RESEARCH BRIEF

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Stanford WOODS INSTITUTE for the ENVIRONMENT

Environmental Education Efforts Impact Conservation and Stewardship

Effective environmental education programs can directly benefit natural habitats and also address conservation and stewardship issues, particularly when they offer opportunities for scientists, decision-makers, community members and other stakeholders to collaborate in place-based settings.

Background

The U.S. outdoor recreation sector is growing faster than the overall economy and federal, state and nonprofit efforts to open wildlands to a diversity of uses are increasing opportunities nationwide for people to interact directly with the natural environment. Along with the many potential benefits of increased access—including enhanced place-based connections—this growth is anticipated to bring more intensive use of parks and open spaces. The increased use, combined with intensifying pressures from climate change, will likely create new challenges for conservation, requiring innovative strategies to effectively educate and engage the public in stewardship efforts.

POINTS FOR POLICY MAKERS

Using citizen science programs as one model, policymakers and resource managers can, from the outset, consider how to design environmental education initiatives with measurable conservation and environmental-quality outcomes. Such environmental education programs support high community engagement by ensuring relevance, developing practical and applicable skills and supporting ongoing interactions with invested stakeholders. They can also continuously monitor the impact the programs are having on desired environmental-quality outcomes.

▶ **Well-designed environmental education programs can produce beneficial environmental impacts.** Successful programs incorporate: a focus on locally relevant issues; collaboration with scientific, policy and community-based experts; action-oriented learning approaches that have a direct environmental benefit, such as hands-on conservation activities and engagement with policy; and ongoing measurement and reporting of outcomes. Incorporating these key principles into environmental education programs allows conservation organizations and agencies to engage the public in ways that concurrently improve environmental quality.

▶ **Actively engaging community members through educational programs empowers them to take action by connecting them with environmental issues in relevant ways.** Community engagement and participation in decision-making can propel policy-making efforts forward, facilitating positive, ongoing change in environment, sustainability and related issues.

USAF/Stacey Geiger

By definition, environmental education encompasses approaches, tools and programs that develop and support environmentally related attitudes, values, awareness, knowledge and skills, all in service of taking informed action on behalf of the environment. Identifying and specifying the ways in which environmental education leads not only to conservation actions and behaviors, but especially to tangible improvements in the environment, is important for demonstrating how individuals and communities can meaningfully contribute to these efforts. At the same time, documenting and quantifying measurable outcomes can be challenging due to inconsistencies in defining and analyzing cause and effect.

Employing a three-pronged approach, Stanford researchers analyzed hundreds of peer-reviewed studies on environmental education programs to determine how the planned interventions were implemented, how the outcomes were measured and documented and whether conservation-related outcomes were achieved. The researchers found that environmental education programs that successfully impacted on-the-ground conservation outcomes included four main principles: a focus on localized issues or locally relevant dimensions of broader issues; collaboration with scientists, resource managers and/or community organizations; integrated activities within the programs that directly addressed conservation and environmental-quality improvements; and inclusion of measuring and reporting structures that facilitated real-time documentation of conservation progress.

As an example, the researchers noted that high-quality citizen science programs employed these principles to achieve their well-documented successes. Strategies informing such programs involved embedded actions, like those that directly engage participants in physically improving the environment through removing invasive species or preparing soil for planting trees. Others included tactics that supported participants in building and practicing skills such as community engagement, facilitation and policy negotiation. The embedded actions occurred as part of a pathway to producing direct, measurable and documentable conservation outcomes in terms of their impact on the ecosystem.

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NPS/Matt Johnson

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