IPM and IWDM: Is there a difference?

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INTEGRATED PEST MANAGEMENT (IPM) has been the model for pest management for more than half a century. IPM has been defined as "the process of integrating and applying practical methods of prevention and control to keep pest situations from reaching damaging levels while minimizing potentially harmful effects of pest control measures on humans, nontarget species and the environment" (USDA 1994). The IPM model taught in invertebrate pest management classes includes the concept of an economic threshold (a level at which the benefits of control exceed the costs of the damage plus the costs of control). The methods which are "integrated" include mechanical, chemical, biological, and cultural.

I first heard the term integrated wildlife damage management (IWDM) in the mid-1990s. Its use originally recognized that we are reluctant to consider wildlife as pests, but it has been refined in policy to encompass the integration and application of all approved methods of prevention and management to reduce wildlife damage. The IWDM approach may incorporate cultural practices, habitat modification, animal behavior management, local population reduction, or a combination of these approaches. The selection of wildlife damage management methods and their application must consider the species causing the damage and the magnitude, geographic extent, duration, frequency and likelihood of recurring damage. In addition, consideration is given to nontarget species, environmental conditions and impacts, social and legal factors, and relative costs of management options (USDA 2004).

On the surface, IPM and IWDM appear to be the same program. Each considers the use of multiple methods, the risk of future loss, the risk to nontarget species, and the risk to the environment. In practice, I would submit that IWDM differs in one very important aspect. IWDM considers the ecological benefits of the target animal and, in mitigating the impacts to the environment, tries to balance the positive and negative impacts of that animal.

Consider the difference between wolf damage management and the control of boll weevils. In a cotton patch, there is little consideration for the positive ecological impacts of boll weevils. Control strategies need to mitigate for potential negative impacts of pesticide run-off, possible loss to beneficial, nontarget insects, and a host of economic issues related to crop production and treatment. Wolf damage management, on the other hand, considers the ecological impacts of control on both the predator and the resource being protected. Wolves serve a biological function in their environment that must be balanced with the negative impacts of damage to livestock or excessive predation on wildlife.

That said, the concept of an economic threshold gets quite sticky. It is practical to calculate from research results the potential loss of livestock or a crop in the absence of management and compare that to the cost of management to determine a benefit:cost ratio. However, it is difficult to calculate the environmental costs and benefits associated with a conflict. I will argue that while IPM uses costs and benefit:cost ratios to decide which methods should be employed; legal, effective, and humane considerations are more important under IWDM than costs.

The goal of any professional WDM practitioner is to be as target specific as possible. In some cases, this may refer to targeting the species (e.g., blackbirds at a feedlot) to the exclusion of other species (e.g., doves or gulls at the same location). In other cases, the professional WMD practitioner tries to target the individual causing the damage, such as a single depredating black bear in a forest full of nondepredating bears. In IWDM, the consideration of nontarget organisms is often more narrowly focused than in

most IPM applications.

If you accept that IWDM considers the positive ecological aspects of the target species or animal, then you may also find that IWDM may not be appropriate when dealing with invasive species. Feral hogs, for example, are an ecological train-wreck affecting soil, vegetation, and other wildlife; they also serve as reservoirs for diseases and parasites. When considering a feral hog abatement project, consideration of the positive ecological impacts of hogs is inappropriate.

Of course, consideration of nontarget risks must also consider the ecological status of the nontarget animal. Nutria is an invasive species and may be considered a nontarget species in a beaver damage management program. However, it would be ecologically irresponsible to release nutria captured in beaver equipment. Feral hogs may be inadvertently captured in coyote snares. Selection of the methods used in an IWDM application would not only consider the risks to nontarget animals but the ecological role of the nontarget animal, as well.

I would offer that IWDM is part of IPM, but has a much more narrow focus and, more than any IPM strategy, attempts to balance ecological benefits with economic harms. For native wildlife, IWDM strategies are appropriate. ✷

Literature cited

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