

FOREWORD

by the Chief Scientist



Until recently, most Arctic biodiversity was relatively unaffected by negative impacts from human activities. Only over-exploitation of certain animal populations posed serious threats, such as the extermination of Steller's sea cow, the great auk, the Eskimo curlew and a number of whale populations in recent centuries, in addition to the contribution that humans may have made to the extermination of terrestrial mega-fauna in prehistoric times.

Human impacts, however, have increased in modern times with increasing human populations in much of the Arctic, modern means of rapid transport, modern hunting and fishing technology, increasing exploration and exploitation of mineral resources, impacts from contaminants and, most importantly, with climate change, which is more pronounced in the Arctic than elsewhere on the globe.

There is no inherited capacity in human nature to safeguard the Earth's biological assets – moral and intellectual strength are needed to achieve conservation and wise use of living resources through cultural and personal ethics and practices. Sustainability is a prerequisite for such balance, but it does not come without restraint and concerted efforts by all stakeholders, supported by mutual social pressure, legislation and law enforcement.

The king eider is one of the fascinating species endemic to the Arctic. Photo: Patrick J. Endres/
AlaskaPhotoGraphics.com

The Arctic is changing rapidly with shorter winters, rapidly melting sea ice, retreating glaciers and expanding sub-Arctic vegetation from the south. If greenhouse gas emissions are not reduced, Arctic biodiversity will be forever changed, and much may disappear completely.

On 18 May 2011, 50 prominent thinkers, among them 15 Nobel Prize winners, issued The Stockholm Memorandum, which among other things states that:

Science indicates that we are transgressing planetary boundaries that have kept civilization safe for the past 10,000 years. Evidence is growing that human pressures are starting to overwhelm the Earth's buffering capacity. Humans are now the most significant driver of global change, propelling the planet into a new geological epoch, the Anthropocene. We can no longer exclude the possibility that our collective actions will trigger tipping points, risking abrupt and irreversible consequences for human communities and ecological systems. We cannot continue on our current path. The time for procrastination is over. We cannot afford the luxury of denial. We must respond rationally, equipped with scientific evidence.

Among the many current and projected stressors on Arctic biodiversity addressed in this report is that of invasive species. However, if we want to do something about the many problems facing nature and biodiversity in the Arctic, we need to focus on the impacts of the most globally 'invasive species' of all: *Homo sapiens*.

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