CAREERS IN MARINE SCIENCE

DEPARTMENT OF ANIMAL CARE
THE MIRAGE
3400 LAS VEGAS BOULEVARD, SOUTH
LAS VEGAS, NEVADA 89109
702-791-7588
CAREERS IN MARINE SCIENCE

This brochure has been compiled by The Mirage Department of Animal Care to offer general information to those who wish to consider a career in marine science.

As the scope of this profession is too wide for a brochure of this size, we have provided a list of publications and internet websites, which may be helpful for you to explore.

To learn more about this field, there is no substitute for hands-on experience – therefore, we encourage you to get out and VOLUNTEER, VOLUNTEER, VOLUNTEER! Most zoos, aquariums and natural history museums have volunteer programs that will better expose you to some of the daily work that goes on in this field. Our rule of thumb is that after six months of volunteering at any local facility, you will either love or hate this field of study! No matter the outcome, give yourself the opportunity to learn and grow – you’ll never know unless you try!

We wish you much success in whatever field you pursue.

Department of Animal Care
3400 Las Vegas Blvd., So.
Las Vegas, NV 89109
702-791-7588
INTRODUCTION TO THE PROFESSION

Today, thousands of individuals are employed in marine science-related work. Of this number, however, few actually work with or around an animal-related environment, and an even smaller percentage work one-on-one with animals.

Although careers in marine science are not as glamorous as they may appear, the rewards are great for professionals who share in the knowledge that their work is benefiting the future of our ecosystem for generations to come.

In addition to the many areas of specialization available to those interested in pursuing a career in this profession, concerns for the future of our environment have brought about a growing demand for business and public administrators, economists and lawyers, who are qualified to work in the field of marine science.

IS THIS FIELD OF STUDY FOR ME?

Ask yourself the following questions:

Do you enjoy…
  - studying science?
  - designing experiments?
  - reading books and magazines about science and living organisms?
  - learning how animals function – including humans?

Would you like to…
  - develop theories that lead to new ways of thinking?
  - work to improve environmental quality?
  - strive to protect endangered species?
  - teach others about living organisms?

If your answer to several of these questions was “yes,” marine science could be a good career choice for you.

Tip

Individuals receive job offers in this field because of their skills in science or engineering, not because they like or want to work with animals.
Where Would I Work?

Strong public interest in this rewarding field has established keen competition for positions. A strong academic background in science coupled with volunteer experience is a good start for gaining access to most entry-level positions.

Places that hire marine scientists:

Marine Science employers include:
- zoos, aquariums and marine parks
- museums
- foundations and organizations

Government agencies include:
- Bureau of Land Management
- U.S. Department of Agriculture
- Environmental Protection Agency
- U.S. Fish and Wildlife Service
- National Oceanic and Atmospheric Administration
- National Park Service
- National Science Foundation

Teaching institutions:
- colleges and universities
- community and junior colleges
- technical schools
- elementary, junior high and high schools

Industry involved in:
- development of products for agriculture
- biotechnology
- pharmaceutical sales and production
- life support/water quality
- filtration system equipment

Additionally, one can pursue the field of engineering and become involved in the design, construction, and maintenance of life support and/or water quality systems. These systems are vital for zoos, aquariums and other marine facilities. Engineers have and can continue to make tremendous contributions to maintaining a clean and healthy ecosystem.
WHAT KIND OF SALARY CAN I EXPECT TO EARN?

The salary range for employees in the field of marine science varies dramatically in relation to the position, the institution and the region where it is located. Positions can pay from slightly above minimum wage to more than $40,000 per year with tenure.

WHAT TYPE OF BACKGROUND DO I NEED?

Generally there are far more applicants than positions available, and attempts to gain employment in this profession can be met with frustration. To provide yourself with every opportunity for success, a university degree with an emphasis in marine biology, biology, zoology, behavioral psychology or engineering, and experience as a volunteer or intern will make you a serious candidate for any available entry-level position.

When you are ready to begin your professional job search, try to remain as flexible as possible. Any position within this field, no matter how far removed from your specific area of interest, can be beneficial in attaining your ultimate goals.

Schooling:

* **Bachelor’s degree**
  Many individuals enter the workplace after completing their Bachelor’s degree and continue to successfully advance in this field. Professional opportunities at this level include: entry-level positions within the industry, government, zoos, aquariums, and museums. Some individuals choose teaching to elementary, middle, junior high or high school students.

* **Master’s degree**
  A master’s degree enables you to build your knowledge to a higher technical level. Professional opportunities at this level include: positions as laboratory technicians within industry, government and universities, and entry to mid-level positions with zoos, aquariums, and museums. Some individuals choose to become secondary schoolteachers or junior college instructors.

* **Ph.D. degree**
  The Ph.D. degree allows you to add to the body of technical knowledge that exists in this field. Professional opportunities at this level include: positions directing research, and teaching at the college or university level. Individuals who have completed their Ph.D. degree share a strong commitment to their chosen field of study and are generally prepared to engage in the high level of competition for grant money necessary to fund research.

**Tip**
Most professionals in this field majored in biology.
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VOLUNTEERING

A very large percentage of professionals in the field of marine science got their careers off to a start by volunteering.

Volunteering can help you:
- Gain a better understanding of what is required of professionals.
- Learn more about the many different specializations you can pursue.
- Find out about potential job opportunities.

Whether you are a high school student, university student, or university graduate, volunteering is a wonderful way to learn about the field you are interested in pursuing.

Tip
Volunteers and internship positions also provide you with an extra bonus to your academic education – work experience! When you are ready to enter the job market, be sure to include any volunteer or internship positions you have held.

WHERE CAN I VOLUNTEER?

For volunteer opportunities, contact a local zoo, aquarium or museum. If your community is lacking these resources, try the National Park Service, Department of Wildlife, or Division of Parks and Recreation in your area.

Even if the volunteer position you find is not in your specific area of interest, you are still gaining worthwhile experience and are providing a valuable service to your community.

Tip
Searching the web for sites that have information on volunteering, internships and careers can be useful. We have listed some of the sites in this brochure that we feel will be helpful.
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INTERNSHIPS

Many facilities and government agencies offer internship programs that allow students to gain professional experience in this field. Some institutions have reciprocal agreements with high schools and/or universities, which enable students to receive academic credit for their efforts. While most internship positions are unpaid, some institutions offer a small stipend to help compensate students for their time and effort.

**Tip**

At the end of this brochure is information regarding The Mirage Internships in Marine Science. You should also check with government agencies to learn about summer internship opportunities.

VOLUNTEER OPPORTUNITIES – CLARK COUNTY, NEVADA

<table>
<thead>
<tr>
<th>Facility</th>
<th>Requirements</th>
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<tbody>
<tr>
<td>Lake Mead National Recreation Area</td>
<td>Minimum age: 18 for “science work”</td>
</tr>
<tr>
<td>601 Nevada Way</td>
<td>No minimum hours</td>
</tr>
<tr>
<td>Boulder City, NV 89005</td>
<td></td>
</tr>
<tr>
<td>Volunteer Coordinator</td>
<td></td>
</tr>
<tr>
<td>Phone: 293-8714</td>
<td></td>
</tr>
<tr>
<td>Las Vegas Natural History Museum</td>
<td>Minimum age: 16</td>
</tr>
<tr>
<td>900 Las Vegas Blvd., North</td>
<td>No minimum hours</td>
</tr>
<tr>
<td>Las Vegas, NV 89101</td>
<td></td>
</tr>
<tr>
<td>Phone: 384-3466</td>
<td></td>
</tr>
<tr>
<td>Red Rock Canyon</td>
<td>No minimum age</td>
</tr>
<tr>
<td>PO Box 26569</td>
<td>No minimum hours</td>
</tr>
<tr>
<td>Las Vegas, NV 89126</td>
<td></td>
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<tr>
<td>Phone: 363-1921</td>
<td></td>
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<tr>
<td>Southern Nevada Zoological-Botanical Park</td>
<td>Minimum age: 18</td>
</tr>
<tr>
<td>1775 North Rancho Drive</td>
<td>Must commit to volunteering</td>
</tr>
<tr>
<td>Las Vegas, NV 89106</td>
<td>12 hrs/month</td>
</tr>
<tr>
<td>Phone: 647-4685</td>
<td>Zoo Explorer Post</td>
</tr>
<tr>
<td>Wild Wing Project</td>
<td>14-18 years old</td>
</tr>
<tr>
<td>Gilcrease Nature Sanctuary</td>
<td></td>
</tr>
<tr>
<td>8103 Racel Ave.</td>
<td>Minimum age: 16</td>
</tr>
<tr>
<td>Las Vegas, NV 89131</td>
<td>No minimum hours</td>
</tr>
<tr>
<td>Volunteer Coordinator</td>
<td></td>
</tr>
<tr>
<td>Phone: 645-3426</td>
<td></td>
</tr>
</tbody>
</table>
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PUBLICATIONS

To learn more about careers in the field of marine science, we suggest the following publications:

*Opportunities in Zoos and Aquariums*
Blythe Camenson, Vgn Career Horizons

Thane Maynard, Franklin Watts, Inc.

*Healers of the Wild: People Who Care for Injured and Orphaned Wildlife*
Shannon Jacobs, Coyote Moon

*We’ve Got the Whole World In Our Hands: Environmental Careers*
S/N: 029-001-03208-1
Available through the U.S. Government Printing Office
Superintendent of Documents
PO Box 371954
Pittsburgh, PA 15250-7954
202-512-1800

WEB PAGES

*Note: This list is provided for your convenience, and does not necessarily imply endorsement of individual institutions by The Mirage.*

Alliance of Marine Mammal Parks and Aquariums
http://ammpa.org/
Click on Alliance members
http://ammpa.org/memfram.html

American Association of Zookeepers Inc.
http://www.aazzk.org/default1.htm
Click on zookeeping as a career
http://www.aazzk.org/Career/career.htm

American Fisheries Society
http://www.fisheries.org/

American Zoo and Aquarium Association
www.aza.org

Disney Internships
http://disney.go.com/DisneyCareers/wdwcareers/college/
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Humboldt State University Department of Fisheries Biology
http://www.humboldt.edu/~fish/

International Association of Avian Trainers and Educators
www.iaate.org

International Marine Animal Trainer’s Association
www.imata.org
click on career info
http://www.imata.org/members/Career_Info/index.cfm

Love Lab
http://www.id.ucsb.edu/lovelab/

Moorpark College, America’s Teaching Zoo
http://www.moorparkcollege.edu/zoo

National Marine Educators Association
http://www.marine-ed.org/

National Sea Grant
http://www.nsgo.seagrant.org/

Other Aquarium Related Sites
http://www2.hawaii.edu/~delbeek/aquarium.html

Santa Fe Community College Teaching Zoo
http://inst.santafe.cc.fl.us/~zoo/

Society for Integrative and Comparative Biology
http://www.sicb.org/careers/faqs.php3

Society for Marine Mamology
http://www.marinemammalogy.org/
http://www.marinemammalogy.org/strat.htm

Southwest Marine Educators Association
www.swmea.org

Wildlife, Fish and Conservation Biology
http://wfcb.ucdavis.edu/

World Aquaculture Society
www.was.org
Use of the World Aquaculture Society logo does not suggest endorsement of The Mirage or any of the programs or organizations listed.

Zoos, Aquaria & Marine Mammals
http://asci.uvm.edu/intern/zoo.htm
MIRAGE INTERNSHIPS IN MARINE SCIENCE

The Department of Animal Care at The Mirage has two internships in the field of marine science. The Mirage has a reciprocal agreement with the Department of Environmental Studies at the University of Nevada, Las Vegas (UNLV), where students are able to earn credits while working in either the Aquarium or Dolphin Care areas of the Department of Animal Care.

The Marine Biology Internship (Aquarist)

Preferred applicants will be at the junior level at UNLV, pursuing a degree in Environmental Studies, Biology, or a related field, and interested in pursuing a career in Marine Biology, Aquaculture, or Aquarium Science. Applicants must be available to work for at least 30 hours per week. The workweek may exceed 30 hours in the summer or, provided all parties agree, during the school year. Mirage interns may not be employed elsewhere. By June 1, interns selected should have SCUBA certification. Marine Biology interns will have responsibilities associated with daily maintenance of the marine life support systems at The Mirage, and will learn how to manipulate chemical and biological conditions essential to the health and well-being of the variety of organisms being held there. They will learn all aspects of the husbandry, education, and communication roles associated with the operation of a zoological institution.

Applicants should ask two people familiar with their work (job or school) to send letters of evaluation to Dr. David M. Hassenzahl, Assistant Professor, Department of Environmental Studies, UNLV, Box 454030, Las Vegas, NV 89154-4030 or email david.hassenzahl@ccmail.nevada.edu. Each letter should address characteristics such as attitude toward work, interpersonal relationships, attitude toward school, job experience, interest in animals, and prospects for the future.

Application forms are available from the Department of Environmental Studies webpage (http://environment.nevada.edu), or from the Environmental Studies office (MPE 130). This internship is intended to begin June 1, and if agreeable with all parties could extend through the academic year. Interns who want academic credit are encouraged to make early arrangements with Dr. Hassenzahl or another appropriate advisor, to enroll in ENV 495 for either or both semesters. The Mirage will make

A Mirage Aquarist demonstrates the fine points of fish food preparation.
final selections.

The Care and Management of Marine Animals Internship (Dolphin Specialist)

Preferred applicants are students majoring in Biology or Environmental Studies at UNLV or CCSN, and available to work for at least 30 hours per week. Work hours may exceed 30 hours per week by agreement between all parties. Mirage interns may not be employed elsewhere. By the anticipated start date of June 1, interns selected should have SCUBA certification, have completed a minimum of 40 credit hours of college level course work with a minimum 3.0 gpa, and have had at least one year of experience with the care of captive animals. A physical and swim test will be required and scheduled as part of the Mirage interview process. Animal Care interns will learn all aspects of the husbandry, conditioning, education, and communication roles associated with the operation of a zoological institution. The internship qualifies for 3 academic credits per semester. A mandatory thesis paper will be required at the end of this internship to satisfy completion requirements.

Applicants should ask two people familiar with their work (job or school) to send letters of evaluation to Dr. David M. Hassenzahl, Assistant Professor, Department of Environmental Studies, UNLV, Box 454030, Las Vegas, NV 89154-4030 or email david.hassenzahl@ccmail.nevada.edu. Each letter should address characteristics such as attitude toward work, interpersonal relationships, attitude toward school, job experience, interest in animals, and prospects for the future.

Information and application forms are available in the Environmental Studies Office (MPE 130), or on the web at http://environment.nevada.edu. Internships are for one (1) calendar year. Interns who want academic credit are encouraged to make early arrangements with Dr. Hassenzahl or another appropriate advisor, to enroll in ENV 495 for either or both the fall and spring semesters. Final selections will be made by the Mirage.