ᓄᓇᕗᒻᒥ ᐊᕙᑎᓕᕆᔾᔪᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦᑎᑦ ᑐᒃᓯᕆᐅᑦ ᕿᒥᕐᕈᔭᒃᓴᖅ #125890

Sampling treeline trees to develop a temperature reconstruction using quantitative wood anatomy

ᑐᒃᓯᕆᐅᑕᐅᔪᖅ ᖃᓄᐃᑦᑐᓂᖓ:	New
ᐱᓕᕆᐊᕆᓗᐊᖅᑐᐃᓐᓇᖅ ᖃᓄᐃᑦᑐᓂᖓ:	Scientific Research
ᐅᓪᓗᖓ ᑐᒃᓯᕆᐅᑎᓕᐊᕆᓂᐅᑉ:	3/6/2024 12:33:14 PM
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ᑐᓴᐅᒪᓂᖅᓴᖅ

ᖃᓄᐃᑦᑐᑎᓂᒃ ᐱᓕᕆᐊᖃᖅᓂᐊᕆᐊᖃᖅᓯᓚᐅᓂᒃ

ᖃᓄᖅᓱᓇᑎᑐᑦ: The North American Arctic is one of the fastest warming regions in the world, and scientists expect temperatures to continue rising at more than twice the rate of the global average over the next 100 years. Greenhouse gases aren't the whole story, though. Past volcanic eruptions have caused periods of cooler temperatures in North America, so it is important to study both natural and human drivers of changes in the climate. However, the short length of temperature records in this area make it difficult to observe long-term variability in temperature or the impacts of volcanic eruptions in the distant past. This project aims to reconstruct records of past climate from the North American treeline by examining tree rings collected by obtaining tree cores from spruce trees in northern Alaska and Canada to understand and record detailed temperature variations over long time periods. Tree core samples will be studied using a method called "quantitative wood anatomy", where project scientists will take detailed measurements and use information about the thickness and shape of individual cell walls in the tree rings to tell a story of what the climate was like in the past. By conducting this research, scientists at the University of Arizona and the University of Nevada, Reno will be able to fill gaps in the current record of historical summer temperatures and identify the timing and strength of periods when volcanic eruptions contributed to periods of colder than normal summer temperatures. The findings of the research will then be used to contribute to a better overall understanding of what the climate was like in North America many, many years ago before we had weather stations. The project will involve collaboration with undergraduate and graduate students, and will involve discussions with teachers and the community in Kugluktuk, which will bring together a diverse group of voices interested in understanding the past climate in the North American Arctic. To carry out this project will require a team of 3-4 scientists to travel to a location at the northern edge of treeline on the banks of the Coppermine River. The team will use a local guide company to fly us to the nearest location to our proposed sampling site that can be accessed by float plane. We will then travel by raft along the Coppermine River until we get to the site. We will sample 30-40 trees using increment borers, a non-destructive technique that takes a small core sample from each living tree. Coring trees does not cause any lasting harm to living trees. We will also be collecting cross-sections from any dead wood that is present in the same area as the trees we sample. We aim to carry out this sampling during the summer of 2024.

ᐅᐃᓴᑎᑐᑦ: L'Arctique nord-américain est l'une des régions au monde qui se réchauffe le plus rapidement, et les scientifiques s'attendent à ce que les températures continuent d'augmenter à un rythme plus de deux fois supérieur à la moyenne mondiale au cours des 100 prochaines années. Mais les gaz à effet de serre ne représentent pas la seule chose qui s'influence les températures. Les éruptions volcaniques aux passées ont provoqué des périodes de températures dans l'été plus froid en Amérique du Nord. Il est donc important d'étudier les facteurs naturels et humains des changements climatiques. Cependant, la courte durée des enregistrements de température dans cette zone rend difficile l'observation de la variabilité à long terme de la température ou des impacts des éruptions volcaniques dans un passé lointain. Ce projet vise à reconstruire les enregistrements du climat passé de la limite forestière nord-américaine en examinant les cernes des arbres collectés en obtenant des carottes d'épinettes du nord de l'Alaska et du Canada afin de comprendre et d'enregistrer les variations détaillées de température sur de longues périodes. Des échantillons de carottes d'arbres seront étudiés à l'aide d'une méthode appelée « anatomie quantitative du bois », dans laquelle les scientifiques du projet prendront des mesures détaillées et utiliseront des informations sur l'épaisseur et la forme des parois cellulaires individuelles des cernes des arbres pour raconter l'histoire du climat de l'année. le passé. En menant cette recherche, des scientifiques de l'Université de l'Arizona et de l'Université du Nevada à Reno seront en mesure de combler les lacunes dans les enregistrements actuels des températures estivales historiques et d'identifier le moment et la force des périodes pendant lesquelles les éruptions volcaniques ont contribué à des périodes plus froides que la normale. températures estivales. Les résultats de la recherche seront ensuite utilisés pour contribuer à une meilleure compréhension globale du climat en Amérique du Nord il y a de très nombreuses années, avant que nous ayons des stations météorologiques. Le projet impliquera une collaboration avec des étudiants du premier cycle et des cycles supérieurs, ainsi que des discussions avec des enseignants et la communauté de Kugluktuk, qui rassembleront un groupe diversifié de voix intéressées à comprendre le climat passé de l'Arctique nord-américain.Pour mener à bien ce projet, une équipe de 3 à 4 scientifiques se rendra à un endroit situé à la limite nord de la limite forestière, sur les rives de la rivière Coppermine. L'équipe fera appel à une compagnie de guides locale pour nous amener à l'endroit le plus proche de notre site d'échantillonnage proposé, accessible par hydravion. Nous voyagerons ensuite en radeau le long de la rivière Coppermine jusqu'à arriver sur le site. Nous échantillonnerons 30 à 40 arbres à l'aide de foreurs progressifs, une technique non

destructive qui prélève une petite carotte sur chaque arbre vivant. Le carottage des arbres ne cause aucun dommage durable aux arbres vivants. Nous collecterons également des coupes transversales de tout bois mort présent dans la même zone que les arbres que nous échantillonnons. Nous envisageons de réaliser cet échantillonnage au cours de l'été 2024.

ᐃᓄᒃᑎᑐᑦ: ᐅᐊᖕᓇᖕᒐᓂᑦ ᐊᒥᐊᓕᑲᒥᑦ ᐅᑭᐅᖅᑕᖅᑐᖅ ᐃᓚᒋᔭᐅᔪᖅ ᐱᐊᓛᓚᒃᑯᑦ ᐆᓇᖅᓯᕙᓪᓕᐊᓂᖃᖅᑐᓂᒃ ᓄᓇᕐᔪᐊᕐᒥᑦ, ᐊᒻᒪᓗ ᖃᐅᔨᓴᐅᑎᑦ ᓂᕆᐅᒃᑐᑦ ᐆᓇᖅᓯᕙᓪᓕᐊᙱᓐᓇᕐᓂᐊᕐᓗᓂ ᒪᕿᐃᖅᑕᕐᓗᒍ ᐅᖓᑖᓄᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ ᐊᒥᓱᑦ ᐊᑕᐅᓯᕐᒍᖅᓱᑎᑦ 100 ᐅᑭᐅᓂᑦ ᖃᐃᔭᓂᑦ. ᐱᑦᑕᐅᖏᑦᑐᑦ ᐊᓂᐊᔪᑦ ᐱᔪᑑᖏᑦᑐᑦ, ᑭᓯᐊᓂ. ᖃᖅᑲᓂᑦ ᐆᓇᖅᑐᖅ ᓄᓇᐅᑉ ᐃᓗᐊᓂᙶᖅᑐᑦ ᐊᓂᖃᑦᑕᕐᓂᖏᑦ ᓂᓪᓕᓇᕐᓂᖅᓴᐅᑎᑦᑎᓂᖃᖅᓯᒪᔪᑦ ᐅᐊᖕᓇᖕᒐᓂᑦ ᐊᒥᐊᓕᑲᒥᑦ, ᑕᐃᒪᓐᓇᓗᑦ ᐱᒻᒪᕆᐅᔪᖅ ᖃᐅᔨᓴᕐᓗᑎᑦ ᑕᒪᕐᒥᒃ ᓄᓇᒥᑦ ᐱᑎᑦᑎᔪᑦ ᐊᒻᒪᓗ ᐃᓄᖕᓄᑦ ᐱᑎᑕᐅᔪᑦ ᓯᓚᐅᑉ ᐊᓯᕝᕿᖅᐸᓪᓕᐊᓂᖓᓄᑦ. ᑭᓯᐊᓂ, ᓇᐃᑦᑑᖃᑦᑕᕐᓂᖏᑦ ᐆᓇᕐᓃᑦ ᐃᓂᐅᔪᒥᑦ ᐊᔪᕐᓇᖅᑎᑦᑎᔪᑦ ᐊᑯᓂᐅᔪᒥᑦ ᐋᔾᔨᒌᙱᓐᓂᖏᓐᓂᒃ ᐆᓇᕐᓂᐅᑉ ᐅᕝᕙᓘᓐᓃᑦ ᐋᒃᑐᖅᓯᓂᖏᑦ ᖃᖅᑲᓂᑦ ᐆᓇᖅᑐᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓂᑦ ᐊᓂᖃᑦᑕᖅᑐᑦ ᖃᖕᒐᒃᑲᓪᓚᒃ ᐱᓯᒪᔭᓂᒃ. ᐱᓕᕆᐊᖅ ᑐᕌᒐᖃᖅᑐᖅ ᐋᖅᑭᒃᓱᖅᑕᐅᒃᑲᓂᕐᓗᑎᒃ ᓯᓚᐅᑉ ᐆᓇᕐᓂᖕᒐᓄᑦ ᑎᑎᕋᖅᑕᐅᖃᑦᑕᖅᓯᒪᔪᑦ ᐅᐊᖕᓇᖕᒐᓂᑦ ᐊᒥᐊᓕᑲᒥᑦ ᓇᐹᖅᑐᐃᑦ ᑭᓪᓕᖕᒋᓐᓂᑦ ᕿᒥᕿᓗᒋᑦ ᓇᐹᖅᑐᐃᑦ ᐊᖕᒪᓗᖅᑐᖕᒋᑦ ᑲᑎᑕᐅᖃᑦᑕᕐᓗᑎᒃ ᐱᔾᔨᐅᓗᑎᒃ ᓇᐹᖅᑐᐃᑦ ᐃᓗᓐᒋᓐᓂᑦ ᓯᐳᐹᔅ-ᖑᓂᕋᖅᑕᐅᔭᓂᑦ ᓇᐹᖅᑐᓂᑦ ᐅᐊᖕᓇᖅᐸᓯᖕᒐᓂᑦ ᐊᓛᔅᑲᒥᑦ ᐊᒻᒪᓗ ᑲᓇᑕᒥᑦ ᑐᑭᓯᐊᓕᕈᒪᑉᓗᒋᑦ ᐊᒻᒪᓗ ᑎᑎᕋᐅᓯᕆᓗᒋᑦ ᓇᓗᓇᐃᔭᖅᓯᒪᔪᒃᑯᑦ ᐆᓇᕐᓃᑦ ᐊᔾᔨᒌᙱᓐᓂᖏᑦ ᐊᑯᓂᐅᔪᒥᑦ ᐅᑉᐹᔪᓄᑦ. ᓇᐹᖅᑐᐃᑦ ᐃᓗᓐᒋᓐᓂᑦ ᐆᒃᑐᕋᐅᑏᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᐊᖅᑐᑦ ᐊᑐᕐᓗᑎᒃ ᑕᐃᔭᐅᔪᒥᒃ "ᐊᒥᓱᓂᒃ ᕿᔫᑉ ᐃᓗᐊᓅᑦᑐᒃᑖᖏᑦ", ᐱᓕᕆᐊᕐᒧᑦ ᖃᐅᔨᓴᕐᔫᑎᑦ ᓇᓗᓇᐃᔭᖅᓯᒪᔪᒃᑯᑦ ᐆᒃᑐᕋᐃᖃᑦᑕᕐᓗᑎᒃ ᐊᒻᒪᓗ ᐊᑐᕐᓗᑎᑦ ᑐᑭᓯᐅᒪᔾᔫᑎᑦ ᐃᑉᔭᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐋᖅᑭᐅᒪᓂᖓᑕ ᐊᑕᐅᓯᖅ ᐃᓂᐅᔪᖅ ᓴᓂᕋᖏᓐᓂᑦ ᓇᐹᖅᑐᐃᑦ ᐊᖕᒪᓗᖅᑐᖏᓐᓂᑦ ᖃᐅᔨᔭᖕᓇᕐᓂᐊᕐᓗᑎᒃ ᖃᓄᐃᑦᑑᓚᐅᕐᓂᖓ ᓯᓚ ᑕᐃᑉᓱᒪᓂᒥᑦ. ᖃᐅᔨᓴᕐᓗᑎᒃ, ᖃᐅᔨᓇᓱᒃᑏᑦ ᓯᓚᑦᑐᖅᓴᖅᕕᒃᔪᐊᖅ ᐊᐃᕆᓲᓇᒥᑦ ᐊᒻᒪᓗ ᓯᓚᑦᑐᖅᓴᖅᕕᒃᔪᐊᖅ ᓂᕚᑕ, ᕇᓅ-ᒥᑦ ᓇᓗᓇᕐᓂᐅᔪᒥᒃ ᖃᐅᔨᔭᖕᓇᕐᓂᐊᖅᑐᑦ ᓖᓐᓇᐅᔪᖅ ᑎᑎᕋᐅᓯᐅᓯᒪᔪᓂᒃ ᑕᐃᑉᓱᒪᓂᒥᑦ ᐊᐅᔭᒃᑯᑦ ᐆᓇᕐᓂᐅᕙᓚᐅᖅᑐᓂᒃ ᐊᒻᒪᓗ ᖃᐅᔨᓗᒋᑦ ᖃᖓᒃᑰᓚᐅᕐᒪᖔᑕ ᐊᒻᒪᓗ ᓴᙱᓂᕆᓚᐅᖅᑕᖏᑦ ᐅᑉᓗᓂᑦ ᖃᖅᑲᐃᑦ ᐃᓗᐊᓂᑦ ᐆᓇᖅᑐᑦ ᐊᓂᑎᓪᓗᒋᑦ ᐃᑲᔪᐃᓂᖅᓯᒪᙵᓚ ᐅᑉᐹᓚᐅᖅᑐᓂᒃ ᓂᓪᓕᓇᕐᓂᖅᓴᐅᑎᑦᑎᑉᓗᑎᒃ ᐊᐅᔭᒃᑯᑦ ᐆᓇᕐᓂᕆᔭᐅᕙᒃᑐᑐᖃᕐᒥᐅᖕᒐᓂᑦ. ᖃᐅᔨᔭᐅᔪᑦ ᖃᐅᔨᓴᐃᓂᕐᒥᑦ ᐊᑐᖅᑕᐅᓕᕐᓗᑎᒃ ᑕᒪᐃᒃᑯᑦ ᑐᑭᓯᐊᓂᖅᓴᐅᓕᕐᓂᐊᕐᓗᑎᒃ ᖃᓄᐃᑦᑑᓚᐅᕐᒪᖔᑦ ᓯᓚ ᐅᐊᖕᓇᖕᒐᓂᑦ ᐊᒥᐊᓕᑲᒥᑦ ᐊᒥᓱᑲᓪᓚᐃᑦ ᐅᑭᐅᑦ ᐊᓂᒍᖅᓯᒪᓕᖅᑐᓂᑦ ᓯᓚᓕᕆᕝᕙᖅᖄᖅᑎᓇᒍ. ᐱᓕᕆᐊᖅ ᐱᓕᕆᐊᕆᓂᐊᕐᓗᒍ ᐱᓕᕆᖃᑎᖃᕐᓂᐊᖅᑐᑦ ᐃᓕᓐᓂᐊᖅᑎᓂᒃ ᐊᒻᒪᓗ ᐃᓕᓐᓂᐊᕌᓂᒃᓯᒪᔪᓂᒃ, ᐊᒻᒪᓗ ᐅᖃᓪᓗᓇᒃᓴᖃᑎᖃᕐᓗᑎᒃ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔨᓂᒃ ᐊᒻᒪᓗ ᓄᓇᓕᖕᒥᐅᓂᑦ ᖁᕐᓗᖅᑐᒥᑦ, ᑲᑎᑦᑎᓂᐊᖅᑐᑦ ᐊᔾᔨᖏᙲᑦᑐᓂᒃ ᐃᓄᖕᓂᒃᑳᓘᖅᑐᓂᑦ ᐃᓱᒪᒋᔭᐅᔪᓂᒃ ᑐᑭᓯᐊᓕᕈᒪᔪᓂᒃ ᑕᐃᑉᓱᒪᓂᒥᑦ ᓯᓚᕆᔭᐅᕙᓚᐅᖅᑐᒥᑦ ᐅᐊᖕᓇᖕᒐᓂᑦ ᐊᒥᐊᓕᑲᒥᑦ ᐅᑭᐅᖅᑕᖅᑐᒥᑦ. ᐱᓕᕆᐊᕆᓂᐊᕐᓗᒍ ᐱᖕᒐᓱᓂᑦ ᓯᑕᒪᓄᑦ (3-4) ᖃᐅᔨᓇᓱᒃᑎᓂᒃ ᐃᓂᐅᔪᒧᙵᐅᔪᖃᕆᐊᖃᕐᓂᐊᖅᑐᑦ ᐅᐊᖕᓇᖅᐸᓯᖕᒐᓂᑦ ᐃᓱᐊᓂᑦ ᓇᐹᖅᑐᐃᑦ ᑭᓪᓕᖕᒋᓐᓄᑦ ᐃᒪᐅᑉ ᖃᓂᑕᖕᒐᓂᑦ ᑳᐳᒪᐃᓐ ᑰᑉ. ᖃᐅᔨᓇᓱᒃᑏᑦ ᐊᑐᕐᓂᐊᖅᑐᑦ ᐊᐅᓪᓚᕈᔾᔨᖃᑦᑕᖅᑐᒥᑦ ᑲᓪᐸᓂᒥᒃ ᑎᖕᒥᓲᒃᑯᑦ ᖃᓂᓛᒧᙵᐅᓂᐊᕐᓗᑕ ᐆᒃᑐᕋᐃᕝᕙᐅᔭᒪᔭᒧᑦ ᑎᑭᑕᐅᔭᖕᓇᖅᓱᓂ ᐃᓖᓄᑦ ᒥᖃᑦᑕᖅᑐᖅ ᑎᖕᒥᓲᒧᑦ. ᕿᔭᖕᓂᑦ ᐊᑐᕐᓗᑕ ᑳᐳᒪᐃᓐ ᑰᒃᑯᕐᓗᑕ ᑭᓯᐊᓂ ᐃᓂᐅᔭᕐᒧᑦ ᑎᑭᒃᑯᑉᑕ. ᐆᒃᑐᕋᐃᓂᐊᖅᑐᒍᑦ 30-40 ᓇᐹᖅᑐᓂᒃ ᐊᑐᕐᓗᑕ ᐆᒪᔪᐃᑦ ᓇᐹᖅᑐᐃᑦ ᐃᓗᐊᓂᑦ ᐲᖅᓯᔾᔪᑎᓂᒃ, ᓱᕋᐃᓂᖃᖃᑦᑕᙱᑦᑐᑦ ᒥᑭᑦᑐᒥᒃ ᐱᖃᑦᑕᕐᓗᑎᒃ ᐆᒃᑐᕋᐅᑕᐅᓂᐊᖅᑐᒥᒃ ᐊᑐᓂ ᐆᒪᔪᓂᑦ ᓇᐹᖅᑐᓂᙶᖅᑐᓂᑦ. ᐃᓗᐊᓃᑦᑐᓂᒃ ᓇᐹᖅᑐᐃᑦ ᐲᔭᐃᓂᖅ ᐊᑯᓂᐅᔪᒥᒃ ᐋᓂᖅᓯᓂᖃᖃᑦᑕᙱᑦᑐᑦ ᐆᒪᔪᓂᒃ ᓇᐹᖅᑐᓂᑦ. ᑲᑎᑦᑎᓂᐊᕐᒥᔪᒍᑦ ᐃᓚᖕᒋᓂᒃ ᑐᖁᖓᔪᓂᑦ ᕿᔪᖕᓂᙶᖅᑐᓂᒃ ᑕᐃᒪᐅᔪᓂᒃ ᐃᓂᒋᔭᖕᒋᓈᑦᑐᓂᒃ ᓇᐹᖅᑐᓂᒃ ᐆᒃᑐᕋᐅᑎᓂᒃ ᐱᕚᕆᔭᑉᑎᖕᓂᑦ. ᐆᒃᑐᕋᐅᑎᐅᓂᐊᖅᑐᓂᒃ ᐱᓕᕆᔪᒪᔪᒧᑦ ᐊᐅᔭᖕᒐᓂᑦ 2024.

Inuinnaqtun: Nunaqyuami Ukiuqtaqtuani atauhiq kayumiktumik unakpalianiqhaq nunani hilaqyuami, naunaiyaiyit nahuriyut unaqnigit uunakpalianiginik amigaitqiyanik malruiqtunigani hilayuami amigainiqhani atuqtukhani 1-hanani ukiuni. Halumaitut puyuvaluit tamaitaugitut unipkaami, kiheani. Taimani nunap qaraqnigit iluanit qunmut pijutauyut niglaumaniganik Nunaqyuami, atuqniqatiaqtuq ilituqhariagani tamaknik nunami inuilu pijutainik aalaguqniganik hilap. Kihiani, naitut unaqniganik/niglaumaniganik naunaipkutit uvani nunami ayuqhautauyut nalunaiyariagani hivituyumik taimainiginik unaqniginik/niglaumaniginik aktuniginikluniit nunap iluanit qagaqniginik taimaniraaluk. Una havaaq pijutaunahuaq nalaunahuariagani naunaipkutit taimani hilap qanuriniganik Nunaqyuami napaaqtuqaqnigani ilituqhaqlugit napaaqtut iluit kaivyariktuinit ahiyunit napaaqtunit ukiuqtaqtuani Alaska-mi Kanatamilu kagiqhiyaagani naunaiyaklugilu unaqniganik/nigalaumaniganik qanuriniginik taimaniraaluk amihuni ukiuni. Napaaqtut iluinik naunaiyagakhat ilituqhaqtauniaqtut atuqlutik "amigaitunik qiyuknik iluinik", ukunani havaami naunaiyaiyit naunaiyaitiaqniaqut uuktaqlutit atuqlugilu hivuniqhijutit hilikniginik qanuriniginiklu atuni kaimalurikninuagit iluit napaaqtut unipkaaqaqmata hilap qanurinigani taimaniraaluk ukiuni atuqhimayuni. Havaarinigani uuma ilituqhautip, naunaiyaiyit Ilihaqvikyuamit Arizona-mi, Navada-mi, Reno-milu iliurainiaqut ilaguqaqnigni taya naunaipkutini taimani auyami hilap unaqniganik/ niglaumaniganik nalunaiqlugilu hunautilugu hivituniginiklu nunap iluanit qaraqniginik qunmut pijutauyut niglaumatqiyauniginit atuqtauvaktumit auyami unaqniganik/ niglaumaniganik. Nalunaiqtauyut ilituqhautimi atuqtauniaqtut ilaliutilutik kagiqhivalirutikhanik tamaini qanuginiganik hilap Nunaqyuami taimaniraaluk ukiuni piqaliriaqtinata hilalikijutinik ila naunaiyautinik. Havaaq ilauviuniaqtuq havaqatiriikniginik ilihaqpaaliqhimaaqtut ilihaqtaaqhimayulu ilihaqtunik, ilaqaqlunilu uqaqatiriikniginik ilihaiyit nunagiyauyuqlu Quqluqtumi, katijutauniaqtuq aalatqiinit ikayuqtiriinit nipainik ihumagiyaqaqtunik kagiqhivaaliriagani taimani hilagiyauyuq Nunaqyuami Ukiuqtaqtumi. Havaariyaagani una ikayuqtiriigutauniaqtuq pigahunit hitamaniluniit naunaiyaiyinik aulaariagani inikhamut ukiuqtaqtumi napaaqtuqaqniganut hinaani Quqluqtuup Kuugani. Ikayuqtiriit atuqniaqtut nunagiyauyumit tikuaqtuiyukhamik havakviuyumik tikmiakut akyaqtauyaaptikni qaniniqhamut atulirumayaptiknik naunaiyaivikhamik tikitaulaaqtumik tikmiakut qayalikmik. Aulaaqniaqtugut tilrautaqtukut Quqluqtuup Kuugavut tikilvikhaptiknut

inikhami. Naunaiyainiaqtugut 30-nit 40-nut napaaqtunik atuqluta ikuutaqnik, hugautaugituq ahivaijut mikiyumik kaimaluriktunik nalruyumik ilituraqtakhamik atuni nauhimaaqtumit napaaqtumit. Iluit ahivaqtiriagani napaaqtut ihuilujutaugituq nauhimaaqtuni napaaqtuni. Katitiriniaqtugulu ilaginik ukunanga tuqugayunit napaaqtunit talvaniitunik nunami atautimi ilagilugit napaaqtut ilituqhaqtaptikni. Havaariyumayaqut una atuliqat auyaknigani ukiup 2024-mi.

Personnel

Personnel on site: 5

Days on site: 10

Total Person days: 50

Operations Phase: from 2024-06-21 to 2024-08-21

ᐱᓕᕆᐊᕆᔾᐅᓂᐊᖅᑐᑦ

ᓇᒥ	ᖃᓄᐃᑦᑑᒥᑦ ᐱᓕᕆᐊᖄᕐᓂᐊᖅᐸ	ᑭᑯᑦ ᓄᓇᕐᑰᑖᓂ	ᑐᓴᐅᒪᔾᒃᓴᑦ ᓄᓇᐅᐸ ᖃᓄᖅ ᐊᑐᒐᐅᓚᐅᖅᓯᒪᔪᕆᐊᖕᒐᓐᓂᒃ	ᐃᑦᓴᕐᓂᑕᖃᕐᕕᐅᕙᓚᐅᖅᐸ ᐃᓄᖕᓄᑦ ᓇᔪᖅᑕᐅᖃᑦᑕᕐᓂᑰᕙᓗ ᑕᐃᑦᓱᒪᓂᑐᖃᐅᓕᖅᑐᖅ	ᖃᓂᓐᓂᖅᐹᖅ ᓄᓇᓕᒋᔭᐅᔪᖅ ᐊᒻᒪᓗ ᓴᐳᒻᒥᒃᓲᕕᐅᕙᓗ ᓱᓇᓄᑦ
We will be sampling sites along the Coppermine River that were previously sampled in the 1980s. These are forested sites right at treeline.	Scientific/International Polar Year Research	Crown	Samples were collected from this site for tree ring analysis in the 1980s. We wish to update the collections to understand how climate change has influenced trees since that time and obtain additional samples to allow for improved long-term temperature reconstructions.	Unknown	Kugluktuk is the nearest community.

ᓄᓇᓕᐅᑉ ᐃᓚᐅᖃᑕᐅᓂᖓ ᓄᓇᓖᓪᓗ ᐊᕕᒃᑐᖅᓯᒪᐅᕐᓂᖓᓄᑦ ᐃᑲᔪᑕᐅᔪᓐᓇᖅᑐᑦ

ᓄᓇᓕᒋᔭᖅ	ᐊᑏᑦ	ᑲᑐᔾᔨᐊᖃᑎᒌᒋᔭᖅ	ᖃᖓᓗ ᑐᓴᖅᑎᑕᐅᓚᐅᕆᐊᖕᒥᓐᓂᒃ
ᖁᕐᓗᖅᑐᖅ	Kugluktuk Angoniatit Association	Kugluktuk Angoniatit Association	2024-03-07

ᓚᐃᓴᓐᔩᑦ ᐱᒍᓐᓇᐅᑏ ᐊᖏᖅᑕᐅᓯᒪᔪᑦ

ᓇᒦᒋᐊᖏᓐᓂᒃ ᐱᓕᕆᐊᕆᕝᕕᐅᓂᐊᖅᑐᑦ ᑎᑎᕋᕐᔪᒋᑦ:

ᓚᐃᓴᓐᔩᑦ ᐱᒍᓐᓇᐅᑏ ᐊᖏᖅᑕᐅᓯᒪᔪᑦ

ᒐᕙᒪᒋᔭᐅᔫᑉ ᐊᕕᒃᑐᖅᓯᒪᐅᕐᓂᖓᓐᓂ ᒪᓕᒐᕐᓅᖓᔪᓂᒃ ᐱᕐᑯᔭᕐᓅᖓᔪᓂᒡᓗ ᑲᒪᔩᑦ ᐱᔪᓐᓇᐅᑎᑖᕈᑎᓂᒃ ᓚᐃᓴᓐᓯᓄᓪᓗ ᑲᔪᓯᒃᑲᐃᔩᑦ	ᖃᓄᐃᑦᑐᓪᓚᕆᐅᕙ ᓚᐃᓴᓐᓯᑖᕈᑕᐅᔪᖅ ᐱᔪᓐᓇᐅᑎᑖᕈᑕᐅᔪᖅ ᐊᖏᖅᑕᐅᔪᕐᓘᓐᓃᑦ	ᒫᓐᓇ ᖃᓄᐃᓕᖓᕙ	ᐅᓪᓗᒥ ᑐᓂᔭᖅ/ ᑐᒃᓯᖅᑑᑕᐅᓚᐅᖅᓯᒪᔪᖅ	ᑭᒡᓕᖃᕐᕕᖓ
ᓄᓇᕗᒥ ᖃᐅᔨᓴᖅᑐᓕᕆᓃᒃᑯᑦ	Required for scientific research in Nunavut	Applied, Decision Pending		
ᓄᓇᕗᑦ ᒐᕙᒪᖓ, ᐊᕙᑎᓕᕆᓃᒃᑯᑦ	Required for plant sampling	Applied, Decision Pending		

Project transportation types

Transportation Type	ᓲᓇᒧᑦ ᐊᑐᒐᐅᓂᐊᖅᐸ	Length of Use
Air	We will travel by chartered bush plane to access our site	
Water	We may need to travel by canoe to access some sites	
Land	We will hike on foot as needed.	

Project accomodation types

Temporary Camp

ᐊᑐᒐᐅᓂᐊᖅᑐᖅ

ᐱᕐᑯᑦ ᐊᖏᔪᖅ ᐊᑐᖅᑕᐅᓂᐅᓴᔪᖅ ᐃᓚᖃᓯᐅᑎᓗᒋᑦ ᐃᑰᑕᐃᑦ, ᒥᓪᓗᐊᕈᑏᑦ, ᖃᖓᑕᓲᖅ, ᓄᓇᓯᐅᑦ ᐊᓯᖏᓪᓗ

ᐊᖏᔪᖅ ᐱᕐᑯᑦ ᐊᑐᒐᐅᓂᐊᖅᑐᖅ ᖃᓄᐃᑦᑑᓂᖓ	ᖃᑦᓯᐅᕙᑦ	ᐊᖏᓂᖏᑦ - ᐳᖅᑐᓂᖏᑦ	ᓱᓇᒧᑦ ᐊᑐᒐᐅᓂᐊᖅᐸ
canoe	1	18	traveling on the Coppermine River
Chartered aircraft	1	unknown	getting to the site
Chainsaw	2	16	Sampling deadwood
increment borers	5	5cm diameter x 30 cm length	sampling living trees
2 burner propane stove	1	20 x 20	cooking
tent	4	50 x 50	sleeping
Firearm	1	10	Bear protection
hand pump	1	5 x 5	collecting drinking water

ᑎᑎᕋᐅᓯᕆᓗᒍ ᐅᖅᓱᒃᓴᐃᑦ ᐊᑦᑕᓇᖅᑐᖅᑕᓖᓪᓗ ᐊᑐᖅᑕᐅᓂᐊᕐᓂᖏᑦ

ᓱᓇᒧᑦ ᐅᖅᓱᒃᓴᒡᒋᐊᖅ ᐊᑐᒐᐅᓂᐊᖅᐸ	ᖃᓄᐃᑦᑐᓪᓚᕆᐅᕙ ᐅᖅᓱᒃᓴᒡᒋᐊᖅ	ᖃᑦᓯᐅᕙᑦ ᐅᖅᓱᒃᓴᖃᐅᑏᑦ	ᐆᒃᓴᐅᑉ ᐃᒪᖃᖅᑎᕆᔪᓐᓇᕐᓂᖓ	ᑲᑎᓪᓗᒍ	ᐆᒃᓴᐃᑦ ᐊᒥᓲᓂᖏᑦ	ᓱᓇᒧᑦ ᐊᑐᒐᐅᓂᐊᖅᐸ
Gasoline	fuel	1	10	10	Liters	fuel for chainsaw
Propane	fuel	1	10	10	Liters	cooking
	fuel	1	0.5	0.5	Liters	bar oil for chainsaw
WD-40	hazardous	1	0.2	0.2	Liters	Cleaning increment borers

ᐃᒪᖅ ᐊᑐᖅᑕᐅᔪᒫᖅᑐᖅ

ᐅᓪᓗ ᑕᒫᖅ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᖅ	ᖃᓄᖅ ᐃᒥᖅᑕᖃᑦᑕᕐᓂᐊᖅᐸᑦ	ᓇᑭᑦ ᐃᒥᖅᑕᖃᑦᑕᕐᓂᐊᖅᐸᑦ
20	via water jerry can.	from the river.

ᐊᖏᑕᑯᑦ

ᐊᖏᑕᑯᓕᓂᐊᕐᓂᖅ

ᐱᓕᓐᐊᓐᖏᐅᔪᒪᔪᒍᑦ ᐱᓕᓐᐊᓐᖏᐅᓂᐊᖅᑐᖅ	ᖃᓄᐃᑦᑐᖅ ᐊᖏᑕᑯᖅ	ᖃᓄᐃᑎᒋ ᐊᖏᑕᑯᑦ ᓴᖅᑭᐊᓂᐊᖅᑐᓐᖏᐅᐳᑦ	ᖃᓄᐃᖅ ᐊᖏᑕᖅᑕᐅᓂᐊᖅᓯ	ᓴᑐᒪᖅᓴᐅᑎᖏᓴᖏᓐᓂᐅᓂᐊᖅᑐᑦ
Camp	ᖃᐃᖅᑕᓕᓐᓂᖅ	5 lbs per day	Will bring biodegradable human waste bags that will be packed out at the end of our project.	Biodegradable human waste bags.

ᐊᓯᑎᒥᐅᑕᓂᖅᑐᑦ ᐊᖏᑐᖅᑕᐅᓱᒪᔪᑦ

The impacts of our expedition will be what might normally be expected from a small group of people camping along the river. We will be a camp of 3-5 people who will pack in and pack out all waste and leave a minimal footprint. Our scientific sampling methods are non-destructive. We take increment cores (small samples drilled out of a tree) that leave no lasting damage to the trees. We will only cut samples from dead wood and driftwood from around the site.

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

ᐃᓕᓴ ᐊᔪᑎᐅᐸ ᖃᓄᐃᓐᑐᓕᕆᐅᓂᖏᓐ: ᓄᓇᐅᐸ ᖃᓄᐃᓐᑐᑐᓂᖏᓐ

ᐃᓕᓴ ᐊᔪᑎᐅᐸ ᖃᓄᐃᓐᑐᓕᕆᐅᓂᖏᓐ: ᐅᒪᔨᖅᑕᖃᖅᓂᖏᓐ

ᐃᓕᓴ ᐊᔪᑎᐅᐸ ᖃᓄᐃᓐᑐᓕᕆᐅᓂᖏᓐ: ᐃᓄᓕᕆᓂᕐᒧᑦᓴᐅᔨᑦ-ᐱᔪᓕᕆᔨᕆᓂᕐᒧᑦᓴᐅᔨᑦ

Miscellaneous Project Information

ᓇᓗᓇᐃᖅᑕᐅᓂᖓᑦ ᐊᐅᑐᖅᑕᐅᓯᒪᔨᑦ ᖃᓄᐃᓐᑐᑐᓂᖓᑦ ᐸᓪᐅᒥᐠᔨᓯᖅᑕᐅᓂᐊᖅᓂᖓᓕᓪᓗ

We plan a low impact expedition to sample trees at treeline. We will be a camp of 3-5 people who will pack in and pack out all waste and leave a minimal footprint. Our scientific sampling methods are non-destructive. We take increment cores (small samples drilled out of a tree) that leave no lasting damage to the trees. We will only cut samples from dead wood and driftwood from around the site.

Cumulative Effects

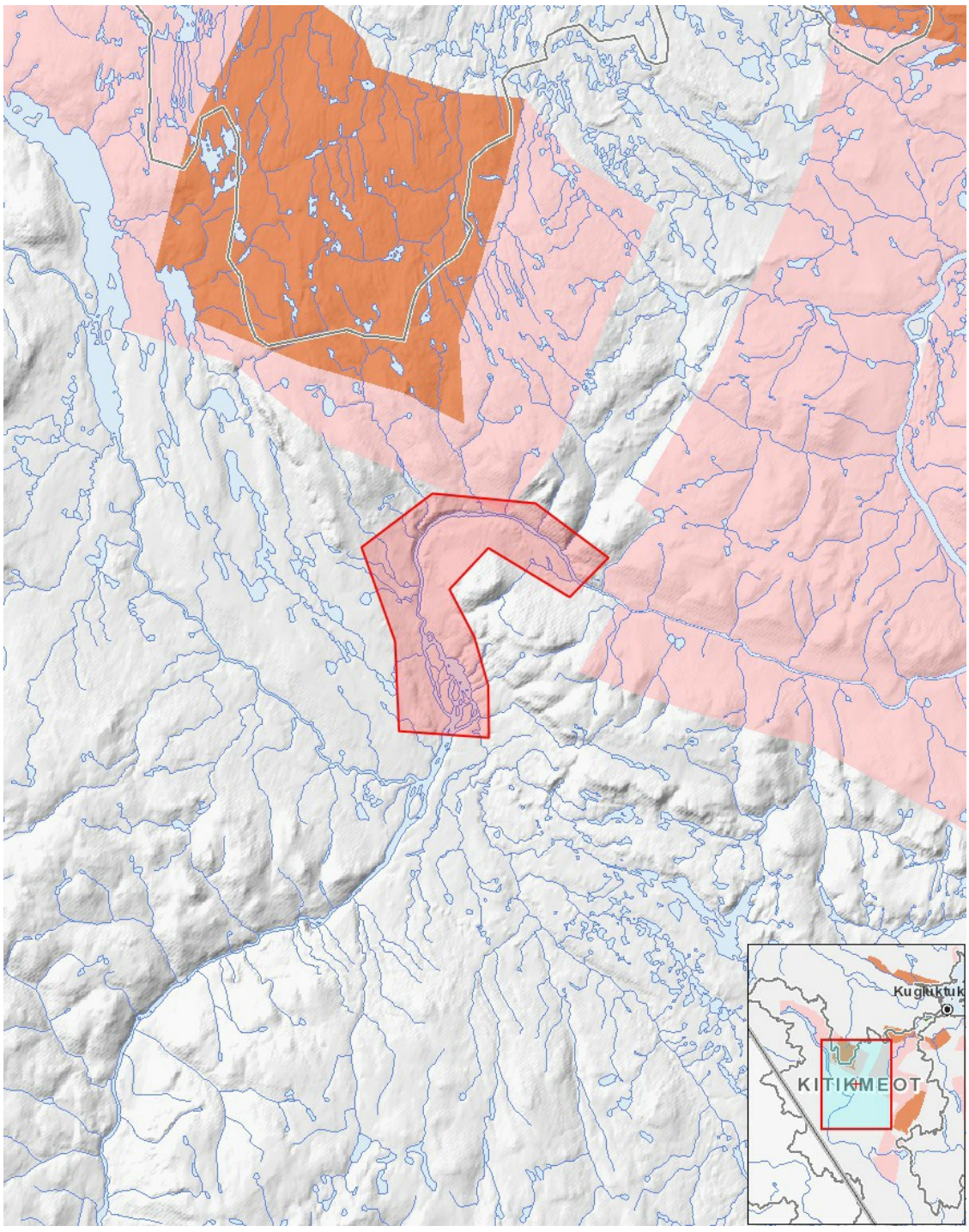
Impacts

ᓄᓇᓕᐃᖅᑕᐅᓂᖏᑦ ᐊᐸᑎᒥᐅᑕᓀᑦᑐᑦ ᐊᖅᑐᖅᑕᐅᓱᒪᔪᑦ

	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
ʔᓇᓂᖅ																									
-			-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
ᐅᓴᖃᑦᑕᕐᓂᖅ																									
Scientific/International Polar Year Research			-	-	-	-	-	-	-	-	-	-	-	-		M	-	-	-	-		-	-	-	-	-
ᐃᑐᑦᑎᓗᓂᖅ																									
-			-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = ᐊᑲᐅᓴᑭᑎᔨᓐᓇᖅᑐᑦ, N = ᐊᑲᐅᓯᕐᔪᐊᑕᐅᔨᓐᓇᖅᑐᑦ <ᓪᓚᐅᒥᔪᕐᓂᖅᑐᑕᐅᔨᓐᓇᖅᑐᕐᓂᑐᑦᓗᓪᓕ, M = ᐊᑲᐅᓯᕐᔪᐊᑕᐅᔨᓐᓇᖅᑐᑦ <ᓪᓚᐅᒥᔪᕐᓂᖅᑐᑕᐅᔨᓐᓇᖅᑐᑦᓗᓪᓕ, U = ᖃᐅᔨᒪᓐᓇᕐᑐᑦ)

ᓇᒋᒪᖏᓗᖅ ᐱᓕᕆᐊᒃᓴᐅᔪᖅ



List of Project Geometries

1 polygon	We will be sampling sites along the Coppermine River that were previously sampled in the 1980s. These are forested sites right at treeline.