



NIRB Application for Screening #126462

Studying Long-Term Changes in Arctic Ocean Ecosystems near Qikiqtarjuaq

Application Type:	New
Project Type:	Scientific Research
Application Date:	Monday, July 20, 2026
Period of operation:	from 2026-08-01 to 2029-10-31
Project Proponent:	Natasha Leclerc Université Laval 315 rue Saint-Jean, Apt. 421 Quebec Quebec G1R 1N9 Canada Phone Number:: 6475235994, Fax Number::

DETAILS

Non-technical project proposal description

English: (Document title will also be included as additional documents)Title: Studying Long-Term Changes in Arctic Ocean Ecosystems near QikiqtarjuaqPrimary Applicant: Natasha Leclerc, Université LavalBackgroundTiny marine plants called phytoplankton are the foundation of Arctic marine food webs. They help feed fish, clams, and many other animals that are important to northern ecosystems and harvesting. Phytoplankton are also important because they absorb carbon from the atmosphere.The amount of phytoplankton in the ocean changes from year to year as sea ice, sunlight, water temperature, and other environmental conditions change. Understanding how these changes have occurred over the past hundreds of years can help us better understand how Arctic marine ecosystems are responding to climate change and other human activities, including future coastal development.Some marine organisms, such as clams and coralline algae, grow in yearly layers similar to tree rings. These layers preserve information about past ocean conditions and allow scientists to study how the marine environment has changed over time including phytoplankton dynamics.Project ObjectivesThis project will study clams and coralline algae collected near Qikiqtarjuaq (within 115 km) to better understand long-term changes in the marine environment and phytoplankton.The project has two main activities:1.Collect clams and coralline algae from coastal areas around Qikiqtarjuaq.2.Install a small underwater monitoring platform for one year to study how coralline algae grow under changing environmental conditions. Platform will be removed at the end of the study. Whenever possible, fieldwork will be coordinated with other research projects to reduce environmental impacts and minimize demands on community members.Field ActivitiesFieldwork will take place between August 2026 and October 2029. Research will be based out of Qikiqtarjuaq Research Centre and will involve boat trips and SCUBA diving near Qikiqtarjuaq.Community InvolvementWorking with the community is an important part of this project. Inuit Knowledge and observations will help guide the selection of study sites and improve our understanding of environmental change. Working with local guides and partners will also ensure that fieldwork does not impede on local hunting activities. The project will provide opportunities to employ local boat operators and field assistants and, where possible, offer training in scientific diving and laboratory techniques. Community members have already contributed valuable knowledge by identifying potential sampling locations and sharing their observations of the local marine environment.Sharing ResultsProject updates will be shared with the Hamlet and the Hunters and Trappers Association (HTA) through annual reports and community presentations. Outreach activities will also be offered at the local school.The final results will be shared with the community before being published in scientific journals and presented at conferences. Whenever possible, Inuit partners will be invited to participate in presenting the research.

French: N/A Inuktitut or English are the common languages used in Qikiqtarjuaq.

[illegible]

Operations Phase: from 2026-08-01 to 2029-10-31

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Only marine areas near the coast will be used to collect clams and coralline red algae specimens.	Scientific/International Polar Year Research	Marine	Region has a long history of oceanographic and biological research much of which has been led by Université Laval and Memorial University of Newfoundland including the Green Edge project (2015-2016). The area has also long been used for sea mammal hunting by Inuit. Coralline algae is known to be thick and of the desired species in the southern extent of the polygon from prior research in 2014.	n/a	At most, 115 km away from Qikiqtarjuaq
The platform will be installed under seawater near the coast in this zone near the Island of Qikiqtarjuaq	Scientific/International Polar Year Research	Marine	Area surrounds the community of Qikiqtarjuaq, and has a long history of hunting and use for travel for Inuit since time immemorial. The region also has a long history of oceanographic and biological research much of which has been led by Université Laval and Memorial University of Newfoundland including the Green Edge project (2015-2016).	n/a	At most 25 km away from Qikiqtarjuaq.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Qikiqtarjuaq	Laila Alookie	Qikiqtarjuaq Research Centre	2025-12-20
Qikiqtarjuaq	Sammy Qappik	N/A	2025-10-26
Qikiqtarjuaq	Jaypootie Aliqatuqtuq	Hunters and Trappers Association	2026-01-21

Authorizations

Indicate the areas in which the project is located:

South Baffin

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Planning Commission	NPC (File #151191) determined that project falls outside an area of applicable regional land use plan	Active	2026-06-03	
Hunters and Trappers Associations/Organizations	Approval letter provided by Nattivak HTO Chairperson, Jaypootie Aliqatuqtuq.	Active	2026-02-18	
Other	Authorization from Department of Fisheries and Oceans will be sought in the next week for collection.	Not Yet Applied		
Nunavut Research Institute	Application for research permit to conduct research starting in August 2026. Application submitted June 4, 2026.	Applied, Decision Pending		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	Small boat craft (summer) or skidoo (winter) to collection or growth monitoring platform sites.	

Project accomodation types

Community

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Hand-held pneumatic drill	1	40 x 40 cm	Used to screw plates into rocks (if required depending on the site) at coralline red algae monitoring site during installation day.
Personal SCUBA Equipment	4	50 x 100 cm	Used to aid divers in collecting specimens and installing monitoring site
Environmental Loggers	4	10 x 30 cm	Photosynthetic active radiation, light, temperature, salinity and pH loggers to be installed at 20m depth at monitoring site
Small vessel	1	10-15 m	Local rental through outfitter and guide to bring researchers to and from field sites
Snowmobile	4	322 x 108 x 110 cm	Qikiqtarjuaq Research Centre rental to bring researchers to and from field sites in ice-cover season
Stainless steel rods	10	30 cm x 1 cm	Used to anchor instruments and platform to the seafloor.
Stainless steel screws	20	1 x 3 cm	Used to anchor instruments and platform to the seafloor.
Stainless steel brackets	4	(10 x 10 x 3 cm)	Used to anchor instruments and platform to the seafloor.
PVC Sheet	10	19 x 35 cm	Used as base for platform
Splash Zone Putty	4	0.25 gallons (15 x 15 cm)	Used to cement algae into PVC plates
Hammer and chisel	2	20 x 4 cm	To pry algae off rocks during collection
Stainless Steel Bracket	4	12 x 2.54 cm	Used to anchor instruments and platform to the seafloor.
Bin	1	84 x 51 x 34 cm	Container to stain algae with alizarin red (to mark algae at the start of the study in the lab before algae are removed from stain solution and deployed on the platform on the sea floor).
Growing light (Fluval Sea marine spectrum LED)	2	6.5 x 61 x 2 cm	Light will be installed over the bin and staining

			algae during the staining period 3 days in the lab to stimulate algae growth.
Jerry can	1	25 L	Hold alizarin red diluted in water at the Qikiqtarjuaq research centre and for shipment to Quebec City.
Plastic vials	24	50 ml	Near monthly collection of seawater and sediment samples. These will be brought back to Université Laval for analysis.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Gasoline	fuel	96	20	1920	Liters	Use for boat and snowmobiles (maximum amount per year). These will be community rentals and fuel will be provided by community members or the research centre through rentals and per day guide rates).
Alizarin red salts	hazardous	1	0.025	0.025	Kg	Will be used in laboratory to stain the algae to record the start of the experiment before being installed on the underwater platform. This dye does not produce any significant health hazards, but will be disposed off at the Université Laval in Quebec City.

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
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Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Researching	Combustible wastes	10 lbs	Bin, growing lights and jerry can will all be transported back to Quebec City for future projects and/or disposal.	N/A
Researching	Non-Combustible wastes	5 lbs	Some packaging waste from equipment shipment will be sent to the Qikiqtarjuaq landfill. No other waste is expected.	N/A
Researching	Non-Combustible wastes	Approximately 40 lbs	Materials used for the platform, including sensors, batteries, stainless steel, cemented algae, will be brought back to the Université Laval after the study by air or by boat. Some stainless steel rods or screws with a bit of the Splash Zone Putty cement may be left on the seafloor if cementing is required. Otherwise, no other waste is expected.	N/A
Researching	Non-Combustible wastes	25 g	Alizarin red will be diluted in water within plastic bins in the lab at the Qikiqtarjuaq Research Centre. All unused alizarin and water will be stored at the Qikiqtarjuaq Research Centre until it can be shipped back to Québec City for proper disposal after the study.	N/A

Environmental Impacts:

The proposed project is expected to have minimal environmental impacts. Potential negative but mitigable

impacts are limited to temporary increases in noise and human presence associated with vessel and snowmobile travel, which may cause short-term disturbance to wildlife, including marine mammals, seabirds, and aquatic species. These effects are expected to be localized, infrequent, and of short duration. Mitigation measures will include minimizing time spent at sampling locations, avoiding close approaches to wildlife, maintaining appropriate setback distances from marine mammals and birds, conducting activities in accordance with local wildlife guidelines, and suspending or relocating activities if sensitive species are observed nearby. No habitat alteration, resource depletion, pollution, waste disposal, or long-term infrastructure development is proposed. The project is expected to have positive socioeconomic impacts through local employment, collaboration with community members and organizations, support for environmental monitoring, and contributions to knowledge of marine ecosystems that are important for food security and community well-being. Communication with the community will be maintained throughout the research period through local radio, Facebook, and regular contact with the Qikiqtarjuaq Research Centre to ensure concerns can be identified and addressed promptly. Species listed under the Species at Risk Act (SARA), including polar bear, bowhead whale, narwhal, and certain seabird species, may occur within the broader region. The project is not expected to adversely affect listed species, their critical habitat, or residences due to its non-destructive nature and implementation of wildlife avoidance measures. No significant cumulative, transboundary, or non-mitigable effects are anticipated.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

The proposed study area is located in the marine environment surrounding Qikiqtarjuaq, Nunavut, and does not overlap with Auyuittuq National Park, protected wildlife areas, or other formally designated protected areas. The area is culturally important to the community and is regularly used for travel, harvesting, fishing, and hunting activities. Marine and sea-ice covered habitats within the region support a variety of species, including marine mammals, Arctic char, clams, seaweed, marine fish, seabirds, polar bears, and Arctic foxes. The surrounding landscape and seascape are also valued for their scenic beauty and cultural significance. Water quality in the region is generally considered high; however, localized influences may occur near the community due to wastewater discharge, fuel storage and handling, vessel traffic, shoreline disturbance, runoff, and historical waste sites. No significant impacts on these environmental or cultural values are anticipated, as project activities are limited to non-destructive marine scientific research and environmental monitoring. The project will not restrict access to these areas or involve activities expected to adversely affect wildlife habitat, water quality, or harvesting activities.

Description of Existing Environment: Biological Environment

The marine environment surrounding Qikiqtarjuaq is of significant socioeconomic and cultural importance to the local Inuit community. Marine resources support subsistence harvesting, food security, cultural practices, recreation, tourism, and local economic activities. The area is regularly used for travel by boat and snowmobile and is valued for its scenic beauty and connection to Inuit culture and traditional knowledge. Marine vegetation is dominated by macroalgae, including kelp and other benthic algal communities that provide habitat and food for a variety of marine organisms. The region supports diverse wildlife populations, including ringed, harp, and bearded seals, narwhal, bowhead whales, polar bears, and Arctic foxes. Wildlife movements and habitat use are strongly influenced by seasonal sea-ice conditions. The area also provides important habitat for numerous seabird species, with migratory birds using coastal and marine habitats for feeding, nesting, and staging during the summer months. The project area does not overlap with any designated seabird protection areas. Aquatic species include Arctic char, Greenland halibut, Arctic cod, capelin, sculpins, clams, and other marine invertebrates. Nearshore benthic habitats support shellfish, seaweed communities, and other organisms important to local food webs. Several species occurring in the region may be listed under the federal Species at Risk Act (SARA) or territorial conservation frameworks, including polar bear, bowhead whale, narwhal, and certain seabird species. The proposed research activities are limited to non-destructive marine scientific research and environmental monitoring and are not expected to adversely affect wildlife, habitats, migration routes, or harvesting activities.

Description of Existing Environment: Socio-economic Environment

The project area is located in the marine environment adjacent to the hamlet of Qikiqtarjuaq, approximately 1-110 km from the community depending on sampling or surveying location. The area is regularly used by

Inuit for travel, harvesting, fishing, hunting, and other land- and sea-based cultural activities. Marine resources contribute significantly to local food security, cultural continuity, recreation, tourism, and the local economy. While no archaeological, palaeontological, or culturally significant sites are known to occur within the marine project footprint, the surrounding region contains numerous Inuit cultural landscapes, traditional travel routes, harvesting areas, and archaeological sites of cultural and historical importance. Any previously unidentified cultural resources encountered during project activities would be reported to the appropriate authorities. The area experiences seasonal vessel, snowmobile, and small-aircraft traffic associated with community activities, harvesting, tourism, research, and resupply operations. Local resource use includes subsistence harvesting of marine mammals, fish, seabirds, shellfish, and other country foods, as well as tourism, guiding, and wildlife viewing activities. Human health and well-being in the region are closely linked to access to country foods, environmental quality, cultural practices, and opportunities for safe travel on the land and sea ice. The proposed research activities are limited in scale, non-destructive, and are not expected to adversely affect community well-being, resource use, cultural values, navigation, or harvesting activities. Other valued socioeconomic components identified through community engagement and regional studies include food security, cultural continuity, knowledge sharing, environmental stewardship, and access to marine resources.

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

The proposed project is expected to have minimal environmental and socioeconomic impacts. Project activities are limited to small-scale, non-destructive marine scientific research and environmental monitoring. No construction, blasting, fuel caching, waste disposal, or long-term infrastructure installation is proposed. Potential negative impacts are expected to be minor, temporary, and mitigable. These may include short-term disturbance from vessel or snowmobile activity, noise, or the presence of researchers in marine areas used by wildlife and community members. Mitigation measures will include minimizing time on site, avoiding close approaches to wildlife, maintaining clean field practices, preventing the release of waste or contaminants, and coordinating activities with local partners to avoid interference with harvesting, travel, or culturally important activities. Communication with the community will be maintained throughout the research period through local radio, Facebook, and regular contact with the Qikiqtarjuaq Research Centre. These communication channels will provide opportunities for community members to raise concerns or identify potential impacts, allowing project activities to be clarified, modified, or relocated where appropriate. Potential socioeconomic impacts are expected to be neutral to positive. The project may contribute to local knowledge, environmental monitoring, research capacity, and understanding of marine ecosystems important to food security and community well-being. No adverse effects on human health are anticipated. The project will not restrict access to travel routes, hunting areas, fishing areas, or other marine resource-use areas. No transboundary effects are anticipated, as project activities are localized near Qikiqtarjuaq and do not involve emissions, discharges, habitat alteration, or activities likely to affect areas outside the local study area. Species listed under the federal Species at Risk Act (SARA), including polar bear, bowhead whale, narwhal, and certain seabird species, may occur regionally. The project is not expected to adversely affect listed species, their critical habitat, or residences. Researchers will avoid disturbance to wildlife, maintain appropriate distances from marine mammals, birds, and polar bears, and suspend or relocate activities if sensitive species are observed nearby. Overall, identified impacts are expected to be either positive or negative but mitigable. No negative non-mitigable impacts are anticipated. Monitoring will occur through field observations, documentation of any wildlife interactions or unusual environmental conditions, and ongoing communication with local partners and community members.

Cumulative Effects

The proposed project is not expected to contribute meaningfully to cumulative environmental effects. Activities are limited to small-scale, non-destructive marine scientific research and environmental monitoring and will not result in significant habitat alteration, resource depletion, pollution, or long-term infrastructure development. While the project will occur within a region that experiences ongoing community activities, harvesting, tourism, marine transportation, and research, its contribution to cumulative effects is expected to be negligible due to its limited spatial extent, short duration, and low-intensity nature. The project is not expected to interact with past, present, or reasonably foreseeable future activities in a manner that would result in significant cumulative environmental or socioeconomic effects.

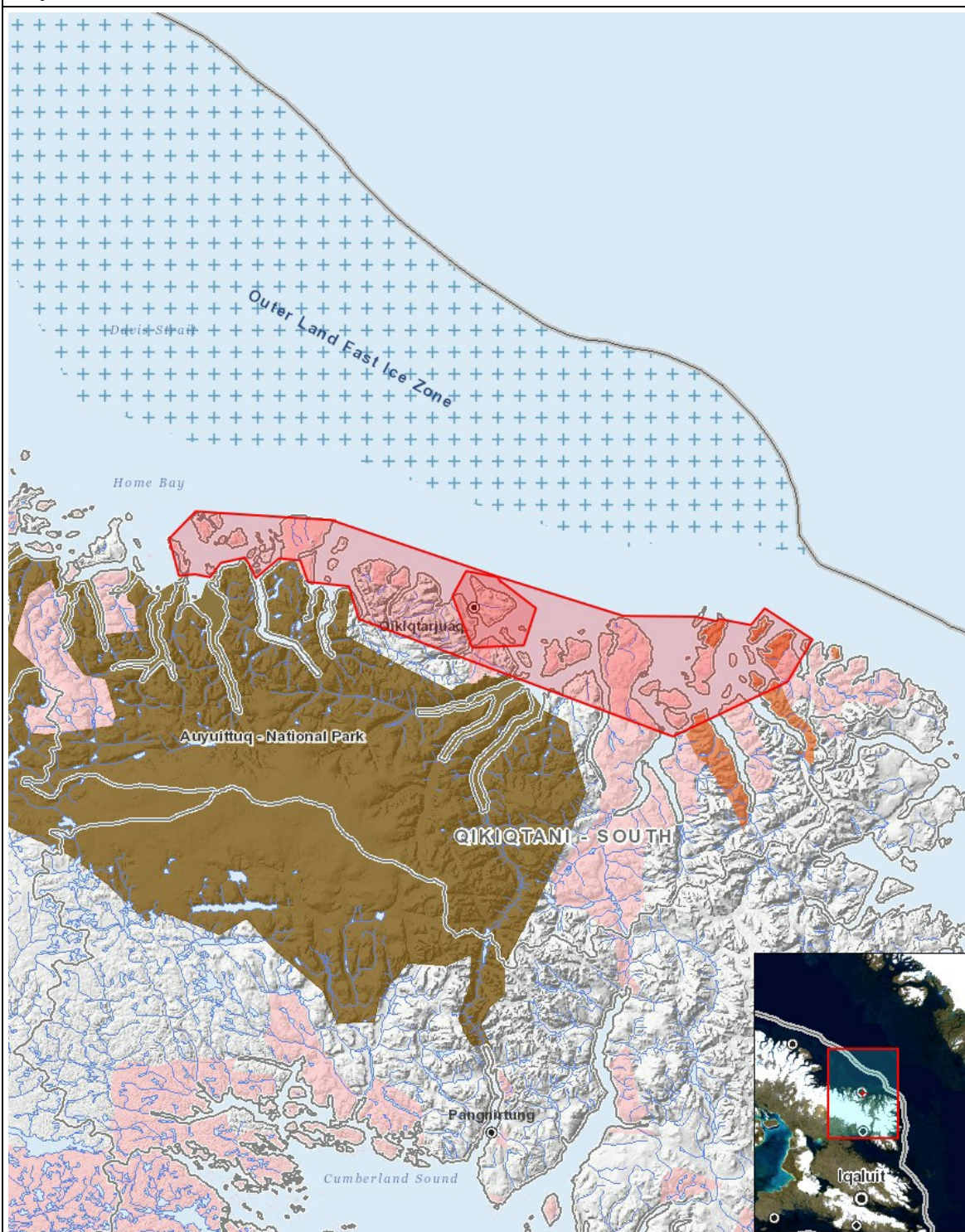
Impacts

Identification of Environmental Impacts

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation																									
Scientific/International Polar Year Research		-	-	-	-	-	-	-	-	-	-	-	-	M	-	M	M	M	-	-	-	P	P	-	-
Decommissioning	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

- | | |
|-----------|---|
| 1 polygon | The platform will be installed under seawater near the coast in this zone near the Island of Qikiqtarjuaq |
| 2 polygon | Only marine areas near the coast will be used to collect clams and coralline red algae specimens. |