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Alien Invaders: Envisioning Exotic Species in Florida

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The *Tampa Tribune* recently expressed its "shame and outrage" that State politicians were ignoring what the paper calls "perhaps the greatest threat to the State's natural heritage": the invasion of exotic species. These nefarious species were, according to the paper, quite literally "gobbling up Florida's landscape." Here, the terms used to portray this invasion are significant. The Australian melaleuca tree (*Melalueca quinquenervia*), for example, originally was imported as a means to reclaim land from the soggy marshes of south Florida. The melalueca is characterized in the editorial as a "heavy drinking Australian punk tree" which threatens to render most of the Everglades a "biological wasteland" as a result of the continual spread of its "ugly thickets." The similarly invading Australian pine (*Casuarina equisetifolia*) is characterized as having "little wildlife value" to speak of as it 'overruns' undeveloped sections of barrier islands where sea turtles and American crocodiles abode. Finally, hydrilla (*Hydrilla verticillata*), an aquatic plant originally from Sri Lanka has, according to the paper, "invaded 42 percent of the state's public waters" and is "most troubling to residents" as it has a propensity to "grow an inch a day" making boating and other recreational uses of these waters "virtually impossible" (*Tampa Tribune* May 2, 1995).

Of course, the *Tampa Tribune* was not the first to notice the potential ecological problem of invasive exotic species in Florida. There is ever growing documented evidence of the effects of such invasions in Florida and elsewhere in the scientific literature (Coblentz 1990; Berger 1993; Bodle *et.al.* 1994). I will use this editorial commentary, however, as a means to explore several issues surrounding the way in which our conception of this ecological "problem" is constructed by the very way in which we speak of it. "Heavy drinking" Australians aside, terms like "exotic," "alien," "invaders," even "natural heritage," are just as loaded as terms such as "ugly" and "troublesome" in relation to the natural world. Indeed, recent work in this area clearly demonstrates how such

rhetoric constructs a certain kind of nature or human-nature nexus as much as it may reflect some outside "reality" (Herndl and Brown 1996; Cronon 1995; Baldwin, Jr. *et.al.* 1994).

Yet, rather than attempt to scale the heights of rhetorical analysis, I am concerned here with three seemingly more practical issues, all within the general context of the ecological problem of exotic species. There is the question, firstly, as to what is "natural" in the "natural heritage" of Florida. To answer this presumes that what is "natural" in this respect can be determined in some sort of objective way; surely a debatable proposition. The second issue concerns the very characterization of "exotics" as a problem which needs to be dealt with, sometimes even at crisis-speed. There is much room for debate here, both in terms of the actual effects of exotics and in the very idea that there is something to be saved from their on-slaught. The third issue concerns the wider context in which the conversation about exotics is taking place; that is, the growing feeling among some humans that non-human nature can be, and indeed must be, somehow managed by humans in order to insure its survival. This feeling is most manifested in the growing literature of the new transdiscipline of conservation biology which is characterized by one of its founders as a "crisis discipline" (Soulé 1991). There are several problems with this notion of the human management of non-human nature, however, the most significant being that it retains, paradoxically, the very "mastery of nature" discourse its adherents feign to battle most vehemently.

The Nature of Nature

When the *Tampa Tribune* writes about the "natural heritage" of Florida it is easy to presume that most of us understand something similar. But what, really, does this heritage entail? There is a tendency to think that this nature connotes something somehow more original, somehow more pristine, somehow more real. Moreover, the usual conception of this natural reality is that it is only minimally impacted, if at all, by humans. Yet, this conjured image entails a rather severe conundrum. Florida's flora and fauna, like that of all areas of the world, were greatly impacted by the activities of aboriginal peoples as others are increasingly pointing out (Worster 1994). So, how far does one go back in time to determine the real nature of Florida or North America? In his recent presidential address to the Society for Conservation Biology, for example, Soulé (1990, 235) argues seriously that, since such megafauna were

once native to North America he "would not be surprised to read someday that cheetahs are helping to control deer and that mesquite is being overbrowsed by rhinoceroses." In Florida's case, because for long periods in recent geological history much of the peninsula was under water, its real natural heritage in this respect could be regarded as totally submersed aquatic.

But the question can be taken to a higher level of sophistication. The tendency among ecologists is to regard nature as more natural to the extent that the impact of one natural species, humans, can be minimized or otherwise impeded. Aboriginal Floridians are not considered in most ecological accounts because they are generally considered to be more a part of nature than outside; sort of like other beasts in the garden. With the conquest of the aboriginals, so this narrative unfolds, the human impact on the rest of nature has increased continuously to the extent that, now, humans must be totally banished in order for the garden to heal itself. One of my colleagues in Biology, for example, has suggested that, to solve south Florida's ecological problems, all people living south of Gainesville should be moved north. The proper benchmark for managing ecosystems, another ecologist recently has argued, is to consider "natural" to mean "without human influence" whatsoever (Hunter, Jr. 1996). The paradox in this scenario, however, is not only that it miss-identifies humans but also that it suggests that in order to recover "nature" (some) humans will have to manage both the process and the ultimate outcome. Yet, how is this humanly-managed nature more "natural" than any other?

Invading Exotics

The bottom line is that this scenario is a form of mastery of nature discourse even if, in this case, on the side of a supposed ecological good. Before bringing this point home, however, I will approach it from another angle. There has been much textual hand-wringing in recent years about the invasion of exotic species in Florida. The extent of this problem is summarized in a recent government report:

> South Florida...contains troublesome infestations of several aggressive non-indigenous plants, most of which were deliberately introduced. The State has approximately 925 established non-indigenous plant species. Non-indigenous plants and land

> mammals constitute about 25 percent of all species in the State. Sixty-three percent of the introduced non-indigenous bird species in the continental United States are found in Florida, which also has the largest number of established non-indigenous amphibian and reptile species in the United States (O.T.A. 1993, 255; emphasis added).

The major problem of this nature in Florida is exotic aquatic flora like the melaleuca, hydrilla, Australian pine, water hyacinth (*Eichhornia crassipes*), and Brazilian pepper tree (*Shinus terebinthifolius*) which have clogged waterways and otherwise displaced other aquatic species. The report just cited goes so far as to say that melalueca "is now regarded as the most serious threat to the integrity of all south Florida's natural systems" (O.T.A. 1993, 261). No wonder, then, that an estimated $1.3 million has been spent as of 1991 for the removal of this exotic or that, between 1980 and 1990, the management of all exotic aquatic plants in Florida cost an estimated $120 million in public funds (Schmitz *et.al.* 1990).

Now most scientists would agree with this attempted species-cleansing of south Florida's "natural" systems given the way the call to action has been constructed. Exotic species overwhelm natives, more successfully compete for resources and reproduce themselves, disrupt established ecological relationships, and thereby forever change the natural community in which they have inserted themselves. These species are aliens solely bent on changing the existing, more natural community.

Already, the rhetoric suggests cross-fertilization with social theory concerning the results of human migrations. Yet, keeping in context, what is the ecological issue with regard to exotics which drives conservationists to argue quite sincerely that "eradicating" these natural species, if distasteful, is a "nasty necessity" that must be undertaken to preserve natural integrity (Temple 1990)? The answer appears to be threefold. First, exotics displace native species to the point of extinction. As a result, second, exotics are a force in the thinning of global and local biodiversity. Thirdly, and most generally, exotics disrupt the "integrity" of natural ecosystems thereby leading to the degradation of such systems. In short, all three issues are quite interrelated and implicate exotics as just so many weeds in the garden.

Managing Ecological Integrity

The specific problem with the characterization of the ecological "threat" of exotics is that it assumes more than it can substantiate. Exotics certainly have displaced native species. But the question again arises: how long does a species have to be in-place before it is assumed to be native? In addition to Soulé's remark about native American rhinoceroses, another ecologist recently has written about what he calls four new species of "naturalized exotic trees" in Florida. As he puts it, "naturalization is defined as a wild population having reproductive adults, juveniles, and seedlings in either disturbed or undisturbed habitats" (Pascarella 1994, 173). If exotics can be so naturalized, in other words, why the haste to eradicate them? The key here is that what is native can be only relatively defined with regard to time in the same way that it can be only relatively defined with regard to the spatial boundaries of "home" and "not-home."

Similarly, whether exotics actually will thin biodiversity cannot be known over short periods of geological time. While this may be an initial impact of the introduction of new species, it is not necessarily the longer-term impact as other species—even those labeled "native"—come into interrelation. It may be, as Soulé (1990, 234) so colorfully puts it, that the "flood of exotics will tend to homogenize ecological communities" as "the number of exotics in most regions produces a cosmopolitanization of remnant wildlands." But such a homogenization, even if occurring, does not necessarily imply a thinning of biodiversity; after all cosmopolitanism itself implies increasing diversity in interrelation.

And, hence, we arrive at the final issue. Exotics appear to disrupt the integrity of functioning ecosystems leading ultimately to ecological degradation. This is an extremely important charge because the idea of the new conservation movement is that ecological integrity can, indeed should, be managed at the community level. But this presumes that the extent and nature of ecosystems actually can be identified with certitude and, in turn, that they function with integrity in some sort of equilibrium state. Yet, both assumptions have come into serious question in what conservationists themselves are calling the recent post-modern turn in the science of ecology. According to this, as Lodge (1993, 373) so neatly summarizes, "ecological communities" are not considered evolving toward some equilibrium relation. Rather, such communities are "in perpetual disequilibrium...Community succession proceeds,

therefore, toward a moving target." As Worster (1995, 73-74) puts it, the post-modern message in ecology is that:

> Nature should be regarded as a landscape of patches of all sizes, textures, and colors, changing continually through time and space, responding to an unceasing barrage of perturbations.

From this point of view, exotics merely change existing ecological relations at any given place at any given time. To label this change somehow "good" or "bad" is not only based on an outmoded systems equilibrium model, it is also the height of anthropomorphic arrogance. (Some) humans have labeled (some) species weeds to be eradicated on the basis of uncertain time- and space-bound ecological knowledge. But "weeds" are merely a human construction; an anthropomorphic projection on to non-human nature. If saving something called Florida's natural heritage is the real goal, then eradicating species such as cows, sugarcane, and citrus trees would be much more efficient than picking on the melalueca. But, then, we humans do not see cows as "ugly" as we once did.

Conclusion

In a short paper like this, I can only point in certain directions. In the end, what is considered most "natural" or "native" to the place is relative to the human evaluation of non-human nature. Humans can never think like a mountain without the mountain becoming thereby a human construction. The idea that humans can somehow manage non-human nature on the basis of strict ecological interests or integrity is of the same ilk. One fears the nefarious results—both financial and ecological—of the many attempts at species-cleansing in the name of "natural heritage" or "ecological integrity," both ultimately defined by (some) humans for (some) human purposes. Again, the parallel in social theory of the appeal of the following statement by the editors of the *Tampa Tribune* is nothing but obvious: "without a concerted effort to control exotic plants, Florida's landscape, and its appeal, soon may be lost to these foreign invaders"; to the (English First) ramparts, indeed!

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