

THE OCCURRENCE AND POPULATION CHARACTERISTICS OF INVASIVE FISH AMUR SLEEPER (*PERCCOTTUS GLENII*) IN OXBOW LAKES IN SOUTH-EASTERN POLAND

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PRISUSTVO I POPULACIONE KARAKTERISTIKE INVAZIVNE VRSTE AMURSKI SPAVAČ (*PERCCOTTUS GLENII*) U MRTVAJAMA U JUGOISTOČNOM DELU POLJSKE

Apstrakt

Amurski spavač (*Perccottus glenii*, Dybowski 1877) je vrsta ribe koja se u toku poslednjih godina smatra alohtonom vrstom za prirodne vodene ekosisteme Centralne Evrope. U Poljskoj je prvi put zabeležena 1993. godine u srednjem delu reke Vistula. Zbog njenih morfoloških i bioloških predispozicija ona predstavlja pretnju za prirodne vodene ekosisteme. Ova vrsta ribe se karakteriše velikom proždrljivošću, otpornošću na nepovoljne faktore sredine i brojnim drugim odlikama karakterističnim za invazivne vrste. Cilj ove studije je bio da se odredi prisustvo, abundanca i procentualni udeo amurskog spavača u fauni riba u mrtvajama koje se nalaze u jugoistočnom delu Poljske.

Istraživanja su obavljena u toku dva dana 2012. godine i obuhvatila su šest mrtvaja (No 1-6) koje se nalaze u basenu reke Wieprz. Izlov ribe je izvršen korišćenjem aparata za elektroribolov (IUP-12, 220-250V, 7A). Svi izlovljeni primerci riba su određeni do nivoa vrste i izmerena je njihova totalna dužina ($L_t \pm 1$ mm) i totalna težina ($W \pm 1$ g). Određen je ihtiofaunistički sastav mrtvaja i abundanca amurskog spavača, kao i dužinska i težinska struktura i gustina (kao CPUE, tj. $\text{ind.} \cdot 100\text{m}^{-2} \cdot \text{h}^{-1}$ izlovaljavanja) ove vrste.

Ukupno je nađeno 14 vrsta riba u istraživanim mrtvajama. Amurski spavač je nađen u 4 od 6 ispitivanih mrtvaja. Totalna dužina amurskog spavača je bila u rangui od 34 mm do 128 mm. (u proseku 55 ± 26 mm) i varirala je u zavisnosti od istraživanog lokaliteta. Prosečna biomasa amurskog spavača je bila 5.4 ± 7.3 g i varirala je od 1 g to 12 g. Proporcionalni udeo amurskog spavača u abundanci riba je varirao od 40% u mrtvaji u blizini lokacije Latyczów (No 2) do 67.3% u mrtvaji u blizini grada Wał (No 6). Gustina ove alohtone vrste je varirala od 4.0 do 35.6 CPUE i zavisila je od istraživanog lokaliteta. U dužinskoj

strukturi populacije amurskog spavača dominirale su jedinke sa totalnom dužinom manjom od 50 mm.

U cilju identifikacije i određivanja puteva širenja amurskog spavača u nove oblasti, potrebno je vršiti kontinualni monitoring ihtiofaune. Štaviše, bilo bi korisno pronaći biološke karakteristike ove vrste koje bi omogućile njenu eliminaciju iz slatkovodnih ekosistema.

Ključne reči: amurski spavač, Perccottus glenii, invazivne vrste riba, populacione karakteristike

Abstract

Amur sleeper (*Perccottus glenii*, Dybowski 1877) is fish which in recent years has been regarded as an alien fish species in natural water ecosystems of Central Europe. In Poland, it was first recorded in 1993 in the middle part of the Vistula River. Because of its morphological and biological predispositions it is a threat to natural water ecosystems. This fish is characterized by high voracity, resistance to adverse environmental factors and a number of features conducive to invasion. The aim of this study was to determine the presence, abundance and percentage contribution of Amur sleeper in the fish fauna of oxbow lakes located in south-eastern Poland.

The study was conducted on two different terms (June and August) in 2012 in six oxbow lakes (No 1-6) located in the Wieprz River basin. Control fishing was carried out using electric fishing gear (IUP-12, 220-250V, 7A). All caught fish were identified to species and their total length (Lt; ± 1 mm) and weight were measured (W; ± 0.1 g). The species composition of the fish fauna of the oxbow lakes and the abundance of Amur sleeper were determined, as well as the size structure and density (in CPUE, i.e. $\text{ind.} \cdot 100\text{m}^{-2} \cdot \text{h}^{-1}$ of fishing) of Amur sleeper.

A total of 14 fish species were found in the oxbow lakes. Amur sleeper was reported in four of the six surveyed oxbows. The total length of Amur sleeper ranged from 34 mm to 128 mm (on average 55 ± 26 mm) and varied depending on the study site. The average biomass of Amur sleeper was 5.4 g (± 7.3 g), ranging from 1.3 g to 11.8 g. The proportional contribution of Amur sleeper in the abundance of fish ranged from 40% in the oxbow in the vicinity of Latyczów (No 2) to 67.3% in the oxbow lake near the town of Wał (No 6). The density of this alien species ranged from 4.0 to 35.6 CPUE and depended on the study site. The size structure of the Amur sleeper population was clearly dominated by individuals with a total length of less than 50 mm.

To identify and determine the routes of dispersion of Amur sleeper into new areas, continuous fish fauna monitoring should be conducted. Moreover, it would be useful to find biological features of this species that would enable its elimination from freshwater ecosystems.

Key words: Amur sleeper, (Perccottus glenii), invasive fish, population characteristics