

Integrated Vegetation Management

A Philosophy of Utilizing All Tools to Optimize Resource Values

Scott A. Johnson, Vegetation Management Specialist, Wilbur-Ellis Company, Rio Linda, CA

Summary: Integrated Vegetation Management (IVM) is a philosophy of optimizing resource values through the combination of physical, cultural, biological, and chemical methods of vegetation management. IVM encourages resource managers to use all of these management methods. Additionally, vegetation management programs that incorporate the IVM philosophy may be more acceptable to both funding organizations and the public than programs that emphasize only one or two management methods.

The goal of this presentation is to encourage CWSS members to adopt a systems approach to managing vegetation. This approach is called Integrated Vegetation Management. I hope to define it for you and explain why IVM is a highly effective philosophy for optimizing resource values. The term “Integrated Vegetation Management”, as I know it, was first used by utility right-of-way foresters in the Eastern United States about twenty-five years ago. I personally picked it up from a California utility forester in 1990.

Vegetation management programs can have several goals, depending on the perspective of individual land managers. The goals can include:

- Infrastructure maintenance and protection
- Fuels management/Fire safety
- Rangeland improvement for livestock
- Management of noxious and exotic weeds
- Habitat improvement/restoration for wildlife
- Aesthetics

Integrated Vegetation Management is the vegetation management component of Integrated Pest Management. It is a philosophy of optimizing resource values through the combination of physical, cultural, biological, and chemical methods of vegetation management. IVM encourages land managers to use all of these management methods.

We should probably step back a bit here to define Integrated Pest Management. “Integrated Pest Management (IPM) is a practice where pest management is but one component in an overall crop production system. IPM is based on the principle of providing growers and land managers with the widest array of options to control pests, e.g., physical, cultural, biological, chemical and genetic techniques. The ultimate goal of IPM is to ensure production of abundant, high quality food and fiber in an environmentally and economically sound manner.”
Source: *IPM: The Quiet Evolution — An overview of Integrated Pest Management (IPM) and its*

impact on Western Agriculture; Western Crop Protection Association (WCPA). Note: WCPA is called the California Plant Health Association.

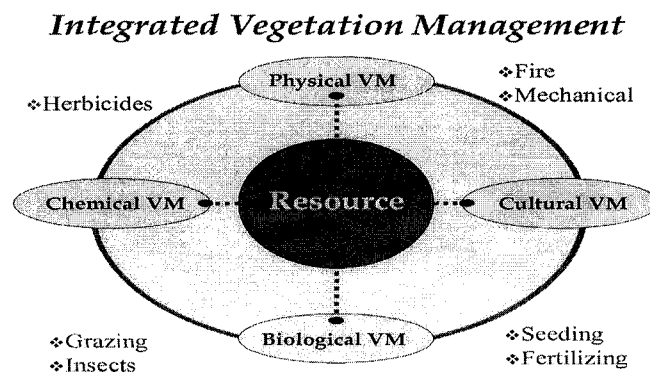
Physical vegetation management methods include manual, mechanical, and prescribed fire techniques. Seeding and fertilizing desirable plant species, such as range grasses, are types of cultural vegetation management strategies. Biological methods include livestock and wildlife grazing to manage fuel levels, as well as introduction of biological control by insects. Cultural and biological methods also include encouraging native plant and wildlife species.

Any professionally responsible Integrated Vegetation Management program should, by definition, include the judicious use of herbicides to prepare a site for burning, minimize resprouting brush, or eliminate exotic invasive weeds. The properly timed application(s) of site-appropriate herbicide(s) can eliminate non-productive and noxious plants, improve wildland and rangeland productivity, increase biodiversity and species richness, and lengthen the interval between fires through reduction in undesirable fuel loading.

In the past, it was common for wildland managers to use physical management methods, e.g. “crush and burn”, to open up or reclaim rangeland. Seeding and/or fertilizing of grass may have followed this site preparation. What often happened then was that woody species, including brush and trees, re-sprouted and re-occupied the site. This then required burning the area again — a vicious cycle of events.

The introduction of herbicides added a new element to the vegetation management cycle. By treating brush to prevent sprouting, the burn cycle can be greatly extended. This longer cycle allows the so-called “smoke budget” in a given airshed to be spread over more acres over a longer time than without the use of herbicides. When herbicides are combined with mechanical brush control, fire may not be needed at all.

The IVM systems approach can be demonstrated in the following graphic:



Each of the four main types of vegetation management has an influence on the resource being managed. No one technique used alone can fully provide the benefits of a plan that uses the “full circle” Integrated Vegetation Management system shown here. Physical methods can remove biomass in the short run but it usually grows back. Herbicides can kill the brush, but they will not remove the biomass. Seeding desirable grass will not work if noxious or invasive weeds choke out the grass. Animals will graze some, but not all species of plants or growth stages of plants. The properly timed use of multiple methods can, though, achieve the desired outcome.

In summary, I hope that you, as vegetation managers, will adopt and support the inclusion of Integrated Vegetation Management in any program you undertake or support. I believe that use of IVM will answer questions that funding agencies will ask in grant proposals. I also feel that many members of the general public will find it easier to support programs that use all techniques over those that emphasize one vegetation management method.