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(E-mail: gul\_sultan@mail.ru)****Cyperaceae* in the flora of «Burabay» Nature park**

In the article the territorial study results of «Burabay» State National Nature park (2010–2018) are provided. It gives an annotated species list of the *Cyperaceae* family and identifies main habitat types for each species with their frequency of occurrence. 46 species of the *Cyperaceae* family grow in «Burabay» State National Nature park. It makes 25.3 % of their total amount in Kazakhstan. The largest genus of the *Cyperaceae* family is *Carex* (36 species, 5.6 %). Most species of sedge grasses prefer moist, marshy biotopes which are frequent in the area under study. They are *Carex acuta*, *C. acutiformis*, *C. cespitosa*, *C. disticha*, *C. elata* subsp. *omskiana* which are widespread along the marshy banks of streams, lakes and in the marshy birch forests of the park. *C. dioica*, *C. elongata*, *C. juncella*, *C. chordorrhiza* are frequent in sphagnum and grass swamps. *C. caryophyllea*, *C. supina*, *C. tomentosa*, *C. praecox* species grow in light pine forests, on edges and meadows. Analysis of plants on their types of habitats demonstrates that in the flora of the nature park dominate widespread Holarctic species with a significant amount of Euro-Siberian species.

*Key words:* «Burabay» State National Nature park, the *Cyperaceae* family, *Carex* genus, flora, habitat, population, sedges.

*Introduction*

National Nature parks play the most important part in the preservation of natural landscapes and maintenance of their sustainable functioning.

«Burabay» State National Nature park (SNNP) is an environmental state institution within the system of specially protected natural areas of republican significance [1]. The total area of «Burabay» SNNP is 129 935 hectares.

This territory is the highest zone of the northern part of the Central Kazakh Hills. The relief is a complex combination of low mountains, hills and plains, crossed by a rare network of river valleys and shallow lake basins.

The climate is sharply continental, with hot summers and cold winters with little snow, softened by the influence of mountains and hills, ponds and woods.

Currently, the transformation of the plant world has already led to its fragmentation and an increase in the isolation degree of many natural complexes, which arouses a particular concern in the case of specially protected natural territories. For «Burabay» National park the leading anthropogenic factor is recreation, a formation of the road-path network, and construction.

The history of botanical research on this territory lasts for almost 200 years. Many herbarium collections made at the beginning of XX century have not been repeated and the materials have been lost. Such issues like the spread of sedges, the status of populations remain insufficiently studied due to their rare occurrence and low abundance of many family representatives. Therefore, the purpose of the current research is a modern floristic inventory of this relatively small area, taking into account changes in the flora under the influence of anthropogenic factors.

*Objects and methods of research*

The authors were examining the territory of «Burabay» SNNP in 2010–2018. Administratively, the territory of «Burabay» SNNP is located in the Burabay and Enbekshilder districts of Akmola region.

The study covered the territory of 10 forestries: Akylbay, Borovskoy, Katarkol, Zolotoborsk, Mirniy, Barmashinsky, Priozerny, Bulandy, Temnoborsky and Zhalayirsky forest areas.

By the end of the botanical investigation of «Burabay» SNNP there were collected and identified more than five thousand herbarium sheets of higher vascular plants and were made over 400 detailed geobotanical descriptions. The herbarium collection is now stored at the Department of Biology and Chemistry in A. Baitursynov Kostanay State University.

Main botanical approaches were used as the main research methods. A multivolume report «Flora of Kazakhstan» was used as a source to determine the herbarium specimen. Determination of the families and

genera was carried out with the help of «Flora of Kazakhstan» by M.S. Baitenov. Latin names and nomenclature changes in taxa were verified in accordance with S.K. Cherepanov.

### Results and discussion

The core flora of the Burabay mountain forest is made up of flowering plants, the proportion of dicotyledons accounts for 72.6 % and 23.1 % of monocots of the total flora composition. The family spectrum analysis showed that the first triad of families in the flora of the Burabay massif includes the *Asteraceae-Cyperaceae-Poaceae* families. The sedges take the second place, which determines the Cyperaceae (arctoboreal-East Asian) as the type of the studied flora [2].

*Cyperaceae* Juss family. It covers more than 100 genera and 4000 species across the whole world. Kazakhstan has 19 genera and 182 species [3]. 46 species of the Cyperaceae family grow in «Burabay» State National Nature park which is 25,3 % of the total in Kazakhstan.

The following list includes the species identified in the result of processing herbarium specimens of plants collected in «Burabay» Nature park during expeditionary works. While compiling this list we used our own herbarium collections, floristic and geobotanical descriptions, as well as the works of V.F. Semenov, 1929 [4], Z.V. Karamysheva and E.I. Rachkovskaya, 1973 [5], P.L. Gorchakovsky, 1987 [6], B.F. Sviridenko, 2000 [7], «Flora of Kazakhstan» [8].

Each species has got its habitat characteristics and occurrence information on the territory of the national park:

- occurring very rarely — 1 location (data labels or a reference to a literary source are provided);
- occurring rarely — no more than six locations;
- occurring occasionally — the species sporadically found in the park or the species of specific habitats (salt marshes, meadows, etc.);
- occurring usually — the widespread species found throughout the park, or in any part of it (e.g., steppe or forest).

### The *Cyperaceae* Juss family

*Bolboschoenus maritimus* (L.) Palla, 1905, in W. Koch, Syn. Deutsch. Fl., ed. 3: 2532; Polyakov, 1956, Flora of Kazakhstan. 2:21.

Occurring occasionally. Along the shores of salt lakes.

*Carex acuta* L. 1753, Sp. Pl.: 978; Malyshev, Fl. Sib. 3: 158. — *C. fusco-vaginata* Kuk. 1904: Bull. Herb. Boiss. 2, 4: 56; Polyakov, 1956, Flora of Kazakhstan. 2:56.

Occurring occasionally. Along the shores of lakes and streams.

*Carex acutiformis* Ehrh. 1789, Beitr. IV: 43; Polyakov, 1958, Flora of Kazakhstan. 2: 75.

Occurring rarely. Along the shores of Small Chebachye Lake, near Small Karasu Lake in a marshy birch forest.

*Carex atherodes* Spreng. 1826, Syst. Veg. 3: 828, 1990, Flora of Siberia. 3: 120. — *C. orthostachys* C.A. Mey.; Polyakov, 1958, Flora of Kazakhstan. 2: 82.

Occurring rarely. Was found in the Batmak on a marshy shore, along the Bettybulak stream.

*Carex bohémica* Schreb. 1772, Besch. Gräser, 2, 2: 52; Malyshev, 1990, in Flora of Siberia. 3: 68; *C. cyperoides* Murr. 1774, in L., Syst. Veg., ed. 13: 703; Polyakov, 1956, Flora of Kazakhstan. 2: 51.

Occurring rarely. In swampy birch forests, along the streams.

*Carex buxbaumii* Wahlenb. 1803, Sv. Vetensk. Ak. Nya. Handl. XXIV: 163; Polyakov, 1956, Flora of Kazakhstan. 2: 63.).

Occurring rarely. In swampy birch forests near the Svetly and Small Karasu lakes.

*Carex canescens* L. 1753, Sp. pl.: 874; Polyakov, 1958, Flora of Kazakhstan. 2: 53.

Occurring occasionally. Along swampy shores of lakes and streams.

*Carex caryophyllea* Latourr. 1785, Chlor. Lugd.: 27; 1990, Flora of Siberia. 3: 138. — *C. ruthenica* V. Krecz.; Polyakov, 1958, Flora of Kazakhstan. 2: 68.

Occurring very rarely. Quarters 40–41 of the Barmashinsky forestry, greenwood pine forest with an abundance of ferns.

*Carex caespitosa* L. 1753, Sp. pl.: 978; Polyakov, 1958, Flora of Kazakhstan. 2: 56.

Occurring usually. Along swampy shores of lakes and streams.

*Carex chordorrhiza* Ehrh. ex L. fil. 1781, Suppl.: 414; Polyakov, 1958, Flora of Kazakhstan. 2: 53. Occurring occasionally. Along the marshes, on the shores of lakes [7].

*Carex diandra* Schrank. 1781, Cent. Bot. Anmerk.: 49 et Act. Acad. Mogunt.: 57; Polyakov, 1958, Flora of Kazakhstan. 2: 51.

Occurring rarely. Along the swampy shores of the Small Karasu, Tasshalkar lakes, along the banks of a stream flowing into Small Chebachje lake.

*Carex diluta* M.Bieb. 1808, Fl. taur.-cauc. II: 388; Polyakov, 1958, Flora of Kazakhstan. 2: 74.

Occurring occasionally. In the Batmak along the shore of a dried lake, along the shores of Lake Katarkol.

*Carex dioica* L. 1753, Sp. pl.: 971; Malyshev, 1990, Flora of Siberia. 3: 61.

Occurring very rarely. The neighborhood of Small Karasu lake, the sphagnum swamp along the shore, quarter 3 of the Barmashinsky forestry.

*Carex distans* subsp. *Aspratilis* (V.I. Krecz.) Egor. Egorova, 1999, Sedges of Russia: 266; Malyshev, Flora of Siberia. 3: 128.

Occurring rarely. On the banks of a river of the lake Tasshalkar and the river Arykpay.

*Carex disticha* Huds. 1762, Fl. Andl. ed. I: 347; Polyakov, 1958, Flora of Kazakhstan. 2: 46.

Occurring rarely. On the shores of lake Tasshalkar and in a small swamp in the Karakistak.

*Carex elata* subsp. *Omskiana* (Meinsh.) Jalas. 1901, A. H. P. XVIII, 3: 340; Polyakov, 1958, Flora of Kazakhstan. 2: 56.

Occurring rarely. Was found on the Imanaevsky stream and along the shores of lake Svetly.

*Carex elongate* L. 1753, Sp. pl.: 973; Polyakov, 1958, Flora of Kazakhstan. 2: 52.

Occurring very rarely. Quarters 1–2. A spring in the Akylbajsky forestry.

*Carex enervis* C.A. Mey. 1833, in Ledb. Fl. Alt. IV: 209; Polyakov, 1958, Flora of Kazakhstan. 2: 55.

Occurring very rarely. Quatre 89 of the Zolotoborsky forestry, the coast of lake Tasshalkar.

*Carex juncella* (Fr.) Th.Fr. 1857, Bot. Notis.: 105; Polyakov, 1958, Flora of Kazakhstan. 2: 55.

Occurring very rarely. Quatre 134 of the Barmashinsky forestry, a birch and pine forest along the road.

*Carex lasiocarpa* Ehrh. 1784, Hannov. Magaz. IX: 132; Polyakov, 1958, Flora of Kazakhstan. 2: 78.

Occurring very rarely. The shore of Small Karasu lake, a sphagnum swamp, quarter 3 of the Barmashinsky forestry.

*Carex leporine* L. 1753, Sp. pl.: 973; Polyakov, 1958, in Flora of Kazakhstan. 2: 51; Egorova, 1999, Sedges...: 543. — *C. ovalis* Good: Malyshev, 1990, in Flora of Siberia. 3: 85.

Occurring very rarely. Borovsky forestry, a drying out Gromatuha river.

*Carex limosa* L. 1753, Sp. pl.: 977; Polyakov, 1958, Flora of Kazakhstan. 2: 58.

Occurring rarely. Along the moss swamps of the lakes Svetly and Small Karasu.

*Carex loliacea* L. 1753, Sp. pl.: 97; Polyakov, 1958, Flora of Kazakhstan. 2: 52.

Occurring rarely. In the moss swamps at the lakes Svetly and Small Karasu, along the Tasbulak and the nameless stream around Shchuchinsk (square 216 of the Barmashinsky forestry).

*Carex magellanica* subsp. *irrigua* (Wahlenb.) Hiit. 1933, SuomenKasvio: 161; Egorova, 1999, Sedges...: 358.

Occurring rarely. Was found on the western shore of lake Svetly [5].

*Carex melanostachya* M. Bieb. ex Willd. 1805, Sp. pl.: IV: 299; Polyakov, 1958, in Flora of Kazakhstan. 2: 76

Occurring rarely. In Batmak, along the road, birch forest.

*Carex pediformis* C.A. Mey. 1831, Mem. Ac. St. Petersburg. Sav. Etrang. I: 219; Polyakov, 1958, Flora of Kazakhstan. 2: 72

Occurring usually. In birch-pine and pine forests, steppe communities in the outputs of granites.

*Carex praecox* Schreb. 1771, Spic. fl. Lips.: 63, non Jacq.; Polyakov, 1958, Flora of Kazakhstan. 2: 47

Occurring occasionally. In sparse birch forests and their edges in the forest-steppe part of the park, was found in the mid-logs of the Shuchinsk hills.

*Carex pseudocyperus* L. 1753, Sp. pl.: 978; Polyakov, 1958, Flora of Kazakhstan. 2: 82.

Occurring rarely. In the marshy birch forest around the cordon Golden Bor (quatre 89 of the Zolotoborsky forestry) and along the river Gromatuha.

*Carex rhynchophysa* C.A. Mey. 1844 in Suppl. Index Sem. Hort. Bot. Petrop. 9: 9; Malyshev, 1990, Flora of Siberia. 3: 95.

Occurring rarely. Forest lakes [7].

*Carex riparia* Curtis. 1783, Fl. Lond. IV: 60; Polyakov, 1958, Flora of Kazakhstan. 2: 75.

Occurring occasionally. On the swampy shores of lakes Svbetly and Borovoy, on the river Arykpay, in Batmak along the shore of a dying out marsh.

*Carex rostrata* Stokes 1787, in With Bot. Arrang. Veg. Great. Brit. 2, 2: 1059; Malyshev, 1990, Flora of Siberia. 3: 96. — *C. inflata* Huds. 1762, Fl. Angl. Ed. I: 354; Polyakov, 1958, Flora of Kazakhstan. 2: 80.

Occurring usually. On the banks of water basins.

*Carex secalina* Willd. ex Wahlenb. 1803, Sv. Vetensk. Ak. Nya Handl. XXIV: 151; Polyakov, 1958, Flora of Kazakhstan. 2: 73.

Occurring occasionally. On open sandy shores of lakes Katarkol, Shchuchye and Small Chebachje.

*Carex songorica* Kar. & Kir. 1842, Bull. Soc. Nat. Mosc. XV: 525; Polyakov, 1958, Flora of Kazakhstan. 2: 76.

Occurring occasionally. On the swampy shores of lakes Katarkol and Tasshalkar, on the bank of a drying up swamp in Batmak.

*Carex supina* Willd. ex Wahlenb. 1803, Sv. Vetensk. Ak. Nya Handl. XXIV: 158; Polyakov, 1958, Flora of Kazakhstan. 2: 69.

Occurring usually. On rocky slopes of the hills, in pine forests.

*Carex tomentosa* L. 1767, Mant. I: 123; Polyakov, 1958, Flora of Kazakhstan. 2: 67.

Occurring very rarely. In Batmak, along the roads.

*Carex vaginata* Tausch. 1821, in Flora, 4: 557; Polyakov, 1958, Flora of Kazakhstan. 2: 71.

Occurring usually. In the marshy birch forests on the shores of Svetly, Borovoy, Small Karasu lakes, on the Imanaevsky and Tasbulak streams.

*Carex vesicaria* L. 1753, Sp. pl.: 979; Polyakov, 1958, Flora of Kazakhstan. 2: 82.

Occurring usually. On the shores of forest lakes, bogs, swampy lowlands.

*Eleocharis acicularis* (L.) Roemer et Schultes s. ctr. 1817, Syst. Veg. 2: 154; Bubnova, 1990, Flora of Siberia. 3: 26. — *Heleocharis acicularis* (L.) Roemer et Schultes; Polyakov, 1958, Flora of Kazakhstan, 2: 26.

Occurring rarely. Shchuchye lakeshores [9].

*Eleocharis palustris* (L.) Roem. & Schult. 1817, Syst. Veg. 2: 151; Bubnova, 1990, Flora of Siberia. 3: 28. — *Heleocharis eupalustris* Linbd.; Polyakov, 1958, Flora of Kazakhstan. 2: 27.

Occurring occasionally. On the banks of water basins.

*Eleocharis sareptana* Zinserl. 1929 in Fl. S-E 3: 279; Bubnova, 1990, Flora of Siberia. 3: 30. — *Heleocharis fennica* Palla ex Kneuck, 1901, in Allg. Bot. Zietschr. Jahrg.: 212; Polyakov, 1958, Flora of Kazakhstan. 2: 32

Occurring very rarely. Quartre 89 of the Zolotoborsky forestry, the shore of Lake Tasshalkar.

*Eriophorum gracile* W.D.J. Koch. 1800, in Roth. Cat. II: 259; Polyakov, 1958, Flora of Kazakhstan. 2: 11.

Occurring very rarely. Quartres 1–2. A spring in the Akylbay forestry.

*Eriophorum polystachyon* L. 1753, Sp. pl.: 52; Timokhina, Bondareva, 1990, Flora of Siberia. 3: 14. — *E. angustifolium* Roth; Polyakov, 1958, Flora of Kazakhstan. 2: 10.

Occurring very rarely. Akylbay forestry, quarter 1, a swamped shore of a spring.

*Rhynchospora alba* (L.) Vahl. 1806, Enum. II: 236; Polyakov, 1958, Flora of Kazakhstan. 2: 34.

Occurring rarely. On turf marshes near Karas lake [5]. On sphagnum marshes and in swampy areas [4, 6].

*Scirpus lacustris* L. 1753, Sp. pl.: 48; Polyakov, 1958, Flora of Kazakhstan. 2: 17.

Occurring rarely. On the banks of the river Arykpay and Bettybulak, Imanay, Gromatuha streams.

*Scirpus sylvaticus* L. 1753, Sp. pl.: 61; Polyakov, 1958, Flora of Kazakhstan. 2: 15.

Occurring occasionally. On the Imanay stream, the shores of lakes.

*Scirpus tabernaemontani* C.C. Gmel. 1805, Fl.: 101; Polyakov, 1958, Flora of Kazakhstan. 2: 16.

Occurring occasionally. The shores of lakes Big and Small Chebachje, Katarkol.

Analyzing the presented materials, we should emphasize that the largest genus of the Cyperaceae family is *Carex* genus (36 species, 5.6 %). Most species of sedge grasses prefer moist, marshy biotopes which are frequent in the area under study. They are *Carex acuta*, *C. acutiformis*, *C. cespitosa*, *C. disticha*, *C. elata* subsp. *omskiana*, *C. pseudocyperus*, *C. riparia*, *C. rostrata* widespread in the park on its marshy banks of streams, lakes, in marshy birch forests. *C. dioica*, *C. elongata*, *C. juncella*, *C. chordorrhiza*, *C. buxbaumii*, *C. vaginata* are frequent on sphagnum and grass swamps. *C. caryophyllea*, *C. supina*, *C. tomentosa*, *C. prae-cox* species grow in light pine forests, on edges and meadows. *C. pediformis* is found on steppe stony slopes

and granite outlets, *C. diluta*, *C. distans* subsp. *aspratilis*, *C. secalina*, *C. melanostachya* along the shores of salt lakes and damp saline meadows.

Analysis of the plants by their habitat type clearly shows the relationship of the flora of the studied region with the surrounding flora and partly allows to define migration routes of the species within the studied area [5]. Identification of habitats types was based on the analysis of modern species spread. When identifying the habitat types of the «Burabay» SNNP flora, we took the analysis principles of the central Kazakhstan hills steppe flora proposed by Z.V. Karamysheva and E.I. Rachkovskaya (1973). In the flora of Nature park there prevail Holarctic species with significant participation of Euro-Siberian species.

1. Cosmopolitan (pluri-regional) habitat type belongs to the plants found in many humid and arid botanical and geographical regions of the northern and southern hemisphere. Many coastal aquatic plants have cosmopolitan habitat: *Bolboschoenus maritimus* (L.) Palla, *Carex canescens* L., *C. leporine* L. and *Eleocharis acicularis* (L.) Roem Schult.

2. Holarctic habitat type belongs to the species common in most areas (humid and arid) of the Holarctic.

A group of species with a holarctic habitat type in Burabay flora is the largest and has 15 species. Among them there is a large number of marshy types: *Carex buxbaumii*, *C. chordorrhiza*, *C. limosa*, *C. loliacea*, *Eriophorum gracile*, *E. polystachyon*, *Rhynchospora alba*.

3. Palearctic habitat type belongs to the species widely spread in humid areas of Eurasia and in special conditions of subarid and arid regions (in the steppes of Europe and Kazakhstan, in the mountains of Central Asia, the Mediterranean, Asia Minor). A group of Palearctic types in the nature park flora is also numerous (11 species). Ecologically and by a phytocenotic confinement Palearctic species are similar to Holarctic ones. Among them there are the species that prefer waterlogged habitats — *Carex acuta* L., *C. bohémica* Schreb., *C. cespitosa* L., *C. dioica* L., *C. disticha* Huds., *C. lasiocarpa* Ehrh., *C. secalina* Willd. ex Wahlenb., *Eleocharis uniglumis* (Link) Schult., *Scirpus lacustris* L., *S. tabernaemontani* C.C. Gmel.

4. East Palearctic habitat type belongs to the species widespread throughout all humid and arid territories of North, East and Central Asia (mainly to the east from the Urals or from the western border of the Zavolzhsk-Kazakhstan geobotanical province).

Such species as *Carex pediformis* C.A. Mey is typical for steppe and petrophytic communities, *Carex songorica* Kar. & Kir. grows on saline soils on the shores of lakes.

5. Western Palearctic habitat type belongs to the species widespread in humid areas of Europe and Western Siberia, as well as in arid regions (in the Mediterranean, in the Balkans, in Asia Minor, in the steppes of the Black Sea-Kazakhstan subregion of the Eurasian steppe region).

The following coastal aquatic plants belong to the West Palearctic group: *Carex acutiformis* Ehrh., *C. juncella* (Fr.) Th. Fr., *C. riparia* Curtis, *Scirpus sylvaticus* L.

6. Euro-Siberian habitat type belongs to the species widespread in the boreal regions of Europe, Siberia, in the mountains of northern Mongolia and northern areas of the steppe region (in the east they are spread mainly till Angara-Sayan floristic region) Among Euro-Siberian types there are: Steppe *Carex praecox* Schreb and a forest type of *C. tomentosa* L., some species are typical of the swamps and marshy shores — *Carex elata* subsp. *omskiana* (Meinsh.) Jalas, *C. elongata* L., *C. vesicaria* L.

7. Mediterranean habitat type belongs to the species common in arid areas (Mediterranean Evergreen, Eurasian steppe, Sahara-Gobi desert). This habitat type is typical only for *Carex melanostachya* M. Bieb. ex Willd.

8. Pannon-Black Sea-Kazakhstan habitat type belongs to the species widespread in the Black Sea-Kazakhstan subregion of the Eurasian steppe region, sometimes they are found in the Middle Danube basin or have a more narrow habitat. A steppe type *Carex supina* Willd. ex Wahlenb belongs to this habitat type.

9. Zavolzhje-Kazakhstan habitat type belongs to the species found within the entire East Kazakhstan steppe province, in the mountains of Altai, East Kazakhstan, Central Asia, in the steppe islands of Eastern Siberia. This habitat type is typical only for *Carex distans* subsp. *aspratilis* (V.I. Krecz.) Egor.

10. Kazakhstan-Turan-Central Asia habitat type belongs to the species widespread in the steppes of Kazakhstan. Many of them are found throughout desert steppes, in the southern part of dry tipchak-feather grass steppes. There are few such species in the flora of the Bor massif. It is a coastal *Carex enervis* C.A. Mey., and the species found along the saline shores of lakes *Carex diluta* M. Bieb.

Thus, on the basis of the conducted research, we can claim that in the flora of SNNP «Burabay» a significant portion of species (34 species, 74 %) has extended habitats — cosmopolitan, holarctic, and palaeartic.

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### «Бурабай» табиғи паркінің флорасындағы *Cyperaceae*

Мақалада «Бурабай» мемлекеттік ұлттық табиғи паркінің аумағын зерттеу нәтижелері келтірілген (2010–2018 жж.). *Cyperaceae* тұқымдасы түрлерінің аннотацияланған тізімі келтірілген. Әр түрдің мекендейтін жерлерінің негізгі түрлері және кездесу жиілігі көрсетілген. «Бурабай» Мемлекеттік ұлттық табиғи паркінің аумағында *Cyperaceae* тұқымдасының 46 түрі өседі, бұл Қазақстандағы олардың жалпы санының 25,3 %-ын құрайды. *Cyperaceae* тұқымдасының ең ірі түрі — *Carex* туысы (36 түрі, 5,6 %). Қиякөлендер туысының көбісі зерттелетін аумақтағындай ылғалды, батпақты биотоптарда жақсы өседі. Бұған дәлел парк аумағында бұлақтардың, көлдердің батпақты жағалауларында, батпақты қайыңды жерлерде кеңінен *Carex acuta*, *C. acutiformis*, *C. cespitosa*, *C. disticha*, *C. elata* subsp. *omskiana* кездесуі. Сфагналық және шөпті батпақтар үшін *C. dioica*, *C. elongata*, *C. juncella*, *C. chordorrhiza* тән. *C. caryophyllea*, *C. supina*, *C. tomentosa*, *C. praecox* ашық қарағайлы ормандарда, олардың шеттерінде, шалғындарда өседі. Ареал типтері бойынша өсімдіктерді талдаудың нәтижесі табиғи парктің флорасында еуросібірлік түрлердің қатысуымен кең ареалдық голарктикалық түрлердің басым екенін көрсетеді.

*Кілт сөздер:* «Бурабай» мемлекеттік ұлттық табиғи паркі, *Cyperaceae* тұқымдасы, *Carex* туысы, флора, ареал, популяция, қиякөлендер.

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### *Cyperaceae* во флоре природного парка «Бурабай»

В статье приведены результаты исследования территории Государственного национального природного парка «Бурабай» (2010–2018 гг.). Дан аннотированный список видов семейства *Cyperaceae*. Указаны основные типы местообитаний каждого вида и частота встречаемости. На территории Государственного национального природного парка «Бурабай» произрастает 46 видов семейства *Cyperaceae*, что составляет 25,3 % от их общего числа в Казахстане. Самый крупный род семейства *Cyperaceae* — род *Carex* (36 видов, 5,6 %). Большинство видов осок предпочитают сырые, заболоченные биотопы, которые хорошо представлены на исследуемой территории. Это широко распространенные на территории парка *Carex acuta*, *C. acutiformis*, *C. cespitosa*, *C. disticha*, *C. elata* subsp. *omskiana*, которые встречаются по заболоченным берегам ручьев, озер, в заболоченных березняках. Для сфагновых и травяных болот характерны *C. dioica*, *C. elongata*, *C. juncella*, *C. chordorrhiza*. Виды *C. caryophyllea*, *C. supina*, *C. tomentosa*, *C. praecox* растут по светлым сосновым лесам, по опушкам, на лугах. Анализ растений по типам ареалов наглядно показывает, что во флоре природного парка преобладают широкоареальные голарктические виды при значительном участии евросибирских видов.

*Ключевые слова:* Государственный национальный природный парк «Бурабай», семейство *Cyperaceae*, род *Carex*, флора, ареал, популяция, осоковые.

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