

Survival or Extinction?

by Manfred Raguse

Edited and translated from the German by Alex Blonna — Sketch by Svend Saabye

AMIDST AN atmosphere of tension, Norwegian conservationists are awaiting a critical decision by the nation's parliament. That decision may determine nothing less than the survival or extinction of the Atlantic salmon in Norwegian waterways. The main issue at hand concerns whether or not to ban commercial driftnetting of salmon within the 12-mile coastal limit.

In a proposal issued by the Direktoratet for Vilt og Ferskvannsfisk (Norway's Department of Fish and Game), the agency strongly recommended that the Norwegian parliament ban driftnetting and institute a number of other reforms designed to assure the continued survival of Norwegian salmon. Informed sportsmen throughout Europe have greeted the proposal with enthusiasm.

The Directorate's proposal comes after almost a decade of biological research undertaken in response to a series of near-catastrophic disasters for Norwegian-spawned salmon. As early as 1978, the World Wildlife Fund recognised that the Atlantic salmon was a species facing imminent extinction. This recognition preceded ominous news from biologists testifying to the virtual absence of salmon in most of Norway's internationally famous rivers. The resultant public outcry sparked nation-wide concern over the continued use of driftnets.

Eight years later, the situation appears to be reaching the point of crisis. The Aroy River, world-renowned for harbouring some of the largest sport-caught salmon in the world, produced a total of 24 fish in 1985. According to hatchery supervisor Jon Naset, only 12 salmon spawned in the river throughout the entire year. Until recently, the Driva, Rauma, and Vallendalselva rivers had produced a combined annual sportcatch of 20 to 30 tons. This year, the total combined catch for all three rivers amounted to a mere 1.5 tons of fish. Local divers examining the Driva during the spawning season found that the river contained a grand total of one large salmon. With the exception of a few rivers like the Gaula, the sportfishing tallies for 1985 reflected

a serious decline in the number of fish present in Norwegian salmon streams.

There is no doubt in the minds of informed scientists that coastal driftnetting is primarily responsible for the drastic reduction in the number of Atlantic salmon which successfully return to their ancestral spawning grounds. The Norwegian driftnetting fleet consists of approximately 700 licensed boats carrying an average of 1.33 kilometers of net per boat. This amounts to a total net length of approximately 950 kilometers, or enough net to cordon off about two-thirds of the Norwegian coast. Salmon returning from their feeding grounds to the rivers of their birth travel in schools consisting of mixtures of fish from different watercourses. A large school could contain entire runs of fish headed for several different rivers. Utilising highly sophisticated fishing gear and vast expanses of net, it is theoretically possible for one or more driftnetting boats to eliminate the entire spawning run of a river before the fish ever enter fresh water.

The licensing of driftnetters in 1979 excluded some 1,000 previously operating hobby-fishermen who could not meet the new standards imposed by government regulations. Aided by decreasing competition, scientific studies on fish movements, and increasingly efficient technology, driftnetters have more than doubled their average per-year share of the Norwegian salmon catch. Until 1978, their efforts accounted for an average of 22 percent of all salmon caught in Norwegian waters. Since that date they have consistently garnered more than 50 percent of the yearly salmon haul. During the 1985 season it was not uncommon for drift-

Manfred Raguse has written on salmon and sea trout for the magazine DER SLEIGIN FISCHER for many years. He is currently involved in research for the University of Bremen on the respective contributions of the netting and sportfishing salmon industries to the Scandinavian economy.

netters to take between 70 and 100 fish per day, per boat. Most of this catch ranged in the five to seven kilo class. Curiously enough, this is exactly the size of fish that tends to be under-represented in Norway's salmon rivers.

While a ban against driftnetting lies at the core of Norway's latest attempt to save its salmon, the Direktoratet has also proposed the following: 1) a shortening of the salmon sportfishing season by 10 days; 2) a ban on the use of monofilament nets for the capture of anadromous species; 3) the licensing of fixed net salmon fishing.

The agency's recommendation to shorten the sportfishing season probably represents little more than an attempt to appease the powerful driftnetting lobbies, who see commercial fishermen as bearing the brunt of reform. According to Norges Statistisk Sentrlbyra (the Norwegian Central Statistics Bureau), an average of 550,000 salmon sportfishing licenses were sold annually to Norwegians between the years 1980 and 1983. Approximately 5 percent of the salmon taken during these years can be attributed to the efforts of sportfishermen. Clearly, even the most drastic regulation of sportfishing can have nothing more than a minimal impact in determining the future of Norway's Atlantic salmon.

A much larger impact will be made by the Directorate's suggested ban of monofilament nets — should the ban be adopted by the Norwegian government. On the Malselv River, one of Norway's most famous salmon streams, recent studies have shown an alarming increase in the number of net-scarred fish entering the river. Whereas 27 percent of the fish caught in the stream were scarred in 1980, surveys done in 1983 indicated that an astonishing 97 percent of all salmon caught in the Malselv had been injured by commercial fishing nets. Monofilament nets are generally regarded as "sharper" than conventional nets and more dangerous to fish. Net marks, in addition to diminishing the aesthetic appearance of fish, eventually cause the

exposed flesh to become infected with various forms of fungus and bacteria. A significant percentage of salmon contacting monofilament nets on their way to spawning grounds suffer damage to their gills. This damage is often serious enough to cause death within hours.

The Directorate's last proposal — the licensing of fixed-net fishing by the Norwegian government — represents a necessary step in the struggle to protect Atlantic salmon. One important reason that fixed netting has so far remained a viable commercial fishing method is that fixed nets, stationed close to shore or close to the mouths of rivers, allow the large mixed salmon schools to break up into relatively homogeneous river runs before they are confronted by fishing pressure. Were all netters licensed, more reliable fish counts could be taken. Effective regulations could then be established, taking into consideration the varying environmental conditions and peculiar survival hazards confronting the different families of salmon indigenous to particular Norwegian rivers.

The Directorate is well aware that its recommendation in favour of the licensing of fixed-netters can do little by itself to protect the Atlantic salmon. The varied and localized nature of the survival threats facing Norwegian salmon mandate the elimination of driftnetting as a corollary to any attempted licensing reform. The deadly parasite *Gyrodactylus Salaris* is considered by many biologists to be responsible for the disturbingly barren runs witnessed on the Driva and Rauma rivers within the last few years. Runs of fish ravaged by disease, as they have been on the Driva, Rauma and the 30 other Norwegian rivers infected by *Gyrodactylus Salaris*, cannot be saved if the few healthy salmon who leave the river are allowed to be swept up en masse by driftnetters operating off the nation's coastline.



Stronger and more unified international protest is sure to follow if Norway's parliament continues to ignore the driftnetting threat.

Judged from an economic standpoint, driftnetting merits scant defense. According to statistics published by economist

In response to the gravity of the situation confronting the Atlantic salmon, a convention of all northern European salmon-producing nations (including Norway) was held in 1982. Participating nations signed a treaty banning the fishing for salmon in international waters. This move represented a serious act of international cooperation aimed at protecting the economic interest of all nations concerned. It was generally understood by parties to the treaty that banning salmon fishing beyond the 12-mile limit, while allowing driftnetting just *within* the limit, violated if not the letter of the treaty then certainly its intent.

Norwegian salmon confront the menace of driftnetting

Norway's consistent refusal to ban driftnetting is disconcerting to international observers. Due to Norway's central location, many of the large migratory schools in its coastal waters contain sizeable salmon populations which were spawned outside Norwegian national boundaries. Danish sportfishing organisations have already published a number of articles criticizing the Norwegian government's lack of concern for the international repercussions of its driftnetting policies.

P. Gerhardsen of Bergen, commercial salmon fishing grosses Norwegian fishermen some 50 million kroner per year, while the sportfishing industry (considering total spin-off earnings) brings 445 million K. into the Norwegian economy. Salmon ranching produces 22,000 tons of fish and 1.1 billion annually in earnings from exports alone. It is largely dependent upon the availability of healthy native smolts, which are increasingly endangered as driftnetting cuts into the overall salmon population. Measured against fixed-net fishing, driftnetting is more work-intensive and eats up hundreds of thousands of kroner more per year in fuel costs.

Norway's Direktoratet for Vilt og Ferskvannsfisk has recommended that the proposed ban on driftnetting should begin no later than the end of the 1987 season. In the opinion of the international sportfishing community, the ban is long overdue. To those devoted to the protection of the Atlantic salmon, "Norway" has always conjured up special and precious images. Mountain panoramas, fast-flowing crystalline rivers, leaping silver fish... These are the scenarios that have earned Norway its reputation as the world's most pristine sanctuary for the elusive Atlantic salmon. It is high time that the Norwegian government moves to guarantee that this admirable tradition does not end up as a dusty footnote in the history of sportfishing. The Direktoratet seems to agree, and has acted upon its conviction. How long will it be before the Norwegian parliament follows the lead of its own professional advisors? □