

# ARCTICMI MAKPIRAAQ UQAQTUAQ

●●● Nakuruallaktuaq tapqua inuusiq Saangani qiniraa savaktiit

## QAQSUQSIIVIK 2020

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Taamna National Research Council of Canada's (NRC) Arctic Program, uvagut savaktiit governmentmun, Nunaruqqaqtuatlu saangani inuuniarvik, taamna savaktiitlu ilisarvik, qiniqtuaq tadjvangatchiaqtuaqlu ilisaqtuaq ikayuqtuaq ilitaqlu mikiyuq-ungavausigaa sanayuaq Saangani, nakuruallaktuaq inuusiq Saangani. Taigugaa taamna ukiuqmi piksaq ilisaqtuat uvagut sanayuaqlu taimagaa tapqua sitamat qiniraa makpiraaq: saangani aullati, tariuq munari, pisuktuq sanayuaqlulu inuuniarvik sanayaat.

## UQALLAUN SAVAKTII ANNE BARKER

Asiin atausiq ukiuqmi kisain kangma savaktuaq qiniraa sivunniurutit, 2019mi igliqtuaq ukiuq savaktuat taimaagaa takunaqtuq, kiilu qiniraa piksagaalu nutaaq savaktiit ikayuqtuatlu nakuruallaktuaqlu qiniraa.

Uvagut quviasuktuyuuat taamna Canadian Arctic Shipping Risk Assessment System (CASRAS) tapqua ilaksaqtuaq savagaa National Trade Corridors Fund asulu savaknaiqtuat tapqua saangani atautchikun isumaliuqtuaq taamna savaktiit nakuruallaktuaq aturaalu taimaaga.

Taamna NRC qiniraa uqsuk kuviyuaq paqitaalu bioremediation nakuruallaktuat, atautchikun nutaaq nunamilu, qapsit tapqua surautat qaritauyyaq. Allauyuaq qiniraa savaktuat nakuruallaktuat, asulu ukiuq-apqun uqqituaq nuna qiqumalaaqtuaq nungungayuaq, asulu pitquyuaq, savaktiit asulu nukiktusiyuaq sanayuaq maquliq nakuruallaktuaq surautat-qaritauyyaq. Asiin ikayuqtuaq mikiyuq tapqua qiniraa taamna International Maritime Organization (IMO) ikayuqti isuma Polar Code qanuq tapqua nuna kisitait

sivituyumik annautiyaa Arctic tariuq kappianaqtuatlu, nakuruallaktuaq uinqaiqtuat angmaniq piksagaa tapqua umiat. Taigugaa taamna paqitaa ilisimayaa savagaa kangma sukunlu savaktuat.

Asiin isaktuat taamna ilurriyaa taimaagaalu nikaittuq sivituyumiklu Arctic saangani qiniraa NRCmi. Tusaayaaqlusi kiilu makpirat katitait, uqaqtuat atautchikun tapqua savaktiit sanayuaq nakuruallaktuaq qiniraa ungavausigaa taimaagaalu ikayuqtuaq inugiaktut governmentmun pisuktuq saangani inuuniarvik sivulliqmi. Ilisimayaa taamna sanayuaq kangma, asiin ikayuqtuaq tamaita ilisimayaa qiniraa uqaqtuaqlu!

Ilisimayaa taamna nakuruallaktuaq qiniraa, apiqsilutin atautchikun savagaa, asiin ikayuqtuatlu kiuyuaq tamaita qiniraalu sanayuaqlu pisuktuat. Apiqsisaqtuusi ilisimayaalu atautchikun taamna sivulliqmi qiniraa qisuaqiyaa, taigugaa NRC's makpiraaq katitait (NPARC) qiniraa makpiraaq tapqua asulu aglaktuaq.



# SAVAGAA NUTAAQ

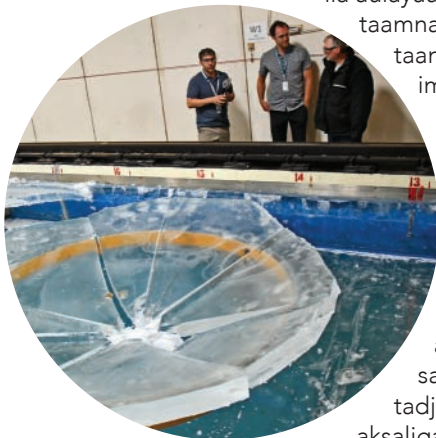


## SAANGANI AULLATI

### Nakuruallaktuaq ukiuq apqunmi atautchikun sila-ungavausiqtuak

Angmaqsimayuaq kisain qiqinguyiaq tatqiqsiun ukiuqmi, taamna apqun ukiuq aturaa itqutiyaq uqsuryuaqlu angiyuqmiq surautat, niqilu, saangani inuuniarviklu. Nunami, apqun ukiuqmi ila aulayuaq siku kuuklu tasiqlu. Nuna, sikulu taamna illagauyaaq, pigigaa qiqinguyuaq taamna uqqituaq ibyuyuuqlu nutqaqtuaq imaaqnaiqtuak.

NRC savaktuat qiniraa takuyaa savisuklu polypropylene geogrid aturaa nakuruallaktuaq sikuum matuyaaalu isaktuaq qaliq-siku ikauqtuaq ukiuqmi apqun. Aglaan taimaagaa takuyaa sivunniurutit, sannaigaa taamna makpiraaq aglaqtuat nakuruallaktuaq. Nutim savagaa, savaktuat qiniraa paqitaa tadjvainaqlu uqumaittuat surautat, taamna aksaligaq, sikumi sivituyumik. Nutim uqqituaq sivikittuqmi, sivituyumik taamna aksaligaq sukasaqtuaqlu, imaaqnaiqtuak. Atautchikun tapqua Royal Military College Kingston, Ontariomi, NRC savaktuat qiniraa qanuq nakuruallaktuaq sikuum matuyaa pimagaq una tadjvangatchiaqtuaq. Atautchikun savagaalu taimaagaa tapqua inugiaktut-ukiuq taamna Transport Canadalu Crown-Indigenous Relationlu Northern Affairs Canadami. Ilisaqlusi : [nrc.canada.ca/en/research-development/research-collaboration/programs/project-reinforcing-ice-roads](https://nrc.canada.ca/en/research-development/research-collaboration/programs/project-reinforcing-ice-roads)



## TARIUQ MUNARI SURAUTAT-QARITAUYAQ

### Uinqaiqtuat ungavausigaalu umiaqmun suviiq piksagaa

Inugiaktut allauyuaq ungavausigaa iluani taamna umiaq pimayaa savaktiit asiin sila qiqinguyuaqlu. Taamna silami, savaktiit iluani, akunningayuaq savaktiitlu atimayuat ungavausigaa qingaaq piksagaalu umiat. Savaktuat atautchikunlu Transport Canadami, NRC qiniraa takunaqtuq qangma makpiraaqlu uvagut nakuruallaktuaq kangiqsiyaa qanuq taamna ungavausigaa uumayuaq savaktiit inugiaktut carbon dioxide taimaaga tapqua umimmariktuat inimi.

Qiniraa nikaittuq tapqua annuraat atimayuaq umiat savaktiit ungavausigaa nikaittuq nakuruallaktuaq iluani suviiq, asii una piksaqnaiktuaq qingaaq. Taamna annuraat atimayuat savaktiit allauyuaq nakuruallaktuaq



tapqua umiat ungavausigaa (e.g. military savaktiit, surautat, aulayuut), taamna qingaaq ilisaqtuaq. Taamna NRC qaitaa isumaliuqtuat takunnagaa qingaaq aturaa umiatlu, uqaqtuat taimaagaa makpiraaq katitait taamna International Maritime Organizationmi (IMO). Una makpiraaq uqausiit taamna umiaq uumayuaq ikayuqtuaq IMO isumayuut uqausiq taamna ikayuqtiit tapqua international Savaktiit. Ilisaqlusi : [nrc.canada.ca/en/research-development/research-collaboration/programs/project-reviewing-lifeboat-ventilation-requirements](http://nrc.canada.ca/en/research-development/research-collaboration/programs/project-reviewing-lifeboat-ventilation-requirements)

## PISUKTUAQ SANAYUAQLU

# Ilisaqtuaq uqsuk-ingattaviktuaq tariuq anniarun



Angiyuqtuat tariuq aulayuq Arctic imaqmi, inugiaktut tadjvinaq uqsuk kuviyuaq. Una NRC savagaa qiniraa qinigaa taamna Northwest Passage nakuruallaktuaq surautat paluktainaq uqsuk kuviyuaq allayuaq angiyuq tadjvangatchiaqtuaq nunamun.

Aturaalu genomics ilisaqtuaq, NRC qiniraa anniarun taamna Arctic imaqmi nikaittuq piksagaa uqsuk-nungungayuaq. Una savagaa atautchikunlu Fisheries Oceans Canadami, Department National Defence, Environment Climate Change Canadami, McGill Universitymi, University Manitobami, Aarhus Universitymi (Denmarkmi), SINTEF (Norwaymi), asulu CSIRO (Australiammi).

Qiniraa iviqtitaa inuuniarvik allayuaq nuna Arcticmi allayuaq sivituyumiklu takunaqtuq uqsuk nungungayuaq tadjvinaq anniarun inimi. Ilisaqtuat qinigaa inugiaktut allayuaq anniarun isaktuat kangma takkuani uqsuk sanayuaq,lu

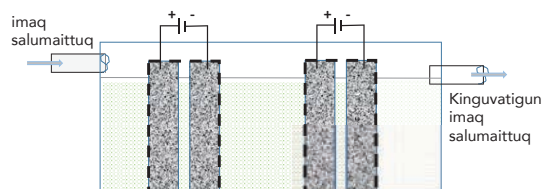
nikaittuq uqsuk nungungayuaq Arcticmi tariuq sukayuq. Inugiaktut ilisaqtuaq kangma pisuktuaq suqiuqtuat ungavausigaa allayuaq nakuruallaktuaq atdjigiiktuk uqsuk nungungayuaq tadjvangatchiaqtuaq taamna anniarun inimi. Ilisaqlusi : [nrc.canada.ca/en/research-development/research-collaboration/programs/project-study-oil-degrading-marine-bacteria](http://nrc.canada.ca/en/research-development/research-collaboration/programs/project-study-oil-degrading-marine-bacteria)

## INUUNIARVIK SANAYUAQLU

# Isaktuaq maquliq Arcticmi

Iluuqtuq nakuruallaktuaq maquliq ila inuuniarvik surraituq Arcticmi. Taamna tamaita Arctic inuuniarvik Canadami aturaa imaqlu iviraq nakuruallaktuaq maquliq. Aglaan surraituq akikittuq savaktut, tamaita imaqlu iviraq tusaalaituut tapqua Environment asulu Climate Change Canadam nakuruallaktuaq pitquya. Inukittut savaktiit nakuruallaktuaq tusaalaituut pitquya allayuaq akituyuq savaktutlu. Una iluaqruraa, taamna NRC sanayuaq BioElectrochemical Anaerobic Sewage Treatment (BEAST) technology.surautat-qaritauya. Aturaa niryun kii ayuyuaq anniarun aktat qasagiyaa, mikiyuq-savaktiit sanayuaq takunnagaa electroactive anniarun taputiya aktatlu sanayuaq savaktiit- nakuruallaktuaq uqqituaq gaasiliq. Una surautat-qaritauyaq ungavausigaa taamna iglumunlu tamapta inuuniarviklu.

Savaktiit qiniraa taamna takuyaa BEAST savaktii allayuaq nunami uumayuaq saangani Canadami, asulu Alaska, Greenlandlu. Takuyaa ilisaqtuaq taamna tadjvinaq una surautat-qaritauyaq iluaqruraa allayuaq imaqtadjigiiktuk tadjvangatchiaqtuaq, maqaigaalu uqumaittut savisuk, (selenium, tuqunaq), asulu hydrocarbons pimagaa aktat imaqmi. Ilisaqlusi : [nrc.canada.ca/en/research-development/research-collaboration/programs/project-bioelectrochemical-sewage-treatment-arctic](http://nrc.canada.ca/en/research-development/research-collaboration/programs/project-bioelectrochemical-sewage-treatment-arctic)



SUNA?

## SAANGANI AULLATI

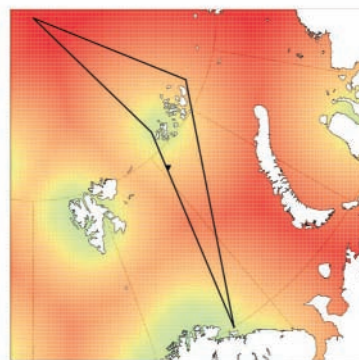
### Nakuruallaktuaq taamna Arctic qaitaa tapqua CASRAS

Qarrisigaait sanayaa umiaqpak nakuruallaktuaq quvaisuktuat tapqua inuit saangani inuuniarvik pigigaa tapqua umiaqpak taamna surautat, uqsuryuaq, niqilu. Isumaliuqtuaq taamna uqqituaq, isaktuaq, sungiqutigiyaa tapqua umiat suli sivikittuq tariuq itqutiyyaa ukiuqmi isumaliuqtuaq manik tamaita Canadian. Aglaan, tariuq nangiaruaqtuq siku nakuruallaktuaq ungavausigaa taamna Arctic surautat isaktuaq nutqaqtuaq, ungavausigaa tamaita simmiqtuatlu, inuit takuyaa aulayuat, savaak angiyuut nunami.

Transport Canadam nutaaq manik tapqua National Trade Corridors Fund ikayuknaiqtuat atatchikun taamna nunami kisitchiunlu savaktim illisaknaiqtuat aturaa NRC's Canadian Arctic Shipping Risk Assessment System (CASRAS). Aturaa una makpirat katitait, taamna NRC qiniraa ilurriyaalu taimaaga nakuruallaktuaq tariuq-siku sila surautatlu kisitchiun sanayuat tampqua CASRAS qaritauyaq. Taamna savaktiit Northwest Territoriesmi isumaliuqtuaq ilisaqtuaq-pitquyaq tadjvangatchiaqtuaq takunaqtuq sila sanayaat isumaliuqtuat tuyugaa savaktuat tapqua sivulliq, kangmalu, taimaunga sila allayuaq. Iislaqlusi : [nrc.canada.ca/en/research-development/products-services/technical-advisory-services/canadian-arctic-shipping-risk-assessment-system-casras](http://nrc.canada.ca/en/research-development/products-services/technical-advisory-services/canadian-arctic-shipping-risk-assessment-system-casras)

## TARIUQ MUNARI SURAUTAT-QARITAUYAQ

### Suquiqtuaq takunaqtuq qangma taamna nunami



Suquiqtuaq takunaqtuq qangma (h) – Suviq aturaa

Nuna tapqua qiqinguyuaq sila nunami, nakuuyuat aulayuaq nakuruallaktuaq-piksagaa umiaqpat sitkitaa tapqua inuit itiriaqtuqtuat tariuqmi. Asiin angiyuq surautat aulayuat mikiyuq saangani nunam. Angiyuq tariuqmi aulayuaq nunami taamna angiyuq tadjvangatchiaqtuaq pitquqiyuat piksagaa. Uumayuat saangani nunam kinguvatigun tariuqmi tadjvangatchiaqtuaq uqaqtuaq inugiaktut nuna.

Tapqua savaktiit aullaqtuat sukayuuq Saangani, pigigaa inuusiq-annautiyaa surautat umimmariktuuaq umiaq uqqituaq savaktiit qiqinguyuaq sila annautiyaa savaktiit qaiyuat. Sivutyumik annautiyaa savaktiit qaiyuat nikaittuq qanitqigaa umiaq pitchiriaqtuq iluaqtuquq isumaliuqtuaq uumayuatlu savaktiit. Taamna NRC sivuani savagaa qiniraa suqiuqtuaq takunaqtuq sivulliqmi ilaksaqtuaq taamna nunami Canadian Arctic. Savaktuyuat Transport Canadiani, taamna NRC isumaliuqtuaq suqiuqtuaq takunaqtuq sivulliqmi. Una savaktii qaitaa taamna International Maritime Organization (IMO) taamna nunam suqiuqtuaq takunaqtuq sivulliqmi. Ilisaqlusi : [nrc.canada.ca/en/research-development/research-collaboration/programs/project-estimating-exposure-time-polar-regions](http://nrc.canada.ca/en/research-development/research-collaboration/programs/project-estimating-exposure-time-polar-regions)

## PISUKTUAQ SANAYUAQLU

### Piksaq-nipaliq imaq ataani uqsuk kuviyuaq paqitaa



Tamaita nuna sila-ungavausiqtuak taimaagaa inukittut tariuqmi siku Arcticmi, taamna angiyuq tariuq aulayuaq, savaak angiyuutlu, inuuniarvik kivgaqtuaq. Taamna ilitaq arctic nuna angiyuq tadjvangatchiaqtuaq tapqua uqsuk kuviyuaq. Aglaan, tamaita paqitaalu tubliyuat savaklu savagaanaiqtuat taamna uqsuk kuviyuaq tadjvangatchiaqtuaq siku ataani, tadjva nutaaq qanuq savak nakuruallaktuaq.

NRC qiniraa Boucherville, Quebecmi sanayuaq nutaaq surautat-qaritauyaaq sanayuaq piksaq-imiqtuaq paqitaalu takunnagaa taamna uqsuk kuviyuaq aturaa ataani-imaq aulayuat, taamna savaktiit asulu ataani-imaq aulayuat. Una nutaaq savak atautchikun ataani-imaq tigliqtuaq qaumaniqlu taamna savaktiitlu paqitaa ultrasonic waves tapqua uqsuk kuviyuaq. Una surautat-qaritauyaaq nakuruallaktuaq, tutqaanaittuq makpirat katitait, uliqnaiqtuaquq, isaktuaq nunaayaquq takunnagaa-allauyuaq uqsuk kuviyuaq. Una taimaagaa kangma nakuruallaktuaq, ikayuqtilu savaktuat taamna uqsuk kuviyuaquq takunnagaalu. Taamna NRC savaknaiktuat tapqua nakuruallaktuaq surautat qaritauyaaq atautchikun sanayuaquq, ilurriyaa, aulayuaq surautat-qaritauyaaq taamna inuusim. Ilisaqlusi : [nrc.canada.ca/en/research-development/research-collaboration/programs/project-photo-acoustic-underwater-oil-spill-detection](http://nrc.canada.ca/en/research-development/research-collaboration/programs/project-photo-acoustic-underwater-oil-spill-detection)

## INUUNIARVIK SANAYAA LU

### Uqqituaq nuna qiqumalaaqtuaq nungungayuaq

Atautchikun Wilfrid Laurier Universitylu, NRC sanayuaq qiqauyuq sanayuaq nakuruallaktuaq mikliyuaq nuna qiqumalaaqtuaq nungungayuaq taamna sanayaat nunami. Aturaalu imaq-sitkitaa qiqsaq savaktiilu apun-ungavausigaa sanayuaq, nakuuyuq surautat-qaritauyaaq maqaigaa kiilu uunaqtuq ungavausigaa nuna qiqumalaaqtuaq sulii auyaqmi sivuani savak. Atautchikun, una sanayuaq ikayuqtuaq katitait qiqinguyuaq ukiuqmi atdjigiiktuk savaktiit qiqsaq siku nunami. Una atautchikun ikayuqti ilitaq qiqsaq nuna sila taamna tutqaanaittuquq siagait naqittuq nuna sila akunnirun apqun qipaluaq sanayaa, tadjvangatchiaqtuaq.

Atiq 'inter-seasonal cold redistribution', taamna nakuruallaktuaq qiqauyuq isaktuaq atdjigiiktuk siku-nakuyuuk nuna, takunnagaa ikkalruquq, niglaumaaq ungavausigaa qiqsaq nuna sukun nuna-imaq, tamaita ikayuqtuq uqqituaq nungungayuaq nuna qiqumalaaqtuaquq kinguvatigun ungavausigaa sanayaat Arcticmi. Ilisaqlusi : [nrc.canada.ca/en/research-development/research-collaboration/programs/project-mitigating-permafrost-degradation](http://nrc.canada.ca/en/research-development/research-collaboration/programs/project-mitigating-permafrost-degradation)





NRCmi, taamna Research Centre qaitaa atautchikun allauyuaq taamna qiniraa savaktiit inugiaktut. Ilisaqtuat allauyuatlu tapqua NRC atayuaq Arctic-nuna ingniqiyilu savaktuat, ila aullati, sanayaat, nunami, savaktiit, uqqituaq. Taamna ilitchuriniaqti, ingniqiyilu, savaktiit surautat-qaritauyaq ikayuqti allauyuaq surautat kivgaqtuatlu, ikayuqtuat Canadian savaktiit, pitquyatlu, mikliyuaq takunaqtuq tapqua nakuruallaktuaq sivituyumik savaktuatlu Arctic sanayaat. Taamna allauyuaq illisaknaiqtuat taimaagaa sanalrunlu savaktiit atautchikun allauyuaq ilaksaqtuaq Nakuruallaktuaq savaknaiktuyut ikayuqnaiktuyutlu tamaita savaakmun.

Apiqsisaqtuusi ilisimayaalu atautchikun tapqua savaktiit, apiqsilutin. Ilisimayaa uqaqin uvagut tamapta isumaatinlu, ikayuqtuatlu ilisaqtuaq surautat-qaritauyaq taimagaa.

●●● UQAQTUAQ

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