

Human dimensions: the fishery guards versus illegal fishermen in three regions of Central-Eastern Europe

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Abstract. Sixty officers of the fisheries guard from three regions in northeast Poland, an area that is rich in inland waters, were surveyed. The results obtained are presented as percentages of each possible answer to each question and as rankings on a five-point scale. Those surveyed reported that the most common motivation for serving in the guard was an interest in nature, followed by an interest in recreational fisheries and then their own material and living conditions. Those surveyed reported that the principal motivation for poaching was to earn profits and as a consequence of unemployment. Sixty percent of officers reported encountering aggression from those who were monitored. Ninety percent of officers reported receiving threats from those monitored. The officers surveyed ranked their professional experience the highest among factors that impacted the effectiveness of the activities performed by the fisheries guard and the possibility of safeguarding ichthyofauna against poaching.

Keywords: Central-Eastern Europe, poaching, fishery guards, illegal fishermen, human dimensions

Introduction

The first humans began fishing more than 100,000 years ago in Africa (Lyman 2008), and in prehistoric times fishing was an easy, safe and sure way of obtaining food (Gartside and Kierkegaard 2009). Illegal fishing dates from the times when the first laws were drafted to limit fishing. Until the twentieth century, the decided majority of poachers committed this crime to survive, as most were poor peasants (Osborne and Winstanley 2006, Von Essen et al. 2014). In Poland, poaching, understood as thus, appeared simultaneously with Polish statehood during the early feudal period of the middle ages (Walachowicz 1963, Górzynski 1964, Slugocki 1991, Trella and Wołos 2015) and almost certainly earlier, before written law was known, and common law and tradition guided ancestral and tribal communities. The centuries have passed, but this phenomenon, now with vastly improved methods and fishing techniques, continues today in Poland and in many parts of the world (Pasternak 2013).

At present the matters related to fishing water use in Poland are specified in the Inland Fisheries Act (1985), which in a synthetic way gives Art. 1 as follows: The Act defines: 1) the terms and conditions for the protection, culture, breeding and fishing of fish in inland surface waters, hereinafter referred to

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as „waters“, in waters located in water facilities and in facilities intended for fish farming or breeding; 2) the competence of public administration bodies, their behavior, as well as the tasks and responsibilities of organizational units and persons related to the implementation of the provisions. According to the Act of 1985 it is forbidden to fish: in the cases specified by the provisions on nature protection; below protective dimensions; during the protection period; in violation of the catch limit set out in the regulations; at a distance of less than 50 m from structures and hydro-technical water damming devices; nets, rods or crossbows other than those specified in the rules; by creating an electric field characteristic of alternating current in water; poisonous and intoxicating agents; hurting tools, except hook lines, hook bundles, rod hook and crossbow harpoon; explosives; by stunning them and regulations governing fishing with a fishing rod. In addition, it is prohibited to: store, possess, transport, process and market eggs and fish caught or harvested in breach of regulations; marketing of fish from amateur fishing; catch fish and crayfish by pulling them out of burrows and breaching burrows.

Modern fisheries poaching is conducted with nets, longlines, grappling gear, electrofishing gear and other devices and traps. Illegal fishing is conducted in conservation areas and in violation of closed seasons and fish size restrictions. Catch limits are also exceeded in recreational fisheries (Kucyk 2011). In Poland, poaching has been a tradition for generations, there is solidarity among its practitioners and it is protected by a conspiracy of silence. Poaching is developing and growing on an increasing scale (Szpetkowski 2013a). However, measures undertaken by the fisheries guard to combat it are making measurable inroads (Mickiewicz and Wolos 2014). Unfortunately, poaching is not routinely condemned by society, which is why it is important to educate people about how poaching is against the law and violates the fundamental principles of nature conservation. It is

justified to undertake any and all actions to ensure that poaching is no longer socially acceptable (Szpetkowski 2013a, Szpetkowski 2013b).

In Poland, fighting illegal fishing is the responsibility of the State Fisheries Guard (SFG). The SFG is a specialist organizational unit that is directly subordinate to the voivodes. They function under the Inland Fisheries Act (1985) and all executive regulations issued based on it (Zebek and Napiórkowska-Krzebietke 2015). During the performance of official duties, the guards of the SFG are entitled, among others for: checking documents authorizing fishing for persons catching fish and documents confirming the origin of fish in persons processing or placing fish on the market; inspection of items used to catch fish; securing abandoned fish and objects used to catch them in the event that their holder cannot be identified; demand explanations and perform actions necessary to carry out inspections, and in the event of a justified suspicion of committing a crime or offense; ID card of suspects to establish their identity; collecting fish and items for catching them upon receipt; retaining documents after receipt; control of means of transport; searching people and rooms; bringing people to the police station; imposing fines by way of a penalty ticket for offenses specified in the Act; carrying small firearms and signal weapons; wearing handcuffs, hand-throwers, incapacitating substances, a truncheon, and objects intended to incapacitate persons by means of electricity. Thus, they have sufficient legal tools and technical measures to restrict poaching (Kucyk 2011); however, over the course of many years, increased tightening of the law in this area has been noted in Poland (Kosicki 2013).

This paper focuses on fisheries officers charged with fighting illegal fishing and their opinions on how the SFG functions and the phenomenon of fisheries poaching in Poland. The aim is to examine the human dimensions of poaching and the work that aims to combat it as it is viewed by the service charged with fighting poaching.

Materials and methods

The officers of the SFG surveyed were from three northeastern regions of Poland in the Pomeranian, Warmian-Masurian and Podlaskie voivodeships (Fig. 1). The region studied has many inland water basins, mainly lakes (including the largest in Poland – Śniardwy, Mamry, Łebsko, Jeziorak, Niegocin, Gardno, Roś, Wigry, Drużno, Nidzkie, Rajgrodzkie, Żarnowieckie, Wdzydze, Charzykowskie, Selment Wielki, Beldany, Orzysz, Ryńskie, Łańskie, Narie, Dadaj). The percentage of terrain covered by lakes in the three voivodeships is 2.8% in the Pomeranian, 5.3% in the Warmian-Masurian and 0.7% in the Podlaskie voivodeships, while the mean percentage of Polish territory covered by lakes is 0.9% (Kondracki 2002). Rivers (for example, the Vistula, Narew, Biebrza, Łyna, Pasłęka, Słupia, Łeba, Wierzyca, Wda,

Drwęca, Czarna Hańcza) and canals (the Ostródzko-Elbląski, the Mazurski, the Augustowski – which is the oldest and longest in Poland) also occur in this region, as well as a large number of smaller streams that interconnect the lakes and rivers.

In this regions aquatic tourism and recreation, including recreational fisheries, are especially well developed, and most of the nation's large lake fishery enterprises are in operation in this area. The large quantity of inland waters in the region studied means that there is significant poaching pressure, which is why this area was selected for study.

The research material comprised information obtained by analysing answers to survey questions. The commandants of the voivodeship SFGs distributed surveys to SFG officers in the Pomeranian, Warmian-Masurian and Podlaskie voivodeships. Sixty-five surveys were sent, to all of the fisheries



Figure 1. Map of Poland with the borders of the Pomeranian (a), Warmian-Masurian (b) and Podlaskie (c) voivodeships (https://pl.wikibooks.org/wiki/Wikibooks:Strona_g%C5%82%C3%B3wna).

guard officers employed at the SFG, and 60 were returned, which is a very satisfactory return rate of 92%.

The survey included questions regarding topics such as length of employment at the SFG, motivation for serving in the SFG, the motives of people who commit fisheries poaching, the types of aggression experienced by the officers from those they monitored, the types of threat officers heard from those they monitored and the types of risk encountered by SFG officers in the line of duty. The respondents were also asked to evaluate whether their work provided enough protection against poaching and to evaluate co-operation between the SFG and commercial and recreational fishers. The survey questions are presented in the Results section.

The survey was comprised of closed questions, i.e., the respondents were provided with options to choose from to answer questions. They were allowed to choose more than one answer. Additionally, they were allowed to provide their own answers to two questions, which is why the percentage share of responses does not always equal 100%.

The information obtained from the SFG officers through the surveys was analysed using basic mathematical statistics – calculated percentages and standard deviation (SD) – and responses to the questions about evaluating the work of the SFG were analysed using a ranking scale of 0 to 5 (0 indicated absolutely insufficient and 5 indicated absolutely sufficient) regarding whether, in their opinion, the following components of SFG work were sufficient to safeguard ichthyofauna from poaching: number of employees, training, experience, technical equipment. The results are presented as percentages (%) of the highest possible rank and as the mean rank. The highest possible rank of 100% was awarded when all respondents ranked a given factor 5 points. This means that over the entire analysed sample (60 individuals), 100% corresponds to 300 points. The magnitude of the average

rank is the arithmetic average of the sum of all ranks allocated to a factor (in cases when the highest possible rank is 5).

Results

The mean length of employment in the SFG among the officers surveyed was 14.8 years (SD = 8.40) within a range of 1 to 29 years. Among the motivation for seeking to serve in the SFG (Fig. 2), the leading answer given by the officers surveyed was an interest in nature (68% of responses). This was followed by an interest in recreational fisheries (50%) and then their own material and living conditions (42%). It is noteworthy that another common reason to serve in the SFG was the respondents' previous employment, i.e., police officer, soldier, fisher (22%). The desire for adventure or other reasons for deciding to serve were of little or no consequence.

Among the motives that the respondents believed led to committing poaching (Fig. 3), the desire for making profit (82% of responses) and unemployment (78%) were the leading responses. These were followed by poverty (63%), family or local tradition (62%) and the desire to obtain fresh fish for personal consumption (48%). The respondents chose

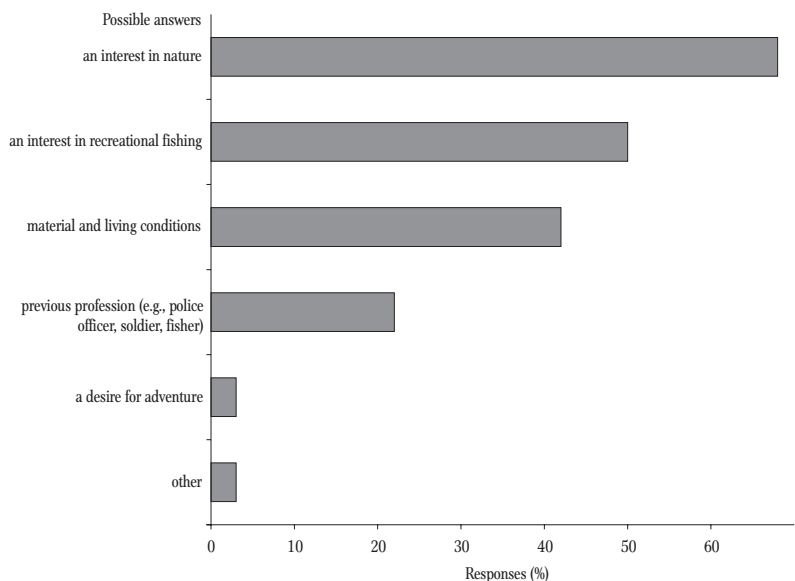


Figure 2: Distribution of responses to the question: What led you to join the State Fisheries Guard?

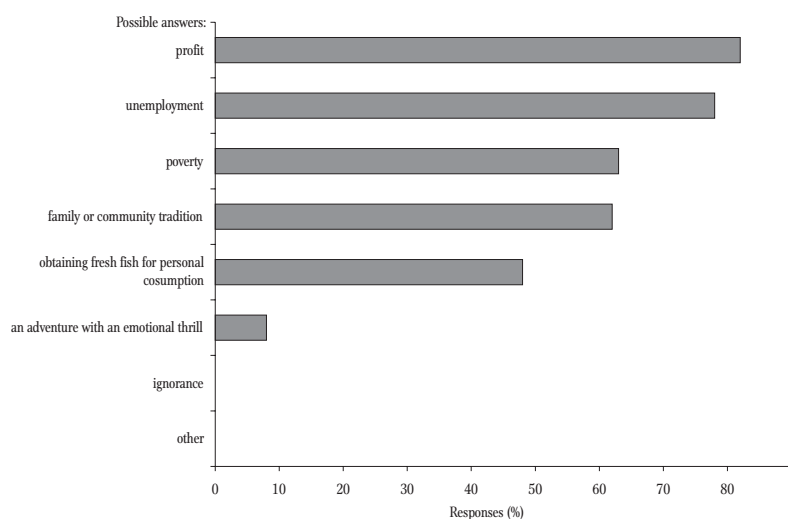


Figure 3: Distribution of answers to the question: In your opinion, what motivates people most frequently to commit poaching?

the answer of poaching as an adventure that provides an emotional thrill least frequently (8%). None of the respondents chose the answer referring to committing poaching through ignorance and no respondent contributed his or her own answers.

The answers to the question 'In the line of duty, have you encountered aggression from those you monitor?' were as follows:

- often – 60%,
- rarely – 18%,
- very often – 15%.
- very rarely – 7%,
- never – 0%,

According to the respondents, the most frequent type of aggression encountered was verbal (93% of

responses) and they also experienced verbal and physical aggression from those they monitored (7% of responses). SFG officers also received threats from those they monitored, with 90% of respondents reporting incidences of this. Most of these threats were directed towards the officers themselves (72% of responses), followed by threats made against officers' property, for example their cars or homes (35% of responses), and against their families or people close to them (22% of responses).

The responses to the question 'In your opinion, is working at the SFG dangerous?' were as follows:

- health hazards – 85%,
- risk of death – 72%,
- loss of property – 28%,
- no dangers are associated with this work – 5%.

Among the factors impacting the effectiveness of the work of the SFG and the ability of the organization to safeguard ichthyofauna from fisheries poaching, the SFG officers ranked professional experience the highest with 4.5 points on a scale of 0 to 5, nearly 90% of the maximum total rank possible (Table 1). This was followed by training (3.8 points and nearly 76%) and technical equipment (3.0 points and nearly 61%), with the number of SFG officers ranked the lowest (2.8 points and approximately 55%).

A total of 86% of respondents evaluated their co-operation with commercial fishers as good and

Table 1

Factors impacting the effectiveness of the State Fisheries Guard and its ability to safeguard ichthyofauna against fisheries poaching according to the SFG officers surveyed

Order	Factors impacting the effectiveness of the State Fisheries Guard	Mean rank (on a scale of 0 to 5 points)	Share (%) of the maximum total rank (100%=300 points)
1	Experience	4.5	89.7
2	Training	3.8	75.7
3	Technical equipment	3.0	60.7
4	Personnel	2.8	55.3

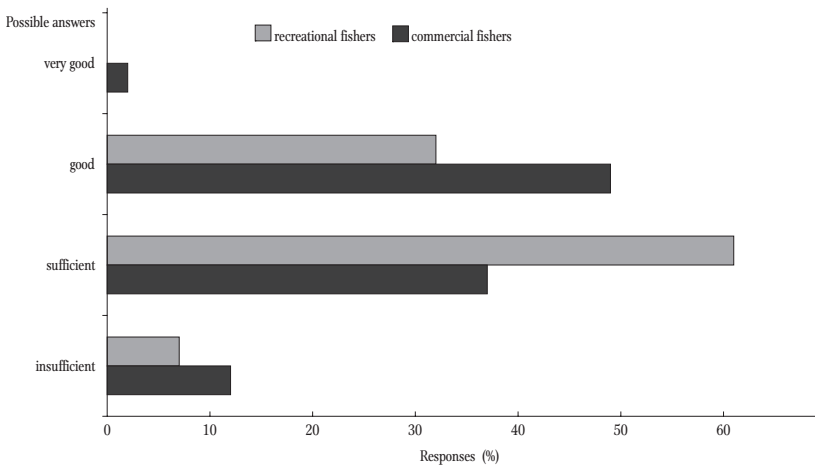


Figure 4: Distribution of responses to the question: How do you evaluate co-operation with commercial and recreational fishers?

sufficient, while they ranked that with recreational fishers at 93%; co-operation with commercial fishers was ranked as good by 49% of respondents and that with recreational fishers was ranked as good by 32% of them (Fig. 4). This co-operation was ranked as very good by 2% of respondents, while none of the respondents ranked co-operation with recreational fishers as very good. The percentage of respondents who evaluated their co-operation with commercial fishers as insufficient was 12% and with recreational fishers it was 7%.

Discussion

The human dimension in fisheries management is increasingly valued by managers responsible for implementing sustainable fisheries management (Aas and Ditton 1998, Ditton and Hunt 2001, Arlinghaus 2004, De Young et al. 2008, Loquine 2010). Studies of the human dimension permit gaining an understanding and integration of the complexity of managing the wilderness with a view to reconciling the interests of the many people who exploit waters (Bath 1995, Ditton 1996, Ditton and Hunt 2001, Loquine 2010). Collecting data on the subject of the human dimension provides a lot of information on current and potential problems that occur in the

implementation of sustainable fisheries management (Aas and Ditton 1998, Ditton and Hunt 2001). The human dimension of fisheries management illustrates the complicated web of relations that is often difficult to identify (Loquine 2010), and the problem this paper focuses on from the perspective of fisheries guard officers and one in which the human dimension of fundamental importance is precisely that of illegal fishing.

The average length of employment in the SFG of the respondents surveyed is nearly 15 years, and this can be described as relatively long. This is linked to the request in the survey to evaluate the factors impacting the effectiveness of the work of the SFG and the possibility of it safeguarding ichthyofauna against poaching; the respondents ranked the factor of their professional experience most highly (mean rank of 4.5 points and nearly 90% of the maximum ranking attainable).

When analysing the responses to the question regarding the motivation for serving in the SFG, it can be concluded that officers are not motivated by financial reasons or by chance, but rather by ideology – an interest in nature or in fishing – that is associated (or should be) with an interest in nature and a desire to protect it. This motivation corresponds somewhat with the range of risks encountered by officers in the line of duty at the SFG; someone who lacks ideological motivation would not expose him - or herself for nearly 15 years to the range of risks that the respondents listed. As many as 75% of the respondents indicated that they encountered aggression – most frequently verbal (93% of responses) – from those they monitored either often or very often. As many as 90% of those surveyed reported receiving threats from those they monitored; these were most frequently threats against the officers themselves (72% of responses). It is no wonder that as many as 85% of respondents reported that serving in

the SFG poses a health hazard, and as many as 72% of them reported it posed a risk of death. Certainly, the officers surveyed would feel safer if they had better equipment and if a greater number of them participated in patrols. This might be evidenced by the fact that among the responses to the question about factors impacting the effectiveness of work at the SFG, equipment and the number of officers employed was at the bottom of the list with respective mean rankings of 3.0 and 2.8 points (on a scale of 0 to 5 points). Thus, one can assume that the ideology factor – an interest in nature and a desire to protect it – plays an enormous role in officers' service in the SFG.

Just the opposite was true in the case of the illegal fishermen. In the opinions of the officers surveyed, the motivations to poach were mainly economic and, in a certain way, based on fairly convoluted logic, poaching was a necessity. Respondents evaluated the motives for committing poaching as follows: a desire for profit (82% of responses), unemployment (78% of responses) and poverty (63% of responses). Environmental factors were also relevant as a tradition of poaching within families or communities was cited as a reason for committing poaching by 62% of those surveyed. According to Borejko (2008) in Russia, Ukraine and Belarus, illegal fishermen can be divided into three groups: 1) those for whom poaching is the only source of income; 2) those for whom it is a business; 3) those for whom it is a passion, entertainment and seeking strong impressions. It is not surprising then that in Ukraine every year, poachers caught 197,000 tons of fish, while legal professional fishermen approx. 200,000 tons.

In relation to this, it must be noted here that fisheries poaching in Poland (and at least partly in another countries in Central-Eastern Europe) is rooted in the country's historical, cultural and social background, including the nineteenth-century partition of Poland between Russia, Prussia and Austria, the Nazi occupation of 1939–1945, the domination (and de facto occupation) by the Soviet Union and the rule of the totalitarian Polish communist party from 1945 to 1989

and, finally, the monumental socioeconomic transformation of the late twentieth and early twenty-first centuries that have resulted in, for example, structural unemployment and low standards of living among segments of society that persist even to today. These aspects of fisheries were investigated by historians, sociologists, ethnographers and cultural anthropologists (Górzyński 1964, Szczygielski 1967, Znamierowska-Prüfferowa 1988, Sługocki 1991, Kłodnicki 1992, Olszewski 1993). Similar observation was made in another country of Central-Eastern Europe, Ukraine, where it was found that illegal fishing in watercourses of the Tisza River drainage was widespread and primarily practiced by low-income residents of rural communities (Didenko et al. 2011). Social and economic impacts of illegal fishing are severe, and are especially prevalent in developing nations (Liddicch 2014), and even lead to the non-achievement of management goals and sustainability of fisheries (Sumaila et al. 2005, Rizollo et al. 2017).

Analysis of the evaluations of the surveyed SFG officers regarding co-operation with commercial and recreational fishers indicates that they viewed co-operation with commercial fishers slightly better than that with recreational fishers as is reflected in the percentages of good (49% and 32%, respectively) and very good (2% and 0%, respectively) evaluations. Additionally, the total percentages of insufficient and sufficient evaluations regarding commercial and recreational fishers were 49% and 68%, respectively. On the other hand, the percentage shares of evaluations of insufficient co-operation with commercial and recreational fishers were 12% and 7%, respectively. Thus, it is difficult to obtain an unambiguous evaluation regarding the co-operation between the SFG and commercial and recreational fishers. Despite difficulties in interpreting the results, one can venture that the slightly better co-operation between the SFG officers surveyed and commercial fishers stems from the fact that the SFG is working to safeguard the fisheries and thus the fishers' livelihoods, while for recreational fishers the officers are only protecting the possibility of practicing their hobby.

Conclusion

The State Fisheries Guard employs officers who are most motivated by the interests of nature conservation and recreational fisheries. For poachers, the most important motivation for illegal fishing are factors such as profit, unemployment and family or local traditions. The guards consider professional experience, training and technical equipment as the most important factor determining the effectiveness of SFG operations. While performing the service, officers of the SFG often encounter aggression, health hazard and risk of death, and therefore we must recognize that their legally sanctioned powers are completely justified. In view of the fact that in the three regions of Central-Eastern Europe studied rich in inland waters we are still dealing with the scourge of poaching, the question remains open: is the current number of guards employed at PSG sufficient?

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