**Title:** Long-term changes in pathways and vectors of biological invasions in Northwest Europe

**Authors:** Alexandra Zieritz1,2\*, Belinda Gallardo2,3, Simon J. Baker4, J Robert Britton5, Johan L.C.H. van Valkenburg6, Hugo Verreycken7, David C. Aldridge2

**Affiliations:**

1 School of Geography, University of Nottingham Malaysia Campus, Jalan Broga, 43500 Semenyih, Malaysia

2 Department of Zoology, University of Cambridge, Downing Street, Cambridge CB2 3EJ, UK

3 Department of Biodiversity Conservation and Ecosystem Restoration. Pyrenean Institute of Ecology - Spanish National Research Council (IPE-CSIC). Avda. Montañana 1005, 50059 Zaragoza, Spain

4 Natural England, York, UK (retired)

5 Department of Life and Environmental Sciences, Faculty of Science and Technology, Bournemouth University, Fern Barrow, Poole, Dorset, BH12 5BB, UK

6 Netherlands Food and Consumer Product Safety Authority, National Reference Centre, P.O. Box 9102, 6700 HC Wageningen, The Netherlands

7 Research Institute for Nature and Forest, Kliniekstraat 25, B-1070 Brussels, Belgium

\*Corresponding author

**Suppl. Table 2.** Information on presence/absence and first year of observation in the wild in each country, and continent(s) of origin, invasion pathway(s), invasion vector(s) and environment for 353 species, comprising 53 non-native invasive Angiospermae, and all non-native Mollusca, Osteichthyes (bony fish), Anseriformes (wildfowl) and Mammalia established in at least one of the four study countries (i.e. Great Britain, France, Belgium and the Netherlands).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Established in** | | | | **First year of record in the wild** | | | |  | **Pathway of introduction** | | | | **Vector of deliberate introduction** | | | | |  |  |
| **Species** | **GB** | **France** | **Belgium** | **Netherlands** | **GB** | **France** | **Belgium** | **Netherlands** | **Continent(s) of origin** | **deliberate import & release** | **deliberate import & escape** | **accidental introduction** | **dispersal** | **ornamental** | **leisure** | **industry** | **biocontrol** | **research** | **Environment** | **References** |
| ***ANGIOSPERMAE*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Acacia dealbata* Link |  | Y |  |  |  | 1847 |  |  | Aus | Y |  |  |  | Y |  | Y | Y |  | T | 1-3 |
| *Acacia mearnsii* De Wild. |  | Y |  |  |  | 1992 |  |  | Aus | Y |  |  | Y |  |  | Y |  |  | T | 1,4 |
| *Acacia saligna* (Labill.) H. L. Wendl. |  | Y |  |  |  | 1961 |  |  | Aus | Y |  |  | Y | Y |  | Y |  |  | T | 1,2,4 |
| *Acer negundo* | Y | Y | Y | Y | 1688 | 1688 | 1955 | n.d. | NAm, SAm | Y |  |  |  | Y |  |  |  |  | T | 1,2,5,6,7 |
| *Acroptilon repens* | Y | Y | Y |  | 1948 | n.d. | 1956 |  | As, Eu |  |  | Y | Y |  |  |  |  |  | T | 1,2,5 |
| *Ailanthus altissima* (Mill.) | Y | Y | Y | Y | 1935 | 1786 | 1952 | 1800 | As, Aus | Y |  |  | Y | Y |  | Y |  |  | T | 1-9 |
| *Akebia quinata* (Houtt.) Decne. | Y | Y | Y |  | n.d. | n.d. | n.d. |  | As | Y |  |  | Y | Y |  |  |  |  | T | 1,3,4 |
| *Ambrosia artemisiifolia* Linnaeus | Y | Y | Y | Y | 1836 | 1863 | 1883 | 1875 | NAm | Y |  | Y | Y | Y |  | Y |  |  | T | 1-4,5,7,8,10 |
| *Amelanchier lamarckii* F. G. Schroed. | Y | Y | Y | Y | 1887 | n.d. | 1876 | 1870 | NAm | Y |  |  | Y | Y |  |  |  |  | T | 1-3,5-8,10 |
| *Arundo donax* Linnaeus | Y | Y |  |  | n.d. | n.d. |  |  | Af, As, Eu | Y | Y |  | Y | Y |  | Y | Y |  | F+T | 1,2,4,5 |
| *Aster X salignus* Willd. | Y | Y | Y |  | 1846 | 1815 | 1861 |  | na | Y |  |  |  | Y |  |  |  |  | T | 1,2,5-7 |
| *Baccharis halimifolia* Linnaeus | Y | Y | Y | Y | 1924 | 1683 | 1924 | 2003 | NAm | Y |  |  |  | Y |  | Y |  |  | T | 1-3,5-8,10,11 |
| *Buddleja davidii* Franch. | Y | Y | Y | Y | 1922 | 1895 | 1942 | n.d. | As | Y | Y |  |  | Y |  |  |  |  | T | 1,2,4,5,6,7 |
| *Bunias orientalis* | Y | Y | Y | Y | 1825 | 1899 | 1858 | 1853 | As, Eu |  |  | Y | Y |  |  |  |  |  | T | 1,2 |
| *Cabomba caroliniana* A. Gray | Y | Y | Y | Y | 1969 | 2007 | 1998 | 1986 | NAm, SAm | Y | Y |  |  | Y |  | Y |  |  | F | 1-3,5,7,8,10,11 |
| *Campylopus introflexus* (Hedwig) Bridel, 1819 | Y | Y | Y | Y | 1941 | 1954 | 1966 | 1961 | Af, Aus, SAm |  |  | Y | Y |  |  |  |  |  | T | 1,2,5 |
| *Carpobrotus edulis* (Linnaeus) Brown | Y | Y | Y |  | 1886 | 1800 | n.d. |  | Af | Y |  |  | Y | Y |  |  | Y |  | T | 1-3,4,5, 11 |
| *Cenchrus longispinus* |  |  | Y |  |  |  | 1888 |  | NAm |  |  | Y |  |  |  |  |  |  | T | 1,2,7 |
| *Cornus sericea* Linnaeus | Y | Y | Y | Y | 1838 | n.d. | 1885 | 1974 | NAm | Y |  |  | Y | Y |  |  |  |  | T | 1-3,5-8,10 |
| *Cortaderia selloana* (Schultes) Ascherson & Gräbner | Y | Y | Y | Y | 1925 | 1899 | 2004 | n.d. | SAm | Y | Y |  | Y | Y |  |  |  |  | T | 1-3,4,5,7 |
| *Cotoneaster horizontalis* Decaisne | Y | Y | Y | Y | 1940 | n.d. | 1982 | n.d. | As | Y |  |  | Y | Y |  |  |  |  | T | 2,3,5-8,10 |
| *Crassula helmsii* (Kirk) Cockayne | Y | Y | Y | Y | 1911 | 2006 | 1982 | 1995 | Aus | Y |  |  | Y | Y |  | Y |  |  | F | 1-12 |
| *Echinocystis lobata* (Michx.) Torr. & A. Gray |  | Y | Y |  |  | n.d. | n.d. |  | NAm | Y |  |  | Y | Y |  | Y |  |  | T | 1,2,5 |
| *Egeria densa* Planchon | Y | Y | Y | Y | 1950 | 1919 | 1999 | 1944 | SAm | Y | Y |  |  | Y |  | Y |  |  | F | 1-8,10,11,13 |
| *Eichhornia crassipes* (Mart.) Solms | Y | Y | Y | Y | 1982 | 1961 | 2001 | 1917 | SAm | Y |  |  | Y | Y |  | Y |  |  | F | 1-3,5,7,8,10 |
| *Elodea callitrichoides* | Y | Y |  |  | 1948 | 1959 |  |  | SAm | Y | Y |  |  | Y |  |  |  |  | F | 1,2,5,11 |
| *Elodea canadensis* Michaux | Y | Y | Y | Y | 1836 | 1845 | 1860 | 1860 | NAm | Y | Y |  | Y | Y |  | Y |  |  | F | 1-8,10,11,14 |
| *Elodea nuttallii* (Planchon) St-John | Y | Y | Y | Y | 1966 | 1973 | 1939 | 1941 | NAm | Y |  |  | Y | Y |  | Y |  |  | F | 1,2,5-8,11,12 |
| *Epilobium ciliatum* Raf. | Y | Y | Y | Y | 1891 | 1961 | 1952 | 1915 | As, NAm, SAm |  |  | Y | Y |  |  |  |  |  | T | 1,2,5,6,7 |
| *Euphorbia X pseudovirgata* (Schur) | Y | Y |  |  | 1887 | 1966 |  |  | Eu | Y | Y |  |  |  |  | Y |  |  | T | 2,5 |
| *Fallopia japonica* (Houttuyn) Ronse Decraene | Y | Y | Y | Y | 1825 | 1939 | 1882 | 1849 | As | Y | Y |  | Y | Y |  | Y |  |  | T | 1-8,10 |
| *Fallopia sachalinensis* (Schmidt) Ronse Decraene | Y | Y | Y | Y | 1896 | n.d. | 1924 | 1887 | As | Y | Y |  | Y | Y |  |  |  |  | T | 1-3,5-8,10 |
| *Fallopia X bohemica* (Chrtek & Chrtková) Bailey | Y | Y | Y | Y | 1954 | n.d. | 1924 | 1997 | na | Y |  |  | Y | Y |  |  |  |  | T | 1-3,5-8,10 |
| *Galinsoga quadriradiata* Ruiz & Pav. | Y | Y | Y | Y | 1909 | 1973 | 1900 | 1920 | NAm, SAm |  |  | Y |  |  |  |  |  |  | T | 1,2,5,7 |
| *Grindelia squarrosa* (Pursh) Dun. |  |  | Y | Y |  |  | 1920 | n.d. | NAm |  |  | Y |  |  |  |  |  |  | T | 1,2,7,10 |
| *Hedychium gardnerianum* Sheppard ex Ker Gawl. | Y |  |  |  | n.d. |  |  |  | As | Y |  |  | Y | Y |  |  |  |  | T | 1 |
| *Helianthus tuberosus* Linnaeus | Y | Y | Y | Y | 1617 | 1607 | 1893 | 1613 | NAm | Y |  |  | Y | Y |  | Y |  |  | T | 1,3,5-8,10 |
| *Heracleum mantegazzianum* Sommier & Levier | Y | Y | Y | Y | 1817 | 1890 | 1938 | 1900 | As | Y |  |  | Y | Y |  |  |  |  | T | 1-8,10 |
| *Hydrilla verticillata* (C. Linnaeus) Royle | Y |  |  |  | n.d. |  |  |  | As, Aus |  |  |  |  |  |  |  |  |  | F | 1,3 |
| *Hydrocotyle ranunculoides* L.f. | Y | Y | Y | Y | 1985 | n.d. | 1992 | 1994 | NAm, SAm | Y | Y |  | Y | Y |  |  |  |  | F | 1-3,5-8,10-12 |
| *Impatiens glandulifera* Royle | Y | Y | Y | Y | 1839 | 1839 | 1891 | 1903 | As | Y |  |  | Y | Y |  |  |  |  | T | 1-8,10 |
| *Iva xanthiifolia* Nutt. | Y | Y | Y |  | 1901 | n.d. | 1908 |  | NAm |  |  | Y |  |  |  |  |  |  | T | 1,2,5,7 |
| *Lagarosiphon major* (Ridley) Moss | Y | Y | Y | Y | 1944 | 1939 | 1993 | 2003 | Af | Y | Y |  |  | Y |  | Y |  |  | F | 1-8,10-11 |
| *Lonicera japonica* Thunb. | Y | Y | Y |  | 1937 | 1899 | 1995 |  | As | Y | Y |  | Y | Y |  |  | Y |  | T | 1,2,4,5,7 |
| *Ludwigia grandiflora* (Michx.) Greuter & Burdet | Y | Y | Y | Y | 1999 | 1820 | 1983 | 1993 | NAm, SAm | Y |  |  |  | Y |  | Y |  |  | F | 1-3,5-8,10-12 |
| *Ludwigia peploides* (Kunth.) P.H. Raven, 1963 | Y | Y | Y | Y | 1999 | 1820 | 1995 | 2003 | Aus, NAm, SAm | Y | Y |  |  | Y |  |  |  |  | F | 1,2,5,6,7,10 |
| *Lupinus polyphyllus* Lindl. | Y | Y | Y | Y | 1900 | n.d. | 1882 | 1899 | NAm | Y | Y |  |  | Y |  |  |  |  | T | 1,2,5,6,7 |
| *Lysichiton americanus* Hultén & H. St. John | Y | Y | Y | Y | 1901 | n.d. | 2006 | 2003 | NAm | Y | Y |  |  | Y |  |  |  |  | F,T | 1,2,5,6,10 |
| *Mahonia aquifolium* (Pursh) Nutt. | Y | Y | Y | Y | 1874 | n.d. | 1906 | 1894 | NAm | Y | Y |  | Y | Y |  |  | Y |  | T | 1-3,5-8 |
| *Mimulus guttatus* DC. | Y | Y | Y | Y | 1824 | n.d. | 1953 | 1836 | NAm | Y | Y |  |  | Y |  |  |  |  | T | 1,2,5,6,7 |
| *Myriophyllum aquaticum* (Vellozo) Verdcourt | Y | Y | Y | Y | 1960 | 1880 | 1983 | 1898 | SAm | Y | Y |  | Y | Y |  | Y |  |  | F | 1-8,10-11 |
| *Myriophyllum heterophyllum* Michx. | Y | Y | Y | Y | 1941 | n.d. | 1993 | 1999 | NAm | Y | Y |  | Y | Y |  | Y |  |  | F | 1-8,10-11 |
| *Nassella neesiana* | Y | Y | Y |  | 1916 | n.d. | 1895 |  | SAm |  |  | Y |  |  |  |  |  |  | T | 1,4,5,7 |
| *Opuntia ficus-indica* (L.) Mill. |  | Y |  |  |  | 1834 |  |  | SAm | Y |  |  | Y | Y |  | Y | Y |  | T | 2 |
| *Opuntia stricta* (Haw.) Haw. |  | Y |  |  |  | n.d. |  |  | NAm, SAm |  |  |  |  |  |  |  |  |  | T | 1,2 |
| *Oxalis pes-caprae* Linnaeus | Y | Y |  | Y | 1901 | 1833 |  | n.d. | Af | Y | Y |  | Y | Y |  |  |  |  | T | 1-5,7 |
| *Paspalum distichum* Linnaeus | Y | Y | Y |  | 1924 | n.d. | 1950 |  | Af, As, NAm, SAm |  |  | Y | Y |  |  |  |  |  | F+T | 1-3,5,7 |
| *Phytolacca acinosa* Roxb. | Y |  | Y | Y | 1925 |  | 1960 | n.d. | As | Y |  |  |  | Y |  |  |  |  | T | 3,5,7, 10 |
| *Phytolacca americana* Linnaeus | Y | Y | Y | Y | n.d. | 1834 | 1958 | 1901 | NAm | Y |  |  |  | Y |  |  |  |  | T | 2,3,7,8,10 |
| *Prunus serotina* Ehrhart | Y | Y | Y | Y | 1853 | 1600 | 1890 | 1875 | NAm | Y |  |  | Y | Y |  |  | Y |  | T | 1-3,5-8,10 |
| *Psidium cattleianum* Sabine | Y | Y |  |  | 1818 | n.d. |  |  | SAm |  |  |  |  |  |  |  |  |  | T | 1 |
| *Rhododendron ponticum* Linnaeus | Y | Y | Y | Y | 17634 | n.d. | 19204 | 1904 | As, Eu | Y |  |  | Y | Y |  |  |  |  | T | 1-8,10 |
| *Robinia pseudoacacia* Linnaeus | Y | Y | Y | Y | 1888 | 1913 | 1856 | 1847 | NAm | Y |  |  | Y | Y |  |  |  |  | T | 1-8,10 |
| *Rosa rugosa* Thunb. | Y | Y | Y | Y | 1917 | n.d. | 1934 | 1918 | As | Y |  |  | Y | Y |  |  |  |  | T | 1-3,5-8,10 |
| *Senecio inaequidens* DC. | Y | Y | Y | Y | 1836 | 1935 | 1892 | 1939 | Af |  |  | Y |  |  |  |  |  |  | T | 1,2,5,6,7 |
| *Sicyos angulatus* Linnaeus, 1753 | Y | Y | Y |  | n.d. | 1981 | 1882 |  | NAm |  |  | Y |  |  |  |  |  |  | T | 1,2,7 |
| *Solanum elaeagnifolium* Cavanilles | Y | Y | Y |  | n.d. | n.d. | 1996 |  | NAm, SAm |  |  | Y |  |  |  |  |  |  | T | 1,7 |
| *Solidago canadensis* Linnaeus | Y | Y | Y | Y | 1645 | 1648 | 1863 | 1899 | NAm | Y |  |  | Y | Y |  |  |  |  | T | 1,2,5-8,10 |
| *Solidago gigantean* Aiton | Y | Y | Y | Y | 1916 | n.d. | 1869 | n.d. | NAm | Y |  |  |  | Y |  |  |  |  | T | 1,2,5-8,10 |
| *Spartina anglica* C.E. Hubbard | Y | Y | Y | Y | 1892 | 1894 | n.d. | 1924 | Eu | Y |  |  | Y |  |  | Y | Y |  | T+M | 1-5,8,10,12,15 |
| *Spiraea alba* Du Roi | Y | Y | Y | Y | 1876 | n.d. | 1803 | n.d. | NAm | Y | Y |  | Y | Y |  |  |  |  | T | 2,5-8,10 |
| *Spiraea douglasii* Hook | Y | Y | Y | Y | 1910 | n.d. | 1881 | n.d. | NAm | Y |  |  |  | Y |  |  |  |  | T | 2,5-8,10 |
| *Symphyotrichum lanceolatum* (Willd.) G.L.Nesom | Y | Y | Y | Y | 1800 | 1800 | 1835 | 1900 | NAm | Y |  |  |  | Y |  |  |  |  | T | 1,2,5-8,10 |
| ***MOLLUSCA*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Aegopinella nitens* (Michaud, 1831) |  |  | Y | Y |  |  | n.d. | n.d. | Eu |  |  |  |  |  |  |  |  |  | T | 2,10 |
| *Anomia chinensis* Philippi, 1849 |  | Y |  |  |  | 1974 |  |  | As | Y |  |  |  |  |  | Y |  |  | M | 2 |
| *Arion flagellus* Collinge, 1893 | Y |  |  |  | 1893 |  |  |  | Eu |  |  |  |  |  |  |  |  |  | T | 5,16 |
| *Arion vulgaris* (Moquin-Tandon, 1855) | Y | Y | Y | Y | 1954 | n.d. | 1973 | 1989 | Eu |  |  | Y | Y |  |  |  |  |  | T | 2,5,8,10,16 |
| *Atrina rigida* (Lightfoot, 1786) | Y |  |  |  | 1986 |  |  |  | NAm |  |  | Y |  |  |  |  |  |  | M | 18 |
| *Aulacomya atra* (Molina 1782) | Y |  |  |  | 1994 |  |  |  | SAm |  |  | Y |  |  |  |  |  |  | M | 2,5,12,15,18 |
| *Bellamya chinensis* (Gray 1834) |  |  |  | Y |  |  |  | 2010 | As |  | Y | Y |  | Y |  |  |  |  | F | 4,10,19 |
| *Boettgerilla pallens* Simroth 1912 | Y | Y | Y | Y | 1972 | 1968 | 1967 | 1973 | Eu |  |  |  |  |  |  |  |  |  | T | 5,10,20 |
| *Brachidontes exustus* Linneaus, 1758 | Y |  |  |  | 1977 |  |  |  | NAm |  |  | Y |  |  |  |  |  |  | M | 18 |
| *Brachidontes pharaonic* (Fischer P., 1870) |  | Y |  |  |  | n.d. |  |  | As |  |  | Y | Y |  |  |  |  |  | M | 2 |
| *Calliostoma zizyphinum* (Linnaeus, 1758) |  |  |  | Y |  |  |  | 2001 | Eu |  |  | Y |  |  |  |  |  |  | M | 8,10,17 |
| *Calyptraea chinensis* Linnaeus 1758 | Y |  |  | Y | 1957 |  |  | 1941 | Af, Eu |  |  | Y |  |  |  |  |  |  | M | 5,10,17,18 |
| *Cecilioides acicula* (Müller, 1774) | Y |  |  |  | 1926 |  |  |  | Eu |  |  |  |  |  |  |  |  |  | T | 5,16 |
| *Cernuella cisalpine* (Rossmässler, 1837) |  |  | Y | Y |  |  | n.d. | n.d. | Eu |  |  |  |  |  |  |  |  |  | T | 10,16 |
| *Cernuella neglecta* (Draparnaud, 1805) | Y | Y | Y | Y | 1900 |  | n.d. | n.d. | Eu |  |  |  |  |  |  |  |  |  | T | 5,10,16 |
| *Choromytilus chilensis* (Hupé, 185) | Y |  |  |  | n.d. |  |  |  | SAm |  |  |  |  |  |  |  |  |  | M | 2 |
| *Choromytilus chorus* (Molina, 1782) | Y |  |  |  | 1967 |  |  |  | SAm |  |  |  |  |  |  |  |  |  | M | 18 |
| *Cochlicella barbara* (Linnaeus, 1758) | Y |  | Y | Y | 1975 |  | 1946 | n.d. | Eu |  |  | Y |  |  |  |  |  |  | T | 2,5,16 |
| *Corambe obscura* Verrill, 1870 |  | Y |  | Y |  | 1973 |  | 1879 | NAm |  |  | Y |  |  |  |  |  |  | M | 2,15,17 |
| *Corbicula fluminalis* (Müller, 1774) |  | Y | Y | Y |  | 1980 | n.d. | 1985 | As |  |  | Y |  |  |  |  |  |  | M+F | 2,8,10,12,16,17 |
| *Corbicula fluminea* (Müller, 1774) | Y | Y | Y | Y | 1997 | 1980 | 1992 | 1985 | As |  |  | Y |  |  |  |  |  |  | M+F | 2,4,5,10-12,16-18 |
| *Crassostrea brasiliana* (Lamarck, 1819) | Y |  |  |  | 1977 |  |  |  | SAm |  |  | Y |  |  |  |  |  |  | M | 2,5 |
| *Crassostrea gigas* (Thunberg 1793) | Y | Y | Y | Y | 1926 | 1962 | 1960 | 1883 | As |  | Y | Y | Y |  |  | Y |  |  | M+F | 2,4,5,8,10,12,15,17,18,21 |
| *Crassostrea rhizophorae* Guilding 1828 | Y | Y |  |  | 1980 | 1976 |  |  | SAm | Y | Y |  |  |  |  | Y |  | Y | M | 2,5,12,18 |
| *Crassostrea rivularis* (Gould, 1861) |  | Y |  |  |  | 1994 |  |  | As | Y | Y |  |  |  |  | Y |  |  | M | 2 |
| *Crassostrea sikamea* (Amemiya 1928) |  | Y |  |  |  | 1994 |  |  | As | Y | Y |  |  |  |  | Y |  |  | M | 2 |
| *Crassostrea virginica* (Gmelin 1791) | Y | Y | Y | Y | 1871 | 1861 | 1960 | 1943 | NAm, SAm | Y | Y |  |  |  |  | Y |  |  | M | 2,5,10,12,15,17,18 |
| *Crepidula fornicata* (Linnaeus, 1758) | Y | Y | Y | Y | 1872 | 1949 | 1911 | 1926 | NAm |  | Y | Y | Y |  |  | Y |  |  | M | 2,4,5,8,10,12,15,17,18,21 |
| *Cyclope neritea* (Linnaeus, 1758) |  | Y |  |  |  | 1970 |  |  | Af, Eu |  |  | Y |  |  |  |  |  |  | M | 22 |
| *Deroceras invadens* Reise, Hutchinson, Schunack & Schlitt, 2011 | Y | Y | Y | Y | 1931 | n.d. | 1968 | n.d. | Eu | Y |  |  |  |  |  |  |  |  | T | 2,5, 10,16 |
| *Dreissena polymorpha* (Pallas 1771) | Y | Y | Y | Y | 1820 | 1847 | 1826 | 1826 | As, Eu |  |  | Y | Y |  |  |  |  |  | F | 2,4,8,10-12,17,18,21 |
| *Dreissena rostriformis bugensis* (Andrusov, 1897) |  | Y | Y | Y |  | *2011* | *2009* | *2006* | As, Eu |  |  | Y | Y |  |  |  |  |  | F | 1,4,5,8,16,23,24 |
| *Ensis directus* (Conrad 1843) | Y | Y | Y | Y | 1989 | 1991 | 1986 | 1981 | NAm |  |  | Y | Y |  |  |  |  |  | M | 2,5,12,15,17,18,21,25 |
| *Ferrissia fragilis* (Taylor 1981) | Y |  |  |  | 1931 |  |  |  | Af, Eu |  |  | Y |  |  |  |  |  |  | F | 2,5,11,16 |
| *Gibbula albida* (Gmelin, 1791) |  | Y |  |  |  | 1984 |  |  | Eu | Y |  |  |  |  |  | Y |  |  | M | 2 |
| *Gibbula cineraria* (Linnaeus, 1758) |  |  |  | Y |  |  |  | 1980 | Eu |  |  | Y |  |  |  |  |  |  | M | 8,10,17 |
| *Glycymeris glycymeris* (Linnaeus, 1758) |  |  |  | Y |  |  |  | n.d. | Eu |  |  |  |  |  |  |  |  |  | M | 10 |
| *Gyraulus chinensis* Dunker, 1848 |  | Y |  | Y |  | n.d. |  | n.d. | As |  |  | Y |  |  |  |  |  |  | F | 8,10,16 |
| *Gyraulus parvus* (Say, 1817) |  |  |  | Y |  |  |  | n.d. | NAm |  |  |  |  |  |  |  |  |  | F | 8,10 |
| *Helicodiscus singleyanus* (Pilsbry, 1890) | Y |  |  |  | 1975 |  |  |  | NAm |  |  |  |  |  |  |  |  |  | T | 5,16 |
| *Helix lucorum* (Linnaeus, 1758) |  | Y |  |  |  | n.d. |  |  | Eu | Y |  |  |  |  |  | Y |  |  | T | 16 |
| *Hygromia cinctella* (Draparnaud, 1801) | Y | Y |  | Y | 1950 | 1940 |  | 1990 | Eu |  |  | Y |  |  |  |  |  |  | T | 5,16,10 |
| *Lehmannia nyctelia* (Bourguignat, 1861) |  | Y |  |  |  | n.d. |  |  | Af, Eu |  |  | Y |  |  |  |  |  |  | T | 2 |
| *Lehmannia valentiana* (Férussac, 1822) | Y | Y | Y | Y | 1945 | n.d. | 1973 | n.d. | Eu |  |  | Y |  |  |  |  |  |  | T | 2,5,10 |
| *Lepidopleurus cancellatus* (Sowerby, 1840) |  |  |  | Y |  |  |  | 1897 | Eu |  |  | Y |  |  |  |  |  |  | M | 10,17 |
| *Leucostigma candidescens* (Rossmässler, 1835) |  | Y |  |  |  | 1903 |  |  | Eu |  |  |  |  |  |  |  |  |  | T | 2,16 |
| *Limacus flavus* (Linnaeus, 1758) | Y | Y |  |  | n.d. | n.d. |  |  | Eu |  |  |  |  |  |  |  |  |  | T | 5,16 |
| *Limacus maculatus* (Kaleniczenko 1851 | Y |  |  |  | 1884 |  |  |  | As, Eu |  |  |  |  |  |  |  |  |  | T | 5 |
| *Littorina compressa* (Jeffreys,1865) |  |  |  | Y |  |  |  | n.d. | n.d. |  |  |  |  |  |  |  |  |  | M | 8,10 |
| *Lopha folium* (Linnaeus, 1758) | Y |  |  |  | 1986 |  |  |  | NAm |  |  | Y |  |  |  |  |  |  | M | 18 |
| *Lucilla scintilla* (Lowe, 1852) | Y |  |  |  | 1975 |  |  |  | NAm |  |  |  |  |  |  |  |  |  | T | 16 |
| *Marmorana serpentine* (A. Férussac, 1821) |  | Y |  |  |  | n.d. |  |  | Eu |  |  | Y |  |  |  |  |  |  | T | 2,16 |
| *Melanoides tuberculatus* (Muller, 1774) |  |  |  | Y |  |  |  | 1992 | Af, As |  |  |  |  |  |  |  |  |  | F | 8,10 |
| *Menetus dilatatus* (Gould, 1841) | Y | Y |  | Y | 1869 | 1980 |  | n.d. | NAm |  |  | Y |  |  |  |  |  |  | F | 2,5,8,10,11,16 |
| *Mercenaria mercenaria* (Linnaeus 1758) | Y | Y | Y | Y | 1860 | 1861 | 1930 | 1933 | NAm | Y | Y | Y | Y |  | Y | Y |  |  | M | 2,5, 8,10,12,15,17,18 |
| *Milax gagates* (Draparnaud, 1801) | Y | Y | Y | Y | 1926 |  | n.d. | n.d. | Eu |  |  |  |  |  |  |  |  |  | T | 5,10,16 |
| *Milax nigricans* (Philippi, 1836) | Y | Y |  | Y | 1948 | n.d. |  | 1990 | Eu |  |  | Y |  |  |  |  |  |  | T | 2,5,16 |
| *Musculista senhousia* (Benson in Cantor, 1842) |  | Y |  |  |  | 1978 |  |  | As |  |  | Y |  |  |  |  |  |  | M | 2,4,12 |
| *Musculium transversum* (Say, 1829) | Y | Y |  | Y | 1856 | 2000 |  | 1954 | NAm |  |  | Y |  |  |  |  |  |  | F | 2,5,8,10,11 |
| *Mya arenaria* (Linnaeus 1758) | Y | Y | Y | Y | 1899 | 1700 | 1700 | 1765 | NAm | Y |  | Y | Y |  |  | Y |  |  | M | 2,4,5,8,10,12,15,17,21 |
| *Mytilopsis leucophaeta* (Conrad 1831) | Y | Y | Y | Y | 1996 | 1898 | 1835 | 1895 | NAm |  |  | Y | Y |  |  |  |  |  | M+F | 4,5,8,10,11,12,15,,17,18,21 |
| *Ocinebrellus inornatus* (Récluz, 1851) |  | Y |  | Y |  | 1995 |  | 2007 | As | Y |  | Y |  |  |  | Y |  |  | M | 2,8,10,26 |
| *Opeas pumilum* (Pfeiffer, 1840) |  | Y |  |  |  | n.d. |  |  | SAm | Y |  |  |  |  |  |  |  |  | T | 2 |
| *Osilinus lineatus* (da Costa, 1778) |  |  |  | Y |  |  |  | n.d. | Eu |  |  |  |  |  |  |  |  |  | M | 10 |
| *Ostrea angasi* Sowerby, 1871 |  | Y |  |  |  | 1985 |  |  | Aus | Y |  |  |  |  |  | Y |  |  | M | 2 |
| *Ostrea denselamellosa* Lischke, 1869 |  | Y |  |  |  | 1982 |  |  | As | Y |  |  |  |  |  | Y |  |  | M | 2 |
| *Ostrea edulis* (Linnaeus, 1758) |  | Y |  |  |  | 1970 |  |  | Eu | Y |  |  |  |  |  | Y |  |  | M | 12 |
| *Ostrea puelchana* D'Orbigny 1842 |  | Y |  |  |  | 1989 |  |  | SAm | Y |  |  |  |  |  | Y |  |  | M | 2 |
| *Paralaoma servilis* (Shuttleworth, 1852) | Y |  |  | Y | 1985 |  |  | n.d. | Aus |  |  |  |  |  |  |  |  |  | T | 5,10,16 |
| *Patinopecten yessoensis* Jay, 1857 |  | Y |  |  |  | 1980 |  |  | As | Y |  |  |  |  |  | Y |  |  | M | 2,12 |
| *Pecten maximus* (Linnaeus, 1758) |  |  |  | Y |  |  |  | 1942 | Eu |  |  | Y |  |  |  |  |  |  | M | 10,17 |
| *Petricola pholadiformis* Lamarck, 1818 | Y |  | Y | Y | 1870 |  | 1899 | 1899 | As, NAm | Y | Y | Y | Y |  |  | Y |  |  | M | 2,5,8,10,12,15,17,18,21 |
| *Physella acuta* (Draparnaud, 1805) | Y | Y |  | Y | 1800 | 1862 |  | n.d. | NAm |  |  | Y |  |  |  |  |  |  | F | 2,5,10,11 |
| *Physella gyrina* (Say, 1821) | Y |  |  |  | 1918 |  |  |  | NAm |  | Y | Y |  | Y |  |  |  |  | F | 5,11,16 |
| *Pinctada radiata* (Leach, 1814) | Y | Y |  |  | 1986 | n.d. |  |  | Af, As, NAm |  |  | Y | Y |  |  |  |  |  | M | 12,18 |
| *Potamopyrgus antipodarum* (Gray, 1843) | Y | Y | Y | Y | 1852 | 1950 | 1927 | 1913 | Aus |  |  | Y |  |  |  |  |  |  | M+F | 2,4,5,8,10,12,17,18,21 |
| *Psiloteredo megotara* (Hanley in Forbes & Hanley, 1848) |  |  | Y | Y |  |  | n.d. | n.d. | Eu, NAm |  |  | Y |  |  |  |  |  |  | M | 8,10,17,21 |
| *Pteria colymbus* (Roding, 1798) | Y |  |  |  | 1986 |  |  |  | NAm |  |  | Y |  |  |  |  |  |  | M | 18 |
| *Rangia cuneata* (G. B. Sowerby I, 1831) |  |  | Y |  |  |  | 2000 |  | NAm |  |  | Y |  |  |  |  |  |  | M+F | 4,12,21 |
| *Rapana venosa* (Valenciennes 1846) | Y | Y | Y | Y | 1991 | 1997 | n.d. | 2005 | As | Y | Y | Y | Y |  |  | Y |  |  | M | 2,4,5,8,15,18 |
| *Ruditapes philippinarum* (Adams & Reeve 1850) | Y | Y |  | Y | *1980* | *n.d.* |  | *2008* | *As* | Y |  |  | Y |  |  | Y |  |  | M | 5,8,12,15,18 |
| *Selenochlamys ysbryda* Rowson & Symondson, 2008 | Y |  |  |  | 2004, |  |  |  | As, Eu |  |  | Y |  |  |  |  |  |  | T | 5,16 |
| *Sinanodonta woodiana* (Lea, 1834) |  | Y | Y |  |  | *1985* | *1999* |  | *As* |  |  | Y |  |  |  |  |  |  | F | 2,12,16 |
| *Spisula solidissima* (Dillwyn, 1817) |  |  |  | Y |  |  |  | 1982 | NAm |  |  |  |  |  |  |  |  |  | M | 17 |
| *Stagnicola catascopium* (Say, 1816) | Y |  |  |  | 1929 |  |  |  | NAm |  |  | Y |  |  |  |  |  |  | F | 5,11 |
| *Tandonia budapestensis* (Hazay, 1880) | Y | Y |  | Y | 1880 | n.d. |  | n.d. | Eu |  |  |  |  |  |  |  |  |  | T | 5,10,16 |
| *Tandonia rustica* (Millet, 1843) | Y | Y |  | Y | 1986 | n.d. |  | n.d. | Eu |  |  |  |  |  |  |  |  |  | T | 5,16 |
| *Tandonia sowerbyi* (A. Férussac, 1823) | Y |  | Y | Y | 1823 |  | n.d. | n.d. | Eu |  |  |  |  |  |  |  |  |  | T | 5,16 |
| *Teredo navalis* Linnaeus 1758 | Y | Y | Y | Y | 1992 | n.d. | 1600 | 1730 | As |  |  | Y | Y |  |  |  |  |  | M | 2,5,8,10,15,17,21 |
| *Testacella scutulum* Sowerby, 1821 | Y |  |  |  | 1821 |  |  |  | Eu |  |  |  |  |  |  |  |  |  | T | 5,16 |
| *Theba pisana* Müller, 1774) | Y |  | Y | Y | 1799 |  | 1866 | n.d. | Eu |  |  |  |  |  |  |  |  |  | T | 5,10,16 |
| *Tiostrea chilensis* (Philippi, 1845) | Y | Y |  |  | 1963 | 1982 |  |  | SAm | Y | Y |  |  |  |  | Y |  |  | M | 2,18 |
| *Tiostrea lutaria* (Hutton, 1873) | Y |  |  |  | 1963 |  |  |  | Aus |  | Y |  |  |  |  | Y |  |  | M | 2,5,12 |
| *Trochoidea elegans* (Gmelin, 1791) | Y | Y | Y |  | 1890 |  | 1976 |  | Eu |  |  | Y |  |  |  |  |  |  | T | 2,5,16 |
| *Urosalpinx cinerea* (Say 1822) | Y | Y |  | Y | 1900 | 1960 |  | 2007 | NAm |  |  | Y |  |  |  |  |  |  | M+F | 2,4,5,8,10,12,15,18 |
| *Viviparus acerosus* (Haas, 1913) |  |  |  | Y |  |  |  | 2006 | Eu | Y | Y |  |  | Y |  |  |  |  | F | 27 |
| ***OSTEICHTHYES*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Abramis sapa* (Pallas, 1814) |  |  |  | Y |  |  |  | 2004 | As, Eu |  |  |  |  |  |  |  |  |  | F | 8,33 |
| *Acipenser baerii* Brandt, 1869 | Y | Y |  | Y | 1990 | 1975 |  | 1993 | As | Y | Y |  | Y |  | Y | Y |  |  | M+F | 2,5,8,12,28 |
| *Acipenser gueldenstaedtii* (Brandt & Ratzeberg, 1833) |  |  |  | Y |  |  |  | 1993 | Eu | Y |  |  | Y |  |  | Y |  |  | M+F | 2,8,10,12,33 |
| *Acipenser ruthenus* Linnaeus, 1758 | Y | Y |  | Y | 1986 | 1980 |  | 1993 | Eu | Y |  |  | Y | Y | Y | Y |  |  | M+F | 2,5,8,10,12,28-30 |
| *Acipenser stellatus* Pallas, 1771 |  |  |  | Y |  |  |  | n.d. | As, Eu |  |  |  |  |  |  |  |  |  | M+F | 10,33 |
| *Ambloplites rupestris* (Rafinesque, 1817) | Y | Y |  |  | 1930 | n.d. |  |  | NAm | Y |  |  |  | Y | Y |  |  |  | F | 2,5,11,12,28 |
| *Ameiurus catus* Linnaeus, 1758 | Y |  |  |  | 2000 |  |  |  | NAm | Y |  |  |  | Y |  |  |  |  | F | 28,30 |
| *Ameiurus melas* Rafinesque, 1820 | Y | Y | Y | Y | 1885 | 1871 | 1892 | 1900 | NAm | Y | Y |  |  | Y | Y | Y |  |  | F | 5,8,10-12,28 |
| *Ameiurus nebulosus* Lesueur, 1819 | Y | Y | Y | Y | n..d | 1950 | 1871 | 1900 | NAm |  |  |  | Y |  |  |  |  |  | F | 4,6,8,10,12,33 |
| *Anguilla japonica* Temminck & Schlegel, 1846 |  | Y |  |  |  | n.d. |  |  | As |  | Y |  |  |  |  | Y |  |  | M+F | 12,33 |
| *Aspius aspius* (Linnaeus, 1758) |  | Y |  | Y |  | 1990 |  | 1984 | As, Eu |  |  |  | Y |  |  |  |  |  | F | 8,10,12,33 |
| *Atherina boyeri* A. Risso, 1810 | Y |  |  | Y | 1846 |  |  | 1964 | Af, Eu |  |  | Y |  |  |  |  |  |  | M+F | 5,17 |
| *Barbus barbus* (Linnaeus, 1758) | Y |  |  |  | 1956 |  |  |  | Eu |  |  |  |  |  |  |  |  |  | F | 12,33 |
| *Carassius auratus* Linnaeus, 1758 | Y | Y | Y | Y | 1694 | n.d. | n.d. | n.d. | As | Y | Y |  |  | Y | Y | Y |  |  | F | 4,5,8,10-12,28,29 |
| *Carassius gibelio* (Bloch, 1782) | Y | Y | Y | Y | n.d. | n.d. | 1750 | n.d. | As, Eu | Y |  |  |  | Y |  | Y |  |  | F | 2,6,8,10,12,33 |
| *Catostomus commersoni* Lacépède, 1803 | Y |  |  |  | 1980 |  |  |  | NAm | Y | Y |  |  | Y |  |  |  |  | F | 2,5,12,28-30 |
| *Chondrostoma nasus* (Linnaeus, 1758) |  | Y |  |  |  | n.d. |  |  | As, Eu |  |  |  |  |  |  |  |  |  | F | 12,33 |
| *Clarias batrachus* (Linnaeus, 1758) | Y |  |  |  | 1963 |  |  |  | As | Y | Y |  |  | Y |  |  |  |  | F | 2,4,5,12,28 |
| *Clarias gariepinus* (Burchell, 1822*)* |  | Y | Y | Y |  | n.d. | n.d. | n.d. | Af, As | Y | Y |  |  |  |  | Y |  | Y | F | 2,4,12,33 |
| *Coregonus albula* (Linnaeus, 1758) | Y | Y |  | Y | n.d. | n.d. |  | n.d. | Eu |  | Y |  |  |  |  | Y |  |  | F | 12,33 |
| *Coregonus clupeaformis* (Mitchill, 1818) | Y | Y |  | Y | 1878 | 1881 |  | 1907 | NAm | Y |  |  |  |  | Y |  |  |  | F | 2,5,12,28 |
| *Coregonus lavaretus* (Linnaeus, 1758) |  | Y | Y | Y |  | n.d. | 1978 | 1936 | Eu |  | Y |  |  |  | Y |  |  |  | F | 12 |
| *Coregonus maraena* (Bloch, 1779) |  |  |  | Y |  |  |  | n.d. | Eu |  |  |  |  |  |  |  |  |  | M+F | 8,10,33 |
| *Coregonus nasus* Pallas, 1776 |  |  | Y |  |  |  | n.d. |  | Ar, Eu, NAm |  | Y |  |  |  |  | Y |  |  | F | 2,12,33 |
| *Coregonus peled* (J. F. Gmelin, 1788) |  | Y | Y |  |  | 1981 | 1978 |  | As, Eu |  | Y |  |  |  | Y | Y |  |  | F | 2,12,33 |
| *Ctenopharyngodon idella* (Valenciennes in Cuvier & Valenciennes, 1844) | Y | Y | Y | Y | 1960 | 1976 | 1967 | 1968 | As , Eu | Y |  |  | Y |  | Y | Y | Y |  | F | 2,4,5,10,12,28 |
| *Cyprinella lutrensis* S. F. Baird & Girard, 1853 | Y |  |  |  | 1980 |  |  |  | NAm |  |  |  |  |  |  |  |  |  | F | 5,28 |
| *Gambusia affinis* (Baird and Girard, 1853) |  | Y |  |  |  | 1924 |  |  | NAm | Y |  |  |  |  |  |  | Y |  | F | 4,12 |
| *Gambusia holbrooki* Girard, 1859 |  | Y |  |  |  | 1927 |  |  | NAm | Y | Y |  |  | Y |  |  |  |  | F | 4,12 |
| *Gymnocephalus cernuus* (Linnaeus, 1758) | Y | Y |  |  | n.d. | n.d. |  |  | As, Eu | Y | Y | Y |  |  | Y |  |  |  | F | 4,5,12 |
| *Hucho hucho* (Linnaeus, 1758) | Y | Y | Y |  | 1900 | n.d. | 1954 |  | Eu | Y |  |  |  |  | Y |  | Y |  | F | 2,5,12 |
| *Hypophthalmichthys molitrix* (Valenciennes, 1844) | Y | Y | Y | Y | 1980 | 1975 | 1975 | 1966 | As | Y | Y |  | Y |  | Y | Y | Y |  | F | 2,4,5,10,12,28 |
| *Hypophthalmichthys nobilis* (Valenciennes, 1844) | Y | Y |  | Y | 1980 | 1975 |  | 1980 | As | Y | Y |  | Y | Y | Y | Y | Y |  | F | 2,4,5,8,10,12 |
| *Hypostomus plecostomus* (Linnaeus, 1758) | Y |  |  |  | 2000 |  |  |  | SAm | Y |  |  |  | Y |  |  |  |  | F | 28,30,33 |
| *Ictalurus punctatus* (Rafinesque, 1818) | Y | Y | Y |  | 1920 | n.d. | 1984 |  | NAm | Y | Y |  |  | Y | Y | Y |  |  | F | 2,5,12,28 |
| *Lepomis gibbosus* (Linnaeus, 1758) | Y | Y | Y | Y | 1915 | 1930 | 1884 | 1902 | NAm | Y | Y | Y |  | Y |  | Y |  |  | F | 2,5,6,8,10-12,28,29 |
| *Leucaspius delineatus* Heckel, 1843 | Y | Y | Y | Y | 1980 | n.d. | 1910 |  | As, Eu |  | Y | Y | Y | Y |  |  |  |  | F | 2,5,11,12,28 |
| *Leuciscus idus* (Linnaeus, 1758) | Y | Y | Y | Y | 1870 | 1930 | n.d. | 1900 | As, Eu | Y | Y |  |  | Y | Y |  |  |  | F | 2,4,5,11,12,28 |
| *Maylandia* sp. M. K. Meyer & W. Förster, 1984 | Y |  |  |  | 1950 |  |  |  | Af | Y |  |  |  | Y |  |  |  |  | F | 2,5,11,28 |
| *Micropogonias undulatus* (Linnaeus, 1766) |  |  | Y | Y |  |  | 1998 | 2005 | NAm, SAm | Y |  | Y | Y |  |  |  |  |  | M+F | 2,10,12,15,21,33 |
| *Micropterus dolomieui* Lacepède, 1802 | Y | Y | Y | Y | 1878 | n.d. | 1873 | 1984 | NAm | Y |  |  |  |  | Y |  |  |  | F | 2,5,12 |
| *Micropterus salmoides* (Lacépède, 1802) | Y | Y | Y | Y | 1879 | 1877 | 1877 | 1984 | NAm | Y | Y |  | Y |  | Y | Y |  |  | F | 2,4,5,10-12,28,33 |
| *Misgurnus anguillicaudatus* (Cantor, 1842) |  |  |  | Y |  |  |  | 2012 | As | Y | Y |  |  | Y |  |  |  |  | F | 10,31 |
| *Misgurnus fossilis* (Linnaeus, 1758) | Y |  |  |  | 1960 |  |  |  | Eu | Y | Y |  |  | Y |  |  |  |  | F | 2,5,28 |
| *Misgurnus mizolepis* (Günther, 1888) | Y |  |  |  | 2000 |  |  |  | As | Y | Y |  |  | Y | Y |  |  |  | F | 2,5,11,28,30 |
| *Neogobius fluviatilis* (Pallas, 1814) |  |  |  | Y |  |  |  | 2009 | As, Eu |  |  |  |  |  |  |  |  |  | M+F | 8,10,33 |
| *Neogobius kessleri* (Günther, 1861) |  |  |  | Y |  |  |  | 2007 | As, Eu |  |  |  |  |  |  |  |  |  | M+F | 8,10,33 |
| *Neogobius melanostomus* (Pallas, 1814) |  | Y | Y | Y |  | 2011 | 2010 | 2004 | As, Eu |  |  | Y | Y |  |  |  |  |  | M+F | 2,5,8,10,12,15 |
| *Oncorhynchus clarki* (Richardson, 1836) | Y |  |  |  | n.d. |  |  |  | NAm | Y |  |  |  |  | Y |  |  |  | F | 2,5,33 |
| *Oncorhynchus gorbuscha* (Walbaum 1792) | Y |  |  |  | 1960 |  |  |  | As, NAm | Y | Y |  | Y |  | Y | Y |  |  | M+F | 2,5,12,18,28 |
| *Oncorhynchus keta* (Walbaum 1792) | Y |  |  |  | 1960 |  |  |  | As, NAm | Y |  |  |  |  | Y | Y |  |  | M+F | 15,18,33 |
| *Oncorhynchus kisutch* (Walbaum 1792) | Y | Y | Y | Y | 1975 | 1974 | n.d. | 1982 | NAm | Y | Y |  | Y |  |  | Y |  |  | M+F | 2,5,10,12,15,17,18 |
| *Oncorhynchus mykiss* (Walbaum 1792) | Y | Y | Y | Y | 1880 | 1882 | 1882 | 1898 | As, NAm | Y |  |  |  |  | Y | Y |  |  | F | 4,5,8,10-12,17,18,28,29 |
| *Oncorhynchus tshawytscha* (Walbaum, 1792) | Y | Y |  | Y | n.d. | 1877 |  | 1877 | As, NAm | Y | Y | Y |  |  | Y | Y |  |  | F | 2,10,12,33 |
| *Oreochromis aureus* (Steindachner, 1864) | Y |  |  |  | n.d. |  |  |  |  |  | Y |  |  |  |  | Y |  | Y | F | 12 |
| *Oreochromis mossambicus* (W. K. H. Peters, 1852) | Y |  |  |  | n.d. |  |  |  | Af |  | Y |  |  |  |  |  |  | Y | F | 4,12 |
| *Oreochromis niloticus* (Linnaeus, 1758) | Y |  | Y |  | n.d. |  | 1957 |  | Af |  |  |  |  |  |  | Y |  |  | F | 2,12 |
| *Osphronemus goramy* Lacépède, 1801 |  | Y |  |  |  | n.d. |  |  | As |  |  |  |  |  |  | Y |  |  | M | 12 |
| *Pachychilon pictum* (Heckel & Kner, 1858) |  | Y |  |  |  | 1987 |  |  | Eu |  | Y |  |  |  |  | Y |  |  | F | 12 |
| *Pimephales promelas* (Rafinesque, 1820) | Y | Y | Y | Y | 199 | 1983 | 1983 | 2007 | NAm | Y | Y | Y |  | Y | Y | Y |  | Y | F | 2,5,6,8,10,12,28,30 |
| *Pisodonophis semicinctus* (Richardson, 1848) |  | Y |  |  |  | n.d. |  |  | Af |  |  |  |  |  |  |  |  |  | M | 12 |
| *Poecilia reticulata* W. K. H. Peters, 1859 | Y | Y |  | Y | 1960 | n.d. |  | 1985 | SAm | Y |  |  |  | Y | Y | Y |  |  | M | 2,4,5,10-12,15,17,28 |
| *Proterorhinus semilunaris* (Heckel, 1837) |  | Y | Y | Y |  | 2007 | 2010 | 2002 | As, Eu |  |  | Y | Y |  |  |  |  |  | F | 2,8,10,12,33 |
| *Pseudorasbora parva* Temminck & Schlegels, 1846 | Y | Y | Y | Y | 1985, | 1983 | 1989 | 1992 | As | Y | Y | Y | Y | Y | Y |  |  |  | F | 2,5,6,8,11,12,28,30 |
| *Rhodeus amarus* (Bloch, 1782) | Y |  |  |  | 1920 |  |  |  | Eu | Y |  | Y | Y | Y |  |  |  |  | F | 2,5,11,28,29 |
| *Rhodeus sericeus* (Pallas, 1776) | Y |  |  |  | 1920 |  |  |  | Eu |  |  |  |  |  |  |  |  |  | F | 12,33 |
| *Romanogobio belingi* (Slastenenko, 1934) |  |  |  | Y |  |  |  | 2004 | Eu |  |  |  |  |  |  |  |  |  | F | 8,10 |
| *Salmo salar* Linnaeus, 1758 | Y |  |  |  | 1980 |  |  |  | Eu, NAm | Y |  |  |  |  | Y |  |  |  | F | 2,5,28 |
| *Salvelinus alpinus* (Linnaeus, 1758) |  | Y |  | Y |  | n.d. |  | 1900 | Ar, Eu | Y | Y |  |  |  | Y | Y |  |  | F | 10,12,33 |
| *Salvelinus fontinalis* (Mitchill, 1814) | Y | Y | Y | Y | 1860 | 1904 | 1884 | 1883 | NAm | Y | Y |  |  |  | Y | Y |  |  | F | 2,4,5,8,10-12,28 |
| *Salvelinus malma* (Walbaum, 1792) | Y |  |  |  | n.d. |  |  |  | As | Y |  |  |  |  | Y |  |  |  | F | 2,5 |
| *Salvelinus namaycush* (Walbaum, 1792) | Y | Y |  |  | 1920 | 1886 |  |  | NAm | Y |  |  |  |  | Y |  |  |  | F | 2,4,5,12,28 |
| *Sander lucioperca* (Linnaeus, 1758) | Y | Y | Y | Y | 1870 | 1958 | 1890 | 1901 | As, Eu | Y |  |  | Y |  | Y |  | Y |  | F | 2,5,8,10-12,28,29 |
| *Sander vitreus* (Mitchill, 1818) | Y |  |  |  | 1925 |  |  |  | NAm |  |  |  |  |  |  |  |  |  | F | 12,33 |
| *Sebastes schlegelii* Hilgendorf, 1880 |  |  |  | Y |  |  |  | 2009 | As | Y |  |  |  |  |  | Y |  |  | M | 12,33 |
| *Silurus glanis* Linnaeus, 1758 | Y | Y | Y | Y | 1853 | 1890 | 1983 | 1970 | As, Eu | Y |  |  |  |  | Y | Y |  |  | F | 2,5,11,12,28 |
| *Tetraodon fluviatilis* F. Hamilton, 1822 |  |  | Y |  |  |  | 2001 |  | As | Y |  |  |  |  |  | Y |  |  | M+F | 2,33 |
| *Thymallus thymallus* (Linnaeus, 1758) |  | Y |  | Y |  | n.d. |  | 1980 | Eu |  |  |  |  |  |  |  |  |  | F | 12,33 |
| *Tilapia zillii* (Gervais, 1848) | Y |  |  |  | 1960 |  |  |  | Af | Y |  |  |  | Y |  |  |  |  | F | 4,5,11,12,28 |
| *Trinectes maculatus* (Bloch & J. G. Schneider, 1801) |  |  |  | Y |  |  |  | 1984 | NAm | Y | Y | Y |  |  |  |  |  |  | M | 2,15,17 |
| *Umbra krameri* Walbaum, 1792 | Y |  |  |  | 1920 |  |  |  | Eu | Y | Y |  |  | Y |  | Y |  |  | F | 1,5,12,28 |
| *Umbra pygmaea* (DeKay, 1842) |  | Y | Y | Y |  | 1913 | 1920 | 1920 | NAm | Y |  |  | Y |  | Y | Y |  |  | F | 2,6,8,10,12,33 |
| *Vimba vimba* (Linnaeus, 1758) |  | Y | Y | Y |  | 1990 | 2001 | n.d. | Eu |  |  |  |  |  |  |  |  |  | F | 2,10,12,33 |
| ***ANSERIFORMES*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Aix galericulata* (Linnaeus 1758) | Y | Y | Y | Y | 1745 | 1977 | 1939 | 1964 | As | Y | Y |  |  | Y | Y |  |  | Y | F+T | 2,5,6,8,10,11,32 |
| *Aix sponsa* (Linnaeus 1758) | Y | Y | Y | Y | 1830 | n.d. | 1957 | n.d. | NAm | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,11,32 |
| *Alopochen aegyptiacus* (Linnaeus 1766) | Y | Y | Y | Y | 1676 | 1985 | 1870 | 1967 | Af | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,6,8,10,11,32 |
| *Anas acuta* (Linnaeus 1758) | Y |  |  |  | 1869 |  |  |  | Eu, NAm |  | Y |  |  | Y | Y |  |  |  | F+T | 2,5,32 |
| *Anas americana* Gmelin, 1789 | Y |  | Y |  | 1963 |  | n.d. |  | Eu, NAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anas bahamensis* (Linnaeus 1758) | Y | Y |  | Y | 1960 | n.d. |  | n.d. | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 2,5,10,32 |
| *Anas capensis* Gmelin, 1789 | Y |  |  | Y | 1986 |  |  | n.d. | Af | Y | Y |  |  | Y |  |  |  | Y | F+T | 5,8,10,32 |
| *Anas castanea* (Eyton, 1838) | Y |  |  |  | 1989 |  |  |  | Aus |  | Y |  |  | Y |  |  |  |  | F+T | 5,32,33 |
| *Anas cyanoptera* Vieillot, 1816 | Y |  |  |  | 1980 |  |  |  | NAm, SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anas discors* (Linnaeus 1766) | Y |  |  |  | 1940 |  |  |  | NAm, SAm |  | Y |  |  | Y |  |  |  |  | F+T | 2,5,32 |
| *Anas erythrorhyncha* Gmelin, 1789 | Y |  |  |  | 1993 |  |  |  | Af |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anas falcata* (Georgi 1775) | Y |  | Y |  | 1950 |  | 2000 |  | As |  | Y |  |  | Y |  |  |  |  | F+T | 2,5,32 |
| *Anas flavirostris* (Vieillot, 1816) | Y | Y |  |  | 1985 | n.d. |  |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 2,5,32 |
| *Anas formosa* Georgi, 1775 | Y |  |  |  | 1906 |  |  |  | As | Y | Y |  |  | Y |  |  |  | Y | F+T | 5,32 |
| *Anas georgica* Gmelin, 1789 | Y |  |  |  | 1996 |  |  |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anas hottentota* (Eyton, 1838) | Y |  |  |  | 1987 |  |  |  | Af |  |  |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anas luzonica* Fraser, 1839 | Y |  |  |  | 2000 |  |  |  | As |  |  |  |  | Y |  |  |  |  | F+T | 5 |
| *Anas penelope* Linnaeus, 1758 | Y |  |  |  | 1999 |  |  |  | Eu , As , Af |  | Y |  |  | Y | Y |  |  |  | F+T | 5,32 |
| *Anas platalea* Vieillot, 1816 | Y |  |  |  | 1996 |  |  |  | SAm |  |  |  |  | Y |  |  |  |  | F+T | 5 |
| *Anas platyrhynchos* Linnaeus, 1758 | Y |  |  | Y | n.d. |  |  | n.d. | As, Eu, NAm | Y |  |  |  |  | Y |  |  | Y | F+T | 10,32 |
| *Anas rhynchotis* Latham 1802 | Y |  |  |  | 1983 |  |  |  | Aus |  |  |  |  | Y |  |  |  |  | F+T | 5 |
| *Anas sibilatrix* Poeppig, 1829 | Y |  | Y |  | 1977 |  | n.d. |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anas strepera* (Linnaeus 1758) | Y |  |  |  | 1850 |  |  |  | As, Eu, NAm | Y |  |  |  | Y | Y |  |  | Y | F+T | 2,5,32 |
| *Anas undulata* Dubois, 1839 | Y |  |  |  | 1967 |  |  |  | Af |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anas versicolor* Vieillot, 1816 | Y |  |  |  | 1980 |  |  |  | SAm |  |  |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anser albifrons* (Scopoli 1769) | Y |  |  | Y | 1991 |  |  | n.d. | As, Eu, NAm |  | Y |  |  | Y | Y |  |  |  | F+T | 2,5,32 |
| *Anser anser* (Linnaeus 1758) | Y | Y | Y | Y | 1900 | n.d. | 1971 | n.d. | As, Eu | Y |  |  |  |  | Y |  |  | Y | F+T | 2,10,32 |
| *Anser brachyrhynchus* (Baillon 1834) | Y | Y |  | Y | 1990 | 2003 |  | n.d. | Eu | Y | Y |  |  | Y | Y |  |  | Y | F+T | 2,5,32 |
| *Anser caerulescens* (Linnaeus 1758) | Y | Y |  | Y | 1950 | n.d. |  | n.d. | As, NAm | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,32 |
| *Anser canagica* (Sevastianov 1802) | Y |  |  | Y | 1980 |  |  | 1998 | As, NAm | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,8,10,32 |
| *Anser cygnoides* (Linnaeus, 1758) | Y |  |  | Y | 1978 |  |  | 1987 | As |  | Y |  |  | Y |  | Y |  |  | F+T | 2,5,8,10,32 |
| *Anser erythropus* (Linnaeus, 1758) | Y |  |  |  | 1976 |  |  |  | As, Eu |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anser fabalis* (Latham 1787) | Y |  | Y | Y | 1980 |  | 1990 | 1990 | As, Eu |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Anser indicus* (Latham 1790) | Y | Y | Y | Y | 1960 | 1999 | 1966 | 1950 | As | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,6,8,11,32 |
| *Anser rossii* (Cassin 1861) | Y |  |  | Y | 1960 |  |  | 2001 | NAm |  | Y |  |  | Y |  |  |  |  | F+T | 2,5,32 |
| *Anseranas semipalmata* (Latham, 1798) | Y |  |  |  | 1996 |  |  |  | Aus |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Aythya americana* (Eyton, 1838) | Y |  |  |  | 1996 |  |  |  | NAm, SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Aythya baeri* (Radde, 1863) | Y |  |  |  | 1901 |  |  |  | As |  |  |  |  | Y |  |  |  |  | F+T | 5 |
| *Aythya ferina* (Linnaeus 1758) | Y |  |  |  | 1840 |  |  |  | Af, As, Eu |  | Y |  |  | Y | Y |  |  |  | F+T | 2,5,32 |
| *Aythya novaeseelandiae* (Gmelin, 1789) | Y |  |  |  | 1996 |  |  |  | Aus |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Aythya nyroca* (Güldenstädt, 1770) | Y |  |  |  | 1993 |  |  |  | Af, As, Eu |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Aythya valisineria* (Wilson, 1814) | Y |  |  | Y | 1988 |  |  | n.d. | NAm, SAm |  |  |  |  | Y |  |  |  |  | F+T | 5,8,10 |
| *Branta bernicla* (Linnaeus, 1758) | Y |  |  |  | 1991 |  |  |  | As, Eu, NAm |  | Y |  |  | Y | Y |  |  |  | F+T | 5,32 |
| *Branta canadensis* (Linnaeus 1758) | Y | Y | Y | Y | 1665 | 1960 | 1842 | 1930 | NAm | Y | Y |  | Y | Y | Y |  |  | Y | F+T | 2,4-6,8,10,11,32 |
| *Branta hutchinsii* (Richardson, 1832) | Y |  |  | Y | 1987 |  |  | n.d. | NAm | Y |  |  | Y | Y | Y |  |  | Y | F+T | 5,10,32 |
| *Branta leucopsis* (Bechstein 1803) | Y | Y | Y | Y | 1980 | n.d. | 1960 | n.d. | As, Eu, NAm | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,32 |
| *Branta ruficollis* (Pallas, 1769) | Y |  |  |  | 1960 |  |  |  | As, Eu |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Branta sandvicensis* (Vigors, 1833) | Y |  |  |  | 1991 |  |  |  | NAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Bucephala albeola* (Linnaeus 1758) | Y |  |  |  | 1996 |  |  |  | Eu, NAm |  | Y |  |  | Y |  |  |  |  | F+T | 2,5,32 |
| *Bucephala islandica* (Gmelin, 1789) | Y |  |  |  | 1910 |  |  |  | Eu, NAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Cairina moschata* (Linnaeus 1758) | Y |  |  | Y | 1959 |  |  | 1980 | NAm, SAm | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,8,10,11,32 |
| *Callonetta leucophrys* (Vieillot, 1816) | Y | Y |  |  | 1980 | 1990 |  |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 2,5,32 |
| *Chenonetta jubata* (Latham, 1802) | Y |  |  |  | 1995 |  |  |  | Aus |  | Y |  |  | Y |  |  |  |  | F+T | 5,32,33 |
| *Chloephaga picta* (Gmelin 1789) | Y |  | Y | Y | 1930 |  | 1980 | 1980 | SAm | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,8,10,32 |
| *Coscoroba coscoroba* (Molina, 1782) | Y |  |  |  | 1935 |  |  |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Cyanochen cyanoptera* (Rüppell, 1845) | Y |  |  |  | 1987 |  |  |  | Af |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Cygnus atratus* (Latham 1790) | Y | Y | Y | Y | 1791 | 1979 | 1889 | 1978 | Aus | Y | Y |  |  | Y | Y |  |  | Y | F+T | 2,5,6,8,11,32 |
| *Cygnus buccinator* Richardson, 1832 | Y |  |  |  | 1993 |  |  |  | NAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Cygnus cygnus* (Linnaeus 1758) | Y |  |  |  | 1990 |  |  |  | As, Eu | Y | Y |  |  | Y |  |  |  | Y | F+T | 2,5,32 |
| *Cygnus melanocoryphus* (Molina, 1782) | Y |  |  |  | 1993 |  |  |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Dendrocygna autumnalis* (Linnaeus, 1758) |  | Y |  |  |  | n.d. |  |  | NAm, SAm |  | Y |  |  |  |  |  |  |  | F+T | 2,32,33 |
| *Dendrocygna bicolor* (Vieillot, 1816) | Y | Y |  |  | 1990 | 2003 |  |  | Af, As, NAm, SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Dendrocygna javanica* (Horsfield, 1821) | Y |  |  |  | 1998 |  |  |  | As |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Dendrocygna viduata* (Linnaeus, 1766) | Y | Y |  |  | 1988 | n.d. |  |  | Af, SAm |  | Y |  |  | Y |  |  |  |  | F+T | 2,5,32 |
| *Heteronetta atricapilla* (Merrem, 1841) | Y |  |  |  | 1988 |  |  |  | SAm |  |  |  |  | Y |  |  |  |  | F+T | 5 |
| *Lophodytes cucullatus* (Linnaeus, 1758) | Y |  |  | Y | 1970 |  |  | n.d. | Eu, NAm, SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,10,32 |
| *Lophonetta specularoides* (King, 1828) | Y |  |  |  | 1996 |  |  |  | SAm |  |  |  |  | Y |  |  |  |  | F+T | 5 |
| *Marmaronetta angustirostris* (Menetries, 1832) | Y | Y | Y |  | 1973 | n.d. | n.d. |  | Af, As, Eu |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Neochen jubata* (Spix, 1825) | Y |  |  |  | 2005 |  |  |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Netta peposaca* (Vieillot, 1816) | Y | Y |  |  | 1982 | n..d |  |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Netta rufina* (Pallas 1773) | Y |  |  |  | 1937 |  |  |  | Af, As, Eu | Y | Y |  |  | Y | Y |  |  | Y | F+T | 2,5,32 |
| *Oxyura jamaicensis* (Gmelin 1789) | Y | Y | Y | Y | 1949 | 1974 | 1979 | 1973 | NAm, SAm | Y | Y |  | Y | Y |  |  |  | Y | F+T | 2,4,5,8,10,11,32 |
| *Oxyura leucocephala* (Scopoli, 1769) | Y |  |  |  | 1977 |  |  |  | As, Eu |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Oxyura maccoa* (Eyton, 1838) | Y |  |  |  | 1993 |  |  |  | Af |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Oxyura vittata* (Philippi, 1860) | Y |  |  |  | 1993 |  |  |  | SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Porphyrio porphyrio* (Linnaeus, 1758) | Y |  |  | Y | 1863 |  |  | n.d. | Af, As, Aus, Eu |  | Y |  |  | Y |  |  |  |  | F+T | 5,10,32 |
| *Sarkidiornis melanotos* (Pennant, 1769) | Y |  |  |  | 1993 |  |  |  | Af, As, SAm |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Tadorna cana* (Gmelin, 1789) | Y |  |  |  | 1975 |  |  |  | Af |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Tadorna ferruginea* (Pallas 1764) | Y | Y | Y | Y | 1776 | 1980 | 1980 | 1969 | Af, As, Eu | Y | Y |  | Y | Y |  |  |  | Y | F+T | 2,5,8,32 |
| *Tadorna radjah* Lesson, 1828 | Y |  |  |  | 1981 |  |  |  | Aus |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Tadorna tadornoides* (Jardine & Selby, 1828) | Y |  |  |  | 1977 |  |  |  | Aus |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| *Tadorna variegata* (Gmelin, 1789) | Y |  |  |  | 1982 |  |  |  | Aus |  | Y |  |  | Y |  |  |  |  | F+T | 5,32 |
| **MAMMALIA** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Callosciurus erythraeus* (Pallas 1779) |  | Y | Y | Y |  | 1974 | 2005 | 1998 | As |  | Y |  |  | Y |  |  |  |  | T | 2,6,8,10,33 |
| *Castor canadensis* Kuhl 1820 |  | Y | Y |  |  | 1975 | 2009 |  | NAm |  | Y |  |  |  |  | Y |  |  | F+T | 2,4,6,8 |
| *Cervus nippon* Temminck 1838 | Y | Y |  |  | 1860 | 1913 |  |  | As | Y | Y |  |  | Y | Y |  |  |  | T | 2,4,5 |
| *Cervus porcinus* Zimmermann, 1780 |  | Y |  |  |  | 1954 |  |  | As | Y | Y |  |  |  |  |  |  |  | T | 2,33 |
| *Cynomys ludovicianus* (Ord, 1815) | Y |  |  |  | 1976 |  |  |  | NAm |  | Y |  |  | Y |  |  |  |  | T | 5 |
| *Glis glis* Linnaeus 1766 | Y |  |  |  | 1902 |  |  |  | As, Eu | Y |  |  |  | Y |  |  |  |  | T | 2,5 |
| *Hydropotes inermis* Swinhoe 1870 | Y | Y |  |  | 1850 | 1965 |  |  | As | Y | Y |  |  | Y |  |  |  |  | F+T | 2,5 |
| *Hystrix brachyura* Linnaeus, 1758 | Y |  |  |  | 1969 |  |  |  | As |  | Y |  |  | Y |  |  |  |  | T | 2,5 |
| *Lepus granatensis* Rosenhauer 1856 |  | Y |  |  |  | 1970 |  |  | Eu | Y | Y |  |  |  |  |  |  |  | T | 2,33 |
| *Macropus rufogriseus* (Desmarest 1817) | Y | Y |  | Y | 1850 | 1971 |  | 2005 | Au | Y | Y |  |  | Y |  |  |  |  | T | 2,5,8,10 |
| *Mephitis mephitis* (Schreber, 1776) |  |  |  | Y |  |  |  | 2000 | NAm | Y | Y |  |  |  |  |  |  |  | T | 5,8 |
| *Meriones unguiculatus* Milne-Edwards, 1867 | Y |  |  |  | 1971 |  |  |  | As | Y | Y |  |  | Y |  |  |  |  | T | 2,5 |
| *Mesocricetus auratus* (Waterhouse 1839) | Y |  |  | Y | 1958 |  |  | n.d. | As |  | Y |  |  | Y |  |  |  |  | T | 2,5 |
| *Muntiacus reevesi* (Ogilby 1839) | Y | Y |  | Y | 1894 | 1890 |  | 1997 | As | Y | Y |  |  | Y |  |  |  |  | T | 2,4,5,8 |
| *Mustela lutreola* (Linnaeus, 1761) |  | Y |  |  |  | 1831 |  |  | Eu |  |  |  |  |  |  |  |  |  | F+T | 2 |
| *Mustela vison* (Schreber, 1777) | Y | Y | Y | Y | 1948 | 1970 | 1970 | 1920 | NAm | Y | Y |  |  |  |  | Y |  |  | F+T | 2,4,5,8,11 |
| *Myocastor coypus* (Molina 1782) | Y | Y | Y | Y | 1927 | 1929 | 1963 | 1935 | SAm | Y | Y |  |  |  |  | Y |  |  | F+T | 2,4,5,6,8,11 |
| *Nyctereutes procyonoides* (Gray 1834) | Y | Y | Y | Y | 2005 | 1975 | 1980 | 1981 | As | Y | Y |  | Y |  |  |  |  |  | T | 2,5,6,8,10 |
| *Ondatra zibethicus* (Linnaeus 1766) | Y | Y | Y | Y | 1927 | 1933 | 1928 | 1941 | NAm | Y | Y |  | Y |  |  | Y |  |  | F+T | 2,5,6,8,10,11 |
| *Procyon lotor* (Linnaeus 1758) | Y | Y | Y | Y | 1970 | 1934 | 1986 | 1910 | NAm | Y | Y |  | Y | Y | Y | Y |  |  | T | 2,5,6,8,10 |
| *Rangifer tarandus* (Linnaeus 1758) | Y |  |  |  | 1738 |  |  |  | Eu, NAm | Y |  |  |  | Y | Y |  |  |  | T | 2,5 |
| *Rattus norvegicus* (Berkenhout 1769) | Y | Y | Y | Y | 1720 | 1700 | 1730 | 1600 | As | Y | Y | Y |  |  |  | Y |  |  |  | 2,4,5,6,8,10,11 |
| *Sciurus carolinensis* Gmelin 1788 | Y |  |  | Y | 1828 |  |  | 1990 | NAm | Y | Y |  |  | Y |  |  |  |  | T | 2,4,5,8,10 |
| *Sylvilagus floridanus* (J.A. Allen 1890) |  | Y | Y |  |  | 1953 | 1950 |  | NAm, SAm | Y |  |  |  |  | Y |  |  |  | T | 2 |
| *Tamias sibiricus* (Laxmann 1769) | Y | Y | Y | Y | 1999 | 1960 | 1960 | 1960 | As, Eu | Y | Y |  |  | Y |  |  |  |  | T | 2,4,5,6,8,10 |

**References**

1. Centre for Agricultural Bioscience International CABI (2016) Invasive Species Compendium. Wallingford, UK: CAB International. http://www.cabi.org/isc (accessed 2016).

2. Delivering Alien Invasive Species Inventories for Europe DAISIE (2003-2016) Alien Species Database. http://www.europe-aliens.org (accessed 2016).

3. European and Mediterranean Plant Protection Organisation EPPO (2016) EPPO list of invasive alien plants. http://www.eppo.int/INVASIVE\_PLANTS/ias\_lists.htm (accessed 2016).

4. Invasive Species Specialist Group ISSG (2016) Global Invasive Species Database. http://www.issg.org/database (accessed 2016).

5. GB Non-native Species Secretariat (2016) GB Non-native Species Information Portal. https://secure.fera.defra.gov.uk/nonnativespecies/home/index.cfm (accessed 2016).

6. Belgian Forum on Invasive Species BFIS (2000-2016) Harmonia database. http://ias.biodiversity.be (accessed 2016).

7. Verloove, F. (2006) Catalogue of neophytes in Belgium (1800-2005). Scripta Botanica Belgica, 39, 1-89.

8. North European and Baltic Network on Invasive Alien Species NOBANIS (2016) Gateway to Information on Invasive Alien species in North and Central Europe. http://www.nobanis.org (accessed 2016).

9. Q-bank (1999-2016) Invasive Plants database. Comprehensive databases on quarantine plant pests and diseases. http://www.q-bank.eu/Plants (accessed 2016).

10. Naturalis (2005-2016) Nederlands Soortenregister, version 2.0. http://www.nederlandsesoorten.nl (accessed 2016).

11. Keller RP, Ermgassen PSEz, Aldridge DC (2009) Vectors and Timing of Freshwater Invasions in Great Britain. Conservation Biology 23:1526–1534.

12. Food and Agriculture Organisation of the United Nations FAO (2016) Fisheries and Aquaculture topics. Introduction of species. Database on Introductions of Aquatic Species. In: FAO Fisheries and Aquaculture Department. Rome. http://www.fao.org/fishery/introsp/search/en (accessed 2016).

13. Csurhes S, Hannan-Jones M, Dimmock A (2008) Pest plant risk assessment Dense waterweed *Egeria densa*. The State of Queensland, Department of Primary Industries and Fisheries, Brisbane, Queensland.

14. Conservatoires d'espaces naturels (2011) *Elodea canadensis* Michaux. Fiche réalisée par la Fédération des Conservatoires botaniques nationaux

15. Gollasch S, Haydar D, Minchin D, et al. (2009) Introduced Aquatic Species of the North Sea Coasts and Adjacent Brackish Waters. In: Biological Invasions in Marine Ecosystems. Ecological Studies 204:507-528.

16. AnimalBase Project Group (2005-2014) AnimalBase. Early zoological literature online. - World wide web electronic publication (www.animalbase.uni-goettingen.de). Available at: (accessed 2016).

17. Wolff WJ (2005) Non-indigenous marine and estuarine species in The Netherlands. Zoologische Mededelingen 79:1-116.

18. Minchin D, Cook EJ, Clark PF (2013) Alien species in British brackish and marine waters. Aquatic Invasions 8:3-19.

19. Soes DM, Majoor GD, Keulen SMA (2011) *Bellamya chinensis* (Gray, 1834) (Gastropoda: Viviparidae), a new alien snail species for the European fauna Aquatic Invasions 6:97-102.

20. Reise H, Hutchinson JMC, Forsyth RG, et al. (2000) The ecology and rapid spread of the terrestrial slug *Boettgerilla pallens* in Europe with reference to its recent discovery in North America. The Veliger 43:313-318.

21. Kerckhof F, Haelters J, Gollasch S (2007) Alien species in the marine and brackish ecosystem: the situation in Belgian waters Aquatic Invasions 2:243-257.

22. Simon-Bouhet B, Garcia-Meunier P, Viard F (2006) Multiple introductions promote range expansion of the mollusc *Cyclope neritea* (Nassariidae) in France: evidence from mitochondrial sequence data. Molecular ecology 15:1699-711.

23. Marescaux J, Molloy DP, Giamberini L, et al. (2012) First records of the quagga mussel, *Dreissena rostriformis bugensis* (Andrusov, 1897), in the Meuse River within France. BioInvasions Records 1:273-276.

24. Bij de Vaate A, Beisel J-N (2011) Range expansion of the quagga mussel *Dreissena rostriformis bugensis* (Andrusov, 1897) in Western Europe: first observation from France. Aquatic Invasions 6, Supplement 1:S71-74.

25. WoRMS Editorial Board (2016) World Register of Marine Species. http://www.marinespecies.org/aphia.php?p=taxdetails&id=140732 (accessed 2016).

26. Lützen J, Faasse M, Gittenberger A, et al. (2012) The Japanese oyster drill *Ocinebrellus inornatus* (Récluz, 1851) (Mollusca, Gastropoda, Muricidae), introduced to the Limfjord, Denmark. Aquatic Invasions 7:181-191.

27. Soes DM, Glöer P, de Winter AJ (2009) *Viviparus acerosus* (Bourguignat, 1862)(Gastropoda: Viviparidae), a new exotic snail species for the Dutch fauna. Aquatic Invasions 4:373-375.

28. Britton JR, Cucherousset J, Davies GD, et al. (2010) Non-native fishes and climate change: predicting species responses to warming temperatures in a temperate region. FreshwBio 55:1130-1141.

29. Copp GH, Stakėnas S, Davison PI (2006) The incidence of non-native fishes in water courses: example of the United Kingdom. Aquatic Invasions 1:72-75.

30. Zięba G, Copp GH, Davies GD, et al. (2010) Recent releases and dispersal of non-native fishes in England and Wales, with emphasis on sunbleak *Leucaspius delineatus* (Heckel, 1843). Aquatic Invasions 5:155-161.

31. van Kessel N, Dorenbosch M, Crombaghs B, et al. (2013) First record of Asian weather loach *Misgurnus anguillicaudatus* (Cantor, 1842) in the River Meuse basin. BioInvasions Records 2:167-171.

32. Banks A, Wright L, Maclean IM, et al. (2009) Review of the status of introduced non-native waterbird species in the area of the African-Eurasian Waterbird Agreement: 2007 update. British Trust for Ornithology.

33. Wikimedia Foundation (2016) Wikipedia: The Free Encyclopedia. http://en.wikipedia.org/wiki/Main\_Page (accessed 2016).