MORPHOBIOLOGICAL CHARACTERISTICS OF THE COMMON MARINKA (*SCHIZOTHORAX INTERMEDIUS*) POPULATION IN THE QORASUV CANAL

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ABSTRACT

This study presents morphobiological characteristics of the common marinka (*Schizothorax intermedius*) population in the Karasuv Canal (Tashkent region) based on 50 specimens. Plastic and meristic features, age composition, growth rate, and reproductive biology indicators were analyzed. The Fulton condition factor (K = 1.09) demonstrates satisfactory ecological status and environmental adaptability of the population. The results were compared with previously reported data from the Chirchiq River basin.

KEYWORDS

Schizothorax intermedius, Karasuv Canal, morphometry, meristic features, condition factor, age composition, phenotypic variability, fecundity.

INTRODUCTION

The common marinka (*Schizothorax intermedius* McClelland, 1842) is one of the dominant representatives of the ichthyofauna of the Aral Sea basin, widely distributed in the Syr Darya River and its tributaries [1]. The Karasuv Canal—a left branch of the Bozsuv Canal flowing through Tashkent city and Tashkent region—has become a stable habitat for *S. intermedius* despite strong anthropogenic pressure [4, 7]. Identifying the morphobiological characteristics specific to the canal population of this species is of scientific and practical significance: the results provide a basis for species conservation measures and regional biodiversity monitoring.

LITERATURE REVIEW

The morphology of *S. intermedius* was described in detail by Berg (1949) [1]. The methodology of Pravdin (1966) allows standardized measurement of plastic and meristic features in ichthyological studies [8]. Bogutskaya and Naseka (2004) provided normative values for meristic features of *S. intermedius* [2]. Reshetnikov (1984) developed the methodology for assessing morphological variability using the coefficient of variation (CV%) [9]. Nazarov and Kholiqov (2019) provided initial ecological data on *S. intermedius* in the Karasuv Canal [4]. Nikolsky (1974) established the basis for evaluating the nutritional status of fish populations through the condition factor [6].

RESEARCH METHODOLOGY

The research materials consisted of 50 specimens of *S. intermedius* collected from the Karasuv Canal during 2024–2026. Measurements were conducted according to Pravdin (1966): all plastic measurements were expressed as percentages of standard length (SL) [8]. A total of 10 plastic and 8 meristic features were recorded. Age was determined by the scale method; fecundity was assessed gravimetrically. Statistical indicators—mean (M ± m), standard deviation (SD), and coefficient of variation (CV%)—were calculated following Lakin (1990) [3].

ANALYSIS AND RESULTS

Morphological features. Specimens of *S. intermedius* from the Karasuv Canal correspond to the descriptions of Berg (1949): body elongated and fusiform, dorsal surface brownish-green, ventral surface silvery. An inferior mouth with thick fleshy lips and two pairs of short barbels are present [1].

Plastic features. Morphometric analysis (n = 50) showed that the body depth to SL ratio (BD/SL = 24.1 ± 0.38%) indicates a relatively deep-bodied population compared to riverine populations (21–23%), attributed to lower current velocity and higher nutritional productivity of canal waters [9]. Variation analysis showed that body

depth (CV = 11.95%) and caudal peduncle depth (CV = 12.86%) exhibit the highest plasticity among measured features (Table). Principal component analysis (PCA) showed that the first two components explained 67.4% of the total variance [9].

Table. Main plastic features of *S. intermedius* in the Karasuv Canal (n = 50)

No.	Feature (% of SL)	M ± m	SD	CV%
1	Head length (HL/SL)	22.6 ± 0.31	2.34	10.35
2	Body depth (BD/SL)	24.1 ± 0.38	2.88	11.95
3	Caudal peduncle depth (CPD/SL)	11.2 ± 0.19	1.44	12.86
4	Eye diameter (OD/HL)	18.3 ± 0.27	2.05	11.20
5	Dorsal fin base length (DFL/SL)	17.8 ± 0.29	2.21	12.42
6	Pre-ventral distance (PreVL/SL)	46.3 ± 0.48	3.65	7.88

Meristic features. Lateral line scale count (LL = 85–96, modal 90), dorsal fin formula (III 7–9, modal III 8), and anal fin formula (III 4–6, modal III 5) fully correspond to normative values for *S. intermedius* [2].

Age composition and growth. Age groups from 1+ to 5+ were identified; the 3+ group was dominant (32.0%). The highest growth rate was recorded at age 2+ (ΔSL = 46.2 mm/year), declining gradually in subsequent years. Fulton condition factor (K = 1.08–1.11, mean 1.09) demonstrated satisfactory nutritional status across all age groups [6].

Reproductive biology. Absolute fecundity in females was 4,218 ± 312 eggs; relative fecundity was 47.6 ± 3.1 eggs/g. Sexual maturity was observed at age 3+; sex ratio was 1:0.67 (♀:♂) [5].

CONCLUSION

The *S. intermedius* population in the Karasuv Canal exhibits morphobiological characteristics within normative values, with a stable age structure and satisfactory

reproductive performance. The relatively higher body depth and morphological adaptation to slow-current conditions indicate ecotypic characteristics of this population. Seasonal water quality fluctuations and anthropogenic impacts represent the main threats to the long-term stability of the Karasuv population [7].

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