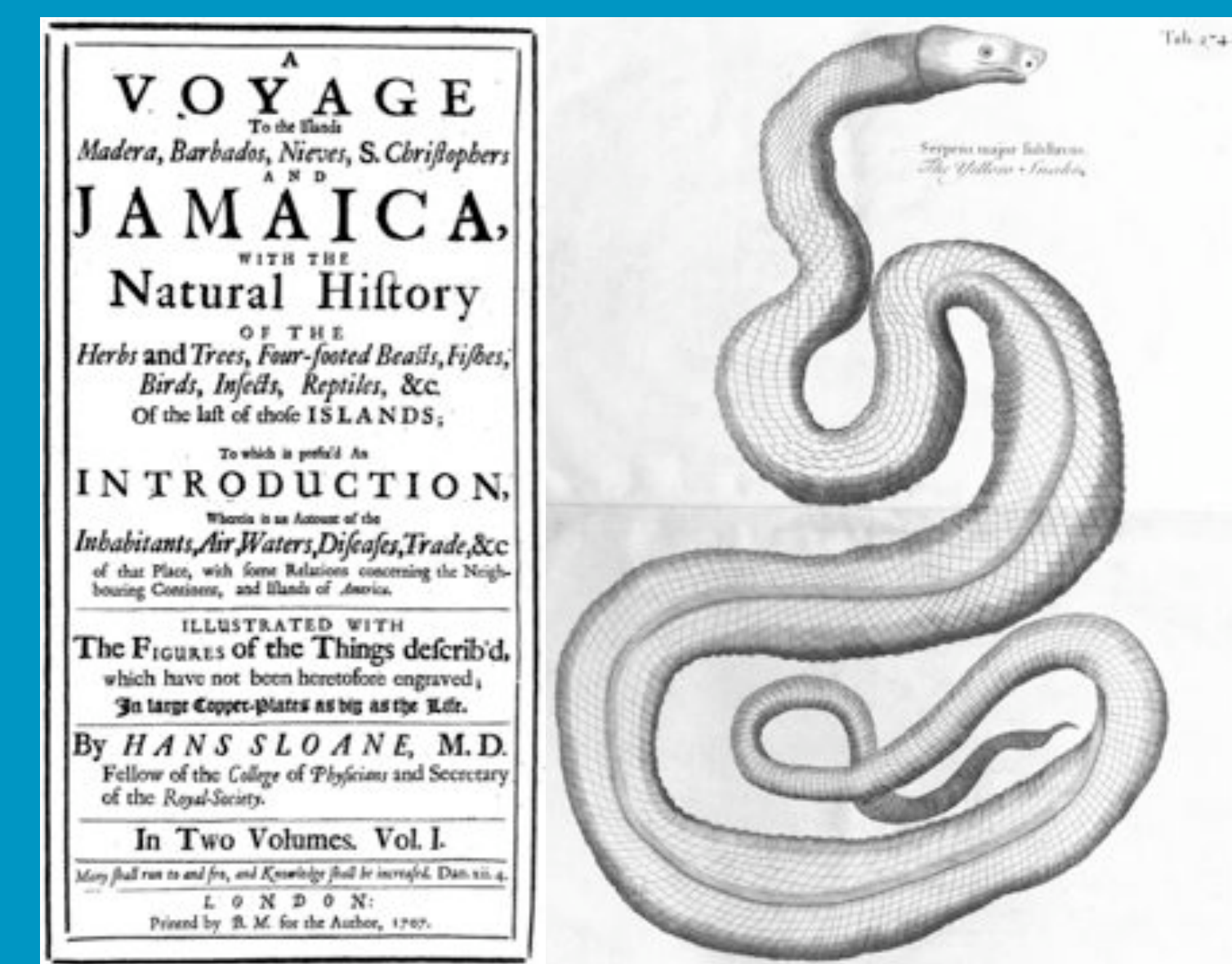


# Conservation Genetics of the Jamaican Yellow Boa (*Epicrates subflavus*)

Athanasia C. Tzika & Michel C. Milinkovitch  
Laboratory of Evolutionary Genetics (IBMM - ULB), Belgium

Susan Koenig  
Windsor Research Center, Jamaica

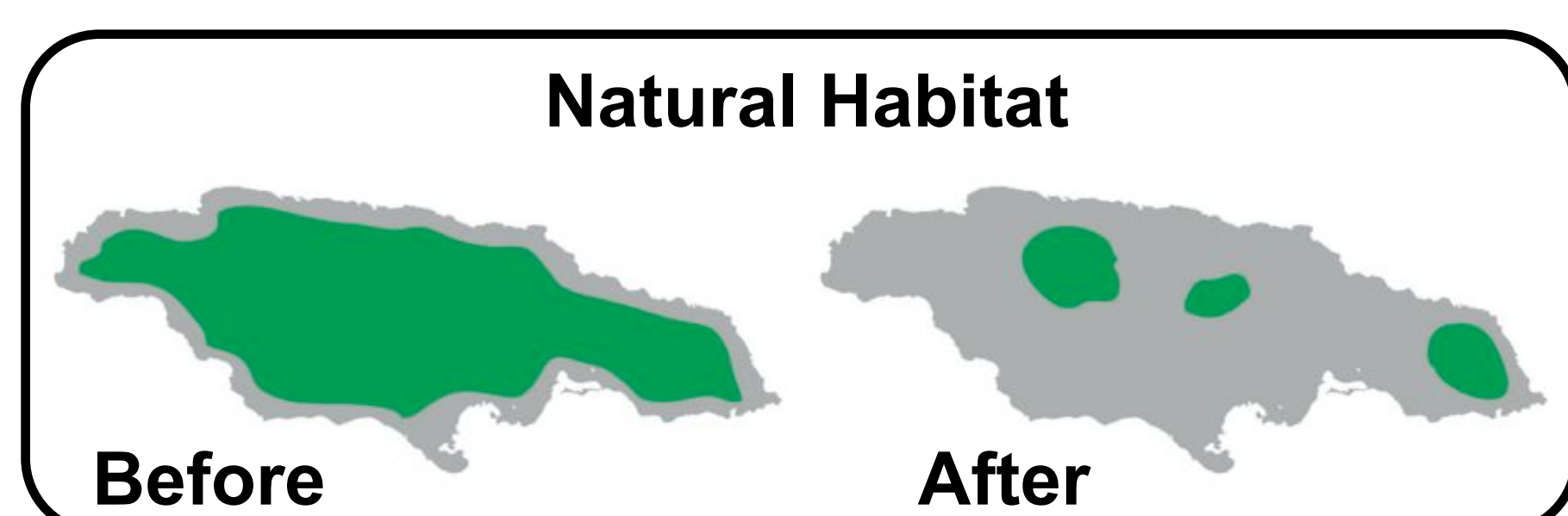
Christophe Remy  
Museum of Natural History and Vivarium, Belgium



The **Jamaican Yellow Boa** has been classified as **Vulnerable** by the **World Conservation Union (IUCN)** because the number of wild animals has been in constant decline in the last two centuries. Unfortunately, very little is known on the ecology and population structure of this spectacular endemic snake.

There are two main reasons for the decline of the Jamaican Boa:

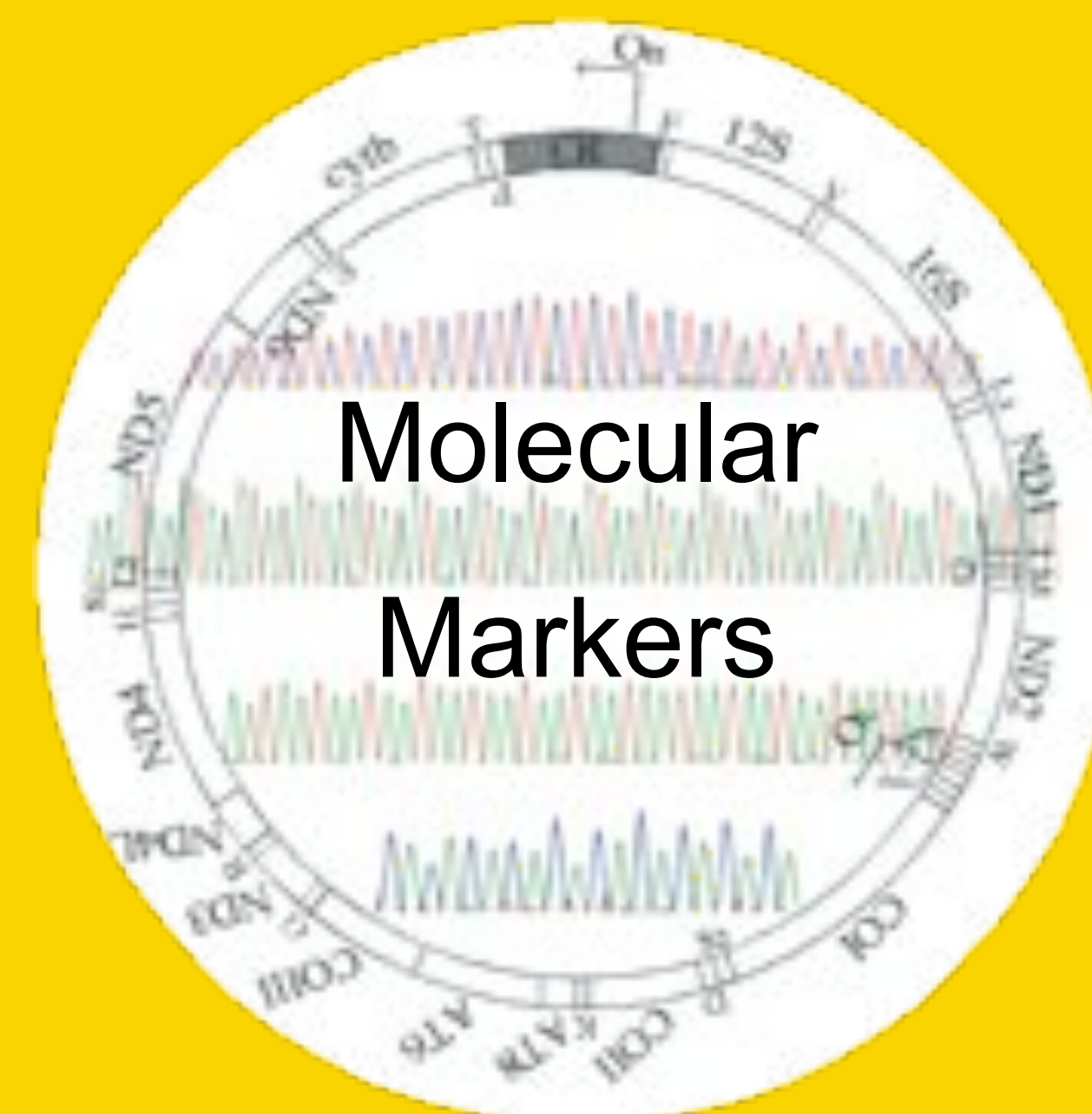
1. **Loss of natural habitat (75-90%)**: deforestation, agriculture (fragmentation of habitat), mining, tourism, ...
2. **Direct threats**: persecution by humans, introduced species (mongooses, cats, rats)



In March 2006, we organized a sampling campaign in collaboration with the **Durrell Wildlife Conservation Trust (DWCT - Jersey, UK)**, aiming at:

- sampling wild individuals across the species distribution,
- establishing long-term collaborations with local authorities and research centers.

We organized: (i) workshops and seminar at the 'Seven Oaks Sanctuary (SOS) for Wildlife', the Hope Zoo (Kingston), and Mona University (Kingston) and (ii) field work in association with the 'Windsor Research Center' and the 'Natural Environmental Planning Agency (NEPA)'.

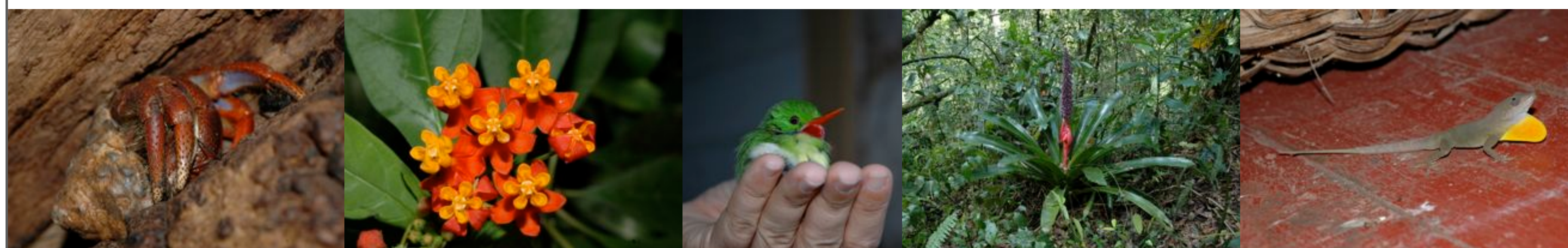
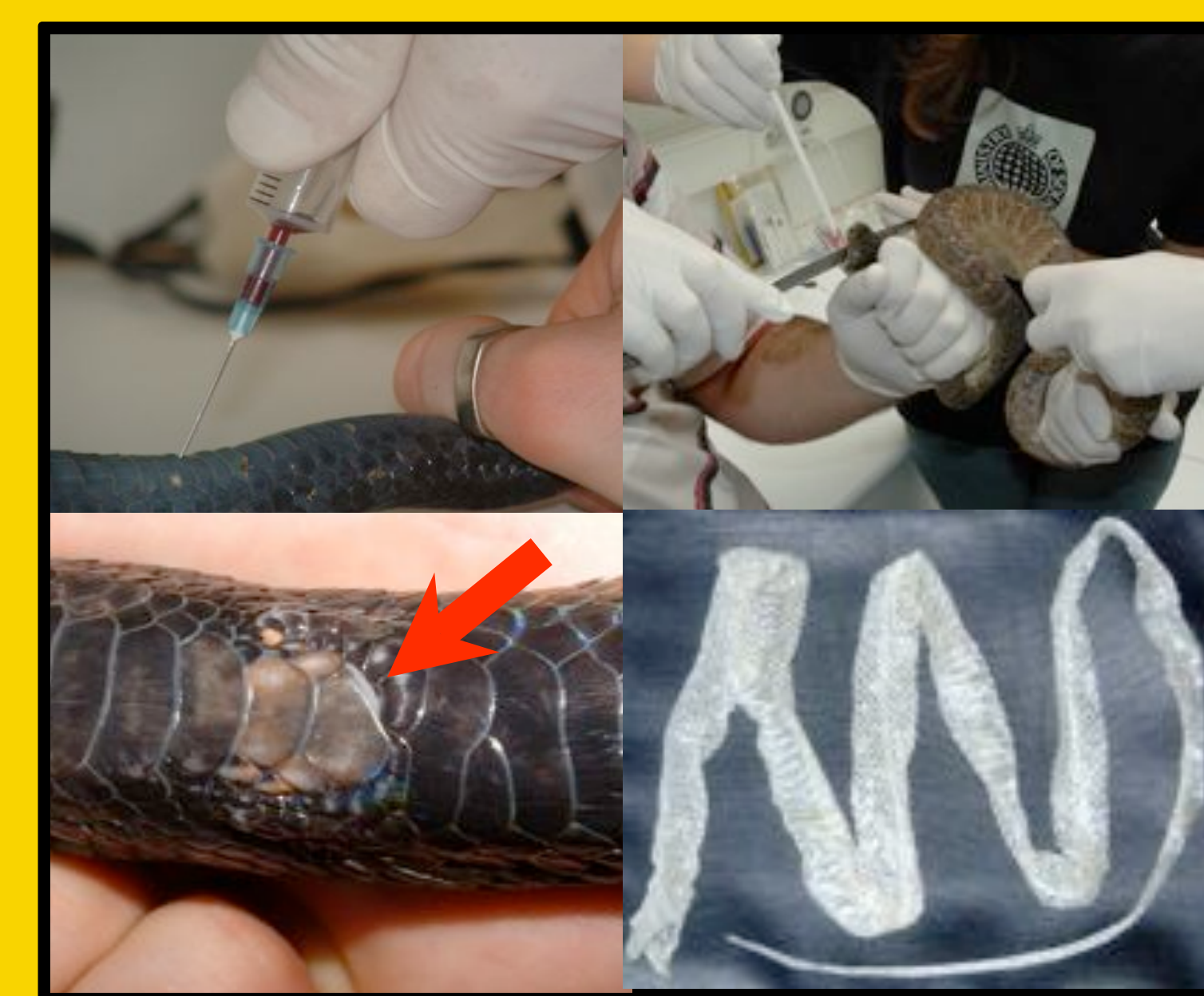


In the 1970s, a **captive breeding program** was initiated at the DWCT with **9 founders** brought from the wild. Thirty years later, more than 600 offspring were produced and about **70 individuals** are now present at **14 institutions** affiliated to the 'European Association of Zoos and Aquariums'. Although significant knowledge has accumulated on the reproductive behavior of the species, little information is available about the genetic diversity of the initial and current captive populations.

## Results of our Molecular Analyses

We performed molecular genetic analyses of all **samples collected in the wild** (Jamaica) and in zoos around Europe using two types of molecular markers. Both approaches indicate that **two distinct groups** are genetically differentiated: one is at the **East** and the other one is in the **Western/Central** part of the island. To ensure proper conservation of the species in the wild, both groups should be independently managed, and efforts should focus on the preservation of the species habitat. One area of prime importance is the wet limestone forest of **Cockpit Country**, which is Jamaica's largest remaining primary forest and a refuge for many rare and endemic Jamaican animals (such as the Black-billed parrot and the Giant Swallow-tail butterfly), and for more than 60 endemic plants.

Our molecular genetic analyses of animals from the **captive breeding program** (i) identified some errors in parentage assignment, (ii) detected that the founders originated from the Eastern group, and (iii) allowed us to select the best mating groups for maximizing genetic diversity (genetic health) in the captive population.



More information and pictures at:  
[www.ulb.ac.be/sciences/ueg](http://www.ulb.ac.be/sciences/ueg)  
[www.cockpitcountry.com](http://www.cockpitcountry.com)