

## **Invasion Terminology: Should Ecologists Define Their Terms Differently Than Others? No, Not if We Want to be of Any Help!**

Daehler (2001) recently argued that the primary criterion for a species to be considered an “invader” (other than being new to the region) should be that the new species is “spreading” in the new environment. He also argued, contrary to our recommendation (Davis and Thompson 2000), that the “impact” of the species in the new region (whether ecological or economic) should not be considered at all in the definition of “invasiveness.” We believe that there are compelling practical and conceptual reasons for impact to be a part of the defining criteria for an invading species.

The primary practical reason is that, outside of the discipline of ecology, “invasive species” are usually explicitly defined on the basis of their impact. Consider the definition of “invasive species” in President Clinton’s recent Executive Order on Invasive Species (Order 13112, February 3, 1999): “‘Invasive species’ means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” The U.S. Fish and Wildlife Service <<http://invasives.fws.gov/>> defines invasive species according to this Executive order: “Sometimes known as ‘exotic-invasive’ or ‘alien-invasive’ species, these invasive plants and animals cause vast ecological and economic damage, and sometimes human health impacts, in areas they infest and have gained a foothold on public and private lands throughout the nation and

in other parts of the world.” If ecologists are going to communicate effectively with the various individuals, agencies and public organizations dealing with non-native species, then we must use the same language. Using terms with different operational definitions, particularly key words such as “invasive species,” is going to result in confusion that will only impede understanding and effective management efforts in the field.

The prospect of lumping all novel species that are spreading throughout a region into a single category, instead of acknowledging their differences in impact, leads us to our second concern, which is conceptual in nature. We believe that the practice of lumping virtually all novel species into a single category called “invaders” has contributed to a belief that invasions are a unique ecological phenomenon, which we believe has hindered ecologists’ efforts to understand the invasion process (Davis et al. 2001). In addition, discriminating between the traits of natives and spreading aliens has, with a few honorable exceptions, proved to be a largely unrewarding enterprise. The reasons for this are not hard to find. In the United Kingdom, about equal numbers of native and alien plants are expanding their ranges, and an analysis of their traits shows that these two groups are effectively indistinguishable (Thompson et al. 1995). There is, perhaps, more hope of discerning the key traits of “high-impact” invaders.

Daehler expresses concern regarding the subjectivity of the term “impact,” but, at least in principle, impact can be defined quite objectively, although it rarely has been. Nor do we see what grave problems would result if a species were deemed invasive at one place but not another, or at one time and not another. Defin-

ing invasive species on the basis of impact would do nothing to prevent ecologists from studying novel spreading species, irrespective of their impacts, if this is what they wanted to do. Thus, we are not persuaded by Daehler’s arguments and believe that it would be counterproductive to the field and to society if ecologists were to define the terms “invader” and “invasive” differently than the rest of society, and not include “impact” as part of their definitions.

### **Literature cited**

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