(elephant grass), *Psidium guajava* (guava), and *Rubus niveus* (hill raspberry) are among the worst invaders, and the four human-inhabited islands are the most significantly affected (*7*).

In the archipelago, the plant species introduced since the island's discovery in 1535 (600 species) now outnumber the native flora (500 species). This equates to a rate of more than one species per year, whereas the natural rate of arrival of new plant species on the islands is about one species every 10,000 years (*8*).

The Gardening for Galápagos Foundation, Inc. (GFG) was founded to encourage and assist botanical conservation and research efforts in the Galápagos Islands through fundraising, education, and community outreach programs. Our programs engage U.S. botanists, landscapers, gardeners, and other naturalists (see http://members.aol.com/aplectrum/GFG.htm). Prevention is the most cost-effective means of managing invasive species over the long run and is the Galápagos' first line of defense. Unless stringent measures are taken, the number of invasive species (plant and animal) will continue to rise. Ultimately, awareness campaigns, limits on human population, strong risk assessment and management procedures, and an effective quarantine program are required to minimize the arrival, spread, and impact of invasive species in the Galápagos (*5, 7*).

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References and Notes

1. "Invasive species" means an alien (nonnative) species whose introduction does or is likely to cause economic or environmental harm or harm to human health. U.S. Executive Order 13112, 3 February 1999.
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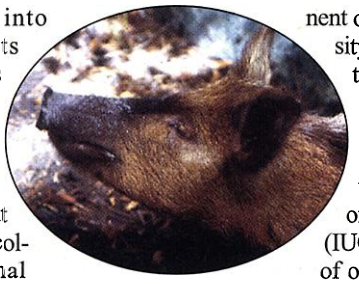
3. J. A. McNeely, Ed., *The Great Reshuffling: Human Dimensions of Invasive Alien Species* [World Conservation Union–International Union for Conservation of Nature and Natural Resources (IUCN), Cambridge, MA, 2001].
4. D. Pimentel *et al.*, *BioScience* **50**, 53 (2000); D. Pimentel *et al.*, *Agric. Ecosyst. Environ.* **84**, 1 (2001).
5. J. A. McNeely *et al.*, Eds., *Global Strategy on Invasive Alien Species* (IUCN, Cambridge, United Kingdom, in collaboration with the Global Invasive Species Program, 2001).
6. Cultivated alien species include food plants such as guava, banana, orange, and pineapple; ornamentals such as bougainvillea, hibiscus, Madagascar periwinkle, and oleander; forage plants such as elephant grass; timber trees, including West Indian cedar and balsa; and medicinal plants such as the quinine tree.
7. C. K. McMullen, *Flowering Plants of the Galápagos* (Cornell Univ. Press, Ithaca, NY, 1999).
8. D. M. Porter, in *Patterns of Evolution in Galápagos Organisms*, R. I. Bowman *et al.*, Eds. (American Association for the Advancement of Science, San Francisco, 1983), pp. 33–96.

Problem Pigs in a Poke: A Good Pool of Data

A MASSIVE EFFORT TO REMOVE INTRODUCED species, largely feral animals, from the Galápagos Islands is the topic of, as Jocelyn Kaiser's article "Galápagos takes aim at alien invaders" (News Focus, 27 Jul., p. 590). As with many other eradication programs of feral populations, the Galápagos project is missing an opportunity to collect basic demographic and ecological data from these populations, just the sort of data needed to

better "know thy enemy." Data such as population sex/age composition, reproductive parameters, and food habits that can be gathered from the carcasses can provide information toward determining where and when the most vulnerable stages in the life history of these unwanted invaders might occur. Investing some small amount of resources into such research efforts would enable managers to develop the most effective future removal efforts.



CREDIT: I. LEHR BRISBIN JR.

This little piggy went to market; this little piggy went feral...

In contrast, sometimes the enemy turns out not to be all bad. Data collected from feral animal populations, especially long-isolated ones, can reveal interesting cases of environmental adaptation and provide basic genetic and evolutionary information. For example, in the feral pigs (*Sus scrofa*) of Ossabaw Island off the coast of Georgia, 30 years of data has shown that this population has developed a number of traits over ~500 years that are not exhibited by any other pigs, wild or domestic (*1*). These traits include the ability to tolerate unusually high concentrations of salt in food (marsh grass, *Spartina* species) and drinking water (seawater) (*2*), the development of the highest levels of total body lipid reserves known of any ungulate (*3*), and a unique system for handling body lipid that produces a state of noninsulin dependent diabetes (*4*). These traits make the Ossabaw Island feral pigs a unique component of the world's total suid biodiversity and, moreover, one of interest to several lines of physiological and biomedical research. In fact, the Pigs and Peccaries Specialist Group of the International Union for Conservation of Nature and Natural Resources (IUCN) has named this pig as one of only two feral pig populations in the world being worthy of conservation consideration (*5*).

As emphasized by this group's evaluation, however, any such consideration for the possible conservation of a feral population must be tempered by the assurance that these populations be so managed as to ensure that their impact is either minimal or nonexistent on endemic flora, fauna, or other ecological resources in the habitats where they are found. In some cases, this might argue for ex situ conservation of remnant captive populations (*5*). In any case, the possibility of a unique and hitherto unsuspected component of world biodiversity lurking within the feral animal populations themselves should not be overlooked.

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A Way to Boost NSF's Astronomy Program

THE OFFICE OF MANAGEMENT AND BUDGET commissioned a study to see if the astronomy program at the National Science Foundation