

# CWSF 2014 - Windsor, Ontario



## Isabella O'Brien

### Trouble in Paradise: Can shell recycling help buffer ocean acidification?

**Challenge:** Environment

**Category:** Junior

**Region:** Bay Area

**City:** Dundas, ON

**School:** St. Augustine E.S.

**Abstract:** Anthropogenic CO<sub>2</sub> is making the oceans more acidic, thereby reducing the pH of the ocean (ocean acidification) and depleting the carbonate ions available for marine organisms to build their shells and skeletons. The purpose of this experiment is to determine whether the addition of pulverized recycled calcium carbonate-based shells to seawater will act as an effective alkaline buffer to mitigate the effects of ocean acidification.

#### Biography

I am a grade seven student at St. Augustine school in Dundas. I just finished serving five weeks as a Page at the Ontario Legislature. This gave me the opportunity to observe and learn about the Ontario political process. I have also been active in government at my school by being class representative, running for treasurer and assisting in administering student elections. I am also very interested in environmental issues. I am a member of my school Eco-team and have done previous science fair projects on finding an innovative green solution to cleaning oiled birds and on testing the purity of bottled versus tap water. While diving in Mexico last year I noticed the damage done to coral reefs and became interested in the problem of ocean acidification, which inspired my project. I wanted to see if recycling shells and returning them to the ocean in powdered form would act as a buffer to slow the effects of ocean acidification. I would like to do further work on ocean acidification because of the serious threat it poses to the entire ocean ecosystem. My advice to students thinking about science fair is to do something that interests you and start early!

#### Awards

#### Value

Challenge Award - Environment - Junior Sponsor: Youth Science Canada	\$500
Excellence Award - Junior - Gold Medal Sponsor: Youth Science Canada	\$700
Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University	\$4 000
<b>Total</b>	<b>\$5 200</b>