International and national stock trends

International trends

The number of wild Atlantic salmon returning to coasts across the North East Atlantic from their oceanic feeding grounds shows a pattern of long-term decline since estimates began in 1971 (Figure 1).

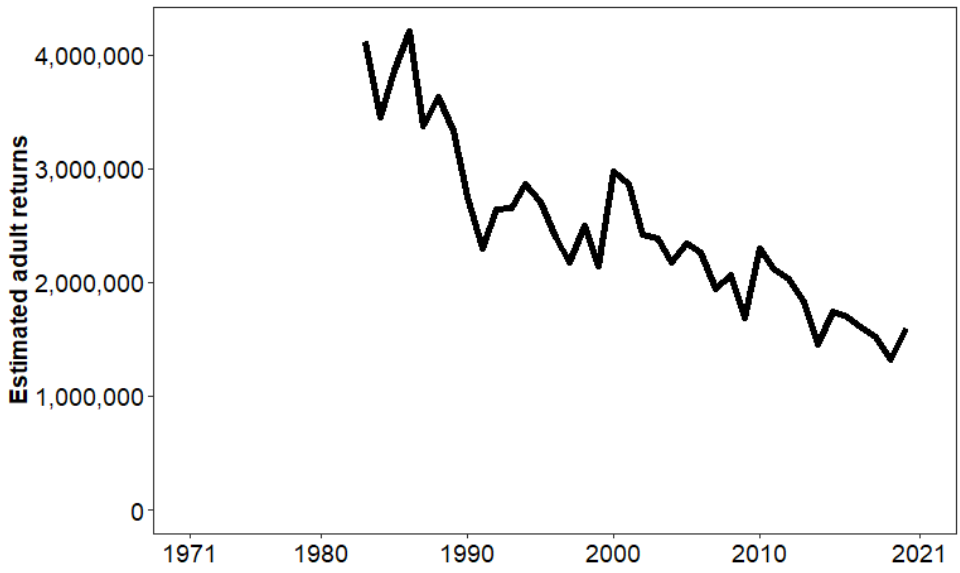

Figure 1: Long term pattern of decline in wild Atlantic salmon returning to coasts across the North East Atlantic (source: ICES WGNAS 2021)

National trends

The pattern of decline in abundance at the North East Atlantic level is also reflected in the numbers of wild Atlantic salmon returning to Scottish coastal waters (Figure 2), with the available evidence showing that this is, at least partly, driven by changes in oceanic conditions.

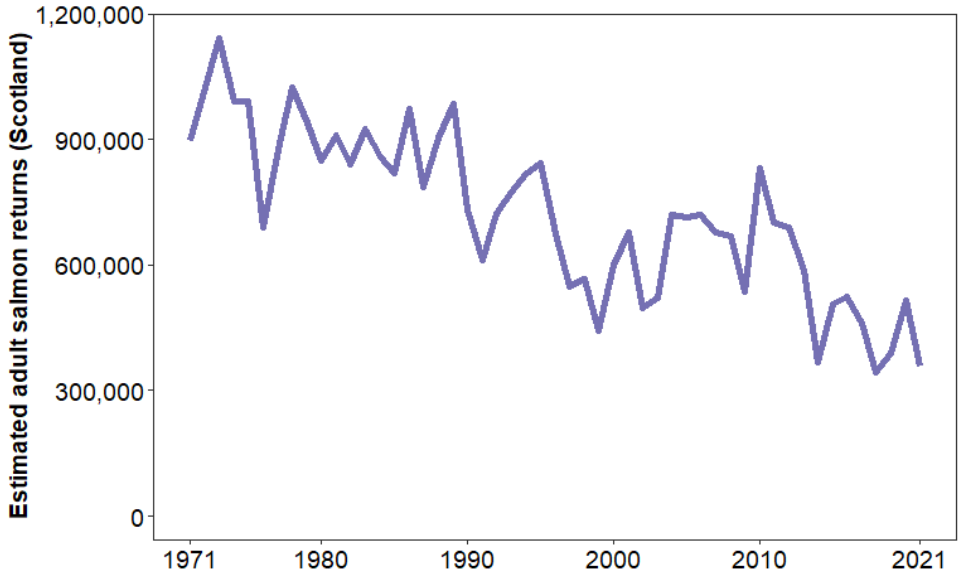

Figure 2: Long term pattern of decline in wild Atlantic salmon returning to Scotland (source: ICES WGNAS 2021/MSS)

Managers have been able to mitigate these declines by curtailing the killing of wild salmon in net fisheries and by implementing statutory and voluntary catch and release policies for rod anglers. Thus, far fewer salmon are being retained in domestic fisheries in recent years - down from over 400,000 fish in the 1970s to a few thousands in 2021 (Figure 3).

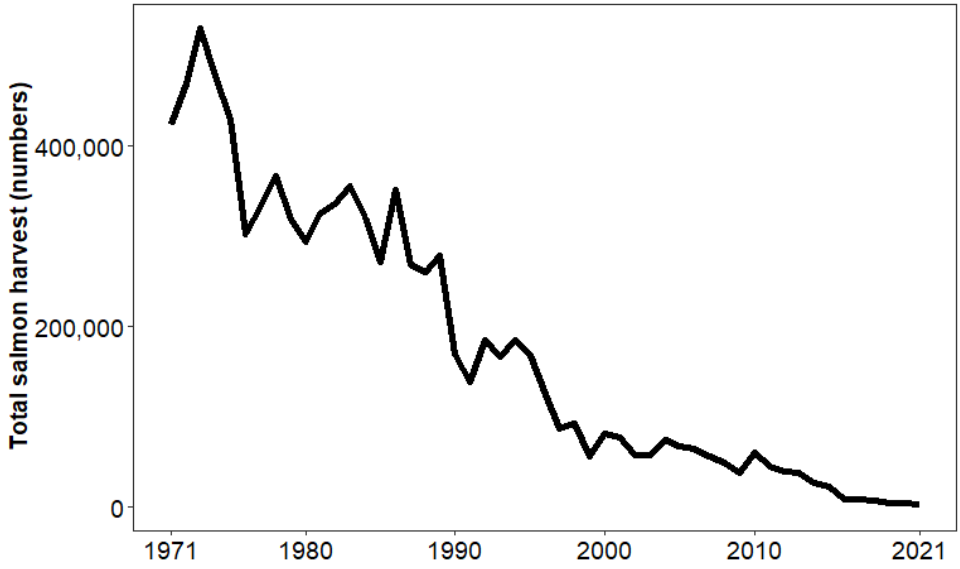

Figure 3: The number of wild Atlantic salmon removed by net and rod fisheries (source: MSS)

This reduction in direct exploitation means that although numbers returning to the coast have declined, a relatively stable number of fish escaped fisheries to spawn (Figure 4). However, this buffering capacity has been nearly fully utilised (Figure 3) and since around 2010 there has been a decline in the spawning stock. These declines shows no signs of ceasing and there is a concern over the limited management actions available to counteract continuing declines in the number of spawners.

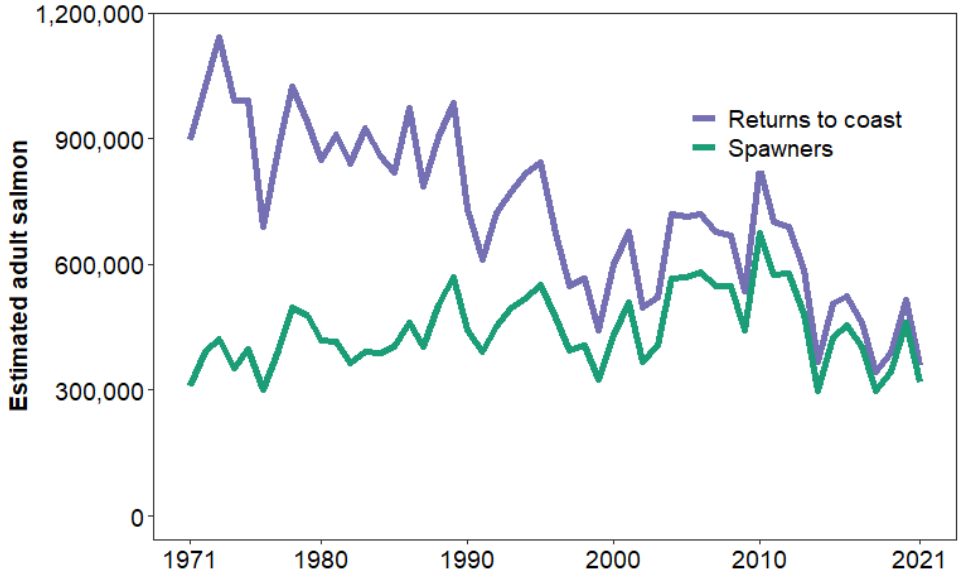

Figure 4: Estimated number of wild Atlantic salmon returning to Scotland together with estimates of the number surviving to reproduce.

Regional Trends

The introduction of the Conservation of Salmon (Scotland) Regulations in 2016 led to stock assessments being undertaken at a finer geographical scale than the national picture shown above. Estimates are available from 2011 onwards and can be used to look at the trends in stock levels throughout Scotland to see if they follow the national pattern. There is evidence of a decline in all 9 fishery regions between 2011 and 2021 (Figure 5).

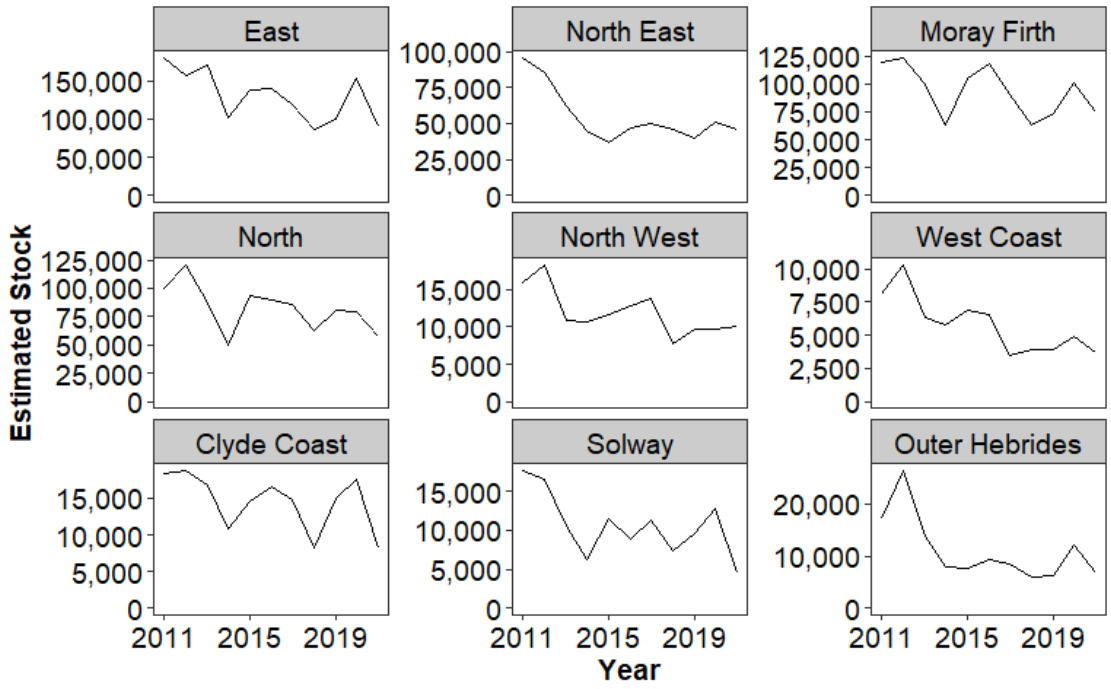

Figure 5: Trends in salmon stocks 2011-2021 broken down by fishery region

These patterns highlight that declines in salmon stocks are occurring throughout Scotland. Localised factors may drive some of the differences in trends seem among Scottish rivers. However, as stock estimates at a finer scale tend to be more variable than regional estimates, it is difficult to confidently detect the presence or absence of significant trends with only 11 years of data. The stock assessments that inform the Conservation Regulations therefore take a different approach to assessing stock status.

Conservation Regulations

The status of Scottish stocks are determined by comparing the stock levels over the past 5 years to an internationally agreed level which aims to maintain stocks at sustainable levels.

The chance of each of the 173 assessed stocks meeting the required level has decreased since 2011, driven by the decline in stocks (Figure 6).

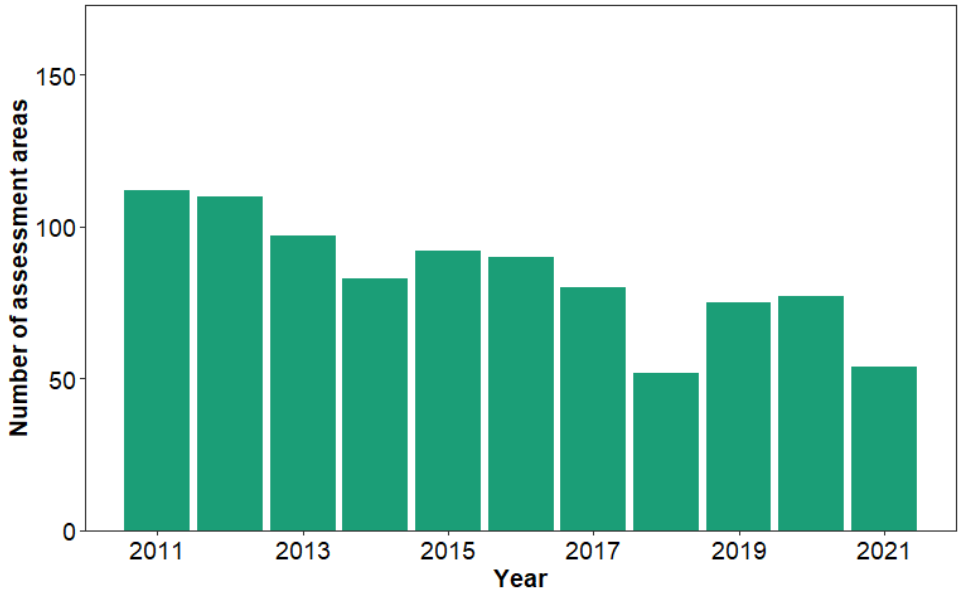

Figure 6: The number of stocks assessed as meeting the required stock level (out of 173 stocks) during 2011-2021.

The grades which form the basis of the annual Conservation Regulations are based on the latest 5 years of data. While the assessments incorporate information on declining abundance they do not predict what will happen in the future.

The proposed grades for 2023 highlight that the majority of stocks are thought to be in poor conservation status (Grade 3), and these are spread throughout the country (Figure 7).

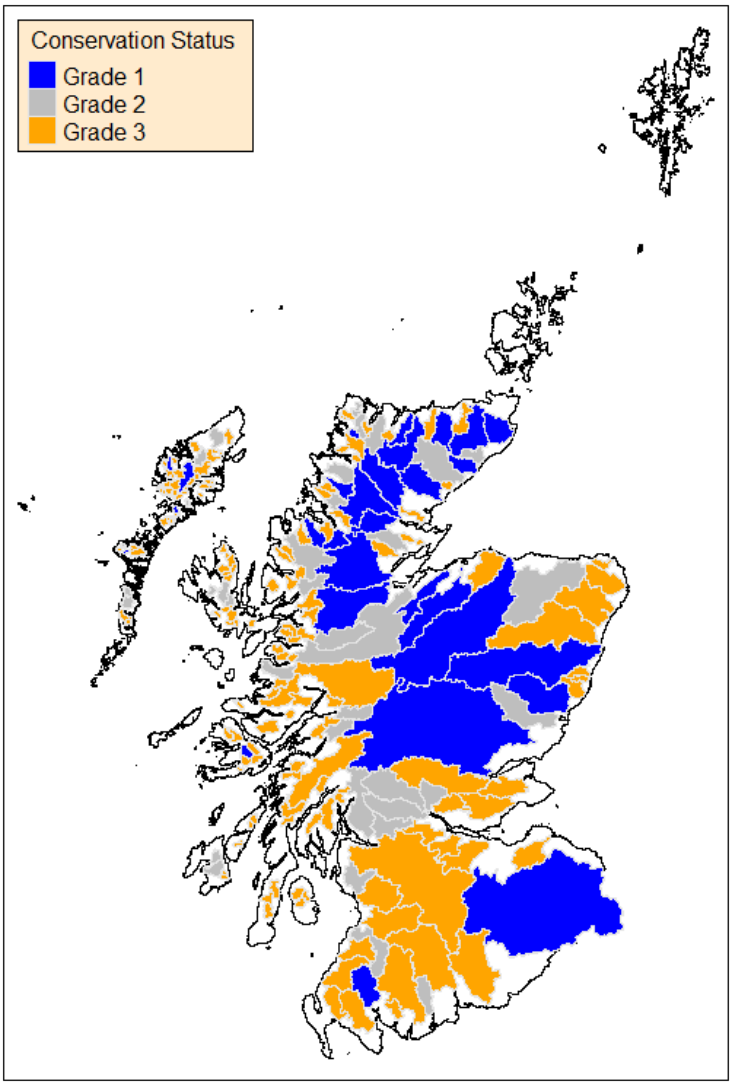

Figure 7: Proposed grades of the 173 assessed stocks.

Different components of the stocks do show different trends in abundance, for example those fish that have spent different lengths of time at sea. While trends in such components are acknowledged, and published, they all form part of the same spawning stock.