


Fish Stocks in Conservation Areas are Improved to Enable Prodigious Amateur Fishing

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Abstract

A freshwater protected area is a designated portion of inland water that limits human activity. They were created to combat the decline of the world's flora and fauna. Some authors question their practical effectiveness in protecting endangered plant and animal species. We assessed the impact of conservation on fish communities. Selected data from two years of gillnets analyzed differences between low anthropogenic impact areas (LAI) and high anthropogenic impact areas (HAI) in terms of abundance, biomass, standard length and diversity index did. Three groups of fish have been found to prefer protected areas where anthropogenic pressure is low. Pike (*Esox Lucius*), catfish (*Silurus glanis*) and rudd (*Scardinius erythrophthalmus*) were never seen in the HAI area. A larger specimen of Zander (*Stizostedion lucioperca*) that survived well in the LAI area. Several factors can affect his LAI, including illegal poaching and the use of bait to lure fish. Another possible factor is migration of fish for foraging or breeding as the LAI area is open to the reservoir. Areas of the LAI serve as protected habitats for frequently fished predatory fish species, increasing fish diversity. The example of protected areas and low-impact areas in Lipno should be followed in other waters with high fishing pressure and anthropogenic influence.

Keywords: Angling; Recreation pressure; Exploitation; CEN gillnets; Recreation fishing

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Introduction

A freshwater protected area is a designated portion of inland water that limits human activity. They were created to combat the decline of the world's flora and fauna [1]. Some authors question their practical effectiveness in protecting endangered plant and animal species. We assessed the impact of conservation on fish communities. Selected data from two years of gillnets analyzed differences between low anthropogenic impact areas (LAI) and high anthropogenic impact areas (HAI) in terms of abundance, biomass, and standard length and diversity index. Three groups of fish have been found to prefer protected areas where anthropogenic pressure is low [2].

YOY (Young-of-the-year) perch (*Perca fluviatilis*), dominant species in young fish communities [3]. Pike (*Esox lucius*), catfish (*Silurus glanis*) and rudd (*Scardinius erythrophthalmus*) were never seen in the HAI area [4]. A larger specimen of Zander (*Stizostedion*

lucioperca) that survived well in the LAI area. Several factors can affect his LAI, including illegal poaching and the use of bait to lure fish. Another possible factor is migration of fish for foraging or breeding as the LAI area is open to the reservoir [5]. Areas of the LAI serve as protected habitats for frequently fished predatory fish species, increasing fish diversity. The example of protected areas and low-impact areas in Lipno should be followed in other waters with high fishing pressure and anthropogenic influence [6].

Result

Total catch per unit (CPUE; population per individual) of fish older than juveniles from gillnets at high-impact (HAI) and low-impact (LAI) locations in Lake Lipno [7]. Boxplots represent quartiles of CPUE, black dots represent the mean of each grid, thick center line represents the median, white dots represent the

overall mean of all measurements, and whiskers represent actual values. Represents the lowest and highest quartile. Total biomass expenditure per unit (BPUE; kg per point) of fish older than YOY from gillnets in high-impact (HAI) and low-impact (LAI) sites in the Lipno Reservoir [8]. Boxplots represent BPUE quartiles, black dots represent the mean of each grid, thick center line represents the median, white dots represent the overall mean of all measurements, and whiskers represent true values represents the lowest and highest quartiles [9].

Discussion

The most commonly caught species in Czech reservoirs are carp and predatory fish such as zander and pike. Our results showed that the main predatory species targeted by zander, perch, catfish and pike had more CPUE/BPUE or larger average size within the LAI than in control areas [10]. Pike and catfish densities in the HAI area are very low and no individuals were captured during this survey. Due to less exploitation in the LAI area, fish can achieve larger sizes or densities [11]. Small perch fish may be more common in his HAI area, but larger ones are more common in his LAI area. Except for pike and catfish, there is no significant difference in density. This is probably due to the movement of LAI fish and limited fishing pressure, including illegal poaching. Interestingly, the two bays on the southwest coast of Lipno have very similar fish compositions, but only one of them is a no-take zone. The results suggest that her Račinská Bay, a remote area difficult for anglers to reach, can also serve as a shelter [12]. Protection of the Lipno LAI region consists primarily of fishing bans and isolation from tourists and local anglers. In theory, there is little to no fishing in these areas, although other parts of the reservoir are under very severe fishing pressure. It is not closed off from the lake, but is large enough (tens to hundreds of hectares) to develop stronger subpopulations of some species. Differences in fish communities in the LAI and HAI regions may also be caused by inherent differences between the western and eastern sides of the lake, unrelated to anthropogenic pressures. The entire west bank of the reservoir has been designated as a protected area to limit recreational fishing as much as possible. However, differences in the population and size structure of

predatory fish species indicate that the life expectancy of these valuable fish species is much higher in his LAI region. Commercial fishing is completely prohibited in Czech reservoirs, but recreational fishing is just as effective as or even more effective than commercial fishing in a wide variety of environments and habitats [13].

Overall fish density was actually lower for him in the LAI. Some fish are very attracted to feeding anglers at their favourite spot. This tactic is very effective against cyprinid fish such as carp and roaches, and an angler can lure these cyprinid fish into his HAI area, which is frequently frequented by the angler. Also, HAI regions may receive more nutrients and be more productive. Interestingly, Rudd was more common in his LAI area [14]. Although not common in reservoirs, this species seems to prefer protected coves. Later in life, it becomes more herbivorous. In Czech reservoirs it is considered an indicator of macrophytes presence and good ecological potential, and is more common in bays protected from prevailing westerly winds. Protected areas are essential to the conservation of biodiversity and are essentially intended to maintain functioning natural ecosystems, serve as a haven for species, and protect ecological processes in all types of environments. It is the cornerstone of all national and international conservation strategies. Intact freshwater systems are becoming increasingly scarce around the world, and management, environmental and social measures must be taken to maintain their natural state and unique biodiversity before they fall victim to a range of threats. Protected areas are often the most important tool needed to save the many at risk [15].

Conclusion

Our study represents an attempt to assess the impact of the Lipno Dam protected area, the largest body of water in the Czech Republic, on fish abundance, biomass and species composition. Her three groups of fish have been found to prefer protected areas with low anthropogenic pressure. YOY perch, as the super-ruler of the juvenile community. The survey did not find pike, catfish or rudd in areas of high anthropogenic influence. Larger specimens of zander appear to survive better in areas of low anthropogenic pressure.

References

- 1 Halpern BS, Walbridge S, Selkoe KA, Kappel CV, Micheli F, et al. (2008) A global map of human impact on marine ecosystems. *Science*, 319: 948-952.
- 2 Jones KR, Klein CJ, Halpern BS, Venter O, Grantham H, et al. (2018) The location and protection status of Earth's diminishing marine wilderness. *Current Biology* 28: 2506-2512.
- 3 Alongi, Daniel M (2002) Present state and future of the world's mangrove forests. *Environmental Conservation* 29: 331-349.
- 4 Mumby Peter J, Mark A, Priest Brown, Christopher J, Roff George, et al. (2018) Decline of coastal apex shark populations over the past half century. *Communications Biology* 1: 223.
- 5 Waltham Nathan J, Elliott Michael, Lee Shing Yip, Lovelock Catherine, Duarte Carlos M, et al. (2020) UN Decade on Ecosystem Restoration 2021-2030-What Chance for Success in Restoring Coastal Ecosystems. *Frontiers in Marine Science* 7: 71.
- 6 Lennox Robert J, Alós Josep, Arlinghaus Robert, Horodysky Andrij, Klefoth Thomas, et al. (2017) Fish and Fisheries. *Fisheries* 18: 986-1010.
- 7 Sneddon LU (2009) Pain perception in fish: indicators and endpoints. *ILAR Journal* 50: 38-42.
- 8 Lund V, Mejdell CM, Röcklinsberg H, Anthony R, Håstein T, et al. (2007) Expanding the moral circle: farmed fish as objects of moral concern. *Diseases of Aquatic Organisms* 75: 109-118.
- 9 Davie PS, Kopf RK (2006) Physiology behaviour and welfare of fish during recreational fishing and after release. *N Z Vet J* 54: 161-172.
- 10 Yaowu Hu Y, Hong Shang H, Haowen Tong H, Olaf Nehlich O, Wu Liu W, et al. (2009) Stable isotope dietary analysis of the Tianyuan 1 early modern human. *PNAS* 106: 10971-10974.
- 11 Pedergrana Antonella, Cristiani Emanuela, Munro Natalie, Valletta Francesco, Sharon Gonen, et al. (2021) early line and hook fishing at the Epipaleolithic site of Jordan River Dureijat (Northern Israel). *PLOS ONE (PLOS)* 16: 0257710.
- 12 Jones Benjamin L, Unsworth Richard K F (2019) the perverse fisheries consequences of mosquito net malaria prophylaxis in East Africa. *Ambio* 49: 1257-1267.
- 13 Hardy JT (1982) The sea surface microlayer: Biology, chemistry and anthropogenic enrichment. *Progress in Oceanography* 11: 307-328.
- 14 Wurl Oliver, Holmes Michael (2008) the gelatinous nature of the sea-surface microlayer. *Marine Chemistry* 110: 89-97.
- 15 Österblom H, Crona BI, Folke C, Nyström M, Troell M, et al. (2017) Marine ecosystem science on an intertwined planet. *Ecosystems* 20: 54-61.