

uv radiation and arctic pdf

A 25 year long Climate Data Record of UV radiation at Barrow is available. The 2011 "Arctic ozone hole" led to large increases in UV radiation, and such events may reoccur in the future.

Ultraviolet radiation in the Arctic: an update

1. Summary The main objective of the AON project "Ultraviolet Radiation in the Arctic" is to perform observations of solar UV radiation at Barrow, Alaska, and Summit, Greenland over the period ...

Ultraviolet Radiation in the Arctic | Request PDF

Ultraviolet (UV) Radiation in the Arctic and Unusual Mortality Events in Marine Mammals Arctic seals need some sunscreen For the last 30+ years I have been working in Alaska on climate change as it relates to top predators, harmful algal blooms and contaminants.

Ultraviolet Radiation (UV) - Environment Alaska

A potential role for UV-B exposure in these cancers in the Arctic needs to be explored. In view of the high levels of POPS in some Arctic regions, potential interactions between the immunosuppression caused by some of these pollutants and the effects of UV-B need to be investigated.

UV-B radiation: a health risk in the Arctic?: Polar

Visible Light and UV Radiation 71 With the sun at its zenith, about 10% of the total solar radiation and about 30% of UVB and UVA is diffuse. For a solar elevation angle of 20° about 20% of the total radiation, 70% of UVA and almost 80% of UVB, is diffuse.

7 Visible Light and UV Radiation - Universitetet i oslo

PDF | To assess the potential impact upon the Arctic ecosystem of increased UV radiation caused by the ozone depletion, a model is needed that accounts for low solar heights, high ice cover albedo ...

(PDF) A model for calculation of ultraviolet radiation

Hanelt D, Wiencke C, Nultsch W (1997) Influence of UV radiation on the photosynthesis of Arctic macroalgae in the field. J Photochem Photobiol B Biol 38:40-47 CrossRef Google Scholar Hegseth EN (1998) Primary production of the northern Barents Sea.

UV Radiation Effects on Phytoplankton Primary Production

Arctic ecosystems are very sensitive to exposure to UV radiation, and even small changes in future UV levels may induce significant responses, e.g., changes in phytoplankton communities, color dissolved organic

Projected changes in solar UV radiation in the Arctic and

Although there are some biological processes that are supported by UV radiation, most organisms are stressed by it in various ways, e.g. through DNA damage. Top international experts present an integrated overview of UV radiation and its effects on terrestrial, freshwater and marine Arctic biota.

UV Radiation and Arctic Ecosystems | Dag Hessen | Springer

Climate and UV Radiation Climate Change and UV-B Impacts on Arctic Tundra and Polar Desert Ecosystems At the last glacial maximum, vast ice sheets covered many continental areas. The beds of some shallow seas were exposed thereby connecting previously separated landmasses. Although some areas were ice-free and supported a

Past changes in arctic terrestrial ecosystems, climate and

Exclusion of UV radiation significantly affected the xanthophyll cycle but not the other photosynthetic pigments analysed. Under UVA/B exclusion, the epoxidation state of xanthophyll cycle pigments (EPS) was increased and violaxanthin-antheraxanthin-zeaxanthin (VAZ) pool size was unchanged in April, whereas EPS remained unchanged and the VAZ pool size was reduced in May and June.

UV Radiation and Subarctic Ecosystems - Arctic Centre

thetic active radiation, UV-A radiation, UV-B radiation). Our results reveal ecotypic differentiations in the stress responses of zoospores of *L. digitata* and *S. latissima* from the Arctic and North Sea.

Interactive effects of UV radiation and temperature on

In the field, the species inhabiting the intertidal (e.g. *Fucus distichus*) or the upper sublittoral zone (e.g. *Alaria esculenta*, *Devaleraea ramentacea*) also frequently have to cope with temporarily high ultraviolet radiation (UVR) and high intensities of photosynthetically active radiation (PAR).

UV Radiation and Arctic Marine Macroalgae | SpringerLink

Increased stratospheric ozone depletion and the corresponding increase in ground levels of UV radiation as well as ambient, "natural" UV radiation as a key ecological factor in the Arctic spring and summer are discussed in detail.

UV Radiation and Arctic Ecosystems eBook by

Multiple stressors in the Arctic, including pollutants, climate change and water accessibility may combine non-linearly with the stress from increased UV radiation. Many of these stressors are expected to remain significant or, as is the case for climate change, increase in the Arctic in the coming years.

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