



Service Learning: High School Students Study Saguaros and Climate Change

Introduction

Saguaro National Park and AmeriSchools College Preparatory Academy are studying the park's saguaro cacti through a Service Learning program made possible by the National Parks Foundation's Park Stewards Program and a grant from the Bank of America foundation. During the school year 2010-2011, students are designing and implementing a long-term program to monitor the iconic cactus that is symbolizes Arizona and the American Southwest.



Using a self-designed measuring tool for small saguaros

Overview of the Program

AmeriSchools College Preparatory Academy (ASCP) has a diverse population (approximately 50% minority), a first-come, first-served open enrollment policy, and a Community as Laboratory program that integrates community work into the curriculum. Located near Saguaro National Park, ASCP was Arizona's Charter School of the Year in 2008. The school's inquiry-based science program encourages students to develop questions and test them through the scientific process.

Service-Learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich



Collecting saguaro height measurements

learning, teach civic responsibility, and strengthen communities. This project teaches scientific skills, including experimental design and statistics, while providing an outdoor and wilderness experience. Most importantly, it promotes the idea that understanding natural resources links students today with students that will follow them in the future.

Accomplishments

Saguaros are slow-growing plants that live more than 200 years. More than 4 decades ago, scientists at the park developed a model that uses precise height measurements to predict the age and germination year of individual plants. However, saguaro growth can vary depending on rainfall and other environmental factors. Therefore, the students are designing modern tools to re-measure saguaros on the original plots where saguaros were measured in the 1970s. Their study questions include: Are growth rates of saguaros changing? Does growth vary with elevation and habitat? The answers, which will only be known by different students in a few years, may provide insight into how saguaros may be responding to a changing climate with warmer winters and longer droughts.

ASCP students are also studying art in the park through photography; improving their hiking and wilderness skills; learning basic wilderness safety principles; and learning about the history and organization of the National Park Service. Park staff have spoken to the class about fire management, climate change, invasive species, and



Prototype for large saguaro measurements

other topics. One student employee who is a graduate of the school returned to talk about his experiences working at Saguaro. ASPC and Saguaro National Park are planning for this partnership in long-term stewardship to continue into the future. In 2011, the National Geographic Society and Saguaro National Park are hosting the BioBlitz, a large citizen science taxonomic inventory of the park. We are hoping that some students in this project will become leaders in the BioBlitz – and future leaders in our national parks.



AmeriSchool High School class

This project was made possible in part by a grant from the National Park Foundation through the generous support of the Bank of America Foundation.