

The Biologist-In-A-Box

When talking about panther dens, we often refer to a device known affectionately as the “biologist-in-a-box.” So what is a biologist-in-a box, you ask? No, it’s not the wildlifer’s version of “Prince-Albert-in-a-can.” So no phone calls please. In simplest terms it’s a device that allows us to monitor the presence or absence of a panther at a den. We use it to ascertain when a mother panther leaves the den, signaling that it is safe to approach the site to examine the kittens.

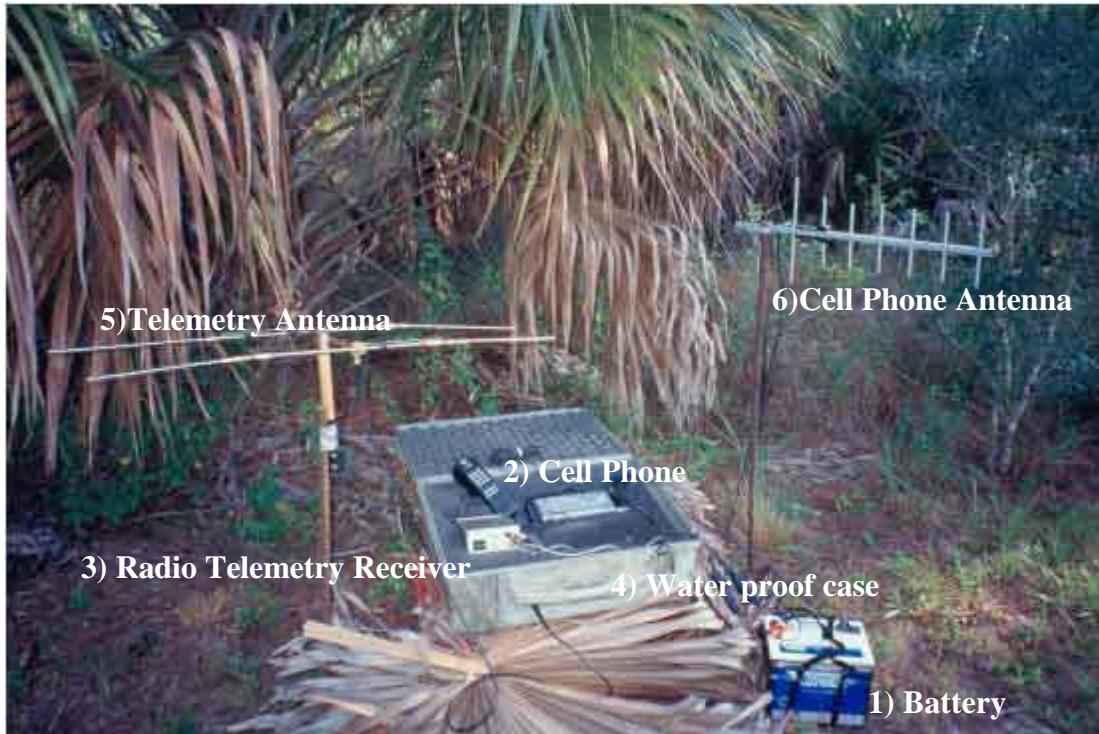
In order to comprehend how we utilize the biologist-in-a-box, one must first understand the interplay between the radio-collar, telemetry receiver, and receiver antenna. Each radio-collar has a transmitter equipped with a unique frequency. The desired frequency is then dialed into the receiver. The antenna, often referred to as an “H” antenna because of its shape, is then attached to the receiver in order to pick up the frequency tuned into the receiver. The signal is heard over the receiver as a “beep.” The antenna is *directional* meaning that the signal from the collar is strongest when the antenna is pointing directly towards it. The strongest signal, therefore, indicates the direction to the panther.

The biologist-in-a-box consists of 3 main parts: a radio-telemetry receiver (set to the appropriate collar frequency), a cell phone, and a battery to power both of these items. Additionally there are antennas for both the receiver and phone. The phone is connected to the receiver and is set to answer automatically. When a call is made we hear what the receiver is detecting. If the panther is at the den, we will hear the signal from the radio-collar, but if she is away only static will be heard. The equipment is housed in a large protective weatherproof case (excluding the antennas which are aimed in the appropriate direction to maximize signal strength).

We suspect a panther has denned when she is consistently located in the same place for over a week. When she is at the den we go out and pinpoint her location by walking around the site and triangulating a position. We then set up the biologist-in-a-box. After the box is set up, the monitoring game begins, but from the closest phone instead of from the field.

Our best opportunity to handle kittens is when they are 2-3 weeks old because their mother can leave the den for longer periods as the kittens reach this age, yet they are not mobile enough to escape from us. We weigh, sex, and deworm the kittens, collect genetic samples (skin biopsies, blood), and insert transponders. A transponder is a small microchip about the size of a grain of rice encased in glass and inserted just below the skin between the shoulder blades. It is the same device many people use to identify their pets and provides a means to permanently identify an individual. The chip, which contains a unique alpha-numeric code, can be read with a portable scanner and won’t wear out since there are no moving parts.

The biologist-in-a-box is a great time and money saver. Before its development we would have to spend hours driving to the den location to check on the status of the denning panther. However, now we can save time, gas, and vehicle wear with an 18-cent phone call.



The biologist-in-a-box consists of a 1) battery that powers the 2) cell phone and 3) radio telemetry receiver. The equipment is encased in a 4) water proof case. The 5) telemetry antenna and 6) phone antenna are usually attached to a nearby tree.