

## **Tucker and the Iguanas**

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### **Conservation Dogs**

One of the most pressing conservation issues that countries face today, is the need to distinguish between multiple, concurrent pressures facing wildlife over large geographic ranges. The Center for Conservation Biology's Conservation Canine program at the University of Washington addresses this need by combining the precision and the efficiency of the detection dogs to readily locate wildlife scat samples, with the ability to extract a wide variety of genetic and physiological indicators from scat. Use of detection dogs to locate wildlife scat over large areas was pioneered in 1997 by Samuel Wasser, Director of the Center for Conservation Biology, University of Washington. Since then, Conservation Canines (CK9) has been non-invasively monitoring a diverse array of threatened and endangered species around the world.

Conservation Canines adopts dogs from rescue shelters that cannot be placed in homes. Dogs that make it into the program must have an intense desire to play fetch. They are happy to work all day long in the field looking for scat just for the opportunity to obtain their play reward upon locating each sample. Conservation Canines traverse plains, climb mountains, clamber over rocks and fallen trees, splash through rivers and trek through snow all over the world, helping to monitor and study wildlife.

I have been a canine handler/trainer for Conservation Canines for over two and a half years. Tucker and I started working together in the oil sands of Alberta locating moose, caribou and gray wolves. Since then we have been working on and off as a team searching the ocean for resident killer whale scat in an effort to help researchers determine the potential causes of the recent population declines.

### **Tucker and Alien Iguanas in Saint Lucia**

Recently, Tucker and I worked on a pilot study in Soufriere on Saint Lucia, with the Forestry Department of the Ministry of Agriculture, Lands, Forestry and Fisheries (MALFF) and Durrell Wildlife Conservation Trust (Durrell) to locate an alien species of arboreal iguanas. The alien iguanas were introduced to the island through the pet trade and held in an unsecured private

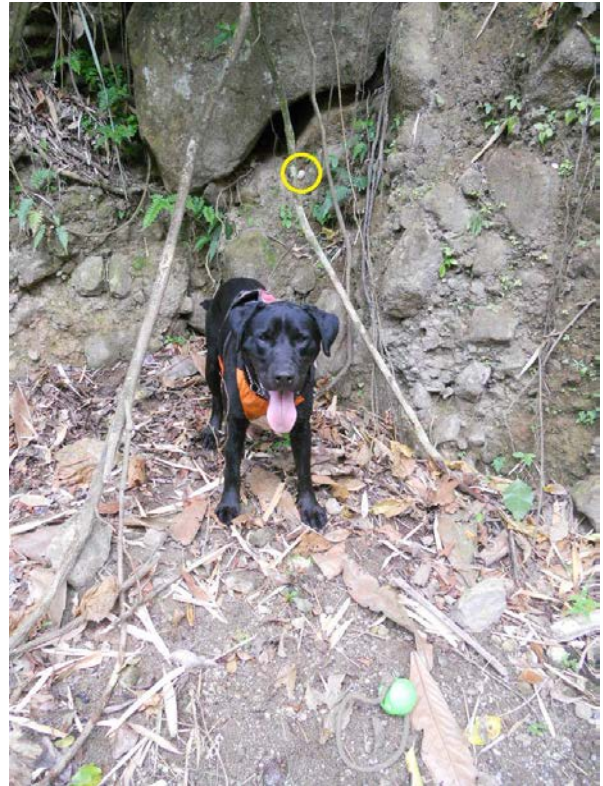
collection from 1980 to early 2002. In 2008, reports of adult iguana and hatchling sightings in the Soufriere area increased the urgency of population control for the invasive iguana. The most pressing concern is the likelihood of hybridization between native and alien iguanas. Other concerns include competition between the native and the invasive iguanas, potential crop destruction, salmonella infections or potential predation on bird eggs. (Morton and Krauss 2011). Thus, MALFF and partner organizations aim to eradicate the alien iguana. Detection of individuals at very low population densities is believed to be the bottle neck to success.

Detection dogs have successfully been used once worldwide to detect an arboreal reptile, the brown tree snake in Guam. Researchers released radio transmitted snakes into specific areas for the dog and handler teams to survey; however, only one free-ranging snake was found over a four month study with two dog/handler teams (Savidge *et al.*, 2008). On Saint Lucia, Tucker and I faced the same challenge of locating an arboreal reptile in thick vegetation in a tropical climate. We utilized multiple training tools in order to optimize Tucker's chance of locating the iguanas. Body swabs taken from previously captured iguanas were originally used to introduce Tucker to their scent. Preserved iguana eggs were placed in holes and under sand to teach Tucker to dig when he detects the odor of potential nest sites. As the study progressed, we collected native and alien iguana scat to help determine specific areas within the forests where iguanas are living. At the final stage, captive native and alien iguanas were included in the training to be certain that Tucker was alerting to the scent of live iguanas. The cages used to hold these iguanas were varied to ensure that Tucker was truly detecting iguanas rather than cueing on the scent of plastic or metal.

Taking the training out to the field proved to be a whole new challenge. Saint Lucia was struck by Hurricane Tomás in October of 2010, causing severe damage to our study location in Soufriere from landslides and floods. The damage made hiking extremely difficult at times. Surveys had to be restricted to mornings to avoid the oppressive hot, humid afternoon weather. I spent the afternoons surveying with the Durrell volunteers, hoping to find areas likely to contain iguanas that Tucker and I could search in detail the following morning.

Soufriere received heavy rain for weeks in late April and early May, which caused more flooding and some small landslides in our study area. The new rainfall further complicated hiking conditions in likely iguana habitat to be surveyed, and particularly along ridge tops, ravines and river beds.

Tucker and I were always accompanied by a member of the Forestry Department and/or a Durrell volunteer during our surveys. As Tucker's training progressed, he became better in locating iguana signs in the field. However, we still had not been able to find a wild iguana. So, we decided to set up blind exercises as a proof-of-concept. Forestry personnel or Durrell volunteers hid a live iguana or iguana scat in the forest without our knowledge, which Tucker and I then set out to find. Tucker found every sample, without fail (Figure 1). He has an incredible nose and is capable of smelling iguanas in the trees, even though he cannot climb them. During training, I noticed that Tucker would circle an area of interest, leave the area, circle back into the area, and repeat the process. Even though he was unable to locate the specific area, he was able to show me that he found



*Figure 1: Tucker waiting patiently for his reward after finding an iguana egg in the opening of a hole by the river (circled yellow)*

and alerted to the proper smell! These alerts provided the Forestry Department and Durrell volunteers with specific areas to focus their searches. However, since these iguanas live 10-40 meters up trees in dense vegetation, locating them remains a formidable challenge; only one iguana has been located by Forestry personnel over the past three months, including the duration of the pilot study, as opposed to over 150 in 2010 (U. Krauss, pers. comm., 2011). As eradication efforts progress, this difficulty will increase.

At completion of the pilot study, we provided the Forestry Department and Durrell with digital (GIS) locations of areas where Tucker had alerted to iguanas or located iguana scat. Those locations are now being used to conduct further investigations with hope that authorities will find iguanas in the specific areas where Tucker alerted to the scent.

Conservation Canines hopes to continue their work surveying for the invasive iguana on Saint Lucia and assist the Forestry Department to build up their own conservation dog and handler team for sustainable wildlife management. For more information regarding Conservation

Canines and their work around the world visit their website at [www.conservationbiology.net](http://www.conservationbiology.net) or [www.facebook.com/ConservationCanines](http://www.facebook.com/ConservationCanines)

## **References**

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