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THE STERLET (*ACIPENSER RUTHENUS*) AND ITS POTENTIAL USE IN ORNAMENTAL AQUACULTURE

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1. AIM OF THE STUDY

- To present the morphological, biological and ecological characteristics of the sterlet (Acipenser ruthenus).
- To evaluate its potential use in ornamental aquaculture.
- To highlight the importance and ornamental value of the albino variety in decorative ponds.

2. MORPHOLOGICAL CHARACTERISTICS

- Elongated, slender and almost cylindrical body.
- Narrow and elongated rostrum.
- Ventral, protractile mouth adapted for bottom feeding.
- Four long, fringed sensory barbels.
- Five longitudinal rows of bony scutes.
- One of the smallest sturgeon species found in the Danube.
- Sensory barbels play an important role in locating food on the bottom.
- The species is mainly adapted to a benthic lifestyle.

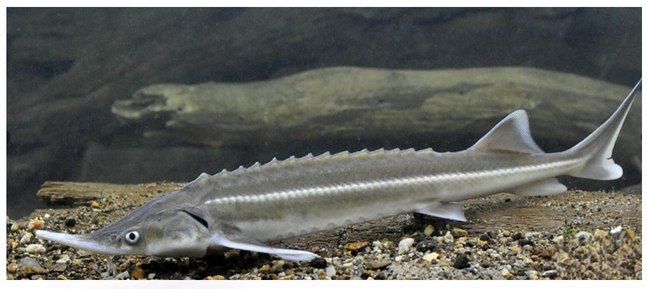
3. BIOLOGICAL AND ECOLOGICAL CHARACTERISTIC

- Potamodromous freshwater species, completing its entire life cycle in freshwater.
- Mainly benthic and usually remains close to the river bottom.
- Gregarious and non-territorial species.
- Feeds mainly on insect larvae, crustaceans, mollusks, other benthic invertebrates and small fish.
- Feeding occurs mainly by suction.
- Spawning takes place in spring.
- In the Middle Danube, spawning generally occurs between April and May.
- Spawning water temperature: approximately 8–19 °C.
- Optimal spawning temperature: approximately 12–17 °C.
- Sexual maturity is reached at approximately 3–5 years in males and 5–8 years in females.
- Sensitive to pollution and alterations of aquatic habitats.
- Requires clean, well-oxygenated water and suitable river-bottom habitats.

4. POTENTIAL USE IN ORNAMENTAL AQUACULTURE



- he sterlet is one of the smaller and calmer sturgeon species, making it suitable for ornamental and garden ponds.
- Its distinctive body shape and behaviour increase its ornamental value.
- It is a freshwater species adapted to cool, well-oxygenated water.
- During the day, sterlets tend to remain in the deeper areas of the pond and become more active towards evening.
- Proper acclimatization is essential when introducing new specimens into the pond.
- Sterlets can coexist with compatible pond fish, provided that overcrowding and food competition are avoided.
- Successful ornamental keeping requires adequate space, good water quality, proper feeding and efficient filtration.



5. RECOMANDED CONDITIONS FOR AN ORNAMENTAL POND

- Pond volume: approximately 4,500–9,000 L, with larger ponds recommended for adult specimens.
- Optimal water temperature: 10–18 °C.
- During summer, pond temperature should be carefully monitored; temperatures above 22 °C require increased water circulation or shading.
- Recommended pH: 7.0–8.2, with slightly alkaline water preferred.
- The pond should contain clean, cool and highly oxygenated water.
- Both mechanical and biological filtration are required.
- The entire pond volume should ideally pass through the filtration system at least once every two hours.
- Continuous aeration and good water circulation are important for maintaining adequate oxygen levels.
- Ammonia and nitrite levels should remain low.
- The pond should provide sufficient space and shaded areas, especially during warm periods.

6. ALBINO VARIETY

- Albino Acipenser ruthenus has a high ornamental value.
- Its pale coloration creates a strong visual contrast in decorative ponds.
- Body coloration may range from pale white to cream-yellow.
- Albino individuals are considered rare and attractive ornamental pond fish.
- The absence of melanin makes them more sensitive to intense sunlight.
- They require shaded areas to reduce excessive exposure to ultraviolet radiation.
- They may also be more sensitive to stress and poor water quality.
- Good water quality and careful monitoring are therefore essential.
- A balanced diet rich in vitamins and minerals is important for maintaining good health.
- Albino and leucistic varieties increase the ornamental attractiveness of the species.



7. CONCLUSIONS

- *Acipenser ruthenus* shows strong potential for ornamental aquaculture, but its long lifespan and adult size require careful long-term planning.
- Albino and leucistic varieties increase the ornamental value of the species, although they require more careful management.
- Ornamental keeping should follow biosecurity, animal welfare and conservation principles, and captive specimens should never be released into natural waters