



**S.I.E.F.**  
Società Italiana  
Ecopatologia  
della Fauna

**ATTI DEL**

**IV CONGRESSO NAZIONALE DI  
ECOPATOLOGIA DELLA FAUNA**

Domodossola  
11-13 Ottobre 2017

Atti del IV Congresso Nazionale di Ecopatologia della Fauna

Organizzato da: S.I.E.F. – Società Italiana di Ecopatologia della Fauna  
Fondata nel 1992

[www.sief.it](http://www.sief.it)

Edizione a cura di:

Stancampiano L.; Armaroli E.; Viganò R.; Ferrari N.

Publicazione elettronica scaricabile dal sito [www.sief.it](http://www.sief.it)

A cura di: S.I.E.F. - Società Italiana di Ecopatologia della Fauna

Dicembre 2017

ISBN on line: 9788894297300

---

Direttivo SIEF:

Nicola Ferrari, Carlo Citterio, Laura Stancampiano, Roberto Viganò, Elisa Armaroli, Mauro Ferri, Vittorio Guberti

# ALIEN FISH SPECIES IN ITALY: AN OVERVIEW ABOUT STATUS AND HEALTH RISKS TO AQUATIC BIODIVERSITY

PASTORINO P.<sup>1,2</sup>, PIZZUL E.<sup>2</sup>, PREARO M.<sup>1</sup>

<sup>1</sup> Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle d'Aosta, Via Bologna 148 - 10154 Torino;

<sup>2</sup> Dipartimento di Scienze della Vita, Università degli Studi di Trieste, Via Giorgieri, 10 - 34127 Trieste.

Alien species are species introduced by humans (either intentionally or accidentally) outside its natural past or present distribution. Synonyms of “alien” that are widely used are: exotic, allochthonous, introduced, not native species (NNS) or not indigenous. Otherwise, a species occurring in its original area is defined as autochthonous or native or indigenous. In Italy, Zerunian (2004) reports the presence of 48 autochthonous freshwaters species (with 22 endemisms). Nocita and Zerunian (2007) reports 38 allochthonous species, 13 of them are naturalized. The last check list drafted by Italian Association of Freshwaters Ichthyologist (A.I.I.A.D.) in 2016 reported the presence of 72 allochthonous species. The increase is also due to the implementation of new genetics techniques and biogeographic knowledge. The most common negative effects that an alien species may cause are: 1) predation; 2) competition with autochthonous species; 3) changes of the habitat; 4) hybridization with indigenous species; 5) spreading of new pathogenic agents (parasites, bacteria, viruses, fungi) that may be more virulent to new hosts due to the lack of innate immunity in the autochthonous species. In Italy, the introduction of fish fauna from foreign countries, both for restocking or for aquaculture, has been going on for years. Problems related to international trade are not just an Italian issue. In fact, the presence of globalization and the paucity of rules and controls at frontiers has led to the introduction of alien species in the Member States and their spread throughout the territory. A classic example is the Anguillicolosis, a parasitic disease caused by *Anguillicoloides crassus* (Nematoda), introduced in Europe through the import of *Anguilla japonica* from Asia. It causes health problems (inflammation of the swim bladder and secondary bacterial infections) in aquaculture facilities and in eel wild populations. In addition, certain pathogens introduced with the import of live fish may potentially be dangerous for humans (zoonotic agents), such as some etheroxenic parasites present in freshwater fish. Health issues are not only related to the introduction of alien species from other countries, but are also extended to the handling of indigenous species from different geographic district within the national territory.

Thus, risks from the introduction of alien species are several: while the ecological risks have been repeatedly defined, and reaffirmed at national and international scientific meetings, the health risks are often marginally considered. The aim of this presentation is to contribute to the assessment of alien freshwaters fish introduced in our territory and related health risks.