

Developing performance standards in fish passage: Integrating ecology, engineering and socio-economics

Amanda C.O Toole*

Department of Biology, University of Carleton, Canada

Received: 02-Jan-2023; Manuscript No: JAEFR-23-88282; Editor assigned: 04-Jan-2023; Pre QC No: JAEFR-23-88282 (PQ); Reviewed: 18-Jan-2023; QC No: JAEFR-23-88282; Revised: 23-Jan-2023 (R); Manuscript No: JAEFR-23-88282 (R); Published: 30-Jan-2023; DOI: 10.3153/JAEFR.09.02.011

Introduction

As this report points out, seafood such as mussels, oysters and clams are readily available in our waters. These animals actually clean the water around them by using a filtration system within their bodies [1]. They absorb and remove dangerous pathogens and chemicals [2]. It turns out that fish are incredibly small creatures. Not only are they a valuable food source for us humans, but they also have a positive impact on the environment in many ways. Method is as follows [3]. The main advantage of aquaculture over aquaculture is the fact that the farm takes up much less space. Fish are usually smaller than cows, pigs, or chickens and can be farmed in water. That means the land is freed up for other versatile resources. A study conducted in the UK found that even low-level carnivores produce more greenhouse gases than fish eaters [4]. Piscivores produce more greenhouse gases than vegetarians are only slightly higher in emissions. So eating fish as a source of protein is not only good for the planet, it's good for humans. Bycatch refers to the incidental capture of "non-target species" such as dolphins, sea turtles and seabirds by fishing [5]. We tend to think that wild fish are always better, but if they were caught commercially, there's a good chance that the nets also had bycatch.

Description

It is a major contributor to the death of endangered aquatic organisms worldwide. One of the ways responsible aquaculture can help the planet is by eliminating bycatch entirely [5]. Keeping fish in floating cages ensures that unwanted species are not accidentally captured. Through their daily, seasonal and annual migration patterns in lakes, rivers and seas, fish can contribute to the surrounding ecosystems in many ways [3]. They are not only a food source for multiple species, but also provide links between ecosystems through their daily migration, feeding and resting places [1]. In lakes, certain fish are able to "transport and redistribute phosphorus and other essential nutrients between riparian, pelagic, and

deeper bottom zones." Fish are constantly exposed to water conditions. It is therefore an excellent indicator of biological and environmental health [4]. Monitoring fish responses (growth, migration patterns, chemical toxicity, changes in dispersal due to water pollution, etc.) is essential to better understand the overall state of fish species and surrounding ecosystems. Whether it's nature's ability to transport needed nutrients between shore and the deeper seabed, or the fact that eating it can reduce CO₂, fish are not only delicious to eat, they're important to our ecosystems [2]. Also plays an important role in Abandoned fishing gear such as nets and traps are a major source of debris that pollutes the ocean.

Conclusion

Equipment traps animals, engulfs and endangers marine life, and affects habitats. According to researchers at the University of Georgia and Florida International University, fish play a much more important role as a source of nutrients in marine ecosystems than previously thought. In his two articles in the journal Ecology, they show that fish contribute more nutrients to local ecosystems than any other source, and the growth of organisms at the bottom of food webs. Fisheries can be defined as raising and harvesting wild marine and freshwater fish for food or industrial use. According to the Food and Agriculture Organization (FAO), fishing is the activity that results in a harvest of fish. They are categorized according to the people involved, the type and type of fish, the surface and bottom of the water, the method of catching, the type of boat, the purpose, etc. Some organizations that focus on recreational fishing include not only fishermen, but fish and the habitats that fish depend on for their definition.

Acknowledgement

None.

Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

***Correspondence to**

Amanda C.O Toole

Department of Biology

University of Carleton

Canada

amanda.c_o.toole@usc.edu.ca

References

1. Baras E, Lucas MC. Impacts of man's modifications of river hydrology on the migration of freshwater fishes: A mechanistic perspective. *Int J Ecohydrol Hydrobiol.* 2001; 1(3):291-304.
2. Barrett J, Mallen-Cooper M. The murray river's 'sea to hume dam' fish passage program: Progress to date and lessons learned. *Ecol Manag Restor.* 2006; 7(3):166-242.
3. Burnett NJ, Hinch SG, Braun DC, et al. Burst swimming in areas of high flow: Delayed consequences of anaerobiosis in wild adult sockeye salmon. *Physiol Biochem Zool.* 2014; 87(5):587-98.
4. Calluad D, Pineau G, Texier A, et al. Modification of vertical slot fishway flow with a supplementary cylinder. *J Hydraul Res.* 2014; 52(5):614-29.
5. Grill G, Lehner B, Thieme M, et al. Mapping the world's free-flowing rivers. *Nature.* 2019; 569(7755):215–21.