

New Dimensions of Visual Landscape Assessment

Wildlands Management for Wildlife Viewing¹

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Abstract: Wildlife in general and wildlife viewing in particular play significant roles in enriching the aesthetic experiences of visitors to wildlands. Effective management of wildlife for viewing must be based on human as well as biological information. The integration of the principles and techniques developed for game management with information on the human dimensions of wildlife appreciation offers tremendous potential in management of wildlife as a visual resource. These opportunities can not only provide benefits to the public but can also serve to stimulate awareness and concern for our national landscape.

INTRODUCTION

Landscape aesthetics are a function of many different environmental components. Topography, vegetation, scenic vistas and human developments are most often considered by planners concerned with the aesthetic values of an area. Too often overlooked are the potentials for planning and managing areas to provide opportunities for viewing wildlife. Wildlife are valuable aesthetic resources in any natural or semi-natural environment and the potential for land use planning and management to provide wildlife viewing opportunities is great. This paper discusses some of these opportunities and some guidelines for incorporating wildlife aesthetics into planning and management processes.

Appreciation of wildlife as a visual resource appears to be increasing in our society. A recent survey estimated that over 49 million Americans participated in some form of wildlife observation in 1975 (USDI) and memberships in animal-oriented organizations of all types have burgeoned (Witter 1977). In many natural and semi-natural areas, wildlife is an important and essential resource complementing other scenic natural amenities that attract outdoor

recreationalists. Current research at the University of Arizona is revealing some areas in which opportunities for viewing wildlife are the primary attraction for thousands of recreational visitors (Witter et al. 1978, Shaw et al. 1978, Richards et al. 1979).

These studies are part of the growing body of evidence indicating that for many Americans, aesthetic values of wildlife are very significant. Other important studies dealing with aesthetic values of wildlife include Hendee (1969), Dagg (1974), Horvath (1974), Payne and DeGraff (1975), Langenau (1975), Kellert (1978), and More (1979). A review of current research on this topic consistently shows that appreciative enjoyment of wildlife appears to be increasing and by some measures is even outdistancing the more traditional commodity values for wildlife. In spite of this evidence, the potential of managing wildlife for aesthetic purposes has been sorely neglected.

Traditionally, the group most interested in wildlife management, as well as the group providing most of the revenue for management activities, has been the sport-hunter. Quite naturally, this has resulted in the development of scientific techniques aimed primarily at management to produce a harvestable surplus of game species. However, it is important to point out that management for hunting is not necessarily incompatible with management for aesthetic uses--in fact, in many ways non-hunted species have benefited from habitat preservation and other activities associated with traditional game management. Fortunately, much of the knowledge and techniques developed for game

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management can be transferred to considerations of wildlife as a visual resource.

The aesthetic and existence values of wildlife are becoming well recognized by resource management agencies. However, due to financial constraints, nongame management is still relatively minimal. As of 1975, only seventeen states had nongame programs that even included one full-time employee (Wright 1976). The problem facing all nongame programs is one of large numbers of wildlife species and aesthetic values to be considered, with inadequate staffing and revenue supplied to meet the management needs.

A significant exception has been in the area of management of endangered species. The endangered species Acts of 1966, 1969, and 1973 have provided the impetus for major efforts in management of some species. These laws, along with other state and federal legislation or proposed legislation involving wild horses, burros, trapping regulations, and other wildlife issues, are reflections of society's interest in wild animals. Understandably, though, most of these laws deal with protection of these species, rather than provision for viewing opportunities.

But many species are not endangered, and can provide aesthetic experiences without threatening the well-being of the animals involved. More attention to the potential of managing wildlands for wildlife viewing opportunities is long overdue. Wildlife management and resource management in general must be evaluated in terms of human benefits. Public interest in wildlife as a visual resource appears to be substantial and increasing, and one way wildland managers might increase human benefits is deliberately to provide opportunities for wildlife appreciation in wildland settings.

WILDLIFE VIEWING OPPORTUNITIES AS ONE PRODUCT OF WILDLAND MANAGEMENT

Effective management of wildlands for wildlife viewing will require input from several areas of expertise including wildlife biologists, resource planners and managers, and social scientists. Figure 1 illustrates a process for incorporating this objective into management and planning activities.

Wildlife Tolerance of Human Interaction

Wildlife vary in their tolerance of human interactions. Some are very sensitive to any human activities and others can tolerate or even benefit from association with humans. Just as certain species can provide harvestable surpluses, and hence opportunities for hunting

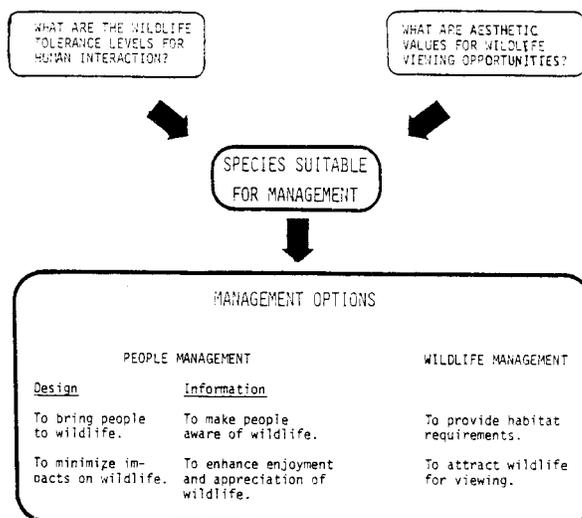


Figure 1--Management Guidelines for Wildlife Viewing Opportunities

recreation, some species can provide viewing opportunities without serious effects on the population or ecosystem. One of the first questions in identifying possibilities for providing wildlife viewing opportunities is to determine the degree of vulnerability of the various species in the area.

There are numerous examples of game as well as non-game species which tolerate non-threatening human activities with minimal disruption. For example, during winter and migration periods, wild waterfowl often concentrate in highly urbanized areas such as Lake Merritt in downtown Oakland, California. These ducks provide considerable viewing opportunities during part of the year and revert to wilder behavior during the breeding season. Likewise, deer, elk and other hunted ungulates can become fairly tame in protected situations without losing their wildness or ability to survive without humans (Behrend and Lubeck 1968). The presence of various birds, small mammals and reptiles can enhance almost any outdoor recreational experience. In many cases these opportunities for enjoying wild animals exist through no effort on the part of the management agency. One thesis of this paper is that many more positive interactions with wildlife are possible with relatively minor efforts on the part of planners and managers.

Of course, some species simply are not suited for human observation due to their behavioral or ecological requirements. For example, the low population density and secretive behavior of mountain lions and bobcats make observation unfeasible for most recreationalists. Other species are very intolerant of human

activities for part of or all of the year. One would certainly not promote viewing of species where human proximity might lead to unsuccessful reproduction or abandonment of critical habitat as may be the case for certain birds as well as large ungulates such as bighorn sheep. In some cases such intolerance might be only a seasonal phenomenon; in other cases human proximity may be detrimental at any time.

The important thing to recognize is that animal tolerance of humans runs the entire continuum from highly tolerant to highly intolerant. In between these two extremes are many species that may be capable of providing aesthetic experiences under certain conditions which can be controlled by the land management agency. Viewing opportunities under carefully controlled conditions may even be appropriate for endangered species where an adequate buffer is provided between people and the animals. Every year thousands of people view southern sea otters from the coastal cliffs of California and whooping cranes from specially designed blinds and observation towers in southern Texas. In fact, the endangered status of these species undoubtedly increases their value as visual resources.

In every initial planning effort, we must remember that each species has a unique tolerance to human interactions; understanding of these tolerances is perhaps the most critical factor in providing appropriate viewing opportunities. Wildland managers will be well advised to seek the expertise of wildlife biologists in answering these questions.

Aesthetic Values

A second important question is the value of various species in providing viewing enjoyment. Certain species are more popular than others as viewing subjects. In general, the aesthetic appeal of wild animals is a function of a variety of factors including size, age, color, life history, habitat and scarcity. Large mammals such as deer, bear and elk may be more popular than smaller mammals (Bart 1978). A bear and her cubs, a new fawn, or a nest of robins can offer particular enjoyment to a viewing experience. Colorful birds such as cardinals and jays are often liked more than thrashers or towhees (Brown and Dawson 1978). Predatory animals such as hawks, eagles and mountain lions seem to have a unique appeal. The setting of the viewing experience is important also. Viewing a bear or deer in a cage or even a natural appearing enclosure is much different from a viewing experience in a wild environment (More 1978). Finally, humans attach special values to opportunities for viewing rare animals. A non-endangered minnow

probably has little aesthetic value but an essentially similar desert pupfish may become attractive because of its endangered status.

Provision of high quality wildlife viewing will require more than biological input. It is essential to understand the human experiences provided by the viewing opportunities, a job which can best be done by enlisting the aid of social scientists who recognize that aesthetic values involve physical stimuli plus cognitive processes whereby significance is attached to an object. In the case of wildlife, this cognitive component may be particularly important (Shaw 1979).

Combining the biological assessment of each species' tolerance to humans with the sociological appraisal of desirability for viewing opportunities can lead to identification of those species most appropriate for providing viewing opportunities. A major thesis of this paper is that wildlife viewing opportunities demand attention from, and cooperation among, several fields. With the knowledge of which are suitable species, the next question emerges: How can this knowledge be translated into a successful viewing experience?

People Management

Design

Design can be a useful vehicle for bringing people and wildlife together. People concentrate themselves along roads, trails, campgrounds and other environments made accessible by design (Gill and DeGraaf 1974). Thus, design and placement of facilities in wildlands are major factors in providing most wildlife viewing opportunities.

In some cases, design considerations for wildlife viewing can be relatively simple and inexpensive. Providing roadside pullouts in areas where people are likely to view wildlife can provide an otherwise unavailable opportunity. A design decision to place picnic tables near desert washes or rocky outcroppings instead of in open areas is a simple matter, but can greatly increase viewing of birds, rodents and small mammals. In other cases, design can be used to take people into areas that are otherwise inaccessible. For example, boardwalks in swamps increase opportunities for viewing birds, fish and alligators. Even colonial nesting populations of birds such as egrets can be enjoyed when the design of trails and blinds places people in locations that do not disturb the birds.

More elaborate uses of design can bring people in very close proximity to animals in

their natural habitat. One example of this is the building of a visitor center in such a way as to provide underwater viewing of a stream and its inhabitants. Similar facilities could undoubtedly be developed to bring people close to terrestrial wildlife using the expertise of wildlife biologists and design and planning specialists.

Information

Perhaps the most powerful strategy available to management and often the least costly is provision of information to the viewing public. Information is powerful not only in the sense that it can significantly increase viewing opportunities for persons, but that, in addition, it can increase general awareness and aesthetic appreciation of wildlife and its ecology (Sharpe 1976). From environmental and interpretative education to simple signs and displays along trails, dissemination of information can take many forms and each of these can be a valuable tool in increasing human enjoyment of wildlife.

Laws, customs and regulations have traditionally been used to inform the public of their responsibilities toward wildlife. In wildlands such information often takes the form of use limits, prescribed use of certain areas, time restrictions and law enforcement. Yet, dissemination of information for protection purposes can have effects beyond the protection specifically intended. For instance, a large sign warns when a "Trogon Management Area" in the Chiricahua Mountains of southeast Arizona is being entered. The purpose of the sign is to inform people of the restricted nature of the area. As a result, however, many visitors who otherwise would have known nothing of the birds have become aware of their presence and are now viewing them. Such effects can be good or bad, depending on the circumstances, but the point is that resource managers must be aware of the real and powerful effects that communication of information can have on an area and the wildlife that lives there.

Often the most profitable kind of information that can be given to the public is on the predictable behavior and life history of animals. Such things as breeding and courtship activities, feeding habits, preferred food items and seasonal movements are but a few animal characteristics which when known can contribute greatly to viewing enjoyment. This kind of information disseminated in an interesting and responsible manner may not only help in locating wildlife for viewing, but it may also alert the viewers to particularly exciting times for observation in an animal's life. Numerous examples of using information to enhance enjoyment

of wildlife exist at interpretative facilities of various resource management agencies but much more could be done.

Wildlife Management

One of the most important tenets of wildlife management is that wildlife are a part of and largely controlled by their resource base. A species' success, or extinction, depends on the quality and availability of resources such as food, water, and cover (Leopold 1933). Thus a large part of wildlife management is habitat management. Depending on the goals involved, this management can provide ways of attracting wildlife and human impacts, or ways of providing escape or cover for wildlife. Since habitat management is a key factor in the survival and presence of a given species in an area, it is also critical to the provision of viewing opportunities.

Attracting wildlife to certain areas for viewing is certainly not a new idea. Tens of thousands of backyards are set up as feeding stations for precisely that purpose. However, few formal wildland management plans have used their resources to increase viewing opportunities. On the contrary, most management has involved manipulation in order to provide cover, or a buffer to cushion human impact (Schoenfeld and Hendee 1978). However, where habitat management has been used to enhance viewing, it has met with success. For example, bird sightings in some Appalachian forests have been increased through management efforts (Gill and DeGraaf 1974). Where vegetation was lacking along trails and in campgrounds, additional nesting vegetation has been planted and nesting boxes have been provided.

Controlled burning to diversify vegetation and generate new successional forest growth provides many of the requirements needed by wildlife and can significantly increase their presence and diversity in such areas. In western states, grazing patterns on range lands and in riparian areas can be manipulated to benefit wildlife and the provision of water in desert areas has a tremendous potential for attracting wildlife. If wildlife viewing is adopted as a land management objective the techniques of habitat manipulation most often used in providing sport hunting opportunities would have innumerable applications.

CONCLUSION

Wildlife is important to Americans for many reasons, but during the past few years we have experienced a tremendous growth in the appreciation of the aesthetic values of wild

animals. Along with this growth must come recognition by land use planners and managers that wildlife can be managed effectively as visual resources. The purpose of this presentation has been to set forth some of the important considerations which must be made in managing wildlife as a visual resource. Determining the tolerance levels of wildlife species and assessing human values for wildlife are critically important considerations. Important, too, are decisions as to which species are suitable for viewing and which are the most appropriate management strategies to provide viewing opportunities. These decisions demand cooperation among several professions: wildlife biology, social sciences, design, and resource management. Such an interdisciplinary effort is often difficult to initiate but its benefits in terms of providing aesthetic experiences for people can be great.

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