#94-83

Fish and Wildlife Service

Endangered and Threatened Species Listing and Recovery Priority Guidelines

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice.

SUMMARY: The U.S. Fish and Wildlife Service has developed guidelines governing the assignment of priorities to species for listing as Endangered and Threatened under the Endangered Species Act of 1973, as amended (Act) and development and implementation of recovery plans for species that are listed under the Act. The guidelines aid in determining how to make the most appropriate use of resources available to implement the Act.

EFFECTIVE DATE: The guidelines are adopted as of September 21, 1983.

FOR FURTHER INFORMATION CONTACT: Mr. John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240, (703/235-2771).

SUPPLEMENTARY INFORMATION:

General

The Service recognizes that it is necessary to assign priorities to listing, delisting, reclassification, and recovery actions in order to make the most appropriate use of the limited resources available to implement the Act. The following priority systems are based on an analysis of such factors as degree and immediacy of threat faced by a species, needs for furhter information, and species' recovery potentials. Inasmuch as such assessments are subjective to some degree, and individual species may not be comparable in terms of all considerations, the priority systems presented must be viewed as guides and should not be looked upon as inflexible frameworks for determining resource allocations. Draft guidelines were published on April 19, 1983 (49 FR 16756). These final guidelines are based on that draft.

Summary of Comments and Recommendations

Comments were received from the following organizations: the Center for Environmental Education (also representing Defenders of Wildlife, Humane Society of the United States, and Natural Resources Defense Council); Chevron U.S.A., Inc.; The Ecological Society of America; Environmental Defense Fund; the law firm of McCarty, Noone and Williams (representing the Colorado River Water Conservation District); Pacific Legal Foundation; Western Timber Association; and Wildlife Legislative Fund of America. Three of the comments expressed general support for the guidelines as proposed, without offering any recommendations for change. Substantive recommendations are addressed below:

Comments on Listing, Delisting, and Reclassification Priorities

Because of the detailed and specific nature of comments on the listing portion of the guidelines, they are addressed individually. The Center for Environmental Education *et al.* (CEE) recommended that the Service emphasize listing of qualified species over delisting of species no longer in need of protection, and also stated that delisting should be undertaken only for species with no present need for protection and unlikely to need such protection in the future. The Service agrees in principal with this comment. It should be recognized, however, that the retention of recovered or extinct species on the lists undermines the overall credibility of the lists, and the Service believes that it is justifiable to devote resources to the removal of such species when they are identified.

CEE also expressed concern that consideration of degree and immediacy of threat be tempered by a consideration of benefit from listing and availability of information. They favored subsuming immediacy within degree of threat and adding the other two considerations as "pragmatic" criteria in the system. The Service continues to believe that separate consideration of immediacy is warranted in order to help ensure that the system is most effective in

forestalling imminent extinctions. Although, as noted by CEE, this may result in listing resources being devoted to species whose recovery would be difficult and costly, such considerations are addressed in the recovery priority system, where recovery potential is expressly considered. Inasmuch as listing is an identification process, it appears to be most appropriate to proceed on a "worst-first" basis and list those species in greatest immediate danger of extinction first. Inclusion of a "benefit from listing" criterion would not, in the opinion of the Service, improve the priority system. The Service believes that all listed species derive some benefit from their identification as Endangered or Threatened. The magnitude of such benefits, however, are often largely unpredictable at the time of listing and would be difficult to quantify within the framework of a simple, workable priority system. The Service also rejects the inclusion of an "availability of information" criterion in the priority system because this seems unnecessary. Availability of information adequate to determine a species' status is necessary before any assessment of the appropriateness of listing can be addressed. To this extent, availability of information is implicit in any priority system that might be adopted, and its statement as an explicit criterion adds little, if anything, to the effectiveness of the system. CEE also expresses concern that, if information were to become available on a group of species in a particular area indicating that some were eligible for listing as Endangered and others as Threatened, the proposed system might preclude listing of all the eligible species in the area. The Service believes that it retains sufficient flexibility under the proposed system to proceed with listings of all the appropriate species in such a situation when this would increase the overall efficiency of the listing process by avoiding duplicative regulations. It should be recognized that the setting of listing priorities is an intermittent, rather than continuous, activity, and that information developed on a species believed to have a high priority may indicate that a lower priority is justified, but that this situation would not necessarily preclude its being listed while the status information was available and current. CEE further takes issue with the proposed system's "taxonomy" criterion, stating:

> It may be true that certain monotypic genera of plants such as the three redwoods that dominate particular ecosystems make an important and irreplaceable contribution to maintenance of the diversity of those ecosystems, but it doesn't follow that subspecies of coyote bush are any more interchangeable or less important in chaparral ecosystems. An ecological preference for preserving monotypic genera of animals makes even less sense. It appears that the California condor, a monotypic genus, may have less ecosystem impact that any of several butterfly subspecies.

The Service believes that the CEE comment confounds two different concepts. Taxonomy is included in the proposed system as a crude reflection of genetic distinctness in an attempt to provide for the preservation of maximum genetic diversity in ecosystems. Genetic distinctness of a taxon, however, may have little bearing on the importance of the taxon's impact on the functioning of the ecosystem to which it belongs. Judging a taxon's functional contribution to its ecosystem is generally much more difficult and does not lend itself to the framework of a simple priority system. The Service recognizes that there are aspects of species' biology, such as this one, that are not appropriately incorporated within the listing priority system, and it is for this reason that the system is not designed to be used in a rigid fashion. The Service has attempted to use the system flexibly so that important biological considerations that fall outside the scope of consideration of the system can figure into particular decisions on an *ad hoc* basis.

The CEE comment further disputes the appropriateness of giving consideration to monotypic genera in setting listing priorities, citing the large number of monotypic genera of hummingbirds and the apparent lack of accompanying genetic diversity in the group. The Service recognizes that the consideration given monotypic genera is only an approximate measure of genetic distinctness and that taxonomic concepts and standards vary among different groups of organisms. Nevertheless, if used with proper understanding of this lack of taxonomic uniformity, the criterion appears to be useful and is retained in the priority system. In practical terms, the Service expects to only rarely have need for the priority categories reflecting monotypic genera, because there are relatively few such taxa among the candidate species now recognized, but believes that such taxa generally reflect a level of genetic distinctiveness worth noting in the system. It should also be recognized that the system only sets *relative* priorities and that this is the lowest order of priority-setting, so that a species would at most move up one level in priority by virtue of its representing a monotypic genus, and species not representing monotypic genera would only rank below monotypic genera facing equally serious and immediate threats.

Finally, the CEE comment cites the 1982 Senate Committee Report on amendments to the Endangered Species Act and its stated preference only for listing species before subspecies and subspecies before populations as justification for deleting consideration for monotypic genera. CEE notes that the importance attached to monotypic genera in the proposed system appears to imply a value of species not provided for in Section 2 of the Act, which refers to "esthetic, ecological, educational, historical, recreational, and scientific" values of species. The Service believes that the Act's provision that species are, of educational and scientific value more than adequately justifies the modest consideration proposed to be given monotypic genera, which may represent highly distinct gene-pools deserving of continuing scientific and educational attention.

The Ecological Society of America (ESA) expressed general support for the proposed system, but made several recommendations for changes. ESA recommended that greater emphasis be placed on listing candidate species than on delisting species no longer in need of protection, noting that the possibility of removing a species from the list is always open, whereas extinction may foreclose the option of listing some species. The Service agrees in principal with this comment, as explained below in response to a similar comment from the Environmental Defense Fund.

ESA also observed that the average number of species per genus is generally lower among higher organisms, e.g., mammals and birds, than among various invertebrate groups and plants, because of differing taxonomic concepts and standards. They expressed concern that the consideration afforded monotypic genera in the proposed system could thus work to favor vertebrate species, as in the former system that was expressly rejected by Congress. The Service believes that the benefit of affording consideration to taxonomic distinctness, if the consideration is applied flexibly and with due appreciation of differing taxonomic standards, outweighs any bias that might be introduced into the priority-setting process.

In a related observation, ESA pointed out that there are highly distinct organisms that are nevertheless not placed in monotypic genera, and that the taxonomic criteria contained in the system are inflexible. The Service, as has been pointed out previously, does not view any facet of the system as inflexible, and will reserve the

discretion to assign appropriate priorities to highly distinct and genetically isolated organisms whether or not they constitute monotypic genera.

Finally, ESA requested a clarification of the applicability of the proposed system to unnamed populations. The Act includes populations of vertebrate animals in its definition of "species." Because this portion of the definition applies only to vertebrates, it appears inadvisable to incorporate it formally into the priority system. The Service intends to generally afford vertebrate populations the same consideration as subspecies, but when a candidate subspecies and a candidate population have the same numerical priority, the candidate subspecies will generally have priority.

The Environmental Defense Fund (EDF) expressed concern that too much time might be devoted to setting of species priorities, and that this might detract from actual implementing of listing tasks. The Service agrees that no more time than is necessary should be devoted to the assigning of priorities. Because of this consideration, the Service has deliberately attempted to formulate a system that is simple and that assigns species priorities in a straightforward manner without the need for complex analysis. EDF also expressed concern over the interrelationship of the three systems contained in Tables 1., 2., and 3. As explained below in the summary of comments on the recovery priority system, Tables 1. and 2. are largely independent of Table 3. Further, it is not possible, in the opinion of the Service, to formulate a direct relationship between the systems in Tables 1. and 2. As is explained in the narrative portion of the guidelines, it is anticipated that the need to delist species or reclassify them from Endangered to Threatened will be identified largely through mandated 5-year reviews or through petitions. Once such actions have been identified and assigned priorities, they will be considered for possible action within the Service's annual planning process.

Establishing specific criteria for ranking the priorities of listing proposals versus delisting proposals would take away the flexibility needed by the Service to efficiently apportion its resources. Although the same statutory criteria apply to make the listing and delisting determinations, the factual considerations for setting listing and delisting priorities are quite different. General rules cannot govern this complex mesh of priorities. However, it would generally be found that candidate species facing immediate, critical threats should have priority for listing over competing delisting proposals under consideration at the time. Likewise, a delisting proposal for a recovered species that would eliminate unwarranted restrictions on significant, identifiable activities may, in appropriate instances, take precedence over listing proposals for species not facing severe, imminent threats. In deciding on which proposals will receive priority, the Service must examine the overall "mix" of potential listings and delisting and assess the relative priorities of the various proposals in light of that "mix." Of course, this assessment process will constantly change as new candidate species are brought to the Service's attention and as listed species attain recovery or become extinct.

EDF also recommended that terms used in the proposed system be more precisely defined and, in particular, recommended that the "degree of threat" criterion be quantified in a way that parallels the standards for finding "jeopardy" under Section 7 of the Act. The Service believes that the circumstances applying to most species are individualistic enough as to be incapable of precise definition or quantification beyond the level proposed. In particular, with regard to determinations of degree of threat, the parallel with considerations under Section 7 of the Act seems faulty. Consultations under Section 7 address known and carefully identified actions that may affect the survival of a species. Degree-of-threat considerations for listing a species may address highly speculative future actions, or more frequently, documented decline of a species for poorly-known or unknown reasons. Such considerations often cannot be quantified, and an attempt to do so might only serve to make priority-setting, rather than listing, the main activity of the program, as feared by EDF (see above). The Service believes that it has access to sufficient biological expertise to permit the admittedly loose definitions of terms to be interpreted appropriately.

EDF also recommended that "degree" be replaced by "magnitude" under "threat." The Service agrees that the latter term is somewhat more precise, and has altered the final guidelines accordingly.

EDF expressed concern that the "immediacy" criterion for threat not be applied so rigidly that Endangered species would always be listed in preference to Threatened species, which might be more recoverable. In general, the Service intends that species judged Endangered should be listed before those judged Threatened. Once again, it is worth noting that listing is an identification process and, other considerations being equal, should proceed on a "worst-first" basis. Nevertheless, the Service intends that species originally judged to be faced with immediate threats, but which prove not to face such immediate threats when sufficiently complete status information is developed, may be listed nevertheless in order that current status information need not be gathered again later on.

EDF supported the concept of immediacy of threat as a useful addition to the priority system but observed that:

> Specifically, we are concerned that the immediacy of threat criterion may ultimately rely on and be distinguished by the availability of scientific information about such threats. Because such threats are not well-known, however, a dearth of information may preclude necessary and expeditious action by the Service. We therefore suggest that the immediacy of threat criterion should be defined and delimited by what are necessarily somewhat subjective best judgments about the expected temporal sequence and realization of a threat: not just the known or unknown occurrance of such threats. We believe the Service recognizes this in its attempt to distinguish two categories ("actual identifiable" versus "potential, intrinsically vulnerable") but falls short in that effort by distinguishing "latent" from "potential" by the presence or absence of information available about such threats (e.g., "known occurrence or lack of * * *."). Hence, to the maximum extent possible, judgments about the immediacy of threat should be guided by how quickly the threat posed by any one of the five statutory factors may affect those populations of a candidate species at risk.

The Service believes that such a recommendation, if adopted, would render the system unworkable. It could make priorities responsive to highly speculative but rapidly-realized threats such as earthquake or volcanic eruption. The Service prefers in setting priorities to rely on known or reasonably predictable threats to a species' survival and known vulnerability to reasonably probable future conditions.

Because they believe that all threats are by definition potential, EDF recommends that "potential" be replaced by "non-imminent" in the system. Insomuch as a threat in this context is one of extinction, and is only realized when a species is extinct, this is a point well taken by the Service. The final system is altered accordingly.

EDF also recommended that an "ecosystem" criterion be incorporated into the system, similar to the "conflict" criterion in Table 3. This would be intended to identify species of ecologic

importance and to accommodate the provision of the Senate Environmental and Public Works Committee's report on the 1982 amendments to the Act:

> Biologically it makes sense to treat all taxonomic groups equally or even to place some special emphasis on protecting plants and invertebrates since they form the bases of ecosystems and food chains upon which all other life depends.

S. Rep. No. 413, 97th Cong., 2d Sess. 14 (1982).

The Service fully appreciates the importance of species that are ecologically significant, and intends to give this importance due consideration in determining listing goals, but does not consider this an appropriate element in the listing priority system. This kind of information is seldom available at the time a species is considered for listing and, if included, would only raise it in priority above species that were equal in all other respects under the system. In addition, the Service believes that all species are of some importance to ecosystems, so that a simple "yes-or-no" decision would rarely be possible. Thus, it appears most reasonable to consider "ecosystem importance" on an *ad hoc* basis outside the formal priority system, when such importance is identifiable. EDF also requests clarification of the consideration to be given vertebrate populations under the priority system. As explained above in reply to a similar enquiry from ESA, the Service intends that vertebrate populations generally be accorded the same consideration as that given subspecies.

Finally, EDF suggests that species may be identified for delisting or reclassification from Endangered to Threatened by virtue of their having met objectives for such action in recovery plans. The Service certainly intends to consider identified recovery goals in planning delistings or reclassifications, but will assign priority for such actions according to the criteria in Table 2.

The Pacific Legal Foundation (PLF) supported development of priority guidelines, expressing the opinion that the Endangered Species Act " * * * has been misused by some as a vehicle by which major construction projects and reasonable development of our natural resources have been delayed or stopped." The Service agrees that guidelines are desirable as a method of helping to ensure appropriate use of resources. The Service has always attempted to proceed on the basis of the best scientific knowledge available in implementing the Act, whether through the listing or recovery of Endangered and Threatened species. PLF also recommends that all listing, delisting, or reclassification actions be undertaken in strict compliance with the guidelines and that, for every species that is listed, reclassified, or delisted, a discussion of each of the criteria in the relevant priority system table should be supplied. The Service, as has been mentioned above, does not view the priority systems as dictating actions so much as providing flexible guides in making rational decisions. In this light, it is counterproductive to explain how each action fits the priority system so long as species subject to the actions qualify under the conditions of the Act.

PLF also expressed the opinion that is redundant to consider both "degree" and "immediacy" of threat. As has been explained above, the Service continues to believe that the distinction is a useful one.

Finally, PLF requested a clarification to indicate that, " * * * no protection is afforded individual gene pools below the taxonomical level of subspecies." The Service notes that, in the case of vertebrate animals the Act specifically provides for the listing of populations. The recommendation of PLF in this instance would thus contradict the Act. As explained above, the Service intends to generally assign vertebrate populations the same priority of consideration as that afforded subspecies.

Comments on recovery priorities. Several of the comments on the recovery priority system are conveniently categorized and addressed topically below:

1. *Taxonomy.* Some concern (two comments) was expressed concerning the use of taxonomic uniqueness as a criterion for determining recovery priority. This issue has been addressed in the above section for listing priority.

In one comment, it was recommended that a better measure than taxonomy would be the species' ecological significance. For this purpose, a species with "high" ecological significance would be one for which recovery measures would likely benefit the conservation of the listed or candidate species as well. It was recommended that Ecological Significance should substitute for Taxonomy in Table 3.

To the extent possible, the Service has adhered to this philosophy of considering ecosystems in its recovery plans. This is evident by the following recovery plans (includes both draft and approved plans) which utilize an ecosystem or multi-species approach: Antioch Dunes (three species), Eureka Valley Dunes (two species), Hawaiian Forest Birds (four species), Hawaiian Sea Birds (four species), Hawaiian Water Birds (three species), Kauai Forest Birds (six species), San Bruno Mountain (two species), San Clemente Island (seven species), NW Hawaiian Islands Passerine Birds (three species), and the San Marcos River Endangered and Threatened species (four species), (technical review draft stage).

Because ecosystems are already considered and it is difficult to quantify "Ecosystem Significance," the Service elects not to substitute Ecosystem Significance for Taxonomy in Table 3.

2. *Recovery potential and associated costs of recovery.* Two comments expressed concerns about the recovery potential of a species and an efficient investment of resources. The Service is in agreement with the concerns expressed and will expand the narrative of the guidelines to accommodate this concern. Priority will be given to those species and projects that offer the greatest potential for success. The recovery potential of a species will be determined by consideration of the following criteria:

	High recovery potential	Low recovery potential
Biological and ecological limiting factors.	Well understood	Poorly understood.
Threats to species existence.	Well understood easily alleviated	Poorly understood or pervasive and difficult to alleviate.
Management needed [1]	Intensive management not needed, or techniques well documented with high probability of success.	Intensive management with uncertain probability of success, or techniques unknown or still experimental.

[1] When possible and biologically feasible, data pertinent to the recovery of a particular taxon will be extrapolated from known ecological requirements or management techniques for closely related taxa.

Regardless of this recovery potential, the Service will strive to undertake for every high threat species those minimum survival efforts which will at least stabilize its status and prevent its extinction. Once such "emergency" measures have been taken, further recovery work designed to eventually lead to delisting of the species will be evaluated according to the recovery potential described above.

Several specific comments are addressed below:

Chevron expressed a desire to have greater public involvement in the preparation of recovery plans. This has been done to a limited degree in the past for those plans where a conflict, or

potential conflict, has been known to exist, e.g., Northern Rocky Mountain wolf, San Bruno Mountain, San Marcos River Endangered and Threatened species, and the small whorled pogonia. The Service will continue to invite public participation for those species where conflicts or controversies are known to exist.

PLF stated that it is unclear (in Table 3) if there is any differing treatment between Endangered and Threatened species. The distinction between Endangered and Threatened species occurs in the Degree of Threat criterion. It is generally understood that the Degree of Threat is greater for Endangered species than for Threatened species.

PLF also suggested that an additional column be added to Table 3 that would give greater priority in the preparation of recovery plans to those species which are Endangered throughout all their range over those species that are Endangered throughout a portion of their range. Although it is not specifically stated, this concern is reflected in the first criterion (Degree of Threat) of Table 3. A species which is Endangered throughout its range would be listed higher on the degree of threat scale than would be a species Endangered throughout a portion of its range. In reality, most species which are listed are Endangered throughout their ranges. Even though it is legally acceptable to list populations of vertebrates, this practice represents the exception rather than the rule.

ESA recommended that for listing and recovery efforts, populations and named subspecies should have the same priority, since the possession of a name is often based more on tradition than on any meaningful measure of distinctiveness. This issue is addressed in the above Listing Section. In addition, the above reply to a comment from PLF indicates that priority be given to species which are Endangered throughout all their range rather than just to a population. Populations will be addressed when there is sufficient justification, but this is the exception rather than the rule.

EDF expressed the hope that the Service will devote most of its resources to implementing listing and recovery planning efforts and not to prioritizing such tasks. The listing portion of this concern is addressed in the earlier section of this article. The Service is mandated by the Endangered Species Act, as amended, to the preparation of recovery plans giving priority to those species most likely to benefit from such plans. In doing so, the Service will also focus on those species that are, or may be, in conflict with construction or other development projects or other forms of economic activity. The proposed guidelines are intended to provide a means to identify, and rank, those species most likely to benefit from such plans. It is also necessary that the limited resources for the implementing of recovery actions be allocated in the most judicious fashion possible. This can only be possible by having a sound system for ranking proposed recovery actions.

EDF commented that it remains unclear specifically how the three priority models (Tables 1, 2, and 3) relate to one another. Table 3, Recovery Priority, is independent of Tables 1 and 2. It is to be expected that many species would have a similar ranking when evaluated by Tables 1 and 3. However, differences between species, or recovery potential could reduce these similarities of ranking. This concern is also addressed under listing comments, above.

EDF also found the tasks priority—recovery priority system somewhat confusing. They agreed that the Service's limited resources should be distributed equitably to all listed species, but were not sure specifically how this will be accomplished. They requested clarification of this situation. They commented that, "presumably recovery plans for species facing the highest degree of threat will designate more priority 1 tasks than those plans for species jeopardized by a lower degree of threat."

Generally, plans for species facing the highest degree of threat will designate more Priority 1 tasks than those plans for species jeopardized by a lower degree of threat. However, exceptions may occur. For example, a highly-Threatened isolated desert fish may be in imminent danger from siltation associated with adjacent cattle grazing. Possibly only one task, i.e., fencing, would warrant a Priority 1 designation.

Furthermore, as indicated in the earlier summary of comments on recovery potential and associated costs regardless of the recovery potential, the Service will strive to undertake for every high-threat species those minimum survival efforts which will at least stabilize its status and prevent its extinction. Once such "emergency" measures have been taken, further recovery work designed to eventualy lead to delisting of species will be evaluated according to the recovery potential described above. To ensure consistency in the utilization of the recovery priority system, all draft recovery plans will be reviewed by the same office at the Washington level. Additionally, all funding proposals for implementation of recovery actions will also be reviewed by the same office at the Washington level.

Priority Guidelines

Listing, Delisting, and Reclassification Priorities. In the past, the Service has informally assigned priorities for listing species as Endangered or Threatened on the basis of several different systems. In 1979, a report to Congress (General Accounting Office, 1979) recommended that the Service officially adopt a listing priority system based primarily on consideration of the degree of threat faced by a species. Following this report, the 1979 Amendments to the Endangered Species Act (Pub. L. 96–159, 93 Stat. 1241) required that guidelines be established and published in the **Federal Register**, including "* * * a ranking system to assist in the identification of species that should receive priority review for listing * * *." Such a system was adopted (U.S. Fish and Wildlife Service, 1980), but not published in the **Federal Register**. This system was subsequently revised (U.S. Fish and Wildlife Service, 1981) so that priority for listing would be assigned within a given category of Degree of threat so as to generally favor vertebrate animals ("higher life forms") in the following order: mammals, birds, fishes, reptiles, amphibians, vascular plants, invertebrates.

The 1982 Amendments to the Endangered Species Act (Pub. L. 97–304) retained the requirement that guidelines be published. However, the amendments and the accompanying Conference Report necessitated revision of the 1981 system. Specifically, the amended Act requires that the priority system address delisting as well as listing of species and the Conference Report stated opposition to the adoption of any system that would give consideration to whether species were "higher or lower life forms." The present system is intended to satisfy the requirements of the amended Act.

1. *Listing and reclassification from Threatened to Endangered.* In considering species to be listed or reclassified from Threatened to Endangered, three criteria would be applied to establish 12 priority categories as follows (Table 1):

TABLE 1.—PRIORITIES FOR LISTING OR RECLASSIFICATION FROM THREATENED TO ENDANGERED

Threat		Taxonomy	Priority
Magnitude	Immediacy		
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies	6
Moderate to low	Imminent	Monotypic genus	7
		Species	8
		Subspecies	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies	12

Explanation. In keeping with the recommendation of the General Accounting Office (GAO) and the Service's previous policy, the first criterion would be magnitude of threat. Species facing the greatest threats to their continued existence would receive highest listing priority.

The second criterion, immediacy of threat, is intended to assure that species facing actual, identifiable, threats are given priority over those for which threats are only potential or that are intrinsically vulnerable to certain types of threat but not known to be presently facing such threats. In assigning a species to a priority category under immediacy of threat, the Service would consider the known occurance or lack of documented detrimental trade or harvest, habitat modification, significantly detrimental disease or predation, and other present or potential threats.

The third criterion is intended to devote resources on a priority basis to those species representing highly distinctive or isolated gene pools, as reflected by the taxonomic level at which they are recognized. The more isolated or distinctive a gene pool, the greater contribution its conservation is likely to make to the maintenance of ecosystem diversity. This final criterion implements the Act's stated concern for ecosystem conservation by recognizing the distinctness denoted by assignment of a species to a monotypic genus, as well as the relative distinctness denoted by the recognition of a taxon at the level of species or subspecies.

2. *Delisting and Reclassification from Endangered to Threatened*—The Service currently reviews listed species every 5 years in accordance with Section 4(c)(2) of the Act to identify any that might qualify for removal from the lists, or reclassification. When species are identified in the curse of these periodic reviews as warranting deletion from the lists or reclassification from Endangered to Threatened, priority for preparation of regulations would be assigned according to the system below (Table 2), employing two criteria to yield six categories. It should be pointed out that the priority numbers in Table 1 and 2 are not comparable.

TABLE 2.—PRIORITIES FOR DELISTING AND RECLASSIFICATION FROM ENDANGERED TO THREATENED

Management impact	Petition status	Priority
High	Petitioned action	1
	Unpetitioned action	2
Moderate	Petitioned action	3
	Unpetitioned action	4
Low	Petitioned action	5
	Unpetitioned action	6

Explanation. In considering species for possible delisting or reclassification from Endangered to Threatened, this system is intended to focus on species whose original classification has become inappropriate due to changed circumstances or new information. Priority considerations would concern whether or not maximum protection under the Act is necessary any longer and whether the listing causes an unwarranted management burden or unnecessarily restricts human activities.

The first consideration of the system accounts for the management burden entailed by the species' being listed, which, if the current listing is no longer accurate, could divert resources from species more deserving of conservation efforts.

Because the Act mandates timely response to petitions, the system secondly considers whether the Service has been petitioned to remove a species from either of the lists or to reclassify it from Endangered to Threatened. This consideration is also intended to assign highest priority to those species whose delisting is likely to remove the greatest impacts on human activities inasmuch as such species would also be likely to be subjects of petitions.

It is not intended that existence of a petition or identified management impact with regard to a given species would automatically direct or mandate any particular decision regarding its removal from the lists or its reclassification. The priority system is intended only to set priorities for the development of rules for species that no longer satisfy the listing criteria for their particular designation under the Act. The decision regarding whether a species will be retained on the lists or in the Endangered category must still be based on the considerations contained in Section 4(a)(1) of the Act and 50 CFR 424.11.

Recovery Plan Preparation and Implementation Priorities. The importance of recovery plans as guiding documents for recovering species has been recognized since 1972, when the Service developed its first draft recovery plan. Although the Service strongly encouraged their development, and some plans were developed, preparing a recovery plan for a species was elective until the 1978 Amendments to the Act required the development of a recovery plan for every listed Endangered and Threatened species, except when the Secretary determines that "* * * such a plan will not promote the conservation of the species."

Through fiscal year 1977, recovery plan development was not based on any established priority system. During fiscal year 1977, the Service developed a draft recovery priority system to be used as a guide for recovery planning and resource allocation. The system included three criteria—degree of threat, recovery potential, and taxonomic status, arranged in a matrix of 12 categories. The 1979 GAO report recommended that this draft recovery priority system be approved and implemented.

The present system expands the taxonomy criterion to include "monotypic genus." This would expand the matrix to yield 18 species recovery numbers (see Table 3). As described in the preceding section on listing, this addition is intended to devote resources on a priority basis to these species representing highly distinctive or isolated gene pools.

The previous system (as referenced in the 1979 GAO report) was adopted in 1980 (U.S. Fish and Wildlife Service, 1980). This system was subsequently revised to give priority within the existing matrix to taxonomic groups (higher life forms) as in the 1981 listing priority system. The system presently adopted deletes this preference for higher life forms and adds a new criterion on conflict required by the 1982 Amendments.

In particular, the 1982 Amendments specify that recovery plans shall, to the maximum extent practicable, give priority to those Endangered species or Threatened species most likely to benefit from such plans, particularly those species that are, or may be, in conflict with construction or other development projects or other forms of economic activity. The present system is intended to satisfy the requirements of the amended Act. It utilizes a modification of the three-factor system originally adopted by the FWS in 1980 but includes a fourth factor, conflict,

which, if applicable, elevates the species in priority for development of a recovery plan and is to be an additional element in determining what actions are to be implemented for the recovery of a species. This fourth factor gives priority within each category in the preparation of recovery plans to those species that are, or may be, in conflict with construction or other development projects or other forms of economic activity. Thus, the species will retain its numerical rank and will acquire the letter designation of "C" indicating conflict, e.g., priority 7 would become 7C. The categories would be assigned as follows:

TABLE 3.—RECOVERY PRIORITY

Degree of threat and recovery potential	Taxonomy	Priority	Conflict
High:			
High	Monotypic genus	1	1C, 1.
High	Species	2	2C, 2.
High	Subspecies	3	3C, 3.
Low	Monotypic genus	4	4C, 4.
Low	Species	5	5C, 5.
Low	Subspecies	6	6C, 6.
Moderate:			
High	Monotypic genus	7	7C, 7.
High	Species	8	8C, 8.
High	Subspecies	9	9C, 9.
Low	Monotypic genus	10	10C, 10.
Low	Species	11	11C, 11.
Low	Subspecies	12	12C, 12.
Low:			
High	Monotypic genus	13	13C, 13.
High	Species	14	14C, 14.
High	Subspecies	15	15C, 15.
Low	Monotypic genus	16	16C, 16.
Low	Species	17	17C, 17.
Low	Subspecies	18	18C, 18

Explanation. The first step for the conservation of any species is to prevent its extinction. Thus the species with the highest degree of threat have the highest priority for preparing and implementing recovery plans. A species can be put in either a high, moderate, or low category, which represents the degree of threat. The high category means extinction is almost certain in the immediate future because of a rapid population decline or habitat destruction. Moderate means the species will not face extinction if recovery is temporarily held off, although there is continual population decline or threat to its habitat. A species in the low category is rare, or is facing a population decline which may be a short-term, self-correcting fluctuation, or the impacts of threats of the species' habitat are not fully known.

Within the above categories, resources should be used in the most cost-effective manner. Priority for preparing and implementing recovery plans would go to species with the greatest potential for success. Recovery potential is based on how well biological and ecological limiting factors and threats to the species' existence are understood, and how much management is needed.

Priority will be given to those species and projects that offer the greatest potential for success. The recovery potential of a species will be determined by consideration of the following criteria:

	High recovery potential	Low recovery potential
Biological and ecological limiting factors.	Well understood	Poorly understood.
Threats to species' existence.	Well understood easily alleviated.	Poorly understood or pervasive and difficult to alleviate.
Management needed [1].	Intensive management not needed, or techniques well documented with high probability of success.	Intensive management with uncertain probability or success, or techniques unknown or still experimental.

[1] When possible and biologically feasible, data pertinent to the recovery of a particular taxon will be extrapolated from known ecological requirements or management techniques for closely related taxa.

Taxa that are most genetically distinct should receive priority within any given category of degree of threat. Monotypic genera will be given priority over species, subspecies, or populations. This last criterion is in recognition that the loss of the most genetically distinct taxa is of greater significance than the loss of less genetically distinct taxa. That is, for example, the loss of a full genus is of greater significance than the loss of a single species or population of that species.

The second requirement concerning recovery plans mandated by the 1982 Amendments is that priority be given to those species "that are, or may be, in conflict with construction or other development projects or other forms of economic activity." This requirement will be satisfied by having any listed species or subspecies, lacking a recovery plan, and identified as being, or having a recognizable potential for being, in conflict with a construction or development project, automatically qualify for the conflict column of the matrix. This species would then be considered high priority for having a recovery plan developed.

Conflict with construction or other development projects would be identified in large part by consultations conducted with Federal agencies under Section 7 of the Act. Any species identified through Section 7 consultations as having generated a negative biological opinion which concluded that a given proposed project would violate Section 7(a)(2) of the Endangered Species Act or resulted in the recommendation of reasonable and prudent alternatives to avoid a negative biological opinion, would be assigned to the conflict category and would be given priority over all other candidates for recovery plan preparation and implementation in the same numerical category not involving a conflict. The Service would also contact other Federal agencies for their identification of listed species that are, or may be, in conflict with construction or other development projects or other forms of economic activity. Any species identified by this process would be assigned to the conflict category and would also be given priority over other candidates for recovery plan preparation and implementation within the same numerical category (see Table 3) not involving a conflict.

A task priority (1–3) is used in conjunction with species recovery numbers (1–18 or 1C–18C) in ranking those tasks that need to be accomplished for the recovery of a species. This combination results in a two-tiered priority system (species recovery number-task priority number) which serves to distribute the resources of the program equitably for all listed species. Recovery tasks will be assigned priorities based on the following:

1. *Priority 1.* An action that must be taken to prevent extinction or to prevent the species from declining irreversibly.

2. *Priority 2.* An action that must be taken to prevent a significant decline in species population/habitat quality, or some other significant negative impact short of extinction.

3. *Priority 3.* All other actions necessary to provide for full recovery of the species. (Recognizing that the ultimate success of the Program is species recovery, priority 3 action likely to lead to full recovery and delisting of a species in the foreseeable future will tend to rank higher than other priority 3 actions.)

The highest priority activity (research proposal, permit proposal, etc.) is a 1C–1 priority (species recovery number 1C; task priority number 1).

This is an action necessary to prevent extinction for a monotypic genus, with a high recovery potential, under a high degree of threat and in conflict with a construction or other development project. If resources were channeled into activities based solely on the recovery priority of a species, these resources would be utilized primarily for species with a recovery priority of 1C to 6. However, when the species' priority is viewed in conjunction with the task priority, we are able to identify the most critical activities for all species. This system would insure that resources are

distributed to the most critically Endangered species and would recognize those species approaching recovered status.

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