Culita Sirbu, Iulia V. Miu, Athanasios A. Gavrilidis, Simona R. Gradinaru, Iulian M. Niculae, Cristina Preda, Adrian Oprea, Mihaela Urziceanu, Petronela Camen-Comanescu, Eugenia Nagoda, Ioana M. Sirbu, Daniyar Memedemin, Paulina Anastasiu (2022) Distribution and pathways of introduction of invasive alien plant species in Romania. NeoBiota

# **Appendix S1. List of invasive and potentially invasive alien plant species in Romania (\* denotes an invasive alien species of Union concern pursuant to Regulation (EU) No 1143/2014 of the European Parliament and of the Council)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Alien taxon** | **Habitat** | **Native range** | **Invasiveness status** | **Introduction pathway** | **Total number of records in 5× 5 UTM grid cells in Romania** | **Species ID** |
| Aceraceae | *Acer negundo* L. | Deciduous forest, scrub, grassland, riparian, palustrine | America North + Central | invasive | RE\_nat + Es\_faci + Es\_fore + Es\_hort + TR\_habi + TR\_mult + Un\_nat | 658 | 1 |
| Amaranthaceae | *Amaranthus albus* L. | Gravelly and sandy disturbed soils, anthropogenic | America North + Central | invasive | TR\_seed + TR\_mult + UN\_nat | 723 | 2 |
| *Amaranthus blitoides* S. Watson var. *blitoides* | Ruderal, segetal | America North + Central | invasive | TR\_seed + TR\_mult + Un\_natu | 666 | 3 |
| *Amaranthus blitoides* S. Watson var. *reverchoni* | Ruderal, segetal | America North + Central | potentially invasive | TR\_seed + TR\_mult + Un\_natu | 32 | 4 |
| *Amaranthus blitum L.* subsp. *blitum* | Ruderal, segetal | Mediterranean | invasive | ES\_agri | 319 | 5 |
| *Amaranthus crispus*  (Lesp. et Thévenau) N.Terracc. | Ruderal, anthropogenic, riparian | America South | invasive | TR\_seed + TR\_mult + Un\_natu | 482 | 6 |
| *Amaranthus deflexus* L. | Ruderal, anthropogenic | America South | invasive | TR\_seed + TR\_mult + Un\_natu | 216 | 7 |
| *Amaranthus emarginatus*  Moq. ex Uline et Bray | Segetal, riparian | Tropics | potentially invasive | TR\_seed + TR\_mult + Un\_natu | 33 | 8 |
| *Amaranthus graecizans* L. subsp. *graecizans* | Segetal, riparian | Mediterranean | potentially invasive | TR\_seed + TR\_mult + Un\_natu | 56 | 9 |
| *Amaranthus graecizans* L. subsp. *sylvestris*  (Vill.) Brenan | Segetal, riparian | Mediterranean | potentially invasive | TR\_seed + TR\_mult + Un\_natu | 46 | 10 |
| *Amaranthus hybridus* L. | Riverbank | America North + Central | potentially invasive | TR\_seed + TR\_mult + Un\_natu | 93 | 11 |
| *Amaranthus powellii* S.Watson | Canyons, desert washes, open habitats | America North + Central | invasive | TR\_seed + TR\_mult + Un\_natu | 884 | 12 |
| *Amaranthus retroflexus* L. | Riverbank pioneer | America North + Central | invasive | TR\_seed + TR\_mult + Un\_natu | 1800 | 13 |
| Apiaceae | *Heracleum mantegazzianum*  Sommier & Levier | Forest edges, riparian, mountains | Asia + Pacific | potentially invasive | ES\_faci | 1 | 14 |
| *\*Heracleum sosnowskyi*  Manden | Forest edges, riparian, mountains | Asia + Pacific | potentially invasive | ES\_faci | 1 | 15 |
| Asclepiadaceae | *\*Asclepias syriaca* L. | Anthropogenic | America North + Central | invasive | ES\_hort + ES\_othr | 155 | 16 |
| Asteraceae | *Ambrosia artemisiifolia* L. | Grassland, anthropogenic | America North + Central | invasive | TR\_mult + Un\_natu | 2715 | 17 |
| *Ambrosia tenuifolia* Spreng. | Grassland, anthropogenic | America South | potentially invasive | TR\_mult | 4 | 18 |
| *Ambrosia trifida* L*.* | Anthropogenic | America North + Central | potentially invasive | TR\_mult | 22 | 19 |
| *Artemisia annua* L*.* | Sandy riverbank and lakeshore | Asia + Pacific | invasive | ES\_agri | 835 | 20 |
| *Bidens frondosa* L. | Moist forest, meadow, segetal, anthropogenic | America North + Central | invasive | UN\_intr | 201 | 21 |
| *Bidens vulgata*  E.L. Greene | Open forest, anthropogenic | America North + Central | potentially invasive | UN\_intr | 85 | 22 |
| *Cyclachaena xanthiifolia* (Nutt.) Fresen. (syn. *Iva xanthifolia*  Nutt.) | Anthropogenic, ruderal, segetal | America North + Central | invasive | UN\_natu | 695 | 51 |
| *Matricaria discoidea*  DC. | Ruderal, anthropogenic | America North + Central | invasive | UN\_natu | 677 | 23 |
| *Erigeron canadensis* L. | Ruderal, anthropogenic | America North + Central | invasive | UN\_natu | 3717 | 24 |
| *Erigeron annuus*  (L.) Pers. subsp. *annuus* | Ruderal, segetal, anthropogenic | America North + Central | invasive | UN\_natu | 2229 | 25 |
| *Erigeron annuus*  (L.) Pers. subsp. *strigosus* (Muhl. ex Willd.) Wagenitz | Grassland, ruderal | America North + Central | invasive | UN\_natu | 376 | 26 |
| *Galinsoga parviflora*  Cav. | Ruderal, segetal, anthropogenic | America South | invasive | TR\_habi + UN\_natu | 1348 | 27 |
| *Galinsoga quadriradiata*  Ruiz et Pav. | Ruderal, segetal, anthropogenic | America North + Central | invasive | TR\_habi + UN\_natu | 455 | 28 |
| *Grindelia squarrosa*  (Pursh) Dunal. | Grassland, ruderal | America North + Central | potentially invasive | TR\_mult | 6 | 29 |
| *Helianthus decapetalus* L. | Woodland, forest edge | America North + Central | potentially invasive | ES\_hort | 167 | 30 |
| *Helianthus tuberosus* L. | Ruderal, forest edge | America North + Central | invasive | ES\_hort + ES\_othr | 618 | 31 |
| *Rhaponticum repens* (L.)  Hidalgo | Ruderal, segetal, riparian | Asia + Pacific | potentially invasive | TR\_mult | 1 | 32 |
| *Rudbeckia laciniata* L. | Moist forest, riverbanks | America North + Central | invasive | ES\_hort | 412 | 33 |
| *Solidago canadensis* L. | Grasslands, riverbank | America North + Central | invasive | ES\_hort | 484 | 34 |
| *Solidago gigantea*  Aiton | Moist habitats, open forest | America North + Central | invasive | ES\_hort | 195 | 35 |
| *Symphyotrichum ciliatum*  (Ledeb.) Nesom | Moist, saline, sandy soil | Asia + Pacific | invasive | UN\_natu | 168 | 36 |
| *Symphyotrichum lanceolatum*  (Willd.) G.L. Nesom | Riparian, meadow, ditches | America North + Central | invasive | ES\_hort | 238 | 37 |
| *Symphyotrichum ×salignum*  (Willd.) G. L. Nesom | Forest, grassland | Other regions | potentially invasive | ES\_hort | 91 | 38 |
| *Verbesina encelioides*  (Cav.) Bentham et Hooker fil. ex A. Gray | Sand, clay, limestone, anthropogenic | America North + Central | potentially invasive | TR\_seed | 8 | 39 |
| *Xanthium orientale*  L. subsp. *italicum* (Moretti) Greuter | Anthropogenic | America North + Central | invasive | TR\_mult | 1535 | 40 |
| *Xanthium spinosum*  L. | Ruderal, riparian, alkaline soils, anthropogenic | America South | invasive | TR\_mult | 1147 | 41 |
| Salviniaceae | *Azolla filiculoides* Lam. | Stagnant and slow-moving waters | America North + Central | invasive | UN\_intr | 111 | 42 |
| Balsaminaceae | *\*Impatiens glandulifera*  Royle | Mountain | Asia + Pacific | invasive | ES\_hort | 446 | 43 |
| *Impatiens parviflora*  DC. | Grassland, floodplain, forest edges | Asia + Pacific | invasive | UN\_natu | 117 | 44 |
| Brassicaceae | *Armoracia rusticana*  P.Gaertn., B.Mey. et Scherb. | Ruderal, segetal, riverbanks | Europe | invasive | ES\_agri | 927 | 45 |
| Cabombaceae | *\*Cabomba caroliniana*  A. Gray | Riparian, palustrine | Americas (North + Central + South) | potentially invasive | RE\_land + RE\_othe | 1 | 46 |
| Cannabaceae | *\*Humulus scandens* (Lour.) Merr. (syn. *H. japonicus*  Siebold & Zucc.) | Sandy soils, riverbanks, ruderal | Asia + Pacific | potentially invasive | ES\_hort | 7 | 47 |
| Chenopodiaceae | *Bassia scoparia*  (L.) A. J. Scott | Pastures, ruderal, segetal, disturbed sites | Asia + Pacific, Europe | invasive | ES\_hort | 709 | 48 |
| *Dysphania ambrosioides*  (L.) Mosyakin & Clemants | Sandy soils, riverbanks, ruderal, segetal | Tropics | invasive | ES\_othe | 111 | 49 |
| Caprifoliaceae | *Lonicera japonica*  Thunb. | Anthropogenic, forest edges, forest, meadows, segetal, shrubland | Asia + Pacific | potentially invasive | ES\_hort | 21 | 50 |
| Convolvulaceae | *Ipomoea purpurea*  (L.) Roth | Segetal, thickets | Tropics | potentially invasive | ES\_hort | 159 | 52 |
| Cucurbitaceae | *Echinocystis lobata*  (Michx) Torr. et A. Gray | Riparian, palustrine, moist ruderal, moist habitats, ditches, thickets | America North + Central | invasive | ES\_hort | 839 | 53 |
| *Sicyos angulatus* L. | Riverbanks, ruderal | America North + Central | invasive | ES\_hort | 83 | 54 |
| Cupressaceae | *Juniperus virginiana*  L. | Forests, moist ruderal | America North + Central | invasive | RE\_othe + ES\_fore + ES\_hort + | 21 | 55 |
| Cuscutaceae | *Cuscuta campestris*  Yunck. | Parasite of herbaceous plants | America North + Central | invasive | TR\_seed | 693 | 56 |
| Cyperaceae | *Cyperus difformis*  L. | Riparian, palustrine | Tropics | invasive | TR\_seed | 38 | 57 |
| Elaeagnaceae | *Elaeagnus angustifolia*  L. | Forests, grassland | Asia + Pacific | invasive | RE\_eros + ES\_hort + | 183 | 58 |
| Euphorbiaceae | *Euphorbia maculata*  L. | Ruderal, segetal | America North + Central | invasive | TR\_habi + UN\_natu | 212 | 59 |
| Fabaceae | *Amorpha fruticosa* L. | Riverbanks, lakeshore, open forest, ruderal | America North + Central | invasive | RE\_eros + ES\_hort + UN\_intr | 622 | 60 |
| *Cytisus scoparius*  (L.) Link. | Sandy soils, pastures on acid soils, gravelly soils | Europe | invasive | RE\_eros + RE\_othe + ES\_hort | 120 | 61 |
| *Gleditsia triacanthos* L. | Moist forests, riverbanks | America North + Central | potentially invasive | RE\_othe + ES\_fore + ES\_hort + | 290 | 62 |
| *Robinia pseudoacacia*  L. | Forest, ruderal | America North + Central | invasive | RE\_eros + RE\_othe + ES\_fore + ES\_hort | 1656 | 63 |
| *Trigonella caerulea*  (L.) Ser. | Well-drained loamy soils | Mediterranean | invasive | ES\_othe | 250 | 64 |
| Fagaceae | *Quercus rubra*  L. | Well-drained uplands | America North + Central | potentially invasive | RE\_othr + ES\_fore + ES\_hort | 16 | 65 |
| Haloragaceae | *\*Myriophyllum aquaticum*  (Vell.) Verdc. | Low-lying areas, shallow waters and muddy substrates, mountain areas | America South | potentially invasive | RE\_othr | 1 | 66 |
| Hydrocharitaceae | *Elodea canadensis*  Michx. | Riverbanks, wetlands, shallow waters and muddy substrates | America North + Central | invasive | UN\_intr | 164 | 67 |
| *\*Elodea nuttallii*  (Planch.) H.St John | Lakes and rivers, mostly calcareous | America North + Central | invasive | UN\_intr | 158 | 68 |
| *Vallisneria spiralis*  L. | Lakes and rivers, palustrine | Tropics | invasive | ES\_hort | 66 | 69 |
| Juncaceae | *Juncus tenuis*  Willd. | Sandy to clayey soils | America North + Central | invasive | UN\_natu | 750 | 70 |
| Lamiaceae | *Salvia reflexa*  Hornem. | Grassland, ruderal | America North + Central | invasive | TR\_seed | 94 | 71 |
| Lemnaceae | *Lemna minuta*  Kunth | Mesotrophic to eutrophic waters | Americas (North + Central + South) | potentially invasive | UN\_intr | 7 | 72 |
| Malvaceae | *Abutilon theophrasti*  Medik. | Segetal, ruderal | Asia + Pacific | invasive | TR\_seed + UN\_natu | 232 | 73 |
| Moraceae | *Morus alba* L. | Open habitats | Asia + Pacific | invasive | ES\_hort + ES\_othr | 539 | 74 |
| Nelumbonaceae | *Nelumbo nucifera*  Gaertn. | Floodplain | Europe | invasive | RE\_land | 6 | 75 |
| Onagraceae | *Oenothera biennis* L. | Dry grassland, lakeshores, open forest, anthropogenic | America North + Central | invasive | ES\_hort | 749 | 76 |
| Oleaceae | *Fraxinus americana* L. | Upland and lowland forest, well-drained riverbanks, grassland | America North + Central | potentially invasive | RE\_land + RE\_othr + ES\_fore + ES\_hort | 27 | 77 |
| *Fraxinus pennsylvanica*  Marshall | Open woodlands, riverbanks, swamps, ditches | America North + Central | invasive | RE\_land + RE\_othr + ES\_fore + ES\_hort | 260 | 78 |
| Oxalidaceae | *Oxalis corniculata*  L. | Forest, grassland, riverbanks, segetal, ruderal | Mediterranean | invasive | ES\_hort | 350 | 79 |
| *Oxalis dillenii* Jacq. | Grassland, roadsides, riverbanks, sandy, rocky, or gravelly soils | America North + Central | invasive | UN\_natu | 120 | 80 |
| *Oxalis stricta* L. | Grassland, riverbanks, floodplains, ruderal, forest | America North + Central | invasive | UN\_natu | 556 | 81 |
| Phytolaccaceae | *Phytolacca americana* L. | Ruderal, grassland, clearings, thickets, forest edges | America North + Central | invasive | ES\_hort + ES\_othr | 262 | 82 |
| *Phytolacca acinosa*  Roxb. | Forest | Asia + Pacific | potentially invasive | ES\_hort + ES\_othr | 29 | 83 |
| Poaceae | *Cenchrus longispinus*  (Hack.) Fernald | Sandy forests, segetal, anthropogenic | America North + Central | invasive | TR\_mult + UN\_natu | 9 | 84 |
| *Eriochloa villosa*  (Thunb.) Kunth | Riverbanks, meadows, ruderal, segetal | Asia + Pacific | invasive | TR\_seed | 65 | 85 |
| *Panicum capillare* L. | Ruderal, segetal | America North + Central | invasive | ES\_hort | 176 | 86 |
| *Panicum miliaceum* L. | Grassland | Asia + Pacific | invasive | ES\_agri | 153 | 87 |
| *Paspalum distichum* L. (syn. *P. paspalodes*  (Michx.) Scribn.) | Riparian | Tropics | invasive | UN\_natu | 11 | 88 |
| *Sorghum halepense*  (L.) Pers. | Dry open habitats | Mediterranean | invasive | TR\_seed | 791 | 89 |
| Polygonaceae | *Reynoutria × bohemica*  Chrtek & Chrtková | Hybrid formed in Europe | Other regions | invasive | ES\_hort | 335 | 90 |
| *Reynoutria japonica*  Houtt. | Mountains, ruderal, segetal | Asia + Pacific | invasive | ES\_hort | 489 | 91 |
| *Reynoutria sachalinensis*  (F.Schmidt) Nakai | Forest, grassland, riverbanks, wetlands | Asia + Pacific | potentially invasive | ES\_hort | 23 | 92 |
| Rosaceae | *Prunus cerasifera*  Ehrh. | Forest edge, grassland | Europe | potentially invasive | ES\_hort | 479 | 93 |
| *Prunus serotina*  Ehrh. | Ruderal, segetal, open forest, riverbanks | America North + Central | invasive | RE\_eros + ES\_fore + ES\_hort | 64 | 94 |
| Salicaceae | *Populus × canadensis*  Moench | Hybrid formed in Europe | Other regions | potentially invasive | RE\_eros + ES\_fore + ES\_hort | 70 | 95 |
| Scrophulariaceae | *Lindernia dubia*  (L.) Pennell | Moist habitats | America North + Central | invasive | UN\_natu | 18 | 96 |
| *Veronica persica*  Poir. | Mountains | Asia + Pacific | invasive | UN\_natu | 918 | 97 |
| Simaroubaceae | *\*Ailanthus altissima*  (Mill.) Swingle | Moist and loamy soils, limestone-rich soils | Asia + Pacific | invasive | RE\_othr + ES\_faci + ES\_fore + ES-hort + TR\_mult + UN\_natu | 604 | 98 |
| Solanaceae | *Datura stramonium* L. | Fertile soils | Americas (North + Central + South) | invasive | TR\_habi + UN\_natu | 643 | 99 |
| *Lycium barbarum* L. | Riverbanks, meadows | Asia + Pacific | invasive | ES\_hort | 972 | 100 |
| Vitaceae | *Parthenocissus vitacea* (Knerr) Hitchc. (syn. *P. inserta*  (A. Kerner) Fritsch) | Forest, open forest, riparian | America North + Central | invasive | ES\_hort | 213 | 101 |
| *Parthenocissus quinquefolia*  (L.) Planchon | Forest, open forest, riparian | America North + Central | invasive | ES\_hort | 102 | 102 |