

# TEACHERS ON THE ESTUARY

CREATING A BETTER COAST FOR TODAY AND TOMORROW.



Teachers on the Estuary (TOTE) is a teacher training program provided at most of the 28 national estuarine research reserves. Each year approximately 250 teachers participate.

Teachers use TOTE to increase their understanding of estuary science, including climate change, and they learn how to engage students in the investigation of changes in their local environment using data obtained from the reserves' monitoring programs.

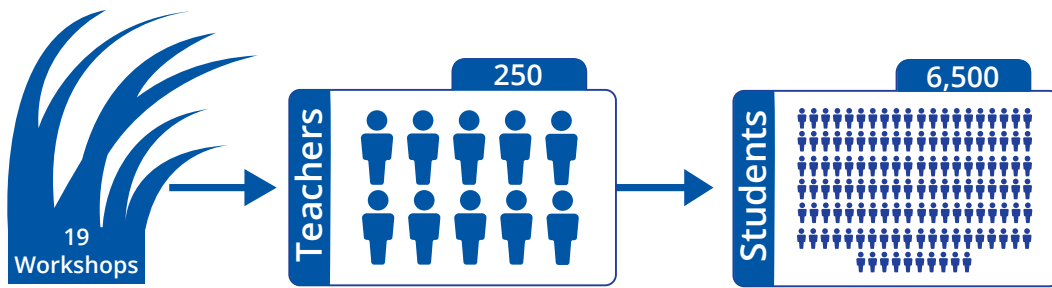
With this program, teachers and students can interact with scientists, find information about local environmental issues, and participate in field trips and community conservation projects. It's an experience that changes lives and communities.

## TOTE Provides

- Field-based teacher workshops
- Learning activities aligned with Next Generation Science Standards and state standards
- Access to national estuary education resources from the reserve system
- A supportive learning environment for educators and scientists to work together

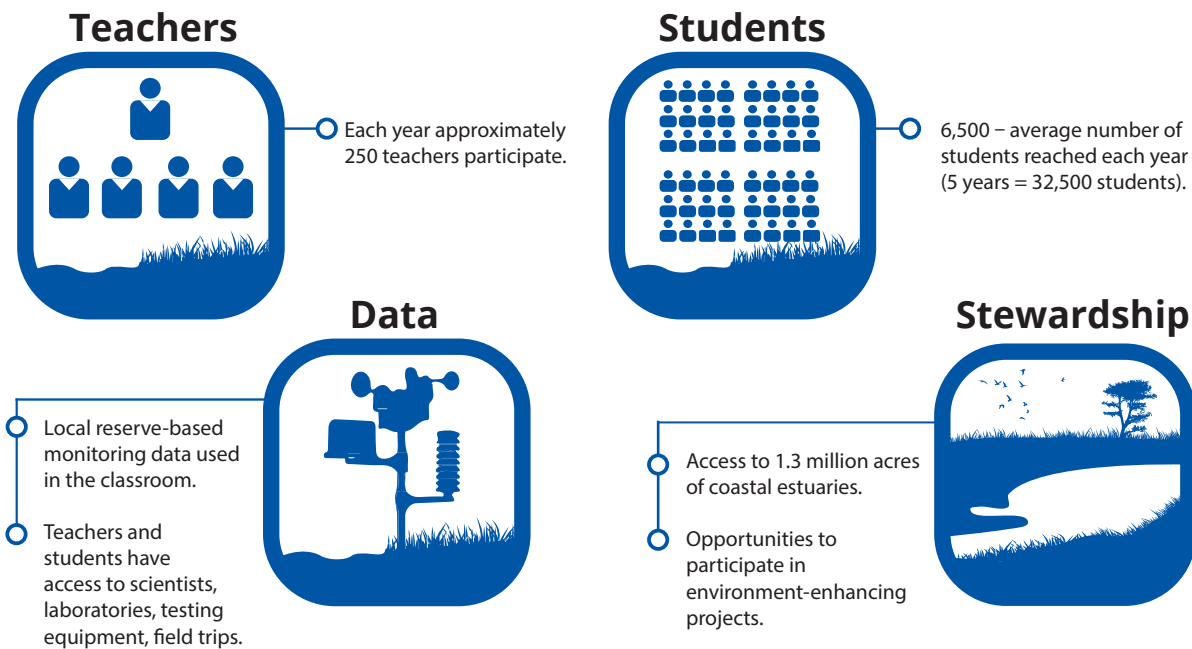


# TOTE BY THE NUMBERS



## The Multiplier Effect

- Growing an Informed Citizenry.** Each teacher trained impacts approximately 26 students. With 250 teachers in the program, approximately 6,500 students are impacted each year. Over five years, that results in 1,250 teachers and 32,500 students who have gained an in-depth knowledge about their local environment and how natural and man-made changes can impact drinking water, other natural resources, and flooding.
- Expanding the Use of NOAA Data.** Each reserve collects important NOAA data to document short- and long-term environmental trends and conditions. Students analyze and use these data to make informed decisions about how choices impact coastal areas. These data are also used to teach students about the scientific process and build analytical and critical thinking skills.
- Improving the Environment.** TOTE participation often leads to stewardship projects that range from planting marsh grass to building a boardwalk, or helping eradicate an invasive species. Students learn, and the environment and the community benefit.



*“The average class size in 2011-12 was 21.2 pupils for public elementary schools and 26.8 pupils for public secondary schools,” U.S. Department of Education, National Center for Education Statistics, from Digest of Education Statistics 2013 (NCES 2015-011).*

