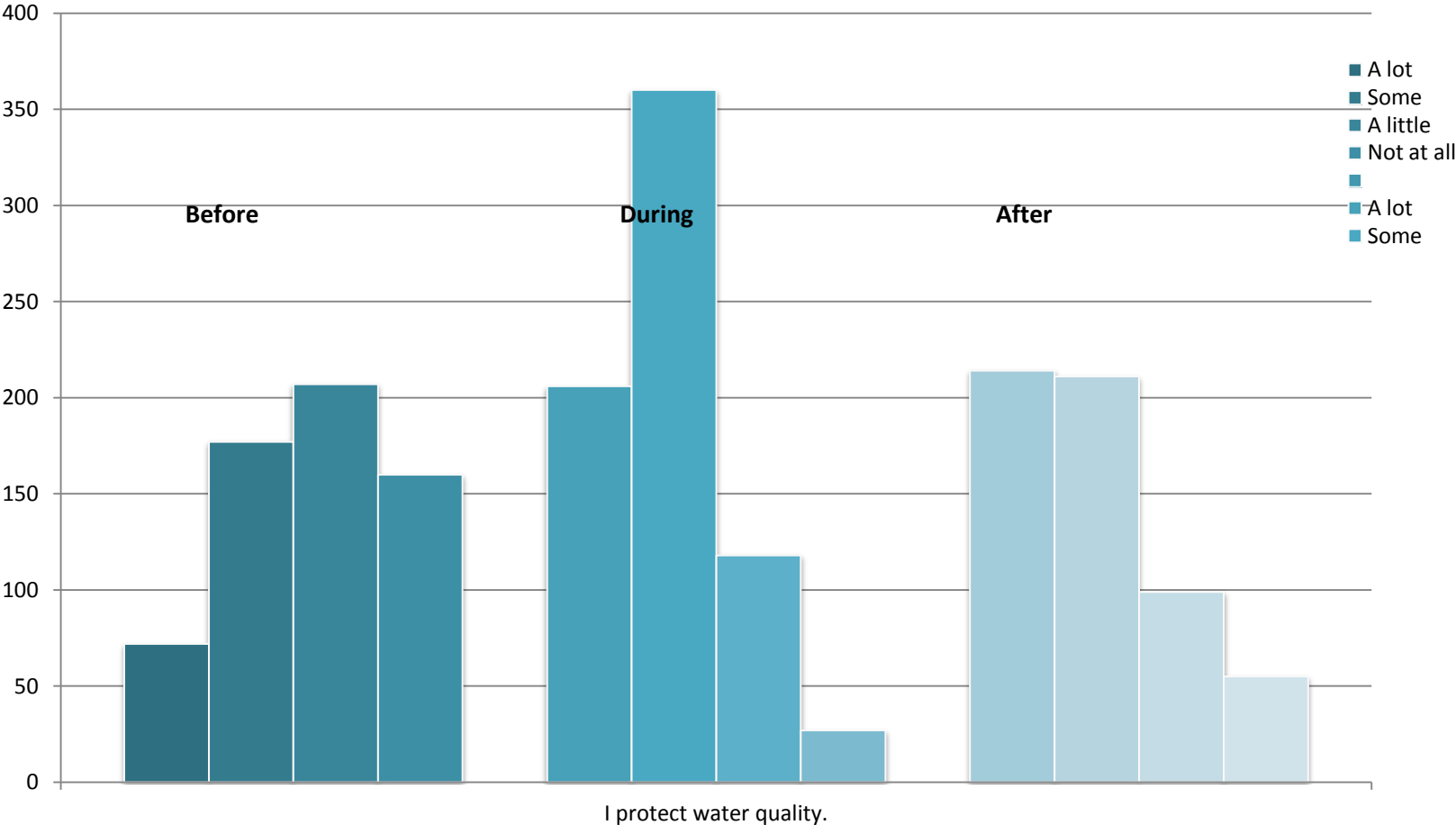




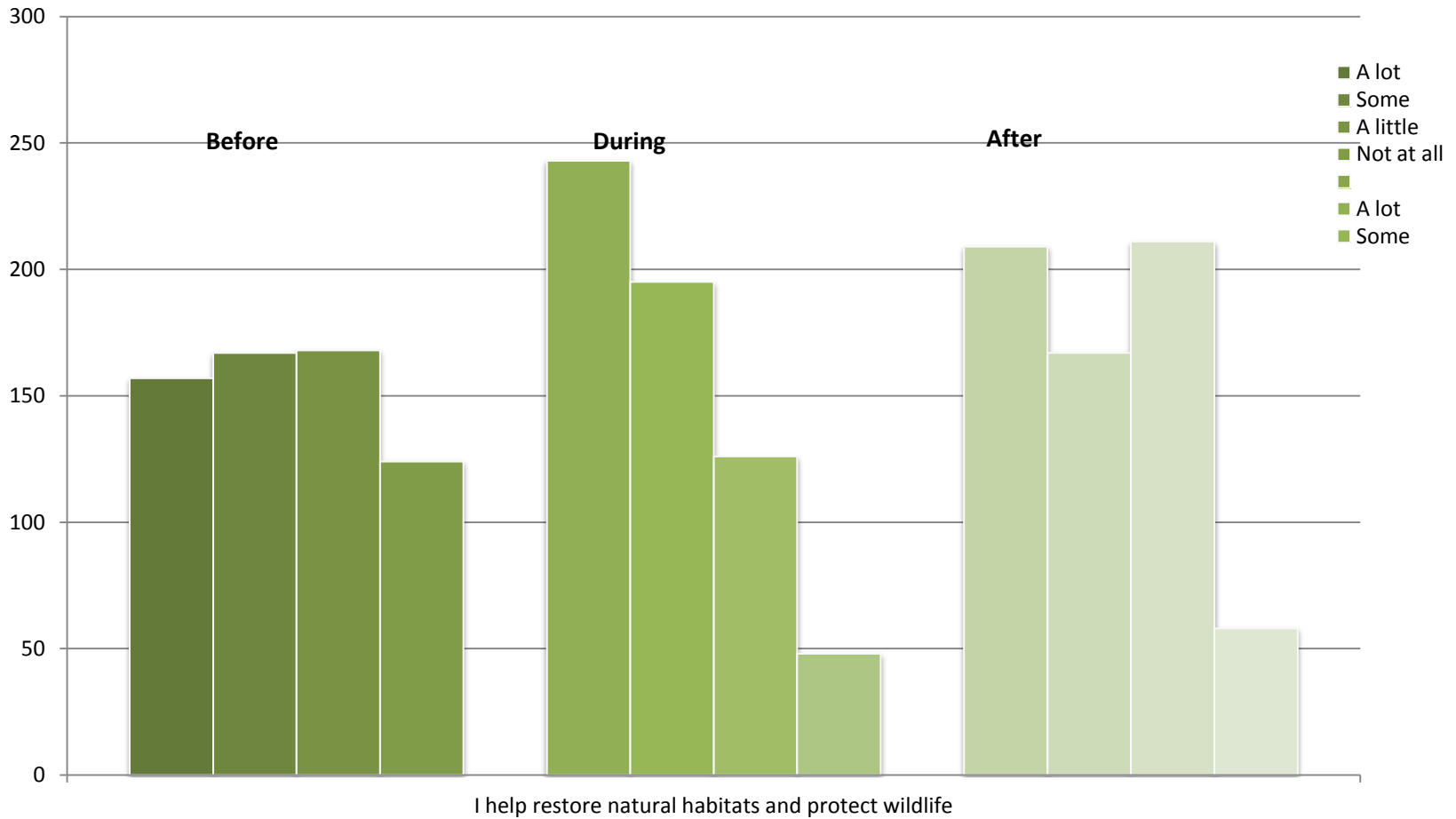
# Nisqually River Education Project

2012-2013 Student Survey Results

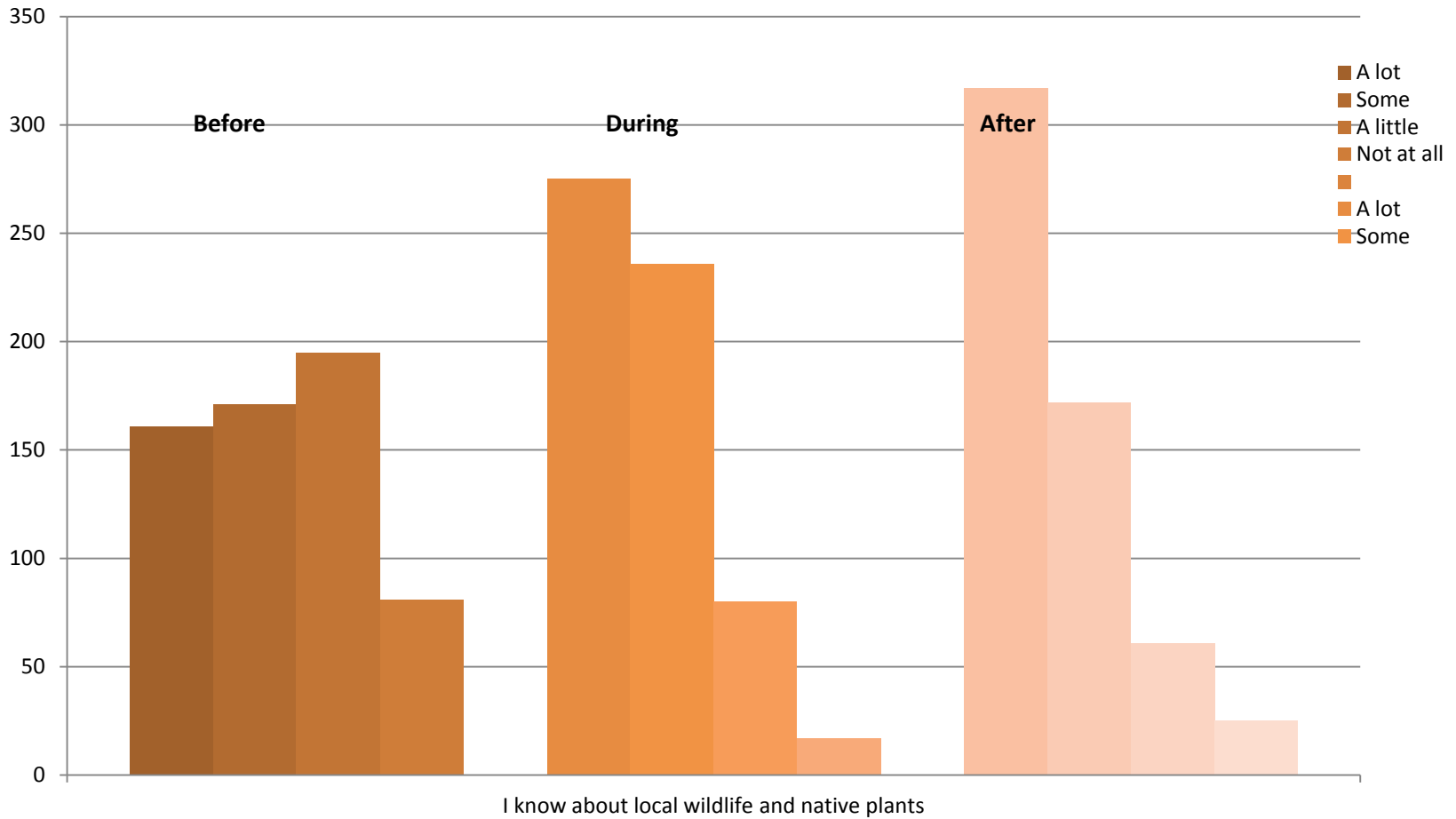
# I protect water quality



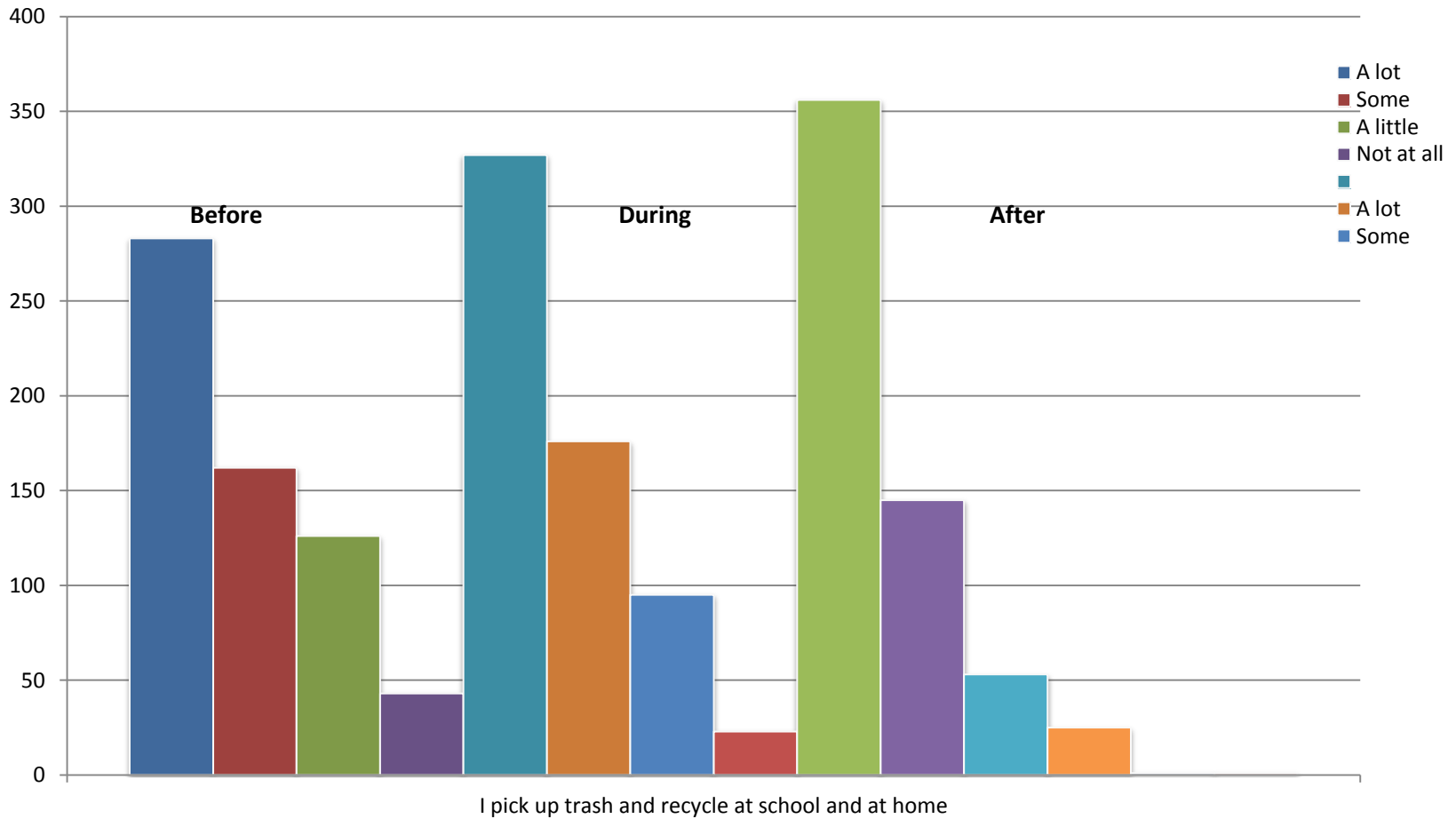
# I help restore natural habitats and protect wildlife



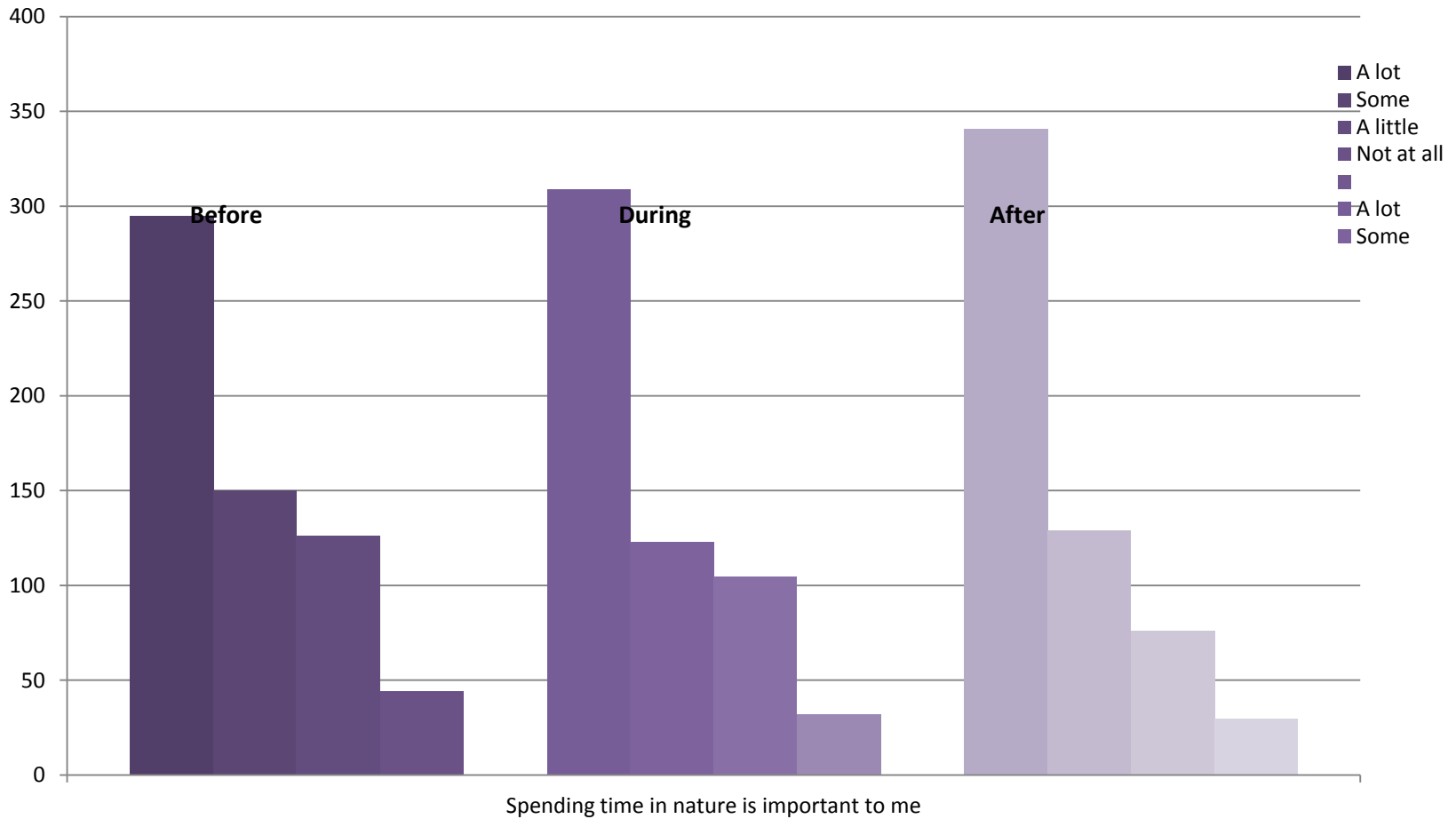
# I know about local plants and wildlife.



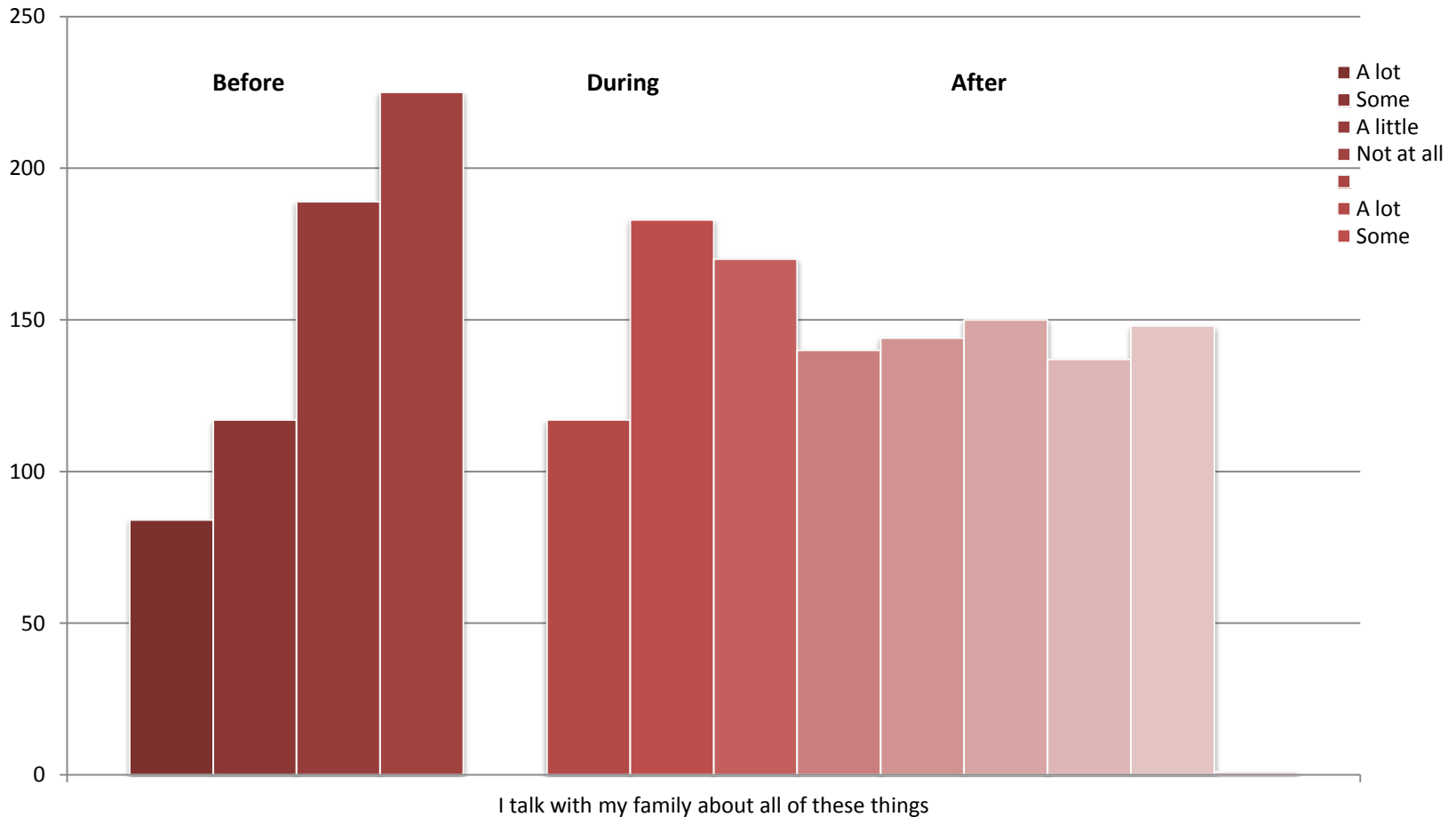
# I pick up trash and recycle at school and at home.



# Spending time in nature is important to me.

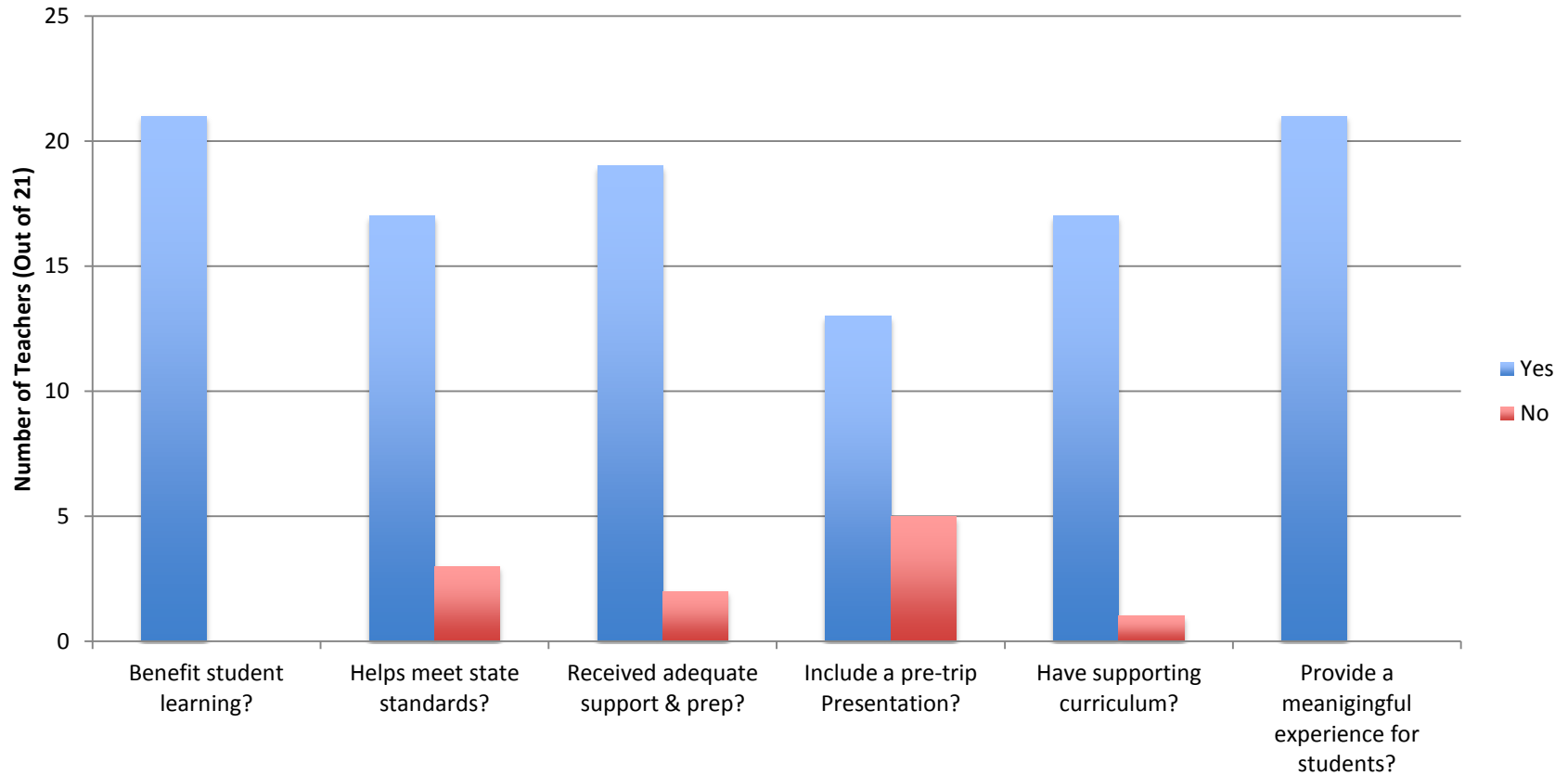


# I talk with my family about all of these things.



# Teacher results – Water Quality

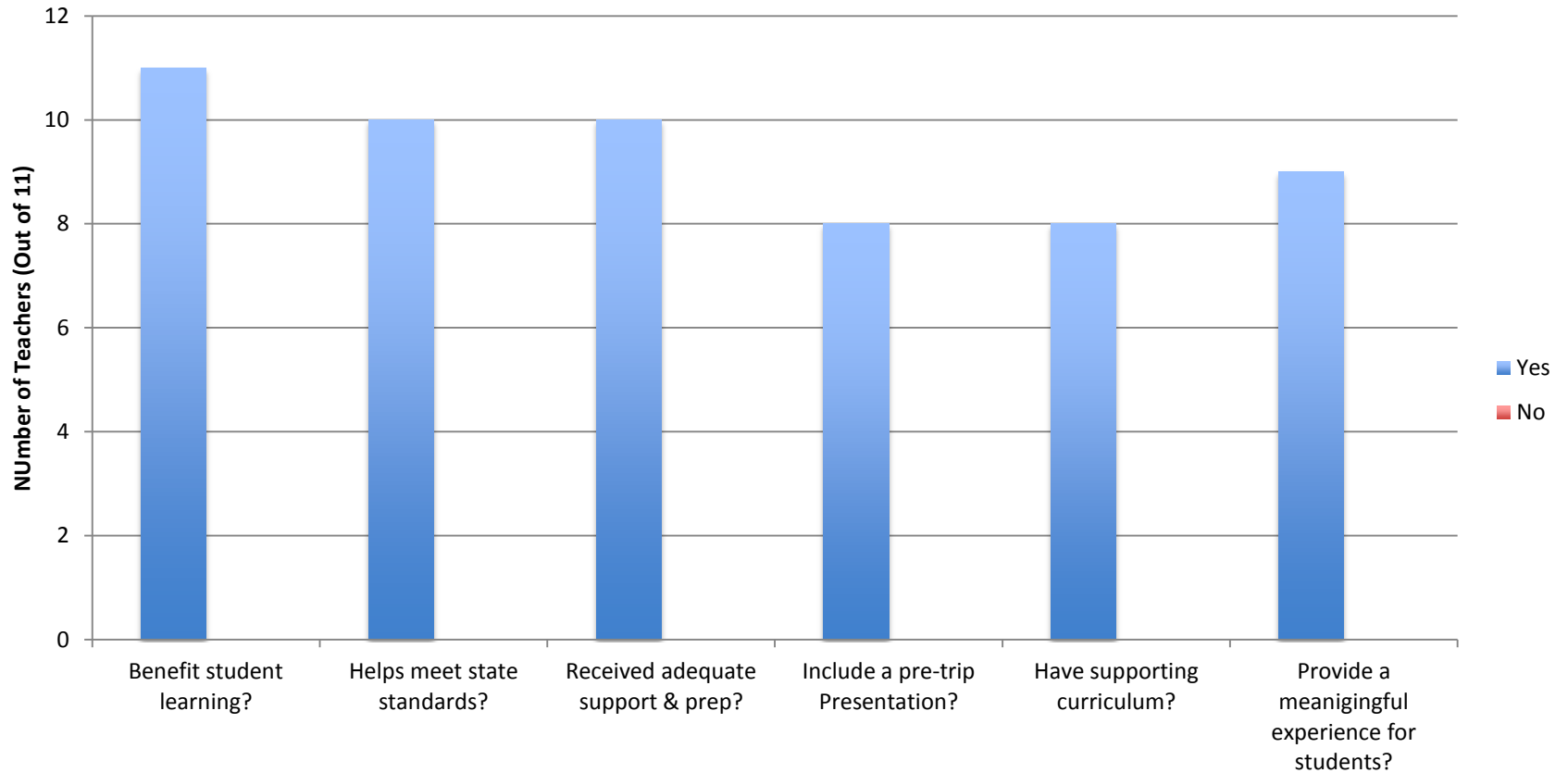
## 2012-2013 NREP Water Quality Monitoring Program





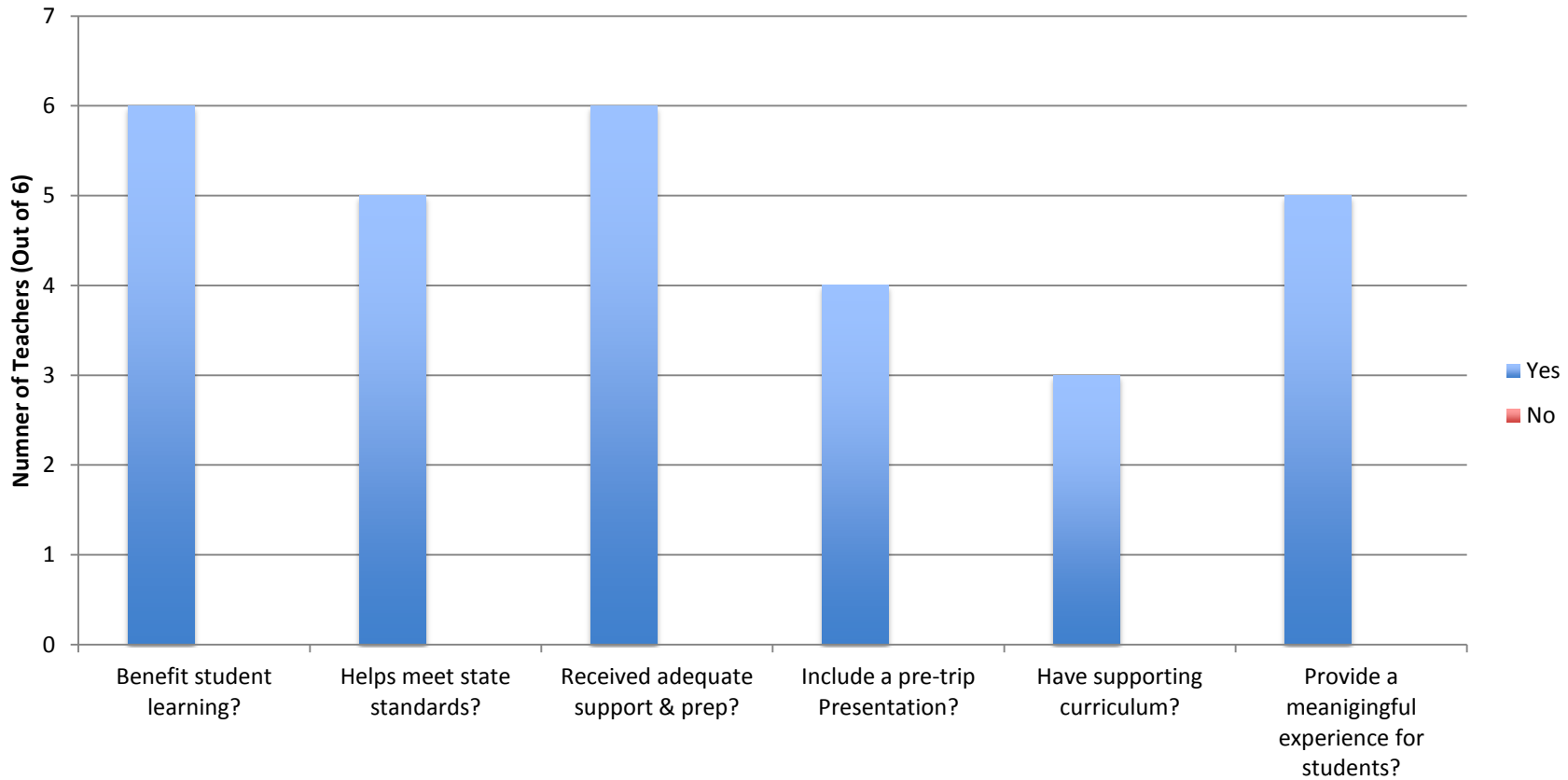
# Teacher Results- Habitat Restoration

## 2012-2013 NREP Habitat Restoration Fieldtrips



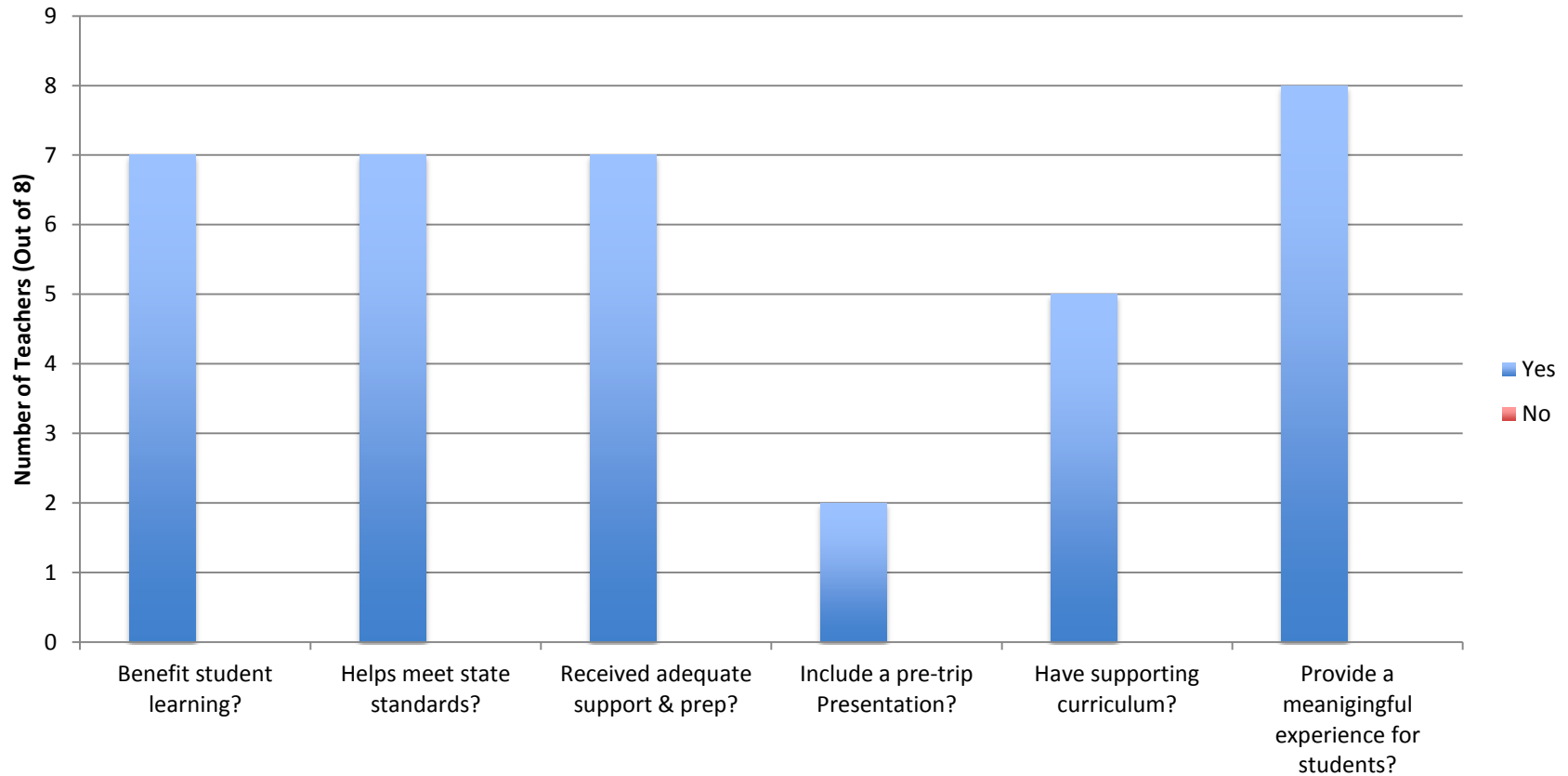
# Teacher Results – Salmon Toss

2012-2013 NREP Salmon Toss Fieldtrips



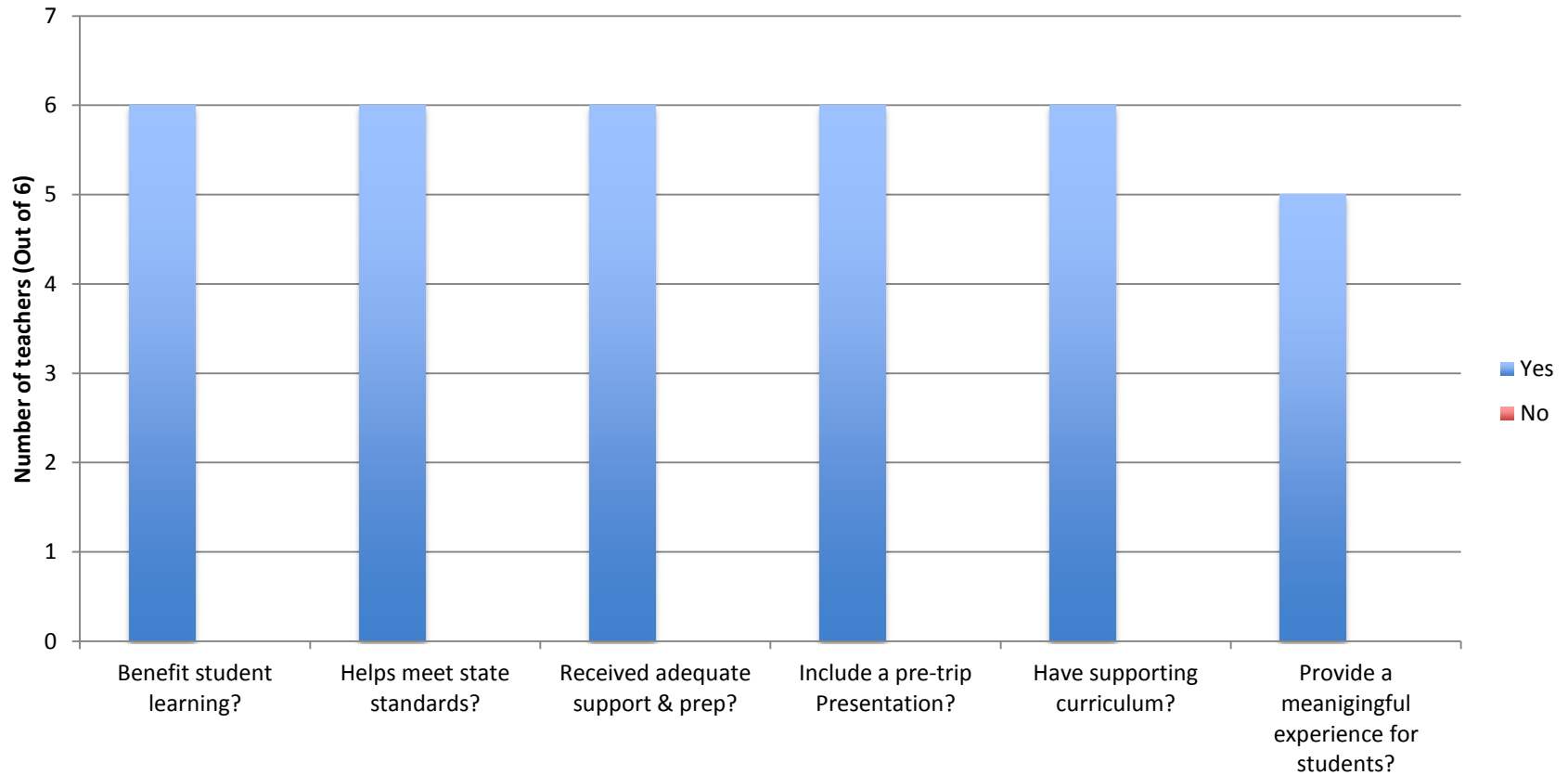
# Teacher Results- Student GREEN Congress

## 2013 Student GREEN Congress



# Teacher Results – Eye on Nature

## 2013 Eye on Nature Field Studies



# Fun Factoids - Teachers

- 21 Teachers participated in the end-of-year survey, 50% of the 2012-2013 NREP participants.
- 19% participated in only Water Quality Monitoring
- 33% participated in WQM and at least one other NREP activity.
- 33% participated in WQM and at two other NREP activities.
- 10% participated in WQM and three other activities. 5% participated in WQM and four other activities.
- 90% of teachers will be participating in 2013-2014 NREP activities
- 30% of NREP teachers attended (or intended to) Summer Teacher Institute.
- 24% Intend on attending Fall's Networking Meeting.
- 57% of teachers find Networking Meetings helpful.
- 81% Believe they have ample volunteer support for fieldtrips.
- 90% are up to date with their WQM Training.
- 81% feel that they are supported by colleagues and principals.

# 2013-2014 Program Evaluation

- Working with South Sound GREEN, Chehalis Basin Education Consortium and NREP
- Todd Johnson ESD 113
  - Merging our survey approach with current research from NOAA/BWET/MWEE/original GREEN program
  - Pilot 13-14
  - Online 14-15

G Model  
JSEE-474; No. of Pages 14

ARTICLE IN PRESS

Studies in Educational Evaluation xxx (2013) xxx–xxx

Contents lists available at ScienceDirect

Studies in Educational Evaluation

journal homepage: www.elsevier.com/stueduc

ELSEVIER

Studies in Educational Evaluation

Evaluating *Meaningful Watershed Educational Experiences*: An exploration into the effects on participating students' environmental stewardship characteristics and the relationships between these predictors of environmentally responsible behavior

Michaela Zint<sup>a,\*</sup>, Anita Kraemer<sup>b</sup>, Giselle Kolenic<sup>c</sup>

<sup>a</sup> School of Natural Resources and Environment, University of Michigan, Dana Building, 440 Church Street, Ann Arbor, MI 48109-1041, United States  
<sup>b</sup> eeEvaluations, 1605 Park Grove Ave., Catonsville, MD 21228, United States  
<sup>c</sup> Center for Statistical Consulting and Research, University of Michigan, Rackham Building, 915 E. Washington Street, Ann Arbor, MI 48109-1070, United States

ARTICLE INFO

**Article history:**  
Received 5 June 2013  
Accepted 25 July 2013

**Keywords:**  
Program evaluation  
Environmental education  
Outdoor education  
Behavior  
Multilevel analysis  
Path analysis

ABSTRACT

This study evaluated *Meaningful Watershed Educational Experiences* (MWEEs) funded by the National Oceanic and Atmospheric Administration's Chesapeake Bay *Watershed Education and Training* (B-WET) grant program. It also empirically explores the relationships between predictors of environmentally responsible behavior (ERB) in the Hines, Hungerford, and Tomera (1986/1987) and Hungerford and Volk (1990) behavior models. Multilevel analyses identified associations between eight environmental stewardship characteristics, as well as between these outcomes and (1) participation in MWEEs (sample: 258 students in 20 treatment classes, 193 students in 12 comparison classes matched by grade) and (2) specific MWEE instructional practices (sample: 434 students in 29 treatment classes). Students who participated in MWEEs scored significantly higher in five of eight characteristics (i.e., knowledge of ecology, issues, and actions, individual locus of control, intention to act) than those in the comparison group. Students who were engaged in the science inquiry steps of analyzing data or reflection and those who participated in more of certain types of environmental actions also scored significantly higher in a greater number of environmental stewardship characteristics than students who did not have these experiences. Results suggest that MWEEs are likely to increase ERBs but are not reaching their full potential. Tests of the relationships between the variables in Hines et al. (1986/1987) and Hungerford and Volk (1990) models confirm that they predict a high amount of variance in intention to act and suggest that environmental stewardship characteristics are likely to interact in complex ways.

© 2013 Elsevier Ltd. All rights reserved.

**Introduction**

Among the primary questions environmental educators, their funders, and supporters have is to what extent environmental education programs foster environmentally responsible behavior (ERB) and which instructional practices this outcome can be attributed to. The first question is of interest because the ultimate goal of environmental education is to foster behaviors that contribute to conserving, protecting, and restoring the environment (UNESCO, 1978). Answers to the second question are critical to informing environmental education practice, by identifying the types of instruction most likely to lead to behavioral outcomes.

Despite the interest in these questions, few studies are available to help answer them. Four syntheses of environmental education research and program evaluations, which reviewed work published between 1971 and 2008 (Leeming, Dwyer, Porter, & Coburn, 1993; Rickinson, 2001; Zelezny, 1999; Zint, 2012), identified only seventeen studies exploring the effects of environmental education on elementary and secondary students' behavioral outcomes