Frog Decline: What about the Tadpoles?

Frogs lay eggs, eggs develop into tadpoles, and tadpoles develop into frogs. Many endangered species, like Panama’s strikingly beautiful golden frogs (Atelopus zeteki), have more than one life stage. To find out how the disappearance of the tadpole stage would effect the environment, Anthony Ranvestel, with Karen Lips (University of Southern Illinois-Carbondale and Research Associate at the Smithsonian Tropical Research Institute), traveled to a cloud forest in Cocle, Panama, where golden frogs are still plentiful.

Using tiny electric fences, Ranvestel and Lips completely excluded tadpoles from some sections of a stream. They compared stream sections with and without tadpoles. There was 40 percent more organic and inorganic sediment on the stream bed in sections without tadpoles. A look at the stomach contents of a few tadpoles from the sections where they had not been excluded, confirmed that they had been eating sediments and tiny algae, called diatoms. When tadpoles were excluded, researchers found fewer mayflies, perhaps because mayflies need the tadpoles to scrape off sediments from the rocks to expose the food they need.

The extinction of the golden frog may cause sediments to accumulate in tropical highland streams, and may have a domino effect, eliminating other species that require clean streams for their own survival.

Information Highway Hi-Lites

The DST Centre of Excellence for Invasion Biology (CIB) <http://www.sun.ac.za/cib>, based at the University of Stellenbosch, South Africa, provides information about this nationally funded research center, with a focus on the dynamics of invasion biology. Under the direction of Steven Chown, the research at CIB spans all biomes in South Africa, including Marion Island, and is also geared to understanding invasions elsewhere in Africa. The center investigates how biological diversity is altered by invasive plants and animals, and the effects these have on the functioning of ecosystems and the services they deliver. Through its research, CIB makes scientific information available to assist policy makers and managers with rational decision-making options regarding invasive alien species. The CIB is an inter-institutional “Centre of Excellence” established within South Africa’s Department of Science and Technology (DST) Centres of Excellence Programme, and is co-funded by DST and the University of Stellenbosch in South Africa. Although the CIB is housed at the University of Stellenbosch, it does research and student training with the help of a network of researchers at several South African universities and institutions, including the University of KwaZulu-Natal, University of Cape Town, University of Transkei, and the Council for Scientific and Industrial Research (CSIR).

The Center for Invasive Plant Management (CIPM) <http://www.weedcenter.org>, housed in the Department of Land Resources and Environmental Sciences at Montana State University, has a variety of information on invasive plants. The Center’s mission is to serve as an information clearinghouse for land managers in the western United States. The site, completely redesigned and revised this past spring, includes up-to-date noxious weed lists, databases and image galleries, educational resources, case studies of restoration projects, information on ecological management, and much more. CIPM offers several annual grants that can be applied for on-line, and the site also maintains a current list of other funding opportu-
nities. Invasive plant information can be found for each state and province in the west. A current calendar of weed events, as well as a “what’s new” section, appears on the home page.

**Current Literature**


Chang, C.C., Kim, H., Park, T.Y., and Maunder, M. 2004. Low levels of genetic variation among southern peripheral


Grand, J., Buonaccorsi, J., Cushman, S.A., Griffin, C.R., and


