

Order Clupeiformes

Herrings

A large group of pelagic fishes living in all seas except the Antarctic. Clupeiformes is one of the most important fish orders in all open-ocean ecosystems. It plays an important role in fisheries. Most species are marine, but many enter estuaries to forage or spawn. Some are anadromous or permanent freshwater inhabitants. Clupeiformes are unmistakably distinct from other freshwater fish in the area, identified by the presence of a ventral keel with scute-like scales forming a toothed edge when viewed in profile, a

large fleshy eyelid, no lateral line, and no adipose fin. The order has recently been reviewed, and a new family structure was proposed, which is followed here. Shads of the genus *Alosa* are now placed in their own family, Alosidae. *Clupeonella* is placed in Ehiravidae, *Nematalosa* and *Tenu-
alosa* are in Dorosomatidae. The earliest fossil clupeiform is the pan-clupeoid *Cynoclupea* from the Barremian-Aptian (129.4–113.0 million years ago) in the Cretaceous of Brazil. **Further reading.** Whitehead 1985 (diversity); Hoestlandt 1991a (morphology); Nelson et al. 2016 (diversity); Wang et al. 2022 (phylogeny); Near & Thacker 2024 (earliest fossil).

Key to genera of Clupeiformes in freshwaters of West Asia

1a - Snout pig-like, protruding mouth; lower jaw very long, its articulation extending behind posterior eye margin, usually extending to a point well beyond, almost to vertical through posterior eye margin.

.....*Thrissina*

1b - Snout not protruding mouth; articulation of lower jaw not extending behind posterior eye margin.

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2a - Last dorsal ray elongate, filamentous, longer than first branched dorsal ray; mouth subterminal.

.....*Nematalosa*

2b - Last dorsal ray, shorter than first branched dorsal ray; mouth terminal or superior.

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3a - Last two anal rays longer than preceding rays and paddle-shaped; upper jaw without median notch; no black lateral spots; no elongated scales at base of caudal lobes.

.....*Clupeonella*

3b - Last two anal rays of same length as preceding rays; upper jaw with median notch; black lateral spots present in most individuals; elongated scales at base of caudal lobes.

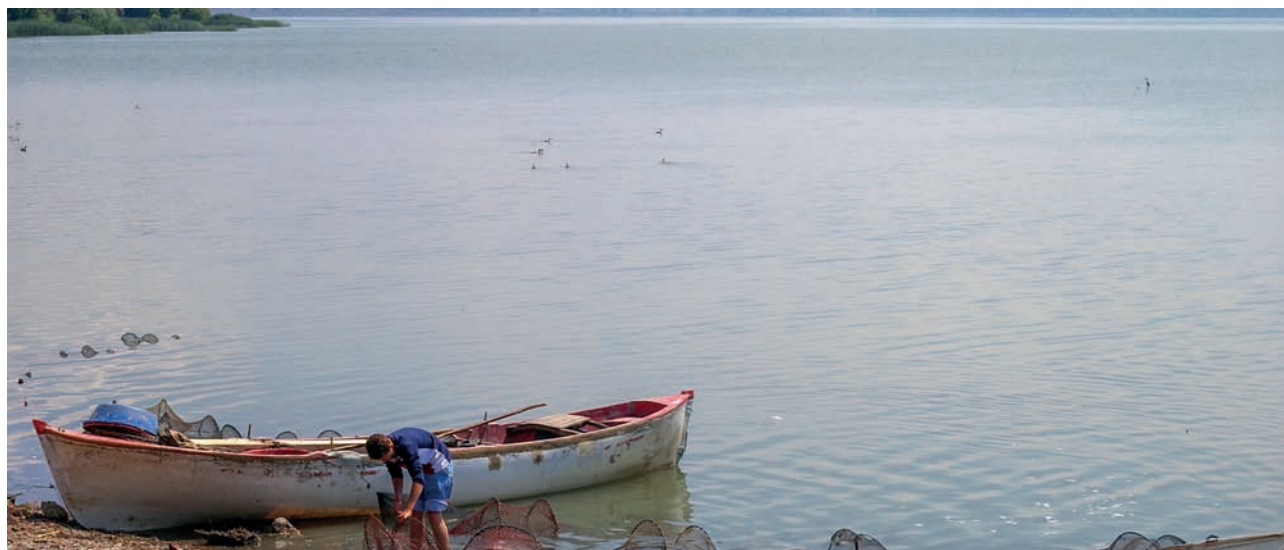
.....4

4a - Scales on caudal base not elongated.

.....*Tenu-
alosa*

4b - Two elongated scales on caudal base.

.....*Alosa*



Lake Apolyont in Türkiye was known for landlocked shads. These seem to have vanished from all lakes in West Asia.