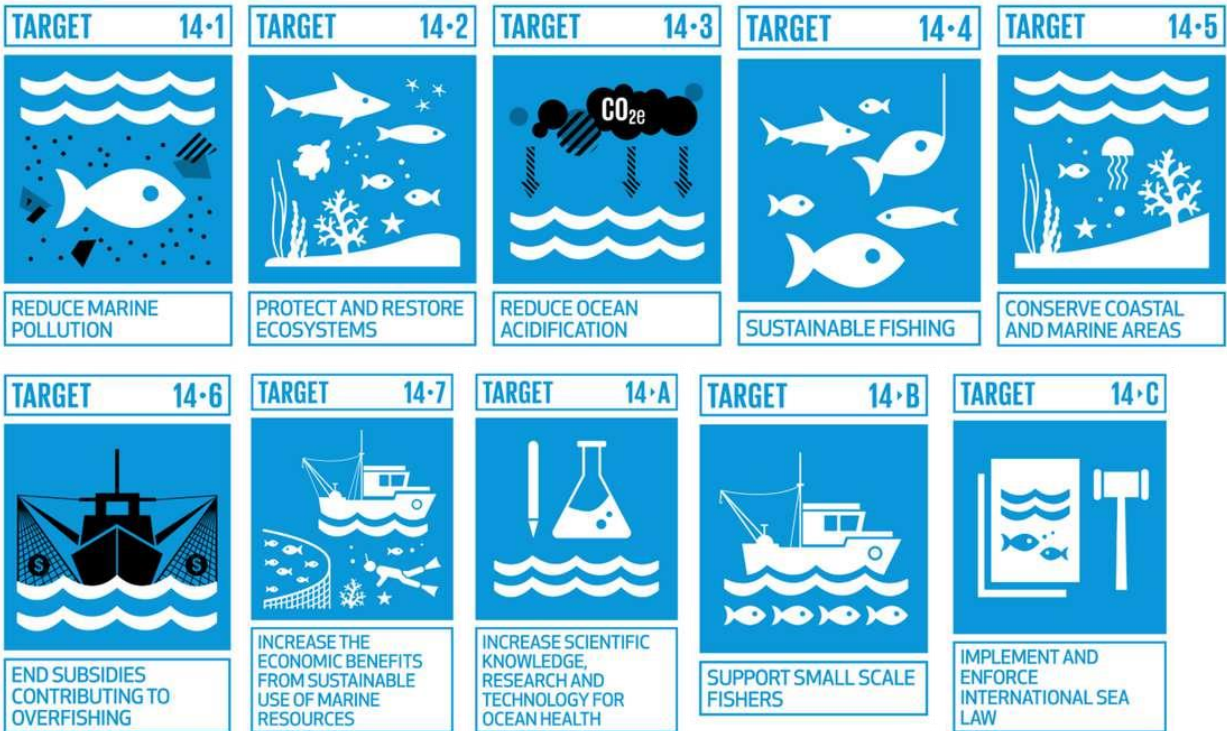




FOR SUSTAINABLE
DEVELOPMENT, PRESERVE
AND USE THE SEAS,
MARINE RESOURCES, AND
OCEANS ETHICALLY

Healthy oceans and seas are crucial for human survival. They span 70% of our world, and we rely on them for food, energy, and water. Nonetheless, we have managed to cause significant damage to these valuable resources. We must safeguard them by eradicating pollution and overfishing and immediately beginning to sustainably manage and conserve all marine life around the planet.





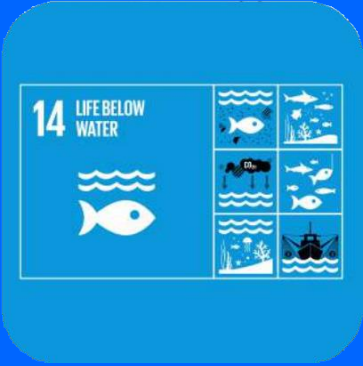
ARTICLES ON UNDERWATER DEVELOPMENT BY STAFF OF UWED

- ❑ Article by professors of UWED AND NUU Umurdin Dalabaev and Nusratilla Latipov on topic of “Modeling the flow in the presence of underwater vegetation”
- ❑ Analysis of the effect of mechanical impurities in water on the hydroabrasive wear of the turbines of the Bozsu hydroelectric power plant. E3S Web of Conferences, FORM- 2023



ARTICLES ON UNDERWATER DEVELOPMENT BY STAFF OF UWED

Abstract. The paper investigates the flow of an incompressible fluid in an open stream with an unequal bottom and slope. The uneven bottom is due to vegetation. The flow is modeled on the basis of the two-velocity Rakhmatulin model, in a laminar regime from zero velocity of the discrete phase. The flow of a viscous fluid in a channel with an open stream with vegetation at the bottom of the stream is considered. The results of numerical simulation of the hydrodynamic features of a two-dimensional viscous flow are presented. The Kozeny-Karman ratio is used as the force of interaction with vegetation. The methods of computational experiment are used to study the effects of non-uniformity of the fluid velocity field, which arise due to vegetation. A qualitative comparison of velocity inhomogeneities is carried out. For the numerical implementation of the resulting equation, which is a generalization of the Navier-Stokes equation, a SIMPLE-like algorithm with appropriate generalizations was used. A single algorithm is applied for the entire area, without highlighting the free and porous zone.



EVERYONE CAN HELP TO MAKE SURE THAT WE MEET THE GLOBAL GOALS

**"Empowering Change, Shaping Futures:
University Actions for a Sustainable
World"**