Canisius Ambassadors for Conservation: A University/Aquarium Collaboration to Promote the Conservation of Marine Mammals

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Introduction

We report here on a program in which selected university students served as public educators with the mission to promote the conservation of marine mammals. The program consisted of four phases:

Phase 1: Field Studies

The students traveled to the Monterey Marine Reserve and to Pacific Rim National Park on the west coast of North America. There they made firsthand observations of four cetacean species, three pinniped species, and the sea otter. More significantly, the studies focused on the human-derived threats to marine mammals including deforestation and the consequent impact on salmon as an available food supply, industrial pollution and consequent bioaccumulation of toxins, habitat (beachfront) encroachment consequent to the human population explosion, and increased ship traffic including that associated with whale watching. The goal of these studies was for the students to develop a personal, and emotional, appreciation of marine mammals and their plight in the modern world.

Phase 2: Web Page Development

The students then created a series of 78 interlinked web pages devoted to marine mammal conservation. The goal was to provide an exciting mix of images, educational text and suggested steps to promote conservation. These pages can be reached at www.canisius.edu/cac.

Phase 3: Public Presentations at local Seaquariums

The students served over the course of two summers as public educators next to the pools housing California Sea Lions, Orcas, and Belugas at our two local Seaquariums (the Aquarium of Niagara, and Marineland of Canada). The goal was to engage the public with interesting information and to provide a resource for them to explore the questions that they had. These conversations were routinely steered to practical steps that each Aquarium patron could themselves take to promote marine mammal conservation (e.g., reduction of pesticide use, recycling paper, etc.).

Phase 4: Secondary School Presentations

The CAC students also made educational presentations in local schools geared to complement the school teachers' own efforts in covering the topic of marine mammals in their biology classes. The CAC team utilized a multimedia format that contained a mix of motion video, still images, and sounds that were designed to introduce their audiences to the behavior and biology of marine mammals and then also to promote marine mammal conservation.

Findings

The CAC web pages have yielded approximately 1000 "web hits" per month over the past two years. Based on feedback we have received, these have inspired numerous children, schoolteachers, university students, and laypersons.

At our local Seaquariums, the CAC team made personal contact with 61,000 visiting members of the public over the course of the two-year program. The conversations with the university students lasted between 1 and 40 minutes, depending upon the interest of the patrons.

The CAC team made 63 school presentations, reaching approximately 1,800 students with the mix of educational and conservation messages.

Efficacy

A subset of the secondary school audience members were subsequently tested for their retention of factual information about marine mammal behavioral biology and presented with personal attitude and behavioral questions pertaining to marine mammal conservation. Some were tested at 2 weeks after the CAC visit and some were tested at 52 weeks.

Figure 1 shows that the audience participants scored significantly higher on the factual questions (compared to non-participant, control students), and this was true at both the 2 and 52 week follow up time periods ((F(1,154)=55.8, p<.001). It was not surprising that there was also a significant effect due to the testing-delay variable with the scores generally lower at the longer testing interval (F(1,154)=39.2, p<.001). Additionally, there was a significant delay-by-presentation interaction in our anova reflecting the fact that the gap between the audience participants and the control condition tended to narrow at the longer testing interval compared to the shorter one (F(1,154)=5.5, p=.02).

Figure 2 illustrates the findings regarding our composite attitude score. Despite the fact that attitudes declined over time (F(1,154)=6.2, p=.014), the scores were significantly higher at both 2 and 52 weeks (F(1,154)=7.2, p=.008).

Figure 3 illustrates our behavioral variable and here we were pleased to see that our participants reported significantly more recycling than non-participants (F(1,154)=4.4, p=037). Although the reported effect was slight, its statistical significance suggests that such efforts can have an enduring, positive impact on a behavior that favors the environment.

Figure 1: Factual Knowledge

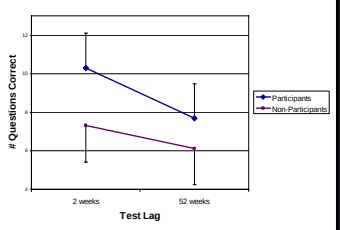
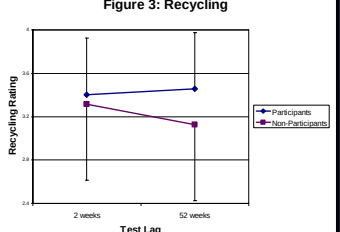


Figure 2: Composite Attitude

Figure 3: Recycling



Summary

Our program takes inspiration from Baba Dioum who argues that:

We will only conserve what we love
We will only love what we understand
And we will only understand what we are taught

It is our position that by educating school children and Seaquarium patrons about marine mammals, it will promote their conservation by heightening the awareness of their plight in the general public.

We offer our program as a model of a pro-conservation program in which specially-trained university students complement the efforts made by schools and local zoological parks. We believe the unique element of our program stemmed from the personal and emotional connection the university students felt toward the topic stemming from their own personal experiences in the field.