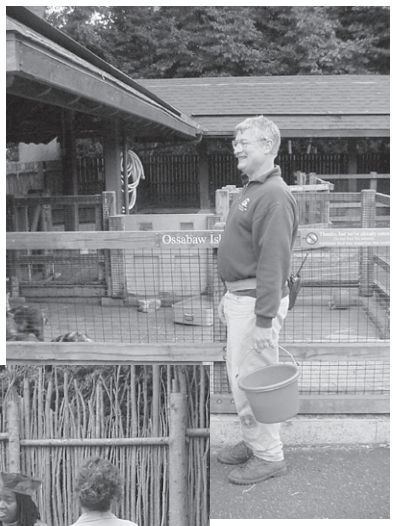
Zoo and Wildlife Careers

As the human population of the world has grown and our consumption of resources has impacted the earth, the state of our environment has come to be an important concern. By pursuing careers that relate to the environment, such as careers in **wildlife** sciences and **conservation**, individuals can dedicate their lives to providing a healthy, functioning, biologically diverse earth for future generations. Careers in wildlife sciences and conservation, including employment in zoos and aquariums, encompass a wide variety of strengths and skills. An interest in the natural world and its living and nonliving components provides the enthusiasm that you will encounter in people who have pursued wildlife and conservation careers. But anyone with that interest and passion, whether you are good at economics, creative writing, architectural drawing, chemistry — you name it — can find your niche in the wildlife and conservation community. Many common careers, such as accounting, marketing, teaching, and graphic design, for example, are represented in wildlife and conservation careers (including in zoos and aquariums).

If you have a love of the natural world, you might want to consider the career opportunities found within the fields of wildlife science and conservation. The information included in this packet focuses on zoos and provides an overview of the variety of career opportunities in zoos and the experiences and skills required for these positions. Much of the information in this packet can also be applied to other wildlife and conservation careers.

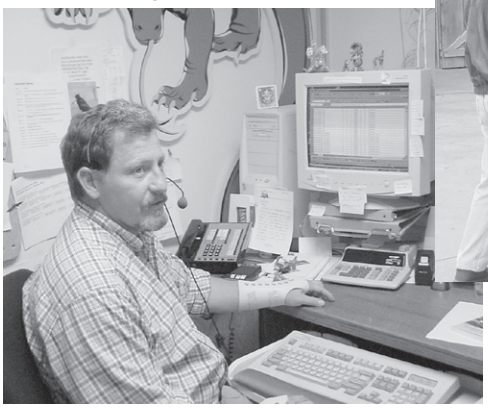
For anyone considering a career in a zoo, it is important to understand the purpose of zoos in the modern world. By understanding the roles of modern zoos, we can be aware of the myriad skills and expertise required in order for zoos to fulfill their missions. From their historic origins as royal collections for public amusement, zoos have evolved into the 21st century to emphasize conservation and education in conjunction with scientific investigation and entertainment. The **Association of Zoos & Aquariums (AZA)** coordinates many conservation and education efforts through programs such as Species Survival Plans (see "Conservation Programs in Zoos" in this packet). Concurrently, many North American zoos have adopted missions that emphasize conservation, education and research. Now, at the beginning of the 21st century, the role of zoos in the conservation of **endangered** species of plants and animals and their **habitats** continues to develop and expand.



Keeper

Program presenter

ZooStore manager



Photos by Margaret White

The Wild Path: Preparing for a Zoo or Wildlife Career

How can you best prepare yourself for a zoo or wildlife career? There are many skills that can benefit a person seeking employment in a wildlife career, but the list of most beneficial skills may vary depending on the type of position sought. There are many ways to gain experience and hone these skills.

One important aspect to understand about careers in zoos, aquariums or in other wildlife organizations is that salaries and wages for these jobs often do not match the earnings possible in corporate careers. Many zoos and aquariums are government-run or are non-profit organizations (some are a combination of both). Government agencies, such as fish and wildlife departments, and non-profit conservation organizations usually pay less than one might earn in a corporate situation. Whatever the case, people aiming for careers in zoos, aquariums or other wildlife organizations must plan their economic lives knowing that their incomes will not likely make them financially wealthy. (See the "Salaries and Cost of Living" information sheet included in this packet.) However, there are countless non-financial benefits to be gained from careers in these fields.

Volunteer/Docent Experience

Volunteer experience is a great benefit for someone interested in a zoo, aquarium or other wildlife career and can provide valuable experience. Volunteering also gives you a better understanding of the work environment of the career in which you are interested and helps you to determine if that career is really for you. In addition to zoos and aquariums, local wildlife rehabilitation centers, conservation organizations, and state departments of fish and wildlife also offer volunteer opportunities that provide experience in working with or educating people about wild animals, or studying wild animals in their natural habitats. Volunteering in a veterinary clinic or with The Humane Society can also provide valuable, hands-on experience working with animals.

In zoos, aquariums and other museum settings, **docents**, or volunteer educators, provide educational opportunities to visitors. In many of these organizations, docents receive significant training in educational approaches as well as background information about the zoo, aquarium, or museum and the animals or components of the facility. This training can be a great benefit for someone interested in gaining employment in such a facility.

It is important to plan ahead if you are interested in volunteering at a zoo. Many voluntary positions, especially positions in which volunteers work closely with zookeepers, are quite competitive and may have long waiting lists. If you are interested in volunteering at a zoo, be sure to contact the zoo's volunteer coordinator and submit your volunteer application materials well before the time you would like to start volunteering.

Seasonal Employment

Many wildlife facilities, including zoos, and **field research** projects offer seasonal employment that provides opportunities for gaining hands-on experience in the field. Contact your local zoo, wildlife rehabilitation facility, Humane Society, veterinary clinic, state department of fish and wildlife, local university or other facilities for information on seasonal or temporary employment. Through seasonal or temporary work you can gain a better sense of what the jobs you are interested in involve while gaining necessary experience (and some money in your pocket!). A seasonal position may also provide you with opportunities to obtain other positions within the facility or organization. Many people who work in zoos, for example, have held a variety of positions within zoos before obtaining their current positions.

Internships

An internship can provide you with significant hands-on, in-depth experience in a specific career. During the course of an internship, interns often receive valuable training and guidance from staff with whom the intern works closely. Internships are usually offered for undergraduate and graduate students, but summer internships may be open to other applicants. Many zoos and other wildlife-related organizations offer internships in a variety of areas including animal care, education, horticulture, public relations, marketing, graphic design, membership, information systems, accounting, etc. For more information on internships in zoos and aquariums, the "Internships – Zoos and Aquariums" list in the resources section includes contact information for zoos and aquariums that currently offer internship opportunities. Also contact your local zoo, aquarium or other wildlife-related facility and inquire about internships.

The Animal Health Department at Woodland Park Zoo provides professional training in wildlife medicine and scientific investigation for university and graduate students pursuing veterinary medicine. Every year up to six veterinary students, from second year students to senior veterinary technicians, each spend several months at the zoo and acquire skills in wildlife medicine. See the "Resources" section in this packet for contact information for Woodland Park Zoo.

Organizations/Clubs

By joining and/or volunteering for a wildlife-related organization or club you can meet with people who share your interests, engage in activities to conserve or appreciate nature and wildlife, and keep updated on current wildlife and environmental issues. You can also start your own wildlife club if there is not one in your school or town. To get some ideas on how to start a club, contact the presidents of existing clubs and learn about the organization of the clubs and how they got started. See the "Resources" section in this packet for information on international and national conservation and wildlife organizations. Check your local yellow pages for information on local organizations or clubs (look under "Environmental and Ecological Organizations").

Schools/Training

Within zoos, aquariums and other wildlife organizations you will find employees with all types of educational backgrounds and work experiences. Some positions may consider previous experience in the field to be even more important than educational background. Of course, the education and training you pursue will be based on what type of position within a zoo you desire.

For those interested in careers in animal care or training or as zoo or aquarium **veterinarians**, the "Schools/ Training" list in the resources section of this packet provides contact information for schools that offer programs in animal health, veterinary technician, or exotic animal management. This list also includes schools with programs in horticulture or landscape design for those interested in applying these professions within zoos.

Contact Professionals

Once you have determined what type of zoo or wildlife career interests you, you may want to research the outstanding professionals in that field and contact them for advice on pursuing your career in the field. A good place to determine the interests and strengths of zoo/ wildlife professionals is in scientific journals where they may have published articles. Possible journals include *Nature*, *Science*, *Conservation Biology*, *Zoo Biology*, *Journal of Wildlife Management*, and *American Journal of Primatology*. To make connections with people in the zoo or wildlife field who do not publish articles in scientific journals, you can start by writing to your local zoo, aquarium, wildlife rehabilitation center, conservation organization, environmental education facility or other similar organizations. Reading issues of *Connect*, a publication of the Association of Zoos & Aquariums, can also give you information on current trends within the zoo and aquarium community and on the research and conservation projects undertaken by zoo professionals.

It is important to do your own research before contacting professionals. Be familiar with the goals, mission and programming of the organization you are interested in and the career and expertise of the professional you wish to contact. When you contact an organization or a professional, it is important that you are clear and focused about the type of information you would like to receive from them. Taking these steps will show the person you are contacting that you respect and appreciate their valuable time. When making first contact it is often best to do so by letter or e-mail, thereby respecting the busy schedule of the person you are contacting. Once you have made initial contact, you can arrange to speak by phone or in person.

When you write a letter or email to an organization or professional, be sure to include the following information:

- Your name and mailing address (including email address)
- A short description of your educational background
- The area of interest for which you would like more information
- The animals, plants, or habitats in which you are particularly interested
- What information you have already found through research
- What information they can provide for you
- Other organizations or people you have already contacted
- Appreciation for their time and consideration

General Skills

When considering employment in a zoo or other wildlife career, it is important to read advertisements for wildlife/ zoo employment and note the skills that employers are seeking. Expand your abilities in each of the areas mentioned in the advertisements.

Computer skills: Many wildlife-related positions, including zookeeper positions, require proficiency in basic computer skills and common computer applications. Wildlife field researchers and zookeepers may be responsible for writing reports and entering data for record keeping purposes. In some positions, technology such as GIS (Geographic Information Systems) may be used for research and familiarity with this technology would be beneficial. Conservation education and zoo marketing staff may use a number of computer applications for word processing, tracking budgets, developing presentations or publications, creating material for Web sites, etc.

Observation skills: In many wildlife positions, such as zookeeper, field/zoo researcher and veterinarian, observation skills are of utmost importance. In order to understand how healthy animals behave, zoo staff and volunteers spend many hours observing and recording the animals' behaviors. During their daily routines, zookeepers are constantly observing the animals in their care and assessing whether or not the animals are behaving normally. Just as a parent would become concerned if his/her child stopped playing and refused to eat or otherwise changed his/her behavior, zookeepers know that something is wrong if they notice subtle changes in an animal's behavior. As a result of these careful observations, the keeper may contact the veterinary staff and have tests run on the animal to determine if there is a problem.

Observations by zoo staff and volunteers are also important when new animals are introduced to one another, when animals are expecting or have offspring, or when animals are introduced into new exhibits. Careful observations and notetaking ensure the safety and health of the animals in these situations.

Double-check your work: Due to the safety risks involved in working with wild animals, employees in wildlife jobs must be extremely dependable and responsible. Constant attention must be paid to safety precautions such as closing and locking doors and gates, preventing disease transmission, and knowing where the animals are located at all times. In writing, data recording, accounting and other tasks, it is also important to double check your work and pay attention to detail.

First Aid/CPR: When working with large numbers of animals and/or people, safety and health are always important considerations. At zoos, staff must be prepared to deal with all kinds of emergencies. Certification in First Aid and CPR are extremely beneficial, and often required, for zoo staff.

Public speaking: Education staff, keepers, development staff, curators, and many other employees may be required to make presentations to a variety of groups, including children, adults, visitors from other countries, and other groups as well as to fellow staff members. Public speaking skills are a great benefit to anyone involved in conservation in order to help them communicate the organization's mission and purpose to the public.

Writing skills: Many zoo employees utilize writing skills in their job positions. Zookeepers may write journal articles about their work and research or may communicate with their peers at other zoos through writing. Education, marketing, public relations and other zoo employees also rely on writing skills to communicate ideas to the public and to other staff members in the zoo community. Field scientists and people in other wildlife careers frequently write magazine or journal articles, books and reports about their work.

Language skills: In a variety of zoo and wildlife careers, having a mastery of a second language can be very beneficial. For example, working as an educator at a zoo you might be able to provide bilingual tours or develop educational materials for bilingual community or school groups. Working as a field scientist, knowing the language of the area in which you are working may improve your ability to learn from and work with local people in the communities.

Math skills: Basic math skills are necessary for all positions in zoos and other wildlife careers. Accountants use math on a daily basis. Keepers and veterinarians use math in determining amounts of food or medications to give animals, admissions staff use math daily to determine what people should pay and to make change. Exhibit designers use basic math to determine sizes, shapes and other aspects of zoo exhibits. Even in the field, scientists and other researchers use a variety of math skills to collect, analyze and interpret data.

Careers in Zoos

Imagine a trip to the zoo…

You get off the bus and enter the zoo's main gate, paying your admission as you enter. You grab a map and stop at the information kiosk to get an idea of what is happening at the zoo that day. You follow the signs to the Tropical Rain Forest exhibit. As you enter the indoor area of the Tropical Rain Forest, you brush past palm trees and hanging vines, enjoying the warm, humid environment. Once inside, you enjoy learning about the animals and plants housed in the exhibit from the informative signs. You are fortunate enough to encounter a docent with a bag of interesting educational props. You are fascinated by the information the docent tells you about how the animals in the Tropical Rain Forest are taken care of and how the zoo supports conservation projects in tropical rain forests in Central America. The warmth of the rain forest has made you thirsty, so you head to the café to get a drink. On your way out of the zoo, you toss your can into a recycle bin can and set off for home.

Read over this imaginary zoo visit again. Think about the "behind-the-scenes" efforts that made this zoo visit possible – who are the people that contributed to this experience? How many zoo careers can you think of that relate to this trip to the zoo? (After you have taken some time to think about this, see the footnote at the bottom of this page for some ideas.)* There are many employment opportunities available in zoos, many of which may not automatically spring to mind.

The following information provides insight into the zoo career community and the opportunities that exist for zoo employees to be involved in wildlife conservation.

Organization of Zoo Personnel

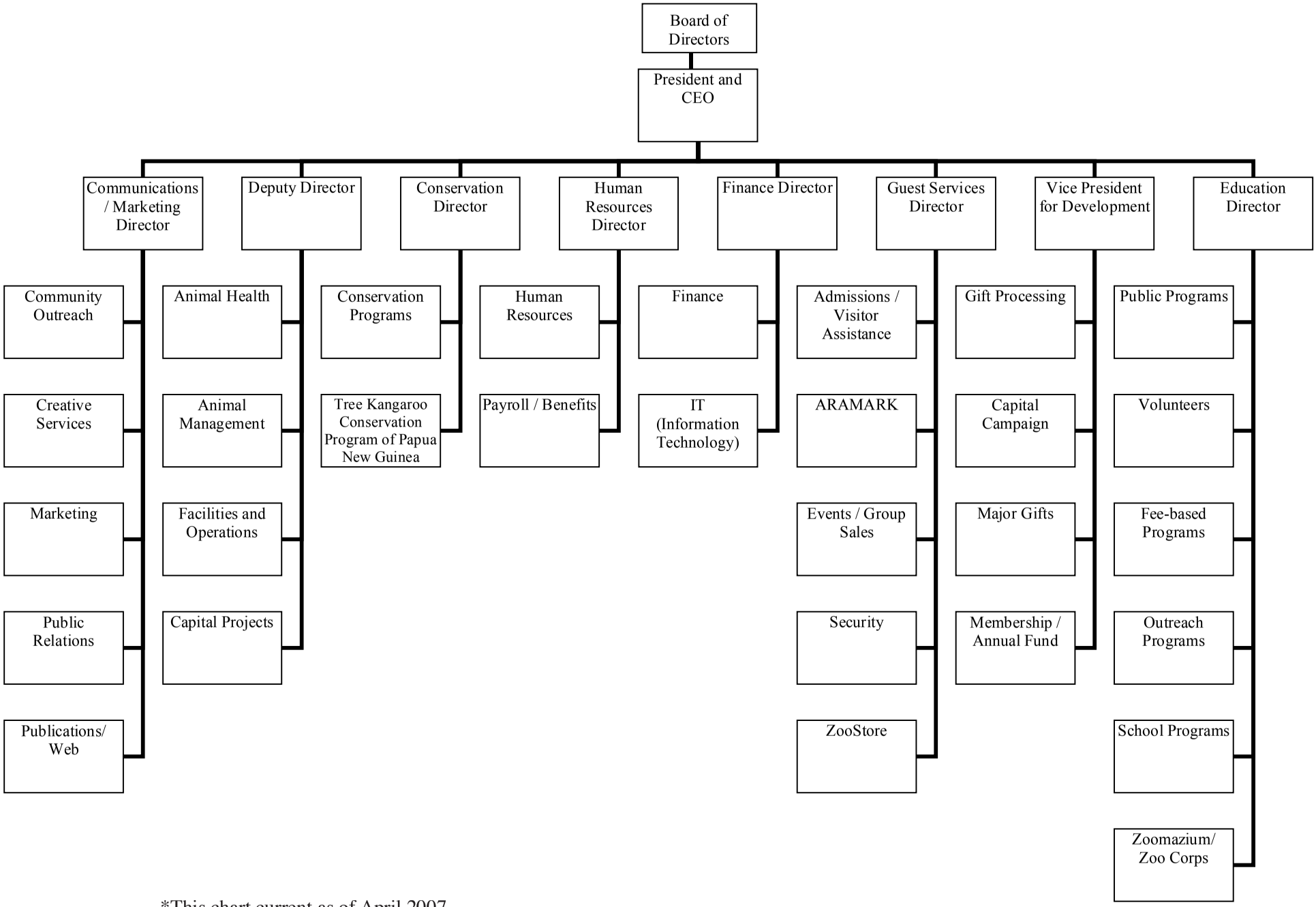
The manner in which a zoo's staff is organized varies from zoo to zoo. Here, the organization of the staff at Woodland Park Zoo provides an example of the breakdown of zoo staff positions. The fact sheets included at the end of this packet describe some of the responsibilities, duties, challenges and rewards of a few of these positions.

Up until March 2002, Woodland Park Zoo was operated by both the City of Seattle and the Woodland Park Zoological Society. On March 1, 2002, the Seattle Department of Parks and Recreation and Woodland Park Zoological Society signed an agreement that officially shifted management of the zoo to the Woodland Park Zoological Society.

Under the 20-year agreement, the zoo remains under City ownership and the Society manages it under a contract. The City will continue to provide public funding for the duration of the agreement. In addition, the Seattle Pro Parks Levy provided $2.5 million for the zoo each year for eight years (2001-2008).

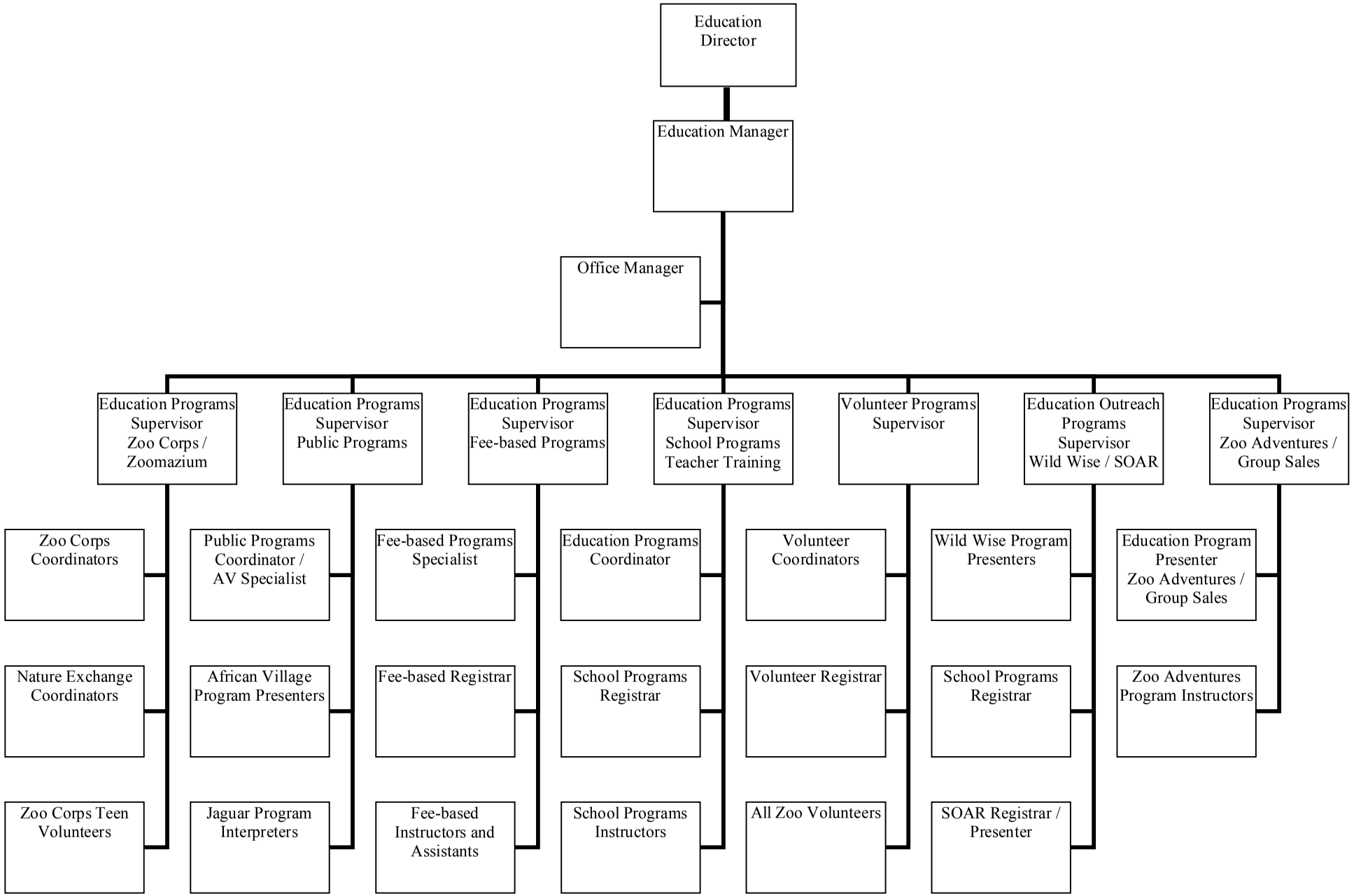
*Admissions cashier to sell tickets, accounting staff to keep track of money from ticket sales, graphic designer to develop zoo map, public programs naturalist to develop programs advertised on kiosk, exhibits staff to post kiosk and directional signs around the zoo, development staff to raise money for building exhibits, horticulture staff to plant and maintain vegetation, animal management staff to care for animals, interpretive designers to develop interpretive signs and props, docents (volunteer educators) trained to present programs developed by education staff, volunteer staff to train and coordinate the work of the docents, a conservation coordinator to organize and facilitate conservation efforts, food service employees to prepare and sell food, maintenance staff to keep the zoo clean and operating properly, etc.

Woodland Park Zoo Organizational Chart



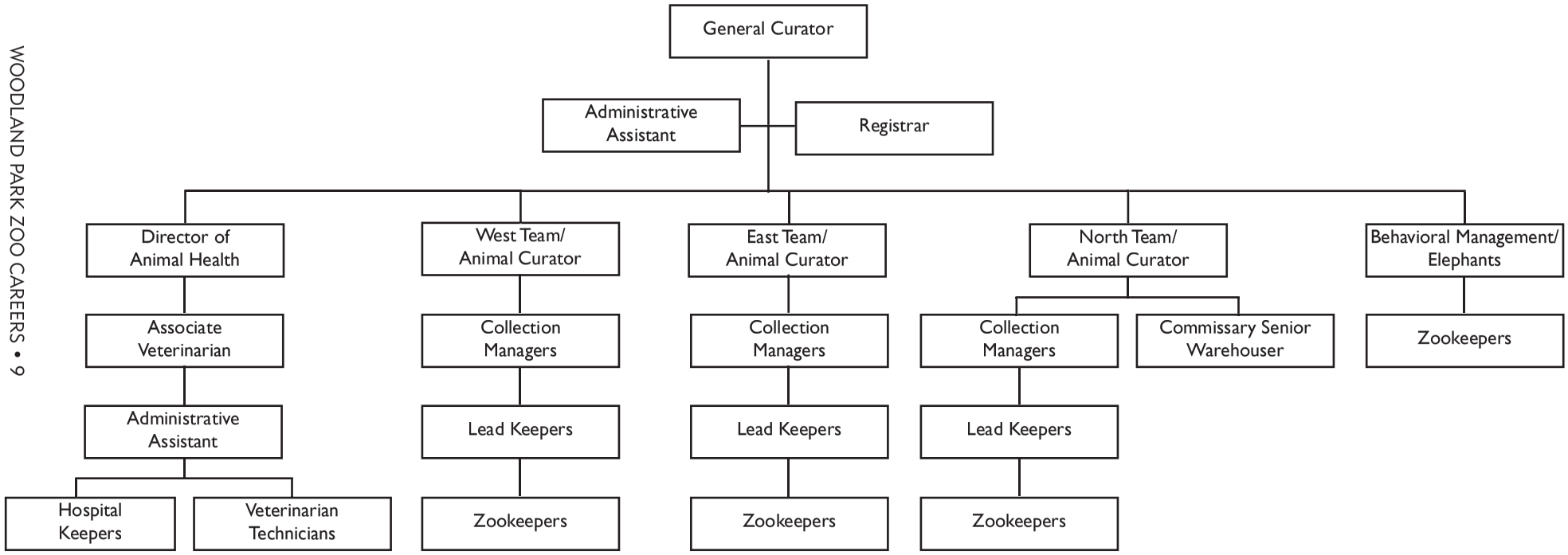
*This chart current as of April 2007

Woodland Park Zoo Education Organizational Chart



*This chart current as of April 2007

Woodland Park Zoo Animal Management Organizational Chart



*This chart current as of April 2007

Job Positions at Woodland Park Zoo

The following is a comprehensive list of job positions currently held by employees of Woodland Park Zoo (as of March 2007). See the "Zoo and Aquarium Career Opportunities" information sheet developed by AZA included in this packet for brief descriptions of some of these job positions. Included with this information sheet is a "Salaries and Cost of Living" sheet of approximate salary ranges for zoo positions at different zoos across the country. The "Salaries and Cost of Living" sheet also includes a Cost of Living Index number for each city. In addition, a pay range is listed on each of the Zoo Careers Fact Sheets included in this packet.

Accounting Supervisor
Accounts Payable Assistant
Accounts Payable Bookkeeper
Accounts Receivable Bookkeeper
Administrative Assistant
Admissions Manager
Admissions Technician
African Village Program Presenter
Animal Curator
Annual Fund Associate
Assistant Gardener
Assistant Zookeeper
Associate Veterinarian
Auction Manager
Audience Research Supervisor
Behavioral Management/Elephant Curator
Butterflies & Blooms Attendant
Capital Improvement Program Manager
Carpenter
Collection Manager
Commissary Senior Warehouser
Commissary Warehouser
Communications and Marketing Director
Community Relations Coordinator
Conservation Coordinator
Conservation Director
Corporate Relations Coordinator
Deputy Director
Director of Animal Health
Drafting and Design Specialist
Education Director
Education Manager
Education Programs Coordinator
Education Programs Supervisor
Electrician
Events and Group Sales Manager
Events Production Assistant
Executive Assistant
Exhibits Technician
Facilities Maintenance Worker
Facility Manager
Family Farm Coordinator
Family Farm Lead
Fee-based Programs Specialist
Fee-based Registrar
Fee-based Instructor
Fee-based Assistant
Finance Director
Gardener
Gates Associate
Gates Lead Associate
Gates Supervisor
General Curator
Gift Processing Manager
Gift Processing Specialist
Gift Processing Supervisor
Grants Officer
Graphic Arts Designer
Graphics Design Supervisor
Greenhouse & Exhibits Senior Gardener
Grounds and Facilities Supervisor
Grounds Maintenance Lead Worker
Group Sales Program Coordinator
Groups Sales Event Associate
Guest Services Attendant
Guest Services Director
Help Desk Technician
Hospital Keeper
Human Resources Director
Information Analyst
Information Systems Database Specialist
Information Systems Manager
Information Technology Manager
Interpretive Exhibits Specialist
Jaguar Program Interpreter
Laborer

Landscape Supervisor
Lead Zookeeper
Major Gifts & Planned Giving Manager
Marketing & Corporate Relations Manager
Marketing Coordinator
Membership Manager
Membership Specialist
Multimedia Specialist
Nature Exchange Coordinator
Network/Systems Administrator
Office Manager
Personnel/Payroll Assistant
Personnel/Payroll Coordinator
Plumber
Pool Maintenance Worker
President and CEO
Procurement Associate
Program Specialist
Project Research Coordinator
Public Programs Coordinator & AV Specialist
Public Relations Coordinator
Public Relations Manager
Publications and Web Manager
School Programs Instructor
School Programs Registrar
Security Officer
Security Supervisor
Senior Accountant
Senior Gardener
Senior Veterinary Technician
SOAR Registrar/Presenter
Technical Facilities Supervisor
Travel Program Representative
Veterinary Technician
Vice President for Development
Volunteer Coordinator
Volunteer Registrar
Volunteer Programs Supervisor
Warehouser
Web Coordinator
Wild Wise Program Presenter
Zoo Adventures Instructor
Zoo Corps Coordinator
Zoo Corps Teen Volunteer
Zookeeper
Zoo Registrar
ZooStore Cashier
ZooStore Cashier Supervisor
ZooStore Inventory Manager
ZooStore Lead Cashier
ZooStore Manager
ZooStore Manager Assistant
ZooStore Receiver

Zoo and Aquarium Careers
Association of Zoos & Aquariums

ZOO AND AQUARIUM CAREER OPPORTUNITIES

With more than 110 million people visiting AZA institutions annually, all zoo and aquarium employees have the opportunity to educate the public about the critical need for the conservation of wildlife and wild lands. This responsibility assures an interesting and rewarding career, but the profession requires more than a commitment to conservation — it requires hard work.

Zoo and aquarium employment is not always glamorous. Much of the work requires physical strength, as well as the ability to make detailed observations and keep information up-to-date. It takes a special kind of dedication to provide care to captive animals that require attention 24 hours a day, seven days a week, come snow, rain or shine.

The rewards for such efforts are great. Zoo and aquarium employees share in the knowledge that they are providing the best care for the creatures in their facility, as well as developing a forum for others to learn how they too can participate in the conservation of our planet's natural resources.

ASSOCIATION OF ZOOS & AQUARIUMS

REQUIREMENTS

The conservation and scientific programs in zoos and aquariums have become highly technical and specialized. Although practical experience with animals may sometimes be substituted for academic training, most entry-level keeper positions now require a four-year college degree. Training in animal science, **zoology**, **marine biology**, conservation biology, **wildlife management** and **animal behavior** is preferred. Curatorial, research and conservation positions typically require advanced academic degrees. However, advanced academic training by itself is insufficient, and it may take years of "on-the-job training" for someone to learn the practical aspects of exotic animal care. A few institutions offer curatorial internships which are designed to provide practical experience.

Students wishing to pursue animal-related careers are encouraged to carefully review the curriculum of the schools they wish to attend, as some programs focus more on a zoological application than others.

Students who are interested in the business side of zoo and aquarium operations should concentrate on skills related to a particular area of expertise, such as accounting, public relations, marketing, personnel management, etc. Whatever your career goal, guidance counselors can offer assistance in determining the most appropriate course of study.

SALARIES

Salaries for zoo and aquarium employees vary depending on the institution and its location. Institutions located in metropolitan areas generally offer higher salaries. An animal keeper's salary can range from minimum wage to more than $30,000 a year, depending on skills and tenure. Salaries for other employees usually compare favorably with those prevailing in that region.

POSITIONS

Listed below are some positions in zoos and aquariums and a brief description of duties. Not all positions are found in all facilities, and responsibilities often vary.

Director/Chief Operating Officer - Executes policies as directed by the governing authority. Responsible for the institution's operation and plans for future development.

Assistant Director - Assists the director and assumes charge in the director's absence.

Finance Manager/Director - Manages the institution's finances, including payment of bills, purchasing, investments, and the preparation of financial statements.

General Curator - Oversees an institution's entire animal collection and animal management staff. Responsible for strategic collection planning.

Animal Curator - Manages a certain portion of an institution's animal collection; i.e., mammals, birds, fish, reptiles, etc.

Veterinarian - Responsible for the healthcare program for the animal collection and the maintenance of health records.

Veterinary Technician - Assists the veterinarian and provides care to the animals under the supervision of the veterinarian.

Registrar - Maintains computer records on the animal collection and applies for permits and licenses to hold or transport animals.

Curator/Coordinator/Director of Research - Supervises research projects, serves as liaison between the institution and the academic community, and publishes articles in scientific journals.

Curator/Coordinator/Director of Conservation - Oversees the institution's conservation activities, including field projects. Serves as liaison with government wildlife agencies and other conservation organizations.

Conservation Biologist/Zoologist - Provides scientific and technical assistance in the management of the animal collection and assists in conducting various research or field conservation projects.

Head Keeper/Aquarist - Supervises a section or department of the institution; provides training and scheduling for keepers.

Senior Keeper/Aquarist - Provides primary animal care for a department.

Keeper/Aquarist - Provides daily care to the institution's animals, including diet preparation, cleaning, general exhibit maintenance, and record keeping.

Operations Director/Manager - Responsible for the daily operation of the institution's physical plant and equipment.

Curator of Exhibits - Creates exhibits and assists in the design of graphics.

Curator of Horticulture - Responsible for the botanical collection and its application to the animal collection, as well as daily maintenance of the institution's grounds.

Curator of Education - Plans and implements the institution's education programs.

Public Relations/Affairs Manager/Director - Promotes the institution, its mission, and its programs to the public via the media.

Development Director/Officer - Develops and manages fund-raising activities which can include writing grant proposals and attracting corporate sponsors, as well as soliciting private donations.

Marketing Director/Manager - Creates advertising campaigns and other activities to increase public awareness of the institution.

Special Events Manager/Coordinator - Develops and implements events to attract visitors throughout the year.

Membership Director/Manager - Responsible for maintaining and increasing institution memberships for families and individuals and designing special events for members only. May also be in charge of "adopt-an-animal" programs to raise funds.

Gift Shop Manager - Manages staff and all aspects of gift shop operation from buying products to designing shops.

Visitor Services Manager - Supervises the staff and facilities that cater to the visiting public including concessions and restrooms.

Personnel Manager/Director - Responsible for all personnel matters including payroll, insurance and tax matters.

Volunteer Coordinator - Responsible for recruiting and maintaining a staff of volunteers/docents. Duties include scheduling docents for on- and off-grounds activities and keeping docents abreast of new developments to relate to the public.

Docent/Volunteer - Duties may include diet preparation, small animal care, teaching educational programs, leading group tours, and staffing special events.

Junior Keeper - Some institutions offer a summer program for high school students who wish to volunteer in a zoo or aquarium setting. Duties are often similar to those of other volunteers, but they are supervised much more closely.

OTHER ORGANIZATIONS PROVIDING CAREER INFORMATION

The American Association of Zoo Keepers (AAZK) is dedicated to the important role keepers play in providing professional care to captive wild animals. Those interested in obtaining more information on becoming a keeper should contact: AAZK, 3601 SW 29th St., Suite 133, Topeka, KS 66614.

The American Association of Zoo Veterinarians (AAZV) is a professional organization dedicated to the science of animal medicine, especially that of exotic animals under **captive management**. Those pursuing a career in exotic animal medicine should contact: Executive Director, AAZV, 581705 White Oak Road, Yulee, FL 32097.

If you are interested in becoming a volunteer, you should contact your local zoo or aquarium. More information on docent activities is available from the Association of Zoo and Aquarium Docents at www.azadocents.org.

The Association of Zoos & Aquariums (AZA) represents virtually every major professionally operated zoo, aquarium, wildlife park, and oceanarium in North America, as well as most of their professional employees. AZA has a rigorous accreditation program for its zoo and aquarium members to ensure quality in animal care and visitor services. One of AZA's key roles is as spokesperson on wildlife issues for more than four million individuals who support zoological parks and aquariums at the local level.

Dennis Conner

Horticulturist teaching zoo visitors

SALARIES AND COST OF LIVING
As of February 2007

Zoo or Aquarium	City, State	Position	Pay Range*	Cost of Living
Los Angeles Zoo	Los Angeles, CA	Membership Ambassador	$8.50/hr	148
Dallas Zoo and Aquarium	Dallas, TX	Veterinary Technologist	$13.58 to $18.00/hr	84
National Aquarium in Baltimore	Baltimore, MD	Director of Facilities	$80,000 annually	117
The Oregon Zoo	Portland, Oregon	ZooTeen Educator	$11.00/hr	112
Woodland Park Zoo	Seattle, WA	Maintenance Laborer	$19.36/hr	144
Point Defiance Zoo & Aquarium	Tacoma, WA	Maintenance Tech	$13.88 to $19.21/hr	106
North Carolina Zoo	Asheboro, NC	Zookeeper	$24,504 to $31,101 annually	81
Forth Worth Zoo	Forth Worth, TX	Mammal Keeper	$440/week	78
San Antonio Zoo	San Antonio, TX	Reptile Keeper	$704 biweekly	75
San Francisco Zoological Society	San Francisco, CA	Zoo Camp Instructor	$15.50/hr	201
Zoological Society of San Diego	San Diego, CA	Invertebrate Keeper	$2,808/month	152
Pueblo Zoo	Pueblo, Colorado	Apprentice Zookeeper	$8.25/hr	82
Zoo New England	Stoneham, MA	Education Programs Manager	$35,000 annually	143
Honolulu Zoo	Honolulu, HI	Zoo Veterinarian	$3954/month	220
Florida Aquarium	Tampa, FL	Public Programs Supervisor	$28,000 annually	99
Lee Richardson Zoo	Garden City, KS	Animal Keeper	$9.48/hr	80
Cleveland Metroparks Zoo	Cleveland, OH	Curator of Herpetology and Ichthyology	$47,441 to $77,243 annually	85

*Pay ranges are given as they were listed in the job announcements. See the "Activities" section in this packet for an activity in which students convert the pay ranges in order to compare them.

** Higher value = higher cost of living; national average = 100 (http://www.bestplaces.net/col)

Conservation Programs in Zoos

Zoos and other conservation organizations are committed to the conservation of plants, animals and habitats. The employees of these organizations are instrumental in instigating conservation programs and often work with much dedication towards ensuring the success of these programs. Within North American zoos and aquariums, conservation efforts are coordinated through the Association of Zoos & Aquariums (AZA). The AZA was established in 1972 to aid the advancement of North American zoos and aquariums through conservation, education, scientific study and recreation. By accrediting zoos and aquariums to ensure that institutions meet certain standards and by helping member institutions disseminate information, AZA promotes the conservation of the world's wildlife and habitats.

The AZA coordinates conservation of wildlife on several different levels. **Conservation Action Partnerships (CAPs)** serve to increase awareness of and support for conservation needs in specific geographic regions of the world. Regions for which CAPs have been developed are areas rich in **biodiversity** with large numbers of endemic (unique to that region) wildlife, such as Madagascar and Brazil. **Taxon Advisory Groups (TAGs)** consider the conservation needs of entire taxa (groups of related species). TAGs consider certain criteria pertaining to all species in a taxon (such as canids [dogs] or felids [cats]) and assess which species should be recommended for captive management programs. Through this program, zoos and aquariums are able to devote their limited space and other resources to species that have been deemed to be most in need of support. **Species Survival Plans (SSPs)** help to ensure the survival of certain species by focusing on habitat preservation, maintenance of healthy captive populations, scientific research and public education. Because genetically sound populations are needed to assure continued successful breeding, SSPs facilitate the cooperation of zoos and private breeding institutions across North America in assuming this animal management responsibility. When and where necessary and appropriate, SSPs also support the reintroduction of species back into their native habitats.

Zoo visitors are often unaware of what captive management strategies involve. Curators and zookeepers are involved in projects as diverse as gorilla (*Gorilla gorilla*) demographic studies and the development of better diets for red pandas (*Ailurus fulgens*). Zoos share expenses and information to improve reproduction and maintenance of species. A program involving Humboldt penguins (*Spheniscus humboldti*) has been beneficial in increased parent-reared breeding successes at the zoo, and many keepers are involved in groundwork SSP planning that will impact some of the world's most endangered species. Sometimes, an SSP coordinator will advise that animals be moved from one zoo to another, called a "breeding loan," in order to increase the genetic diversity of subsequent offspring. For instance, in 1998 Woodland Park Zoo received a new young male Sumatran tiger *(Panthera tigris sumatrae)* as a mate for an elderly, female Sumatran tiger. The SSP coordinator then recommended that the older female Sumatran tiger be relocated to another facility, and a younger female Sumatran tiger, who was a better genetic match with the new male, move in. This transfer was difficult for the keepers involved, who had worked with the elderly female for many years. However, the move has benefited the captive population of Sumatran tigers as a whole with the birth of three litters of cubs as of December 2006.

Keepers and curators are not the only zoo staff involved in AZA conservation programs. An aspect of TAGs, CAPs and SSPs is conservation education both in countries from which endangered species originate and other countries around the world. Conservation education programs may include teacher training opportunities at zoos, environmental education in communities living in proximity to endangered species, and school or community programs on and off zoo grounds which enhance the public's knowledge of wildlife conservation. These education programs foster respect, stewardship and an understanding of the endangerment of species and habitats.

Zoo staff members are often closely involved with AZA programs such as TAGs, CAPs and SSPs. However, this involvement is often on a voluntary basis as these programs have limited funds to hire paid staff. Involvement in AZA programs is a rewarding part of working in the zoo and aquarium community and can also help zoo employees to advance their careers. The AZA itself supports staff positions including Director of Conservation and Science, Conservation Biologists, Program Assistants, Director of Conservation Education, Resource Center Curator, Training Administrator, Director of Government Affairs, and Director of Public Affairs.

Conservation in the Field

Research in the Field

The key to survival of wildlife, including plants, is the existence of healthy habitats throughout the world. Zoos and other conservation organizations work to preserve the genetic lines of species of plants and animals out of their natural environments ***(ex situ)*** while also helping to raise funds for conservation projects for species in their natural environments ***(in situ)***. Field conservation projects serve to identify species that are in need of protection; determine how species satisfy their basic needs for food, water, shelter and places to raise young; and discover any interactions between species or between animals, plants and the environment that are necessary for the lasting integrity of the **ecosystem**. Research in the field on reproductive, social and dietary habits is particularly useful to institutions working to care for and breed animals in captivity. Likewise, research on species in captivity benefits conservation work in the field (see the section "Scientific Investigation in Zoos" in this packet). The ultimate outcome of many conservation research projects is to identify priority species and areas for management and conservation. The information gained in the field, along with cooperative efforts of off-site conservation and breeding facilities, can lead to the successful protection of species and habitats.

Woodland Park Zoo keeper in Malaysia Andy Antilla

Conducting wildlife field research is an exciting career opportunity. Field researchers provide valuable information for the conservation of species and habitats. Likewise, researchers based in zoos, whether they conduct research in the zoo or travel to the field, also contribute knowledge useful in conservation efforts.

Community Involvement

The examples of many field conservation projects have shown that without the involvement and support of the local people who share habitat with wildlife, a conservation project has little chance of success. Working together with local communities on conservation efforts requires skills and experience in multicultural interaction and the flexibility to adapt to life in another culture. A knack for learning languages, or a knowledge of one or more languages other than English is also a benefit.

Scientific Investigation in Zoos

Just as field research can contribute to the management of captive animals, research in zoos can provide information that can be useful in the management of wild populations. Some zoos have research coordinators who coordinate and direct projects both within the zoo and in the field. Observations of species in captivity provide information that would be extremely difficult to obtain in the wild. Zookeepers and zoo volunteers may participate in data collection for scientific studies in zoos. Some zoos have research coordinators who direct scientific research in the zoo, compile and publish the findings of the research, and facilitate collaboration between the zoo and academic institutions.

We're All in This Together

Woodland Park Zoo

Our mission:

"Woodland Park Zoo saves animals and their habitats through conservation leadership and engaging experiences, inspiring people to learn, care and act."

While zoos are involved with many specific conservation programs, both in the field and in zoos, zoos have an overall mission of helping to conserve living things. Every position within a zoo contributes in some way to this mission: gift stores and food concessions bring in money that supports zoo projects; marketing staff and fund-raisers (development staff) obtain funds for zoo programs and projects; maintenance staff keep the zoo grounds clean and ensure the proper functioning of heating, cooling and water facilities for the animals; education programs provide information about wildlife and conservation to the public; horticulture staff provide a natural setting in which zoo visitors can appreciate the animals and their habitats; and accounting staff keep track of funds that support the zoo's operations and programs. There are also many other positions in addition to those mentioned here, each with their own important function that, together, help the zoo to fulfill its mission.

The Benefits of a Zoo or Wildlife Career

If you have compassion for the natural world and an interest in conservation and how we can sustain a biologically diverse world for future generations, there are many benefits to pursuing a wildlife-related career, such as in a zoo. Working together with other people who care about animals, plants and natural habitats can be invigorating and empowering. Knowing that every day you are using your unique strengths and skills to do something good for the world and its plant, animal and human inhabitants can be very fulfilling.

GLOSSARY

- **Animal behavior:** As a career, the study of the behaviors of animals.
- **AZA – Association of Zoos & Aquariums:** An association that aids the advancement of North American zoos and aquariums by coordinating conservation, education, scientific study and recreation efforts within zoos and aquariums. By accrediting zoos and aquariums to ensure that institutions meet certain standards and by helping member institutions to disseminate information, AZA promotes the conservation of the world's wildlife and habitats.
- **Biodiversity:** The relative abundance and number of living organism in a certain area. Biodiversity can refer to the diversity of genes in a species and the diversity of ecosystems on the planet.
- **CAP:** Conservation Action Partnership
- **Captive management:** The management of populations of animals in captivity. May include breeding or control of breeding.
- **CITES:** Convention on International Trade in Endangered Species of Flora and Fauna
- **Conservation:** The management of natural resources, including wildlife and habitats, to sustain resources for the future. Preservation, protection and wise use can all be a part of conservation practices.
- **DNA:** Deoxyribonucleic acid
- **Docent:** A volunteer educator
- **Ecosystem:** An area of any size in which biotic (living) and abiotic (nonliving) components interact and through which nutrients and energy cycle.
- **Endangered:** A species or population that is in danger of extinction if no actions are taken to protect the species**.**
- **Enrichment or Environmental enrichment:** Environmental enrichment is a means of providing captive animals with opportunities to engage in natural behaviors. These opportunities may include the keeper dispersing interesting smells around the exhibit, hiding food around the exhibit, or placing food in special (often naturalistic) feeders that require manipulation in order to reach the food.
- ***Ex situ:*** In reference to wildlife, a plant or animal out of or away from its natural habitat.
- **Field research/field science:** The study of ecosystems and their living and nonliving components in their natural habitat.
- **Habitat:** The area that supplies an organism or group of organisms with all their basic needs for survival (food, water, shelter, air and space).
- ***In situ:*** In reference to wildlife, a plant or animal in its natural habitat. Also refers to activities carried out within the range of the natural habitat of a plant or animal, e.g. "in situ conservation."
- **Marine biology:** The field of biology focusing on the living organisms of the ocean.
- **SSP:** Species Survival Plan
- **TAG:** Taxon Advisory Group
- **Veterinarian:** A doctor responsible for the medical and surgical treatment of animals.
- **Wildlife:** Living organisms that survive independently of humans; undomesticated plants and animals.
- **Wildlife management:** Human control of non-domesticated animals in their natural habitat.
- **Zoology:** The field of biological sciences concerned with the study of animals.