

# Flood Prevention



**Oleg Halidullin\***

*Ecology Professor, Academician of the Russian Federation LAN, Kazakh National University, Russia*

**Submission:** May 13, 2023; **Published:** September 29, 2023

**\*Corresponding author:** Oleg Halidullin, Ecology Professor, Academician of the Russian Federation LAN, Kazakh National University, Russia.  
Email id: 7115215@mail.ru

**Keywords:** Industrial Waste; Reconstruction; Abandoned Areas; Irrigation

## Opinion

The leaders of many countries are blocking roads, bringing in thousands of bags of sand and clay, raising the banks, dike houses, pumping out water from basements, evacuating residents. The fight against floods and their consequences is planned in advance. Enormous funds are spent on this. Every year. In the summer, all the water leaves and it is not enough for drinking and irrigation. To prevent this, high dams are created with flooding of vast areas. Like a glass that will someday break, so will dams someday collapse. All dams require repairs and reconstruction. And they still often collapse and take lives. Considering and analyzing the causes of floods in publications, one can notice that among the listed factors, the most important factor is almost invisible - the change in the bottom of the rivers. The increased volumes of spring waters and heavy rains do not fit into the banks of the rivers, this is a consequence. Why don't they fit in? The reason is the decrease in the depth of the rivers continuously, daily and every minute. To natural sources of bottom sediments from eroded shores is added contamination by mankind itself - industrial waste, feces, garbage washed away by past floods and periodic rains. For millions of years, bottom sediments - minerals gradually and regularly, lying on the bottom for years, dissolve and are consumed by plants, animals, bacteria. Clogging rivers with garbage reduces such functions, reducing dilution. Waste volumes are becoming dominant and are constantly growing. Nature did not provide for the processes of removing bottom sediments along the entire length of the rivers. Modern dredging technology has grown into a mighty industry with an arsenal of floating monsters of hundreds of tons of metals, materials, labor, devouring their rivers of fuel. Not every coastal farm can buy or rent such a dredge for dredging a river.

The construction of dams above the banks of rivers is a crime against nature. Each such structure is a potential flood

when it is destroyed. But many countries persist in building new reservoirs. Each river along its course alternates banks that go close to the surface of the earth and canyons or floodplains with high banks, along the bottom of which river channels run, occupying insignificant parts of the floodplain profile. The filling of part of such floodplains by half can become the accumulation of water for consumption by the population. Here, a dam is installed up to the bank of the floodplain, which is filled to half the entire depth. When precipitation increases, the floodplains are completely filled. And culverts for ships and fish control the level by releasing part of the water and preventing overflows. It is necessary to prepare river beds annually for increased volumes - just remove sediment. Along the entire length of the river. Only the availability of inexpensive and affordable equipment for deepening the bottom of rivers can lead to the return of natural regimes of water movement without floods. Devices based on the use of the forces of the movement of water itself are proposed. Device designs are hundreds of times smaller in volume, the metal consumption of serial dredgers does not consume external energy. The proposed device moves slowly along the bottom of the river, stirs up bottom sediments, washes and carries them over without human intervention. The concentration and direction of movement of water flows is provided by the regulation of special dampers. The device constructively uses the flow of the river, and does not require energy to move the silt and its own movement. Low productivity with a continuous round-the-clock cycle will be able to pass the entire river in spring, summer and autumn before flowing into a lake or sea.

The technological process is carried out by directing part of the flow along a given trajectory. Zones of deep erosion are created, and bottom sediments, depending on their composition, dispersity, properties, can be brought to the coast, closer to the coast, or fit into dams and rifts in floodplain areas. There are many

inventions in the patent collections for the transport of bottom sediments. The proposed device is held at the bottom, but not capially, but by the possibility of displacement by the interaction of the flow with special dampers. A system of dampers or shields forms a mechanism for changing buoyancy, windage and braking for controlled movement with the current. Individual elements of the micromodels of the device have been tested on small rivers, but this is not enough for full-scale research and the creation of a new technology. Design work and testing are required. Types of devices are developed for each type of water body. From small to great rivers such as the Nile, Ural, Mississippi, Yangtze, Amazon. The manufacture and operation of devices that use the forces of river water movement to form a channel within specified limits, with specified depths to restore navigation, are available to small coastal farms that suffer from floods, bank collapse, and shallowing of fairways. To test and show the effectiveness of the new method in natural conditions, full-scale e developmental testing and research of the proposed device on a variety of rivers.

Experience at a natural site will show the effectiveness and possibility of developing a range of various tools for other underwater work. But the main thing may be the direction of flood prevention. Simplicity and cheapness lead to the instant production of many deepeners that can go one after another along the entire length of the river and remove bottom sediments layer by layer to any depth. Widespread and simultaneous deepening of the bottom on all rivers where floods occur can eliminate them in the near future. The designs of such devices are developed for each type of water body. From small streams to great rivers such as the Irtysh, Ural, Mississippi, Nile. Low productivity with round-the-clock traffic for 3-9 months with several devices it will be possible to deepen all rivers by one or more meters along the entire length. The latest device is made from structures that have served their time in their field - materials at a negative cost - from a

complex of decommissioned mechanisms for scrap metal. Made in the form of know-how. You can lower such a device to the bottom, and the current itself will be able to independently lead it along the bottom of the river, stirring up and raising bottom sediments in layers from two to 30 centimeters along the entire length of the river. Two, 10 or 100 such devices will be able to deepen the river bottom in depths of up to several meters along the entire length of the river. It can work continuously and regardless of the season. The proposed devices allow you to save water from evaporation and branches to new channels of the deltas, if you remove the shoals in the main, historical channel.

It will be possible to narrow the delta even to a single channel, to restore navigation in abandoned areas. For example, it is relevant for the delta of Lake Balkhash and the Kapchagay reservoir, which continue to grow. To save water in the summer, it is customary to build reservoirs based on dams and dams. Practice shows that abnormal precipitation leads to the breakthrough of such dams and disasters. They must be gradually eliminated and the flooded lands returned to nature itself. The new principle allows you to create structures that use wave vibrations to save the shores of lakes and seas from being destroyed by waves. And the addition of a lead screw to the design is used to develop the bottom in slow-flowing rivers and even in stagnant reservoirs. In addition to dredging, stabilization options are possible at any place on the bottom with a linkage of any existing equipment, for all known underwater operations. These are dredgers and baking powder, grabs and any other mechanisms for cutting plants, surface and sunken tree trunks. The possibilities of creating new technologies for washing and sorting bottom sediments are attractive, for example, for gold mining without lifting waste rock to the surface. It is offered to an enterprise that can test and become the owner of a new licensed technology.



This work is licensed under Creative Commons Attribution 4.0 License  
DOI: [10.19080/ECO.A.2023.03.555615](https://doi.org/10.19080/ECO.A.2023.03.555615)

### Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats

**( Pdf, E-pub, Full Text, Audio)**

- Unceasing customer service

**Track the below URL for one-step submission**

<https://juniperpublishers.com/online-submission.php>