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THE SCIENCE OF HUMAN DIMENSIONS

Edited by

Michael J. Manfredo

Jerry J. Vaske

Perry J. Brown

Daniel J. Decker

and Esther A. Duke

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New Markets for Recreational Fishing

Øystein Aas and Robert Arlinghaus

Everyone working with recreational fishing, whether as managers, representatives of nongovernmental organizations (NGOs), or commercial actors in the tackle, travel, accommodations, or service provider industries, is concerned about the future of this leisure activity and the characteristics and preferences of current and future anglers. Questions of relevance include the following: Is the absolute *number* of recreational anglers increasing or decreasing or is it stable? Is the *rate* of participation among the public increasing or decreasing or is it unchanged? What are the *characteristics* of these anglers, what preferences and behaviors do they display now, and what changes are likely in the future? Do those who are involved in recreational angling, for example, become *more or less active over time*? Do their *preferences* for the fish species and type of fishing experience they are pursuing change and are they willing to purchase goods and services if specifically developed to meet this demand?

These and a number of other similar questions are asked for a variety of reasons. Fishery managers, for example, may ask these questions because they want to find out the audience they are serving and how to best align the maximization of total angler benefits or angler satisfaction with biocentric objectives such as preserving biodiversity or social objectives such as minimizing user conflicts (Arlinghaus 2005). The number and types of anglers might affect issues such as the social, economic, and ecological costs and benefits associated with recreational fishing (see Weithman 1999; Arlinghaus, Mehner, and Cowx 2002; Pitcher and Hollingworth 2002). Increased numbers of anglers or increased frequency of fishing may increase revenues and resources for

management and angler-dependent industries, but they may also result in overfishing, crowding, and intensified user or management conflicts (Arlinghaus 2005). NGO representatives are interested in trends in recreational fishing because they want to find out about the political influence of the recreational fishing sector in public policy decision making or implementation of relevant legislation. Commercial actors want to know about their customers in order to increase revenue generated through angling and thus the profitability of their businesses. Interestingly, despite the importance of these questions about the angler market, there have been few incentives to invest in appropriate research to answer them, and many stakeholders think that such important information comes at no or little cost.

RELEVANCE OF A MARKET APPROACH

The term *market* is not often applied to studies of the human dimensions of recreational fishing (Ditton 1999). A range of definitions and understandings exist for the term. We use it to mean a group of individuals or organizations interested in a product, willing and able to purchase it and to do so legally (Seaton and Bennett 1996). Another meaning refers to the place where products, goods, and services are sold by some and purchased by others.

These definitions introduce another term—*product*. A product can be a tangible good as well as an intangible service. As early as the 1970s, Driver and colleagues were using the term to mean a recreational fishing opportunity or a recreational fishing experience (see Driver 1985 for a summary). Their use of the term seemed to be motivated by the need for managers to be more proactive about what fishing possibilities to provide to the public in general and to anglers more specifically. They assumed that anglers are users of fisheries and that managers are in the position of delivering a product that the angling public demands. However, it should be noted that such a perspective arose mainly in North America and in other jurisdictions where angling is a public good and where the public hand therefore has the responsibility to manage fisheries based on funds provided by license sales. The product approach has been less prevalent in Europe, where fishing rights are private. In fact, many representatives of European angling NGOs rejected this approach because it conflicted with the idea that angling is a more private affair, disconnected from work and business. Clearly, this is a narrow viewpoint since every angling activity creates economic effects in regional and local economies.

Nevertheless, the "private-affair," noncommercial understanding of recreational fishing has probably hindered a market approach to providing fishing in many places. Despite the long-lasting existence of a significant market for recreational fishing tackle and for fishing holidays, many, especially in public management agencies and in angling NGOs, have resisted or opposed applying a market approach in recreational fishing provision, probably because they feel it could add to commercialization of angling and maybe reduce the dominating "public service" approach of angling as being "everybody's right."

However, we would argue that a market approach is highly relevant for a public service as well as for a private fishing rights approach to recreational fishing. The following are arguments in favor of a market approach to public and private recreational fishing in both public and private fishing rights regimes:

- The market approach takes into account that the recreational fishing market must be segmented into submarkets in order to better satisfy the different needs that the highly diverse angling public expresses.
- The market approach underscores that managers, outfitters, tackle tradespeople, and, in some countries, commercial fishing enterprises and charter operators must behave actively and not passively toward the market (or the public), despite whether they are in the "business" for commercial or public service reasons.
- The market approach acknowledges that fishing is just one of many activities in the leisure market; this poses a challenge to retain, recruit, and enhance angling interest among the public.
- The market approach has the potential to maximize the potential benefits associated with recreational fisheries by trading off angling interest with more commercial interests of local and regional industries.

Fishing participation is declining in several countries, is stable in some, and is increasing in others, but data availability on these trends is generally poor except for some countries such as the United States (Ditton et al. 2008). If managers and businesses depending on recreational fishing are to halt the decline of or increase overall participation, we believe that a market approach in recreational fisheries management is relevant and needed, and in-depth understanding of new markets for recreational fishing is a key to success.

The purpose of this chapter is to identify and discuss new markets for recreational fishing. The chapter primarily focuses on Western, postindustrial societies because we are from the West, but we also comment on other regions of the world.

OVERALL DETERMINANTS OF PARTICIPATION

The stereotypical angler in Western countries is a white, middle-aged man living in rural areas, relatively near fishing opportunities (Aas 1996; Arlinghaus 2006; Murdock et al. 1992, 1996). Several studies in at least three Western countries—Germany, Norway, and the United States—show many similarities in identifying overall factors determining whether a person is an angler or not. A common finding of these studies was that men were more likely to participate in angling than women, worked full time (and had the monetary resources to participate), and lived in rural areas close to a body of water (Aas 1996; Arlinghaus 2006). Some papers found that age had a negative influence on the probability of participating in angling (Walsh et al. 1989), whereas others did not find it a significant influence (Arlinghaus 2006). What is known, however, is that participation rates usually drop considerably for elderly angler populations (Arlinghaus 2006). The process of aging reflects lifestyle changes that influence angling behavior. For example, young people starting a job in their midtwenties will likely go fishing less frequently because of new commitments in life. For older anglers, physical disabilities and health problems may limit angling participation (Walsh et al. 1989). Education and its influence on angling participation are less clear. Some studies report a positive relation between education and angling (Walsh et al. 1989), but German anglers at higher educational levels seemed less likely to fish (Arlinghaus 2006).

An important and relatively new area of research is investigating the differences in meanings, behaviors, and participation rates among different ethnic groups. This work has been mainly conducted in the United States (e.g., Hunt and Ditton 2002). Findings have suggested that minority ethnic population growth may account for the net growth in angler numbers in the United States (Murdock et al. 1992, 1996). In western and central Europe, increasing numbers of immigrants from eastern European countries are changing the culture of recreational fishing, resulting in new groups of anglers, but also in conflicts because of the different meanings these immigrants attached to several aspects of recreational fishing (e.g., as regards consumptive orientation).

Given the known negative relation between urbanization and recreational fishing participation, it is understandable that differences between urban and rural anglers have been the focus of some research in North America (Manfredo, Harris, and Brown 1984) and Europe (Arlinghaus, Mehner, and Cowx 2002). A common finding of these studies is that both angler groups differed little in motivations. However, urban anglers in general were found to be somewhat younger and less educated, more consumptive, and more avid fishers. Despite their lower overall participation rates, urbanites offer a great opportunity for recruiting and retaining anglers since it is important to socialize into the hobby early in life.

CHANGING DEMAND FACTORS

How angling participation will develop is essentially the result of the interplay between demand and supply factors. In previous studies, most of the focus was on demand factors. A range of texts assess trends in recreation and leisure, but none explicitly address recreational fishing (e.g., Cordell 1999; Jackson and Burton 1999; Gartner and Lime 2000). Many of the factors that apply to leisure and outdoor recreation are highly relevant for this analysis. All of these books, however, suffer from a lack of empirical, longitudinal data to support their conclusions, though they present data on demographic and economic changes.

Although some NGOs and many journalists in some countries are optimistic that recreational fishing will increase in importance in the future, research suggests that growth is less likely in many industrialized societies owing to demographic changes that are counterproductive to angling participation (Murdock et al. 1996; Arlinghaus 2006). Many of the changes, however, have the potential to work in different directions. Some of the factors working to reduce angler numbers are:

- a more urban population (geographically as well as culturally)
- an aging population
- decreasing incomes and increased level of unemployment in some countries
- changing family patterns, including more single-parent families, which likely provide a less optimal basis for recruitment
- young people's increased reliance on computer games and other leisure activities that do not involve nature, preventing socialization into fishing

Factors that might positively affect angler participation globally are:

- continued economic growth, especially in countries in eastern Europe and Asia
- more leisure time and increased travel, especially in countries with rapid economic growth
- increased desire of part of the population to relax outside and “escape from it all”

Determining how the following several important social changes will affect angling participation and new markets for recreational fishing is difficult:

- globalization and cultural exchange between different ethnic groups
- better education
- climate change and changes in the productivity of ecosystems

LIMITATIONS OF THE FORECAST APPROACH: CAN EFFECTIVE SUPPLY EFFORTS MAKE A DIFFERENCE?

The approach to understanding future markets based only on forecasts of demographic change has severe restrictions if it is the only one used to identify interesting new markets for recreational fishing. First, the studies that have tried to project or forecast future angling participation based on overall societal and demographic change in general only explain a small percentage of why people do or do not fish (10–40 percent [see Arlinghaus 2006]). These studies implicitly create the impression that the future is fixed and determined, something that stakeholders must accept. This is opposite to the approach that fishery managers as well as business actors principally take. They expect that their efforts and mitigating actions, such as establishing a new fishing site, improving fishing quality in a lake, publishing a brochure about urban fishing sites, or running a big marketing campaign for new tackle or fishing destinations, to potentially affect people’s behavior, at least regarding where and how they fish and maybe if they fish or not (Wightman et al. 2008). Indeed, a range of factors influence current and future angling participation and behavior, not demographic change alone. Specifically, factors such as a person’s social background, culture, and tradition as well as personality and accessibility to fisheries and fishing gear and techniques will most likely play important roles. A

range of aspects related to the fishing opportunities at hand such as "quality," distance/travel time, costs, and so on will affect the likelihood of an individual participating in fishing or not and if they are likely to demand specific fishing products or opportunities. These "supply" factors are amenable to directed and targeted change by angling clubs, managers, and businesses and are an important component of a market approach to recreational fishing. However, the knowledge about how supply factors affect the angling market is even less than the knowledge about how demographic change might affect demand for recreational fishing.

CHANGING FACE OF ANGLING?

Questions about how many anglers there will be in the future and what characteristics they will possess are as interesting. However, it is also important to investigate how the active angling segment will develop and change. A broader body of research literature sheds light on what characterizes anglers, including how they can be separated into subgroups. A range of factors have been used to describe and group anglers, including demographic, behavioral, psychological, and social (Arlinghaus 2004; Ditton 2004). For example, major topics of investigation have been motivations, satisfaction, attitudes toward fishery management in general and harvest regulations more particularly, and degree of consumptiveness. Unfortunately, we are not familiar with any studies in this tradition that explicitly have focused on changes in angling behavior and preferences over time, as almost every study has been cross sectional, not comparing angler characteristics in terms of behavior, attitudes, or preferences over time.

The mantra of this body of research is that the "average angler does not exist" (Aas and Ditton 1998). Every study identifies major differences within any angler population, sometimes significant polarization in behavior and preferences, sometimes preparing ground for conflicts, or at least indicating that zoning (i.e., manage for diversity) approaches are preferable over "one-policy-fits-all" approaches when managing recreational fisheries (Arlinghaus 2004; Ditton 2004).

Early on in the tradition of human dimensions research in recreational fishing, scholars suggested several explanations for the diversity among anglers. By far the most investigated and discussed approach is Bryan's (1977) concept of specialization. Bryan studied trout anglers and defined specialization as "a continuum of behaviour from the general to

the particular reflected by equipment and skills used in the sport and activity setting preferences" (Bryan 1977). He identified four main types of anglers along this continuum, from the occasional angler and the generalist angler to the technique specialist and the technique-and-setting specialist. Bryan further suggested that these groups reflected differences in terms of participation level, commitment, setting and technique preferences, motivations including importance of catch, social groups they fish with, and management preferences. Bryan's work has triggered and influenced abundant research in human dimensions of recreational fishing, and the concept has also been applied and proved its relevance to a range of other outdoor recreation activities, for example, bird-watching, hunting, and water sports (see Scott and Schafer 2001 for review and critique). The generic nature of the specialization concept, and its popularity and application in management as well as in businesses based on recreational fishing, make it an excellent basis for discussing changes among active recreational fishers across the world.

This variation and dynamic nature also suggest that it is possible that angler characteristics, such as behavior and management preferences, change over time. As stated, we were unable to identify studies that document eventual changes in any given angler population or in the use of a fishing destination over time. However, there is clear evidence that fishing practices such as voluntary catch-and-release angling and specialized techniques such as fly- and big-game fishing are growing and making up a larger proportion within several types of recreational fishing (Policansky et al. 2008; Aas, unpublished data 2006). For example, voluntary catch-and-release angling has become more practiced in a range of recreational fisheries in marine as well as in freshwater fisheries over the last few decades (Policansky et al. 2008).

Researchers have argued that recreational benefits and outcomes related to identity formation and self-realization are becoming increasingly important (Jenkins 1996). While there are no studies confirming this for recreational fishing, we suggest that anglers who are less consumptive and more involved and specialized will make up a relatively larger proportion of the angling clientele in the coming years as these create status and identity among their peers. This might affect what types of fishing experiences that people want to spend their leisure time on and be very relevant for a market approach to recreational fisheries management and development.

Fishing providers, private or public, should ask themselves what segment they will target, because there will be significant diversity of

angler subgroups despite major trends toward increasing specialization. We need studies that more explicitly assess whether anglers change in behavior, including if the hypothesis we propose holds some truth.

FISHING TOURISM

Recreational fishing has always been closely linked to tourism, and recreational fishing away from home varies on a continuum from independent, self-organized fishing trips with few purchases, if any, to a full fishing package offered by travel groups or agents, including fishing licences, transportation, food and lodging and guiding, sometimes of high standard and cost. We predict that more recreational fishing in the future will be done in a commercial tourist context. Commodification, the process by which objects and activities are evaluated primarily in terms of their exchange value in the context of trade (Cohen 1988), obviously is going on in the field of recreational fishing as in other forms of outdoor recreation (Veal 1999). Many active anglers have a medium-high income but often lack time. This sparks the commodification process, leading to more organized fishing opportunities available in the market. Given the close link between recreational fishing and tourism, it is surprising that rather few studies have looked at fishing from a tourism perspective (Borch, Policansky, and Aas 2008). If we are to successfully identify future markets for recreational fishing, we need a better understanding of recreational fishing as tourism.

Fish and fisheries constitute several types of tourist attractions. Fish can be the object of viewing experiences, especially where they migrate or gather to spawn. Several places in many countries have established facilities such as visitor or information centers to enhance and utilize such phenomena. Also, commercial and recreational fisheries are attractions in specific locations, particularly if rare, exceptional specimens are targeted in the fishery. However, it is mostly as an activity that fishing plays a part in tourism. Recreational fishing is an activity for several types of tourists and travels. It can be just one of many activities on a single-destination or round-trip holiday. And it can be the major or only activity on such holidays. This type of holiday has been the subject of the few scientific studies that have been conducted (Zwirn, Pinsky, and Rahr 2006; Stoeckl, Greiner, and Mayocchi 2006). Fishing can also be a part of what is called corporate tourism when fishing is part of a meeting or seminar or used as an incentive for employees or customers. The specialized fishing tourism industry is

mostly targeting involved and active anglers with a medium-high income offering experiences where fishing is the main activity, from a base located in wilderness or exotic environments (Borch, Policansky, and Aas 2008).

Tourism is becoming increasingly diversified in terms of both market segments and products. Terms such as ecotourism, nature-based tourism, and wildlife tourism are used to characterize types of tourism with some common features. Fishing tourism has many commonalities with these forms of tourism, and the development in fishing tourism probably follows closely some of the major trends in related tourism sectors, such as ecotourism and adventure tourism. Driving forces in tourism push the industry many different directions, and the paradoxes embedded in tourism grow bigger every day.

For fishing tourism, some of the more relevant trends (Veal 1999; Borch, Policansky, and Aas 2008) are the following:

- more demand for shorter holidays and more people taking several shorter holidays instead of or in addition to one long holiday
- more senior tourists
- more demand for experiences and products that include active rather than passive experiences and learning
- more demand for "authentic tourism" products
- more demand for environmentally friendly holidays
- more demand for the rare, exceptional holiday

MAJOR NEW MARKETS FOR RECREATIONAL FISHING

Recreational anglers today exhibit a wide variety of behaviors and attitudes, and the participation in and the role of recreational fishing in different regions and countries worldwide vary even more. Overall, trends make it safe to assume that angler diversity will increase even more in the coming years. The middle-aged white male, living in rural areas will be supplemented with recreational anglers that have differing backgrounds. Demand-determining factors, especially demographic changes, will work against future growth in recreational fishing participation in Western, postindustrial countries. In other regions, such as eastern Europe and Asia, economic, social, and political factors are likely to increase numbers of recreational anglers. In Western countries it is likely that for public as well as private fishing providers, a growing

economy and increasing purchases per angler might make up for a reduced number of participants in terms of consumption of products. However, stakeholders should be aware that in a period when a reduced number of people have some orientation toward fishing, a more active supply side will be important in order to uphold and maybe increase the general interest for angling. Quality matters to retain interest in the face of competing leisure activities and changing cultures within countries.

Despite the lack of good studies aimed at identifying future markets, we end this chapter by pointing out what we believe are key future markets. We stress that these markets should be subject to modification and clarification in the future and that more research should be conducted.

Senior anglers

The safest conclusion to be drawn from current demographic changes is that there will be more active anglers in the older age brackets, from fifty to eighty years of age. While future senior anglers likely will have better health than elderly fishers of the past, it is still advisable for fishery managers and businesses to tailor products and opportunities for this clientele. Elderly have time and often money to follow up their interests, and this segment is growing strongly in many forms of tourism and outdoor recreation.

Urban Youth

Urban fishing opportunities have been in focus for several decades (Manfredo et al. 1984). Traditionally, people become anglers in their youth, introduced to the sport by male family members at lakes, rivers, or the sea near where they live. As more people live in areas with fewer or no angling opportunities, and with changing family structures in which more children grow up in single-parent families, programs and efforts aiming at providing fishing and ensuring recruitment among urban youth will be important for the future of angling. In addition to the interest in targeting urban youth to ensure future participation in recreational fishing, recreational fishing probably holds qualities that make urban youth a group to whom recreational fishing has something to offer (Wightman et al. 2008).

Middle- and Upper-Class Segments in Regions with a Growing Economy

Several regions of the world have strong economic growth, an increased standard of living, and thus, often better-regulated holidays

and leisure time. In addition, changing political regimes are opening up some regions for more travel. Some of these regions already have a strong tradition of recreational fishing, such as eastern Europe and China. This established culture, together with economic, social, and political changes, make for strong growth in recreational fishing, such as that seen, for instance, in China, Lithuania, and Malaysia (Ditton et al. 2008). This will lead to increased demand for recreational fishing opportunities, not only in domestic and in nearby regions, but also in more exotic and distant fishing destinations. Anglers from Western countries will meet more anglers from these regions in angling destinations across the world.

Growing Numbers of Fishing Tourists

As the urban population grows all over the world, more and more recreational fishing will be enjoyed as tourism. Therefore, a better understanding of fishing as tourism is needed. There is currently a growth in exotic fishing tourism, often in developing countries. We believe that this development will continue and that the clientele visiting these destinations will become more diverse, though they mainly originate from urban areas. While some of the growth in fishing tourism seems to take place in the less-consumptive, ecotourism-inspired tourism segment (Zwirn et al. 2005), there are also major forms of fishing tourism that are less "exotic" and far more consumptive, such as the Norwegian marine recreational fishing tourism targeting the European market (Borch 2004), and major parts of the domestic Australian fishing tourism (Stoeckl, Greiner, and Mayocchi 2006). Few fishing tourism businesses today specifically target the large market for fishing as part of multiple-activity holidays, a segment that likely will grow.

CONCLUSION

In this chapter we have tried to analyze and discuss market trends in recreational fishing. As stated, appropriate studies analyzing changes in the recreational fishing market is largely lacking. We especially recommend conducting studies in which business representatives and scientists working in recreational fishing come together and apply methods such as Delphi techniques, Scenario writing, and time series analysis (Veal 1999). The future of recreational fishing is not fixed but is made up of a complex interplay in which the many stakeholders within the recreational fishing sector can make a difference.

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