

## Tackling a Pesty Problem



### from Different Angles

The red-bellied beautiful squirrel lives up to its name. Sporting a blood-red underbelly it is a striking sight in anyone's garden, and especially in the Pampas region of Argentina that surrounds the city of Buenos Aires. People living there had never seen a squirrel until 35 years ago. But there, the furry critter is also causing havoc. Biologist **M. Laura Guichón** has made it her mission to stop it in its tracks before it causes too much damage.

#### 'This Squirrel Was Everywhere'

This type of squirrel, which goes by the scientific name of *Callosciurus erythraeus*, is originally from Southeast Asia. It settled in Argentina in 1973 when a handful of animals escaped or were released from a garden where they were being kept as pets. Like many species of animals that are not native to a country, these squirrels have no natural predators and they multiply quickly. As they do, they ravage habitat and resources that native species—and people—rely upon.

Laura became interested in the red-bellied beautiful squirrel while she was doing research for her Ph.D. She was spending a lot of time outdoors, studying a rodent called the coypu, which, unlike the squirrel, is native to Argentina. "When I was working in the field I could see this squirrel was everywhere and causing a lot of damage to trees, agriculture, and irrigation."

#### A Model of Invasion

After her Ph.D., Laura started an independent project to study just how quickly the pesty squirrel was invading the countryside. She received a UNESCO-L'Oréal Fellowship, which allowed her to travel to England for one year to work with Patrick Doncaster at Southampton University—an expert at constructing mathematical models. "I was immediately keen to help her model the invasion process so that we could predict its future impacts and look for ways to control the spread," says Doncaster.

Together they created models of how the squirrel population might expand 18 years into the future under different scenarios for managing its spread. The results were published this year in the journal *Ecography*. "One goal of this work was to suggest ways to stop the squirrel population from spreading farther," explains Laura.

She credits the UNESCO-L'Oréal Fellowship with enabling her to work in a foreign country, gain expertise in a different area of research, and publish in a highly ranked international journal, all of which ultimately helped her obtain a permanent position as an independent researcher at Lujan University in Argentina.

#### Talking to Pet Owners

At her university, she has put together a small team of graduate and undergraduate students. Together they are monitoring the numbers and spread of red-bellied beautiful squirrels, studying their ecology and how they impact the environment, as well as evaluating the efficacy of different methods for managing spread. "She has the capacity now to target management actions against the squirrel, which will be of lasting benefit to the Buenos Aires province and beyond," says Doncaster.

According to Doncaster, Laura's work is unique in that it combines biological research with something akin to "social work." Because there are no native squirrels in the Pampas, people like to capture the squirrels to keep as pets and sometimes take them to different areas of the country. Such movements can greatly aid their spread. "Part of our work is to get information to the community by talking in schools or doing workshops," explains Laura. "People need to understand that by moving the squirrel they are creating new pockets of invasion."

#### Value of Publicity

Laura says that the fellowship has helped her work in an unexpected way. "When I got the fellowship, L'Oréal and UNESCO issued a press release. As a result many people in the country heard about my project. When I talk about my work they remembered hearing about someone who was working on the squirrel," says Laura. "That is important for the public face to my project."

Laura is deeply committed to the work she is doing. And that commitment, she explains, is critical to being a successful scientist. "I think it is great to be a scientist, but you must have a passion for it because science is hard work and you have to make many compromises," she says. One of the compromises she made was to postpone starting a family until she had a permanent position as a researcher.

"But the profession also gives a lot of flexibility," she adds. And she has taken advantage of it. These days she sometimes works from home, where she can spend time with her seven-month-old son ... and watch the red-bellied beautiful squirrels outside her window.



"I think it is great to be a scientist."