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e were flattered by Gene Wood's comment (February *JOURNAL*, p. 39) that "The ISC de-

serves high praise for completing its charge. While the strategy and science upon which it is based can be debated, I cannot imagine any finer product given the current state of knowledge, the time frame, and the administratively defined objective." This is high praise indeed.

A few points made by Wood beg response or elaboration. The ISC is not responsible for the consequences of the Endangered Species Act (ESA), nor for the political strategies employed by those active in the ongoing debate over the fate of old-growth forests. Rest assured that the courts are making decisions about the management of those forests when decisions are made about the adequacy of federal management agencies' plans to address the welfare of the northern spotted owl. If the point is that considerations of the welfare of the spotted owl and the fate of old-growth forests should be expanded to consider broader views of ecosystem management, we strongly agree.

Best for the Owl?

The statement that the current strategy "is the best approximation for the owl-but is it the best for 7.7 million acres of landscape?" is incorrect in the statement and misleading in the question. The strategy is most decidedly not the best approximation for the owl, as clearly stated in the report. The "best approximation" would be to reserve all suitable and nearsuitable habitat on federal, state, and private lands, and to implement forest management regimes that would, as quickly as possible, restore the owl to portions of its former range where numbers are low or it has been locally extirpated. The federal courts have indicated in two recent decisions that they clearly understand the distinction between the ISC strategy and what may be the best approximation for the owl in the context of a recovery plan. John Turner, director of the U.S. Fish and Wildlife Service, testified to Congress on April 16, 1991,

that the ISC owl management strategy did not go far enough to protect the northern spotted owl now that the bird is listed as threatened.

Wood implied that commercial forestry was prohibited on 7.7 million acres of forested lands as a result of the ISC recommendations. Not so. Some 3.7 million (48 percent) of those acres are already in a legal status, such as designated wilderness or national parks, that precludes timber harvest. A significant amount of the remaining 4 million acres is reserved from commercial forestry practices by other environmental considerations and designated land uses. Still more is nonforested-meadows, lakes, roads, etc.-or is not commercial forestland. Finally, approximately half of the capable, available, and suitable forestlands within Habitat Conservation Area boundaries have already been logged. This is not to say that the commercial acres reserved from timber management are not significant. They are. But we caution against exaggerating the impact of the ISC strategy on the total withdrawal.

The statement that the ISC overlooked the potentially far-reaching effect of dedicating a large amount of land to a single goal is likewise incorrect. The report clearly stated that the strategy would affect water quality and quantity, recreation, scenic values, soils, retention of biodiversity, etc., and asked that these factors be analyzed along with the economic and social effect. The economic and employment impact was quickly analyzed; impact on the broader array of potential effects has yet to be determined. That may well change, as the district court has recently required an environmental impact statement for any owl management plan adopted by the Forest Service. The mission given the ISC was intentionally specific-develop a scientifically credible conservation strategy for the northern spotted owl. We believe that we fulfilled that assignment. We look forward with great interest to results of the broadened analysis.

Not an Accomplice

The statement implying that the

ISC was in "complicity" with the "surrogate process" (i.e., the use of the spotted owl by some groups as a surrogate for old-growth) is most unfortunate and, we hope, inadvertent. Complicity is defined as "the state of being an accomplice, as in a wrongdoing." We emphatically reject this characterization. The statement that the prohibition of commercial forestry in Habitat Conservation Areas (HCAs) is proof of such complicity is a non sequitur, and demonstrably wrong to boot.

Had we chosen to be in complicity with those who use the owl as a surrogate for the old-growth issue, we would have proposed a strategy that reserved all or most of the remaining old-growth stands-we certainly would not have released any old-growth that was reserved under the old strategy. We would have included a number of roadless areas containing old-growth that environmental groups are struggling mightily to make "off-limits" for harvesting. We had those options at our disposal.

An editorial in the April 13, 1990, Oregonian explored exactly this issue and came to a totally different conclusion than did Wood. Durbin concluded that those who had used the owl as a surrogate for the old-growth issue had been "burned" by the ISC strategy, because they got an owl conservation strategy and not an old-growth plan. The punch line of the editorial was "Be careful what you wish for-it might come true." Surely this issue about appropriate management of publicly owned forests can be debated without resort to any implied conspiracy or insinuations of complicity.

The ISC simply did not believe that the inclusion of commercial activity in HCAs could be either justified or defended on the basis of presently available empirical data, theory, professional opinion, or modeling results. Whether the recommendation could stand court challenge is another question.

The ISC strongly recommended an immediate expansion of efforts to test alternate management schemes, based on innovative silviculture, to determine if and how owls can be main-

tained in conjunction with commercial forest operations. And, under the ISC strategy, millions of acres of presently suitable owl habitat were left available for such tests-including hundreds of thousands of acres that had been reserved from cutting under previous strategies.

If alternate approaches that include logging in habitat managed for owls are tested and proven, alternatives to the ISC strategy can be considered. At the moment, however, we remain unconvinced that adequate data exist to formulate a scientifically credible strategy around such an approach. And it is possible that managing timber intensively and maintaining critical owl habitat (in adequate amounts, sizes, and distribution) are not compatible management strategies. Compatibility for the production of all desired goods and services from the same forestlands cannot, to use Wood's words, be "unblinkingly" assumed to exist.

Technical Counterpoints

It is inappropriate here to debate all the technical points raised in the critique. We will, however, examine two statements to illustrate that the article would have benefited from accompanying documentation-which may well have been required if the article had been peer reviewed. Wood apparently disagrees with our assumption that "owl populations must stabilize at densities lower than predicted carrying capacity of the HCA." We find this puzzling because, to assume otherwise, we would have to believe that (1) all potential territories in a given HCA are fully occupied at all times, (2) any territorial adult that dies or emigrates is replaced immediately by a member of the same sex, and (3) a satisfactory pair bond is established with the mate of the departed adult. Available information indicates that such is not the case.

As a second example, Wood wrote: "The ISC assumed that any type of even-aged management causes fragmentation. That point is hard to accept." Why? Even-aged stands are silviculturally produced through clearcut, shelterwood, or seed-tree regen-

eration prescriptions. Unless such treatments are large enough to encompass the entire forest block. each area cut adds to fragmentation. If the treatments are not so large (regulations under the National Forest Management Act specify about forty acres for a standard regeneration cut), fragmentation of habitat occurs. In either case, habitat is removed. No one who has flown over the Coast Range and the Cascades of Washington and Oregon would doubt that forest fragmentation is resulting from even-aged management. Whether that is good or bad for wildlife depends on the management objective and which species are considered.

Though specifics are lacking, good reasons exist to suspect that fragmentation may be antithetical to

ers." Come now. Upon what information did Wood base his conviction? The field biologists on the ISC team were aware that the models were developed with frequent comment and criticism from experienced field biologists.

We were taken by the pronouncements about what was or was not "poor multiple-use management" and "a poor land ethic." Such a statement is merely polemical. The only "land ethic" that has received wide acceptance and discussion is that of Aldo Leopold: "Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it



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fare of spotted owls. Fragmentation occurs concomitantly with habitat loss, so individual effects are difficult to separate. It is even possible that habitat loss combined with fragmentation is more deleterious than either one considered separately.

Wood also comments on several points about which he has no knowledge. For example, "While I am convinced that the experienced field biologists understood what constituted owl habitat, I am not convinced that knowledge was shared by the model-

otherwise." We have a difficult time understanding how the ISC strategy violates that ethic. If debate is desired, it would be well to define such nebulous terms and vague charges. Again, justification should be provided for such statements.

Wood does make some good points. We agree that the focus in land management that results from compliance with the ESA is far too narrow in most cases. Professionals need to help develop and institute a process that will better address the concerns about

retention of biological diversity and ecosystem functions at a larger scale than is common in dealing with strategies to conserve threatened or endangered species. The emphasis should be shifted to preventing species from becoming threatened, rather than performing repeated heroic management exercises to forestall extinctions.

Providing Input

It is one thing to critique. It is quite another to suggest a scientifically credible, legally defensible, better way. It should be noted that recent court decisions, comments by the Director of the Fish and Wildlife Service, Fish and Wildlife Service, Fish and Wildlife Service consultation with the Forest Service concerning the spotted owl, and the Fish and Wildlife Service's delineation of critical habitat all point to even more stringent requirements for a satisfactory recovery strategy for the owl than those put forth by the ISC.

This provides an opportunity for Wood to influence an outcome for the spotted owl dilemma different from that proposed by the ISC. The Recovery Team for the Northern Spotted Owl, led by Jon Bart, U.S. Fish and Wildlife Service, Portland, OR, has been charged with developing a plan for the "recovery" of the owl-now listed as "threatened." That team would likely appreciate any substantive help, from Wood or others, in developing a habitat conservation strategy that will be scientifically credible, stand up to court challenge, and still meet Wood's criteria for a plan that is in keeping with "good" multiple use and conforms to a "good" land ethic. We feel certain that the Recovery Team's door is open to suggestions and assistance.

They would also appreciate suggestions for any such strategy that will stand muster on scientific and legal grounds while simultaneously causing less economic and social disruption than the ISC strategy. The ISC struggled for six months to meet that charge. We did the best job we could to fulfill this difficult mission. We wish the Recovery Team well as they come up with the final plan.

A Matter of Style

To the *JOURNAL* editor: We suggest that these point-counterpoint "Literature Discussion" articles occur side by side in future issues of the *JOURNAL*. Such a format would be more conducive to achieving what we assume to be the objective-elucidation of and education about critical forestry issues. We also suggest that the "headline" on Wood's critique was prejudicial and not conducive to rational professional discourse. Some level of peer review would help to keep the discussion on an appropriate professional plane and directed to truly germane issues. We do appreciate the opportunity to reply, even belatedly.

With due respect to the hard and good work of the Interagency Scientific Committee and its chair, I did in fact contact Jack Ward Thomas's office for side-by-side publication but was told he was unavailable for an extended period of time. I invited a response, to be forwarded as soon as available, and made the decision not to hold up publication of the Wood critique. Although I agree that it is ideal where possible to publish simultaneously, I by no means see it as a rule.

As to the idea that "Literature Discussion" be peer reviewed, 1 think that too is an editorial call. We have purposely sought a more free environment for expression in some sections of the JOURNAL than peer review encourages, having found that process sometimes inappropriate. The implication here is that peer review would have somehow protected the report from certain questions, but the outcome of that scenario is in the eyes of the beholder, as is "an appropriate professional plane." If forestry profes sionals can't maintain that short of peer review, then we are in trouble. With reference to the headline, I think it accurately described the content of the Wood critique.

When a report is officially made public, it becomes fair game (no pun intended), and criticism should be one expected outcome. On the other hand, we do intend the JOURNAL to be a fair forum, and do see that both sides are heard.-Ed.