

# GLOBAL CHALLENGES IN RECREATIONAL FISHERIES

Edited by

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form a wider intermediate institutional frame both in terms of water areas and interest groups involved. State governance is under the Ministry of Agriculture and Forestry and their district organization.

### *Future outlook*

The future of fisheries in general, in light of global trends, was discussed by Laitinen *et al.* (2005). Although recreational fishing was not dealt with directly, one of the resulting four alternatives was a tourism-oriented fishery scenario where the demand for fishing tourism services grows significantly. At present, fishing tourism is an emerging industry that seems to have potential but still lacks established practices and any official status. Recreational fishing is among the top ten of all outdoor activities in Finland (Sievänen 2001) in terms of participation. With statistical evidence, few access barriers, a strong supply of opportunities and the tradition of spending leisure time in cottages, there is good reason to believe that participation in recreational fishing will remain high.

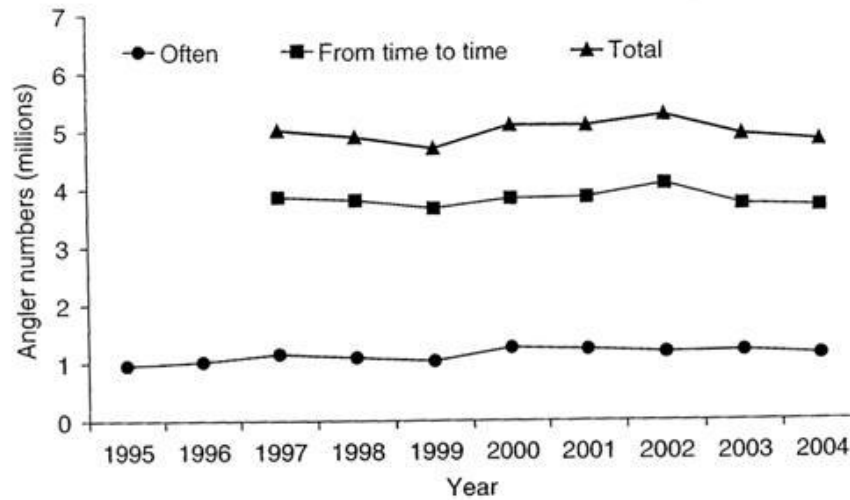
## **2.5 The social and economic significance of recreational fishing in Germany**

### *Robert Arlinghaus*

Recreational fishing in Germany constitutes a popular leisure activity of local, regional and national importance. The objective of this section is to update previous accounts on the socio-economic importance of recreational fishing in Germany based on the first nationwide telephone survey conducted by Arlinghaus (2004). Although non-angling methods are used locally in non-commercial recreational fishing in Germany, most recreational fishing takes place by rod and line. Hence, angling and recreational fishing are used synonymously here.

### *Number of Anglers*

There is no agreement in Germany on how an angler is defined. Many fisheries professionals count the total number of officially registered German fishing licence holders. The latest estimate was about 1.5 million people (1.8% of the total population of c.82.5 million as of 2005). However, holding an official fishing licence is not required in each of the 16 German states. Moreover, people fishing without an official licence in Germany or in other countries are not included in the aforementioned estimate of angler numbers, which is why the previous estimate is likely underestimated (Steffens and Winkel 2002).



**Figure 2.3** Time series of angler numbers estimated by telephone surveys using random sampling of German households (Allensbacher Werbeträgeranalyse, unpublished data).

In the nationwide telephone survey conducted in 2002, anglers were defined as people aged 14 and older having fished at least once during their lifetime. The estimated number was about 3.8 million people. Active anglers were defined as people having fished at least once during the 2002 fishing season in Germany or abroad in other countries. The estimate of active anglers in Germany was 3.3 million (95% confidence interval, 2.6–4.1 million). For people aged 14 and older in the population, the estimated number of active anglers was 4.7% of the German population.

Further support for this estimate of angling participation is provided by a periodically conducted marketing survey that asks a large sample of German residents whether they angle often or occasionally. Unfortunately, this survey does not further specify what 'often' or 'from time to time' means. As shown in Figure 2.3, the total number of anglers is relatively stable at around 5 million people, of which around 1 million indicated they fish often.

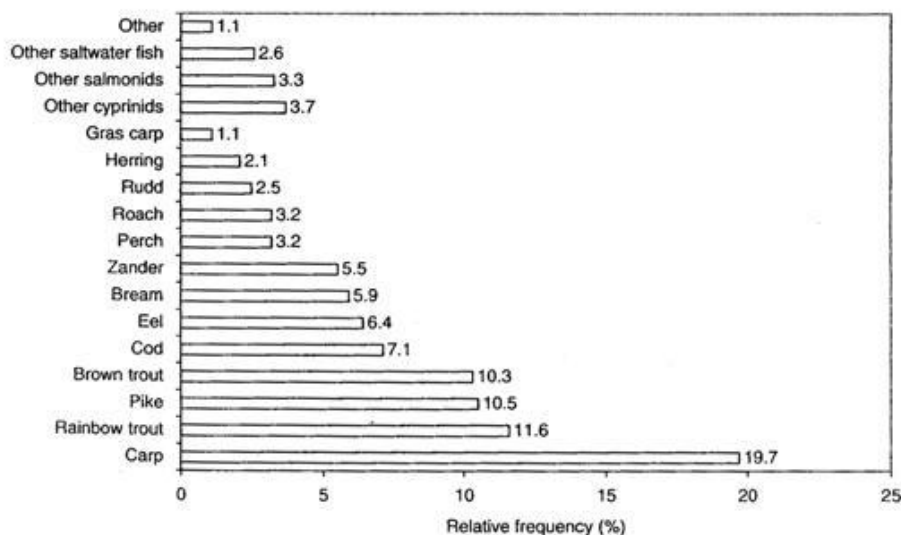
### *Preferred fishing locations*

Nationwide, the most preferred waters are large rivers (for 31% of the anglers) and natural lakes (28%). Of the anglers, 15% prefer to fish in artificial standing waters, 6% in canals, 4% in small rivers and 4% in put-and-take fisheries. For 12% of German anglers, saltwater constitutes the main fishery. German anglers not only target German fishery resources, they also export their effort to a large

extent to foreign fisheries. On average, 40% of their angling days were spent abroad in 2002. More than 60% of all anglers spent most of their time (more than 50% of the annual angling days) fishing in countries other than Germany. Popular countries include the Scandinavian countries. Also, locations overseas are visited regularly (Herrmann *et al.* 2002).

### Target species

Most German anglers prefer piscivorous fish such as pike (*E. lucius* L.), pike-perch (*S. lucioperca* L.), perch (*P. fluviatilis* L.) and various salmonid species, because these species are considered of higher culinary value than non-piscivorous fish species. Among non-piscivorous fish, carp (*C. carpio* L.) and smaller species such as roach (*R. rutilus* L.) or bream (*A. brama* L.) are the preferred target of some anglers, particularly among certain angler groups such as specialized carp anglers or match fishers. Because of the current interpretation of the Animal Protection Act, the only 'reasonable reason' to fish recreationally is to catch fish for consumption, and most anglers in Germany remove the legally sized fish they capture. About 75% of the angler catch is removed for household consumption, and the remainder is likely voluntarily or regularly released. The total harvest was estimated at 45,000 metric tonnes in 2002. In terms of species that constitute the main portion of the harvest, the harvest of most anglers is predominantly comprised of carp, various salmonids and pike. Among saltwater fish, cod (*Gadus morhua* L.) is found most often in the harvest (Figure 2.4).



**Figure 2.4** Relative frequency (%) of fish species primarily harvested by  $N = 474$  German anglers as determined by a telephone survey (Source: Arlinghaus 2004).

### *Economic significance*

It was estimated that the total economic impact of German recreational fisheries was €5.2 billion in 2002, with 52,000 jobs directly or indirectly dependent on angler expenditures. This estimate exceeded a previous estimate of jobs (20,000) assumed dependent on angler expenditures (Hilge 1998). The multiplier identified for €1 of angler expenditure was 1.8. The average annual use value over and above current expenditure was estimated with €134 per angler.

The average annual non-use value was estimated at €21 per person. This suggests that the German population values recreational fishing even if they are not using the resources themselves. Economists distinguish option, bequest and existence non-use values, and the non-use value estimate stated earlier comprises the sum of these three. The total economic benefits generated by German recreational fisheries overall were estimated to be €6.4 billion in 2002.

### *Major institutional arrangements*

Ownership of freshwater fishery resources in Germany is usually dependent on ownership of land adjacent to the water body. Fishing rights can be purchased or leased from landowners who hold the fishing rights. In the latter case, the person or the group (e.g. an angling club or organization) that leases the fishing rights for a certain time period also has the duty to manage the fishery resources without causing harm to the ecosystem. This duty is established in state-specific fisheries legislation and nature conservation laws and by-laws. Legislation is enforced by public agencies either at the national or federal level. Thus, German recreational fisheries systems can be characterized as joint community–public cooperative management regimes. Although fishing rights are private entities, in most recreational fisheries, the fishery resources are typically used jointly by all anglers belonging to a club or purchasing a licence by paying a fee to the fishing rights holder (e.g. a commercial fisher or the angler association/club).

Purchasing an angling licence in Germany often requires an angler to have passed an angling examination after attending a 30-h angling course (Von Lukowicz 1998) and to hold a state fishing licence called a Fischereischein. Recently, some northern states (e.g. Brandenburg, Mecklenburg-Vorpommern, Schleswig-Holstein) have relaxed this burden by allowing fishing for non-piscivorous fish or fishing by non-resident tourists without taking the exam. The funds generated through fishing licence sales are used to cover the administrative costs of state-level fisheries agencies. Any additional revenues are used to fund projects such as fish stocking, habitat rehabilitation, scientific surveys and fish community monitoring.

### *Major constraints*

Recreational fishing in Germany suffers from a number of issues such as (1) lack of social priority; (2) lack of management approaches for integrating the interests of multiple stakeholder groups and often conflicting management goals; (3) lack of cooperative institutional linkages between fisheries agencies and water management agencies and between different angler associations; (4) lack of systems thinking and (5) lack of research and monitoring. Moreover, many fisheries professionals and private fisheries managers disregard modern developments such as the need to integrate the human dimensions of fisheries into day-to-day management. Probably the greatest constraint, however, is the multiple-use characteristic of most fisheries. There are efforts to reduce fishing pressure in some areas, and many nature conservation stakeholders oppose recreational fishing on ideological grounds. Also, fisheries legislation differs in each of the German states, which can create an unnecessary burden on angler who want to fish in other states. In this case, it can be difficult to obtain a fishing permit and it is difficult for anglers to inform themselves about local-level regulations.

Moreover, many habitats have been irreversibly modified, which has contributed significantly to fishery resource declines and reduced fishing quality. Addressing these issues is often beyond the control of fisheries stakeholders, which can lead to increased reliance on stocking to counter fish declines. Stocking, however, can also seriously harm entire fish communities and is therefore controversial in Germany.

The social movements that strive to ban recreational fishing entirely, that is, the animal welfare movement, are also a major constraint. Animal protection is a part of the German constitution as of 2002, and the Animal Protection Act first enacted in 1972 sets severe limits on previously popular fishing practises such as competitive fishing, live baiting, holding fish in 'keep nets' and voluntary catch and release (Meinelt *et al.* this book).

Fisheries stakeholders also view the explosion of fish-eating birds, especially cormorants (*Phalacrocorax carbo*) as a major constraint in German recreational fisheries (Steffens and Winkel 2002). Although the impact of cormorants on local fisheries will vary, it has been documented that they can alter fish community composition.

Finally, a major barrier to the development of recreational fisheries is the lack of research understanding of the activity. For most fisheries, there is little or no information present on available fish stocks and the activity, attitudes and behaviour of anglers. Without this information, sustainable management is difficult to accomplish. Such research conducted with fishery operators and practitioners locally is urgently needed.

### *Future outlook*

Today, recreational fishing is firmly established as the dominant or sole user of most freshwater and many coastal fish stocks. Since the last overview papers published on German recreational fisheries, there has been important progress. The mass media has greatly increased reports on recreational fishing, and politicians are more aware of the size and economic importance of this sector. It remains to be seen whether this attention will strengthen the sector in the future and improve its sustainability by addressing the issues mentioned earlier as well as the largely neglected potential of fishing to negatively impact fish communities (Lewin *et al.* this book). To address and understand the latter issue will require increased investments in research, monitoring and education.

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## **2.6 Recreational fisheries in Lithuania: putting Lithuania on the recreational fishing map in Europe**

*Algirdas Domarkas and Eglė Radaitytė*

The goal of this section is to introduce the field of recreational fisheries in Lithuania, which has been going through dynamic changes in recent years. This section will discuss angling in Lithuania, the social and the economic value of recreational fishing using survey data on attitudes towards fisheries, money spent on fishing and non-compliance with fishing rules and the future of recreational fisheries in Lithuania.

### *Angling in Lithuania*

Angling has always been one of the most popular leisure pursuits in Lithuania. This is not surprising, as 4% (2639 km<sup>2</sup>) of the country's territory is covered by water. In addition, there is the Baltic Sea coast and the Curonian Lagoon, which are also popular fishing locations. However, there has always been the common misconception that the development of recreational fishing and the introduction of fishing tourism could have no positive effect on fish stocks and assisting with conservation. It is only now with research and the involvement of non-governmental organizations that the full potential can be seen.