## Coming to a **Beach Near You**

HE AMERICAN LITTORAL SOCIETY IS looking for volunteers for the 1995 Annual International Coastal Cleanup, scheduled for September 16 and 17. Information will be gathered on the quantities and types

ACTION

of debris in an effort to stop pollution of our waterways and shorelines. In 1994, over 4,000 New Yorkers, for example, cleaned 327 miles of shoreline of more than 100,000 pounds of trash at 168 sites. For information about joining an organized site cleanup or starting one of your own, please contact the American Littoral Society, Sandy Hook, Highlands, NJ 07732; phone, 908-291-0055.





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# **Good News in Nepal**

1994 CENSUS OF THE RHINOS IN NEPAL'S ROYAL CHITWAN NATIONAL PARK REvealed an increase of about 100 animals from the approximately 365 counted in a 1988 survey. Since the late 1960s the population has increased by an estimated 5.6 percent per year on average.

The reasons for Nepal's rhino conservation success are simple: The federal government has fully supported rhino protection since

ENDANGERED Chitwan was established in 1973. Despite being one of the poorest countries in the world, Nepal spends nearly \$2,250 per square mile on management and protection of Chitwan. Park earnings, which are mostly from tourism (above), roughly match these expenditures. Eight hundred soldiers of the Royal Nepali Army are posted in the park, and Forest Department personnel help guard rhinos that stray outside park boundaries. Assistant warden Tika Ram Adhikari says that "Giving rewards for information is the most cost-effective antipoaching system." In 1993, \$3,500 was paid to informants, and 37 rhino poachers were caught and are awaiting trial. The International Trust for Nature Conservation, based in the United Kingdom, is largely responsible for coordinating the funding for intelligence work.

Since the late 1970s, the local villagers have been receiving direct benefits from Chitwan. Each year for two weeks in January, tens of thousands of villagers are allowed to enter the park to collect grass and reeds with which to build and repair their houses—a benefit valued at about \$500,000 a year. In addition, if a rhino dies outside the park, staff remove the horn, hooves, and skin; then the villagers can help themselves to the blood, meat, and urine—all much in demand for traditional medicines. Officials hope that helping the people who live around the park will result in a more positive attitude toward the rhinos and that, instead of harboring poachers, the people will help safeguard their natural heritage.

Lucy Vigne and Esmond Martin

### **Good Vibrations**

HE MALAYSIAN TREE FROG'S SWAMP habitat is so noisy that in order to attract mates, the females of the species have developed what biologist Peter Narins, of the University of California at Los Angeles,

DISCOVERY

describes as a

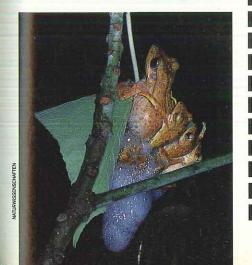
form of seismic communication. Females perform a staccato toe-tapping dance on vegetation, creating vibrations that are audible to prospective suitors above the din of chorusing males and other animal sounds.

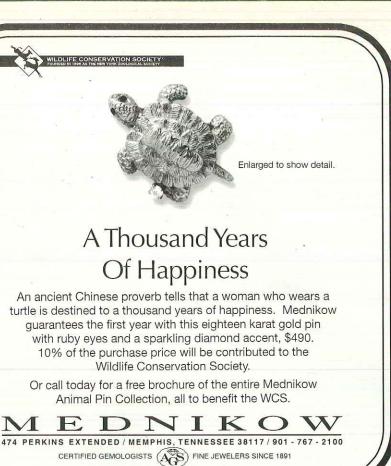
Narins and two colleagues—Albert Feng of the University of Illinois and Jakob Christensen-Dalsgaard of Denmark's University of Odense-discovered the love "song" of Polypedates leucomystex (below) while standing in a pond one dark night last year. "What you hear is not the toe-tapping, but the vegetation rustling," said Narins.

He theorizes that the females' dance creates vibrations in the ground that are detected by the tiny hair cells in the sacculus of the male's inner ear, which tell him a mate is a few yards away in a tangle of reeds. "It's a clever adaptation for a high-noise environment," said Narins, who is uncertain whether such seismic messages are exclusive to the females.

Narins was the first to discover seismic communication among the whitelipped frogs of Puerto Rico, where he worked with E. R. Lewis of the University of California at Berkeley. Despite being half-submerged in mud, Leptodactylus albilabria communicates by drumming the ground with its inflated vocal sac between the forelegs and the head. "The message is the same, but the mode is different," explained Narins.

George Nobbe





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