

Supplementary material 1

Annotated checklist of vascular plants recorded in the Lower Amu Darya State Biosphere Reserve

Note. Species and infraspecific taxa, including subspecies and varieties, were treated as separate terminal taxa and included in the total taxon count used for the floristic inventory and species-richness calculations.

Equisetaceae Rich. ex DC.

Equisetum arvense L., *E. ramosissimum* Desf. (perennials). Habitats: canal and ditch banks, marshy areas, damp places.

Ephedraceae Dumort.

Ephedra distachya L., *E. equisetina* Bunge, *E. strobilacea* Bunge (shrubs).

Habitats: sandy desert soils, rocky, gravelly and fine-gravelly sands, variegated rock outcrops, and low mountains with rocky outcrops.

Liliaceae Juss.

Gagea divaricata Regel (perennial). Habitats: sandy deserts.

Tulipa biflora Pall. (perennial). Habitats: clayey and saline steppes, saline areas.

Iridaceae Juss.

Iris songarica Schrenk ex Fisch. & C.A.Mey. (perennial). Habitats: sandy, clayey and gravelly desert soils, foothill plains.

Asphodelaceae Juss.

Eremurus anisopterus (Kar. & Kir.) Regel (perennial). Habitats: sandy deserts.

Amaryllidaceae J.St.-Hil.

Allium borszczowii Regel, *A. sabulosum* Steven ex Bunge, *A. schubertii* Zucc. (perennials). Habitats: low mountains with rocky outcrops, variegated rock outcrops, and sandy deserts.

Asparagaceae Juss.

Asparagus brachyphyllus Turcz., *A. officinalis* L., *A. persicus* Baker, *A. turkestanicus* Popov (perennials). Habitats: saline sands, *Tamarix* communities, river banks and river valleys, sands, and solonchaks.

Typhaceae Juss.

Typha angustifolia L., *T. laxmannii* Lepech. (perennials). Habitats: marshy areas, river banks.

Juncaceae Juss.

Juncus gerardii Loisel. (perennial). Habitats: river valleys and tamarisk thickets, river banks, moist slopes.

Cyperaceae Juss.

Bolboschoenus maritimus (L.) Palla, *B. maritimus* subsp. *affinis* (Roth) T. Koyama (perennials). Habitats: river banks, marshy areas.

Carex physodes M.Bieb. (perennial). Habitats: sandy deserts, low mountains with rocky outcrops, and gravelly areas.

Cyperus fuscus L. (annual), *C. rotundus* L. (perennial). Habitats: river banks, shallow waters with sandy and clayey substrates.

Eleocharis argyrolepis Kierulff. (perennial). Habitats: wet meadows, damp places, river banks.

Poaceae Barnhart.

Aeluropus lagopoides (L.) Thwaites, *A. littoralis* (Gouan) Parl. (perennials). Habitats: saline areas, meadows, river valleys, damp places.

Agropyron desertorum (Fisch. ex Link) Schult., *A. fragile* (Roth) P.Candargy (perennials). Habitats: sandy, clayey and gravelly deserts.

Avena fatua L. (annual). Habitats: fallow lands, fine-grained soils, gravelly and rocky slopes.

Bromus danthoniae Trin., *B. tectorum* L. (annuals). Habitats: sandy, clayey and gravelly desert soils.

Calamagrostis pseudophragmites (Haller f.) Koeler (perennial). Habitats: river banks, floodplains.

Cynodon dactylon (L.) Pers. (perennial). Habitats: canal and ditch banks, floodplains and agrocenoses, fallow lands, road verges.

Echinochloa crus-galli (L.) P.Beauv. (annual). Habitats: fallow lands, river and ditch banks, gravelly areas.

Elymus repens (L.) Gould (perennial). Habitats: fallow lands, river and ditch banks, gravelly areas.

Eremopyrum bonaepartis (Spreng.) Nevski, *E. distans* (K.Koch) Nevski, *E. orientale* (L.) Jaub. & Spach. (annuals). Habitats: fallow lands, wastelands, river and ditch banks, gravelly areas.

Hordeum bulbosum L. (perennial). Habitats: river valleys, loess and rocky slopes.

Leymus multicaulis (Kar. & Kir.) Tzvelev (perennial). Habitats: river valleys, moist salt marsh meadows, floodplains, canal banks.

Phragmites australis (Cav.) Trin. ex Steud. (perennial). Habitats: along water bodies and ditches, floodplains, damp places, saline areas.

Puccinellia choresmica (V.I.Krecz.) V.I.Krecz. ex Drobov, *P. distans* (Jacq.) Parl. (perennials). Habitats: saline areas, canal and ditch banks.

Saccharum spontaneum L. (perennial). Habitats: canal and ditch banks, floodplains, gravelly areas, alluvial deposits.

Schismus arabicus Nees. (annual). Habitats: sandy, clayey and gravelly deserts, saline areas, gravelly slopes.

Setaria pumila (Poir.) Roem. & Schult. (annual). Habitats: fallow lands, wastelands, ditch banks.

Sporobolus schoenoides (L.) P.M.Peterson (annual). Habitats: river valleys, canal and ditch banks, wastelands, damp sandy saline areas.

Stipa hohenackeriana Trin. & Rupr., *S. richteriana* Kar. & Kir. (perennials). Habitats: fine gravelly soil, gravelly and rocky slopes.

Stipagrostis pennata (Trin.) De Winter. (perennial). Habitats: sandy deserts and low mountains with rocky outcrops.

Tripidium ravennae (L.) H.Scholz (perennial). Habitats: river valleys, canal and ditch banks, thickets, alluvial deposits, damp places.

Papaveraceae Juss.

Hypecoum pendulum L., *H. pendulum* var. *pendulum* (annuals). Habitats: sandy and clayey deserts, loess, fine gravelly soil, gravelly and rocky slopes, alluvial deposits, fields, wastelands.

Roemeria hybrida (L.) DC., *R. refracta* DC. (annuals). Habitats: sandy, gravelly deserts, saline areas, pebble fields, fine gravelly soil, rocky slopes, variegated rock outcrops, canal banks.

Ranunculaceae Juss.

Adonis scrobiculata subsp. *scrobiculata* (annual). Habitats: fine gravelly soil, rocky slopes, wastelands, road verges.

Clematis orientalis L. (perennial liana). Habitats: tugai, canal and ditch banks, rocky slopes.

Delphinium camptocarpum Fisch. & C.A.Mey. (annual). Habitats: sandy, clayey and gravelly deserts, low mountains with rocky outcrops.

Ranunculus falcatus L., *R. testiculatus* Crantz. (annuals). Habitats: sandy, clayey and gravelly deserts, stony places, loess, fine-grained soils and rocky slopes.

Zygophyllaceae R.Br.

Tribulus terrestris L. (annual). Habitats: alluvial deposits, dry riverbeds, road verges, wastelands.

Zygophyllum miniatum Cham., *Z. oxianum* Boriss., *Z. pinnatum* subsp. *pinnatum*, *Z. turcomanicum* Fisch. ex Boiss. (perennials). Habitats: gypsum soils, gravelly areas, variegated rock outcrops, low mountains with rocky outcrops, gravel deserts.

Fabaceae Lindl.

Alhagi pseudalhagi (M.Bieb.) Desv. ex Wangerin, *A. pseudalhagi* subsp. *persarum* (Boiss. & Buhse) Takht. (perennials). Habitats: sandy, gravelly, clayey deserts, salt flats, saline areas, alluvial deposits, canal and ditch banks, tugai.

Astragalus ammodendron Bunge (subshrub), *A. villosissimus* Bunge (subshrub), *A. koelzii* Barneby (perennial). Habitats: sandy, clayey and gravelly deserts, takyrs, low mountains with rocky outcrops.

Astragalus arpilobus Kar. & Kir., *A. bakaliensis* Bunge, *A. tribuloides* Delile, *A. contortuplicatus* L. (annuals). Habitats: sandy, clayey and gravelly deserts, salt flats, river valleys, low mountains with rocky outcrops, foothill plains, fine-grained soils and rocky slopes.

Astragalus subbijugus Ledeb., *A. chiwensis* Bunge (perennials). Habitats: rocky, gravelly, sandy slopes, cliffs, variegated rock outcrops.

Caragana halodendron (Pall.) Dum.Cours. (shrub). Habitats: salt flats, loess hills, variegated rock outcrops, tugai, canal and ditch banks, gravelly areas.

Glycyrrhiza aspera Pall., *G. glabra* L. (perennials). Habitats: clayey and gravelly deserts, tugai, river valleys, saline areas, loess, fine gravelly sands, alluvial deposits, wastelands.

Lotus frondosus (Freyn) Kuprian., *L. krylovii* Schischk. & Serg. (perennials). Habitats: river valleys, canal and ditch banks, alluvial deposits, saline areas.

Melilotus albus Medik. (biennial). Habitats: meadows, river valleys, canal and ditch banks, fine gravelly sands, gravelly areas, damp places, alluvial deposits, wastelands.

Smirnowia turkestanica Bunge (shrub). Habitats: sandy deserts.

Sophora conollyi (Bunge ex Boiss.) M.Liao & Bo Xu (shrub), *S. lehmannii* (Bunge) Yakovlev (subshrub), *S. alopecuroides* L. (shrub). Habitats: sandy deserts, low mountains with rocky outcrops, salt flats.

Rosaceae Juss.

Potentilla supina L. (perennial). Habitats: river valleys, tugai, damp places, canal and ditch banks, road verges.

Elaeagnaceae Juss.

Elaeagnus angustifolia L. (tree). Habitats: river valleys, tugai.

Salicaceae Mirb.

Populus euphratica Olivier, *P. pruinosa* Schrenk (trees). Habitats: river valleys, sandy river terraces, canal and ditch banks, tugai.

Salix alba L. (tree), *S. blakii* Goerz (shrub), *S. songarica* Andersson (shrub), *S. wilhelmsiana* M.Bieb. (shrub). Habitats: river valleys.

Euphorbiaceae Juss.

Euphorbia cheirolepis Fisch., *E. densa* Schrenk & C.A.Mey. ex Karelin, *E. turczaninowii* Kar. & Kir. (annuals). Habitats: sandy deserts.

Phyllanthaceae Martinov.

Andrachne telephioides L. (perennial). Habitats: loess, rocky slopes, variegated rock outcrops.

Geraniaceae Juss.

Erodium oxyrhinchum M.Bieb. (annual). Habitats: rocky and gravelly slopes, sands, pebble beds, variegated rock outcrops.

Nitrariaceae Lindl.

Nitraria schoberi L. (shrub). Habitats: saline areas, takyrs, variegated rock outcrops, gravelly alluvial deposits.

Peganum harmala L. (perennial). Habitats: saline areas, sandy, clayey and gravelly deserts, foothill plains, fine-grained soils, gravelly and rocky slopes, road verges.

Rutaceae Juss.

Haplophyllum ramosissimum (Paulsen) Vved. (shrub). Habitats: sandy, clayey and gravelly deserts, pebble beds, low mountains with scree.

Malvaceae Juss.

Abutilon theophrasti Medik. (annual). Habitats: river valleys, canal and ditch banks, road verges, alluvial deposits.

Hibiscus trionum L. (annual). Habitats: gravelly and rocky slopes, pebble beds, canal and ditch banks, alluvial deposits.

Capparaceae Juss.

Capparis spinosa L. (perennial). Habitats: sandy, clayey and gravelly deserts, fine-grained soils, gravelly and rocky slopes, scree, canal and ditch banks, alluvial deposits, ruins, wastelands.

Brassicaceae Burnett.

Capsella bursa-pastoris (L.) Medik. (annual). Habitats: road verges, rocky and gravelly places, fine gravelly sands, pebble beds, shrub thickets, river valleys.

Descurainia sophia (L.) Webb ex Prantl. (annual). Habitats: wastelands, canal and ditch banks.

Euclidium syriacum (L.) W.T. Aiton. (annual). Habitats: saline areas, sands, clayey and gravelly deserts, foothill plains, canal and ditch banks, takyrs, tugai, fine-grained soils, gravelly and rocky slopes, road verges, alluvial deposits.

Goldbachia laevigata DC., *G. pendula* Botsch, *G. torulosa* DC. (annuals). Habitats: sandy, clayey and gravelly deserts, foothill plains, saline areas.

Hornungia procumbens (L.) Hayek. (annual). Habitats: road verges, rocky and gravelly places, fine gravelly sands, pebble beds, shrub thickets, river valleys.

Isatis minima Bunge, *I. violascens* Bunge (annuals). Habitats: sandy and clayey deserts, submontane plains.

Lachnoloma lehmannii Bunge (annual). Habitats: sandy, clayey and gravelly deserts, low mountains with rocky outcrops, variegated rock outcrops, saline places, takyrs, submontane plains, fine-grained soils.

Lepidium chalepense L., *L. latifolium* L., *L. ruderale* L. (annuals). Habitats: tussocks, sandy-gravelly, fine soils, gravelly slopes, alluvial deposits, road verges.

Leptaleum filifolium (Willd.) DC. (annual). Habitats: saline areas, takyrs, sandy, clayey and gravelly deserts, gravelly areas, canal and ditch banks, fine soils, gravelly and rocky slopes, cliffs.

Matthiola chenopodiifolia Fisch. & C.A.Mey., *M. tatarica* (Pall.) DC. (annuals). Habitats: sandy, clayey and gravelly deserts, takyrs, low mountains with rocky outcrops.

Meniocus linifolius (Stephan ex Willd.) DC. (annual). Habitats: sandy, clayey and gravelly deserts, low mountains with rocky outcrops, salt flats.

Neotorularia torulosa (Desf.) Hedge & J.Léonard. (annual). Habitats: road verges, alluvial deposits, weedy places, takyrs, saline areas, sandy deserts, fine soils, gravelly and rocky slopes.

Olimarabidopsis pumila (Stephan) Al-Shehbaz, O'Kane & R.A.Price. (annual). Habitats: takyrs, limestone outcrops, tussocks, canal banks, gravelly and rocky slopes.

Strigosella africana (L.) Botsch., *Strigosella brevipes* (Bunge) Botsch., *Strigosella scorpioides* (Bunge) Botsch. (annuals). Habitats: sandy, clayey and gravelly deserts, salt flats, river banks.

Tetracme quadricornis (Willd.) Bunge (annual). Habitats: takyrs, salt flats, sandy, gravelly deserts.

Frankeniaceae Desv.

Frankenia bucharica Basil., *F. hirsuta* L. (subshrubs). Habitats: salt flats, meadows, tussocks, canal and ditch banks, alluvial deposits.

Tamaricaceae Link.

Myricaria bracteata Royle (shrub). Habitats: river and stream banks, gravelly areas.

Tamarix elongata Ledeb., *T. hispida* Willd., *T. hohenackeri* Bunge, *T. ramosissima* Ledeb., *T. szovitsiana* Bunge (shrubs). Habitats: river valleys, canal and ditch banks, salt flats, takyrs, saline places.

Plumbaginaceae Juss.

Limonium otolepis (Schrenk) Kuntze (perennial). Habitats: salt flats, saline places, river valleys, canal banks.

Polygonaceae Juss.

Atraphaxis spinosa L. (shrub). Habitats: sandy mounds, loams, gravelly areas, gravelly deserts, rocky slopes.

Calligonum aphyllum (Pall.) Gürke, *C. caput-medusa* Schrenk ex Fisch. & C.A.Mey., *C. leucocladum* (Schrenk) Bunge, *C. microcarpum* I.G. Borshch. (shrubs). Habitats: sandy deserts.

Persicaria amphibia (L.) Delarbre (perennial), *P. hydropiper* (L.) Delarbre (annual). Habitats: canal and ditch banks, marshy areas.

Polygonum aviculare L., *P. corrigioloides* Jaub. & Spach. (annuals). Habitats: overgrazed pastures, tussocks, road verges, canal banks, weedy places.

Rumex chalepensis Mill. (perennial), *R. marschallianus* Rchb. (annual). Habitats: meadows, damp places, road verges, river banks, canal banks, salt flats, weedy places.

Caryophyllaceae Juss.

Acanthophyllum elatius Bunge (perennial). Habitats: sandy deserts, foothill plains.

Gypsophila vaccaria (L.) Sm. (annual). Habitats: fields, fallow lands, river banks, meadows, wastelands.

Silene nana Kar. & Kir. (annual). Habitats: sandy deserts, variegated rock outcrops.

Spergularia media (L.) C.Presl. (annual). Habitats: saline areas, wastelands, river banks.

Amaranthaceae Juss.

Agriophyllum latifolium Fisch. & C.A.Mey., *A. minus* Fisch. & C.A.Mey. ex Fenzl, *A. pungens* (Vahl) Link ex A.Dietr. (annuals). Habitats: sandy, clayey and gravelly deserts.

Amaranthus albus L., *A. blitum* L., *A. retroflexus* L., *A. viridis* L. (annuals). Habitats: wastelands, road verges, river banks.

Anabasis annua Bunge (annual). Habitats: saline areas, takyrs, sandy deserts, gravelly outcrops.

Anabasis aphylla L., *A. eriopoda* (Schrenk) Paulsen, *Anabasis salsa* (Ledeb.) Benth. ex Volkens. (shrubs). Habitats: saline areas, sandy, clayey and gravelly deserts, gravelly, fine-soiled slopes, alluvial deposits, saline sands, pebble fields, takyrs.

Atriplex aucheri Moq., *A. dimorphostegia* Kar. & Kir., *A. micrantha* Ledeb., *A. sagittata* Borkh., *A. tatarica* L. (annuals). Habitats: saline areas, riverbank takyrs, road verges, wastelands.

Bassia eriophora (Schrad.) Asch., *B. hyssopifolia* (Pall.) Kuntze, *B. lasiantha* Freitag & G.Kadereit, *B. scoparia* (L.) Voss. (annuals). Habitats: sandy, clayey and gravelly deserts, loessy and gravelly soils, takyrs, saline areas, canal and ditch banks, wastelands.

Caroxylon dendroides (Pall.) Tzvelev, *C. gemmascens* (Pall.) Tzvelev, *C. orientale* (S.G.Gmel.) Tzvelev (shrubs). Habitats: saline areas, loessy and gravelly soils, river valleys.

Caroxylon incanescens (C.A.Mey.) Akhani & Roalson, *C. nitrarium* (Pall.) Akhani & Roalson, *C. scleranthum* (C.A.Mey.) Akhani & Roalson (annuals).

Habitats: saline areas, sandy and clayey deserts, takyrs, rocky and gravelly slopes.

Ceratocarpus arenarius L. (annual). Habitats: sandy deserts, saline areas, dry riverbeds, road verges.

Chenopodium album L., *Ch. ficifolium* Sm. (annual). Habitats: wastelands, road verges, rocky areas, cliffs.

Climacoptera crassa (M.Bieb.) Botsch., *C. lanata* (Pall.) Botsch. (annuals). Habitats: saline areas, sandy and clayey deserts, gravelly deserts, saline sands.

Corispermum lehmannianum Bunge (annual). Habitats: saline areas, sandy deserts.

Halimocnemis karelinii Moq., *H. latifolia* Iljin, *H. macrantha* Bunge, *H. mollissima* Bunge, *H. pilifera* Moq., *H. sclerosperma* (Pall.) C.A.Mey. (annuals). Habitats: saline areas, takyrs, sandy, gravelly deserts.

Halocharis hispida (Schrenk) Bunge (annual). Habitats: saline areas, sandy, clayey and gravelly deserts, river banks, road verges.

Halocnemum strobilaceum (Pall.) M.Bieb. (shrub). Habitats: saline areas, takyrs.

Halogeton glomeratus (M.Bieb.) Ledeb. (annual). Habitats: saline areas, takyrs, gravelly and rocky slopes, sands.

Halostachys caspica (M.Bieb.) C.A.Mey. (shrub). Habitats: takyrs, solonchaks, saline areas, tugai, alluvial deposits.

Halothamnus subaphyllus (C.A.Mey.) Botsch. (shrub). Habitats: fine-textured, gravelly, sandy deserts, saline areas, takyrs.

Haloxylon ammodendron (C.A.Mey.) Bunge ex Fenzl (shrub), *H. persicum* Bunge ex Boiss. & Buhse (tree). Habitats: gravelly deserts, dry riverbeds, sandy deserts.

Iljinia regelii (Bunge) Korovin ex Iljin (shrub). Habitats: fine-textured, gravelly and rocky slopes, clayey and gravelly deserts.

Kalidium foliatum (Pall.) Moq. (shrub). Habitats: saline areas, takyrs.

Krascheninnikovia ceratoides (L.) Gueldenst. (shrub). Habitats: rocky, gravelly, loess slopes, sandy deserts.

Oreosalsola montana (Litv.) Akhani. (shrub). Habitats: rocky and gravelly slopes, cliffs.

Oxybasis rubra (L.) S.Fuentes, Uotila & Borsch. (annual). Habitats: saline areas, canal and ditch banks, river valleys, weedy places.

Salicornia europaea L. (annual). Habitats: saline areas, takyrs, salinised fields.

Salsola paulsenii Litv., *S. praecox* (Litv.) Litv., *Salsola tragus* L. (annuals). Habitats: sandy, clayey and gravelly deserts.

Spirobassia hirsuta (L.) Freitag & G.Kadereit. (annual). Habitats: saline areas, salinised fields, tugai.

Suaeda acuminata (C.A.Mey.) Moq., *S. altissima* (L.) Pall., *S. dendroides* (C.A.Mey.) Moq., *S. heterophylla* (Kar. & Kir.) Bunge ex Boiss., *S. linifolia* Pall., *S. microsperma* (C.A.Mey.) Fenzl., *S. paradoxa* (Bunge) Bunge, *S. salsa* (L.) Pall. (annuals). Habitats: saline areas, weedy places, salinised fields, tugai, alluvial deposits, road verges, canal and ditch banks, takyrs, river valleys.

Turania aperta (Paulsen) Akhani. (annual). Habitats: saline sands, saline areas.

Xylosalsola arbuscula (Pall.) Tzvelev, *X. richteri* (Moq.) Akhani & Roalson (shrubs). Habitats: sandy, clayey and gravelly deserts, rocky and gravelly slopes.

Portulacaceae Juss.

Portulaca oleracea L. (annual). Habitats: fields, alluvial deposits, fallow lands, wastelands, canal and ditch banks.

Apocynaceae Juss.

Apocynum venetum subsp. *lancifolium* (Russanov) M.H.J.van der Meer., *Apocynum venetum* subsp. *scabrum* (Russanov) M.H.J.van der Meer. (perennials). Habitats: canal and ditch banks, thickets, saline areas.

Cynanchum acutum subsp. *sibiricum* (Willd.) Rech.f. (perennial). Habitats: thickets, canal and ditch banks, gravelly, sandy deserts.

Boraginaceae Juss.

Arnebia decumbens (Vent.) Coss. & Kralik, *A. linearifolia* A. DC., *A. transcaspica* Popov (annuals). Habitats: sandy, clayey and gravelly deserts, low mountains.

Asperugo procumbens L. (annual). Habitats: alluvial deposits, wastelands, thickets, meadows, road verges, shrub thickets.

Gastrocotyle hispida (Forssk.) Bunge (annual). Habitats: sandy and clayey deserts, saline areas, gravelly places, river valleys.

Heliotropium acutiflorum Kar. & Kir. (perennial), *H. micranthos* (Pall.) Bunge (annual), *H. ellipticum* Ledeb. (annual), *H. sibiricum* (L.) J.I.M.Melo (perennial), *H. arguzioides* Kar. & Kir. (perennial), *H. dasycarpum* Ledeb. (perennial). Habitats: sandy, gravelly deserts, gravelly slopes.

Lappula spinocarpos (Forssk.) Asch. ex Kuntze, *L. squarrosa* (Retz.) Dumort. (annuals). Habitats: oases, wastelands, fine-grained soils, gravelly and rocky slopes.

Microparacaryum intermedium (Fresen.) Hilger & Podlech. (annual). Habitats: sandy and clayey deserts, rocky slopes.

Nonea caspica (Willd.) G.Don. (annual). Habitats: sandy, clayey and gravelly deserts, loess, gravelly and rocky slopes.

Pseudoheterocaryum rigidum (A.DC.) Kaz.Osaloo & Saadati. (annual). Habitats: fine-grained soils, gravelly and rocky slopes.

Suchtelenia subsessilis (Vatke) Sennikov, *S. szovitsiana* (Fisch. & C.A.Mey.) Sennikov (annuals). Habitats: sandy, clayey and gravelly deserts.

Convolvulaceae Juss.

Calystegia sepium (L.) R.Br. (perennial). Habitats: thickets, canal and ditch banks, damp shady places.

Convolvulus divaricatus Regel & Schmalh. (shrub), *C. eremophilus* Boiss. & Buhse (subshrub), *C. erinaceus* Ledeb. (subshrub), *C. fruticosus* Pall. (subshrub), *C. arvensis* L. (perennial). Habitats: sandy, clayey and gravelly deserts, low mountains.

Cressa cretica L. (perennial). Habitats: saline areas, thickets, takyrs, river valleys.

Cuscuta campestris Yunck, *C. lehmanniana* Bunge (annuals). Habitats: parasitic on wild herbaceous perennials.

Solanaceae Juss.

Hyoscyamus pusillus L. (annual). Habitats: loess, fine-grained, rocky and gravelly slopes.

Lycium ruthenicum Murray. (shrub). Habitats: sandy, clayey and gravelly deserts, saline areas, river banks, thickets.

Solanum nigrum L. (annual). Habitats: alluvial deposits, wastelands, river banks.

Plantaginaceae Juss.

Plantago lagocephala Bunge (annual), *P. lanceolata* L. (perennial), *P. major* L. (perennial). Habitats: clayey deserts, takyrs, saline areas, low mountains.

Veronica anagallis-aquatica L. (annual or perennial), *V. campylopoda* Boiss. (annual). Habitats: canal and ditch banks, marshy places, sandy and clayey deserts, takyrs, saline areas, rocky and gravelly places.

Lamiaceae Martinov.

Dracocephalum royleanum Benth. (annual). Habitats: sandy, clayey and gravelly deserts, low mountains, fine-grained soils, gravelly and rocky slopes.

Lycopus europaeus L. (perennial). Habitats: damp places, river banks, ditches.

Mazaceae Reveal.

Dodartia orientalis L. (perennial). Habitats: sandy, clayey and gravelly deserts, foothill plains, fine-grained soils, gravelly and rocky slopes, saline areas, river valleys, wastelands.

Orobanchaceae Vent.

Cistanche salsa (C.A.Mey.) Beck (perennial). Habitats: river valleys, parasitic on *Tamarix* species.

Orobanche cernua Loefl (perennial). Habitats: sandy and clayey deserts, tussocks, river banks, fine-grained soils, gravelly and rocky slopes, parasitic on perennial herbs.

Asteraceae Bercht. & J.Presl.

Amberboa turanica Iljin (annual). Habitats: sandy and clayey deserts, loess slopes, oases.

Artemisia annua L., *A. scoparia* Waldst. & Kit., *A. tournefortiana* Rchb. (annuals). Habitats: tussocks, canal and ditch banks, alluvial deposits, wastelands.

Artemisia diffusa Krasch. ex Poljakov, *A. terrae-albae* Krasch. (shrubs). Habitats: sandy, clayey and gravelly deserts, stony places, salt flats, takyrs, low mountains with rocky outcrops, fine-grained soils and gravelly slopes.

Centaurea pulchella Ledeb. (annual). Habitats: sandy deserts, gravelly areas, sandy, fine-grained soils, gravelly and rocky slopes.

Cirsium arvense (L.) Scop., *C. arvense* var. *arvense* (perennials). Habitats: rocky and gravelly slopes, damp meadows, river valleys, tussocks, canal and ditch banks, sands.

Cousinia dichotoma Bunge (annual), *C. prolifera* Jaub. & Spach. (annual), *C. alata* Schrenk ex Fisch. & C.A.Mey. (biennial), *C. hamadae* Juz. (perennial). Habitats: sandy deserts, takyrs, salt flats, river valleys, stony low mountain ranges, foothill plains, oases.

Dipterocome pusilla Fisch. & C.A.Mey. (annual). Habitats: sandy and clayey deserts, saline sands, salt flats, takyrs, loess slopes.

Epilasia acrolasia (Bunge) C.B.Clarke, *Epilasia hemilasia* (Bunge) C.B.Clarke. (annuals). Habitats: sandy, clayey and gravelly deserts, gravelly areas, variegated rock outcrops, river valleys, fine-grained soils and rocky slopes.

Heteroderis pusilla (Boiss.) Boiss. (annual). Habitats: sandy, clayey and gravelly deserts, foothill plains, stony low mountain ranges.

Inula multicaulis Fisch. & C.A.Mey. (perennial). Habitats: gravelly deserts, stony low mountain ranges.

Jurinea multiloba Iljin, *J. persimilis* Iljin (perennials). Habitats: stony low mountain ranges, rocky, gravelly, sandy slopes, cliffs, gravelly areas.

Karelinia caspia (Pall.) Less. (perennial). Habitats: sandy, gravelly, clayey deserts, salt flats, saline areas, alluvial deposits, canal and ditch banks, tugai.

Koelpinia linearis Pall., *K. tenuissima* Pavlov & Lips., *K. turanica* Vassilcz. (annuals). Habitats: salt flats, saline areas, canal and ditch banks, oases, takyrs, tussocks.

Lactuca glauciifolia Boiss. (annual), *L. serriola* L. (annual or biennial), *L. tatarica* (L.) C.A.Mey. (perennial or annual), *L. undulata* Ledeb. (annual). Habitats: fine-grained soils, gravelly and rocky slopes, cliffs, stony low mountain ranges.

Launaea korovinii (Popov) Popov ex Pavlov (annual), *Launaea procumbens* (Roxb.) Ramayya & Rajagopal (perennial). Habitats: sandy and clayey deserts, foothill plains, loess slopes, river valleys.

Microcephala lamellata (Bunge) Pobed. (annual). Habitats: sandy, clayey and gravelly deserts, solonchaks, takyrs, loess, fine-grained soils, gravelly and rocky slopes.

Pentanema caspicum (F.K.Blum ex Ledeb.) G.V.Boiko, Korniy. & Mosyakin (annual). Habitats: solonchaks, saline areas, canal and ditch banks, takyrs.

Rhaponticum repens (L.) Hidalgo. (perennial). Habitats: sandy and clayey habitats, saline areas, solonchaks, canal and ditch banks, alluvial deposits.

Senecio subdentatus Ledeb. (annual). Habitats: sandy deserts, takyrs, solonchaks, saline areas, river banks, shingle, fine-grained soils, gravelly and rocky slopes, limestone outcrops.

Sonchus asper (L.) Hill. (annual). Habitats: alluvial deposits, wastelands, road verges.

Symphyotrichum graminifolium (Spreng.) G.L.Nesom. (perennial). Habitats: takyrs, canal and ditch banks, alluvial deposits, wastelands.

Takhtajaniantha pusilla (Pall.) Nazarova. (perennial). Habitats: sandy, clayey and gravelly deserts, solonchaks, takyrs.

Taraxacum bicornis Dahlst., *T. comitans* Kovalevsk. (perennials). Habitats: meadows, saline areas, solonchaks, river banks, road verges, takyrs.

Tripolium pannonicum (Jacq.) Dobrocz. (annual). Habitats: solonchaks, saline areas, canal and ditch banks, road verges, alluvial deposits.

Xanthium strumarium L. (annual). Habitats: wastelands, road verges, alluvial deposits, canal and ditch banks.

Caprifoliaceae Juss.

Lomelosia olivieri (Coult.) Greuter & Burdet (annual). Habitats: sandy, clayey and gravelly deserts, low mountains with rocky outcrops.

Apiaceae Lindl.

Pimpinella peregrina L. (biennial). Habitats: canal and ditch banks, alluvial deposits, shrub thickets, tugai, takyrs.

Ferula assa-foetida L., *F. karelinii* Bunge (perennials). Habitats: sandy, clayey and gravelly deserts, foothill plains.

Cuminum setifolium (Boiss.) Koso-Pol. (annual). Habitats: sandy, clayey and gravelly deserts, foothill plains.