

Status of Salmon Stocks and Fisheries in the Baltic Sea

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Before the damming of many rivers destroyed the spawning and nursery areas of the salmon in the Baltic there were 80–120 salmon rivers in the region. Pollution, habitat destruction and overfishing had also contributed to this serious decline of the wild salmon populations.

Today, there are about 40 rivers with significant production of wild salmon smolts:

- 13 discharging into the Gulf of Bothnia
- 14 discharging into the Main Basin
- 12 discharging into the Gulf of Finland.

To compensate for the loss of salmon production caused by construction of dams, hatcheries have been built on the affected rivers and reared salmon are released. The salmon fishery is mainly based on reared fish. In recent years reared fish might have constituted about 90% of the catch, but there are indications that the proportion of wild salmon in the catch is higher than previously estimated.

The first action to protect the wild salmon stocks was taken in the mid-seventies when closed seasons were introduced. These were extended in 1981, but in spite of these measures by the early nineties most salmon populations were depleted, only producing between 5–20% of their potential. They were outside safe biological limits.

A very important step to strengthen the production of the wild salmon was taken by IBSFC in 1991 with the introduction of a regulatory system, based mainly on annual TACs for the Baltic Sea and the individual fishery zones of the Contracting Parties. In 1991 the TAC for the whole Baltic was 760,000 units of salmon.

A dramatic increase in the so called M-74 syndrome, which in the period 1992–1996 caused high mortality rates among the offspring of sea-run females (more than 50%), led to a further decline in the wild salmon populations, in particular in the Gulf of Bothnia.

In response to this critical situation, IBSFC established the "Salmon Action Plan 1997–2010" with the following long term objectives:

- The production of wild salmon should gradually increase to attain by 2010 for each salmon river a natural production of wild Baltic salmon of at least 50% of the best estimate potential and within safe genetic limits, in order to achieve a better balance between wild and reared salmon;
- Wild salmon populations shall be re-established in potential salmon rivers.

In implementing the Salmon Action Plan the Commission agreed upon:

- principles for salmon enhancement activities;
- a list of rivers where self-sustaining wild populations should exist by 2010 (29 rivers);
- a list of wild salmon Index Rivers (12) and monitoring methods;
- management measures to optimize the harvesting of the surplus of reared salmon and to minimize genetic impact on wild salmon;
- the definition of terminal fishery areas where the fishery is targeted on reared salmon and where no, or few, wild salmon occur.

It is expected that in the rivers listed for self-sustaining wild populations reared fish should not be released after 2005 so that these populations could become fully sustainable by 2010. An important element of the Action Plan was the setting of the annual TAC in accordance with the long term management objective. Therefore the TACs have been established at comparatively low levels. Since 1997 the TAC for the whole Baltic was in the range of 510–540,000 units of salmon.

There are two management units with separate TACs:

- Main Basin and Gulf of Bothnia (TAC for 2002: 450,000 units of salmon)
- Gulf of Finland (TAC for 2002: 60,000 units of salmon)

These TACs reflect the different status of the stocks in these regions.

As a result of actions taken in implementing the Salmon Action Plan 1997–2010 and the occurrence of a strong brood-year class in 1990, the number of wild salmon smolts, in particular in the Gulf of Bothnia, has increased significantly in recent years.

In the Gulf of Bothnia increased parr densities were observed in almost all rivers in 1996–2000. Improved parr densities are expected to result in good smolt runs in 2001–2002 (3–4 year old smolts) and good spawning runs in 2002–2005. However, in a small number of rivers the improvement in the status of salmon stocks is slow. The wild smolt run of 1.16 million in the Gulf of Bothnia and in the Main Basin in the year 2000 represents about 72% of the potential production as presently estimated for the rivers concerned. Analysis of smolt origin in the Gulf of Bothnia and the Main Basin indicates that the proportion of the wild smolts has increased from about 6% in 1997 to about 20% in 2001.

In its assessment of the status of wild Baltic salmon in 2001, the International Council for the Exploration of the Sea (ICES) considered that “most stocks are improving but still not all”.

The present TAC system, set to safeguard wild salmon, is effective, but it also limits the harvest of the surplus of reared salmon. IBSFC is now focusing on management measures which would allow an increase in the catch of reared salmon by establishing terminal fishery areas where mainly reared salmon are caught fishing techniques would be used which allow release of live wild salmon. IBSFC has defined a terminal fishery area as “a distinct coastal area, where the fishery is targeted on reared salmon, and where no or few wild salmon occur or the fishing technique used allows release of live wild salmon”.

The feasibility of establishing a terminal fishery area depends on the geographical distance to the nearest wild salmon river and the route and timing of the spawning migration of the wild populations. There are two problems IBSFC is, or might be, faced with in the years to come:

- it is possible that the M-74 syndrome may continue to fluctuate rapidly, without any possibility of predicting its level;
- an increased seal population adversely affects the operation and economic viability of the salmon fishery in the northern part of the Baltic Sea (ICES sub-division 29-32).