



Minnesota State Zoological Board.
Zoo-Related Organizations Files.

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Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
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Telephone (612) 432-9010

A Program of the American Association
of Zoological Parks and Aquariums

INTERNATIONAL SPECIES INVENTORY SYSTEM (ISIS)

MINNESOTA ZOOLOGICAL GARDEN

QUARTERLY PROGRESS REPORT

CONTRACT 14-16-008-2049

April - June 1978

1. OVERALL PROGRESS

Collection and updating of mammal and bird inventory data continues. During the months of April, May, and June, 3,956 mammal and 3,135 bird data forms were received and processed.

First Quarter Inventory and Acquisition/Release Reports were produced for six requesting participants.

A Supplement to the ISIS World Geographic and Zoological Institution Directory was prepared and distributed to all participants.

Development of the Physiological Norms System continues. Data tapes have been produced and work on reports is well underway. Data form design has been completed.

Development of the Pedigree Analysis/Studbook/Demography System is progressing. Additional test data is being compiled and report formats are being finalized.

Cover design of the reptilian, amphibian and fishes taxonomic directories has been completed.

2. CURRENT PROBLEM IMPEDING PROGRESS

None.

3. WORK TO BE PERFORMED DURING NEXT QUARTER (July-September)

Processing of inventory data for mammals and birds will continue. Semi-annual Zoo Inventory and Acquisition/Release Reports will be produced for requesting participants. The 1978 mid-year ISIS Species Distribution Report will be produced.

Programming on the Physiological Norms System continues. Completion of report design and distribution of the procedures manual and data forms is planned.

Programming continues in the development of the Pedigree Analysis/Studbook/Demography System. Most proposed reports should be available by the end of the quarter.

Compilation of the reptilian and amphibian taxonomic directories will begin.



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CONTRACT 14-16-0008-2049

January - March 1978

1. OVERALL PROGRESS

Collection and updating of mammal and bird inventory data continues. During the months of January, February and March, 4,324 mammal and 3,883 bird data forms were received and processed.

The major project of the quarter was production of the 1977 ISIS Species Distribution Report and the individual zoo Inventory and Acquisition/Release reports. These reports were distributed in late February to 111 active participants. The 1977 ISIS Species Distribution Report (copy provided to project officer) included 24,434 living mammals and 13,172 living birds.

Development of the Physiological Norms System continues. Programs editing data during input are complete, as are survey reports indicating the numbers and kinds of records entered for each taxonomic classification.

A paper by Nate Flesness, ISIS programming consultant, entitled "Inbreeding Coefficients: How to Calculate Them by Hand" appeared in The February 1978 issue of the AAZPA Newsletter (copy enclosed).

Dr. U.S. Seal and Janice M. Olsen, ISIS Systems Manager, met with the AAZPA Board of Directors in Denver on 17-18 January 1978. The ISIS budgets for Fiscal years 1978 and 1979 were reviewed. The AAZPA Board of Directors voted to increase the ISIS 1977 Participation Fee to \$1.00 per specimen per year, with a minimum participation fee of \$100.00 per year. The Board also voted to provide up to \$15,000.00, if needed, to balance the ISIS operating budget for Fiscal Year 1978. The Board established a committee to review financing alternatives for ISIS and requested that Dr. U.S. Seal appear before the Board at its mid-year meeting in Los Angeles on 11 March 1978 to review the ISIS Fiscal Year 1979 Budget.

Dr. U.S. Seal attended the 11 March 1978 AAZPA Board of Directors meeting. The AAZPA Board voted to establish ISIS as a Service Commission of the AAZPA, to provide a \$20,000 loan to ISIS for operating expenses between July and December 1978 and to undertake a concerted fund raising effort on behalf of ISIS.

Dr. U.S. Seal presented two papers (copies enclosed) on ISIS entitled "Noah's Ark-Sex and Survival" and "ISIS is for the Birds" at the first International Birds in Captivity Symposium held in Seattle 8-12 March, 1978.

The NOVA TV series filmed an interview between Dr. U.S. Seal and Joanne Holechek, NOVA producer, in which they discussed the role of ISIS in captive population management.

Development of the Pedigree Analysis/Studbook/Demography System is progressing. A trial Siberian Tiger Studbook was produced and reviewed to detect programming bugs and data errors.

An IBM advertisement describing ISIS appeared in the 20 March 1978 issue of Aviation Week and Space Technology and will appear in several other publications during April and May 1978. (copy enclosed)

2. CURRENT PROBLEM IMPEDING PROGRESS

None.

3. WORK TO BE PERFORMED DURING NEXT QUARTER. (April-June)

Processing of inventory data for mammals and birds will continue. Quarterly zoo Inventory and Acquisition/Release Reports will be produced for requesting participants.

Programming on the Physiological Norms System continues. Data tapes will be produced and sample reports will be designed.

Programming continues in the development of the Pedigree Analysis/Studbook/Demography System. Refinement of the Studbook report format will be undertaken.

Review of taxonomic treatises will be completed and compilation of the reptilian and amphibian taxonomic directories will begin.



INTERNATIONAL SPECIES INVENTORY SYSTEM (ISIS)

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CONTRACT 14-16-0008-2049

October - December 1977

1. OVERALL PROGRESS

Collection and updating of mammal and bird inventory data continues. During 1977, 17,246 mammal and 14,399 bird data forms were received and processed. This represents a 50% increase in data processing volume over 1976 when 18,819 mammal and 3,163 bird data forms were processed.

In October, Third Quarter 1977 Institution Inventory and Acquisition/Release Reports were produced and distributed to seven requesting participants.

The ISIS Avian Taxonomic Directory, Part II, was printed and distributed to all active participants.

Reformatting of old Vital Statistics Records to correspond to the new record format is complete. These changes were required to permit extraction of specific data for studbook reports. A total of 15,000 records were reformatted since April 1977.

Programming revisions which resulted in more efficient and economical entry of data into the computer files were completed. Data entry costs associated with processing of large volumes of data on a single species, as in the case of studbooks, had sharply escalated.

Programming on the Physiological Norms System was resumed after agreement on development costs was reached.

Dr. U.S. Seal is serving as member of the Committee on Laboratory Animal Records of the National Research Council. The committee is charged with the responsibility of developing standardized record systems for nonhuman primate research and breeding colonies. At the 1-2 December, 1977, committee meeting, Dr. Seal gave a presentation entitled "Quality Control and Editing of Files", based on ISIS data processing methods.

An ISIS site visit at the Minnesota Zoological Garden was conducted on 14-15 November, 1977, by the American Association of Zoological Parks and Aquariums (AAZPA). Those in attendance were:

AAZPA Executive Director	Robert O. Wagner
AAZPA President	William E. Meeker
AAZPA President-Elect	Edward J. Maruska
AAZPA Vice President	Don D. Farst, D.V.M.
AAZPA Board Member	Dennis A. Merrit, Jr.
AAZPA President	Robert Temple, D.V.M.

Discussion centered on development of a firm financial relationship between ISIS and the AAZPA in order to insure more complete coverage of AAZPA member zoos. The site visit committee requested attendance by Dr. U.S. Seal and Janice M. Olsen, ISIS Systems Manager, at a special AAZPA Board meeting to be held in Denver on 17-18 January 1978. Specific financial and organizational proposals are to be considered at this time.

Omitted from the July-September 1977 Quarterly Report was Dr. U.S. Seal's presentation of the paper "The Noah's Ark Problem" to the Symposium on Management Techniques for Preserving Endangered Birds, held 17-20 August 1977 at the University of Wisconsin.

2. CURRENT PROBLEMS IMPEDING PROGRESS

As indicated in the previous quarterly report and reiterated by Dr. U.S. Seal in his conversation with Office of Endangered Species personnel on 30 November 1977, it is our opinion that it will be necessary to negotiate a portion of increased operating costs with the U.S.D.I. so that we might project a balanced budget. Cost escalation, over and above inflation, is largely due to the necessity to attribute all operating personnel and operating costs directly to the operating budget. The Minnesota Zoological Garden, which makes a substantial direct contribution to the International Species Inventory System by housing the project at no charge, can no longer provide any salary support.

It is our opinion that the portion of the yearly operating budget directly attributable to the need for supervision, maintenance, and operation of the studbook/pedigree/demography program be made part of a contractual agreement between the U.S.D.I. and the Minnesota Zoological Garden.

3. WORK TO BE PERFORMED DURING NEXT QUARTER. (January - March)

Processing of inventory data for mammals and birds will continue. The major project of this quarter will be the production and distribution in February of the annual Zoo Inventory and Acquisition/Release Reports, as well as the 1977 ISIS Species Distribution Report.

Programming on the Physiological Norms System continues. Programming involving the input of data should be completed. Work on report formats will be accelerated.

Nate Flesness, ISIS programming consultant, will prepare the first of a projected series of ISIS articles for publication in the AAZPA Newsletter. The article on calculation of inbreeding coefficients will provide a technique by which local zoos can make breeding choices which will minimize the inbreeding of offspring.

Dr. U.S. Seal and Janice M. Olsen, ISIS Systems Manager, will meet again with the AAZPA Board of Directors in January and in March to continue development of a financial and organizational relationship.

Dr. U.S. Seal will present a paper on ISIS at a symposium of the International Ecological Conservation Foundation to be held in Seattle in mid-March.

Programming continues in the development of the Pedigree Analysis/Studbook/Demography System. Reports on basic data such as birth seasonality and sex ratio, death seasonality, population size history and origins of new animals should be available by the end of the quarter.



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QUARTERLY PROGRESS REPORT

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JULY - SEPTEMBER 1977

1. OVERALL PROGRESS

Collection and updating of mammal and bird inventory data continues. During the months of July, August and September, 4,383 mammal and 3,592 bird data forms were received and processed.

Second Quarter 1977 Institution Inventory and Acquisition/Release Reports were produced and distributed in August to eight requesting participants.

A semiannual ISIS Species Distribution Report was produced at the request of 10 participating institutions. As of 30 June, 1977 there are 23,149 living mammals and 7,751 birds in the data bank.

Programming revisions to the Vital Statistics System are complete. Reformating of old records to correspond to the new record format is 90% complete.

The ISIS Avian Taxonomic Directory, Part II has been completed and is ready for printing.

An annual report of ISIS activities, future plans and budgets was submitted to the American Association of Zoological Parks and Aquariums.

Janice M. Olsen, Systems Manager, represented ISIS at the American Association of Zoological Parks and Aquariums annual conference in San Diego during the period of 17-23 September 1977. She met with the AAZPA Board at length on 17 September and presented a brief report on ISIS activities to the AAZPA membership on 22 September.

Programming on the Pedigree Analysis/Studbook/Demography System continues.

Programming on the Physiological Norms System has been delayed due to high development cost estimates.

2. CURRENT PROBLEMS IMPEDING PROGRESS

Given increased operating costs, it is our opinion that it will be necessary to negotiate a portion of these operating costs with the U.S.D.I. so that we might project a balanced budget. Cost escalation, over and above inflation, is largely due to the necessity to attribute all operating personnel and operating costs directly to the operating budget. The Minnesota Zoological Garden, which makes a substantial direct contribution to the International Species Inventory System by housing the project at no charge, can no longer provide any salary support.

It is our opinion that the portion of the yearly operating budget directly attributable to the need for supervision, maintenance, and operation of the studbook/pedigree/demography program be made part of a contractual agreement between the U.S.D.I. and the Minnesota Zoological Garden.

3. WORK TO BE PERFORMED DURING NEXT QUARTER. (October - December)

The ISIS Avian Taxonomic Directory, Part II, will be printed, and distributed.

Reformatting of the remaining Vital Statistics Records will be completed.

The Physiological Norms System will be reviewed. Development will resume when agreement on reasonable development costs is reached.

Programming continues in the development of the Pedigree Analysis/Studbook/Demography System.

Processing of inventory data for mammals and birds will continue. Third Quarter Inventory and Acquisition/Release Reports will be produced for seven participating institutions.



International Species Inventory System



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APRIL - JUNE 1977

1. OVERALL PROGRESS

The First Quarter 1977 Institution Inventory and Acquisition/Release Reports were produced and distributed to six requesting participants in late May.

Collection and updating of mammal and bird inventory data continues. During the months of April, May, and June, 3,527 mammal and 2,770 bird data forms were received and processed.

Programming revisions to the Vital Statistics System are largely complete. Reformatting of old records to correspond with the new record format is 50% complete.

Programming on the Pedigree Analysis/Studbook/Demography System continues. Test data on *Panthera tigris altaica* has been entered into the computer files.

Programming on the Physiological Norms System continues.

2. CURRENT PROBLEMS IMPEDING PROGRESS

None.

3. WORK TO BE PERFORMED DURING NEXT QUARTER (JULY - SEPTEMBER)

The ISIS Avian Taxonomic Directory, Part II, will be completed, printed, and distributed.

Reformatting of the Vital Statistics Records will be completed. The remaining programming revisions to the Vital Statistics System will be installed.

Programming will continue in the development of the Physiological Norms System. Test data will be entered into the computer files.

Programming will continue in the development of the Pedigree Analysis/Studbook/Demography System. Test data on *Equus przewalskii* will be entered into the computer files. Sample reports will be produced from data in the computer files.

Processing of inventory data for mammals and birds will continue. Second Quarter or Semiannual Inventory and Acquisition/Release Reports will be produced for eight participating institutions. A Semiannual Species Distribution Report will be produced.



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JANUARY - MARCH 1977

1. OVERALL PROGRESS

The 1976 ISIS Species Distribution Report and individual zoological institution inventory and acquisition-release reports were produced and distributed to 115 active ISIS participants in late February.

The Species Distribution Report contains a listing of live animals held by all participants, the animals' locations, ages, and sexes. The summary statement shows there were 26,638 animals live in the data bank as of 31 December 1976; 21,975 mammals and 4,663 birds. There were 4,435 births recorded during 1976 and 2,811 deaths.

The ISIS Institution Procedures manual, Second Edition, is complete and was distributed to all active ISIS participants in March.

Keypunching is complete on Part II of the Avian Taxonomic Directory, which contains the Passeriformes. Final editing is proceeding rapidly. The directory should be ready for the printers by mid-April, to be distributed in mid-May.

The Copenhagen Zoo and the Zoological Society of London have begun ISIS participation. Together with the Rotterdam Zoo, there are now three large European zoos actively submitting animal data to ISIS. Also, the Federation of Zoological Gardens of Great Britain and Ireland has voted to participate in ISIS, wishing first to enter great apes, rare or endangered animals and species that individual zoos expect to manage well into the future.

Letters, encouraging participation in ISIS, have been sent to the major bird breeders in the United States.

A mid-year report of ISIS activities, future plans, and budgets has been submitted to the American Association of Zoological Parks and Aquariums.

Collection and updating of mammal and bird data continues. During the months of January, February, and March, 5261 mammal data forms and 3886 bird data forms have been received.

Systems analysis, theoretical evaluation, and programming of pedigree analysis, studbook, demography, and physiological norms continues.

2. CURRENT PROBLEMS IMPEDING PROGRESS

None.

3. WORK TO BE PERFORMED DURING NEXT QUARTER (APRIL - JUNE)

The ISIS Avian Taxonomic Directory, Part II, will be completed, printed, and distributed.

Computer programming revisions to the Vital Statistics system, as well as reformatting of the effected records will be completed.

Systems Analysis and programming will continue in the development of the physiological norms subsystem. Test data will be entered in mid-May and the subsystem should be operational by late June.

Systems Analysis and programming will continue in the development of pedigree analysis, studbook and demography subsystems. Test data on Equus przewalskii will be entered into the computer files and additional test data on other species will be selected and formatted for computer entry.

Processing of inventory data for mammals and birds will continue. First quarter inventory and acquisition/release reports will be produced for five participating institutions, as well as the first quarter Species Distribution Report.

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QUARTERLY PROGRESS REPORT

CONTRACT 14-16-008-2049

OCTOBER - DECEMBER 1976

1. OVERALL PROGRESS

The ISIS Avian Taxonomic Directory, Part I., was mailed to all active ISIS participants on November 30th and December 1, 1976. This directory contains scientific names, common names, and geographic locations for 25 Avian Orders (3721 species of live birds). Appendices include listings of endangered species from the IUCN Red Data Book, the United States list of Endangered Native and Foreign Birds, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

Key punching and editing proceed on Part II of the Avian Taxonomic Directory, which will contain the order Passeriformes.

Computer programming revisions to the basic vital statistics and census system have been completed. These include revision of the circumstance of death codes and inverting the order of the female/male counters on all reports. Further computer programming and data form revisions, as well as a major revision of the ISIS Institution Procedures manual, are underway.

U.S. Seal, D.D. Bridgwater, L. Murtfeldt, and L. Simmons represented ISIS at the American Association of Zoological Parks and Aquariums (AAZPA) annual conference in Baltimore during the period of October 2-7, 1976. The annual ISIS Committee report was presented to the AAZPA Board of Directors on October 2 by ISIS Committee Chairman, Donald Bridgwater, assisted by ISIS Systems Manager, Linda Murtfeldt. Two ISIS workshops were held on the evenings of October 4 and 5. Dr. U.S. Seal presented a paper to the conference attendees on October 7 entitled, "A Computerized Record System as an Aid to the Management of Wild Animals in Captivity". Dr. Lee Simmons, Director of the Omaha Zoo and Vice Chairman of the ISIS Committee, gave a brief report on ISIS activities to the AAZPA membership on October 7.

U.S. Seal attended the annual meeting of the American Association of Zoo Veterinarians in St. Louis, October 26-28, 1976. An update of the ISIS Physiological Norms subsystem was presented. Support in the amount of \$2000 was awarded to ISIS to be used for continuation of the development and implementation of this program.

Collection and updating of mammal and bird data continues. During the months of October, November and December, 5076 mammal data forms and 1613 bird data forms have been received and processed.

Systems analysis, theoretical evaluation, and programming of pedigree analysis, studbook, and demography continues.

2. CURRENT PROBLEMS IMPEDING PROGRESS

None.

3. WORK TO BE PERFORMED DURING NEXT QUARTER (JANUARY - MARCH)

The ISIS Avian Taxonomic Directory, Part II., will be keypunched and ready for edit procedures.

The 1976 ISIS Species Distribution Report and individual zoo inventory and acquisition/release reports will be prepared and distributed to active participants.

Programming and systems analysis will continue on development of physiological norms, pedigree analysis, studbook, and demography subsystems.

Development will begin on the ISIS Reptilian and Amphibian Taxonomic Directory. Several North American taxonomists have been contacted in this regard and have indicated their willingness to aid us.



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QUARTERLY PROGRESS REPORT

CONTRACT 14-16-0008-2049

JULY - SEPTEMBER 1976

1. OVERALL PROGRESS

The ISIS Avian Taxonomic Directory, Volume I., has been completed and is ready for printing. It will be distributed in late October or early November to all active ISIS participants. Appendices in this volume include listings of endangered species from the IUCN Red Data Book, the United States list of Endangered Native and Foreign Birds, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

Dr. U.S. Seal, Donald Bridgwater, Nathan R. Flesness, and Thomas J. Foose attended the Second World Conference on Breeding Endangered Species in Captivity in London, July 6-8, 1976. A paper on the ISIS system was presented.

Three papers dealing with ISIS, its pedigree analysis and studbook subsystem, and its demographics subsystem were submitted to the International Zoo Yearbook for publication in Volume 17. They are entitled as follows: "ISIS: A Computerized Record System for the Management of Wild Animals in Captivity" by U.S. Seal, D.G. Makey, D. Bridgwater, L. Simmons, and L. Murtfeldt; "Gene Pool Conservation: Breeding for Re-Introduction" by Nathan R. Flesness; and "Demographic Models for Management of Captive Populations with Application to Wild Horse (Equus przewalskii) and Arabian Oryx (Oryx leucoryx)" by Thomas J. Foose.

The Journal of Zoo Animal Medicine, a publication of the American Association of Zoo Veterinarians, Volume 7, No. 1 published one article on ISIS, "ISIS - A Collecting and Sharing of Captive Animal Statistics", and two articles resulting from the ISIS physiological norms subsystem currently under development, "Baseline Laboratory Data for the Grant's Gazelle (Gazella granti)" and "Baseline Laboratory Data for the White Rhinoceros (Ceratotherium simum simum)". A third paper, "Baseline Laboratory Data for the Blesbok (Damaliscus dorcas phillipsi)", was published in the same journal, Volume 7, No. 2.

U.S. Seal attended the Council on Resources of the Association of Systematics Collections meeting in Lawrence, Kansas, September 9-10, 1976. This organization is in the process of establishing a computer system for use by museums in terms of collections and resources.

The first European Zoo, Stichting Koninklijke Rotterdamse Diergaarde, has submitted 727 data forms for its mammal collection.

Systems analysis and programming of pedigree analysis, studbook and demography continues.

Collection and updating of mammal and bird data continues. During the months of July, August and September, 5454 mammal data forms and 1252 bird data forms have been received and processed.

ISIS has begun the collection from its participants of lists of zoo-held fishes for incorporation into the ISIS Fishes Taxonomic Directory.

2. CURRENT PROBLEMS IMPEDING PROGRESS

None

3. WORK TO BE PERFORMED DURING NEXT QUARTER (OCTOBER-DECEMBER)

The ISIS Avian Taxonomic Directory, Volume I, will be printed and distributed. The ISIS Avian Taxonomic Directory, Volume II, containing the order Passeriformes, will be completed and made ready for printing.

U.S. Seal, D.D. Bridgwater, and L.E. Murtfeldt will attend the annual meeting in Baltimore of the American Association of Zoological Parks and Aquariums, October 2-7. An annual progress report will be presented to the Board of Directors, two workshops for participants will be conducted, a paper on ISIS will be given to the conference attendees, and a progress report will be presented to AAZPA membership.

U.S. Seal will attend the annual meeting of the American Association of Zoo Veterinarians in St. Louis, October 24-28.

Programming and systems analysis will continue on development of pedigree analysis, studbook, and demographics sub-systems.

Collection and updating of mammalian and avian vital statistics will continue in preparation for the annual run of the 1976 Species Distribution Report and zoo inventories.

U.S. Seal has been invited to attend a meeting of the Museum Data Bank Committee in Beltsville, Maryland on Monday, November 15.

D.D. Bridgwater and /or U.S. Seal will attend the Survival Service Commission meeting in Kino Sonora, Mexico, December 5-7, 1976.



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APRIL-JUNE 1976

1. Overall Progress

The first portion of the ISIS Avian Taxonomic Directory was completed, printed and then distributed in early May, along with avian data forms, to 110 active ISIS participants. This portion of taxonomy included nine avian orders: Struthioniformes, Rheiformes, Casuariiformes, Apterygiformes, Tinamiformes, Sphenisciformes, Falconiformes, Galliformes, and Strigiformes (copy enclosed). Six other avian orders: Gaviiformes, Podicipediformes, Procellariiformes, Pelecaniformes, Anseriformes, and Psittaciformes, have been completed and are ready for printing.

Dr. U.S. Seal has been appointed by Sir Peter Scott, chairman of the International Union for the Conservation of Nature and Natural Resources (IUCN) Survival Service Commission, as a special consultant to the Survival Service Commission (SSC) for a period of approximately two years. Donald D. Bridgwater, Director of Minnesota Zoological Garden and chairman of American Association of Zoological Parks and Aquariums (AAZPA) ISIS Committee, has also been appointed to the commission as AAZPA representative. Dr. Seal and Mr. Bridgwater attended the Survival Service Commission meeting in Morges, Switzerland, May 11 and 12. A presentation of the ISIS system, including vital statistics, pedigree, studbook, and demography development, was given and received enthusiastic response from all present. A proposal for a new Captive Breeding Population Specialist Group within the Survival Service Commission was presented formally and at the request of the SSC chairman is being finally drawn up under the leadership of Mr. Bridgwater.

Pedigree, studbook, demographic subsystems are under development, with the initiation of computer programming. Development thus far has been documented in two papers: "Gene Pool Conservation in Zoos and the Problem of Re-Introductions" by Nathan R. Flesness and "Demographic Models for Management of Captive Populations with application to Wild Horse (Equus przewalski) and Arabian oryx (Oryx leucoryx)" by Thomas J. Foote (copies enclosed). Collection of worldwide studbook data has commenced. The following studbooks have been received and evaluated: orang, white-eared pheasant, Japanese serow, Pere David's deer, white rhino, black rhino, scimitar-horned oryx, okapi, Przewalski horse, wisent, and golden marmoset.

Dr. U.S. Seal presented a paper entitled "A Computerized Record System for the Management of Wild Animals in Captivity" at the American Association for the Advancement of Science (AAAS) meeting in February (copy enclosed).

Using statistics obtained from the 1975 ISIS Species Distribution Report, Mr. Bridgwater, Chairman of AAZPA ISIS Committee, prepared three reports for the AAZPA summarizing: (1) the status of gaur, Bos gaurus, in American zoos in response to an application for an endangered species permit made by a U.S. zoo; (2) the status in American zoos of twenty-seven primates proposed as additions to the United States list of endangered species; and (3) the status of the squirrel monkey, Saimiri sciureus, in American zoos.

Collection and updating of mammal and aves vital statistics continues. During the quarter from April through June, 4,968 mammal data forms and 401 avian data forms have been processed.

One hundred seventy-five zoological institutions have signed up to participate in ISIS. One hundred-ten institutions are submitting mammal data forms and 29 institutions are submitting aves data forms. Seventy-eight institutions have paid the 1975 participation fee.

2. CURRENT PROBLEMS IMPEDING PROGRESS

NONE

3. WORK TO BE PERFORMED DURING NEXT QUARTER (JULY-SEPTEMBER)

The ISIS Avian Taxonomic Directory will be completed, printed and distributed to active ISIS participants by late summer 1976. Along with the taxonomic listing of avian species, their common names, and geographic locations in the wild, this directory shall include listings of endangered and threatened species as contained in the IUCN Red Data Book, the United States of America List of Endangered Native and Foreign Species (Endangered Species Act of 1973), and the Convention of International Trade in Endangered Species of Wild Fauna and Flora (March 3, 1973).

Dr. U.S. Seal, Donald D. Bridgwater, Nathan R. Flesness, and Thomas J. Foose will attend the second World Conference on Breeding Endangered Species in Captivity in London, July 6-8. A paper on ISIS development and implications will be presented.

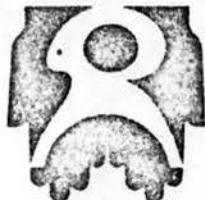
Studbook development will progress with the computer input of all Przewalski's horse vital statistics information as contained in the official international studbook. Programming of pedigree analysis, studbook and demographic analysis will continue.

Work will begin on preparation of the ISIS Reptilian and Amphibian Taxonomic Directory.

Collection and updating of mammalian and avian vital statistics will continue. It is expected that close to 90% of mammal data from U.S. zoological institutions and 20% of bird data will be complete and in the computer file by September first.



International Species Inventory System



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A Program of the American Association
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6 April 1978

TO: Mr. Merwin Terry
Project Officer
U.S. Fish and Wildlife Service
Department of the Interior
1612 "K" Street, NW, Suite 1100
Washington, DC 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

RE: Contract No. 14-16-0008-2049

98210	0611	78
Org. No.	Control No.	FY
Final Pmt. <input checked="" type="checkbox"/>	Partial Pmt. <input type="checkbox"/>	MOR <input type="checkbox"/>
I CERTIFY THAT GOODS OR SERVICES WERE RECEIVED. PAYMENT APPROVED.		
<i>Merwin P. Terry</i>		
Project Leader / Alternate		

INVOICE:

Period: For funds obligated in Fiscal 1978 under Contract
No. 14-16-0008-2049, Modification No. 4.

Costs Incurred For:

Studbook Development:

Programming changes to existing ISIS Vital
Statistics programs and files to allow the
production of studbooks.

Programming \$ 4,500
Computer Time 1,500

Programming changes to existing data input
programs to permit more efficient and
economical entry of studbook data. \$ 1,000

Preliminary design, programming and testing
of studbook report programs. \$ 3,000

Total Requested \$10,000

98210	0611	78
Org. No.	Control No.	FY
Final Pmt. <input checked="" type="checkbox"/>	Partial Pmt. <input type="checkbox"/>	MOR <input type="checkbox"/>
I CERTIFY THAT GOODS OR SERVICES WERE RECEIVED. PAYMENT APPROVED.		
<i>James W. McFadden</i>		
Project Leader / Alternate		

Janice M. Olsen
Janice M. Olsen, ISIS Systems Manager



International Species Inventory System



Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
Apple Valley, Minnesota 55124
Telephone (612) 432-9000

6 April 1978

A Program of the American Association
of Zoological Parks and Aquariums

Mr. Merwin Terry
Project Officer
U.S. Fish and Wildlife Service
Department of the Interior
1612 "K" Street, Suite 1100
Washington, DC 20240

Dear Mr. Terry:

Enclosed you will find the invoice for funds obligated in Fiscal 1978 under Contract No. 14-16-0008-2049, Modification No. 4.

We have received and wish to thank you for your assistance in obtaining the \$10,000.00 obligated in Fiscal 1978 under Contract No. 14-16-0008-2049, Modification No. 3.

Sincerely,

Janice M. Olsen
Systems Manager, ISIS

JMO/kh
Encls:



International Species Inventory System



Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
Apple Valley, Minnesota 55124
Telephone (612) 432-9000

A Program of the American Association
of Zoological Parks and Aquariums

27 April 1978

Mr. Merwin Terry
Project Officer
U.S. Fish and Wildlife Service
Department of the Interior
1612 "K" Street, Suite 1100
Washington, D.C. 20240

Dear Mr. Terry:

We have received and wish to thank you for your assistance in obtaining the \$10,000 obligated in Fiscal 1978 under Contract No. 14-16-008-2049, Modification No. 4.

Sincerely,

A handwritten signature in cursive script that reads "Janice M. Olsen".

Janice M. Olsen
Systems Manager, ISIS

JMO/lp

International Species Inventory System



Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
Apple Valley, Minnesota 55124
Telephone (612) 432-3000

A Program of the American Association
of Zoological Parks and Aquariums

7 March 1978

TO: Mr. Merwin Terry
Project Officer
U.S. Fish and Wildlife Service
Department of the Interior
1612 "K" Street, NW, Suite 1100
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

*Sent DSC
on 3-14-78*

RE: Contract No. 14-16-0008-2049

This is a second invoice, replacing that of 4 November 1977.

INVOICE

Period: For funds obligated in Fiscal 1978 under Contract
No. 14-16-0008-2049, Modification No. 3.

Costs Incurred For:

Studbook Development:

Programming	\$ 7,500.00
Data Processing	<u>2,500.00</u>

\$10,000.00

710 0611 78
V
Janice M. Olsen

Janice M. Olsen
Janice M. Olsen, ISIS Systems Manager

98210 0611 78
V
Merwin Terry
Merwin Terry
Product Leader / Admin's

ISIS

International Species Inventory System



Minnesota Zoological Garden
12101 Johnny Cake Ridge Road
Apple Valley, Minnesota 55124
Telephone (612) 432-9000

A Program of the American Association
of Zoological Parks and Aquariums

4 November 1977

TO: Mr. John Paradiso
U.S. Fish and Wildlife Service
Office of Endangered Species
1612 "K" Street NW, Suite 1100
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

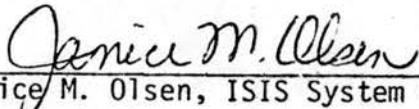
RE: Contract No. 14-16-0008-2049

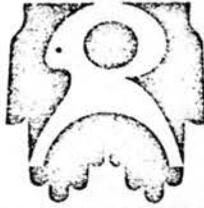
INVOICE

Costs Incurred For:

Studbook Development:
Programming
Data Processing

\$7,500.00
2,500.00
<hr/>
\$10,000.00


Janice M. Olsen, ISIS System Manager



International Species Inventory System
Minnesota Zoological Garden
Wentworth Office Center
30 East Wentworth Avenue
West Saint Paul, Minnesota 55118
Telephone (612) 227-9216
432-3760

October 14, 1976

TO: Mr. Wayne D. Schmidt
Office of Endangered Species
U. S. Fish and Wildlife Service
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

RE: Contract No. 14-16-0008-2049

INVOICE

Costs incurred for:

Printing	\$5000.00
Data Processing	2400.00
Computer Services	3600.00
Studbook Development and Vital Statistics Processing	4000.00

\$15000.00

*Approved for Payment
G.W. McEggin - Program Analyst
10-25-76*

Linda E. Murtfeldt

Linda E. Murtfeldt, ISIS Systems Manager

International Species Inventory System



Minnesota Zoological Garden
~~Wentworth Office Center~~
32 East Wentworth Avenue
West Saint Paul, Minnesota 55118
Telephone (612) 227-9216 432-3760

International Species Inventory System
Minnesota Zoological Garden
12101 Jimmy Cake Ridge Road
Apple Valley, MN 55124

August 3, 1976

*Original to RA
9-3-76*

TO: Mr. Wayne D. Schmidt
Office of Endangered Species
U.S. Fish and Wildlife Service
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

RE: Contract No. 14-16-0008-2049

INVOICE

Costs Incurred For:

Printing	\$3500.00
Data Processing	1000.00
Computer Services	4500.00
Studbook Development, salary	1000.00

\$10,000.00

Linda E. Murtfeldt

Linda E. Murtfeldt, ISIS Systems Manager

1976

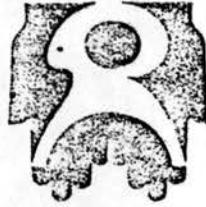
15 10

1976

*OK
8/16/76*



International Species Inventory System



Minnesota Zoological Garden
Wentworth Office Center
33 East Wentworth Avenue
West Saint Paul, Minnesota 55118
Telephone (612) 227-9216

June 21, 197⁶

TO: Mr. Wayne D. Schmidt
Office of Endangered Species
U.S. Fish and Wildlife Service
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

RE: Contract No. 14-16-0008-2049

INVOICE

Costs Incurred For:

Printing	\$1000.00
Data Processing	2600.00
Computer Services	4500.00
Studbook Development, Salary	1900.00

\$10,000.00

Linda E. Murtfeldt
Linda E. Murtfeldt, ISIS Systems Manager



United States Department of the Interior

Contract and General Services Division

FEDERAL ACQUISITION SERVICE

WASHINGTON, DC 20500

MAR 25 1976

State of Minnesota
Zoological Board
Veterans Service Bldg.
St. Paul, Minnesota 55155

Subject: Contract No. 14-16-008-2049

Submitted herewith for your signature are an original and three copies of the subject document(s).

When you have completed your review thereof, please sign and return the original and two copies to this office. One (1) copy may be retained for your records.

When the documents have been processed by this office, an executed copy will be returned to you.

Sincerely yours,

[Handwritten Signature]
John S. Kasko
Chief, Contracts Branch

[Handwritten] 4/8/76

[Handwritten Signature]

Enclosure (1 - State)

CONFIDENTIAL

C. REG. (41CFR) 1-16.101

AWARD CONTRACT

1. (Proc. Inst. Ident.) NO
14-16-0008-2049

2. EFFECTIVE DATE
4-1-76

3. REQUISITION PURCHASE REQUEST/PROJECT NO.
MON 76-127 JO

4. CERTIFIED FOR NATIONAL DEFENSE UNDER BDSA
REG. 2 AND/OR DMS REG. 1
RATING

ISSUED BY CODE

5. ADMINISTERED BY
(If other than block 3)

CODE

7. DELIVERY FOR DESTINATION

OTHER (See below)

Division of Contracting and Gen Svcs
U.S. Fish and Wildlife Service
Department of the Interior
Washington, DC 20240

CONTRACTOR NAME AND ADDRESS CODE

FACILITY CODE

9. DISCOUNT FOR PROMPT PAYMENT

street, city,
county, state,
and ZIP code)

State of Minnesota
Zoological Board
Veterans Service Bldg.
St. Paul, Minnesota 55155

Net

10. SUBMIT INVOICES (4 copies unless otherwise specified) TO ADDRESS SHOWN IN BLOCK 11

SHIP TO/MARK FOR CODE

12. PAYMENT WILL BE MADE BY CODE

Project Officer, ISIS
Office of Endangered Species
U.S. Fish and Wildlife Service
Washington, DC 20240

U.S. Department of the Interior
Fish and Wildlife Service
Denver Service Center
P.O. Box 25346 (DFC) / Denver, Colorado 80252

THIS PROCUREMENT WAS ADVERTISED, NEGOTIATED, PURSUANT TO

10 USC 2304 (a)(1)

F&W Act 1956

41 USC 252 (K)(1)

70 Stat 1119 (16 USC 742)

ACCOUNTING AND APPROPRIATION DATA

9 5110 1400 100

\$20,000.00

15
ITEM NO

16
SUPPLIES/SERVICES

17
QUANTITY

18
UNIT

19
UNIT PRICE

20
AMOUNT

The Contractor, in accordance with specifications and any written technical instructions of the Project Officer, Office of Endangered Species, or his designee, shall:

1 Design, develop and assist in the operation of an International Species Inventory System for Vertebrates as more particularly specified herein.

Description/Specifications

The Contractor shall perform the following work:

1. Provide a computerized tabulation of all animals maintained in zoological collections in the United States. This project shall include a taxonomic directory of mammals,

Estimated

TOTAL AMOUNT OF CONTRACT \$ 55,000.00

CONTRACTING OFFICER WILL COMPLETE BLOCK 22 OR 26 AS APPLICABLE

CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return original plus two copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachment are listed herein)

26 AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award contract. No further contractual document is necessary.

NAME OF CONTRACTOR

[Signature]
(Signature of person authorized to sign)

27 UNITED STATES OF AMERICA

BY

[Signature]
(Signature of Contracting Officer)

NAME AND TITLE OF SIGNER (Type or print)

DEWALD D. BAIGWATER
GENERAL DIRECTOR

25. DATE SIGNED

4/8/76

28. NAME OF CONTRACTING OFFICER (Type or print)

John S. English

29. DATE SIGNED

4-13-76

birds, reptiles, amphibians, and fish.

2. Provide a studbook designed to maintain desirable genetic characteristics in offspring bred in captivity.

This Contract is a continuation of work performed under Contract No. 14-16-0008-1138 with the State of Minnesota Zoological Board.

Data produced by this program will be made available to Government agencies, zoos, and institutions to aid the administration and enforcement of existing endangered species regulations and the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

Estimated Cost:

Total estimated cost: \$55,000.00. Of this total estimated cost, \$20,000.00 is apportioned as of the effective date of this contract which, it is estimated, will cover the period of performance from the effective date of this contract through September 30, 1976.

Completion of Work:

All work hereunder shall be completed by March 31, 1979.

Submission of Vouchers:

The original and two copies of all interim cost-reimbursement vouchers shall be submitted to the Project Officer for approval and transmittal to the paying office. The original and two copies of the final voucher, which shall be marked FINAL VOUCHER, shall be submitted to the Project Officer. Where appropriate, one copy of the final voucher shall be submitted to the appropriate Government audit agency. All vouchers shall include a reference to Contract No. 14-16-0008-2049.

Technical Direction:

Technical Direction as used herein is limited to direction to the Contractor which fills in details or otherwise completes the general description of work set forth by the contract schedule.

This direction may not include new assignments of work, may not be of such a nature as to increase or decrease the estimated costs or the period of performance, and may not affect any other provision of this contract. Work to be performed under this contract shall be subject of the Technical Direction of the following official, or his designee, who shall be the Project Officer.

Title: Project Officer, ISIS (International Species Inventory System)

Address: Office of Endangered Species
U.S. Fish and Wildlife Service
Department of the Interior
Washington, D.C. 20240

Order of Precedence:

In the event of an inconsistency in this contract, unless provided herein, the inconsistency shall be resolved by giving precedence in the following order: (a) the Schedule; (b) General Provisions; (c) the other provisions of the contract whether incorporated by reference or otherwise; and (d) the Specifications.

Key Personnel and Facilities:

The personnel and/or facilities listed below are considered to be essential to the work being performed hereunder. Prior to diverting any of the specific individuals or facilities to other programs, the Contractor shall notify the Contracting Officer reasonably in advance, and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. No diversion shall be made by the Contractor without the written consent of the Contracting Officer. The personnel and/or facilities listed below may, with the consent of the contracting parties, be amended from time to time during the course of the contract to either add or delete personnel and/or facilities, as appropriate.

Personnel: Dr. U.S. Seal

Facilities: NONE

Reporting Requirements/Distribution:

Technical Reports. The Contractor may prepare technical reports on the work performed under this contract when considered appropriate by him due to special findings or upon the completion of a phase of work. Technical reports relative to the work performed under this contract may be published by the Contracting Officer and Project Officer along with the name of the technical journal or group to which the information is presented. Appropriate credits to the United States Department of the Interior Fish and Wildlife Service shall be in any formal published article.

Technical reports if prepared shall be delivered 30 days in advance of publication. Distribution shall be as follows:

1 Copy: U.S. Fish and Wildlife Service
Division of Contracting and General Services
Department of the Interior
18th and C Streets, N.W.
Washington, D.C. 20240

General Provisions:

The General Provisions of the contract consist of the General Provisions Cost Reimbursement Type Research and Development Contract, U.S. Fish and Wildlife Service dated February 1976.

5

Quarterly Progress Report.

The Contractor shall submit separate quarterly progress reports of all work performed during each quarter of contract administration. Reports shall be in narrative form, and brief and informal in content. Quarterly reports shall include:

1. A quantitative description of overall progress;
2. An indication of any current problems which may impede performance, and proposed corrective action; and
3. A discussion of the work to be performed during the next quarterly reporting period.

Quarterly Report Distribution.

The Quarterly Progress Report shall be submitted within two weeks following the end of each quarter commencing with the start of work hereunder. Distribution shall be as follows:

- 1 Reproducible and 2 copies - to the designated Project Officer identified elsewhere in this contract.

1 Copy: U.S. Fish and Wildlife Service
Division of Contracting and General Services
Department of the Interior
18th and C Streets, NW
Washington, DC 20240

Final Report.

The Contractor shall submit a final report which documents and summarizes the results of the entire contract work including recommendations and conclusions based on the experience and results obtained. The final report shall include tables, graphs, diagrams, curves, sketches, photographs, and drawings in sufficient detail to comprehensively explain the results achieved under the contract.

Distribution of the Final Report shall be as follows:

- 1 Reproducible and 2 copies - to the designated Project Officer identified elsewhere in the Contract.

1 Copy: U.S. Fish and Wildlife Service
Division of Contracting and General Services
Department of the Interior
18th and C Streets, NW
Washington, DC 20240



United States Department of the Interior

FISH AND WILDLIFE SERVICE

WASHINGTON, D.C. 20240

September 27, 1976

State of Minnesota
Zoological Board
Veterans Service Building
St. Paul, Minnesota 55155

Reference: Contract No. 14-16-0008-2049; Modification No. 1

Gentlemen:

Enclosed are the original and three (3) copies of the referenced document(s). They have been signed by the Contracting Officer and become a binding contract upon execution by an authorized representative of your organization.

~~Upon execution please return the original and two (2) signed copies of the contract to the U.S. Fish and Wildlife Service, Division of Contracting and General Services, Interior Department, Washington, D.C. 20240. One copy may be retained for your records.~~

Upon completion of your review and execution, you may begin work under the contract.

Sincerely yours,

John S. Kutsko
Contracting Officer

Enclosure(s)

IS15 Linds

10/6/76

Please Final Signed Copy
& Handle



1. MODIFICATION NO. **Modification No. 1** 2. EFFECTIVE DATE **9/30/76** 3. REQUISITION/PURCHASE REQUEST NO. **FWS 76 - 372 (tjs)** 4. PROJECT NO. (If applicable)

5. ISSUED BY **Division of Contracting & General Services
U.S. Fish and Wildlife Service
Department of the Interior
Washington, D.C. 20240** 6. ADMINISTERED BY (If other than block 5) CODE

7. CONTRACTOR NAME AND ADDRESS CODE FACILITY CODE 8. AMENDMENT OF SOLICITATION NO. _____ DATED _____ (See block 9)
 AMENDMENT OF SOLICITATION NO. _____
 MODIFICATION OF CONTRACT/ORDER NO. **14-16-0008-2049**
 DATED **4/1/76** (See block 11)
**State of Minnesota
Zoological Board
Veterans Service Building
St. Paul, Minnesota 55155**

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS
 The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers is extended. is not extended.
 Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:
 (a) By signing and returning _____ copies of this amendment, (b) by acknowledging receipt of this amendment on each copy of the offer submitted, or (c) by separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)
95510 1400 100 **\$15,000**

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS
 (a) This Change Order is issued pursuant to _____
 The Changes set forth in block 12 are made to the above numbered contract/order.
 (b) The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.
 (c) This Supplemental Agreement is entered into pursuant to authority of **41 USC 252(c)(10) Fish and Wildlife Act of 1956, 70 STAT, 1119 (16 USC 742 (a&f))**
 It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION
Contract No. 14-16-0008-2049 is hereby modified as follows:
 1. Total funds obligated hereunder are increased by \$15,000 from \$20,000 to \$35,000. The total estimated cost of \$55,000 remains the same.
 2. The Project Officer is hereby changed to: "Mr. Rick Parsons
 Chief, Wildlife Permit Office
 U.S. Fish and Wildlife Service
 Department of the Interior
 18th and C Streets
 Washington, D.C. 20240"

Except as provided herein, all terms and conditions of the documents referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE **orig. & 2**

14. NAME OF CONTRACTOR/OFFEROR 17. UNITED STATES OF AMERICA
 BY **DDQDB** BY **John S. Russo**
 (Type, title of person authorized to sign) (Signature of Contracting Officer)

15. NAME AND TITLE OF SIGNER (Type or print) 16. DATE SIGNED 18. NAME OF CONTRACTING OFFICER (Type or print) 19. DATE SIGNED
Donald D. Bridgewater, Director **10/6/76** **JOHN S. RUSSO** **9-27-76**
Minnesota Zoological Garden



United States Department of the Interior

FISH AND WILDLIFE SERVICE

WASHINGTON, D.C. 20240

April 25, 1977

State of Minnesota
Zoological Board
Veterans Service Building
St. Paul, Minnesota 55155

Reference: Contract No. 14-16-0008-2049; Modification No. 2

Gentlemen:

Enclosed for your files is a fully executed copy of the referenced document.

Sincerely yours,


John S. Kutsko
Contracting Officer
Division of Contracting
and General Services

Enclosure



AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF 1

1. OFFICE OF ORIGINATING AGENCY: 2. EFFECTIVE DATE: See Blk. 19
 3. REQUISITION/PURCHASE REQUEST NO: MON OES-77-2 (dem)
 4. PROJECT NO. (If applicable):
 5. ADMINISTERED BY (If other than block 5):
 CODE:
 Division of Contracting & General Services
 U.S. Fish and Wildlife Service
 Department of the Interior
 Washington, D.C. 20240

6. OFFICE OR MAILING ADDRESS: State of Minnesota
 Zoological Board
 Veterans Service Building
 St. Paul, Minnesota 55155
 FACILITY CODE:
 8. AMENDMENT OF SOLICITATION NO. _____
 DATED _____ (See block 9)
 MODIFICATION OF CONTRACT/ORDER NO. 14-16-0008-2049
 DATED 4/1/76 (See block 11)

9. CHECK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS
 The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of offers is extended, is not extended.
 10. YOU MUST acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:
 (a) Mailing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which has a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram which provided such explanation. Offer makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

11. ACCOUNTING AND APPROPRIATION DATA (If required):
 N/A

12. CHECK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS
 The changes set forth in block 12 are made to the above numbered contract/order.
 The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.
 A supplementary agreement is entered into pursuant to authority of _____
 The above numbered contract as set forth in block 12

13. CONTRACT AMENDMENT/MODIFICATION
 Contract No. 14-16-0008-2049 is hereby modified as follows:
 Pursuant to the article entitled "Technical Direction," the Project Officer is hereby changed from Mr. Rick Parsons to Mr. John Paradiso, Office of Endangered Species.

14. THE TERMS AND CONDITIONS of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.
 15. SIGNATURE OF CONTRACTOR/OFFEROR IS NOT REQUIRED CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE
 17. UNITED STATES OF AMERICA
 BY: John S. Jutsko (Signature of Contracting Officer)
 18. NAME OF CONTRACTING OFFICER: JOHN S. JUTSKO
 19. DATE SIGNED: 4-25-77



ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

February 9, 1978

RECEIVED FEB 16 1978

Minnesota Zoological Garden
12101 Johnny Cake
Ridge Road
Applevalley, Minnesota 55124

Reference: Contract No. 14-16-0008-2049; Modification No. 3

Gentlemen:

Enclosed for your files is a fully executed copy of the referenced document.

Sincerely yours,

Thomas J. Stafford
Contracting Officer
Division of Contracting
and General Services

Enclosure



1. AMENDMENT/ MODIFICATION NO. 3		2. EFFECTIVE DATE 1/11/78	3. REQUISITION/PURCHASE REQUEST NO. MON OES-78-2 (b11)	4. PROJECT NO. (If applicable)
5. ISSUED BY Department of the Interior Fish and Wildlife Service Division of Contracting & General Svcs. Washington, D.C. 20240		6. ADMINISTERED BY (If other than block 5) 98210-0611-78		
7. CONTRACTOR NAME AND ADDRESS Minnesota Zoological Garden 12101 Johnny Cake Ridge Road Applevalley, Minnesota 55124		8. AMENDMENT OF SOLICITATION NO. _____ DATED _____ (See block 9) <input checked="" type="checkbox"/> MODIFICATION OF CONTRACT/ORDER NO. 14-16-0008-2049 DATED 4/1/76 (See block 11)		

BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers is extended, is not extended.

Contractors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

COUNTING AND APPROPRIATION DATA (If required)

3 5110 1400 100 Obligated Amount \$10,000.00

BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

This Supplemental Agreement is entered into pursuant to authority of _____
It modifies the above numbered contract as set forth in block 12.

DESCRIPTION OF AMENDMENT/MODIFICATION

Contract No. 14-16-0008-2049 is hereby modified as follows:

- Total Funds Obligated hereunder are increased from \$35,000.00 by \$10,000.00 to \$45,000.00. The total estimated cost of \$55,000.00 remains the same.
- The Project Officer is hereby changed to:

Mr. Merwin Terry
USFWS, Office of Endangered Species
1612 K Street, Suite 1100
Washington, D.C. 20240
Telephone: 202/343-7814

As provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN original + 2 COPIES TO ISSUING OFFICE

15. NAME OF CONTRACTOR/OFFEROR <u>Donald D. Bridgwater</u> (Signature of person authorized to sign)	17. UNITED STATES OF AMERICA <u>Thomas J. Stafford</u> (Signature of Contracting Officer)
16. DATE SIGNED Donald D. Bridgwater, General Director	18. NAME OF CONTRACTING OFFICER (Type or print) Thomas J. Stafford
	19. DATE SIGNED 2-7-78



ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

March 30, 1978

Minnesota Zoological Garden
12101 Johnny Lake
Ridge Road
Applevalley, Minnesota 55124

Reference: Contract No. 14-16-0008-2049: Modification No. 4

Gentlemen:

Enclosed for your files is a fully executed copy of the referenced document.

Sincerely yours,

Thomas J. Stafford
Contracting Officer
Division of Contracting
and General Services

Enclosure



1. SOLICITATION NO. 4	2. EFFECTIVE DATE See Blk. 19	3. ACQUISITION/PURCHASE REQUEST NO. MON OES-78-3 (b11)	4. PROJECT NO. (If applicable)
BY Department of the Interior U.S. Fish and Wildlife Service Division of Contracting and General Svcs. Washington, D.C. 20240		6. ADMINISTERED BY (If other than block 5) 98210-0611-78	

CONTRACTOR NAME AND ADDRESS Minnesota Zoological Garden 12101 Johnny Lake Ridge Road Applevale, Minnesota 55124	CODE	FACILITY CODE	8. AMENDMENT OF SOLICITATION NO. <input type="checkbox"/>
rect. city,nty, state, ZIP (e)			DATED _____ (See block 9)
			<input checked="" type="checkbox"/> MODIFICATION OF CONTRACT/ORDER NO. 14-16-0008-2049
			DATED 4/1/76 (See block 11)

THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers is extended, is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or teletype which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by teletype letter, provided such teletype or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

ACCOUNTING AND APPROPRIATION DATA (If required)

95110 1400 100	Previous Contract Amount	\$55,000.00
	Amount of this Modification	10,000.00
	Total Contract Amount	65,000.00

THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

a) This Change Order is issued pursuant to _____

The Changes set forth in block 12 are made to the above numbered contract/order.

b) The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

c) This Supplemental Agreement is entered into pursuant to authority of 41 U.S.C. 252(c)(10) Fish and Wildlife Act of 1976

It modifies the above numbered contract as set forth in block 12.

DESCRIPTION OF AMENDMENT/MODIFICATION

Contract No. 14-16-0008-2049 is hereby modified as follows:

1. Pursuant to the ARTICLE entitled "Description/Specifications", the description of work is hereby modified to allow for the completion of changes to the existing files, complete additions to current computer programs, and convert data to format required for student book production. More specifically, the work performed under this contract shall include the Contractor's supplement dated January 19, 1978, which is incorporated by reference to form an integral part of the contract.
2. Pursuant to the ARTICLE entitled "Estimated Cost," the total estimated cost is hereby increased from "\$55,000.00 by "\$10,000.00" to \$65,000.00.

There are no other changes in the Contract, including the period of performance, by reason of this modification.

As provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE

original + 2

NAME OF CONTRACTOR/OFFEROR <i>D. D. Brinkman</i> (Signature of person authorized to sign)	17. UNITED STATES OF AMERICA
NAME AND TITLE OF SIGNER (Type or print) David D. Brinkman (Contracting Officer)	BY <i>Wm. J. Stapp</i> (Signature of Contracting Officer)
16. DATE SIGNED 3/24/78	18. NAME OF CONTRACTING OFFICER (Type or print) Wm. J. Stapp
	19. DATE 3-31-78

October 29, 1975

TO: Mr. Wayne Schmidt
Office of Endangered Species
and International Activities
Department of the Interior
U.S. Fish and Wildlife Service
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

RE: Memorandum of Agreement, NO. 14-16-0008-1138
Amendment No. 1

INVOICE

Costs Incurred For:

Printing and distribution

\$5,000.00

TREASURY
BUREAU OF
ACQUISITION

DIVISION OF
PROPERTY



PROPERTY

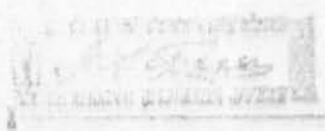
INTL SPECIES INVENTORY
SYSTEM MN ZOOLOGICAL GARDEN

PROPERTY

STMT DTD 10 29 75

FILE NO. 55,573,153
SYMBOL 3131

449000 00



202-343-7814

funding
USDI

May 27, 1975



TO: Mr. Wayne Schmidt
Office of Endangered Species
and International Activities
Department of the Interior
U.S. Fish and Wildlife Service
Washington, D.C. 20240

TREASURY
BUREAU OF
ACCOUNTS

DENVER, COLORADO

55,215,041

BY 11001 3131

FROM: International Species Inventory System
Minnesota Zoological Garden

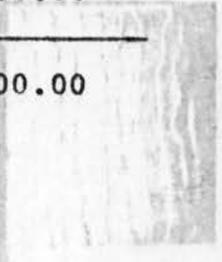


RE: Memorandum of Agreement, No. 14-16-0008-1138
Amendment No. 1

INVOICE

Costs Incurred for:

Printing	\$4,000.00
Systems analysis and programming	\$1,000.00
	<hr/>
	\$5,000.00



International Species Inventory System ^{fundings}



Minnesota Zoological Garden
207 Veterans Service Building
Columbus Circle
Saint Paul, Minnesota 55155
Telephone 612 296-2426

CHECK ENCLOSURE

March 17, 1975

*received
4-17-75*

TO: Mr. Wayne Schmidt
Office of Endangered Species
and International Activities
Department of the Interior
U.S. Fish and Wildlife Service
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

RE: Memorandum of Agreement, No. 14-16-0008-1138
Amendment No. 1

INVOICE

Costs Incurred for:

Taxonomy Directory Preparation	\$3,000.00
Systems analysis	\$2,000.00

\$5,000.00

*OK To Pay
9/2/75
3/20/75*

efg 3/27/75



International Species Inventory System



CHECK ENCLOSURE

Minnesota Zoological Garden
207 Veterans Service Building
Columbus Circle
Saint Paul, Minnesota 55155
Telephone 612 296-2426

January 29, 1975

TO: Mr. Wayne Schmidt
Office of Endangered Species
and International Activities
Department of the Interior
U.S. Fish and Wildlife Service
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

RE: Memorandum of Agreement, No. 14-16-0008-1138
Amendment No. 1

INVOICE

Costs Incurred for:

Keypunching	\$4,000.00
Systems analysis	\$1,000.00

\$5,000.00

2/2 2/19/75

OK
[Signature]
2/12/75

International Species Inventory System

Minnesota Zoological Garden
207 Vassar Service Building
College Circle
Saint Paul, Minnesota 55125
Telephone 612 796-2426

August 30, 1974

202-319-5804

August 21, 1974

TO: Mr. Wayne Schmidt
Office of Endangered Species
and International Activities
Department of the Interior
U.S. Fish and Wildlife Service
Washington, D.C. 20240

FROM: International Species Inventory System
Minnesota Zoological Garden

RE: Memorandum of Agreement, No. 14-16-0008-1138

INVOICE

Costs Incurred for:

System Analysis, Programming, and Computer time \$5,000.00
Printing (directories, binders, instructions, data
forms, cards and forms) \$5,000.00

\$10,000.00

Vernon Plucker
Finance Officer

LB
LCK
LS
PL
HD

MINNESOTA ZOOLOGICAL GARDEN

May 14, 1974

Mr. Earl B. Baysinger
Office of Endangered Species
and International Activities
Washington, D. C. 20240

Dear Earl:

Enclosed find the signed copy of Memorandum of Agreement, No. 14-16-0008-1138, between the State of Minnesota Zoological Gardens and the U. S. Fish and Wildlife Service.

As per our telephone conversation of May 13, 1974, I have signed the agreement subject to changes stated in attachment (1), for your review. I understand that you will communicate these changes to Leland H. Barri-neau.

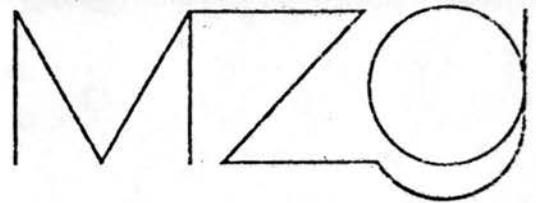
I believe that the proposed change makes more explicit the intent of the Agreement and hope that you will concur.

Sincerely,

DDB vc
enc.

Donald D. Bridgwater
Director

MINNESOTA ZOOLOGICAL GARDEN



May 14, 1974

Mr. Leland H. Barrineau
Chief, Division of Contracting & General Services
United States Department of the Interior
Fish and Wildlife Service
Washington, D. C. 20240

Dear Mr. Barrineau:

As Director of the State of Minnesota Zoological Gardens, I am returning to you the signed Memorandum of Agreement between the U. S. Fish and Wildlife Service and State of Minnesota Zoological Gardens, Cooperative Agreement No. 14-16-0008-1138, subject to a proposed clarification as stated in the attachment to the contract, with specific reference to paragraph six (6).

I have discussed the proposed clarification with Mr. Earl B. Baysinger, the Project Officer, designated for this Agreement, by telephone today and have forwarded all materials to his office for review and concurrence.

Sincerely,

DDB vc
enc.

Donald D. Bridgwater
Director

cc-LS
WK

MEMORANDUM OF AGREEMENT
BETWEEN
THE U.S. FISH AND WILDLIFE SERVICE
AND
STATE OF MINNESOTA ZOOLOGICAL GARDENS

WHEREAS, the U.S. Fish and Wildlife Service has an urgent need for data on Endangered Species for its mission of regulating the importation and movement of endangered species as required by the Endangered Species Act of 1973.

WHEREAS, the State of Minnesota Zoological Gardens is undertaking a National program for census, inventory, and vital statistics on captive animals in zoological collections.

This project is already underway and has the full support of the American Association of Zoological Parks and Aquaria and the American Association of Zoo Veterinarians which are also providing partial funding for the project. Seventy-five American Zoos are already cooperating and providing data, and computer models have been developed for many animal groups.

WHEREAS, such information would provide data to the Office of Endangered Species for its mission of regulating the importation and movement of endangered species as required by the Endangered Species Act of 1973. The design of the system will allow current status reports over any time interval desired, and will allow for the first time the study of captive endangered species life history in the sense of acquisitions, births, deaths, and major causes of death on a systematic basis. These data will be of direct value to the Office of Endangered Species, U.S. Fish and Wildlife Service, in its functions governing the establishment of Survival Centers as required by treaties and laws.

Now, therefore, it is mutually agreed that:

The U.S. Fish and Wildlife Service will make available \$10,000, for a one year period through May 1, 1975, in support of the program.

The State of Minnesota Zoological Gardens will provide a computerized tabulation of all animals maintained in exhibit in zoological collections in the United States.

This agreement may be terminated by either agency upon written request to the other agency at least 90 days prior to the proposed termination date. All direct and indirect phasing out costs shall be paid by the agency requesting the termination. Termination costs of the resulting agency shall not exceed the actual costs incurred as a result of termination of this project.

IN WITNESS WHEREOF, the parties hereto have executed this Memorandum of Agreement as of the day and year of the last signature date indicated below:

STATE OF MINNESOTA
ZOOLOGICAL GARDENS

* BY: D. J. O'Donoghue
TITLE: Director
DATE: 14 May, 1974

U.S. FISH AND WILDLIFE SERVICE

BY: L. J. V. Brennan
TITLE: Chief, Division of Contracting
and General Services (Contracting
Officer)
DATE: May 2, 1974

* Signed subject to the approval of the proposed change offered in Attachment (1).

PROPOSED AMENDMENT
to
COOPERATIVE AGREEMENT NO. 14-16-0008-1138
between the
U. S. Fish and Wildlife Service
and
State of Minnesota Zoological Gardens

It is suggested that Paragraph Six (5) of said Agreement,
originally reading as follows:

"The State of Minnesota Zoological Gardens will
provide a computerized tabulation of all animals
maintained in exhibit in zoological collections
in the United States."

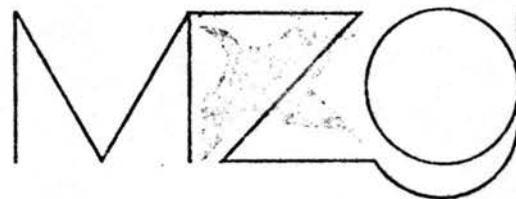
be changed to read as follows:

"As the first phase of a computerized tabulation
of all animals maintained in the exhibits of par-
ticipating zoological garden collections in the
United States, the State of Minnesota Zoological
Gardens will provide a computerized tabulation of
mammals maintained in the participating institu-
tions. The inclusion of additional classes of
animals will be developed in future phases."

APPROVED BY:

Jelene K. Harvillan 5-24-74
Chief, Division of Contracting
and General Services
(Contracting Officer)
U. S. Fish and Wildlife Service

MINNESOTA ZOOLOGICAL GARDEN



January 27, 1975

Mr. Leland H. Barrineau
Chief, Division of Contracting
and General Services
United States Department of the Interior
Fish and Wildlife Service
Washington, D.C. 20240

Dear Mr. Barrineau:

As Director of the State of Minnesota Zoological Gardens, I am returning to you the signed Amendment No. 1 between the U.S. Fish and Wildlife Service and State of Minnesota Zoological Gardens, Cooperative Agreement No. 14-16-0008-1138.

For purposes of technical accuracy please change the heading, Minnesota Zoological Society, to State of Minnesota Zoological Board. The Minnesota Zoological Society is merely a citizen's support group, and plays no part in the operation, administration or management of the Zoological Gardens or State Zoological Board.

Sincerely,

Donald D. Bridgwater
Director

DDB lm
enc.

USD1

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE



United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

January 20, 1975

Amendment No. 1 - Cooperative Agreement No. 14-16-0008-1138

Minnesota Zoological Society
State of Minnesota Zoological Gardens
St. Paul, Minnesota 55155

Gentlemen:

Cooperative Agreement No. 14-16-0008-1138 for support of a National program for census, inventory, and vital statistics of captive animals in zoological collections entitled "International Species Inventory Systems" is hereby amended by extending the performance time to December 31, 1975, and adding \$20,000 to cover the services proposed.

This amendment is necessary to initiate Phase 2 of the development of the International Species Inventory System by setting up a bird inventory program.

All other terms and conditions of the cooperative agreement remain unchanged.

Please indicate your acceptance of this amendment by signing and returning the original to this office.

Sincerely yours,

Leland H. Barrineau
Leland H. Barrineau
Chief, Division of Contracting
and General Services
(Contracting Officer)

The above amendment and all conditions relating thereto are hereby accepted.

STATE OF MINNESOTA
ZOOLOGICAL GARDENS

BY: *D. D. B. Furt*
TITLE: Director

DATE: 1/24/75