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Theme

OTHER - Topics relevant to Arctic Observing

Author list (in order)

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Poster title (brief)

Carbon release during 21st century glacier recession

Abstract - text box

Glacier ice covers ~11% of Earth's land surface, and contains within it a globally significant reservoir of easily degradable glacial organic carbon (GOC). GOC is held within glacier ice, subglacial sediments, and proglacial sediments and soils. Much of this ice and GOC is situated within the Arctic - a region that is experiencing the most rapid and greatest magnitude of warming on Earth. Predicted warming through this century will result in global glacier recession with exposure and release of GOC to lakes and oceans. Degradation of this organic material through physical, chemical and/or biological processes can produce the potent greenhouse gases CO₂ and/or CH₄. Release of these gases to the atmosphere represents a positive feedback on global warming, although GOC can also seed biological production downstream resulting in enhanced photosynthetic carbon drawdown. Therefore, the PhD project is to quantify carbon export from receding glaciers in the Arctic.