Sea Life

Coral Choir  This scene plays out every week in parts of Fiji: A local villager, standing in a clear turquoise lagoon beneath azure skies, swings a crowbar and hacks off a piece of the reef just offshore this small island nation in the South Pacific. The live rock—the substrate on which coral and other reef organisms are growing—earns the villager 15 cents per pound because of demand from the worldwide marine aquarium industry. In fact, trade in coral and live rock is increasing by up to 50 percent a year, and today more than 2,000 tons of the substrate are traded worldwide, more than 1,000 tons of it exported from Fiji. “This is not a sustainable use,” says Mark Hay, a biology professor at Georgia Tech. “The villagers understand this, but they have a small number of ways of acquiring money. They don’t want to be doing this, but they need to.”

Breaking off pieces of the reef can increase coastal erosion and destroy wildlife habitat, thereby decreasing biodiversity. Hay and colleagues at Georgia Tech and the University of the South Pacific in Fiji came up with a way to integrate reef conservation, economic development, and bioprospecting—the search for potential pharmaceuticals in nature.

Working in the village of Tagaqa, the research team purchased 5,000 “blanks”—pumice stones mixed with concrete for added weight—strung them on wires, and placed them on a sandy part of the fringing reef. Six months later coral, algae, and other reef organisms had colonized the blanks, creating artificial, or cultured, live rock. When placed into a marine aquarium, these pieces, much like their natural counterparts, will sprout whatever species are growing in their crevices.

The largest marine life exporter operating in Fiji, Walt Smith International, which practices a more sustainable method of collecting loose live rock from tidal flats that contain little coral growth, agreed to purchase the entire crop from the villagers of Tagaqa, who used half the money to purchase more blanks. The villagers are thrilled, says Kirk Bowman, associate professor of international affairs at Georgia Tech. “The live rock project provides them both with a greater awareness of the wonderful resources that they have and some income generated through the sustainable use of their own resources.”—Todd Neale

more often,” he says. “I just think it’s because more foxes in general are being pushed [by development] into urban areas.”—Hilda J. Brucker

WASTE WANTED  To humans, bird poop is noxious, especially when it accumulates in copious amounts near public places that double as roosting areas. But to underwater seagrass beds, phosphorus-rich guano has been found to be a nourishing food, helping them regenerate. In a current restoration project, scientists at the Dauphin Island Sea Lab are trying to attract birds to fertilize the seagrass around Alabama’s Robinson Island, where motorboats and the occasional hurricane rip up the fragile underwater ecosystem. The seagrass beds are “very critical nursery habitats for shrimp, crab, and finfish,” says John Dindo, a marine scientist at the Sea Lab. To entice the birds, Dindo and his fellow researchers are putting stakes in the ravaged grass beds. Throughout the year all kinds of birds, including gulls, pelicans, and possibly even egrets, are expected to roost there and make deposits. A similar program was effective in restoring seagrass beds in the Florida Keys.—Susan Cosier

TRACKING DRAGONFLIES  Tiny radio transmitters that weigh less than a paper clip have thrilled a team of Princeton University researchers. Led by ecologist Martin Wikelski, the team used eyelash adhesive reinforced with super glue to attach the diminutive devices to green damsel dragonflies in Cape May, New Jersey, in what was the first effort to electronically monitor dragonfly migration patterns.