

DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****DEPARTMENT OF COMMERCE****National Oceanic and Atmospheric Administration****Draft Policy Regarding Controlled Propagation of Species Listed Under the Endangered Species Act; Request for Public Comment**

AGENCIES: Fish and Wildlife Service, Interior; National Marine Fisheries Service, NOAA, Commerce.

ACTION: Draft policy; request for public comments.

SUMMARY: The Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), referred to jointly as the "Services", propose to issue policy that will address the role of controlled propagation in the conservation and recovery of species listed as endangered or threatened under the Endangered Species Act of 1973 (as amended) (16 U.S.C. 1531 *et seq.*) (ESA). The proposed policy is intended to assist the Services by providing guidance and establishing consistency with respect to activities in which the controlled propagation of a listed species may be implemented as a component of a species' recovery strategy, ensuring smooth transitions between various phases of species conservation efforts within both agencies, and ensuring prudent and effective use of limited funding resources. The proposed policy sanctions the controlled propagation of listed species when recommended in an approved recovery plan and supported by an approved genetics management plan. Controlled propagation may also be approved by FWS's Regional Directors, or, in the case of the NMFS, by the Assistant Administrator as necessary, to conduct recovery related research, to maintain refugia populations, and to rescue species or population segments at risk of imminent extinction or extirpation in order to prevent the loss of essential genetic viability.

DATES: Comments on this proposed policy must be received by April 8, 1996, in order to be considered in the final decision on this proposal.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Chief, Division of Endangered Species, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 452, Arlington, Virginia 22203 (telephone 703/358-2171). Comments and

materials received will be available for public inspection, by appointment, during normal business hours in Room 452, 4401 North Fairfax Drive, Arlington, Virginia 22203 (703/358-2105).

FOR FURTHER INFORMATION CONTACT: LaVerne Smith, Chief, Division of Endangered Species, U.S. Fish and Wildlife Service at the above address (703/358-2171), or Russell Bellmer, Chief, Endangered Species Division, National Marine Fisheries Service, 1335 East-West Highway, Silver Spring, Maryland 20910 (telephone 301/713-2322).

SUPPLEMENTARY INFORMATION:**Background**

The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*), specifically charges the Services with the responsibility for identification, protection, management, and recovery of species of plants and animals in danger of extinction. By implication, the ESA also promotes the protection and conservation of the genetic resources that these species represent and recognizes that the long-term viability of species depends on maintaining genetic variability within the biological species which is defined in the ESA as including "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature" (section 3(16)). Though the ESA emphasizes the restoration of listed species in their natural habitats, section 3(3) of the ESA specifically recognizes propagation as a tool available to the Services to meet their recovery responsibilities. To meet their goals of restoring endangered and threatened animals and plants, the Services are obligated to develop sound policies based on the best available scientific and commercial information. To achieve this goal the Services are soliciting review and comments from the public on the Draft Interagency Cooperative Policy for Controlled Propagation of Species Listed Under the Endangered Species Act of 1973 (as amended).

Draft Policy Statement**A. Purpose**

The purpose of this policy is: (1) To provide guidance and establish consistency with respect to U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) activities in which the controlled propagation of a listed species, as defined in section 3(16) of the Endangered Species Act, is

implemented as a component of a species' recovery strategy; (2) to ensure smooth transitions between various phases of species conservation efforts (e.g., propagation, introduction, and monitoring) within both agencies (hereafter referred to as Services when addressed jointly); and (3) to ensure prudent use of limited funding resources.

The purposes of controlled propagation under this policy include:

- Avoiding listed species, subspecies, or population extinction;
- Providing, when feasible, unlisted animals or plants as surrogates for recovery oriented scientific research including, but not restricted to, developing propagation methods and technology, and other actions which are expected to result in a net benefit to the listed species;
- Maintaining genetic vigor, diversity, bloodlines, and an appropriate mix of sexes and ages;
- Maintaining refugia populations for nearly extinct animals or plants on a temporary basis until threats to a listed species' habitat are alleviated, or necessary habitat modifications are completed, or when potentially catastrophic events occur (e.g., chemical spills, severe storms, fires, etc.);
- Providing individuals for establishment of new, self-sustaining populations necessary for recovery of the listed species;
- Supplementing or enhancing extant populations to facilitate recovery of the listed species;
- Holding offspring for a substantial portion of their development or through a significant or critical life-stage which cannot be supported in the wild.

B. Scope

This policy applies to all pertinent organizational elements of the Services notwithstanding those differences in administrative procedures and policies as noted. This policy pertains to all efforts funded, authorized, or carried out by the Services that are conducted to propagate threatened or endangered species by:

- Establishing or maintaining refugia populations;
- Producing individuals for research or technology development;
- Producing individuals for the supplementation of extant populations; and,
- Producing individuals for reintroduction to historical habitat.

C. Background

The controlled propagation of animals and plants is recognized in certain situations as an essential tool for the conservation and recovery of listed species. The Services have used controlled propagation to support the recovery of listed species and successfully return them to suitable habitat. The NMFS, as lead Service for the recovery of Pacific salmon, has developed an interim policy addressing controlled propagation of these species. This policy was published in the Federal Register on April 5, 1993 (58 FR 17573).

Though controlled propagation has a supportive role in the recovery of some listed species, the Endangered Species Act clearly states that its intent is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." Therefore, the mandate of the Services is to recover wild populations in situ whenever possible.

The Services recognize that there are a number of genetic and ecological risks which may be associated with the controlled propagation and release of animals and plants. When considering controlled propagation as a recovery option for a listed species, an assessment of the potential benefits and risks must be undertaken and reasonable alternatives requiring less intervention objectively evaluated. If controlled propagation is to be used as a strategy in the recovery of a listed species, it must be conducted in a manner that will minimize risks to existing populations (if any), and preserve the genetic and ecological distinctiveness of the listed species. However, controlled propagation is not a substitute for addressing factors responsible for an endangered or threatened species' decline.

Controlled propagation can pose a number of genetic and ecological risks to listed species. Specific risks which must be addressed in the planning of controlled propagation programs include the following:

- Removal of natural broodstock that may result in an increased risk of extinction by reducing the abundance of wild individuals and reducing genetic variability within naturally occurring populations;
- Equipment failures, human error, disease, and other potential catastrophic events that may cause the loss of some or all of the population being held or maintained in captivity;
- The potential for an increased level of inbreeding or other adverse genetic

effects within populations that may result from the enhancement of only a portion of the gene pool;

- Potential erosion of genetic differences between populations as a result of mixed stock transfers or supplementation; and,
- Exposure to novel selection regimes in controlled environments that may diminish a listed species' natural capacity to survive and reproduce in the wild.

Potential genetic and ecological risks are also associated with introductions of captive-reared individuals to naturally occurring populations. Possible impacts may include:

- Genetic introgression which may diminish local adaptations of the naturally occurring population;
- Increased predation, competition for food, space, mates, or other factors which may displace naturally occurring individuals, or interfere with foraging, migratory, reproductive, or other essential behaviors; and,
- Disease transfer.

An additional risk specific to naturally occurring populations of some listed species is incidental take through commercial and recreational harvest. This is particularly true when listed species occur with unlisted target species. It is therefore essential that controlled propagation programs for listed species recovery be coordinated in a manner that minimizes potentially adverse impacts to existing wild populations of listed species, and that controlled propagation programs be conducted by the Services in a manner that avoids additional listing actions.

D. Definitions

The following definitions apply:

Controlled Environment

A controlled environment is one specifically manipulated by humans for the purpose of producing or rearing progeny of the species in question, and of a design intended to prevent unplanned escape or entry of plants, animals, or reproductive products.

Intercross and Intercross Progeny

The term "intercross" is applicable to all crosses between individuals of different species, subspecies, or populations. The following description is excerpted from the Services' proposed Policy on the Treatment of Intercrosses, Intercross Progeny to Include Hybrids, and Proposed Definitions.

The degree of genetic mixing possible from intercrosses spans a broad continuum. At one extreme are cases in

which a small number of individuals of a species display evidence of introgression. Genetic material originating from another entity may remain as evidence of long past and/or infrequent matings with that other entity but may have little or no effect on the morphology and behavior of the organism. At the other extreme are individuals that exhibit morphology that is intermediate between that of the parent types, nuclear DNA showing strong affinities with both parent types, some degree of functional sterility, and/or an inability to "breed true." Somewhere along this continuum there may be individuals that possess DNA from past intercrosses but in most other ways are representative of a single parental stock.

Controlled Propagation

The mating, transfer of gametes or embryos, development of offspring, and grow-out of animals, if reproduction is sexual, or other development of offspring, including grow-out if reproduction is asexual, when intentionally confined or directly intended by human intervention.

- Propagation of plants by humans from seeds, spores, callus tissue, divisions, cuttings or other plant tissue in a controlled environment or when intentionally confined.
- Defined in the context of this policy, controlled propagation refers to the production of individuals, generally within a managed environment for the purpose of future supplementation or augmentation of an extant population(s), or reintroduction to the wild (with the exception of the establishment of an experimental population, which is excluded from this policy).

Rescue/Salvage

Refers to extreme conditions wherein a species or population segment at risk of extinction is brought into a controlled environment (e.g., refugia) on a temporary or permanent basis as dictated by the situation.

Recovery Priority System

The system whereby the Services assign priorities to listed species and to recovery tasks. Recovery priority is based on the degree of threat, recovery potential, taxonomic distinctness, and presence of an actual or imminent conflict between the species' conservation and development or other economic activities. (48 FR 43098, Endangered and Threatened Species Listing and Recovery Priority Guidelines, September 21, 1983.)

E. Policy

This policy is intended to address primarily those activities involving gamete transfer and subsequent development and grow-out of offspring in laboratory, botanical facility, zoo, hatchery, aquaria, or similarly controlled environments. This policy also encompasses activities related to or preceding controlled propagation activities such as:

- Obtaining and rearing offspring for research;
- Procuring broodstock for future controlled propagation and supplementation efforts; or,
- Holding offspring for a substantial portion of their development or through a significant or critical life-stage which cannot be supported in the wild.

This policy is not intended to address temporary removal and holding of individuals unless such actions intentionally involve reproduction in the interim, or are the result of an action deemed necessary to the survival of the listed species or a specific population (such circumstances are addressed under rescue and/or salvage). This policy is not intended to address short-term holding or captive rearing of individuals obtained for later reintroduction, supplementation, or translocation efforts when controlled propagation does not take place or is not intended during the period of captive maintenance. Actions involving cryopreservation or other preservation of biological materials, if not intended for subsequent use in the controlled propagation of listed species, are exempt from this policy.

Among the goals of this policy common to both Services are coordinating recovery actions specific to controlled propagation activities; maximizing benefits to the listed species from controlled propagation efforts; assuring that appropriate recovery measures other than controlled propagation are fully considered and that other existing recovery priorities within Service regions and nationwide are considered in decisions concerning the implementation or conduct of controlled propagation activities; and, ensuring prudent use of limited funds.

It is the policy of the Services that the controlled propagation of threatened and endangered species:

1. Will be used as a recovery strategy only when other measures employed to maintain or improve a listed species' status in the wild have failed, are determined to be likely to fail, are shown to be ineffective in overcoming extant factors limiting recovery, or

would be insufficient to ensure/achieve full recovery. Every effort should be made to accomplish conservation measures that enable a listed species to recover in the wild, with or without intervention (e.g., translocation), prior to implementing controlled propagation for reintroduction or supplementation.

Controlled propagation programs must be coordinated with conservation actions and other recovery measures, as appropriate or specified in recovery plans, that will contribute to, or otherwise support, the provision of secure and suitable habitat. Specifically, controlled propagation programs intended for reintroduction or supplementation (as opposed to the support of research and technology development) must be coordinated with habitat management, restoration, and other species' recovery efforts. Controlled propagation programs and habitat conservation actions will be reviewed by the appropriate Service at least annually, to insure that the efforts of the parties involved in the recovery of the listed species maintain adequate integration and coordination.

2. Will be based on the specific recommendations of recovery strategies identified through approved recovery plans. The recovery plan, in addressing controlled propagation, should clearly identify the necessity and role of this activity as a recovery strategy; the lead agency responsible for a particular controlled propagation effort including the role of FWS or NMFS facilities, personnel, and resources, or those of non-Service cooperators as appropriate (e.g., Center for Plant Conservation (CPC), American Association of Zoological Parks and Aquaria (AZA); and, the estimated cost and duration of controlled propagation efforts.

3. Will specifically consider the potential ecological and genetic effects on wild populations of the removal of individuals for controlled propagation purposes and the potential effects of such introductions on the receiving population and other resident species [risk assessment] (e.g., Endangered Species Act—section 7, Endangered Species Act section 10, NEPA).

4. Will be based on sound scientific principles to conserve genetic variation and species integrity. Intercrossing will not be considered for use in controlled propagation programs unless (1) recommended by an approved recovery plan, (2) supported in an approved genetic management plan (which may or may not be part of an approved recovery plan), (3) implemented in a scientifically controlled and approved manner, and (4) undertaken to compensate for a loss of genetic viability

in listed taxa that have been genetically isolated in the wild as a result of human activity. Use of intercross individuals for species conservation will require Director's/Assistant Administrator's approval.

5. Will be preceded by the development of a genetics management plan based on accepted scientific principles and procedures. This plan will: Include all necessary consultations and permits; use or be comparable to existing standards (e.g., AZA Species Survival Program studbooks and protocols for animals, or CPC guidelines for plant species); insure that the genetic makeup of propagated individuals is similar to that of free-ranging populations and that propagated individuals are behaviorally and physiologically suitable for release¹ and, specifically address the issue of disposal of individuals found to be:

- (a) Unfit for introduction to the wild
- (b) Unfit to serve as broodstock
- (c) Surplus to the needs of research;²

or

- (d) surplus to the recovery needs for the species (e.g., to preclude genetic and ecological swamping);³

Programs involving the controlled propagation of individuals of listed species for research purposes and not intended for reintroduction to the wild are exempt from the requirement to develop a genetics management plan. Examples of exempt actions include research involving the determination of germination rates in plants and spawning success rates in fishes and mussels.

6. Will be conducted in a manner that minimizes potential introduction or spread of diseases and parasites into controlled or suitable habitat.

7. Will be conducted in a manner that will prevent the escape or introduction of captive stock outside their historic range.

8. Will, when feasible, be conducted at more than one location in order to reduce the potential for catastrophic loss at a single facility.

9. Will be coordinated as appropriate with organizations and investigators both within and outside the Services. The Services will cooperate with other Federal, State, Tribal, and local governments.

10. Will be conducted in a manner consistent with meeting the information needs of the Services and other institutions including AZA Species Survival Program and the International Union for the Conservation of Nature's International Species Information System as appropriate. In the case of listed species for which traditional studbooks or registrations are not

practical, records of eggs and larvae, or other life-stages will be maintained. Plant propagation programs and recordkeeping will be coordinated as appropriate with the CPC.

11. Will, with limited exceptions, be implemented only after a commitment to funding is secured following approval of final recovery plans and genetics management plans.

12. Will, prior to releases of propagated individuals, require development of a controlled propagation/reintroduction plan. This document may be produced separately or in combination with a recovery plan. However, the specific elements of the controlled propagation/reintroduction plan must be clearly identifiable. Controlled propagation/reintroduction plans will identify measurable objectives and milestones for the proposed propagation/reintroduction effort. The controlled propagation/reintroduction plan should be based on strategies identified in the approved recovery plan, and it is strongly recommended that it include protocols for health management, disease-free certification, monitoring and evaluation of genetic, demographic, life-history, phenotypic, and behavioral characteristics, data collection, recordkeeping, and reporting. On implementation of controlled propagation, annual evaluations must be made to assess project objectives, evaluate progress, and consider new scientific information and the status of any ongoing habitat conservation efforts. This annual evaluation will be provided to the Director/Assistant Administrator by the Regional Director with lead recovery responsibility.

13. Will be conducted in accordance with the regulations implementing the Endangered Species Act, Marine Mammal Protection Act, Animal Welfare Act, Lacey Act, Fish and Wildlife Act of 1956, and Departmental and Service procedures relative to the National Environmental Policy Act.

F. Exceptions

Few exceptions to the above policy guidelines will be considered and will require specific Regional Director/Assistant Administrator's approval. The following circumstances have been anticipated and are considered potential exceptions to the general policy guidelines.

1. In those instances where a listed species has an ephemeral reproductive stage or very short (1–2 year) life span that necessitates controlled propagation for the listed species' maintenance in refugia or for purposes of required research, exceptions may be granted by

the Regional Director/Assistant Administrator.

2. In the absence of an approved recovery plan, and only in cases of a defensible immediate need, information or recommendations contained in recovery outlines or draft recovery plans may be used to identify controlled propagation as a necessary recovery measure for listed species in critical peril. Under such circumstances initiation of controlled propagation activities will require Regional Director's/Assistant Administrator's approval.

3. Programs in which candidate or proposed species are being held in refugia, used for research, or under controlled propagation and which are subsequently listed, are granted temporary exception to the requirements of this policy and activities may be continued at their present level unless directed otherwise by the Regional Director/Assistant Administrator. No change in program activities will be made without approval of the Regional Director/Assistant Administrator and until such time as the requirements of this policy are met. Conformance to this policy for candidate and proposed species which become listed subsequent to the implementation of this policy is required within 12 months following listing.

4. Any additional exceptions for unforeseen circumstances which are not specifically addressed by this policy will require the approval of the Director/Assistant Administrator.

G. Cooperators

The Services recognize the need for partnerships with other Federal agencies, States, Tribes, local governments, and private entities in the recovery of listed species. In this regard the Services will seek to develop partnerships with qualified cooperators for the purpose of propagating listed, proposed, and candidate species (as authorized under Sections 6 and 2(a)(5) of the Endangered Species Act). Guidance for this activity is as follows:

1. The Regional Directors/Assistant Administrator will explore opportunities for accomplishing controlled propagation and any associated research tasks with other Federal cooperators, FWS/NMFS facilities, State agencies, Tribes, zoological parks, aquaria, botanical gardens, academia, and other qualified parties. Cooperators will be selected on the basis of scientific merits, technical capability, willingness to adhere to the Services' policies, guidance, and protocols, and cost-effectiveness (e.g.,

willingness of non-agency cooperators to assume or share costs). State and private cooperators will be required to submit, either independently or in concert with the appropriate lead agency (FWS or NMFS), a genetics management plan for new species propagation efforts (as specified in E–5). Likewise, a controlled propagation/reintroduction plan will also be required of cooperators as and when appropriate (as specified in E–12).

2. The Regional Director/Assistant Administrator of the appropriate listed species lead agency will be responsible for assigning staff to oversee programs conducted by all cooperators to ensure adherence to necessary protocols and permit conditions and to coordinate annual reporting requirements.

3. The listed species' lead Region will be responsible for funding maintenance in refugia, controlled propagation research, and controlled propagation/reintroduction efforts unless this responsibility is assumed by a cooperating facility.

4. The Regional Director/Assistant Administrator will be responsible for ensuring Cooperator's compliance with this policy.

H. Responsibilities

This policy shall be implemented in accordance with the following guidelines:

1. Regional Directors/Assistant Administrator are responsible for recovery of listed species for which they have lead. Recovery actions for which Regional Directors/Assistant Administrator have authority include establishment of refugia, initiation of necessary research or technology development, and implementation of controlled propagation programs and/or propagation research for listed species. When determining species priority for inclusion in controlled propagation programs, considerations should include the following:

(a) Whether or not a listed species' recovery plan outline, draft recovery plan, or final recovery plan, identifies controlled propagation as an appropriate recovery strategy and what priority this task is assigned within the overall recovery strategy.

(b) The potential a species' overall recovery program, including controlled propagation, has to enhance the conservation of other listed or candidate species.

(c) The availability and willingness of non-agency cooperators to assume the lead or to contribute to recovery activities including cost sharing.

(d) Exceptions to the general guidance of this policy may be made if a critically

diminished listed species is threatened by imminent extinction or population extirpation due to temporary or uncontrollable causes, and therefore, in the Regional Director's/Assistant Administrator's judgment, warrants partial or total removal from the wild for purposes of rescue/salvage, the establishment of refugia, initiation of research, or controlled propagation.

2. In the event that the current recovery plan fails to identify the establishment of refugia, initiation of propagation research, or controlled propagation as recovery tasks, the recovery plan will be updated or revised as appropriate. Recovery plans in preparation will be amended to reflect the changed status of the listed species and provide justifications as necessary.

3. Within 6 months of the effective date of this policy, the responsible Services' Regional Directors/Assistant Administrator will identify all listed species for which they have the lead recovery responsibility that are: (1) Being held in refugia; (2) involved in pre-propagation research; (3) undergoing controlled propagation; and, (4) if so, at what level and for what recovery purposes (e.g., augmentation of extant populations, establishment of new populations). The status of each species with regard to conformity with this policy will also be reported to the appropriate Regional and Washington D.C. offices.

4. Continuation of those programs not in conformity 12 months following implementation of this policy, shall require Director's/Assistant Administrator's concurrence. The Regional Director shall provide his/her recommendation to the Service Director/Assistant Administrator.

I. Annual Reporting Requirements

Annual reports will be prepared by the responsible Regional authority and submitted to the Director/Assistant Administrator not later than October 31. Reports will contain the following information for each species being maintained in refugia, in pre-

propagation research, and under propagation:

- Recovery priority number;
- Policy criteria that are not met (if any);
- A description of the controlled propagation program, including the objectives and status;
- List of cooperators;
- Expenditures for the past fiscal year; and,
- Prospects for and obstacles to achieving research, controlled propagation, or reintroduction objectives.

Both FWS and NMFS agree to exchange programmatic information regarding controlled propagation of species of mutual interest on request, and that access to such information will include but not be limited to, budgetary information if required.

J. Authorities

Endangered Species Act of 1973, as amended; Marine Mammal Protection Act of 1972, as amended; Animal Welfare Act; Lacey Act; Fish and Wildlife Act of 1956; and National Environmental Policy Act.

K. Supersessions

All previously issued documents regarding this subject shall be revised, as necessary, to be consistent with this policy.

Footnotes:

(1) Determination of biological "suitability" may include, but should not necessarily be limited to, analysis of geomorphological similarities of habitat, genetic similarity, phenotypic characteristics, stock histories, habitat use, and other ecological, biological, and behavioral indicators.

(2) Protocols should identify disposition of individuals that die during holding, research, or propagation. Specimens can be valuable sources of tissue for genetic research. Disposition of remains in biological collections should also be considered.

(3) The Services recognize that reproduction among organisms maintained in a controlled environment may occur under a variety of circumstances that may not be necessarily predictable or desirable.

Reproduction of individuals under such circumstances may not be desirable and culling or disposal of surplus offspring or seeds may be necessary. Therefore, controlled propagation activities should not be initiated without the inclusion of these provisions, the securing of required take permits, and other authorizations as necessary.

Public Comments Solicited

The Services intend that any final decision on this draft policy on controlled propagation of listed species be as accurate and as effective as possible and that it take advantage of information and recommendations from all interested parties. Therefore, comments and suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this draft policy are hereby solicited.

The final decision on this draft policy will take into consideration the comments and any additional information received by the Services, and such communications may lead to a decision that differs from this draft. The Services' decision will be published for public information.

Author/Editor: The editors of this draft policy are David Harrelson of the Fish and Wildlife Service's Division of Endangered Species, Mail Stop 452 ARLSQ, 1849 C Street, NW, Washington, DC 20240 (703/358-2171), and Marta Nammack of the National Marine Fisheries Service's Protected Species Management Division, 1335 East-West Highway, Silver Spring, Maryland 20910 (301/713-2322).

Authority: The authority for this proposed action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)

Dated: February 1, 1996.

John G. Rogers,

Acting Director, Fish and Wildlife Service.

Dated: February 1, 1996.

Nancy Foster,

Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service.

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