

14.5.5 - Does your university as a body have implemented a watershed management strategy based on location specific diversity of aquatic species?

Azerbaijan State Oil and Industry University (ASOIU) has implemented a Watershed and Aquatic Biodiversity Management Strategy designed to align national water-resource priorities with the university's environmental research and campus sustainability objectives.

ASOIU's main campus lies within the Absheron Peninsula watershed, where industrial, urban, and semi-arid ecological factors converge. The region's limited freshwater resources and saline coastal wetlands host distinct endemic aquatic and brackish species.

Recognizing these unique ecosystems, ASOIU established a Observation Program in 2024 under the ASOIU Sustainable Development Office, aiming to monitor, protect, and restore local aquatic habitats affected by industrial effluents and urban runoff.

Strategy Components

1. Watershed Zoning and Monitoring:

ASOIU's Environmental Engineering Department mapped micro-basins draining into the Boyukshor and Masazir lakes, identifying sensitive biodiversity zones. Monthly water sampling and bioindicator species counts are carried out by student research teams to monitor ecological balance and pollutant levels.

2. Biodiversity-Driven Management:

The strategy prioritizes site-specific aquatic diversity protection—habitat restoration and aquatic plant recovery in saline wetlands. The approach combines GIS-based mapping and remote sensing to identify shifts in aquatic vegetation and biodiversity distribution.

3. Partnership and Policy Integration:

ASOIU collaborates with the Ministry of Ecology and Natural Resources, Caspian Environmental Programme, and local NGOs to align monitoring data with Azerbaijan's National Biodiversity Strategy and Action Plan (NBSAP). The university contributes annual technical reports that inform regional watershed protection measures.

4. Education and Capacity Building:

Students in environmental engineering, petroleum ecology, and water management participate in the "Blue Campus Initiative," an ASOIU program integrating coursework, field visits, and citizen-science data collection on aquatic species. This ensures continuity between academic curricula and real-world conservation.

5. Implementation and Outcomes:

- Annual biodiversity monitoring reports (since 2022) for the Boyukshor watershed.

- Reduction of chemical oxygen demand (COD) in test sites by 17 % (2023–2024).
- Re-introduction of aquatic macrophytes in pilot wetlands near the campus wastewater outlet.
- Publication of joint studies on hydro-ecological restoration in semi-arid urban lakes (2024).