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ABSTRACT:
ECONOMIC DEVELOPMENT AND SOCIAL TRANSFORMATIONS

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Protecting cultural heritage and community roots

It is now a generally accepted fact that climate change is happening faster in the Arctic than in other regions of the world. The changes we see are milder temperatures, more, and wetter, precipitation, more stormy weather and less sea ice. All these changes have great effects on the cultural heritage of the Arctic, both directly and through the more indirect effect of greater accessibility to areas previously protected by sea ice hindrance. International history can loose its concrete manifestations and local communities can lose their tangible roots.

Direct effects of climate change on cultural heritage

The fixed (i.e. objects that cannot be removed to museums) cultural heritage of the Arctic consists of many types of remains of earlier human activities, both from the indigenous populations and from other visiting cultures. Examples include various types of early Inuit dwellings, explorers' campsites, graves and memorials, wooden huts, early mining installations, shipwrecks. While previously often described as "frozen in time", we now see that the milder, wetter climate is accelerating rotting, mould growth, rusting and disintegration of heritage sites.

The majority of sites in the Arctic are to be found along the coasts and the lack of sea ice – in particular the ice foot attached to the shoreline – together with more wind and wave effect, is seriously accelerating the erosion of shorelines with resulting loss of heritage sites. This can be seen all around the Arctic and affects heritage from 1200 year old native cemeteries (Nuvuk, Barrow, Alaska) to late 19th century whaling stations (Herschel Island, Yukon) and early 20th century explorers' sites in the Russian Arctic (Mys Flora, Franz Josef Land).

Knowledge gaps and action needs
In both the Arctic and Antarctic scientists are working to address the challenges mentioned above, which involve multi-disciplinary research from both science and the humanities. Methods to save sites from destruction by erosion are sorely needed.

Indirect effects of climate change on cultural heritage
The Arctic has received much publicity in recent years, and together with the fact of retreating sea ice, this has led to an extremely rapid increase in the tourist industry. Heritage sites which were previously preserved by their inaccessibility are now being exploited, for better and for worse. Considering the attraction of heritage sites, local communities can and do use them as a source of new income. While this can greatly benefit a community, it can also compromise both the community and the heritage sites. Heritage sites lying far from any settlements can be seriously damaged by increased visitation.
Knowledge gaps and action needs
The effects on and mitigation of increased visitation on sites, including general wear and tear and the disturbance or removal of objects needs to be better researched. Information concerning positive and negative effects of the exploitation of community heritage should be spread to potential new tourism areas.

Sustainable heritage?
Management plans for particularly valuable sites must be developed and enforced. Tourist guides and communities must cooperate to the advantage of both tourists and communities. Methods to stagger erosion and climate degradation of heritage sites must be developed and applied. Heritage sites generally should be well documented in case of unavoidable loss.

Recommendations:

- The preparation of an international assessment of significant heritage sites around the Arctic to present an overview to UNESCO and the Arctic Council of sites of particular international value that need special attention paid in the future to management and protection. cf: CAFF's (Conservation of Arctic Flora and Fauna) Arctic Biodiversity Assessment project.
- The development of a concentrated, international and multi-disciplinary programme to address the challenge of the increasing erosion of coastal cultural heritage sites should be initiated.