

MONDAY, APRIL 10, 1978  
PART III



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**ENDANGERED  
SPECIES SCIENTIFIC  
AUTHORITY**

**EXPORT OF BOBCAT,  
LYNX, RIVER OTTER  
AND AMERICAN  
GINSENG**

**Guidelines and Information  
Needs for 1978-1979 Export  
Findings**

Endangered  
Species  
Scientific  
Authority  
Export of Bobcat,  
Lynx, River Otter  
and American  
Ginseng



[4310-55]

# ENDANGERED SPECIES SCIENTIFIC AUTHORITY

## EXPORT OF BOBCAT, LYNX, RIVER OTTER, AND AMERICAN GINSENG

Guidelines and Information Needs for 1978-1979 Export Findings

AGENCY: Endangered Species Scientific Authority.

ACTION: Notice.

SUMMARY: This notice states in general terms what types of information the Endangered Species Scientific Authority (ESSA) will need in order to support a finding in favor of export of bobcat, lynx, and river otter taken in 1978-1979 and American ginseng harvested in 1978.

ADDRESS: Comments should be addressed to the Executive Secretary, Endangered Species Scientific Authority, 18th and C Streets NW., Washington, D.C. 20240.

## FOR FURTHER INFORMATION CONTACT:

Dr. William Y. Brown, Executive Secretary, Endangered Species Scientific Authority, 18th and C Streets NW., Washington, D.C. 20240, 202-343-5687.

BACKGROUND: The Convention on International Trade in Endangered Species of Wild Fauna and Flora, 27 U.S.T. 1087, (Convention) and its implementing regulations, 50 CFR part 23, control international trade in animal and plant species included in each of three Appendices, listed in § 23.23. The Convention Appendices are distinct from the list of species issued under the Endangered Species Act of 1973, 16 U.S.C. 1531-1543.

Appendix II includes generally those species not necessarily now threatened with extinction, but which may become so unless trade in them is subject to strict regulation. In addition, Appendix II may include species similar in appearance to those species included because of biological jeopardy.

Bobcat (*Lynx rufus*), lynx (*Lynx canadensis*), and river otter (*Lutra canadensis*) were included in Appendix II effective February 4, 1977. The animals were included as part of the entire family Felidae and the subfamily Lutrinae. American ginseng (*Panax quinquefolius*) was included when the Convention became effective on July 1, 1975.

The Federal Wildlife Permit Office of the U.S. Fish and Wildlife Service serves as the U.S. Management Authority (MA) for the Convention. Before the MA may issue permits to export specimens of Appendix II species, the MA must be satisfied that specimens were not obtained in violation of domestic law. In addition, the

Endangered Species Scientific Authority (ESSA) must advise the MA that the export will not be detrimental to the survival of the species (Convention, Article IV 2).

The ESSA has established in its Interim Charter the following general criteria for determining whether an export will not be detrimental to the survival of a species:

1. Whether similar export \* \* \* has occurred in the past, and has not reduced the numbers or distribution of the species, nor caused signs of ecological or behavioral stress within the species, or in other species of the affected ecosystem.
2. Whether life history parameters of the species and the structure and function of its ecosystem indicate that the present frequency of export \* \* \* will not appreciably reduce the numbers or distribution of the species, nor cause signs of ecological or behavioral stress within the species or in other species of the affected ecosystem.
3. Whether such export \* \* \* is expected to increase, decrease, or remain constant in frequency.

(ESSA Interim Charter, Article IV. C., 42 FR 35801.)

Through several steps summarized in a notice of March 16, 1978 (43 FR 11082-11093), the ESSA has evaluated the status of bobcat, lynx, river otter, and American ginseng in each State, making findings and establishing conditions concerning detriment to survival.

In a separate notice of March 16, 1978 (43 FR 11097), the ESSA gave notice of procedures to be followed in 1978-1979 for public participation in decisions of the ESSA concerning commercial export of these four species. That notice stated that on or about April 10, 1978:

The ESSA will give notice in the FEDERAL REGISTER of the types of biological data, harvest or export information, and any other information the ESSA will need in order to find in favor of exports of the bobcat, lynx, river otter, and American ginseng. Copies of this notice will be sent to State fish and wildlife agencies and other interested parties. Thirty days will be provided for comment.

The present notice is that referred to in the preceding paragraph.

## GUIDELINES FOR ESSA FINDINGS IN FAVOR OF EXPORT

*Relationship between export and harvest.* Prior to issuance of export permits by the MA, the ESSA must advise that the export "will not be detrimental to the survival of the species." This provision recognizes that harvest may be directly related to export, and that certain levels of harvest may be detrimental to a species' survival.

The relationship between export and harvest is not well known for these species, particularly the bobcat. For lynx (mostly from Alaska) and river otter a subjective assessment of indus-

try and State sources suggests that nearly all pelts and roots are exported. For bobcat, estimates range from 50 percent to 80-90 percent exports, and for American ginseng estimates range up to 95 percent exports. Besides uncertainty as to the percentage of harvested pelts and roots that are exported, there is also uncertainty as to the extent the domestic market will absorb additional pelts or roots, and at what price, if export is restricted. Ultimately, total demand in volume and price, coupled with availability of the resource, should determine harvest effort. Harvest effort may depend strongly on variations in weather and availability of alternate income. These factors are poorly known. The recent and sharp parallel rises in price and harvest of these species, apparently in response to foreign demand, strongly suggest that export restriction will reduce harvest, perhaps substantially. Any more specific conclusion is probably unwarranted. Given the above, the ESSA must consider impact of harvest within States of origin.

## BIOLOGICAL REVIEW

The phrase "not detrimental to the survival of the species" requires operational definition, not expressly given in the Convention. Article 4, Par. 3 of the Convention provides some clarification:

A Scientific Authority in each Party shall monitor both the export permits granted by that State (member country) for specimens of species included in Appendix II and the actual exports of such specimens. Whenever a Scientific Authority determines that the export of specimens of any such species should be limited in order to maintain that species throughout its range at a level consistent with its role in the ecosystems in which it occurs and well above the level at which species might become eligible for inclusion in Appendix I (emphasis added), the Scientific Authority shall advise the appropriate Management Authority of suitable measures to be taken to limit the grant of export permits for specimens of that species.

The above provision clarifies the ESSA's responsibilities in regard to findings concerning detriment to survival, and asserts a continuing obligation to ensure that export does not become detrimental. These provisions suggest a conservation objective similar to optimum sustainable population (OSP). The latter concept appears as a definition in the Marine Mammal Protection Act of 1972:

\* \* \* the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the optimum carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element. 16 U.S.C. 1362(9).

These conservation objectives defined in the Marine Mammal Protection Act and in the Convention are



meant to take into account ecological contingencies that may be complex and poorly understood. These recent concepts have developed largely out of scientific criticism of maximum sustained yield (MSY), summarized by the Council on Environmental Quality:

Quotas have generally been founded on the concept of maximum sustainable yield (MSY), which is defined as the largest catch that may be taken year after year without reducing a population. As it is usually applied, this concept is too simplistic to serve as a scientific basis for stock management.

The MSY concept generally involves an assumption that the unexploited population level is stable or at least predictable. In fact natural cycles may alter populations considerably from 1 year to the next. The assumption therefore can lead to overexploitation during natural population downswings. This apparently occurred with the anchovy catch off Peru in 1972.

Simply applied, MSY disregards the changes in age distribution, sex ratio, social behavior, and reproduction that may occur when a \*\*\* population is exploited. Further, MSY is usually concerned with a single harvested species and not with its competitors, predators, or prey. A competitive species, for example, may move in and replace one that is overharvested, thus blocking recovery of the original species.

Basic to MSY and other theories that consider one species alone is the notion that a population recovers when exploitation stops or diminishes. The evidence indicates that some will not. When the California sardine was overharvested into commercial extinction by the 1950's, the anchovy replaced it, and the sardine population did not recover. Only the gray whale, of all the great whales grossly reduced by overharvest, has recovered significantly.

In February and April 1975, the U.S. Appeal of the World Wildlife Fund, the Ecological Society of America, the International Union for Conservation of Nature and Natural Resources, and the Smithsonian Institution and the Council on Environmental Quality sponsored workshops on developing a better scientific basis for management of fisheries and other critical living resources. The major conclusion was that no simple formula, such as MSY, is suitable. Rather, scientific management must consider a species in relation to its ecosystem, and any system must conform to four principles:

1. Resources should be managed to prevent irreversible or long-term adverse changes.
2. Because of inadequacies in knowledge and in management institutions, management decisions should include a safety factor.
3. Conservation of one resource should not cause waste of another.
4. Use of a wild living resource should be preceded by survey and analysis of the species and ecosystem involved and should be accompanied by continuous monitoring and assessment, the results to be made available to the public. (Sixth Annual Report of the Council on Environmental Quality, December 1975, pp. 405-407.)

Apparently, harvest consistent with these principles should maintain populations above the level at MSY. How much above, short of exceeding the carrying capacity of the environment,

may not be clear even for well studied species. Adoption of a safety factor may be appropriate, allowing flexibility to fine-tune harvest objectives when populations become better understood, and their status more closely monitored.

Application of these principles is difficult and uncertain for species such as bobcat and river otters, where population estimates are only approximate. Special considerations may be needed for lynx in Alaska, whose populations fluctuate dramatically in relation to snowshoe hare populations. These populations apparently have little or no juvenile recruitment during most of the decline in population, and have a high rate of recruitment generally insensitive to harvest during population increase. Virtually nothing is known about populations and harvest levels of American ginseng. In 1977-1978, population estimates for bobcat and river otter partially supported ESSA findings in favor of export, when the reported harvests were well under estimates of MSY.

As one alternative to evaluating impact of harvest by comparing harvest level with population size, the ESSA may rely to some extent upon analysis of population age structure. Given several assumptions, age structure permits estimation of recruitment and loss in a population, indicating whether the population is increasing, decreasing, or stable. The results of this analysis can then be related to harvest (cf. Tabor and Wight, 1977, J. Wildl. Mgmt., 41: 692). Such analyses would be useful if done annually, particularly if coupled with habitat evaluation and with comparison of current density with density at carrying capacity. An approach of this kind has been recommended by a Working Group on the animal species (see 43 FR 11083):

#### MINIMUM REQUIREMENTS FOR BIOLOGICAL INFORMATION

1. Population trend information \*\*\* the method of determination to be a matter of State choice.
2. Information on total harvest of the species.
3. Information on distribution of harvest.
4. Habitat evaluation.

As an interim alternative to the above, the ESSA may rely primarily upon past reported harvest. This approach assumes that yield per unit harvest effort will decrease with population decline. Such an assumption of density dependence is intuitively reasonable, but has not been proven. Furthermore, this method by itself does not estimate the level at which the population is maintained. However, data on total harvest and yield per unit effort are relevant and can be very useful in ESSA findings, particularly if harvest

is reported accurately, and if data indicate harvest effort of individual trappers, hunters and collectors, as well as total numbers engaged in harvest.

#### MANAGEMENT INITIATIVES

For populations of bobcat, lynx, and river otter in certain States, available biological information may allow the ESSA to find in favor of exports within the terms of the preceding section.

For populations in certain other States, available population and harvest information is lacking, is very limited, or indicates that past harvest has been detrimental. For these populations, management practices must ensure conservation of these species, consistent with the preceding section.

For all four species, certain basic initiatives on the part of State conservation agencies are likely to weigh in favor of an ESSA finding that export will not be detrimental. One set of such initiatives has been recommended to the ESSA by the Working Group:

#### MINIMUM REQUIREMENTS FOR A MANAGEMENT PROGRAM

1. There should be a controlled harvest \*\*\* methods and seasons to be a matter of State choice.
2. All pelts should be registered and marked.
3. Harvest level objectives should be determined annually.

These management initiatives appear to be basic and could weigh heavily in favor of a finding of no detriment by the ESSA. The ESSA must consider whether the "harvest level objective" is consistent with the conservation objective of the Convention, as discussed in the preceding section, and whether the controls result in a harvest approximating the harvest level objective. The recommendations also apply to American ginseng, except that greater administrative difficulties in monitoring harvest and identifying specimens suggest approaches differing from item number 2.

As indicated in the notice of March 16 (43 FR 11097), the ESSA will hold a hearing on May 1 concerning the matters discussed here, and will establish findings on detriment for 1978-1979 exports through proposed (approximately July 7) and final (approximately September 1) rulemakings in 1978, made on a State-by-State basis. The ESSA will consider all available biological and management information, whatever form it takes, in arriving at a final determination. However, establishment of comprehensive State management programs for these species along the lines recommended above would facilitate review by the ESSA, minimize paperwork for State agencies, and give the ESSA more flexibil-



ity in arriving at findings of no detriment. Certain States already have comprehensive programs for these species; their annual report on these programs may be sufficient to assure the ESSA that export from these States will not be detrimental to the species' survival.

*Specific information requested on State populations.* Certain specific information on biology and current management practices for these four species in affected States would be particularly useful to the ESSA in establishing findings on export for pelts and roots harvested in the coming season. The most important types of data are itemized below. The ESSA would appreciate information on any of these items, together with explanation of how the information was obtained.

#### BOBCAT, LYNX, AND RIVER OTTER

##### A. POPULATION ESTIMATES, INDICES, TRENDS, AND HABITAT

1. Statewide population estimate and distribution including methods used in estimating total population size (e.g. the time of year the estimate was made, and statistical parameters of the estimate, etc.), and data bases used.

2. The amount, quality, and distribution of available habitat, including data base and methods used in making estimates.

3. Trends in the amount and quality of available habitat that may account for trends in abundance and distribution of the animals, including data base for trends in population sizes.

4. Population studies and monitoring (including methods, sample sizes, and results). (a) Measures of local density carried out within State. (b) Measures of relative abundance used in field for monitoring population (including calibration to absolute density if available). (c) Other methods used to monitor populations or predict future population changes. (d) Other studies of the species carried out in State.

##### B. HARVEST DATA

1. Current and past harvest data.
2. Methods used in calculating harvest levels, including reporting systems, procedures used in gathering data, analysis methods, and statistical reliability.
3. Changes in reporting systems, predator control practices, management goals or programs, regulations, or harvest effort which may have affected harvest records.

##### C. MANAGEMENT

1. State agency with authority to manage species, and extent of that authority.
2. Classification of species by State agency and implications of that classification to management programs.
3. Current regulations for taking and possession of species. (a) Season(s). (b) Who may take (licensing requirements). (c) Dealer licensing. (d) Restrictions on taking method. (e) Open and closed areas. (f) Reporting and marking requirements. (g) Restrictions on transportation. (h) Presence or absence of local or other bounties. (i) Damage or predator control. (j) Special regulations for private lands.
4. Current harvest level objective, underlying and methods used in determining level, and relationship to current management goals, programs, and regulations.

#### AMERICAN GINSENG

##### A. CURRENT AND PAST ABUNDANCE, RANGE, AND DISTRIBUTION INCLUDING TRENDS

1. The amount, quality, and distribution of habitat available to American ginseng, including its specific abiotic preferences (e.g. slope of the terrain, and soil type and pH), and plant associates.

2. Statewide abundance and distribution including the methods used in determining abundance, and data base for distribution.

3. Trends in the amount and quality

of available habitat that may account for trends in abundance and distribution of the plant.

##### B. LIFE HISTORY INCLUDING REPRODUCTIVE BIOLOGY

1. Size and age composition of existing populations.
2. Phenology, including flowering and fruiting periods.
3. Variation of flower and fruit production as related to plant age.
4. Seed production, dormancy, viability, and dispersal.
5. Reproductive success including germination requirements and relation of seed predation to germination and dispersal.
6. Vegetative growth and dormancy including factors affecting root growth and dormancy.

##### C. HARVEST DATA AND MANAGEMENT

1. Collecting pressure, including trends in the number of collectors, collecting effort, quantity of roots harvested, and number of roots per pound harvested.

2. Harvest practices, including degree of adherence to traditional harvest methods (e.g. collecting season, age of plants harvested, and measures taken to conserve the wild plants).

3. State agency (agencies) with authority to manage species and extent of their authority.

4. Management practices by private landowners and Federal and State officials.

Publication of this notice has been approved unanimously by the Members of the Endangered Species Scientific Authority.

Dated: April 5, 1978.

WILLIAM Y. BROWN,  
Executive Secretary, Endangered  
Species Scientific Authority.

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