

## **Ocean climate**

The year 2000 was warm in the Barents Sea, and for 2001 we expect temperatures close to average or just above the average. In the eastern part of the Barents Sea the temperature will decrease by 0.5 °C in 2001 and thus approach the long-term average.

The inflow of warm Atlantic water to the Norwegian Sea is still at a relatively high level. In combination with a warm autumn and winter we expect temperatures above average in the eastern part of the Norwegian Sea, as well as in the deeper water layers along the Norwegian coast in 2001.

The western part of the Norwegian Sea will still be influenced by relatively fresh and cold Arctic water. There is, however, an increased influence of Atlantic water in the upper layer of the central part of the Norwegian Sea north of Lofoten.

The inflow of warm Atlantic water to the North Sea was close to normal in 2000. In the North Sea and the deeper layers of Skagerrak we expect a relatively mild winter in 2001.

## **Ocean production**

In the Barents Sea in the autumn of 2000 the overwintering biomass of zooplankton indicates average feeding conditions for capelin, Norwegian spring spawning herring, and juvenile fish in 2001.

The impact of Atlantic water in the northern Norwegian Sea the last five years combined with relatively high abundances of zooplankton during summer, will probably give the Norwegian spring spawning herring the same individual growth as in 2000, which was quite good.

The recruitment of herring larvae in 2000 seems to be slightly below average. The production of juvenile capelin was very high in 2000. Despite high juvenile production, high mortality was estimated in the fall. Therefore, the 2000 year-class is expected to be average. The future development of this year-class of herring and capelin will depend on the predation and the environmental conditions in the spring 2001.

## **Fish distribution**

In the Norwegian Sea the extension of water of Arctic origin will still limit the western distribution of the Norwegian spring spawning herring, especially in the southern part. Improved feeding conditions in the central Norwegian Sea will also contribute to a more northerly distribution of herring. We expect then that the herring will be distributed as in the previous years, which means that only a minor part of the stock will migrate into the Icelandic zone (see also "Havets ressurser 2001").

## **Long-term prognosis**

Since 1996 the temperature of the inflowing Atlantic water to the Norwegian Sea has been above the long-term average. The inflow has resulted in high temperatures in the eastern part of the Norwegian Sea and in the Barents Sea. Along the Norwegian coast and in the North Sea reduced surface cooling has resulted in higher temperatures during the autumn and winter. Experience from similar warm periods shows that we should expect a decrease in temperature the coming years, although the temperature will stay close to average or just above until 2001/2002. The western part of the Norwegian Sea will also be influenced by Arctic water masses in the years to come.