

CLIMATE COLLAPSE

Growing Evidence of Scary Change

FORTUNE

Monday, January 26, 2004

By David Stipp

Scientists used to think that major climate changes, like the onset of an ice age, took thousands of years to unfold. Now they know such dramatic transitions can occur in less than a decade. The probable trigger of abrupt climate changes, at least in the Northern Hemisphere, is the shutdown of a huge ocean current in the Atlantic Ocean. The current is driven by dense, salty water that flows north from the tropics and sinks in the North Atlantic. If fresh water is pumped into the northerly part of the current—which can occur as global warming melts Arctic ice—its salinity drops, making it less dense. This diminishing density can prevent the water from sinking in the North Atlantic, stopping the current's flow. Much of Europe and the U.S. could become colder and drier if that happened.

Many details of this big picture remain hazy, including whether recent global warming threatens to shut down the Atlantic current. But over the past few years, scientists have detected disquieting trends:

- In tandem with rising average temperatures across the globe, 3% to 4% of the Arctic ice cap has melted per decade since about 1970.
- Recently the Arctic's largest ice shelf broke up near Canada's Ellesmere Island, releasing an ice-dammed freshwater lake into the ocean. (Scientists believe that the similar melting of an Arctic ice dam 8,200 years ago triggered an episode of abrupt climate change.)
- The North Atlantic's salinity has declined continuously for the past 40 years—the most dramatic oceanic change ever measured.
- The flow of cold, dense water through a North Atlantic channel near Norway—part of the great ocean current that warms northern Europe—has dropped by at least 20% since 1950, suggesting that the current is weakening.

Scientists still don't know whether a climate disaster is on the way. But taken together, these changes appear strikingly similar to ones that preceded abrupt climate shifts in the past. Many researchers now believe the salient question about such change is not "Could it happen?" but "When?"

[HOME](#) | [COMPANIES](#) | [CEOs](#) | [INVESTING](#) | [CAREERS](#) | [TECHNOLOGY](#) | [SMALL BUSINESS](#)

Services: [Downloads](#) | [Customer Service](#) | [Conferences](#) | [Special Sections](#) | [Free Product Info](#)
Information: [Current Issue](#) | [Archive](#) | [Site Map](#) | [Press Center](#) | [Contact FORTUNE](#) | [Advertising Info](#)

© Copyright 2004 Time Inc. All rights reserved. Reproduction in whole or in part without permission is prohibited.

[Privacy Policy](#) [Terms of Use](#) [Disclaimer](#) [Contact Fortune](#)