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# **Problems And Solutions Of Architectural Routes Architectural Environment**

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**ABSTRACT:** This article focuses on the development of landscape design projects in the Aral Sea region with an aesthetic appearance that attracts the side areas of the tourist route roadsides. As a result of the study of tourist routes along the Aral Sea in the Republic of Karakalpakstan; visually unattractive views of tourist roadsides were identified and photographed, public service centers using innovative landscape and design solutions to address the identified problems, as well as recreation areas, ornamental plant species used in extreme landscaping, small architectural devices and landscaping solutions projects have been developed.

**KEY WORDS:** Aral Sea, landscape design, tourist route, landscaping, ecology, Kungrad-Moynak highway. Art-object, flora, fauna.

## **I.INTRODUCTION**

As a result of misuse of natural resources, by the middle of the last century, the relationship between nature and society became tense, and geo-ecological problems in the western and north-military regions of the Republic began to intensify in the 60s [1-2].

The situation in Karakalpakstan is deteriorating year by year due to the harsh climate and the drying up of the Aral Sea.

The main reason for this is the decline in the water level of the Aral Sea and its negative consequences, such changes in the Lower Amudarya region have a negative impact not only on the environment but also on people living in the region. Since the middle of the last century, the Amudarya and Syrdarya rivers have been flowing less and less water into the Aral Sea since the middle of the last century due to the steady increase in irrigated land and the construction of reservoirs. It should also be noted that the sharp decline in the water level of the Aral Sea and the formation of a large area without water, ie the Aral Sea, have a significant impact on air pollution.

In order to improve the living conditions of the population in the cities and villages of the Republic of Karakalpakstan in the priority direction of improving the system of state and social construction of the State Program Action Plan for the implementation of the Action Strategy for the five priority areas of development of the Republic of Uzbekistan in 2017-2021 in the "Year of Active Investment and Social Development" Implementation of new constructions, the draft normative-legal document approves the targeted program for the implementation of new constructions in the cities and villages of the Republic of Karakalpakstan, which provides for the construction of a modern town with all the necessary infrastructure in Muynak district [6].

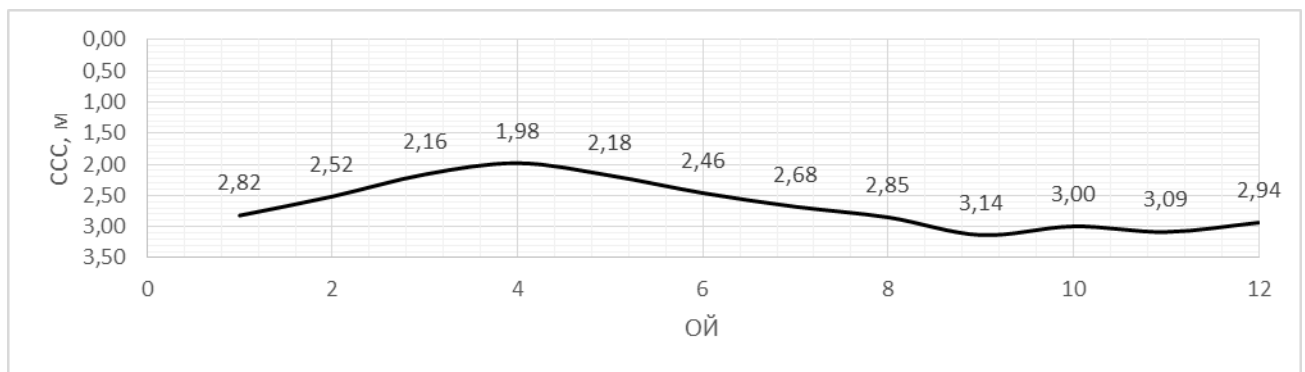
Resolution of the Cabinet of Ministers of the Republic of Uzbekistan on measures for integrated socio-economic development of Muynak district of the Republic of Karakalpakstan dated January 16, 2019, priorities and measures for further development of tourism and improvement of living conditions - A number of scientific, practical and innovative activities are carried out to ensure the implementation of measures.

The following results have been obtained from scientific research on the implementation of Presidential decrees and decrees, as well as the development of tourism in the Aral Sea region. Groundwater levels are high in artificially irrigated areas. The area where the Kungrad-Moynak highway passes is mainly a steppe, desert zone, and the plants are mainly fed by rainwater.

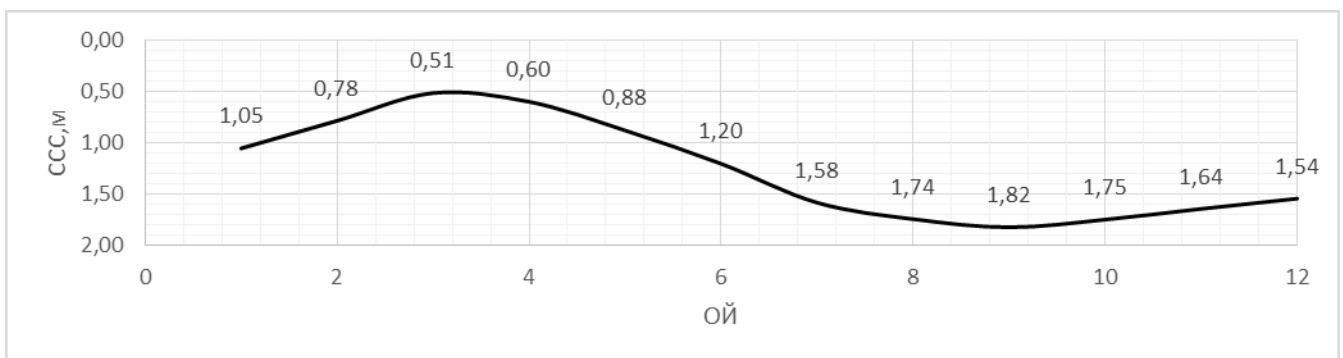
The highway connecting the cities of Kungrad and Moynak is of national importance and is geographically located at 43° 46' North latitude, 59° 02' east. The area where the highway passes is geographically flat and the climate is very hot in summer and very cold in winter. The soil of the area is composed of gray, very fine particles and occurs in a light, sticky soil, heavy, dusty sandy state. In the districts of the Republic of Karakalpakstan, which is the northern part of the Republic of Uzbekistan, groundwater occurs at a depth of about 1-3 m above ground level [7].

Such water is capillary water rising from EOS surfaces, which can also rise through the small airways of the soil and move up to 1-2 m. This source is dangerous with constant exposure as it salts the soil and loosens the moistening structure. Groundwater levels are deep in steppe soils and close to the surface in humid climates. In the Republic of Karakalpakstan and Khorezm regions, groundwater is at a depth of 0.3 m to 3.1 m [8].

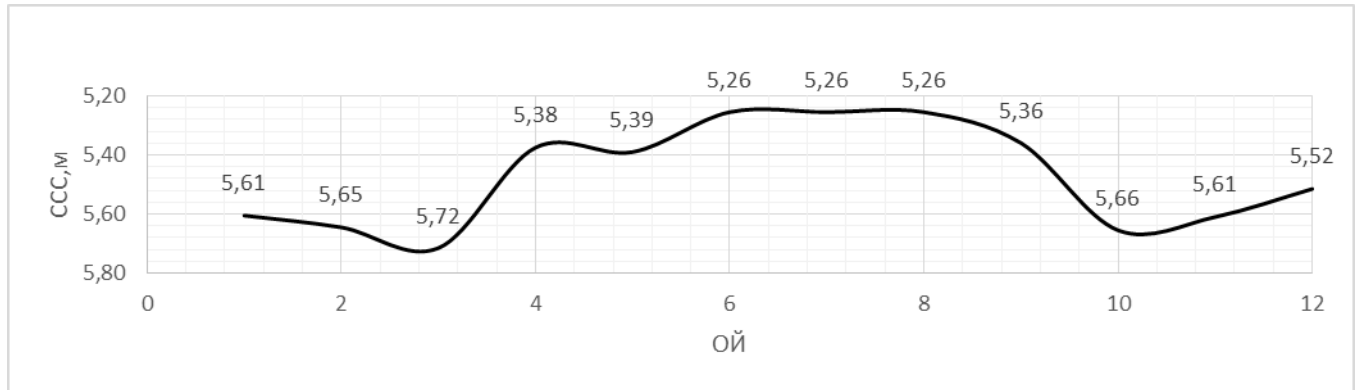
There are 7 wells around the highway connecting the cities of Kungrad and Moynak, which allow to know the composition of groundwater, its location above ground level. Based on the data obtained from the Aral Sea Hydrogeology Field Expedition from 2018 to 2019, we can analyze the approach and decrease of groundwater levels over 2 years and see the changes in groundwater in the following diagrams:



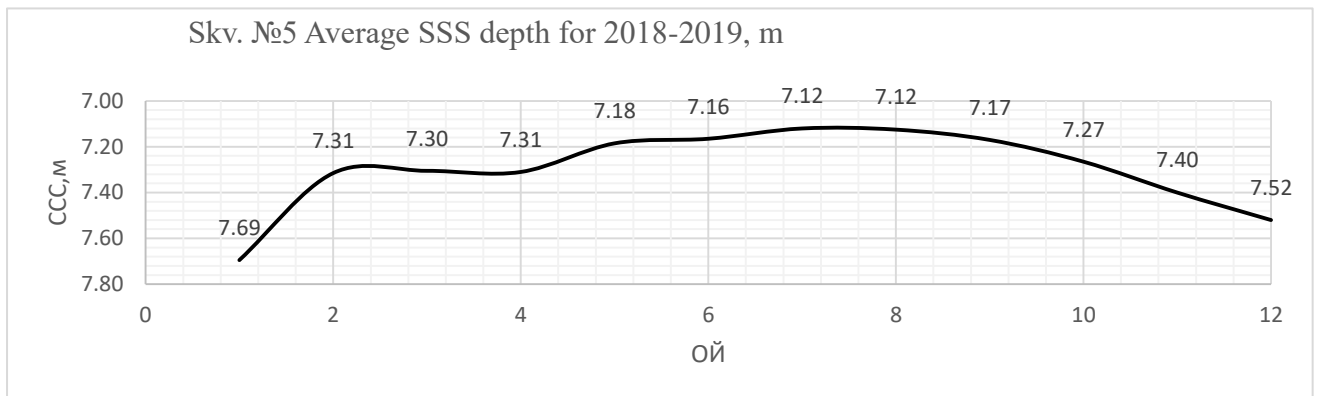
**1-graph. (Well 1) in 2018-2019, the highest rise of groundwater relative to the ground level was 1.98 m and the lowest was 3.14 m.**

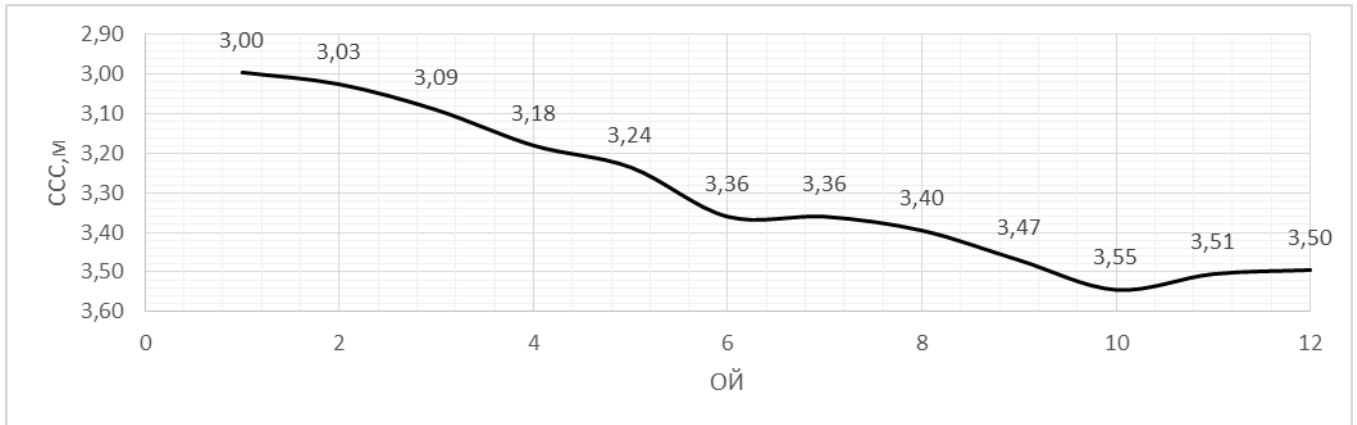


**2-graph. (Well 2) in 2018-2019, the highest rise of groundwater relative to the ground level was 0.51 m and the lowest was 1.82 m.**



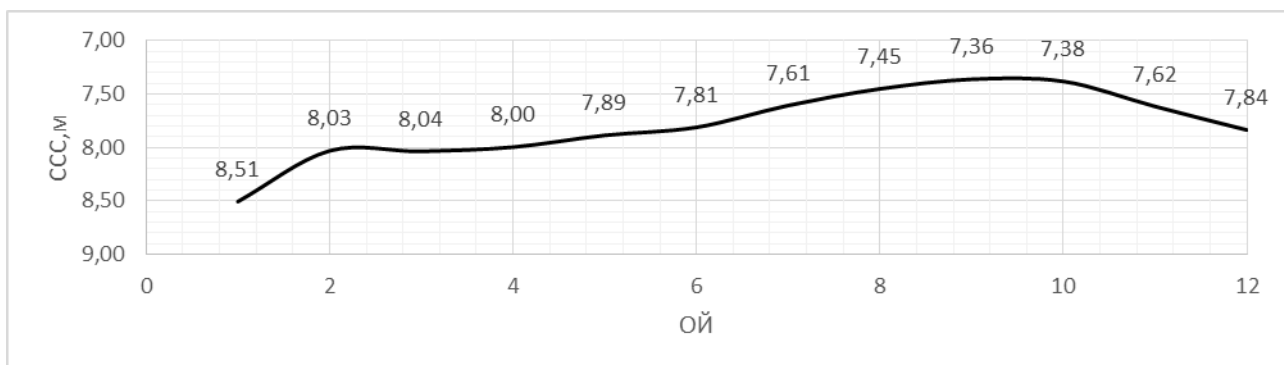
3-graph. (Well 3) in 2018-2019, the highest rise of groundwater relative to the ground level was 5.26 m and the lowest was 5.72 m.





**4-graph. (Well 4) in 2018-2019, the highest rise in groundwater relative to ground level was 3.00 m and the lowest was 3.55 m.**

In summary, based on the data analyzed for 7 wells, the closest and deepest location of the EOS level along the highway edge was determined. These data play an important role in the design of plant irrigation systems in the process of roadside landscaping.



**6-graph. (Well 6) in the period 2018-2019, the highest rise of groundwater relative to the ground level was 7.36 m and the lowest was 8.51 m.**

One of the measures to protect the environment from pollution in such conditions is to carry out regular landscaping of the area, using the available opportunities as much as possible. We know that plants play an important role in keeping the air clean and in good condition. The soil layer of the area is very saline, and because of the proximity of groundwater, the trees grow very slowly and in many cases dry out. This situation can cause some difficulties in landscaping, but this does not mean that landscaping is not possible at all.

With this in mind, a number of draft proposals have been developed, focusing on the issues of landscaping and landscaping around the Kungrad-Moynak highway.

In particular, a project of a green recreation area for locals and tourists has been developed at 30.8 km of the Kungrad-Moynak highway from the city of Moynak.

The study of the organization of the architectural environment along the highway began with the analysis of the dimensions and landscape of the area. Boundaries, objects, location were measured. The measurement plan was implemented in the form of a real situation based on the area, and plant inventory work was carried out in the selected area.

Functional zoning of the area was carried out, the main compositional axes and nodes were identified, the scenario of the green area was developed. The substantiation of the project proposal was based on the overall landscape planning decision and the structure of the plot in accordance with the functional purpose.

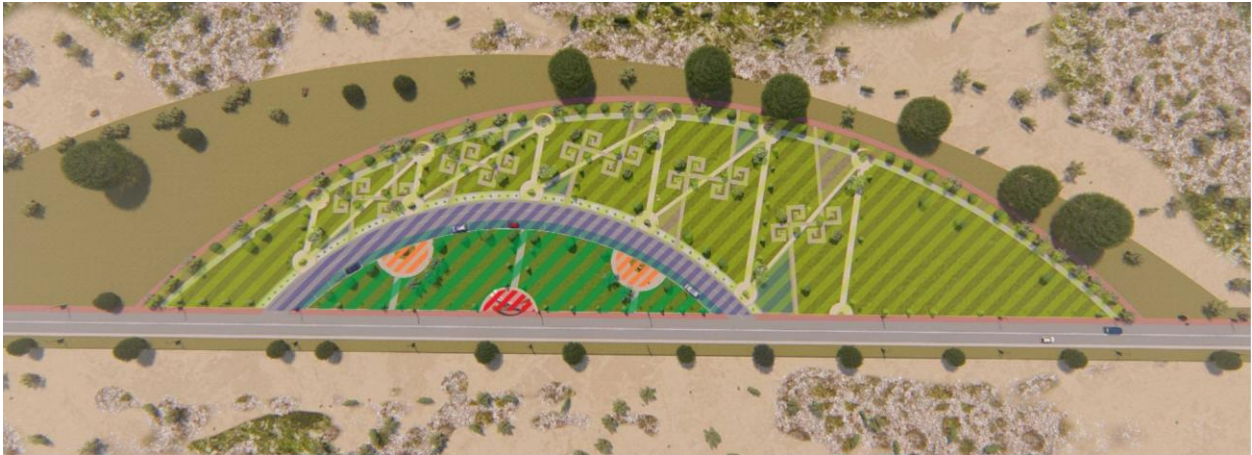
This functional segmentation of architecture in the context of tourism was designed based on a common perspective, based on a simplified approach. Some types or functions of architecture, originally designed at the request of the local population, may, in certain circumstances, serve visitors. In addition, depending on its specific feature, the same architectural structure can perform different functions, for example, rest and amenities are combined [9-16].

The green recreation area is designed to be designed at 30.8 km of the highway from Moynak to Kungrad. The total area of this project is 1800 m<sup>2</sup>. This area is on the right side of the Kungrad-Muynak highway located.








**Figure 1. General history**

The project includes a green recreation area, parking, swimming pools and fountains, as well as art facilities. The total number of small landscape elements: art objects (4 sculptures), pavilions 6 (diameter 5.5 meters), height 2 m, benches 20 190 meters, total length 85 cm, seat size 180-50 cm, parking. Designed for 25 cars, there are 5 pools and fountains (with an area of 271 m / sq in various sizes), a bicycle path (the length of the bike path crossing the project area is 387 meters).



### The order of zoning of the green recreation area

- |   |  |
|---|--|
|  Recreation Area (quiet zone)  |  The area where the art objects are located |
|  Parking territory             |  The main entrance part                     |
|  Separate protection territory |  |

**Figure 2. Territorial components of the recreation area**

In addition, the design solution of the area project will include a bike path and sidewalk along the highway. According to the standards, the width of bicycle lanes is 2.2 meters and the width of sidewalks is 1.5 meters.

Located at the main entrance to the area, the composition "Entrance Arch" - 4 meters high.



**Figure 3. The main entrance part of the recreation area**



**Figure 4. Pergolabench**

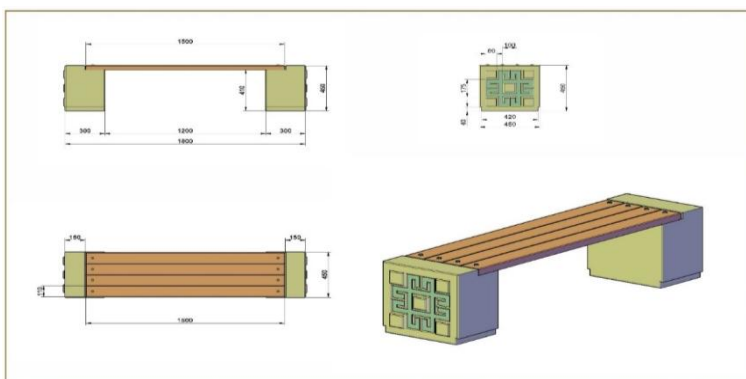
The pergola bench is designed on the basis of Karakalpak national ornaments. Such pergola benches also allow visitors to get acquainted with the elements of national patterns.

In the recreation area there are benches designed on the basis of 20 national ornaments (Fig. 5). The total length of 1.90 meters is 85 cm, the size of the seat is 1.80-50 cm.

Particular attention is paid to the now extinct fauna of the Aral Sea region in the green recreation area. This is aimed at attracting the attention of vacationers to their desire to preserve the flora and

fauna. One of the main reasons we use such art sculptures is that the saigas responsible for this area are declining.

Art sculptures in the recreation area. Art sculptures of tigers and saigas that have become extinct and rare in the region.



**Figure 5. Ethno - bench**



Figure 6. General view of art objects



Figure 7. Streetlighting

The design of the proposed flashlight for lighting the area combines national and modern solutions.

Proposals for landscape design solutions around highways focus mainly on the selection of plants, the improvement of the system of small architectural forms. The main purpose of the creation of small architectural forms and the development of proposed projects is to develop tourism, improve the design solution of recreation areas and stations located along highways, create convenience for passengers.

When choosing plant species for desert and oasis zones in landscaping, trees with high levels of their transparency are recommended.

Dense and opaque branched trees and shrubs provide effective protection from snow, sun, dust, noise and wind.

Recommended in desert and oasis zones due to the low level of sharp-leaved maple and sagebrush transparency.

We selected plants depending on soil climatic conditions when planting the area.

In the selection of tree and shrub species for landscaping and landscaping of the Kungrad-Muynak highway, he visited the nursery of the unitary enterprise





**Picture 8. Nursery of the unitary enterprise "Karakalpak"**

"Karakalpakstan" (Fig. 8) and got acquainted with the types of ornamental plants grown for landscaping of Karakalpakstan highways and urban areas.

List of plants grown in the nursery of the unitary enterprise "Karakalpakstan": Amorpha, Acacia, Ailanthus, Gleditsia, Catalpa, Acer, Juniperus, Haloxylon, Pínus, Thuja, Morus, Fraxinus, Sophorae japonicae, Ulmus trees.

The following plants were analyzed for suitability in landscaping along the roadside of the study area. Such plants include: pine, pine, jasmine, mulberry species, saxaul species, cherkez species, chogon, dye, yam, as well as sugarcane species, juzgun species, as well as in sandy areas with low salinity: amorphous, acacia, jiida, ash species, glidichia, from vinegar tree, coniferous trees and shrubs: Crimean pine, resistant varieties of virgin spruce, oriental biota and others. With the help of plants suitable for such climatic conditions, we can create compositions and create a variety of gardens, parks and gardens.

The natural, environmental and socio-economic aspects of the problem are closely intertwined, requiring only a holistic solution.

Processes and events that occur as a result of natural and anthropogenic factors that negatively affect human health and economic activity cause imbalances in their interaction with the integrity of the environment and geosystems. However, it is a geographical problem because it occurs in a particular geosystem at different scales and on the basis of natural and socio-economic geographical laws, i.e. the ecological problem is formed in a particular geosystem and goes through stages of development. In this sense, it is called a geocological problem.

When it comes to solving a geocological problem, it is first necessary to understand how to restore this natural balance. Restoring natural balance (ecological balance) is the process of bringing the interconnectedness, interdependence, and motion between natural components and geosystems closer to their original state, but it cannot be restored to its original state.

To restore the disturbed natural balance, it is necessary to restore the living conditions and health of the population. The Aral Sea and the Aral Sea Basin are an interconnected regional geocological problem. First of all, it is necessary to ensure that the water coming to the area from outside is clean and abundant.

There will be a need for scientific research and analysis of geo-ecological changes and public health in the districts of the Aral Sea region, as well as the development of recommendations for the prevention of adverse changes.

Currently, the most important measures to overcome the Aral Sea crisis are to improve the living conditions and health of this population.

The next important tasks are the reconstruction of irrigation systems and facilities, the transformation and improvement of agricultural production structures, the introduction of new forms of landscaping and beautification.

## REFERENCES

1. Rafikov A.A., Tetyuxin G.F. SnijenieuronyaAralskogomorya i izmenenieprirodnusloviynizovyaAmudari. - T., «Fan», 1981. -200 p.
2. SafarovE.Yu.,PrenovSh.M., BekanovK.K. The role of cardographic methods and geoaxboroussystem in the traveling of south Caucasus // International scientific-practical conference "Geocological problems of the Aral Sea basin: scientific ideas, research, innovations" dedicated to the 80th anniversary of the founder of the Scientific School of Geoecology of Uzbekistan AA Rafikov 14-15 June 2019 y. National University of Uzbekistan named after MirzoUlugbek, 2019.-39-42p.
3. Baratov P. Alimqulov N.R. Some problems of river water use in the Aral Sea basin // International scientific-practical conference "Geocological problems of the Aral Sea basin: scientific ideas, research, innovations" dedicated to the 80th anniversary of the



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# International Journal of Advanced Research in Science, Engineering and Technology

Vol. 7, Issue 10 , October 2020

- founder of the Scientific School of Geoecology of Uzbekistan Professor AA Rafikov June 14-15, 2019. National University of Uzbekistan named after MirzoUlugbek, 2019.-20-24p.
4. Rafikov AA "Geoecological problems" - T.: Teacher, 1997.
  5. B. Alikhonov Ensuring environmental sustainability is important for the Aral Sea region. <http://uza.uz/oz/society/ecological-bar-determination-05-09-2018>.
  6. Decree of the President of the Republic of Uzbekistan No. PF-4947 of February 7, 2017 "On the strategy of further development of the Republic of Uzbekistan."
  7. H.D.Abdullaev "Designing the base of roads on artificially irrigated roads" Dissertation, Tashkent 2018.
  8. Gidrogeologicheskoezaklyuchenie. On the possibility of water supply for underground water in the territory of "Muynak Livestock Cluster" LLC SSG "Khakimata" of Muynak district. State Committee of the Republic of Uzbekistan for Geology and Mineral Resources GUP "Uzbekgidrogeologiya" Priaralskaya PGGE. Nukus - 2019g.
  9. Z. Adilov, Z. Matniyozov The Proposals Of Landscape Solutions For Highways Environment // International Journal Of Scientific & Technology Research (IJSTR) ISSN 2277-8616 Volume 9, Issue 04, April 2020. -P. 3110-3114.
  10. Adilov Z.X., Matniyazov Z.E., MamatmusaevT.Sh., Khasanov A.O., Tajibaev J.X., Komiljonov MS, Mirzaxmedov B.X., Alieva M.X. Mirdjalalov D.T. - sketches and drawings of works of architecture and landscape design - under the name - «MUYNAK PLANTER» Record in the Register for № 002163 from «20» May 2020 г.
  11. Adilov Z.X., Matniyazov Z.E., MamatmusaevT.Sh., Khasanov A.O., Tajibaev J.X., Komiljonov MS, Mirzaxmedov B.X., Alieva M.X. Mirdjalalov D.T., Tajibaeva D.M. - sketches and drawings of works of architecture and landscape design - under the name - «KUNGRAD BENCH» Record in the Register for № 002162 from «20» May 2020.
  12. A. S. Uralov, L. A. Adilova. Landscape architecture. Cholpon Publishing House. Tashkent - 2014. 382 p.
  13. H. Ya. Krijanovskaya. Basics of landscape design. Rostov-on-Don "Phoenix" 2005. 205 p.
  14. Dosaxmetov A. O. Landscaping of residential areas. Text of lectures. Tashkent, ToshDAU, 2001.
  15. Adilova L.A. Landscape Architecture Part II. Tashkent. 2009.
  16. Arianson L. Jemchujinasadovo-parkovogo art. Jil.icommun. economy. 1979, № 8 st. 20.