

SCIENCE'S COMPASS

Council (NRC) report (1) by the U.S. Committee on Global Change Research and the Board on Sustainable Development. The NRC report calls for a refocus of U.S. global change research in response to the "impressive array of scientific accomplishments" and on the evolution of federal policies over the last decade of the U.S. Global Change Research Program's (USGCRP's) existence. The NRC report justifiably bemoans the recent deterioration of surface-based data collection programs.

The report also dwells on the allocation of funds among the various federal agencies and scientific approaches in the USGCRP. A pie chart in the News article shows three-quarters of the total USGCRP budget going to NASA, and the NRC report states that 61% of the USGCRP budget supports space-based observations, while "only 11% of USGCRP observations [were] devoted to in situ measurements." The implication is that NASA's part could be used more effectively elsewhere in the USGCRP for surface-based studies. Such comparisons ignore the fact that NASA's Earth observation programs serve other national interests. Over half of what USGCRP calls its budget is being

used to build an infrastructure of space-based, global, monitoring systems for scientific, human welfare, and commercial purposes. The NRC report admits that if funding for Earth observations from space were cut, the transfer of funds from NASA space missions to other agencies within the USGCRP would be "unlikely."

We agree that the allocation of limited resources requires careful consideration. Surface measurements provide unique and crucial data, but satellites are the only practical way of getting consistently calibrated, real-time observations over the whole globe. Both are needed to achieve a useful understanding of the Earth System. We also believe the NRC report and the News article may give the wrong impression that all of NASA's research is space-based when, in fact, most of NASA's global change science funding (which is about 14% of the total USGCRP budget) goes to independent research institutions to do in situ studies.

Finally, it seems unfortunate that, given NASA's role in the USGCRP, no NASA scientists were on the NRC report committees.

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References

1. *Overview Global Environmental Change: Research Pathways for the Next Decade* (Academic Press, Washington, DC, 1998).

Native Coral In his article "Coral reef monitoring: Smithsonian field station gets the boot" (News & Comment, 29 May, p. 1340), Joseph Alper describes a dispute between the Kuna Indians of Panama and the Smithsonian Tropical Research Institute (STRI) that led to the closing of the San Blas research station. The dispute was unfortunate, in more ways than one. The Kuna and the Smithsonian had enjoyed a special relationship since 1925, when the National Museum of Natural History in Washington, D.C., played host to a delegation of Kuna. It was during this visit that a plot was hatched (not by the Smithsonian, to be sure) in which the Kuna would rebel against the newly formed Panamanian government, with support from the United States (1). This

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event is, in part, responsible for the large measure of autonomy the Kuna currently enjoy. Since then, and especially since the early 1980s, the Kuna and the Smithsonian have worked closely together on a variety



Site of the now-closed San Blas research station in the Kuna Yala, Panama

of projects dealing with conservation, environmental education, and research. This September, for example, the exhibit "The Art of Being Kuna" will be held at the Smithsonian's National Museum of the American Indian in New York.

The dispute was a complex interaction of personalities, historical circumstances, ways of viewing the world, tribal and scientific politics, attitudes about the value of research, and political currents of an inter-

national nature. As the dust begins to settle, both sides are still sorting through the wreckage in an attempt to figure out how things developed as they did. There is some talk, also on both sides, of repairing the relationship.

Many of the richest areas of biodiversity left on the planet are the domain of indigenous peoples. During the course of the past decade, however, indigenous peoples throughout the world have become increasingly sensitive to what they term "biopiracy" (what some scientists would call "bio-prospecting"). Conflicts are becoming more frequent, and scientists are being denied access to research sites in many parts of the world. The solution is not to buy chunks of land to avoid problems with landlords. Collaborative relationships are complex and difficult to achieve (2), but they are necessary for carrying out basic research in most of these environments.

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References and Notes

1. J. Howe, in *The Art of Being Kuna*, M. L. Salvador, Ed. (Fowler Museum of Cultural History, University of California, Los Angeles, 1997).
2. "The Relationship among Indigenous Knowledge, Western Science, and Environmental Conservation: Working Together in Collaborative Relationships," Front Royal, VA, 18 to 21 May, 1998. Participants included indigenous representatives, conservationists, and scientists from North and Latin America.

CORRECTIONS AND CLARIFICATIONS

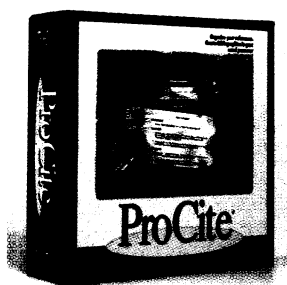
Marcia Barinaga's 4 September News of the Week article "New timepiece has a familiar ring" (p. 1429) incorrectly identified one of two research teams that recently discovered mutations in MYB proteins that disrupt the *Arabidopsis* clock. The two teams are led by George Coupland, of the John Innes Centre in Norwich, United Kingdom, and Elaine Tobin of the University of California, Los Angeles.

In the article "How a growth control path takes a wrong turn to cancer" by Elizabeth Pennisi (News Focus, 4 Sept., p. 1438), Kenneth Marcu's name was misspelled.

In the article "Under pressure, deuterium gets into quite a state" by David Kestenbaum (News Focus, 21 Aug., p. 1135), the name of Russell Hemley was misspelled.

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