

## NASA Sees Arctic Ocean Circulation Do an About-Face

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PASADENA, Calif. – A team of NASA and university scientists has detected **an ongoing reversal in Arctic Ocean circulation triggered by atmospheric circulation changes that vary on decade-long time scales. The results suggest not all the large changes seen in Arctic climate in recent years are a result of long-term trends associated with global warming.**

[*snip*]

**"Our study confirms many changes seen in upper Arctic Ocean circulation in the 1990s were mostly decadal in nature, rather than trends caused by global warming,"** said Morison.

[*snip*]

The Arctic Oscillation was fairly stable until about 1970, but then varied on more or less decadal time scales, with signs of an underlying upward trend, until the late 1990s, when it again stabilized. During its strong counterclockwise phase in the 1990s, the Arctic environment changed markedly, with the upper Arctic Ocean undergoing major changes that persisted into this century. **Many scientists viewed the changes as evidence of an ongoing climate shift, raising concerns about the effects of global warming on the Arctic.**

**Morison cautioned that while the recent decadal-scale changes in the circulation of the Arctic Ocean may not appear to be directly tied to global warming, most climate models predict the Arctic Oscillation will become even more strongly counterclockwise in the future. "The events of the 1990s may well be a preview of how the Arctic will respond over longer periods of time in a warming world,"** he said.

The study was funded by the National Science Foundation.