between experiments. A method of using reference growth curves to evaluate growth performance of larvae from different experiments is proposed. To accommodate for variable feeding and temperature conditions in the field, an individual-based growth model for cod larvae is applied to examine to what extent field-caught cod larvae are growing at their maximum potential growth rates at given temperatures and larval sizes. Estimation of larval growth in the field is commonly carried out after ageing the larvae by means of otolith microstructure analysis, and a failure of taking into account the temperature and size-specific otolith growth versus somatic growth relations may provide inaccurate estimates of growth from field-caught larvae.

A. Folkvord, E. Otterlei, and Ø. Fiksen: Department of Fisheries and Marine Biology, High Technology Center, University of Bergen, N-5020 Bergen, Norway [tel: +47 55584400, fax: +47 55584450, e-mail: arild.folkvord@ifm.uib.no; erling.otterlei@ifm.uib.no; oivind.fiksen@ifm.uib.no]

ICES CM 2001/V:14

Do two-year-old Arcto-Norwegian cod remain in the area where they settled?

Kristin Helle

Arcto-Norwegian cod (*Gadus morhua L.*) reach their maximum spatial extent just before they settle to the bottom during the period September to November at which time they have drifted for five to seven months over a distance up to 2000 km. It is hypothesized that cod are fairly stationary until age two and if this assumption is valid, the growth and survival of young cod until age two is determined by the biotic and abiotic conditions in the area where they settled. To test this hypothesis, the spatial distribution of two-year-old cod was compared with their distribution at the 0-group stage using a nonparametric statistical test. The preliminary results indicate that two-year-old cod are distributed in the same area where they settled.

K. Helle: Institute of Marine Research, P.O. Box 1870 Nordnes, N-5817 Bergen, Norway [tel: +47 55 238601, fax: +47 55 238687, e-mail: kristin.helle@imr.no]

ICES CM 2001/V:15

Changes in size-at-age and condition of cod (*Gadus morhua*) off Labrador and eastern Newfoundland during 1978–2000

George Lilly

The size-at-age and condition of cod (*Gadus morhua*) off Labrador and eastern Newfoundland (Northwest Atlantic Fisheries Organization divisions 2J+3KL) were monitored by sampling catches during research bottom-trawl surveys in the offshore during the autumns of 1978–2000. There was considerable spatial, temporal, and individual variability in both size-at-age and condition. Previous investigations have provided evidence that some of the annual variability in these attributes is related to changes in ocean temperature, stock size, and the biomass or availability of prey, notably capelin (*Mallotus villosus*). However, such explanations are often insufficient because the annual patterns of change varied spatially within the stock. It is shown that inadequacies in sampling, changes in fish distribution, very high apparent mortality and uncertainty regarding trends in prey abundance contribute to difficulty in discerning annual variability in well-being of the cod. Such complications also confound an assessment of the extent to which poor condition might have contributed to the collapse of the stock during the early 1990s.

George Lilly: Department of Fisheries and Oceans, P.O. Box 5667, St. John's, NF, A1C 5X7, Canada [tel: +1 709 772 0568, fax: +1 709 772 4105, e-mail: lillyg@dfo-mpo.gc.ca]

ICES CM 2001/V:16 – WITHDRAWN