

Cooperation urged on invasives - AIBS meeting participants say US Department of Homeland Security could coordinate efforts

The Scientist - Eugene Russo
March 22, 2004

WASHINGTON, DC-Policymakers are not doing nearly enough to curb the negative ecological and economic consequences of invasive species, biologists said at a meeting of the American Institute of Biological Sciences held here last week. In particular, said some speakers, more should be done to merge invasive species management with efforts to ensure homeland security and curb emerging infectious diseases.

Invasive species are a major cause of extinctions, second only to habitat destruction, and they exact a cost of approximately \$120 billion per year in the United States alone, according to Lori Williams, executive director of the National Invasive Species Council (NISC), a cross-agency council formed in 1999 by executive order from President Clinton. Several speakers at "Invasive Species: A Search for Solutions" emphasized, however, that recent scientific advances in modeling and simulation can facilitate the prediction of damaging infestation to inform future regulations.

Speakers suggested more cooperation with the Department of Homeland Security, which is already actively working on ways to detect bioterrorist agents. "It's a huge missed opportunity to use the same resources," David Lodge of the University of Notre Dame told The Scientist. The departments of agriculture and the interior, which have the bulk of the responsibility for invasive species monitoring and eradication, are woefully underfunded and understaffed for the task, said Lodge and others. "It's not a missed opportunity yet," Williams told The Scientist, adding that the Department of Homeland Security is still ramping up and will soon start to officially participate in the NISC's activities.

Andrew P. Dobson of Princeton University noted that when his group attempted to model how hoof and mouth disease might spread through farms in the eastern United States, they discovered that the locations of farms in that area were classified. He said that while this information would be of little use to terrorists, it would be of great use to those wishing to detect and predict the spread of a potentially devastating invasive species. "It's actually the Department of Homeland Insecurity," he quipped.

Government agencies are not only failing to cooperate, but, in some cases, are even working against each other, said Ann Bartuska, deputy chief for research and development at the US Department of Agriculture (USDA) Forest Service. For example, while the National Park Service was attempting to prevent buffelgrass, which was intentionally introduced into the southwest United States as a source of hardy vegetation, from spreading to parklands and pushing out native plants, the USDA was simultaneously developing a hardier, cold-resistant buffelgrass strain. NISC is intended to help mediate such discrepancies and craft a "national management plan" every 2 years.

Lodge said that legislation should target processes of invasion, rather than a taxa, a finite number of species or a particular geographic area such as zebra mussels in the Great Lakes. Rep. Vernon J. Ehlers (R-Mich.) detailed two bills that he, along with Rep. Wayne Gilchrest (R-Md.), had introduced to the House. The "National Aquatic Invasive Species Act of 2003" is meant to curb invasive species through prevention-for example, requiring the treatment of ships' ballast water-and

treatment. The "Aquatic Invasive Species Research Act" would foster, in part, the study of pathways of invasive species introduction as well as the study of species and ecosystems characteristics that would favor the establishment of particular invasive species.

Getting the bill passed, however, will be a struggle, Ehlers said. Several committees have jurisdiction; coordinating policies across international borders is tricky; and some members of Congress need to be better educated about the issue. (According to Ehlers, at one hearing about the problem of zebra mussels in the Great Lakes, one puzzled representative asked why they should spend so much money on "zebras' muscles.")

Several speakers touted recent and planned research that has the potential to stem invasive species. Lodge, along with colleague Cindy Kolar, used a model based on the species characteristics of known Great Lakes fish invaders to forecast what other fish, in this case fish from the Black Sea, might follow suit. Kolar told The Scientist that the model has received some attention from the Canadian government.

The National Science Foundation's (NSF's) National Ecological Observatory Network (NEON) project, currently funded only for a 2-year planning phase, could be an important tool for invasive species detection, said several speakers. However, NEON program officer Elizabeth Blood of the NSF told The Scientist that NEON is planned only as a tool to gain a better understanding of basic biology and that there are no plans to use NEON in a biodefense capacity-nor are there no plans to coordinate NEON activities with those of the Department of Homeland Security. Other agencies do plan to take advantage of the network; however, NASA, for example, may use NEON to "groundtruth" satellite data.

Links for this article National Invasive Species Council
<http://invasivespecies.gov/council/main.shtml>

David Lodge
<http://www.leopold.orst.edu/fellows/lodge/>

Andrew P. Dobson
<http://www.eeb.princeton.edu/FACULTY/Dobson/DobsonA.html>

Vernon J. Ehlers
<http://www.house.gov/ehlers/>

Wayne Gilchrest
<http://gilchrest.house.gov/>

National Ecological Observatory Network
<http://www.nsf.gov/bio/neon/start.htm>

E. Russo, "Brightening NEON's prospects," The Scientist, March 27, 2003.
<http://www.biomedcentral.com/news/20030327/02>