



## BOOK REVIEW

**Skov C. & Nilsson P.A. (Eds.) 2018. BIOLOGY AND ECOLOGY OF PIKE. CRC Press. 402 p. ISBN-13: 978-1-4822-6290-2 (Hardback).**

The Esocidae is an important fish family consisting of one genus and seven species (Fricke et al. 2019). Species belonging to it are *Esox aquitanicus* (Denys et al., 2014), *E. reichertii* (Dybowski, 1869), *E. niger* (Lesueur, 1818), *E. americanus* (Gmelin, 1789), *E. masquinongy* (Mitchill, 1824), *E. cisalpinus* (Bianco and Delmastro, 2011) and *E. lucius* (L., 1758) (Froese & Pauly 2019). *Esox lucius*, known as northern pike, is widely distributed in North America and Eurasia (Froese & Pauly 2019). According to Welcomme (1988) and Kottelat & Freyhof (2007), *E. lucius* has been widely introduced throughout Europe and so far several countries have reported adverse environmental effects since its introduction. Many studies have been carried out on diverse aspects of

the biology of the pike, with their results scattered in various journals. There is a need for a comprehensive and verified scientific reference to address this species. The present book review examines a recently-published book with a focus on the pike. The editors of the book, Christian Skov and P. Anders Nilsson, are experienced researchers who have done numerous studies on the biology and ecology of fishes, especially on the pike. Skov is a researcher at the Technical University of Denmark, Section of Inland Fisheries and Ecology. Nilsson works at the Lund University, Department of Biology – Aquatic Ecology.

This book examines various aspects of the biological and ecological characteristics of the pike. It has summarised the progress of research in the past two decades. A considerable part of this book is devoted to the management measures to conserve the pike stocks, which are of the utmost importance. The present book consists of 14 chapters. The first chapter gives a brief introduction. The number of scientific studies on the pike during the past 100 years (1916–2016) reflects the increasing and continuing interest of researchers at this species. In this chapter, the authors also refer to the aims of each of the following chapters. The remaining part of the book considers the pike in three sections, each consisting of three – six chapters.

Section 1 (chapters 2-5) considers the pike at the level of individuals. Chapter 2 refers to finding food and survival. The authors cover a variety of topics, including foraging behaviours, predation cycle, search, attack and capture of prey as well as digestion. They focus on predating priorities, specialisation and phenotypic plasticity. Chapter 3 addresses abiotic factors influencing pike individuals such as vegetation and turbidity. The aquatic vegetation is recognised as an essential key factor at all stages of pike life. The authors emphasize that the effects of the turbidity are complex and need to be addressed in future studies. They also refer to the direct and indirect effects of climate change on individuals and populations, concluding that this issue is still vague and remains poorly explored. Chapter 4 is focused on the bioenergetics and growth of pike. It examines the role of anatomic and physiological peculiarities, metabolic processes leading to fish growth and the energy storage in tissues, energy budget and, finally, the metabolic peculiarities determining the growth potential of the species. Chapter 5 examines the spatial ecology of the pike, considering separately adult and juvenile stages of this fish species in relation to their movements, activities and habitat selection. Section 2 (chapters 6-8) is entitled “Populations and Communities”. Chapter 6 examines the size and structure of the pike populations, considering independent of density and density-dependent factors for

shaping the population structure and the influence of environmental factors on the recruitment process, mortality and individual growth. Chapter 7 studies the genetics of pike, including such topics as the low level of genetic variation in populations, large-scale phylogeography, population genetics structure and conservation of genetic variability; an important element of this chapter is the presentation of case studies on pike genetics in different regions, which is very helpful for better understanding the subject. Chapter 8 is focused on trophic aspects, especially on the complex consequences of prey-predator interactions and their effects on the structure and dynamics of communities.

Section 3 (chapters 9-14) is devoted to the management and fisheries. Chapter 9 discusses the role of stocking in the increase of pike populations, considering its effectiveness and associated risks; it concludes that stocking can be used as a fisheries management tool in future. Chapter 10 is one of the most important and practical chapters of this book, referring to habitat restoration as a key approach in managing pike populations. Chapter 11 refers to pike stocking as a management tool that can be used to restore aquatic habitats, analysing its efficiency but also its possible negative consequences for the water bodies. Chapter 12 addresses the sustainable management of pike in recreational fisheries. Chapter 13 examines the commercial fisheries and attempts to provide important information on the stocks assessment and aquaculture of this species; this chapter provides a range of information on the pike fishery rates and surveys the methods for estimating the stocking density. An interesting aspect of this chapter is also the discussion of the problems encountered in pike breeding. The final chapter (14), in addition to introducing the northern pike as a valuable endemic fish, also considers it as a dangerous invasive species, especially its effects as a non-native species on salmonids and other fish groups.

The reviewed book has many positive features and strengths that need to be addressed. One of them is the presentation of information in attractive and appropriate illustrations and graphs that draws the reader's attention. In addition, this book gives the necessary information in simple and accessible language. Of course, it should be noted that, despite these positive features, the present book could have been presented in a better way. For example, it could provide basic and important information about the geographical distribution of this species at different latitudes. This suggestion could be taken in view if preparing next editions.

In conclusion, we recommend this book as a verified scientific reference because of its appropriate structure and rich content. This reference can be useful for researchers, students and teachers in various scientific fields such as biology, ecology, fisheries, ichthyology and aquaculture. In fact, this book, with its extensive coverage of the biological and ecological characteristics of the pike, can answer many questions about this species.

## References

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