Minnesota State Zoological Board. Zoo-Related Organizations Files.

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MINNESOTA ZOO
13000 Zoo Boulevard, Apple Valley, MN 55124 612.431.9200

1 September 1992

Bruce Read
AAZPA/WCMC Chairman
St. Louis Zoological Park
Forest Park
St. Louis, MO 63110

Dear Bruce:

I would like to support the nomination of Ronald Tilson, Director of Conservation at the Minnesota Zoo, for AAZPA Tiger SSP Coordinator. This position is a logical extension of Ron's current long-time role as AAZPA Siberian Tiger SSP Subspecies Coordinator as well as his more recent appointment as Tiger Global Animal Survival Plan (GASP) Coordinator.

The Minnesota Zoo is committed to financially support Ron Tilson if selected as Tiger SSP Coordinator as part of our institution's commitment to species conservation and preservation.

Sincerely,

Kathryn

Kathryn R. Roberts, Ph.D.
General Director
Minnesota Zoo

cc: H. Quinn
M. Hutchins

AAZPA CONSERVATION CENTER

7970-D Old Georgetown Road, Bethesda, MD 20814
(301) 907-7777 Fax: 301-907-2980

Conservation ✦ Development ✦ Education ✦ Legislation ✦ Public Relations

Species Survival Plan

AAZPA SPECIES SURVIVAL PLAN (SSP)

MEMORANDUM OF PARTICIPATION

FOR

GIBBON

Hylobates sp.

The Minnesota Zoological Garden will participate in an SSP program on Gibbons initially for a period of 10 years. Thereafter, this commitment will automatically renew until or unless the Species Coordinator and AAZPA Conservation Coordinator is advised your institution is withdrawing from the program. Your institution reserves the right to withdraw from the program at any time.

This commitment is to cooperate in a program of populational management of the Gibbon under the guidance of the Species Coordinator, designated by the Wildlife Conservation and Management Committee, and the Propagation Group of 9 members elected from and by the Participating Institutions. The Memorandum does not constitute transfer of ownership or relinquishment of control of animals to the SSP, Species Coordinator, or Propagation Group. However, Participating Institutions will attempt to manage their animals in accordance with the strategic guidelines and specific recommendations of the Species Coordinator and Propagation Group. Proposals from the Species Coordinator and Propagation Group will include advice on mate selection, animal relocations, breeding schedules, and culling programs with the objective of long-term maintenance of a genetically diverse and demographically stable population.

Individual designated to represent your institution and nominated to serve on the Propagation Group:

Name	Title	Phone

Endorsement of institution's chief executive officer:

Signed by	Title	Date
Katherine R. Roberts	General Director	Jan. 4, 1991

Please return a signed copy to both:

Michael Hutchins, Ph.D.
AAZPA Director of Conservation and Science
AAZPA Conservation Center
7970-D Old Georgetown Road
Bethesda, MD 20814

Ronald L. Tilson or Kathy Castle
Species Co-Coordinators/Gibbons
Minnesota Zoological Garden
13000 Zoo Boulevard
Apple Valley, MN 55124

American Association of Zoological Parks and Aquariums

CONSERVATION COORDINATOR'S OFFICE • MINNESOTA ZOOLOGICAL GARDEN
12101 JOHNNY CAKE RIDGE ROAD • APPLE VALLEY, MN 55124 • [redacted]
(612) 431-9255/9301

2 November 1988

Ron Tilson
Director/Biological Programs
Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
Apple Valley, MN 55124

Dear Ron:

We understand that you are participating in the SSP Program for Tiger. We do not seem to have a Memorandum of Participation (MOP) from your institution for this program in our files. Therefore, would you please have your chief executive officer complete and sign the enclosed MOP and return it to us before 15 November 1988.

Sincerely,

S. Palumbo

Sandra L. Palumbo
Secretary

TJF/slp

Attachment

cc: U. Seal
G. Brady
R. Rockwell

AAZPA SPECIES SURVIVAL PLAN (SSP)

MEMORANDUM OF PARTICIPATION

FOR

TIGER

Panthera tigris

The MINNESOTA ZOOLOGICAL GARDEN (Institutional Name) will participate in an SSP program on tiger initially for a period of 10 years. Thereafter, this commitment will automatically renew until or unless the Species Coordinator and AAZPA Conservation Coordinator is advised your institution is withdrawing from the program. Your institution reserves the right to withdraw from the program at any time.

This commitment is to cooperate in a program of populational management of the tiger under the guidance of the Species Coordinator, designated by the Wildlife Conservation and Management Committee, and the Propagation Group of 9 members elected from and by the Participating Institutions. The Memorandum does not constitute transfer of ownership or relinquishment of control of animals to the SSP, Species Coordinator, or Propagation Group. However, Participating Institutions will attempt to manage their animals in accordance with the strategic guidelines and specific recommendations of the Species Coordinator and Propagation Group. Proposals from the Species Coordinator and Propagation Group will include advice on mate selection, animal relocations, breeding schedules, and culling programs with the objective of long-term maintenance of a genetically diverse and demographically stable population.

Individual designated to represent your institution and nominated to serve on the Propagation Group:

Ronald L. Tilson (Name) | Director/Biological Programs (Title) | (612) 421-9267 (Phone)

Endorsement of institution's chief executive officer:

[signature] (Signed by) | General Director (Title) | (612) 421-7333 (Date)

Please return the signed copy to the AAZPA Conservation Coordinator before 15 November 1988.

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
AAZPA Conservation Office
12101 Johnny Cake Ridge Road
Apple Valley, MN 55124

American Association of Zoological Parks and Aquariums

THE AAZPA CONSERVATION PROGRAM: THERE IS A METHOD TO OUR MADNESS

by

Robert J. Wiese, Ph.D.
Conservation Biologist
and
Michael Hutchins, Ph.D.
Director of Conservation and Science

AAZPA Conservation Center
7970-D Old Georgetown Road
Bethesda, Maryland 20814

INTRODUCTION

In 1980 the Board of Directors for the American Association of Zoological Parks and Aquariums (AAZPA) voted unanimously at their midyear meeting in Tulsa, Oklahoma to make wildlife conservation the Association's highest priority. With this action began the development of the extensive efforts now underway to reach this goal. Many individuals, committees and programs are involved in fulfilling various aspects of this overall plan. However, in order to be effective, each must work together and communicate. This, in turn necessitates that some sort of organizational structure be in place. The purpose of this paper to to provide a brief introduction to the structure of AAZPA's evolving conservation program, including descriptions of important committees and individuals, their respective roles within the organization and the ways in which they interact.

The foundation of the AAZPA's evolving conservation program is the Species Survival Plan (SSP). The SSP originated in 1981 in response to a need to address the genetic and demographic problems associated with the maintenance of small captive populations over long periods of time. Each SSP program, under the direction of a species coordinator and elected propagation group, allows a number of institutions to manage individual animals collectively as one large population. Participating institutions act cooperatively in the best interest of the species, moving animals from place to place to comply with SSP breeding recommendations.

Current estimates suggest that from one to five million species of animals and plants could become extinct in the next two decades alone, primarily due to habitat destruction. Therefore, the ultimate goal of the SSP program is to secure survival of at least some of the most vulnerable and significant of these species by maintaining viable populations in captivity. The hope of many SSPs is to someday

reestablish self-sustaining populations to their former ranges in the event that current hazards are brought under control or eliminated.

Wild populations can become too small or fragmented to be self-sustaining. It may therefore also be necessary to infuse captive-bred individuals or their genetic material. Many SSP programs have opted to manage their species for a 200 year period which will, hopefully, allow the expanding human population to reach an equilibrium. By that time, it is also conceivable that new technologies will allow for the partial or complete restoration of certain habitats. In short, the SSP seeks to maintain future options. It should be recognized, however, that captive breeding should not be considered a panacea for the endangered species problem. In fact, captive breeding programs should only be implemented as part of a more holistic effort to preserve species in their natural habitats. Thus, in addition to curbing the negative genetic and demographic effects arising from small population size, the SSP seeks to assist worldwide efforts in wildlife and ecosystem conservation. Areas of focus in more recent SSP planning include habitat preservation, public education, training of foreign zoo personnel, and field and laboratory research in support of captive breeding and field conservation efforts.

One key aspect of the SSP, often overlooked, is its focus on populations and species rather than the individual animal. In the past zoos and aquariums have often concentrated their attention on individual animals, but this perspective must change. Animal welfare considerations, although important, cannot be the primary focus of a conservation program which seeks to preserve populations and species.

THE AAZPA CONSERVATION PROGRAM: WHO ARE THE PLAYERS AND WHAT DO THEY DO?

In the following section, we summarize the various committees and individuals that make up the evolving AAZPA Conservation Program. In each case, we also describe their respective roles within the organization. As our Association has expanded, it has also become more complex. It is therefore critical that each participant in the AAZPA conservation program understands how the organization works. The reader should note, however, that this document concentrates on those aspects of AAZPA that are relevant to its conservation program.

AAZPA Board of Directors and Executive Director

The AAZPA Board of Directors is the body responsible for overseeing the many diverse affairs of Association. The Board of Directors consists of four elected officers and nine additional members elected for three year terms, on a staggered basis. The four officers include the President, President-Elect, Vice President, and Past President.

Only AAZPA members, with Professional Fellow status, may vote and/or hold elective offices in the Association.

The Executive Director of the AAZPA is an ex-officio member of the Board of Directors, without voting privileges. The Executive Director is appointed by the Board and is responsible for maintaining consistent management of Association staff on a daily basis. The Executive offices of the AAZPA are located in Wheeling, West Virginia. A description of specific regulations and the duties of various officers and standing committees is available in the AAZPA Bylaws.

AAZPA Conservation Center

The AAZPA Conservation Center, located in Bethesda, Maryland, was established primarily to assist and promote the conservation goals of the Association. The Center provides consistent, long term stability to these efforts within AAZPA. A number of individuals provide the expertise necessary to accomplish the diverse and expanding operations undertaken by the Center. Key personnel include the AAZPA Deputy Director, Director of Conservation and Science, Director of Government Affairs, Public Relations Officer, Education Officer and Development Officer.

The Deputy Director is responsible for the management and direction of the Conservation Center and its staff.

The Director of Government Affairs is responsible for monitoring federal legislative and regulatory matters and policy that affect zoos and aquariums. The Director is in close contact with members of the U.S. Congress and their staffs, U.S. Fish and Wildlife Service of the Department of the Interior, National Marine Fisheries Service of the Department of Commerce, Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture, and other relevant regulatory agencies. Keeping the Association up to date on the status of various endangered and threatened species and the associated permit processes is another important duty.

Public support of conservation programs is critical to their long-term viability. The AAZPA Public Relations Officer is therefore responsible for disseminating information on AAZPA conservation activities to the general public and potential donors through a variety of methods. Interaction with the media (including newspapers, magazines, television and radio) is a major responsibility.

The Development Officer's role is to acquire financial support for the diverse conservation activities of the Association. This may include marketing and promotions, as well as working with corporate donors and foundations or assisting other staff members in the preparation of grant proposals.

The Education Officer's primary responsibility is to develop educational programs which promote public understanding of the role of zoos and aquariums in wildlife conservation efforts, and to help coordinate certain cooperative education programs undertaken by the Association.

The Director of Conservation and Science administers the scientific efforts of the Conservation Center. It is the Director's responsibility to coordinate, facilitate and promote the conservation and scientific activities of AAZPA and its member institutions. The Director also takes the lead in fostering collaboration and interaction between the AAZPA and other regional breeding programs (through IUCN CBSG) and in building a solid framework for the Association's various conservation efforts.

The Conservation Biologists provide assistance to species coordinators in the operation of their respective SSP programs and work with the Director of Conservation and Science to improve functioning of the SSP program overall. One of their traditional roles has been the analysis of the genetic and demographic data required for SSP Masterplan development. There are currently two Conservation Biologist positions at the Conservation Center. The AAZPA Long Range Strategic Plan calls for four Conservation Biologists to be employed by 1995, one of which will be promoted to Assistant Director of Conservation and Science.

The Conservation Secretary assists the Director of Conservation and Science and the Conservation Biologists in their duties. The Conservation Secretary is responsible for conducting propagation group elections, maintaining the North American Regional Conservation Archives, producing the monthly ANIMAL EXCHANGE publication, and updating the numerous mailing lists and databases maintained by the Conservation Center.

The SSP and related AAZPA conservation and science programs have expanded rapidly during the last decade. In keeping with the present goal to move toward a more holistic approach to zoo and aquarium-based conservation programs, a number of issues must be addressed, including the development of the Association's field conservation efforts, as well its scientific, public relations and fund-raising capabilities.

While SSP programs are and will continue to be the cornerstone of AAZPA conservation efforts, the number of additional responsibilities and services has increased dramatically. The Director of Conservation and Science, Conservation Biologists and Conservation Secretary are currently responsible for:

(1) SSP development and masterplanning (with the Small Population Management Advisory Group, see below).

(2) Consultation, coordination and review of SSP and Taxon Advisory Group (TAG) performance (with the Wildlife Conservation and Management Committee or WCMC, see below).

(3) Coordination, monitoring, and review of related Taxon Advisory Groups (TAGs), Fauna Interest Groups (FIGs), Trusts, and Consortia (with WCMC).

(4) Coordination and facilitation of research efforts in AAZPA institutions through development of the newly-formed Research Coordinator's Committee (with WCMC).

(5) Formulation of various guidelines and protocols affecting AAZPA conservation programs (with WCMC).

(6) Review and comment on petitions to establish new SSPs and TAGs (with WCMC).

(7) Coordination of AAZPA conservation programs with other regional breeding programs (e.g., Europe, Australasia and Japan) through interaction with IUCN CBSG.

(8) Consultation with ISIS on the future development of ARKS, SPARKS and new services from the ISIS Central Database (with the Small Population Management Advisory Group).

(9) Assistance to the AAZPA Conservation Academy and Zoo Biology School.

(10) Coordination of some field conservation programs organized under the AAZPA umbrella.

(11) Coordination of the AAZPA Conservation Endowment Fund grant application and review process.

(12) Production of various publications and reports, including:

- •ANIMAL EXCHANGE (monthly)
- •AAZPA ANNUAL REPORT ON CONSERVATION AND SCIENCE (annually)
- •CBSG NEWSLETTER report (quarterly)
- •COMMUNIQUE report (monthly)
- •Board of Director's reports (monthly, semi-annually and annually)
- •Various technical and popular articles (intermittently)

(13) Coordination of SSP propagation group elections (annually).

(14) Maintaining the North American regional archives for studbooks, masterplans and husbandry manuals.

(15) Assisting with fund raising and public relations, including production of the AAZPA GUIDE TO SPECIES SURVIVAL (a replacement for the old SSP booklet), interviews with journalists and oral presentations to various groups and organizations.

Wildlife Conservation and Management Committee

The Wildlife Conservation and Management Committee (WCMC) is a standing AAZPA committee which shares responsibility for overseeing the captive propagation, animal management, conservation and scientific efforts of the AAZPA, in consultation with the Director of Conservation and Science. Members are appointed by the incoming AAZPA President and serve staggered, three year terms. The WCMC is composed of a Chair and fourteen members. The four Vice Chairs on the WCMC include one each for Studbooks, Zoo Biology and Research, Permits, Education and Training and Species Survival Plans/Taxon Advisory Groups.

The mission of the WCMC is to poll the opinions of the general membership on various conservation and scientific issues facing the AAZPA and to make recommendations concerning policy or procedures. The WCMC is responsible for reviewing all initial and transfer petitions for Regional (North American) Studbooks, Taxon Advisory Groups (TAG), and Species Survival Plans. Committee members, acting through the Chair, also handle requests from governmental agencies and the AAZPA Board of Directors, and help guide the future development of conservation programs by recommending changes in existing policies, programs and organization.

Beginning in 1991, WCMC will be involved in the evaluation of all SSP and TAG programs and coordinators for progress and timely decisions. This evaluation program is designed to identify programs which may require specific assistance from the AAZPA Conservation Center staff.

Species Coordinators

Each SSP program is managed by a species coordinator. Species coordinators are the key individuals in SSP programs and must be able to manage others effectively to complete their many and often complex duties. The coordinator is officially assigned his/her position by the WCMC following submission and approval of a petition for SSP species designation. The coordinator is assisted by a propagation

group, which is composed of elected institutional representatives (see below).

The species coordinator's primary responsibility is to define and meet the goals of the North American regional population. The first step is to direct the propagation group in the development of a Masterplan. The plans define a regional breeding strategy designed to meet the genetic and demographic goals of the population. Masterplans consist of a set of genetic and demographic analyses based on studbook data, and a list of breeding recommendations designed to offset the deleterious effects of small population size. Masterplans are dynamic rather than static documents which will change regularly depending upon the program's success and most recent breeding recommendations. Once the Masterplan is in place, the primary duty of the coordinator is to make timely breeding and transfer recommendations to the participating institutions. Of course, this will require completion of occasional genetic and demographic analyses of the population as the studbook data are updated.

The species coordinator is also responsible for coordinating the development of a husbandry manual. The husbandry manual defines the current husbandry techniques and management problems for the species. Each manual includes a summary of husbandry problems and a plan for the coordination of theoretical and applied research.

Copies of each Masterplan and husbandry manual should be submitted to the Director of Conservation and Science so that they can be added to the North American Regional Archives.

Coordinators are also asked occasionally to complete questionnaires and supply information to various individuals, committees or agencies. Annual progress reports prepared by the species coordinator appear in the AAZPA ANNUAL REPORT ON CONSERVATION AND SCIENCE. Shorter optional reports appear in the AAZPA COMMUNIQUE on a monthly basis. Keeping the Director of Conservation and Science, the WCMC Chair, and propagation group members appraised of the program's progress and recommendations is an important responsibility of the coordinator. Occasional reports to the Association's membership and promotion of the SSP and its goals are also important.

Propagation Groups

A propagation group consists of representatives from the institutions which hold the SSP species and have signed a Memorandum of Participation (MOP). By signing an MOP, the participating institution agrees to make every effort to abide by the recommendations of the species coordinator and propagation group. The primary recommendations are those involving animal transfers, pairings for

breeding, and the use of separation or contraception to prevent reproduction. A protocol has been established to address problems that occur with a lack of compliance to SSP recommendations.

If less than 15 institutions participate in the program, all representatives are part of the propagation group. However, for larger programs annual elections are held to select a subset of the representatives. In these cases, nine members are elected to serve on the propagation group along with the species coordinator. Elected members serve a three year term which is staggered such that only three new representatives are elected each year.

Individuals and institutions who do not meet AAZPA criteria for institutional membership status may participate in the SSP as non-member participants. Non-members wishing to participate in the SSP complete an application which must then be approved by the propagation group and WCMC.

A propagation group can have any number of advisors to assist them in the management of their species. Advisors for genetic and demographic analyses, veterinary medicine, nutrition, reproductive physiology, and research are common. However, only the nine propagation group members and the species coordinator are able to vote on proposed direction for the SSP and the breeding and transfer recommendations made for all participating institutions.

Studbook Keepers

The species coordinator relies heavily on the studbook keeper to maintain accurate animal records, and in some cases they are one in the same person. Without an accurate and up to date studbook, population analyses can not be accomplished and timely breeding recommendations cannot be made. The studbook keeper is responsible for maintaining close contact with participating institutions and individuals, making sure all records are accurate and all births, deaths and transfers are recorded in a timely manner.

Studbooks may be either International or Regional depending on the number of specimens in captivity and the global distribution of the captive population. Petitions for North American studbooks are submitted to and approved by the WCMC with comment from the Director of Conservation and Science and the Regional Studbook Advisor. International studbooks are approved by a committee of the International Union of Directors of Zoological Gardens (IUDZG) and petitions are submitted to the International Studbook Advisor based at the Zoological Society of London. Studbook advisors, both regional and international, are responsible for coordinating and monitoring the activities of the studbook keepers under their charge.

The timing and frequency of studbook updates will vary depending on the species. For seasonal breeders the studbook can be updated following annual births or before transfers are recommended. Species which mate and give birth throughout the year will require more frequent contact between the studbook keeper and participating institutions and individuals, perhaps biannually or even quarterly. Regardless of frequency with which updates occur, the studbook keeper should require that all births, deaths and transfers be reported directly to them as soon as possible. Two copies of each updated version of the studbook should be sent to the AAZPA Director of Conservation and Science for inclusion in the Regional Archives.

The International Species Information System

The International Species Information System (ISIS) maintains a worldwide computer database on captive animals. Animal records are reported to ISIS by member zoos and aquariums using the Animal Records Keeping System (ARKS) software package or on paper for facilities not yet using a computer. ISIS is administered by an Executive Director who, in turn, answers to an international board of trustees. The organization is based at the Minnesota Zoological Gardens and shares office space with the IUCN CBSG (see below).

Most present ISIS services are primarily a registry of animals and their locations and not a true studbook. However, the "studbook-like" reports available from ISIS are usually a good starting point in the development of a new studbook. The new central database, ISIS 3, now being developed is intended to be much better at tracing animal records and will come closer to a true studbook format. For the 97% of species which do not currently have formally recognized studbooks, ISIS is the international studbook keeper by default.

For many of the present SSP species, studbooks existed prior to their designation or involved cleaning up a relatively good set of data supplied by ISIS. In fact, the reason some of the species were selected was because accurate studbook data were available from ISIS or other sources. In the future, however, the initial studbook preparation will likely be much more tedious because the data may be incomplete. Pedigrees for many less "charismatic" species are likely to have many more gaps (i.e., with fewer known parentages) making the genetic and demographic analyses more difficult and introducing a greater risk of error. Future SSP programs which begin with inadequate data on genealogical relationships may need to employ some novel strategies. One criteria for designation of future SSP programs may have to be the ability to obtain a significant number of founders. This would allow the program to begin anew, with a known amount of genetic variability.

In addition to the ARKS software for tracking animal records, ISIS also maintains the Single Population Analysis and Records Keeping System (SPARKS) software. This software is used to perform some of the basic genetic and demographic analyses needed prior to compilation of an SSP Masterplan. SPARKS is presently undergoing major revisions which are intended to make it the global standard for studbook databases and analysis of a population's genetic and demographic characteristics. Improvements to SPARKS will also include better translation procedures from existing studbook formats, better documentation for users (e.g., help screens and instruction manuals) and a more user-friendly operating environment (e.g., pull down menus).

Small Population Management Advisory Group

Beginning in 1991, species coordinators will also be able to call upon members of the Small Population Management Advisory Group (SPMAG) to assist them with completing and interpreting the genetic and demographic analyses needed to update their Masterplans and make breeding recommendations. This group of consultants should make it easier for all SSP coordinators to make timely and accurate breeding recommendations.

Members of the SPMAG will receive advanced training in the principles of population genetics and demography and use of computer software designed for analysis of studbook data (e.g., SPARKS, GENES). Training will also be provided in the principles of population genetics to allow members to interpret the resulting analyses and make appropriate Masterplan decisions and recommendations.

Regional Taxon Advisory Groups

During the first decade of the program, SSP species tended to be selected on the basis of individual interest, or because they had high public profiles. In some cases this led to designation of species which were not the most critically endangered or which did not have the highest probability of success. To address some of these problems in the future the Taxon Advisory Group (TAG) has evolved.

The function of the TAG is regional strategic planning. More specifically, TAGs evaluate the present conditions surrounding a given taxonomic group in the North American region and recommend species for which new studbooks and SSPs should be developed. To make the most informed recommendations, a TAG should be composed of a diverse group of experts, including representatives from other conservation organizations, field biologists, and zoo professionals. A number of criteria are involved in the prioritization process and, depending on the taxon in question, various factors carry

different weights. While the selection criteria used must be loosely defined to allow each TAG to work most efficiently, the following are often used as a starting point:

(1) Current and anticipated captive space available;
(2) Current captive population size and composition;
(3) Ability to successfully breed in captivity;
(4) Status in the wild;
(5) Sufficient number of founders available;
(6) Usefulness of the taxon to save habitat and other syntopic taxa (i.e., is the taxon a so-called "flagship" or "keystone" species?);
(7) Public appeal;
(8) Uniqueness of the taxa in terms of phylogeny, adaptive strategy, interactions and co-evolution with other taxa, ecological approach to survival, cultural appeal or scientific significance;
(9) Ability to survive in human altered ecosystems that are now ubiquitous; and
(10) Probability of successful reintroduction.

Fauna Interest Groups

Massive habitat destruction is currently underway in a number of biologically-rich areas of the world, thus placing the survival of many thousands of species at risk. Traditionally, zoos and aquariums have invested comparatively little in field conservation efforts. There are, of course, some notable exceptions. The New York Zoological Society, for example, operates Wildlife Conservation International--one of the world's largest conservation research organizations. Indeed, there seems to be increasing interest in exploring ways that zoos and aquariums can become more directly involved in efforts to preserve wildlife habitat or to aid in species recovery plans. One result has been the development of Fauna Interest Groups (FIGs).

The role of FIGs is to help coordinate the conservation activities of AAZPA member institutions in specific geographical regions. Interest groups currently exist for Indonesia/Malaysia, Brazil and Madagascar. Members of the FIG are actively involved in fostering cooperation and communication with foreign governments, zoos and non-governmental organizations in an effort to establish local nature preserves, support existing national parks, conduct field research, transfer technology, educate the public and, in some cases, to obtain animals for captive propagation programs.

Consortia, Trusts and Foundations

Consortia, Trusts and Foundations are legal entities whose intent is to achieve a defined conservation goal and which require the

endorsement of AAZPA. Consortia, Trusts and Foundations may consist of AAZPA member institutions, related organization, private individuals or other conservation organizations. In the past, consortia have resulted in the formation of SSP programs to benefit species under various unusual circumstances (e.g., when a substantial portion of the population is in private hands or when the captive population originates as a result of government confiscations). The Cuban Amazon, Komodo Monitor and Palm Cockatoo Consortia are some current examples. Examples of Trusts include Sumatran Rhinos and Kouprey. In the case of Black rhinos, an international foundation is being formed under CBSG auspices to provide support for in situ conservation as well as to reinforce the captive population of this highly endangered species.

Task Forces

Task forces are specialized committees which focus on specific questions or topics effecting zoos and aquariums. Task Force chairs and advisors are appointed by the incoming AAZPA President. Three such committees relevant to the AAZPA Conservation Program are: Giant pandas, Cryopreservation and Contraception. It should be noted that the need for such specialized task forces may be diminished by the development of WCMC's Zoo Biology and Research arm. A Research Coordinator's Committee is currently being formed to help organize and facilitate the Association's scientific activities. In addition, various subcommittees are envisioned as well, each of which will focus on a specific area of zoo biology (genetics, nutrition, reproductive biology, behavior, veterinary medicine, etc.). At least some of the current Task Forces might be incorporated into this structure.

Captive Breeding Specialist Group of IUCN

The Captive Breeding Specialist Group (CBSG) of the International Union for the Conservation of Nature and Natural Resources (IUCN) is one of a number of Specialist Groups within IUCN's Species Survival Commission or SSC. The role of the SSC is to coordinate worldwide efforts to preserve biological diversity. IUCN itself is the world's largest and, in fact, only conservation union. The organization, headquartered in Gland, Switzerland, links together over 120 government agencies and over 400 non-governmental agencies. It embraces environmental advocacy groups of all sizes and kinds, thus providing a unique forum for consultation, cooperation and debate. Its stated mission is to: "harness the insight and skill of the international conservation movement in order to promote an enduring balance between humanity and the world environment."

Like other Specialist Groups, CBSG is a worldwide network of volunteers. CBSG has over 200 members in 50 countries. The CBSG

office consists of a Chairman, Executive Officer and support staff based at the Minnesota Zoological Gardens. The CBSG produces a quarterly newsletter, which is sent to nearly 1200 zoological institutions worldwide.

Many of the individuals involved in AAZPA programs are also active members of the CBSG and a Memorandum of Understanding (MOU) has been signed by the two organizations (Appendix I). The agreement provides a framework for inter-organizational cooperation. It also recognizes AAZPA as the organization responsible for coordinating North American zoo and aquarium conservation programs. The CBSG, on the other hand, is responsible for fostering international cooperation between the various regional programs developing worldwide (see Regional Breeding Programs, below). The IUCN has agreed upon and published an official policy statement on captive breeding programs prepared by CBSG (Appendix II).

To formulate global strategic plans for related taxa, CBSG has organized Captive Action Plan Groups. Such groups are the global equivalent of the regional TAG. In fact, as a result of the signed MOP, regional TAG chairs will serve on CBSG Action Plan Groups. Like regional TAGs, these groups will generally be formed at a taxonomic level comparable to the IUCN/SSC Specialist Groups. It is hoped that this will result in an integrated approach to conservation-- one in which captive breeding and field conservation efforts are complementary.

CBSG also coordinates global equivalents of the regional Faunal Interest Groups. These groups are composed of the regional FIG chairs and other individuals working in the region of interest. It is hoped that by cooperating on various projects and by pooling their limited resources, the world's zoological parks and aquariums can have a greater impact in the area of field conservation. It is also important that competition is minimized, and that zoological institutions begin to operate under the same philosophical and ethical principles, especially when dealing with developing countries.

Another function of the CBSG has been to perform Population Viability Analyses (PVAs) for particular taxa. Using a specialized software program called VORTEX, PVA analyses seek to estimate the probability that small populations of endangered animals may go extinct within certain specified time periods. The analyses are based on a number of facts and assumptions. However, they can be used to determine population sizes and distribution needed for long-term viability, and thus can have an impact on the formulation of species recovery plans.

Regional Breeding Programs

Following the lead of the AAZPA, several other geographical regions have initiated cooperative breeding and management programs. The Australasian Species Management Programme (ASMP) and the Europaisches Erhaltungszucht Programm (EEP) are the SSP-like programs for the Australasian and European zoo communities, respectively. The British and Japanese communities have their own versions of the SSP program as well.

Global Conservation Coordinator's Committee (of CBSG)

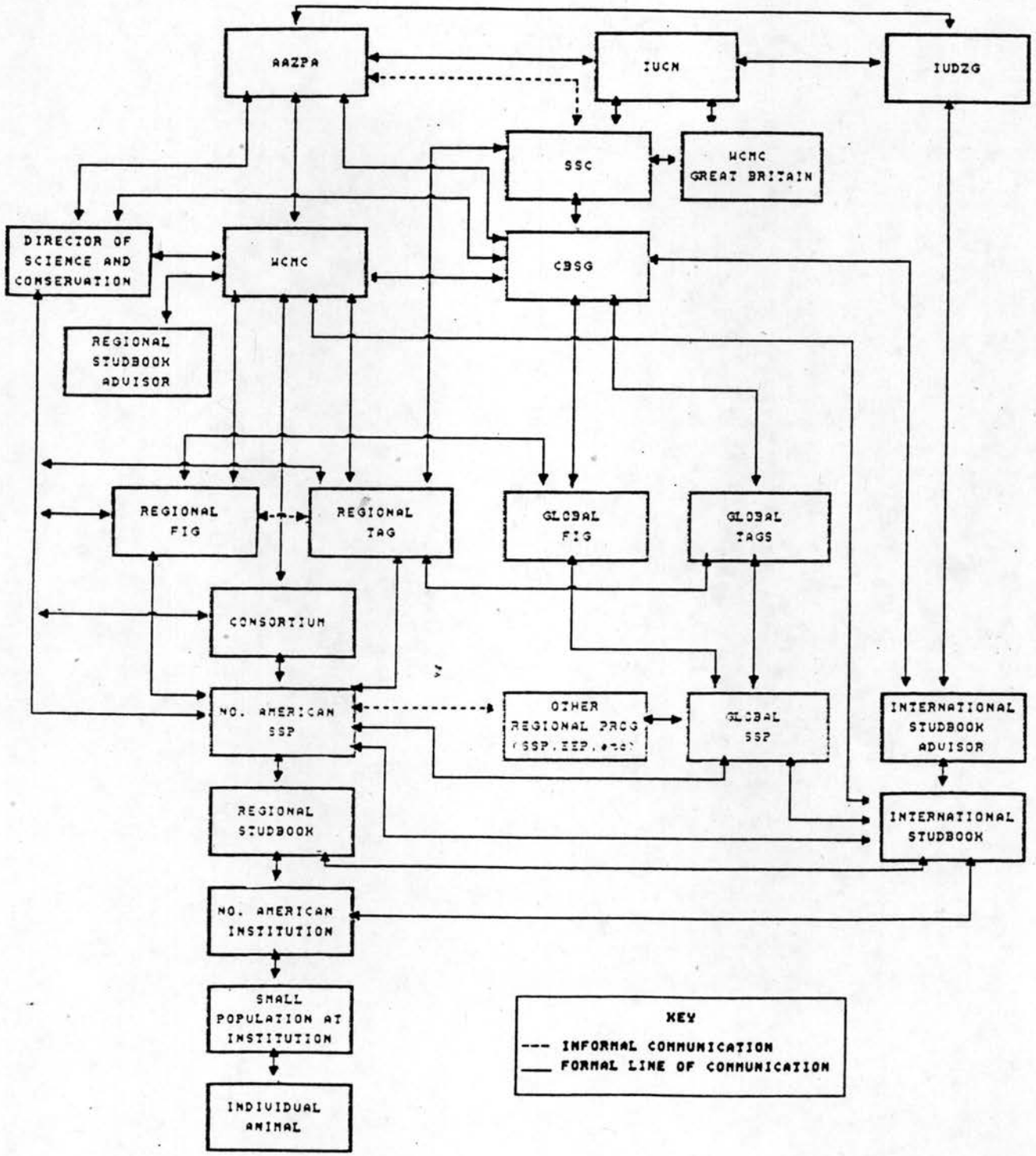
A Global Conservation Coordinator's Committee (GCCC) was formed at the 1990 CBSG Annual Conference in Copenhagen, Denmark. Organized under the auspices of CBSG, this committee consists of the conservation coordinators or directors from the regions or nations which have formal captive breeding programs. Conservation Coordinators/Directors from North America, the British Isles, Europe, Australia/New Zealand, Japan, and the Netherlands currently make up this committee. The group was formed in an effort to facilitate international cooperation and communication among the global captive breeding community.

One potential future role of this committee will be to develop protocols for international cooperation in captive breeding programs, including the establishment of global species management plans and protocols for the movement of animals between various regions for the purposes of genetic and demographic management or reintroduction. Thus, the goal is for CBSG to develop a global coordinating role similar to that currently practiced by the various regional breeding programs. One thought is that the GCCC will help to identify global species coordinators. Such individuals will be responsible for integrating the various regional programs into a single, coherent, global plan.

International Union of Directors of Zoological Gardens

The International Union of Directors of Zoological Gardens (IUDZG) is a non-governmental organization and an international member of the IUCN. Membership is open to all full-time, Chief Executives of Zoological Gardens and Aquaria which are established and managed primarily for scientific, cultural and educational purposes or for the promotion of zoological research on a non-profit basis. IUDZG is responsible for approving and monitoring international studbooks and promoting international communication between the directors of zoological institutions.

Conservation Flow Chart



American Association of Zoological Parks and Aquariums

CONSERVATION COORDINATOR'S OFFICE • MINNESOTA ZOOLOGICAL GARDEN
12101 JOHNNY CAKE RIDGE ROAD • APPLE VALLEY, MN 55124 • [redacted]
(612) 431-9255/9301

30 August 1988

K. Roberts

TO: Institutions Maintaining Clouded Leopard

FROM: Tom Foose

SUBJECT: ORGANIZATION OF CLOUDED LEOPARD SSP PROGRAM

Attached is the Memorandum of Participation (MOP) to organize the SSP program for Clouded Leopard. John Lewis, John Ball Zoological Gardens, is Species Coordinator and Studbook Keeper.

If you desire to participate in this program, please sign the enclosed MOP and appoint your Institutional Representative. Please respond to me by 15 September 1988.

Once we have all the MOP's, we'll proceed to conduct an election for the Propagation Group.

TJF/slp

cc: J. Lewis
D. Bruning
R. Wagner
W. Conway
P. Krantz
E. Schmitt

AAZPA SPECIES SURVIVAL PLAN (SSP)

MEMORANDUM OF PARTICIPATION

FOR

CLOUDED LEOPARD

Neofelis nebulosa

The MINNESOTA ZOOLOGICAL GARDEN (Institutional Name) will participate in an SSP program on clouded leopard initially for a period of 10 years. Thereafter, this commitment will automatically renew until or unless the Species Coordinator and AAZPA Conservation Coordinator is advised your institution is withdrawing from the program. Your institution reserves the right to withdraw from the program at any time.

This commitment is to cooperate in a program of populational management of the clouded leopard under the guidance of the Species Coordinator, designated by the Wildlife Conservation and Management Committee, and the Propagation Group of 9 members elected from and by the Participating Institutions. The Memorandum does not constitute transfer of ownership or relinquishment of control of animals to the SSP, Species Coordinator, or Propagation Group. However, Participating Institutions will attempt to manage their animals in accordance with the strategic guidelines and specific recommendations of the Species Coordinator and Propagation Group. Proposals from the Species Coordinator and Propagation Group will include advice on mate selection, animal relocations, breeding schedules, and culling programs with the objective of long-term maintenance of a genetically diverse and demographically stable population.

Individual designated to represent your institution and nominated to serve on the Propagation Group:

Katharine Latinen	Curator/Tropics Mammals	(612) 431-9275
Name	Title	Phone

Endorsement of institution's chief executive officer:

[signature]	General Director	9/8/88
Signed by Kathryn R. Roberts	Title	Date

Please return the signed copy to the AAZPA Conservation Coordinator before 15 September 1988.

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
AAZPA Conservation Office
Minnesota Zoological Garden
Apple Valley, MN 55124

American Association of Zoological Parks and Aquariums

American Association of Zoological Parks and Aquariums

CONSERVATION COORDINATOR'S OFFICE • MINNESOTA ZOOLOGICAL GARDEN
12101 JOHNNY CAKE RIDGE ROAD • APPLE VALLEY, MN 55124 • (612) 432-9010

1 April 1987

Ross Taylor
Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
Apple Valley, MN 55124

Dear Ross:

Species Coordinator Guy Smith informs us that you are participating in the SSP Program for Asian lion. We do not seem to have a Memorandum of Participation from your institution in our files. Therefore, would you please have your chief executive officer complete and sign the enclosed Memorandum of Participation and return to us before 15 April 1987.

Sincerely,

Sandra Lee Palumbo
Secretary

TJF/slp

Attachment

cc: G. Smith

AAZPA SPECIES SURVIVAL PLAN (SSP)

MEMORANDUM OF PARTICIPATION

FOR

ASIAN LION

Panthera leo persica

The MINNESOTA ZOOLOGICAL GARDEN (Institutional Name) will participate in an SSP program on Asian lion initially for a period of 10 years. Thereafter, this commitment will automatically renew until or unless the Species Coordinator and AAZPA Conservation Coordinator is advised your institution is withdrawing from the program. Your institution reserves the right to withdraw from the program at any time.

This commitment is to cooperate in a program of populational management of the Asian lion under the guidance of the Species Coordinator, designated by the Wildlife Conservation and Management Committee, and the Propagation Group of 9 members elected from and by the Participating Institutions. The Memorandum does not constitute transfer of ownership or relinquishment of control of animals to the SSP, Species Coordinator, or Propagation Group. However, Participating Institutions will attempt to manage their animals in accordance with the strategic guidelines and specific recommendations of the Species Coordinator and Propagation Group. Proposals from the Species Coordinator and Propagation Group will include advice on mate selection, animal relocations, breeding schedules, and culling programs with the objective of long-term maintenance of a genetically diverse and demographically stable population.

Individual designated to represent your institution and nominated to serve on the Propagation Group:

Ross S. Taylor	Zookeeper	(612)432-9010
Name	Title	Phone

Endorsement of institution's chief executive officer:

Kathryn Roberts	Director	Same
Signed by	Title	Date

Please return the signed copy to the AAZPA Conservation Coordinator before 15 April 1987.

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
AAZPA Conservation Office
Minnesota Zoological Garden
Apple Valley, MN 55124

American Association of Zoological Parks and Aquariums

The Minnesota Zoo

September 29, 1988

Diane Bowen
Office of Management Authority
P.O. Box 27329, Central Station
Washington, D.C. 20038-7329

Dear Ms. Bowen:

Find enclosed an Endangered Species/CITES permit application for 1.3 Asian Wild Horses (Equus przewalski). This application should accompany the original application submitted by Larry Killmar of the San Diego Wild Animal Park, which has been assigned file number 731717 by your office.

The four horses to be transferred from Minnesota are:

male #688, New York 17, b. 31 VII 76
female #1514, Minnesota 28, b. 12 XI 86
female, Minnesota 31, b. 22 V 87
female, Minnesota 33, b. 22 VI 87

The stallion, New York 17, and the mare, Minnesota 31, are owned by the New York Zoological Society and the Chicago Zoological Park, respectively. The mares, Minnesota 28 and 33 are owned by the Minnesota Zoo.

Representatives of each of the owners convened on September 23 in Milwaukee at the Asian Horses Species Survival Plan Committee meeting. Each institution has endorsed this transfer of horses.

Sincerely,

Nick Reindl
Curator

Enclosure

cc: Kathryn Roberts, Director
Minnesota Zoo

Jim Doherty, General Curator
New York Zoological Society

Ed Schmidt, Associate Director/Animal Programs
Chicago Zoological Park

Larry Killmar, Curator of Mammals
San Diego Wild Animal Park

OMB NO 42-R1670

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

FEDERAL FISH AND WILDLIFE LICENSE/PERMIT APPLICATION

1. APPLICATION FOR *(Indicate only one)*

CITES, Endangered species

☐ IMPORT OR EXPORT LICENSE ☒ XX PERMIT

2. BRIEF DESCRIPTION OF ACTIVITY FOR WHICH REQUESTED LICENSE OR PERMIT IS NEEDED.

To export 1.3 Asian Wild Horse (Equus przewalski) in international shipment to the Gansu Endangered Wildlife Breeding Center, Wu Wei City, Gansu Province, People's Republic of China

3. APPLICANT. *(Name, complete address and phone number of individual, business, agency, or institution for which permit is requested)*

Minnesota Zoological Garden
13000 Zoo Blvd.
Apple Valley, MN 55124

4. IF "APPLICANT" IS AN INDIVIDUAL, COMPLETE THE FOLLOWING:

☐ MR. ☐ MRS. ☐ MISS ☐ MS. | HEIGHT | WEIGHT

DATE OF BIRTH | COLOR HAIR | COLOR EYES

PHONE NUMBER WHERE EMPLOYED | SOCIAL SECURITY NUMBER

OCCUPATION

ANY BUSINESS, AGENCY, OR INSTITUTIONAL AFFILIATION HAVING TO DO WITH THE WILDLIFE TO BE COVERED BY THIS LICENSE/PERMIT

5. IF "APPLICANT" IS A BUSINESS, CORPORATION, PUBLIC AGENCY, OR INSTITUTION, COMPLETE THE FOLLOWING

EXPLAIN TYPE OR KIND OF BUSINESS, AGENCY, OR INSTITUTION

Public Zoo conducts conservation and research programs in addition to education and recreational activities.

NAME, TITLE, AND PHONE NUMBER OF PRESIDENT, PRINCIPAL OFFICER, DIRECTOR, ETC.

Kathryn Roberts, Ph.D.
Director 612/431-9299

IF "APPLICANT" IS A CORPORATION, INDICATE STATE IN WHICH INCORPORATED

6. LOCATION WHERE PROPOSED ACTIVITY IS TO BE CONDUCTED

Minnesota Zoological Garden
1300 Zoo Blvd.
Apple Valley, MN 55124

7. DO YOU HOLD ANY CURRENTLY VALID FEDERAL FISH AND WILDLIFE LICENSE OR PERMIT? ☒ YES ☐ NO
(If yes, list license or permit numbers)

PRT 707429 PRT 699845 PRT 715554
PRT 676793

8. IF REQUIRED BY ANY STATE OR FOREIGN GOVERNMENT, DO YOU HAVE THEIR APPROVAL TO CONDUCT THE ACTIVITY YOU PROPOSE? ☒ YES ☐ NO
(If yes, list jurisdictions and type of document)

CITES Import Permit

9. CERTIFIED CHECK OR MONEY ORDER *(if applicable)* PAYABLE TO THE U.S. FISH AND WILDLIFE SERVICE ENCLOSED IN AMOUNT OF

$ n/a

10. DESIRED EFFECTIVE DATE

15 October

11. DURATION NEEDED

12 months

12. ATTACHMENTS. THE SPECIFIC INFORMATION REQUIRED FOR THE TYPE OF LICENSE/PERMIT REQUESTED *(See 50 C.F.R. 13.12(b))* MUST BE ATTACHED. IT CONSTITUTES AN INTEGRAL PART OF THIS APPLICATION. LIST SECTIONS OF 50 CFR UNDER WHICH ATTACHMENTS ARE PROVIDED.

CERTIFICATION

I HEREBY CERTIFY THAT I HAVE READ AND AM FAMILIAR WITH THE REGULATIONS CONTAINED IN TITLE 50, PART 13, OF THE CODE OF FEDERAL REGULATIONS AND THE OTHER APPLICABLE PARTS IN SUBCHAPTER B OF CHAPTER I OF TITLE 50, AND I FURTHER CERTIFY THAT THE INFORMATION SUBMITTED IN THIS APPLICATION FOR A LICENSE/PERMIT IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT ANY FALSE STATEMENT HEREIN MAY SUBJECT ME TO THE CRIMINAL PENALTIES OF 18 U.S.C. 1001.

SIGNATURE *(In ink)* Kathryn Roberts | DATE 9-30-88

3-200
(5/74)

GPO 895-042

Minnesota Zoological Garden Apple Valley, MN 55124 612-432-9010 Cable: MZOO

sent to John Lewis w/ ltr. for Bruning

October 6, 1986

Dr. Donald Bruning
Chairman, WCMC
Curator, Department of Ornithology
New York Zoological Society
185th Street and Southern Blvd.
Bronx, NY 10460

Dear Dr. Bruning:

I would like to request that the Clouded Leopard Studbook which is currently the responsibility of the Minnesota Zoo be transferred to the John Ball Zoo, Grand Rapids, Michigan. Mr. John Lewis, the director of the John Ball Zoo, has been keeping the Clouded Leopard Studbook since its inception and is the ideal candidate to continue this important endeavor. We believe that all of the goals and objectives of the WCMC's charter for studbook keepers can be met by this transfer. If any additional supporting evidence or information is necessary in order to make this transaction please do not hesitate to contact me.

Sincerely,

Kathryn Roberts

Kathryn R. Roberts
Acting Director, Minnesota Zoological Garden

KRR:kf

cc: John Lewis

SF-00009-03

STATE OF MINNESOTA

DEPARTMENT MINNESOTA ZOOLOGICAL GARDEN

Office Memorandum

TO: Ron Tilson

DATE: 10/6/86

FROM: Kathryn R. Roberts

PHONE: x300

SUBJECT: TRANSFER OF STUDBOOK TO JOHN LEWIS

Will you please draft a letter for me allowing the transfer of the studbook to John Lewis? Thanks.

The letter goes to Don Bruney, Chair of WCMC saying that the Minnesota Zoo is willing to transfer the Clouded Leopard Studbook to John Ball Zoo.

KRR:gdb

AAZPA SPECIES SURVIVAL PLAN (SSP)

MEMORANDUM OF PARTICIPATION

FOR

PRZEWALSKI HORSE

Equus przewalski

The MINNESOTA ZOOLOGICAL GARDEN (Institutional Name) will participate in an SSP program on Przewalski Horse for a period of 5 years or until notifying the AAZPA Species Coordinator of its withdrawal.

This commitment is to cooperate in a program of populational management of the Przewalski Horse under the guidance of the Species Coordinator, designated by the Wildlife Conservation and Management Committee, and the Propagation Group selected from and by the participating institutions. The Memorandum does not constitute transfer of ownership or relinquishment of control of animals to the SSP, Species Coordinator, or Propagation Group. However, participating institutions will attempt to manage their animals in accordance with the strategic guidelines and specific recommendations of the Species Coordinator and Propagation Group. Proposals from the Species Coordinator and Propagation Group will include advice on mate selection, animal relocations, breeding schedules, and culling programs with the objective of long-term maintenance of a genetically diverse and demographically stable population.

Individual designated to represent your institution and to serve on the Propagation Group.

Nick Reindl	Curator, Northern Trail	(612) 432-9010
Name	Title	Phone

[signature]	Gen. Director	8/23/83
Signed by	Title	Date

Please return the signed copy to the AAZPA Conservation Coordinator before 23 August 1983.

Tom Foose
AAZPA Conservation Coordinator
Minnesota Zoological Garden
Apple Valley, MN 55124

American Association of Zoological Parks and Aquariums

PRZEWALSKI HORSE - INSTITUTIONS

Charles L. Bieler
Executive Director
San Diego Zoo
San Diego, CA 92112

Clayton Freiheit
Director
Denver Zoological Gardens
City Park
Denver, CO 80205

Steve Iserman
Director
Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
Apple Valley, MN 55124

Gary Clarke
Director
Topeka Zoological Park
635 Gage Boulevard
Topeka, KS 66606

Dr. Christen Wemmer
Director
National Zoological Park
3000 Connecticut Avenue NW
Washington, DC 20008

William G. Conway
General Director
New York Zoological Park
185th Street & Southern Blvd
Bronx, NY 10460

George Rabb, Ph.D.
Director
Chicago Zoological Park
3300 Golf Road
Brookfield, IL 60513

Roland Lindemann
President/Executive Director
Catskill Game Farm, Inc.
R.D. 1, Box 133
Catskill, NY 12414

Warren Thomas, DVM
Director
Los Angeles Zoo
5333 Zoo Drive
Los Angeles, CA 90027

Charles Wilson
Director
Memphis Zoological Garden & Aqu
2000 Galloway Avenue
Memphis, TN 38112

William Gruenerwald
Canyon Colorado Equid Sanctuary
P.O. Box 909 - Antlers Plaza
Colorado Springs, CO 80901

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

John Lewis
Please advise
Steve

DATE: 2 August 1983

REPLY TO:

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Steve Iserman
Director
Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
Apple Valley, MN 55124

Dear Steve:

The Species Survival Plan (SSP) for Przewalski Horse continues to progress as one of the leading programs for cooperative management in the zoo world. Indeed, the inception of this program as the North American Przewalski Horse Breeders Group in 1979 at the San Diego Endangered Species Conference represented one of the first attempts of its kind.

As the program continues to grow in scope and complexity, it seems beneficial to formalize more the participation and representation of the institutions with horses by organizing an SSP Propagation Group along the model that has been developed with other species (e.g., the Siberian tiger and various rhinos). Therefore, Species Coordinator Dr. Oliver Ryder has requested that my office contact you on this matter.

Attached is a copy of a Memorandum of Participation which you will have seen before in relation to other species. Could you please sign this form and indicate who the official (i.e., voting) representative of your institution will be. Since only eleven AAZPA institutions are now or soon will be maintaining horses, an election for the Propagation Group will not be necessary. Your representative will automatically be a member.

Please return the signed form to me by 23 August 1983. If you have any questions, please contact me or Ollie Ryder.

Best regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

Attachment

AAZPA SPECIES SURVIVAL PLAN (SSP)

MEMORANDUM OF PARTICIPATION

FOR

ASIAN SMALL-CLAWED OTTER

(Aonyx cinerea)

The Minnesota Zoological Garden (Institutional Name) will participate in an SSP program on Asian Small-Clawed Otter for a period of 5 years or until notifying the AAZPA Species Coordinator of its withdrawal.

This commitment is to cooperate in a program of populational management of the Asian Small-Clawed Otter under the guidance of the Species Coordinator, designated by the Wildlife Conservation and Management Committee, and the Propagation Group of 10 members elected from and by the participating institutions. The Memorandum does not constitute transfer of ownership or relinquishment of control of animals to the SSP, Species Coordinator, or Propagation Group. However, participating institutions will attempt to manage their animals in accordance with the strategic guidelines and specific recommendations of the Species Coordinator and Propagation Group. Proposals from the Species Coordinator and Propagation Group will include advice on mate selection, animal relocations, breeding schedules, and culling programs with the objective of long-term maintenance of a genetically diverse and demographically stable population.

Individual designated to represent your institution and nominated to serve on the Propagation Group.

John Lewis	Asst. Director, Biological Programs	(612) 432-9010
Name	Title	Phone

[signature]	Gen. Director	8/23/83
Signed by	Title	Date

Please return the signed copy before 17 JUNE 1983 to:

Edward C. Schmitt
Chairman AAZPA/WCMC
Denver Zoological Gardens
City Park
Denver, Colorado 80205

American Association of Zoological Parks and Aquariums

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 10 May 1983

REPLY TO:

Edward C. Schmitt
Chairman, AAZPA/WCMC
Denver Zoological Gardens
City Park
Denver, CO 80205

TO: North American Institutions with Asian Small-Clawed Otter

FROM: Ed Schmitt

SUBJECT: Formal Organization of Asian Small-Clawed Otter SSP Program

The Asian Small-Clawed Otter (Aonyx cinerea) was designated an SSP Species during 1982. Subsequent to designation, Pat Foster-Turley, Education Director, Marine World Africa USA, was designated Species Coordinator and Studbook Keeper.

The studbook for the species is completed and nearing publication. It is felt that in order to begin work on the species master breeding plan, the next logical step is the formation of the propagation group.

Enclosed is the Memorandum of Participation for your institution. Also included in the Memorandum of Participation is a request for your candidate to serve on a propagation group. Please enter this individual's name in the space provided and return the signed Memorandum to Ed Schmitt by 17 JUNE 1983.

Upon receipt of all signed Memoranda of Participation, the individual candidate will be placed on a ballot to be circulated to the individuals nominated. They will vote for 10 nominees and those receiving the top 10 votes will be elected to the propagation group.

Your cooperation in this important process is appreciated.

Edward C. Schmitt
Chairman, AAZPA/WCMC

cc: R. Wagner
W. Conway
P. Karsten
A. Shoemaker
E. Turner

SF-00006-03

STATE OF MINNESOTA

DEPARTMENT Biological Programs

Office Memorandum

TO: Steve Iserman

DATE: August 19, 1983

FROM: John Lewis

PHONE: X 260

SUBJECT: SSP for Przewalski Horse and Small-Clawed Otters

My recommendation is that we participate in both of these programs, but at different levels.

For the Przewalski horse group, we should definitely participate with Nick Reindl being our representative. There are some very important issues relevant to the status of our horses that you should be informed about. I would suggest a discussion in the near future with you, Nick and myself on this matter.

For the Small-clawed otters, we should participate with myself being the Zoo's representative. However, our participation should be limited to making our otters available to the program, but not (at this time) putting a lot of effort into propagating this species. I do not think, given other priorities, that we want to get into an involved propagation program for these otters now.

JL:ad

Enclosure

SURPLUS ANIMAL PROBLEMS AT ZOOLOGICAL GARDENS

The mission of the Minnesota Zoological Garden (MZG), as approved by the Minnesota Zoological Board, is stated as follows: The Minnesota Zoological Garden is dedicated to the presentation of animal life to further the understanding and enjoyment of nature. One of the MZG's objectives for accomplishing this mission relates to conservation. It states that: To aid in the conservation of selected species, the Zoo will contribute through reproductive strategies and in the sharing of biological information.

The need for reproductive strategies or planned breeding programs is critical to modern zoos and aquariums. Once zoos were devoted to exhibits of wild animals that were replaced from nature when they died. Today's zoos, including the MZG, devote increasing priority to propagating their own wild animals. In fact, zoos are increasingly cooperating to maintain self-sustaining animal populations; populations that continue long-term through captive breeding and therefore reduce or eliminate the need to supplement captive populations with animals caught from the wild. This change occurred not only because it has become difficult or impossible to replenish collections from nature, but also because of increased public interest in the plight of disappearing animals.

In response to the public interest about disappearing animals and the prediction that many animal species will be extinct by the year 2000, zoos are becoming refuges for a variety of species. But how big is our refuge? North American zoos average less than 55 acres; only a portion of which is devoted to actual animal space. Their combined area is less than 20,000 acres. In fact, it has been calculated that all of the zoos in the world could fit within New York City's Borough of Brooklyn. To bring that closer to home, all of the world's zoos could fit within the combined city limits of Minneapolis and St. Paul. With such limited space it is an uncomfortable reality that zoos cannot save every animal species. We must instead make hard decisions based on the ability of zoos to keep adequate numbers of a species to insure its survival in captivity and our ability to meet its physical, medical and behavioral needs. It is this dilemma of which species to keep and how many that brings us to the basis of the MZG's decision to euthanize a female Siberian tiger.

Zoos have become very good breeders of exotic animals. There are a variety of species that we can reproduce so successfully that we quickly overcome the capacity of zoos to keep them. The big cats are a good example of this problem. Currently, there is room for 2,000 big cats in North American zoos and some private facilities. That is 2000 places for some combination of lions, tigers, leopards, jaguars, pumas, snow leopards, cheetahs and clouded leopards. By applying the principles of population genetics we know that if we wish to maintain captive populations that have a reasonable chance for long-term survival, we need stable populations of at least 250 individuals for each species we maintain. If zoos in North America collectively kept 250 of each of the eight cats listed above that would equal 2,000 cats. The first time any of these cats reproduced and weaned offspring North American zoos would have exceeded their capacity. The problem is further complicated by the fact that there are many different subspecies, or different types, of lions, tigers, leopards, etc. For example there are Asian and African lions; Bengal, Siberian, Sumatran, etc. tigers; and many different types of leopards. There are potentially 45 different types of big cats, instead of eight, that we could attempt to keep in our zoos. It would require room for about 12,000 individuals to properly maintain each subspecies. We have room for only 2,000. These hard decisions must be made. Which big cats will North American zoos attempt to maintain for the long term?

Long term survival of any captive species will require coordinated, cooperative programs. North American zoos are currently selecting species of birds, mammals, reptiles and amphibians that we will try to maintain for the long term. These programs are under the direction of our national organization, the American Association of Zoological Parks and Aquariums (AAZPA), within an activity called the Species Survival Plan (SSP). There is a separate SSP program for each species.

One SSP program is for Siberian tigers. Nearly all of the AAZPA member institutions that maintain Siberian tigers have agreed to participate in this program. It is the most comprehensive SSP program that currently exists in North America. The program is designed to manage a population of 250 Siberian tigers in specific sex ratios and age groups. That is, there are to be an equal number of males (125) and females (125) in the population. And, the population is to be composed of various age groups such as 1 year olds, 2 year olds, 3 year olds, etc. It is desirable to have more young animals than old animals (See Fig. 1) so as animals die of natural causes, disease, or injury the population has sufficient breeding age animals to continue the species.

The tiger SSP has been developed for approximately the next 10 years, identifying which tigers should be bred, to whom, and during what year. In addition to the concerns about age and sex distribution the tiger SSP also selects mates to reduce inbreeding and to promote equal founder representation within the tiger population. A "founder" is a tiger that was originally imported from the wild. Equal founder representation is desirable so we maintain as much as possible the genetic diversity each founder brought from the wild into our captive population. Figure 2 illustrates the current situation for Siberian tigers (Amur = Siberian). Obviously several tigers are over-represented while others are drastically under-represented. The SSP is striving to balance founder representation at about 6%.

The tiger SSP is based on statistical models and mathematical averages. For example, we know that female Siberian tigers have, on the average, 2 or 3 cubs per litter. However, occasionally a female may have many more cubs, possibly even 7 or 8, in one litter. The tiger SSP requires that for each pair of tigers identified for breeding, one male and one female offspring survive and breed to continue the program. If more of either sex in a litter survive to breeding age, those additional tigers may be designated surplus to the SSP. Being surplus means that they should not be bred during their lifetime. If the surplus tigers were bred then their parents and their founder ancestors would become over-represented in North American Siberian tigers. (An important exception to the above is when a new founder is brought into the population. It is then necessary to produce many offspring to rapidly increase the founder's representation.)

What then are the options for a zoo with tigers that are surplus to the tiger SSP? To insure that a SSP surplus tiger or its offspring do not enter the breeding population the following disposition alternatives are offered:

1. Sale, trade, or donation to appropriate North American institutions not participating in the species breeding plan but wishing to exhibit non-breeding specimens.

2. Sale, trade, or donation to reputable zoos overseas for exhibition and/or enhancement of species survival.
3. Sale or loan to appropriate research facilities for humane research of benefit to the species.
4. Continued maintenance of surplus animals in the institution of origin apart from, and in addition to, the institution's precise and stable commitment to the SSP population.
5. Euthanasia.

Given these five alternatives why did MZG decide to euthanize our female Siberian tiger? First, she was one of six cubs from two litters. Two males and two females were placed in breeding situations and a third male identified for back-up. Therefore, we had one female that was surplus to the SSP program. The AAZPA publishes monthly an Animal Exchange List. This list identifies all surplus animals each member institution wishes to offer for sale, trade, or donation. Starting in February 1983 the MZG listed our surplus female tiger for five consecutive months, terms being gratis/approved. That is, we would give her, free of charge, to any AAZPA member institution, private breeder or commercial dealer that could satisfy us that they could adequately and humanely care for the tiger. After no inquiries came forward we listed her again, gratis/approved, in the December 1983 listing and there were still no inquiries.

Placement of SSP surplus animals in foreign zoos should be coordinated through the AAZPA's Conservation Coordinator, and in the case of Siberian tigers, the Species Coordinator for the tiger SSP. This is necessary because most of the Siberian tigers in North America are related to tigers in many foreign zoos. The tiger coordinator must therefore decide which SSP surplus tiger, if any, should go to a foreign zoo that inquires about receiving North American surplus tigers. In the case of our female tiger there were no appropriate foreign zoos of which we were aware.

There were no requests to take the female tiger for humane research. One inquiry was made to conduct research on her at the Zoo for six weeks, but the zoo turned it down.

The issue of whether to keep the female tiger at the MZG indefinitely is a more complex problem, but it basically refers back to the limited space and resources in all zoos that was discussed on page 1 of this paper. For every surplus animal we keep at the MZG, resources of staff, space and money are consumed, thereby preventing the MZG from expanding its conservation efforts to include other species. MZG has one of the largest, if not the largest, collection of Siberian tigers in North America. Since opening in 1978 the Minnesota Zoo has managed and maintained 36 different Siberian tigers. We are currently housing and caring for 17 tigers. Sixteen tigers (5 litters) have been born at the MZG of which 14 survive. We have placed MZG-born tigers in zoos in Delaware, New York, Louisiana, California, Texas and Scotland and will place tigers in Pennsylvania, Illinois, Canada and Colorado as those zoos find the space necessary to accept our animals. Given our above average participation in this species, and the fact that the tiger SSP will insure the long-term survival of Siberian tigers in captivity, keeping the surplus tiger would not be of benefit to the species. It would however tie up resources and staff time that could be committed to another species.

It was after all of the above considerations that the MZG decided to euthanize the female Siberian tiger. Euthanasia would be conducted in such a way as to meet the requirements of the American Veterinary Medical Association and the American Association of Zoo Veterinarians for humane treatment.

The surplus animal problem in zoos involves much more than just Siberian tigers. Because of the limited zoo habitat, every time a zoo breeds one of its animals there is a risk that a new location cannot be found for the offspring. It is not responsible to stop breeding animals. We can, and have, reduced the frequency in which we breed several species. But if we stop breeding, how can we know that the animal will breed in the future just because zoo managers decide they should? We could disrupt the age and sex distribution of the population. Some species only breed reliably immediately after delivering offspring. Shutting them down reproductively may preclude any future reproduction. Birth control, other than separation, in exotic animals is not a very advanced technology, but it does offer a potential solution. Social species, those living in groups, may suffer behaviorally if we separate them to prevent breeding. Given these complex problems zoos have opted for continued reproduction while euthanizing surplus offspring that cannot otherwise be placed.

Finally, we would like to address the issue of who, institution or individual, is qualified to receive MZG's surplus animals. The MZG operates under the ethic that our responsibility to our animals does not end just because it leaves our premises; and that it is more humane to euthanize an animal than to send it to another facility that cannot provide proper care. This ethic encourages the MZG to investigate and be assured through previous experience, references or on-site investigations that anyone receiving our animals is qualified to care for them. Except in rare instances we will not provide exotic animals for pets. We will not provide animals for inhumane research, shooting ranches, firms that sell exotic animal meats, animal auctions open to the general public, or any transaction that is in violation of laws that apply to the acquisition, transportation, maintenance and sale of animals.

Acknowledgements

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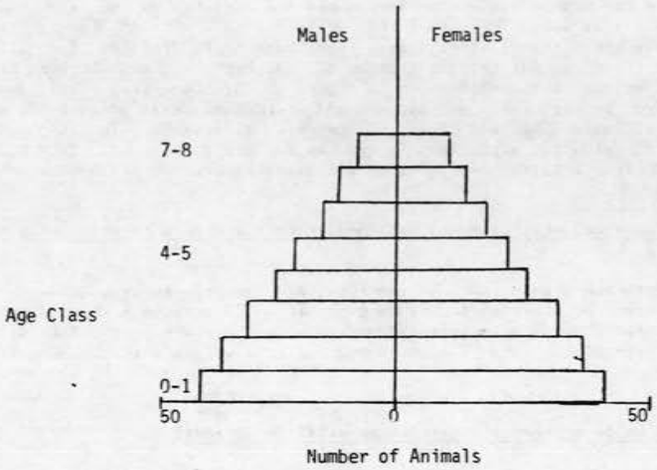
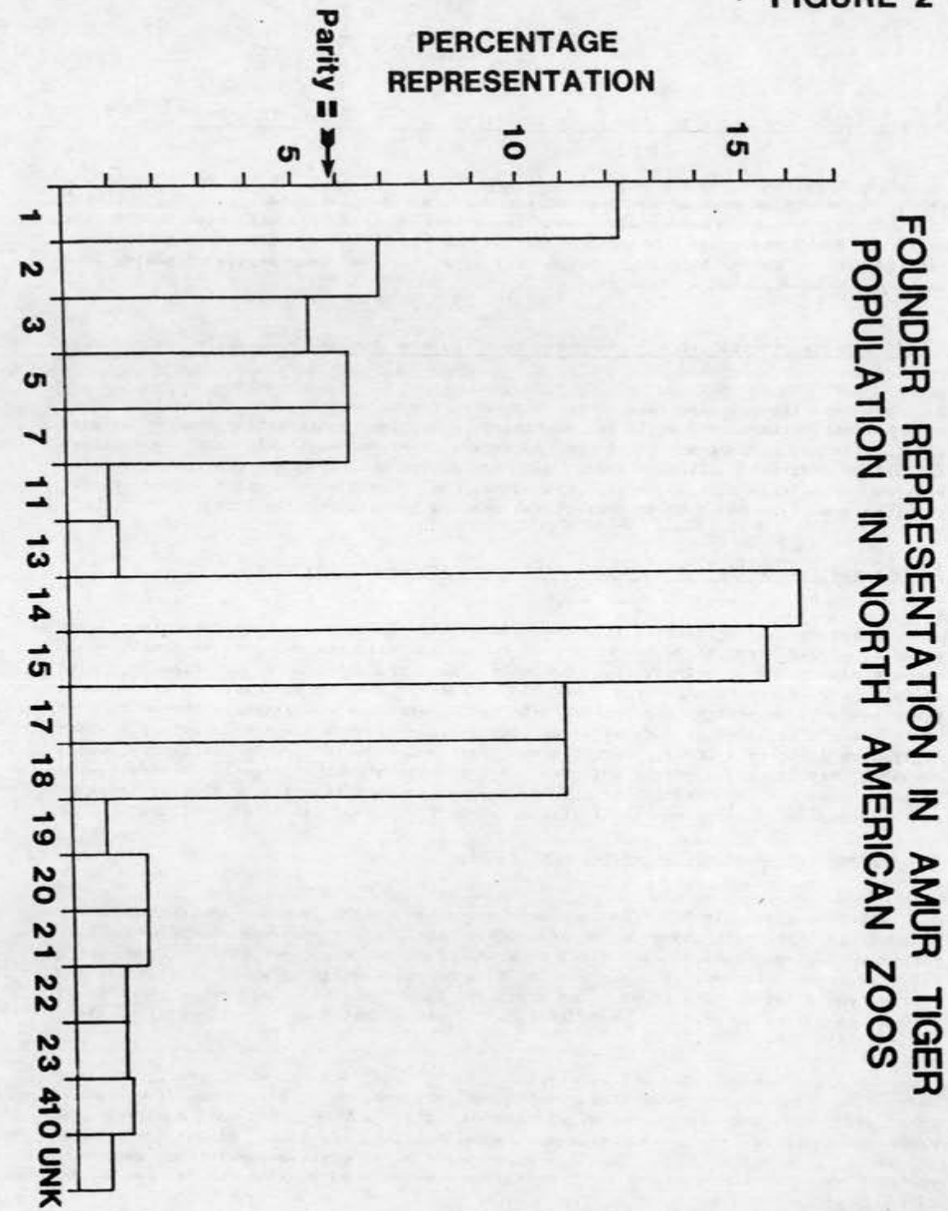
Figure 1



This is an example of desirable age distribution for a captive animal population. NOTE that there are more young animals than older ones, and that there are an equal number of males and females in each age class.

FIGURE 2



QUESTIONS AND ANSWERS

1. Why didn't the MZG place the tiger at another zoo or private location?

MZG attempted to locate another home for the female tiger for the entire year of 1983. The way we pursued this was to list her in a surplus animal list that is sent to all zoos, private breeders and commercial animal dealers that are members of the American Association of Zoological Parks and Aquariums (AAZPA). The tiger was offered free to anyone that could prove they were qualified and capable of caring for the tiger. We received no inquiries.

2. If Siberian tigers are an endangered species, how could we justify euthanizing one?

Siberian tigers, like many of the big cats, are endangered in the wild. They do, however, reproduce well in captivity. Captive reproduction must be managed genetically and demographically to enhance long-term survival and population stability. Variable litter sizes and sex ratios will create a continuing surplus problem. When this surplus exceeds the number of suitable placement alternatives, euthanasia must be employed to protect the species population stability.

3. Why don't we release the surplus captive tigers back into the wild?

Releasing captive animals into the wild is very difficult. A captive tiger, for example, would have to be taught how to locate and kill its own prey -- something it doesn't have to do in captivity. Secondly, but probably more importantly, most animals are disappearing from the wild because of loss of habitat. In other words there may only be enough room for the Siberian tigers that now exist in the wild. An adult male tiger uses as much as seven square miles of area for his territory. Since tigers are solitary animals, placing a new tiger into a wild tiger's territory would probably result in a fight and possibly the death of either tiger. Therefore, the problems that must be overcome to release captive animals is training them to survive on their own and finding enough habitat to support the food and behavioral needs.

4. Why was this female tiger considered surplus?

Siberian tigers in North America maintained at AAZPA member institutions are managed collectively under a program called the Species Survival Plan (SSP). Each participating institution has a staff representative for the tiger SSP. From among all the representatives, ten are elected to a propagation group which is chaired by a species coordinator. The propagation group and the species coordinator prepare a long-range breeding strategy whose goal is to ensure that long-term survival of their assigned species in captivity.

The tiger SSP outlines which tigers are to be bred, during what year, and how many cubs are needed per litter. These designations are to ensure that the captive tiger population does not become highly inbred, that we maintain as much of the genetic diversity in captive tigers as possible, that "founders" (founder = animals originally from the wild) are equally represented in the captive population, and that we only maintain tigers that are breeding or will be bred at some future time in our SSP population.

Our female tiger was one of six cubs born in two litters. Two males and two females were placed in breeding situations and a third male was identified as backup. The remaining female was determined surplus to avoid over-representing her founders. We were instructed not to breed the extra female with a strong recommendation, but not a dictate, to cull her by euthanasia.

5. If the MZG was not required to euthanize the tiger, why did we choose to do so?

If we were to combine all of the land owned and operated by the zoos throughout the world, that area would fit within the combined city limits of Minneapolis and St. Paul. Obviously given that limited space, zoos cannot be refuges for all animal species. For every animal that is kept at MZG another one cannot be kept here. The tiger SSP aims at maintaining 250 Siberian tigers in North America. This number has been identified by population geneticists and statisticians as adequate to avoid the major hazards of inbreeding and loss of genetic diversity. To keep additional surplus tigers wold not significantly aid the captive population. It would however prevent the MZG from applying staff, space and financial resources to other species.

6. If it's resources, what if money was donated to build more tiger holding space?

Again, North American zoos are contributing enough resources now to ensure long-term survival of Siberian tigers in captivity. If persons wish to donate money, we would encourage them to make general donations to their area zoo. This will allow the zoo to respond to the varied needs of the wildlife that could use captive assistance.

7. Why should we be concerned about saving wildlife in zoos?

Preserving wildlife in zoos is the preservation of options. While the difficulties of reintroduction to the wild were explained in question #3, it may be possible for some species. You may not be aware that the American bison was saved from probable extinction by a captive breeding program at the New York Zoological Society, commonly known as the Bronx Zoo. There are several species, such as the Mongolian wild horse and Pere David's deer, that only exist in captive populations. There are none in the wild. Captive animals could also be used someday to supplement wild populations through artificial insemination or egg transplants. Also, knowledge we gain about animals in captivity often helps wildlife managers to better manage free-ranging populations.