

TESTIMONY

OF

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PROFESSIONAL DEVELOPMENT**

ASSOCIATION OF ZOOS AND AQUARIUMS

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Before The

SUBCOMMITTEE ON INSULAR AFFAIRS, OCEANS AND WILDLIFE

COMMITTEE ON NATURAL RESOURCES

U.S. HOUSE OF REPRESENTATIVES

**OVERSIGHT HEARING ON MARINE MAMMALS IN CAPTIVITY: "WHAT CONSTITUTES
MEANINGFUL PUBLIC EDUCATION?"**

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Introduction

Chairwoman Bordallo, Ranking member Brown, and distinguished members of the Subcommittee, thank you for the opportunity to discuss the enormous contributions that the AZA-accredited zoos and aquariums across the country make in educating the public about marine mammals. My name is Dr. Paul Boyle, Senior Vice President for Conservation, Education, and Professional Development for the Association of Zoos and Aquariums - AZA.

AZA-accredited zoos and aquariums serve as conservation centers of excellence that are concerned about ecosystem health, take responsibility for species survival, contribute to research, conservation, and education, and provide society the opportunity to develop personal connections with wildlife and nature.

AZA and its member institutions are proud to work with Congress, the Federal agencies, conservation organizations, the private sector and the general public to conserve our wildlife heritage. With 175 million annual visitors to our 221 accredited zoos and aquariums, AZA's focus on connecting people and animals provides a critical link to helping animals in their native habitats. Far-reaching conservation programs at AZA institutions have provided over \$90 million per year over the past five years to support over 4,000 field conservation and research projects in more than 100 countries. AZA-accredited zoos and aquariums are among the leaders in the protection of endangered species and we enjoy beneficial partnerships with NOAA's National Marine Sanctuary Program and USFWS' National Wildlife Refuge System and Endangered Species Program.

As centers for conservation volunteerism, AZA-accredited zoos and aquariums offer the public a great way to discover connections to their environment and to learn how they can make a difference in conservation. Annually, more than 58,000 volunteers invest over 3 million hours of their time supporting virtually every aspect of zoo and aquarium operations.

AZA-accredited zoos and aquariums effectively communicate science-based educational messages about the importance of conserving marine mammals and their habitats to more than 175 million visitors each year. Fifty million annual visitors are children, making accredited zoos and aquariums essential to how we connect children to marine mammals and the natural world. These messages and programs meet state and national science curriculum standards. In the last 10 years, AZA-accredited zoos and aquariums formally trained more than 400,000 teachers in informal science education methods, supporting science curricula with effective teaching materials and hands-on opportunities and providing over \$85 million annually in educational support.

In addition, AZA-accredited zoos and aquariums enhance local and regional economies, collectively generating \$8.4 billion in annual economic activity and supporting more than 126,000 jobs. In many cases, our zoos and aquariums are the economic engines of the community and the region. When I was Director of the New York Aquarium, every summer my institution was the largest employer of youth in Brooklyn, and a similar story surrounds many of AZA's member institutions across the country. For many of these young people, a job at their local aquarium or zoo represents their first experience in the workplace and first experience in developing job skills for the future.

AZA-accredited zoos and aquariums are windows onto nature for millions of Americans. In fact, their constant delivery of professional programs in informal science education collectively represents one of the chief mechanisms for connecting Americans to nature.

Just a few months ago, testifying to the House Committee on Science and Technology, the Director of the National Science Foundation's Division of Research on Learning in Formal and Informal Settings reported:

“In an era where we are all lifelong learners, the boundaries between formal settings for learning – such as schools and universities – and informal learning settings – such as museums, cyberspace, and the media – are increasingly blurred and porous.” (J. Ferrini-Mundy. NSF. 2009)

Today, we see wildlife and natural habitats increasingly impacted by human activities. This situation affects every part of our planet. AZA-accredited zoos and aquariums are devoting a constantly increasing amount of time, effort, and resources to conservation and the protection of threatened and endangered species including marine mammals. They devote equal energy toward the protection of their living collections, which represent a national heritage for future generations to connect with, understand, and value.

As the subject of this hearing, my testimony today will focus on four key points:

1. The power and effectiveness of informal science education programs that exhibit marine mammals and the current professional standards for education in ensuring sound education outcomes through marine mammal exhibits at zoos and aquariums;
2. The strength and quality of marine mammal conservation programs and marine mammal rescue and rehabilitation programs managed by AZA-accredited zoos and aquariums;
3. The current and evolving methods for evaluating marine mammal education and conservation programs at AZA's member institutions; and
4. Recommendations to the Committee regarding standards.

Although twenty years ago many questioned how much learning occurred in museums, today the enormous value of informal education is proven. Within zoos, aquariums, and science centers, an entire field has emerged around informal science education following fifty years of research and investment in informal science education by the National Science Foundation.

In fact, the National Academies Press published the book titled “Learning Science in Informal Environments,” (Bell et al 2009) which reported:

“Informal environments are of fundamental importance for supporting science learning...”

And

“... designed settings – including museums, science centers, zoos, aquariums and nature centers – can also support science learning. Rich with educationally framed real-world phenomena, these are places where people can pursue and develop science interests, engage in science enquiry, and reflect on their experiences through conversation.”

It goes on to report that

“They also can be effective in improving students' attitudes toward science and toward themselves as science learners.”

Similarly, Miller and Kuczaj (2009) reported that visitors to dolphin shows showed:

“an increase in conservation-related knowledge, attitudes and behavioral intentions immediately following their experience,” and “three months later they reported engaging in more conservation-related behavior compared to three months before the programs.”

Their study demonstrated that people retained the knowledge they gained during the marine mammal experience. In addition, this study showed that the dolphins involved in these shows exhibited higher rates of behavioral diversity and play-behavior immediately following the programs compared to non-program times, which typically has been used as an indicator of well-being. These findings “suggest that dolphin shows and interaction programs can be an important part of an enrichment program within a zoological setting.”

In addition, three weeks ago, an editorial in the journal *Nature* (2010) reported that “education policy-makers should take note” – that “much of what people know about science is learned informally.”

Accredited zoos and aquariums represent national centers of excellence in informal science and conservation education, offering a wealth of valuable science learning to the over 175 million visitors they serve each year and their impact is supported by all of these scientific reports.

Professionally recognized standards for education or conservation programs at public marine mammal display facilities:

As background, the U.S. Commission on Ocean Policy stated that:

“The general public increasingly has opportunities to come into contact with marine species through diving, aquarium shows, and similar activities. These interactions can increase public awareness and sensitivity about the needs and vulnerabilities of these animals and the ways in which human activities can affect them. Aquariums and other exhibitors can also showcase how larger environmental issues affect marine species and the ecosystems on which they rely.” (www.oceancommission.gov)

At present, education standards for informal science learning, outlined by the National Science Foundation (Friedman et al 2008), suggest that learning about the nature of science (how science is done), specific scientific principles, and attitudes toward science in general supports the intent of the Marine Mammal Protection Act.

Further, the Environmental Protection Agency defines environmental education as follows:

“Environmental education increases public awareness and knowledge of environmental issues and challenges. Through environmental education, people gain an understanding of how their individual actions affect the environment, acquire skills that they can use to weigh various sides of issues, and become better equipped to make informed decisions. Environmental education also gives people a deeper understanding of the environment, inspiring them to take personal responsibility for its preservation and restoration” (Falk et al 2009).

The questions posed in the invitation to testify seem to address education separately from conservation. AZA believes that education and conservation can not be separated and, as a result, conservation education is mandated by AZA Accreditation Standards

for any institution housing marine mammals (and any other living animal as well). Our position is based on the widely held recognition that conservation outcomes depend on significant numbers of *people* becoming involved. Stated another way, conservation outcomes require that large numbers of people know more, care more, and do more about the issues in order for the underlying factors that govern change to become activated.

As society urbanizes, more and more people have less and less contact with nature. We believe, because the evidence shows us, that the opportunity to see and get close to wild animals at zoos and aquariums is one of the few authentic experiences that can stem the tide of Americans' growing disconnect from nature.

AZA's Education Standards are in place specifically to use these opportunities to target conservation education directly where it is most needed - in the 175 million people who visit AZA –accredited institutions each year.

The Marine Mammal Protection Act states that a permit for public display can be issued only to those who offer “a program for education or conservation purposes that is based on professionally recognized standards of the public display community;”

Congress has entrusted zoos and aquariums with great responsibility in caring for marine mammals. AZA and its accredited member institutions strive daily to meet this responsibility with mandatory, science-based standards for education, conservation, and animal care and welfare. The National Marine Fisheries Service (NMFS) formally recognized both the standards of the Association of Zoos and Aquariums (AZA) and those of the Alliance of Marine Mammal Parks and Aquariums as the “professionally accepted standards” on which a public display facility must base its education and conservation programs. The standards were published in the *Federal Register* by the National Marine Fisheries Service (Federal Register 1994)

AZA Accreditation Standards:

The highly-trained staff at AZA-accredited zoos and aquariums provides excellent care for more than 800,000 animals nationwide. As part of AZA's mandatory accreditation process, AZA members meet rigorous professional standards for animal welfare, veterinary care, wildlife conservation, scientific research, education, safety, staffing, and more.

AZA Standards require that education must be a key element in the mission of the institution and that education/conservation messages be an integral component of animal demonstrations (see attachments for AZA Education Standards). Every institution must have a written education plan that matches current industry standards, which is overseen by a trained/experienced education professional.

The AZA Standards further state that the institution should encourage active, ongoing collaborative partnerships with community groups, other informal education institutions, school districts, institutes of higher learning, other conservation organizations, local and national governmental agencies, and other organizations and individuals that can contribute to the expansion of the institution's educational dimension and accomplishment of its mission.

There are a number of AZA standards in place which guide the development and delivery of high quality education and conservation programs in AZA-accredited zoos and aquariums. The first four of these are attached to my testimony and they include:

- The AZA Policy on the Presentation of Animals
- The AZA Education Standards which are an integral part of AZA's Accreditation Process
- The AZA Program Animals Policy
- The AZA Program Animal Position Statement, and
- The AZA Recommendations for Developing an Institutional Program Animal Policy (see www.aza.org/accred-materials/),
- The AZA Conservation Standards (see www.aza.org/accred-materials/), and
- The AZA Code of Professional Ethics (see www.aza.org/Ethics/).

This testimony, along with the attached and above referenced materials provided to the committee, emphasize that AZA's standards for education and conservation are stronger today than ever before, and should continue to be recognized as the professionally recognized standards to be met by all permit holders.

The need for regulations to be developed pursuant to Section 104(c)(2)(A)(i) of the Marine Mammal Protection Act to ensure sound standards for marine mammal education or conservation programs:

The letter of invitation to testify at this hearing states that "Regulations delineating the standards for such [marine mammal] programs have never been promulgated." The Marine Mammal Protection Act did not specifically require that either the National Marine Fisheries Service or the Fish and Wildlife Service promulgate its own standards. In this case, the NMFS recognition of the standards for marine mammal education or conservation programs, developed by experts in conservation and education, fulfills the spirit of the requirement of the law.

I express great concern at the thought that the detailed and Federally-recognized, professional conservation education standards produced by AZA and referenced above may be undermined by those who deny the now significant body of evidence demonstrating why zoos and aquariums are achieving conservation education outcomes that could not have been anticipated just twenty years ago.

The social sciences have been actively using internationally peer-reviewed processes for assessing quality, developing new methods, and exploring how learning can be achieved. The vibrant community of professional educators within AZA-accredited zoos and aquariums will continue to push the envelope in informal science education, as they have succeeded in doing for the past two decades. This is not only our responsibility with respect to marine mammals under the law, it is our duty as stewards of these magnificent animals.

Methods for evaluating education and/or conservation programs at public display facilities

With regard to evaluation, I want to provide examples of recent research that have direct relevance to your deliberations. First, I would offer examples of papers published in *Curator: The Museum Journal*, the leading international journal of museum studies. These studies were made possible by funding from the National Science Foundation (NSF) based on an extensive and highly competitive peer-review process that scrutinizes the methods and approach. This

research by Dr. John Falk and his colleagues was the first descriptive study of motivations for visiting zoos and aquariums and the associated conservation learning outcomes from those visits. Dr. Falk and Dr. Heimlich and their colleagues created new research instruments for long-term assessment of our conservation education programs and helped to define how we can report on these results as a community. As a result of this NSF funded study, and subsequent training, I can confirm that today more than 25% of the members of our association have been trained in how to apply these evaluation tools and we continue to ensure that our members will have training opportunities.

But, we have not stopped there. Some people speaking to you during this hearing claim that zoos and aquariums are not educational facilities. I challenge these claims as an unsubstantiated academic hypothesis that is unsupported by empirical research, and represents a deluded view of what we know about how people learn. These nay-sayers are locked in the past, suggesting that the methods developed under rigorous scrutiny of an international community of scholars devoted to the study of informal learning experiences are somehow inadequate - nothing could be farther from the truth.

First, as you all are aware, science evolves and builds on prior knowledge. We accept that the methods we have today will continue to become more accurate and predictive. The last thirty years have seen a revolution in methods for evaluating education in non-formal learning environments, whether they are our facilities with live animals or any museum or environmental learning center.

The National Science Foundation has been a global leader in the use of evaluations and in developing a consistent approach to conducting evaluations. In fact, NSF's Framework for Evaluating Impacts of Informal Science Education Projects (Friedman et al. NSF) is the state of the art evaluations handbook.

In addition, two professional organizations, the American Association of Museum's Committee on Audience Research and Evaluation and the Visitor Studies Association have together produced copious studies and reports on the appropriate use of evaluations in the social sciences. Rather than outline all of the methods developed for these studies, let me just say that we look to these external, independent, academically rigorous communities for our evaluation standards. We respect that this community is leading this challenge. Further, attempting to entrench current evaluation methods in legislation will restrict rather than support the refinement and advancement of ever more predictive tools as we seek to understand how to more successfully assess the conservation learning outcomes that our members are committed to achieving.

As a self-regulating organization, with the most comprehensive and stringent Accreditation process in the world, we have created a new Research and Technology Committee directly charged with the assessment of scientific methods and increased dissemination of assessment tools for promoting conservation.

Today, what we know about the lives of many animals was built on non-invasive research done in zoos and aquariums. Many animals, especially aquatic species, cannot be studied in their natural habitat. What we learn from marine mammals in public facilities has, in fact, built our knowledge about their perceptual world, their social needs, their cognitive skills, and virtually all of their basic biology. I offer you another example of a project that I led as Principal Investigator with funding from the Institute for Museum and Library Services. This study, *Thinking about Dolphins Thinking*, tested how complex scientific information could be delivered meaningfully to visitors surrounding the topic of dolphin cognitive skills discovered, in fact, through studies on dolphins at the New York Aquarium. The project succeeded in achieving a

high level of learning outcomes from an aquarium exhibition about dolphin cognition. This evidence is just one example among many demonstrating that conservation education is measurable, achievable, and built on prior research.

Additional studies conducted by social scientists demonstrate that public discourse about dolphins (outside of zoos and aquariums), in fact, creates misconceptions, and that aquariums are places where these misconceptions can be corrected. These papers speak directly to how technical misconceptions are promoted in society and the very surreal ideas people develop about dolphins based on cartoons, music, and new media rather than through real encounters with these animals at accredited facilities.

I shudder to think where we will be if the average American adult has to rely exclusively on what they learn from popular culture and media about the lives of marine mammals. Aquariums are accessible for all levels of our society, including underserved and under represented audiences. All but the elite cannot afford access to eco-tourism experiences to see these animals in the wild. You may hear from some presenters that television, magazines, and stuffed animals should be enough. However, we know from studies conducted by social scientists in our institutions and even a study by a current program officer from that National Science Foundation (Allen, 2004) that live animals promote more synthesizing conversations that help visitors make sense of the natural world around them, and increase their value for it, than any other type of formal or non-formal learning experience.

What we know from another recent study funded by the Institute for Museum and Library Services through the Wildlife Conservation Society is that Americans expect and want our zoos and aquariums to be educational institutions, that they trust these institutions to honestly report on the environment and nature, and that the public sees these institutions as much more trustworthy than animal rights activists who they perceive to play loosely with the truth (Fraser & Sickler, 2009).

Additionally, if you feel there are other issues that are important for the Subcommittee to consider, please feel free to address them

I would like to directly address something that you have heard in earlier testimony. Recently, the animal rights journal *Society and Animals* published an unsubstantiated critique of the research conducted by the leading scholar in free-choice learning, John Falk, his colleague Joe E. Heimlich from COSI and the Ohio State University, and their colleagues and advisors from across the country. It is clear that this paper by Dr. Lori Marino and her colleagues was a veiled attempt to discredit a team of respected researchers and to disparage their reputations in order to claim that zoos and aquariums can't be educational environments. This criticism did not meet even the minimum criteria for scholarly ethics nor the basic rules of evidence for scientific research. They elected to criticize the methodologies in a public summary document, not the original research publications when, by definition, summary documents do not provide detailed methods or data. Similarly, they ignored the freely available data which was a part of the public record. They challenged the methods on the basis of Karl Popper's outdated standards for science research published in 1959 that were debunked in the final years of the last millennium (Sokal & Bricmont, 1998) – standards that would not permit us even to consider physics to be a science. They also ignored that the research followed the best practices for museum research as outlined in Diamond, Luke & Uttal's (2009) recent guidelines, rigorous standards for validity assessment in the social science literature, and disregarded the facts regarding how learning and knowledge were assessed and validated in this study.

I cannot imagine why these scholars chose to play so fast and loose with the facts. Dr. Marino and her colleagues clearly have no knowledge of the education standards for evaluation that are

used to assess the effectiveness and efficiency of the professional education programs in accredited zoos and aquariums following methods developed by the social sciences professional community and forwarded by the National Science Foundation.

I would like to shift my focus now specifically on the conservation work of AZA's member zoos and aquariums.

AZA-accredited zoos and aquariums are concerned about species survival and ecosystem health and therefore are dedicated to making substantial positive impacts for wildlife conservation. AZA's accreditation standards and Board-approved policies have been established to ensure this objective is achieved and are continuously updated to meet increasingly rigorous criteria.

With its 221 accredited zoos and aquariums, AZA is working to build North America's largest wildlife conservation movement. AZA-accredited zoos and aquariums spend nearly \$90 million per year on conservation and in the last five years, have funded close to 4,000 conservation projects in more than 100 countries. In addition, since 1991, the AZA Conservation Endowment Fund, which supports the cooperative conservation-related scientific and educational initiatives of AZA, its members, and its collaborators, has provided almost \$5 million to 280 conservation projects worldwide.

AZA provides conservation resources, subsidizes financial support, advocates on behalf of marine mammals, and maintains partnerships with like-minded government and non-government agencies such as the Alliance of Marine Mammal Parks and Aquariums and the International Marine Animal Trainers Association to raise awareness of marine mammal issues and promote marine mammal conservation. Some action taken includes:

- In March, 2004, the AZA Board approved a policy which calls for the termination of drive fisheries, stating that: *"Zoos and aquariums accredited by the Association of Zoos and Aquariums are experts in animal care, wildlife conservation and educating the public about wildlife issues. The AZA strongly believes that the practice of killing or taking dolphins and whales in drive fisheries is inhumane and should be terminated immediately."*
- AZA sponsors a campaign called "Act for Dolphins" to halt the annual dolphin drive in Japan. The campaign was launched by a coalition of zoo and aquarium professionals and scientists seeking to raise awareness and bring an end to the Taiji slaughter. Over 124,000 signatures have been obtained on a petition to end the dolphin slaughter in Japan.
- AZA supports H.R. 556 – The Southern Sea Otter Recovery and Research Act: To establish a program of research, recovery and other activities under the US Fish and Wildlife Service to provide for the recovery of the southern sea otter.
- AZA supports S. 859 to amend the John Prescott Marine Mammal Rescue Assistance Grant Program to authorize entanglement response agreements and updates existing practices and procedures for rescuing and rehabilitating stranded marine mammals.
- The AZA Bear Taxon Advisory Group, Polar Bear Species Survival Plan Program, accredited institutions, and Green Scientific Advisory Group work cooperatively to address issues related to polar bear survival and climate disruption.
- AZA collaborates with Polar Bear International to address polar bear and arctic habitat conservation through support for scientific research and educational outreach programs. Numerous AZA-accredited institutions serve as Arctic Ambassador Centers.

Zoos and aquariums also provide a host of conservation tools and resources, and develop conservation partnerships to increase public awareness of marine mammal and ocean conservation issues. For example, public exhibit messages, a public service announcement (<http://dontfeedwilddolphins.org/>), and *in situ* outreach campaigns have been developed by zoos and aquariums to inform the public of the dangers of feeding or interacting with wild dolphins.

Numerous AZA-accredited institutions have been directly involved in the rescue, rehabilitation, and release of marine animals. Collectively, these institutions have dedicated enormously to conservation through this work. At the surface, these programs seem focused only on humanitarian work, rescuing and rehabilitating animals in need of care. However, many rescue and rehabilitation activities lead to questions about animal behavior, physiology, diseases, and a host of other areas that generate many research projects that, ultimately, benefit our understanding of marine mammals and assist in developing practices that protect them in the wild. AZA-accredited institutions have:

- Collectively devoted more than 200 years of staff time caring for stranded dolphins, whales, sea lions, seals, sea otters, sea turtles, and manatees.
- Rescued each year, on average, more than 350 of these animals.
- Spent over 125,000 hours by more than 100 staff members caring for them.
- To date, allocated more than \$3,000,000 to programs for rescuing and rehabilitating more than 1,800 marine animals, of which over 1,750 have been successfully released back into their natural habitat.

RECOMMENDATIONS

Finally, I will offer the following recommendations regarding Standards for education and conservation programs.

AZA Standards are producing the intended results – effective marine mammal conservation and education programs that fulfill the requirements of the Marine Mammal Protection Act. Therefore, no changes in law or additional regulations are necessary.

However, the Congress and NMFS should feel free to engage with AZA and its members in a dialogue about how to make these programs even more successful. It's a conversation we as a professional community are having every day.

We also invite you to visit and experience these educational programs for yourself, and most importantly, to see what happens to people when they get close to marine mammals. The inspiration, the involvement, and the enduring commitment to conservation that is generated by these interactions is unquestionable, and undeniably important to the future of our planet.

On behalf of the Association of Zoos and Aquariums, thank you for the opportunity to offer testimony to the Subcommittee.

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Policy on the Presentation of Animals

Approved by the AZA Board of Directors 22 July 2008

The Association of Zoos & Aquariums (AZA) is dedicated to excellence in animal care and welfare, conservation, education, research, and the presentation of animals in ways that inspire respect for wildlife and nature. AZA's position is that animals should always be presented in adherence to the following core principles:

1. Animal and human health, safety, and welfare are never compromised.
2. Education and a meaningful conservation message are integral components of the presentation.
3. The individual animals involved are consistently maintained in a manner that meets their social, physical, behavioral, and nutritional needs.

Education Standards and Policies

AZA is dedicated to maintaining and promoting standards of excellence in all aspects of education. Accreditation Standards and Board approved policies have been established to ensure this objective is met and often evolve to meet increasingly rigorous criteria.

Accreditation Standards for Education

AZA-accredited zoos and aquariums are required to meet or exceed all AZA Accreditation Standards, including those relating to education. All AZA-accredited institutions must ensure that education is a central tenet in their mission, must develop a written education plan that matches current industry standards, and must regularly evaluate their education programs. Elements evaluated for accreditation include:

- The number of staff dedicated to education programming.
- That at least one paid staff member is dedicated to education.
- How the education message is conveyed to the casual visitor.
- Publications, brochures, or other printed material.
- Classrooms and teaching areas.
- The availability of funds allocated for education programs.
- The level of education department contact with local schools, colleges, and other academia.
- The volunteer, docent, and outreach programs.
- The level of outreach programming and whether appropriate Program Animals are being used.
- How Interpretive Graphics and Exhibits are developed, designed, and contain appropriate information.

Board-Approved Policies for Education

AZA-accredited zoos and aquariums are also required to follow all education-related AZA Board-approved policies including the Animal Contact, Program Animal, and Presentation of Animal policies.

- **The Animal Contact Policy:** provides recommendations to minimize zoonotic disease transmission and identifies safety precautions related to keeper attire and behavior.
- **The Program Animal Policy:** recognizes that the use of any program animal comes with a host of responsibilities including the ensuring the welfare, health and safety of the animal, handlers, and public, and stresses the importance of ensuring that conservation take-home messages are received by the audience.
- **The Presentation of Animals Policy:** stipulates that animals should always be presented in ways that inspire respect for wildlife and nature.

AZA Program Animal Policy

Approved by the AZA Board of Directors in 2003; updated in 2008

The Association of Zoos & Aquariums (AZA) recognizes many benefits for public education and, ultimately, for conservation in program animal presentations. AZA's Conservation Education Committee's Program Animal Position Statement summarizes the value of program animal presentations.

Program Animals

For the purpose of this policy, a program animal is described as an animal presented either within or outside of its normal exhibit or holding area and intended to have regular proximity to or physical contact with trainers, handlers, or the public, or to be part of an ongoing conservation education / outreach program.

Program animal presentations bring a host of responsibilities, including the welfare of the animals involved, the safety of the animal handler and public, and accountability for the take-home, educational messages received by the audience. Therefore, AZA requires all accredited institutions that make program animal presentations to develop an institutional program animal policy that clearly identifies and justifies those species and individuals approved as program animals and details their long-term management plan and educational program objectives.

AZA's accreditation standards require that education and conservation messages must be an integral component of all program animal presentations. In addition, the accreditation standards require that the conditions and treatment of animals in education programs must meet standards set for the remainder of the animal collection, including species-appropriate shelter, exercise, sound and environmental enrichment, access to veterinary care, nutrition, and other related standards. In addition, providing program animals with options to choose among a variety of conditions within their environment is essential to ensuring effective care, welfare, and management. Some of these requirements can be met outside of the primary exhibit enclosure while the animal is involved in a program or is being transported. For example, housing may be reduced in size compared to a primary enclosure as long as the animal's physical and psychological needs are being met during the program; upon return to the facility the animal should be returned to its species-appropriate housing as described above.

CEC Program Animal Position Statement

Last revision 1/28/03

The AZA Conservation Education Committee (CEC) supports the appropriate use of program animals as an important and powerful educational tool that provides a variety of benefits to zoo and aquarium educators seeking to convey cognitive and affective (emotional) messages about conservation and wildlife.

Audience Engagement

Zoos and aquariums are ideal venues for developing emotional ties to wildlife and fostering an appreciation for the natural world. However, developing and delivering effective educational messages in the free-choice learning environments of zoos and aquariums is a difficult task.

Zoo and aquarium educators are constantly challenged to develop methods for engaging and teaching visitors who often view a trip to the zoo as a social or recreational experience (Morgan and Hodgkinson, 1999). The use of program animals can provide the compelling experience necessary to attract and maintain personal connections with visitors of all motivations, thus preparing them for learning and reflection on their own relationships with nature.

Program animals are powerful catalysts for learning for a variety of reasons. They are generally active, easily viewed, and usually presented in close proximity to the public. These factors have proven to contribute to increasing the length of time that people spend watching animals in zoo exhibits (Bitgood, Patterson and Benefield, 1986, 1988; Wolf and Tymitz, 1981).

In addition, the provocative nature of a handled animal likely plays an important role in captivating a visitor. In two studies (Povey, 2002; Povey and Rios, 2002), visitors viewed animals three and four times longer while they were being presented in demonstrations outside of their enclosure with an educator than while they were on exhibit. Clearly, the use of program animals in shows or informal presentations is effective in lengthening the potential time period for learning and overall impact.

Program animals also provide the opportunity to personalize the learning experience, tailoring the teaching session to what interests the visitors. Traditional graphics offer little opportunity for this level of personalization of information delivery and are frequently not read by visitors (Churchman, 1985; Johnston, 1998). For example, Povey (2002) found that only 25% of visitors to an animal exhibit read the accompanying graphic; whereas, 45% of visitors watching the same animal handled in an educational presentation asked at least one question and some asked as many as seven questions. Having an animal accompany the educator allowed the visitors to make specific inquiries about topics in which they were interested.

Knowledge Acquisition

Improving our visitors' knowledge and understanding regarding wildlife and wildlife conservation is a fundamental goal for many zoo educators using program animals. A growing body of evidence supports the validity of using program animals to enhance delivery of these cognitive messages as well:

- MacMillen (1994) found that the use of live animals in a zoomobile outreach program significantly enhanced cognitive learning in a vertebrate classification unit for sixth grade students.
- Sherwood and his colleagues (1989) compared the use of live horseshoe crabs and sea stars to the use of dried specimens in an aquarium education program and demonstrated that students made the greatest cognitive gains when exposed to programs utilizing the live animals.
- Povey and Rios (2002) noted that in response to an open-ended survey question (“Before I saw this animal, I never realized that . . .”), visitors watching a presentation utilizing a program animal provided 69% cognitive responses (i.e., something they learned) versus 9% made by visitors viewing the same animal in its exhibit (who primarily responded with observations).
- Povey (2002) recorded a marked difference in learning between visitors observing animals on exhibit versus being handled during informal presentations. Visitors to demonstrations utilizing a raven and radiated tortoises were able to answer questions correctly at a rate as much as eleven times higher than visitors to the exhibits.

Enhanced Environmental Attitudes

Program animals have been clearly demonstrated to increase affective learning and attitudinal change:

- Studies by Yerke and Burns (1991) and Davison and her colleagues (1993) evaluated the effect live animal shows had on visitor attitudes. Both found their shows successfully influenced attitudes about conservation and stewardship.
- Yerke and Burns (1993) also evaluated a live bird outreach program presented to Oregon fifth-graders and recorded a significant increase in students' environmental attitudes after the presentations.
- Sherwood and his colleagues (1989) found that students who handled live invertebrates in an education program demonstrated both short and long-term attitudinal changes as compared to those who only had exposure to dried specimens.
- Povey and Rios (2002) examined the role program animals play in helping visitors develop positive feelings about the care and well-being of zoo animals.
- As observed by Wolf and Tymitz (1981), zoo visitors are deeply concerned with the welfare of zoo animals and desire evidence that they receive personalized care.

Conclusion

Creating positive impressions of aquarium and zoo animals, and wildlife in general, is crucial to the fundamental mission of zoological institutions. Although additional research will help us delve further into this area, the existing research supports the conclusion that program animals are an important tool for conveying both cognitive and affective messages regarding animals and the need to conserve wildlife and wild places.

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Program Animal Presentations

AZA-accredited zoos and aquariums are ideal venues for developing emotional ties to wildlife and fostering an appreciation for the natural world. The presentation of program animals can provide the compelling experience needed for visitors to gain and maintain personal connections with their own relationships with nature. With these benefits, however, AZA recognizes that program animal presentations require a host of responsibilities that are required to ensure the welfare, health and safety of the animal, handlers, and public, and stress the importance of ensuring conservation take-home messages are received by the audience.

Benefits of Program Animal Presentations

The AZA Conservation Education Committee (CEC) has developed a Program Animal Position Statement that supports the presentation of program animals in the conservation education programs of AZA-accredited zoos and aquariums and illustrates many of the benefits these presentations have on audience engagement, knowledge acquisition, and enhanced environmental attitudes. Studies have shown that the presentation of program animals is a powerful catalyst for learning for a variety of reasons including:

- Increases the length of time that people are engaged with the program animals thereby lengthening the potential time period for learning and overall impact.

- Provides the opportunity to personalize the learning experience, tailoring the teaching session to what interests the visitors.
- Allows the visitors the opportunity to make specific inquiries about topics in which they were interested.
- Enhances the delivery of cognitive and empathetic messages.
- Increases affective learning and attitudinal change.

Responsibilities for Program Animal Presentations

AZA recognizes the many benefits program animal presentations provide and has established several Accreditation Standards, Board-Approved Policies, and recommendations to guarantee that the welfare, health and safety needs of the animals, handlers, and public are met and ensure conservation messages are received by their audience. These include the:

- AZA Program Animal Policy
- AZA Presentation of Animals Policy
- AZA Policy for Animal Contact With the General Public
- White Paper: Apes in Media and Commercial Performances
- Recommendations for Developing an Institutional Program Animal Policy

[Recommendations for Developing an Institutional Program Animal Policy](#)

Rationale

Membership in AZA requires that an institution meet the AZA Accreditation Standards collectively developed by our professional colleagues. Standards guide all aspects of an institution's operations; however, the accreditation commission has asserted that ensuring that member institutions demonstrate the highest standards of animal care is a top priority. Another fundamental AZA criterion for membership is that education be affirmed as core to an institution's mission. All accredited public institutions are expected to develop a written education plan and to regularly evaluate program effectiveness.

The inclusion of animals (native, exotic and domestic) in educational presentations, when done correctly, is a powerful tool. CEC's Program Animal Position Statement describes the research underpinning the appropriate use of program animals as an important and powerful educational tool that provides a variety of benefits to zoo and aquarium educators seeking to convey cognitive and affective messages about conservation and wildlife.

Ongoing research, such as AZA's Multi-Institutional Research Project (MIRP) and research conducted by individual AZA institutions will help zoo educators to determine whether the use of program animals conveys intended and conflicting messages and to modify and improve programs accordingly. When utilizing program animals our responsibility is to meet both our high standards of animal care and our educational goals. Additionally, as animal management professionals, we must critically address both the species' conservation needs and the welfare of the individual animal.

Because "wild creatures differ endlessly," in their forms, needs, behavior, limitations and abilities (Conway, 1995), AZA, through its Animal Welfare Committee, has recently given the responsibility to develop taxon-specific animal welfare standards to the Taxon

Advisory Groups (TAG) and Species Survival Plan® Program (SSP). Experts within each TAG or SSP, along with their education advisors, are charged with assessing all aspects of the taxons' biological and social needs and developing animal care standards that include specifications concerning their use as program animals.

However, even the most exacting standards cannot address the individual choices faced by each AZA institution. Therefore, each institution is required to develop a program animal policy that articulates and evaluates program benefits. The following recommendations are offered to assist each institution in formulating its own Institutional Program Animal Policy.

The Policy Development Process

Within each institution, key stakeholders should be included in the development of that institution's policy, including, but not limited to representatives from:

- the Education Department
- the Animal Husbandry Department
- the Veterinary and Animal Health Department
- the Conservation & Science Department
- any animal show staff (if in a separate department)
- departments that frequently request special program animal situations (e.g., special events, development, marketing, zoo or aquarium society, administration)

Additionally, staff from all levels of the organization should be involved in this development (e.g., curators, keepers, education managers, interpreters, volunteer coordinators). To develop a comprehensive Program Animal Policy, we recommend that the following components be included:

I. Philosophy

In general, the position of the AZA is that the use of animals in up close and personal settings, including animal contact, can be extremely positive and powerful, as long as:

1. The use and setting is appropriate.
2. Animal and human welfare is considered at all times.
3. The animal is used in a respectful, safe manner and in a manner that does not misrepresent or degrade the animal.
4. A meaningful conservation message is an integral component. Read the AZA Board-approved Conservation Messages.
5. Suitable species and individual specimens are used. Institutional program animal policies should include a philosophical statement addressing the above, and should relate the use of program animals to the institution's overall mission statement.

II. Appropriate Settings

The Program Animal Policy should include a listing of all settings both on and off site, where program animal use is permitted. This will clearly vary among institutions. Each institution's policy should include a comprehensive list of settings specific to that institution. Some institutions may have separate policies for each setting; others may address the various settings within the same policy. Examples of settings include:

I. On-site programming

A. Informal and non-registrants:

1. On-grounds programming with animals being brought out (demonstrations, lectures, parties, special events, and media)
2. Children's zoos and contact yards
3. Behind-the-scenes open houses
4. Shows
5. Touch pools

B. Formal (registration involved) and controlled settings

1. School group programs
2. Summer Camps
3. Overnights
4. Birthday Parties

II. Offsite and Outreach

1. PR events (TV, radio)
2. Fundraising events
3. Field programs involving the public
4. School visits
5. Library visits
6. Nursing Home visits (therapy)
7. Hospital visits
8. Senior Centers
9. Civic Group events

*In some cases, policies will differ from setting to setting (e.g., on-site and off-site use with media). These settings should be addressed separately, and should reflect specific animal health issues, assessment of stress in these situations, limitations, and restrictions.

III. Compliance with Regulations

All AZA institutions housing mammals are regulated by the USDA's Animal Welfare Act. Other federal regulations, such as the Marine Mammal Protection Act, may apply. Additionally, many states, and some cities, have regulations that apply to animal contact situations. Similarly, all accredited institutions are bound by the AZA Code of Professional Ethics. It is expected that the Institution Program Animal Policy address compliance with appropriate regulations and AZA Accreditation Standards.

IV. Collection Planning

All AZA accredited institutions should have a collection planning process in place. Program animals are part of an institution's overall collection and must be included in the overall collection planning process. The AZA Guide to Accreditation contains specific requirements for the institution collection plan. For more information about collection planning in general, please see the Collection Management pages in the Members Only section. The following recommendations apply to program animals:

1. Listing of approved program animals (to be periodically amended as collection changes). Justification of each species should be based upon criteria such as:
 - Temperament and suitability for program use
 - Husbandry requirements
 - Husbandry expertise
 - Veterinary issues and concerns

- Ease and means of acquisition / disposition
 - Educational value and intended conservation message
 - Conservation Status
 - Compliance with TAG and SSP guidelines and policies
2. General guidelines as to how each species (and, where necessary, for each individual) will be presented to the public, and in what settings.
 3. The collection planning section should reference the institution's acquisition and disposition policies.

V. Conservation Education Message

As noted in the AZA Accreditation Standards, if animal demonstrations are part of an institution's programs, an educational and conservation message must be an integral component. The Program Animal Policy should address the specific messages related to the use of program animals, as well as the need to be cautious about hidden or conflicting messages (e.g., "petting" an animal while stating verbally that it makes a poor pet). This section may include or reference the AZA Conservation Messages. Although education value and messages should be part of the general collection planning process, this aspect is so critical to the use of program animals that it deserves additional attention. In addition, it is highly recommended to encourage the use of biofacts in addition to or in place of the live animals. Whenever possible, evaluation of the effectiveness of presenting program animals should be built into education programs.

VI. Human Health and Safety

The safety of our staff and the public is one of the greatest concerns in working with program animals. Although extremely valuable as educational and affective experiences, contact with animals poses certain risks to the handler and the public. Therefore, the human health and safety section of the policy should address:

1. Minimization of the possibility of disease transfer from non-human animals to humans, and viceversa (e.g., handwashing stations, no touch policies, use of hand sanitizer).
2. Safety issues related to handlers' personal attire and behavior (e.g., discourage or prohibit use of long earrings, perfume and cologne, not eating or drinking around animals, smoking etc.). AZA's Animal Contact Policy provides guidelines in this area; these guidelines were incorporated into accreditation standards in 1998.

VII. Animal Health and Welfare

Animal health and welfare are the highest priority of AZA accredited institutions. As a result, the Institutional Program Animal Policy should make a strong statement on the importance of animal welfare. The policy should address:

1. General housing, husbandry, and animal health concerns (e.g. that the housing and husbandry for program animals meets or exceeds general standards and that the needs of the individual animal, such as enrichment and visual cover, are accommodated).
2. The empowerment of handlers to make decisions related to animal health and welfare; such as withdrawing animals from a situation if safety or health is in danger of being compromised.

3. Requirements for supervision of contact areas and touch tanks by trained staff and volunteers.
4. Frequent evaluation of human / animal interactions to assess safety, health, welfare, etc.
5. Ensure that the level of health care for the program animals is consistent with that of other animals in the collection.

VIII. Taxon Specific Protocols

We encourage institutions to provide taxonomically specific protocols, either at the genus or species level, or the specimen, or individual, level. Some taxon-specific guidelines may affect the use of program animals. To develop these, institutions refer to the Conservation Programs Database. Taxon-specific protocols should address:

1. How to remove the individual animal from and return it to its permanent enclosure.
2. How to crate and transport animals.
3. Signs of stress, stress factors and discomfort behaviors.
4. Situation specific handling protocols (e.g., whether or not animal is allowed to be touched by the public, and how to handle in such situations).
5. Guidelines for disinfecting surfaces, transport carriers, enclosures, etc.
6. Animal facts and conservation information.
7. Limitations and restrictions regarding ambient temperatures and or weather conditions.
8. Time limitations (including animal rotation and rest periods, as appropriate, duration of time each animal can participate, and restrictions on travel distances).
9. The numbers of trained personnel required to ensure the health and welfare of the animals, handlers and public.
10. Taxon-specific guidelines on animal health.

IX. Logistics: Managing the Program

The Institutional Policy should address a number of logistical issues related to program animals, including:

1. Where and how the program animal collection will be housed, including any quarantine and separation for animals used off-site.
2. Procedures for requesting animals, including the approval process and decision making process.
3. Accurate documentation and availability of records, including procedures for documenting animal usage, animal behavior, and any other concerns that arise.

X. Staff Training

Thorough training for all handling staff (keepers, educators, and volunteers, and docents) is clearly critical. Staff training is such a large issue that many institutions may have separate training protocols and procedures. Specific training protocols can be included in the Institutional Program Animal Policy or reference can be made that a separate training protocol exists. It is recommended that the training section of the policy address:

1. Personnel authorized to handle and present animals.
2. Handling protocol during quarantine.
3. The process for training, qualifying and assessing handlers including who is authorized to train handlers.
4. The frequency of required re-training sessions for handlers.
5. Personnel authorized to train animals and training protocols.
6. The process for addressing substandard performance and noncompliance with established procedures.
7. Medical testing and vaccinations required for handlers (e.g., TB testing, tetanus shots, rabies vaccinations, routine fecal cultures, physical exams, etc.).
8. Training content (e.g., taxonomically specific protocols, natural history, relevant conservation education messages, presentation techniques, interpretive techniques, etc.).
9. Protocols to reduce disease transmission (e.g., zoonotic disease transmission, proper hygiene and hand washing requirements, as noted in AZA's Animal Contact Policy).
10. Procedures for reporting injuries to the animals, handling personnel or public.
11. Visitor management (e.g., ensuring visitors' interact appropriately with animals, do not eat or drink around the animal, etc.).

XI. Review of Institutional Policies

All policies should be reviewed regularly. Accountability and ramifications of policy violations should be addressed as well (e.g., retraining, revocation of handling privileges, etc.). Institutional policies should address how frequently the Program Animal Policy will be reviewed and revised, and how accountability will be maintained.

XII. TAG and SSP Recommendations

Following development of taxon-specific recommendations from each TAG and SSP, the institution policy should include a statement regarding compliance with these recommendations. If the institution chooses not to follow these specific recommendations, a brief statement providing rationale is recommended.