
















Educator-Scientist Climate Change Workshop





University of Maine Darling Marine Center - Walpole, ME - November 2008

Ocean and Climate Literacy

Using ocean and climate literacy principles that best align with the research areas of the workshop scientists, applicants are asked to rate their comfort with and the relevance of the concepts to their own work. Following the workshop, educators are asked to indicate whether changes occurred in their comfort with and their sense of the relevance of the same literacy concepts.

Relative Change Measures for Ocean & Climate Principles

Pre-workshop rating	Post-workshop change		
Very comfortable/relevant			
Comfortable/relevant			
Somewhat comfortable/relevant			
Not comfortable/relevant			
Don't know			
	less	same	more

-  **Preferred result:** An increase in the comfort/relevance rating or remaining at "very comfortable/relevant" rating.
-  **Less preferred result:** A failure to increase rating from "comfortable/relevant."
-  **Negative result:** A decrease in comfort/relevance rating or a failure to change from "somewhat comfortable/relevant" or "not comfortable/relevant" or "don't know" rating.
-  **No response given or inconclusive response**













Literacy change data are presented in the charts below, color-coded as green ("preferred result"), yellow ("less preferred result"), and red ("negative result"). Our preferred result is: 1) they remained "very comfortable" with a principle or continued to find it "very relevant" after the workshop; or 2) they were "more comfortable" with a literacy principle or felt it was "more relevant" after the workshop. Our less preferred result is that the workshop failed to increase an initially moderate "comfort" or "relevance" rating for any principle. We consider any of the following to be a "negative result": 1) a decrease in "comfort" or "relevance" after the workshop; or 2) their post-workshop status remained either "somewhat" "not" comfortable / relevant or "don't know".

The degree to which comfort and relevance changed varied between concepts - some being less emphasized than others at the workshop.

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<p>Life on Earth, including microbes, plants, and animals such as humans, can influence climate substantially and has throughout the evolution of life on the planet.</p>	<p>Comfort </p> <p>Relevance </p>
<p>Observations, experiments, and theory used to construct and refine computer models and develop scientific explanations lead to better understanding of the linkages between the atmosphere-ocean system.... As a result, more reliable projections of future climate changes will develop over time.</p>	<p>Comfort </p> <p>Relevance </p>
<p>The carbon cycle influences climate in a variety of ways, including seasonal interactions between the atmosphere, biosphere, and hydrosphere, and the formation/consumption of fossil fuels. Carbon dioxide is removed from the atmosphere in the ocean and other parts of the Earth system through biologic and geologic processes.</p>	<p>Comfort </p> <p>Relevance </p>
<p>The consensus of scientific opinion is that the natural processes driving Earth's long-term climate changes cannot entirely explain the rapid changes observed in recent decades, nor do they solely predict those projected for coming decades.</p>	<p>Comfort </p> <p>Relevance </p>
<p>Human activities have affected the land, oceans and atmosphere and have altered regional and global climate. These activities include burning fossil fuels, releasing chemicals into the atmosphere, reducing the amount of forest cover, and rapidly expanding farming development and industrial activity.</p>	<p>Comfort </p> <p>Relevance </p>
<p>The ocean has had, and will continue to have, a significant influence on climate change by absorbing, storing, and moving heat, carbon and water.</p>	<p>Comfort </p> <p>Relevance </p>

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<p>Most life in the ocean exists as microbes. Microbes are the most important primary producers in the ocean. Not only are they the most abundant life form in the ocean, they have extremely fast growth rates and life cycles.</p>	<p>Comfort </p> <p>Relevance </p>
<p>New technologies, sensors and tools are expanding our ability to explore the ocean. Ocean scientists are relying more and more on satellites, drifters, buoys, subsea observatories and unmanned submersibles.</p>	<p>Comfort </p> <p>Relevance </p>
<p>Use of mathematical models is now an essential part of ocean sciences. Models help us understand the complexity of the ocean and of its interaction with Earth's climate. They process observations and help describe the interactions among systems.</p>	<p>Comfort </p> <p>Relevance </p>

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