

UDC 635.926

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FACTORS AFFECTING TO COASTAL AQUATIC VEGETATION

Abstract

The article considers the impact of various factors on the development of coastal aquatic vegetation, importance and ecological role of plants in aquatic ecosystems, as well as problems of rational use of coastal aquatic vegetation.

Keywords: *coastal aquatic plants, aquatic ecosystem, biogeocenosis, macrovegetation, eutrophic reservoirs.*

Aquatic vegetation is an important component of aquatic ecosystems. It likes sushi grass, is food for many aquatic organisms. Who just not eat it – fish, insects, larvae, various worms, clams and many species of waterfowl, fur-bearing animals, and many others. The value of these plants is so high that it is difficult to imagine the consequences for the inhabitants of the undergrowth, in the case of the death of at least part of the plant community. If this happens, then the tragedy is out of our sight, as people (with the exception of experts) know fairly little about the diversity of life of coastal waters.

The intensity of the development of aquatic plants depends on many factors, first and foremost – the transparency and temperature of the water content in the water of biogenic macro- and microelements, the gaseous composition of water, pH and others. [1]

Water clarity. Light is a necessary condition for the existence of all photosynthetic organisms, including coastal aquatic vegetation. Solar rays falling on the water surface, is partially reflected from it, the other part is refracted, penetrate deeper. The amount of reflected light depends on the altitude of the sun, that is, the angle at which light falls on the water surface.

Reservoirs that receive marsh water, have a brown color and a low transparency (usually less than 1 m.). Significant influence on the propagation of light has a runoff, which brings in a variety of pond suspended solids, especially during floods. Water clarity is greatly reduced with the development of planktonic organisms, especially when algal blooms. [1]

Light conditions in the reservoir vary during the day and the season. In winter, ice cover and snow on it strongly affect the light reservoirs mode. However, with a little snow cover under the ice is sometimes enough for the growing of aquatic vegetation. You are an important factor and the animals that feed on aquatic plants. These include a wide variety, from fish and birds to rodents and hoofed animals [1].

Coastal- aquatic plants - is not only a food component to the organisms and habitat. Species diversity of animals in the thickets of macrophytes is significantly higher than in the open part of the reservoir; great abundance and biomass of planktonic and benthic organisms. Plants determine the gas composition of the water, which has a direct influence on many groups of animals. Rich plant remains bottom sediments are a breeding ground for benthic organisms. Benthic animals are one of the most abundant groups of organisms, which are of great ecological and economic importance. They consume organic matter, are taking part in the self-purification of water bodies, form the basis of power of most species of fish and waterfowl. [2]

Pollution of surface water bodies may be associated with both natural and anthropogenic factors. Waterways are polluted as a nutrient pollutants (ammonium, nitrates, nitrites, organic compounds), and man-made - heavy metals, oils (Figure 1).

Intrasecular and centuries
climate variability



landscape moisture



Human activities

relief



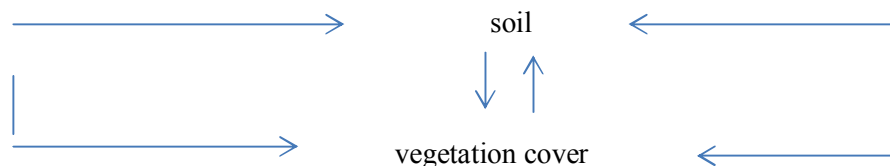


Figure 1 – Influence of various factors on the vegetation

Plant Communities play an important role in the life of zooplankton and other aquatic organisms. These thickets are formed favorable conditions of temperature and gas regime, and promote the growth of intensive growth of animals. They serve them a safe haven and protection from predators. For most species of waterfowl thickets of plants are forage and coastal plants - nesting place. Aquatic plants not only regulates the concentration of oxygen and carbon dioxide in the water, but also affect the mineral content of water, acidity, etc., And this has an impact on the ecosystem. In the thickets of plants intensity of physical and chemical processes is significantly higher than in the open part of the reservoir. This is facilitated not only the plants themselves, but also their fouling (periphyton), bacteria, plankton and benthic organisms. In addition to abiotic environmental factors on the composition and distribution of coastal aquatic plants is strongly influenced by their relationships with other organisms pond. They are dependent on the state of water bodies, diversity, abundance inhabiting their animals, algae, bacteria and fungi. In the thickets of aquatic vegetation inhabits a huge number of different invertebrate biomass which can be up to several hundred grams per square meter of water surface. [3,4]

With moderate eutrophication creates favorable conditions for the development phytophil fauna of plankton and benthic organisms. Rich plant remains bottom sediments are a breeding ground for organisms living there. They consume organic matter and in this way participate in the purification of water bodies. They are used as food by most species of fish and waterfowl. Mass of living organisms in plant bush is many times higher than in the open part of the reservoir. From one square meter coastal zone of the reservoir can collect up to 500 grams of animals.

The surface immersed in water plant is the habitat for many organisms are united by the common term "periphyton" (from "peri" - around, "Fitton" - a plant). Under the periphyton community understood organisms inhabiting the surface of plants and a variety of objects in the water column. The composition of periphyton includes a large number of different organisms belonging to bacteria, fungi, epiphytic algae, protozoa, nematodes, sponges, bryozoans, larvae of insects, molluscs, etc. As a result of sorption processes on the surface of plants accumulated food substrate -, Organic and mineral compounds. Moreover, the plants themselves excrete medium in various organic substances, which stimulate the development of the animals and algae [5].

In recent years, many ponds begin intensively overgrown. Some of them are almost completely covered with aquatic vegetation and gradually turn into swamp. In nature, such eutrophication occurs everywhere, but it flows very slowly, over hundreds and thousands of years. Human activities dramatically accelerated this process. Rinse off with fertilize fields, domestic waste water, changes in the hydrological regime of water bodies and more leads to intensive growth of aquatic and coastal vegetation. So aquatic plants from the good turn into evil.

Eutrophication primarily affects the gas mode, there is a depletion of the oxygen of the water column and on the contrary there are harmful to organisms, methane and hydrogen sulfide. The number of species of organisms decreases dramatically. Water from slightly alkaline gradually becomes more acidic, which can live only a few species of plants and animals. Acid swamp water as it perpetuates moribund vegetation, gradually transforming it into peat and sapropel.

However, all this can be avoided if timely remove the accumulated weight of the plant, the more that it can be used for animal feed and other needs. Aquatic vegetation is complete food for many agricultural animals and poultry, it contains significant amounts of nitrogen and minerals, carbohydrates, vitamins and other nutrients. In many countries, cultured aquatic vegetation especially for these purposes.

Cultivation coastal aquatic vegetation will increase the number of plants to enhance the cleaning power of water bodies, to increase food resources in the hunting and fish farms, strengthen the banks and prevent them from erosion. Cultural practices associated with the cultivation of aquatic plants, in general, not difficult. Most species of plants - perennials, and can seat pieces of rhizomes or

whole turf. Plants without root or immature roots (duckweed, telorez, hornwort) transplanted whole or in part. In species that reproduce by seeds, it is recommended to scatter evenly freshly harvested seeds on the surface area. The seeds of many plants float on the water surface, so their previously rolled into lumps of clay and scatter in the coastal certain depth [6].

Species that reproduce primarily by vegetative means (water lily, egg capsules, calamus, reed, bulrush, cattail, etc.), Well resumed using stem segments (cuttings) and rhizomes with resting buds and whole plants (duckweed, elodea, telorez) . The stems and rhizomes are cut into pieces, and fix them to the bottom of the reservoir in the coastal zone. Nodules evenly scatter on the area of the site or bury them in shallow soil. Whole plants are then placed in water in sheltered areas. This breeding method gives good results.

This efficient use of plant resources, water bodies allows them to maintain the biomass at the level at which they bring maximum benefit pond and its inhabitants.

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ТҮЙІН

Қауымдастық суаттарында өсімдіктердің таралуының ортақ заңдылықтарының болуына қарамастан, әрбір су тоғаны келесідей өзіндік сипаттармен: флористикалық құрамы, алып жатқан көлемі және территориясының бөлінуімен ерекшеленеді.

Су айдындарында өсімдіктердің қалыптасуына су тереңдігі, су түбінің топырағы, ағыстың болуы немесе болмауы, су деңгейінің өзгерісі, толқыны және басқа да себептер әсер етеді.

Су қоймасының температура және жарық режимі, гидрологиялық, гидрохимиялық, морфометриялық көрсеткіштері және өзгеде факторлар маңызды рөл атқарады.

Олар су жағасында және суда өсетін өсімдіктер қауымдастықтарының өмір сүруі үшін тиімді шарттарын анықтайды.

РЕЗЮМЕ

Несмотря на наличие общих закономерностей распределения растений в водоемах сообщества, в пределах каждого водоема имеются свои индивидуальные особенности, отличаются флористическим составом, обилием, занимаемой площадью, распределением по территории.

На формирование растительности водоемов огромное влияние оказывают глубина воды, грунт дна, отсутствие или наличие течения, колебания уровня воды, волнобой и некоторые другие. Большую роль в этом играет температурный и световой режим водоема, гидрологические, гидрохимические, морфометрические показатели водоема и другие факторы. Они определяют тип условий, благоприятных для существования тех или иных сообществ прибрежно-водной растительности.