biological, chemical and physical information. Their accumulation at the bottom of the ponds, one layer on top of the next, produces a vertically arranged historic timeline. Rather like tree rings, which reflect the growing conditions of

A CHANGING WORLD

Fly over the high Arctic in summer and you will see a landscape speckled with shallow ponds, some ringed by mossy wetlands. Fro zen for most of the year, these ponds melt for a few months and become biodiversity hotspots teeming with plants, animals and microor ganisms. The Arctic's isolation and extreme

variations to learn more about how the region had changed over thousands of years.

In 1994, we discovered some unexpected changes in the diatom collections of these Arctic ponds. At one site, we sank a hollow tube about 100 cm into the pond bottom, extracted a sediment core and sliced it into sections. By using dating techniques based on the radioiso topes carbon-14 and lead-210, we knew that this particular core stretched back about 6,500 years. For most of that time, the same three or four diatom species had dominated the pond. But around the mid- to late-nineteenth century, the diatom community changed dramatically: it became more diverse and complex, a sign that

