METEORS, SPACE ALIENS, and OTHER EXOTIC ENCOUNTERS

Tom Hofacker
USDA Forest Service, Forest Health Protection
Auditors Building
201 14th Street, S.W. at Independence Ave., S.W.
Washington, D.C. 20250

Exotics have had a big impact on our environment. If you do not think so, just look at how many people believe that humans would not exist on this planet were it not for exotics. This belief centers on two main theories: (1) that humans could not have evolved were it not for a huge meteor from outer space striking the earth resulting in extinction of the dinasours, the rise of mammals, and the eventual appearance of humans; and (2) that the development of humans or human ancestors was the result of intervention by aliens from outer space; certainly, this would have been the ultimate exotic introduction! In any case, this is the last you will hear of meteors or space aliens. That is not the kind of exotic encounter you will hear about during the rest of this conference. The exotics we are talking about are just alien plants and animals from other continents. Sometimes though, when I think about what has happened in the past and what we are faced with in the future, these exotics seem almost as scary (and a lot more real) than dinasour killing meteors or space aliens.

During this conference, you will hear much about what has happened in the past when exotics like chustnut blight, white pine blister rust, and Dutch elm disease were introduced into North America. While American chestnut, western white pine, and American elm are not truly extinct like the dinosaurs, they are essentially ecologically extinct in terms of the structure and function that these trees provided to the forest and urban landscapes that they once dominated.

Also important are the actions we have taken to deal with exotic introductions: millions of acres treated with mirex bait to control imported fire ants, millions of acres sprayed with DDT to control gypsy moth, millions of acres treated with herbicides to control noxious and exotic weeds. The monetary cost of these treatments alone have been staggering.

This is all in the past. Let's think about two possible future scenarios:

Future 1. An exotic fungus is introduced into the southern US. This fungus causes a disease in loblolly pine that is not as bad as chestnut blight was to American chestnut or white pine blister rust was to western white pine. This fungus only kills about 75% of the loblolly pine in the South. Other southern yellow pine species are also affected, but to a much lesser extent. What do you think the environmental, social, and economic effects of such an event would be?

Future 2. An exotic bark beetle enters the United States. The beetle is quite small (only 1.5 mm long); it breeds in several species of maple, but prefers sugar maple. The adults feed in twig and

banch crotches and leaf axils. The beetles have been in the US for 30 years before they are identified, so they are widely distributed in the eastern US. The beetles cause no significant tree damage, and are of little concern - until an unusual number of dead sugar maples are found in New York, New Hampshire, and Vermont. The beetle is found to be vectoring a new species of fungus that kills 86.5% of the sugar maples from Maine to Minnesota. Again, what do you think the environmental, social, and economic effects of such an event would be?

Do you think these scenarios are too unlikely to even consider? If so, I would like you to think about the globalization of the world economy, the effect of exponentially increasing world trade, the effect of easy air travel, and immigration by people who desire to (and do) bring their native plants into the US along with them, and the effect of trade agreements like GATT on our government's ability to issue protective regulations.

In order to present a balanced view of the exotics issue, I feel compelled to point out that not all exotics are "bad." Most of the food we eat in the US is of exotic origin; many consider having this exotic food available for people to eat to be "good." Honeybees were imported into the US by English settlers; these are also "good" (unless they are Africanized "killer bees"). On the other hand, Spanish explorers imported horse flies, and stable flies; these are "bad" because they literally bite us people on the butt. It is also probably important to remember that perceptions of bugs or fungi or weeds as "good" or "bad" are value judgments that people make. These perceptions/value judgments are important because they govern our personal and society's responses to "opportunities" or "problems."

Ultimately, you will have to make your own value judgments about these past and future exotic introductions. I hope that I have given you some things to think about. I do not want to unduly influence you, so, in closing, I would like to leave you with two thoughts: these exotics are worse than godawful and we need to do more to deal with them.