

Grassroots Conservation: Volunteers Contribute to Projects and Foster a Supportive Public

Christine M. Thody

Volunteer Coordinator
Tern and Plover Conservation Partnership
University of Nebraska-Lincoln
Lincoln, Nebraska
cthody2@unl.edu

Renae J. Held

Program Coordinator
Assistant Chief, Non-game and Endangered Species Program
Conservation Services Division
New Mexico Game and Fish Department
Santa Fe, New Mexico
renae.held@state.nm.us

Ron J. Johnson

Extension Wildlife Specialist
245 Lehotsky Hall
Clemson University
Clemson, SC 29634
ronj@clemson.edu

Jeffrey F. Marcus

Program Coordinator
Piedmont Wildlife Diversity Supervisor
North Carolina Wildlife Resources Commission
Aberdeen, North Carolina
jfmarcus@alltel.net

Introduction

Many extension programs rely on volunteers to assist with project activities in ways that enhance project outcomes. In fact, without the assistance of volunteers, many projects simply could not be undertaken. Volunteer programs often include subject matter training and educational hands-on activities, components that help develop a supportive clientele who then become effective teachers and program advocates.

In Nebraska, the Tern and Plover Conservation Partnership established a volunteer Adopt-A-Colony program in 2000 that includes training and activities related to the conservation and management of federally endangered interior least terns (*Sternula antillarum* *athalassos*), federally threatened piping plovers (*Charadrius melodus*), and their river

habitats. These protected birds are a sensitive social and political issue in Nebraska because their need for water and riverine habitat is often perceived to be in conflict with agricultural, recreational, commercial, and other water users (Peck et al. 2004). Historically, terns and plovers nested on sandbars in area rivers. As river habitat has been modified for other purposes, both species now commonly nest on spoil piles surrounding the man-made lakes at sand and gravel mining sites. After these sites are no longer being mined, they are often converted into lakeside housing developments.

Volunteers who increase their understanding of and interest in the birds, the sand and gravel mining industry, and river ecosystems can become a supportive voice for grassroots common-sense conservation.

The goals for the Adopt-A-Colony program were to provide help with project activities and to engage local community members in endangered species management and protection issues. Volunteers expand our limited personnel resources to more effectively operate at tern and plover breeding colonies located across the expanse of the lower and central Platte, Loup, and Elkhorn river systems in Nebraska. Volunteers interact with the public, help set up and take down predator-deterrent fences, establish colony research plots, monitor populations and reproductive success, and contribute to project newsletters. Each year, 2000–2004, we surveyed volunteers to assess their satisfaction with their experience and to determine their learning and attitude changes as a result of their participation.

Partnership Purpose

Interior least terns and piping plovers are imperiled in Nebraska, and throughout their range, because of loss and degradation of breeding habitat, increased predation, and human disturbance at their nesting sites. Both bird species use sand and gravel mine sites and housing developments in addition to their natural nesting habitat, which is typically high, dry, barren midstream sandbars in large braided river systems. Avoidance of conflicts with commercial interests is imperative for the conservation of these birds, given that severe disturbance can lead to nest loss and mortality of adult and young birds. The presence of these protected birds can delay mining and development activities, causing interrupted production and economic loss (Shogren et al. 1999). By avoiding conflict, commercial interests can avoid citations and fines resulting from harming or harassing federally protected species.

The Tern and Plover Conservation Partnership (Partnership), initiated in 1999, addresses these challenges by bringing mining companies, river users, developers, local governments, community volunteers, and conservationists together to implement protection, monitoring, conflict avoidance, and education activities for the conservation of interior least terns and piping plovers.

Before the breeding season begins, Partnership staff locate potential nesting sites and meet with mining and housing development officials to determine whether planned activities may conflict with nesting birds. To address potential conflicts, the Partnership has developed a mylar deterrent/gravel attractant technique to shift nest site selection away

from planned-use areas to sites without planned activity (Marcus 2007). The Partnership also erects nest enclosure cages, fencing and signs to reduce human and predator activity.

Methods

Every year, from March through June, volunteers were trained to identify and monitor interior least terns and piping plovers. The 4-hour training sessions included information about tern and plover natural history, the Platte River, the mining industry, mine safety, techniques for monitoring and protecting the birds from predators, and conflict avoidance. The training also included on-site orientation and safety training, nesting habitat identification, appropriate monitoring skills, and demonstration of predator fence and deterrent maintenance. Volunteer commitments vary from 1 day per month to 1 day per week.

We evaluated the Adopt-a-Colony Program by mailing a 4 page survey (IRB# 2000-09-022) in September 2000 to 69 volunteers (32 returned); in 2001 to 47 (23 returned); and in October 2002 to 16 volunteers (13 returned). In 2003 and 2004, surveys were sent only to new volunteers. In October 2003, surveys were sent to 33 new volunteers (10 returned); and in October 2004 to 12 volunteers (3 returned). Of 177 surveys, 81 were returned (46%).

Survey questions addressed participants' knowledge and appreciation of terns, plovers, river ecosystems, communication of the program's mission to others, assessment of the program content, possible improvements to the program, and adequacy of training. Eight survey questions asked participants to quantify their knowledge and appreciation before and after participating in the Adopt-A-Colony program.

The Adopt-A-Colony program was publicized through the media, state Cooperative Extension offices, and slide presentations to interested groups and organizations.

Results

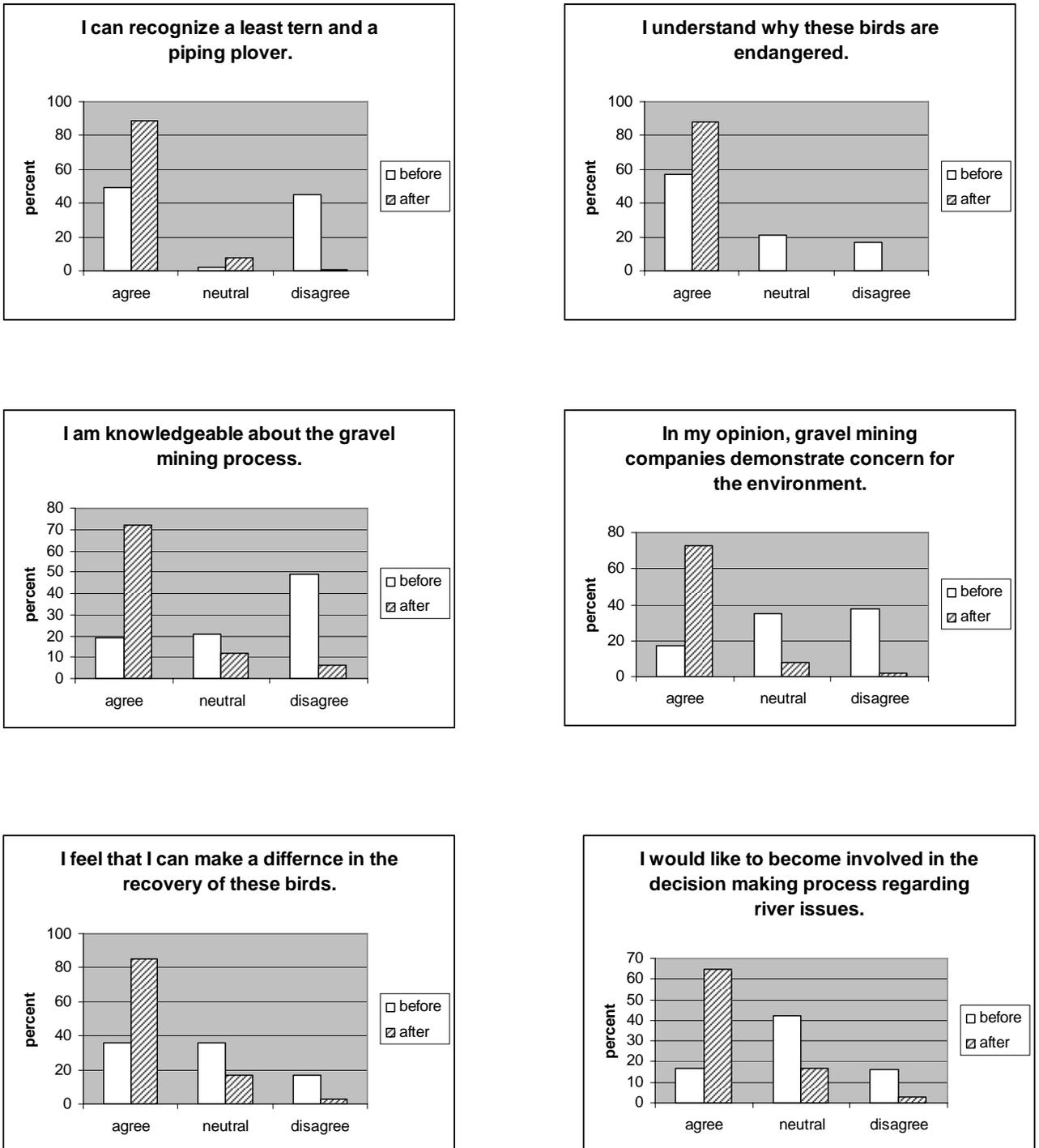
The survey showed that participants on average told 12 people about the program. If all survey respondents (81) responded in kind, as many as 972 people received information about the Adopt-a-Colony program and interior least terns and piping plovers through our volunteers. Although not included in the average total, one volunteer wrote an article for her local newspaper, with a circulation of about 2,000.

Ninety-one percent of volunteers reported that participating in the Adopt-a-Colony program taught them a great deal about terns and plovers; 93% gained a greater appreciation for terns, plovers, and river ecosystems; 87% noted that they would likely participate in the Adopt-A-Colony again; 89% expressed that they were satisfied with their experience in the Adopt-A-Colony program; and 85% of respondents said that they would recommend the program to a friend.

We also asked questions about what volunteers' attitudes were *before* participating in the Adopt-a-Colony program, and then for comparison, what their attitudes were *after*

participating in the program. Results show a clear increase in knowledge and an associated positive shift in attitudes about terns, plovers, and related issues. (Fig.1).

Figure 1. Volunteer responses to key questions assessing change in knowledge and attitude.



Discussion and Conclusion

In areas where efforts to restore habitat for endangered species are perceived to be in conflict with commercial or private interests, many citizens develop a negative attitude toward the conservation of threatened and endangered species (Thigpen 1995). This attitude, combined with a lack of understanding and appreciation for the values of natural processes, hampers conservation of threatened and endangered birds and other wildlife that depend upon Nebraska's rivers.

Likewise, some environmentalists have a negative attitude toward commercial activities, such as sand and gravel mining, which they may perceive as indifferent or detrimental to the environment (Murphy 2003). Sand and gravel mining plays an important role in the economies of riverside communities and the state of Nebraska. Volunteers learn that mining partner companies are concerned about environmental issues and are being managed accordingly. The Partnership public outreach program helps give proper recognition to companies that are conducting business in an environmentally responsible manner, and encourages other companies to do the same. Through this process we have increased public understanding and support of grassroots common-sense conservation for birds and rivers in collaboration with industry.

Partnership public outreach efforts and volunteer programs are creating an informed public with greater appreciation and interest in conserving river-dependent wildlife. Furthermore, the Adopt-a-Colony program allows the public to view interior least terns and piping plovers in a way that minimizes disturbance to the birds. Partnership programs are changing behaviors that cause harm to the birds and are inspiring people to become engaged in decision-making processes regarding conservation issues.

Comments from volunteers included:

“The staff gave me a better understanding about the endangered species.”

“Now that I know more about these endangered species, I have a greater appreciation for them, and was happy to aid in the conservation.”

“I gained a greater appreciation for nature in general.”

“My co-workers became interested in what I was doing, so at times I was able to share information on the plight of the terns and plovers. Even in public when I wore the T-shirt, some people would ask me about the program.”

“Wrote a letter commenting on Missouri River master manual in regard to managing river for terns and plovers.”

“A perception of how fragile a species is in relation to its environment and how vulnerable they are to our influence.”

“Thank you for the opportunity to help make a difference by doing what I enjoy doing.”

What We've Learned

Results show that volunteers would not only participate in the program again but would also recommend the program to friends. Key factors we found to be successful in recruiting and retaining volunteers include:

- Volunteers are most satisfied when they feel their work is making a difference. In our program, volunteers know they are helping to save two imperiled species.
- Retention of volunteers is greatest when volunteers play a vital role in the program.
- A positive volunteer experience can be your greatest asset for recruitment.
- A satisfied volunteer becomes an extension of your outreach program. In our program, volunteers “spread the word” about endangered and threatened species and volunteering.
- Take a personal interest in your volunteers. The extra effort will be rewarded.

Literature Cited

Marcus, J. F., Dinan, J. J., Johnson, R. J., Blankenship, E. E., and Lackey, J. L. (2007). Directing nest site selection of least terns and piping plovers. *Waterbirds* 30: 251–258.

Murphy, D. (2003). Dredging up trouble. *Planet Kansas* 27: 1–4.

Peck, D. E.; McLeod, D. M.; Hewlett, J. P.; Lovvorn, J. R. (2004). Irrigation-dependent wetlands versus instream flow enhancement: economics of water transfers from agriculture to wildlife use. *Environmental Management* 34: 842–855.

Shogren, J. F., Tschirhart, J., Anderson, T., Whritenour Ando, A., Beissinger, S. R., Brookshire, D., Brown, Jr., G. M., Coursey, D., Innes, R., Meyer, S. M., Polasky, S. (1999). Why economics matters for endangered species protection. *Conservation Biology* 13: 1257–1261.

Thigpen, J. (1995). Dealing with endangered species issues on private lands. *Journal of Extension* [On-line] 33 (2). Available at <http://www.joe.org/uoel/1995april/rb1.html>.

Acknowledgements

We thank Arps Gravel and Concrete, the Nebraska Nongame Conservation Fund, Western Sand and Gravel, Nebraska Game and Parks Commission, University of Nebraska-Lincoln Extension, Girl Scouts – Great Plains Council, Nebraska Environmental Trust, National Fish and Wildlife Foundation, Overland Sand and Gravel, United States Fish and Wildlife Service, Lyman-Richey Corporation, Lower Platte South Natural Resources District, Papio-Missouri Natural Resources District, and Mallard Sand and Gravel for their participation in the Tern and Plover Conservation Partnership. We thank the Nebraska Environmental Trust, Harwest Industrial Minerals Corporation, Lower Platte South Natural

Resources District, Lyman-Richey Corporation and Papio-Missouri Natural Resources District for Partnership funding. Bushnell Optics donated spotting scopes and tripods. We thank M. B. Brown for helpful comments on the manuscript. Finally, we thank all of our volunteers for their tireless efforts to protect these birds. Contact information for three co-authors has changed. Current information is as follows:

Abstract

Educational volunteer programs foster supportive clientele who become program advocates and teach others. We surveyed 177 volunteers, 2000–2004, to assess impacts of our Adopt-A-Colony program, where trained volunteers monitor nesting and work to protect colonies of endangered interior least terns and threatened piping plovers at river, sand and gravel mining, and housing sites. Results show that most volunteers increased their knowledge and appreciation of the birds and river ecosystem habitat, felt they could make a personal difference in the recovery of terns and plovers, and expressed greater interest in being involved in the decision-making process regarding river issues.