**Table 5.9.**Examples of invasive alien species that were intentionally introduced for beneficial purposes, conflict resolution and potential management response (**Chapter 4**, **section 4.6.4**)

Groups include terrestrial plant; freshwater/marine plant; microorganism; bird/fish/mammal/reptile; insect.

| Invasive alien species | Taxonomic group | Time and location of introduction | Native range of introduced species | Primary purpose of the introduction | Co-operative efforts to develop management options |
| --- | --- | --- | --- | --- | --- |
| *Lates niloticus* (Nile perch) | Vertebrate (freshwater fish) | Lake Victoria; 1960s | Afrotropical; Congo, Nile, Senegal, Niger, Lake Chad, Volta, Lake Turkana | To promote the fisheries industry as the dominant endemic haplochromine species were perceived to have low economic value (Njiru *et al*., 2005) | The Kenyan, Ugandan and Tanzanian governments established a regional mechanism in 1994–- Lake Victoria Fisheries Organization – to coordinate the management and conservation. The three countries agreed to enforce legislation and regulations to protect the lake and its basin (Njiru *et al*., 2005) |
| *Procambarus clarkii* (red swamp crayfish) | Invertebrate (freshwater crustacean) | Present in 40 countries across all continents except Australia and Antarctica (Nunes *et al*., 2017; Oficialdegui, Sánchez, *et al*., 2020) | Southern  United States and north-eastern Mexico | Aquaculture | In one example in Europe, where the red swamp crayfish has a high economic value, legislation regulating the red swamp crayfish on the basis of biodiversity protection was overridden to allow continued use due to public opposition and socioeconomic interests. Therefore, the legislation did not achieve the desired environmental outcomes, leading to the recommendations that context specific legislation is more likely to receive wider support (Oficialdegui, Delibes-Mateos, *et al*., 2020) |
| *Robinia pseudoacacia* (black locust) | Terrestrial tree | Europe | North America | Wood and honey production, amelioration and soil stabilization (Vítková *et al*., 2017) | Societal concern resulted in the species not being included in the list of regulated species at the European level. In some countries, management is based on site-specific approaches leading to tolerance in selected areas and strict eradication at sites of high conservation value. |
| *Prosopis juliflora* (mesquite) | Terrestrial tree | 35 countries in Africa; over 20 countries in Asia and the Pacific | The Americas | Soil stabilization and to provide fuel and livestock fodder  It was introduced into South India for fuelwood purposes and to benefit the dryland economy | In one region a national plan to manage the invasion is under development, driven by bottom-up concerns, as a community requested compensation from the government after losing their cattle due to the effects of *Prosopis juliflora*. As it was introduced in a government programme (Shackleton *et al*., 2014), the community was awarded compensation (Castillo, 2019).  The use of *Prosopis juliflora* is a socio-economic concern in southern India where management is a complex issue as charcoal from the tree is a source of income for local people (Walter & Armstrong, 2014). Increased use of the wood through proper silvicultural management was proposed to control spread. |
| Grasses and legumes (8200 species; V. M. Adams & Setterfield, 2015; G. D. Cook & Dias, 2006) | Terrestrial plant | Australasia | All continents | For pastoral improvement | Of all the species introduced, twice as many became invasive alien species than became useful (Lonsdale, 1994). Management options are being developed for two species, *Andropogon gayanus* (tambuki grass;V. M. Adams & Setterfield, 2015) and *Cenchrus ciliaris* (buffel grass; Grice *et al*., 2012) |
| 33 *Acacia* spp. including *Acacia mearnsii* (black wattle; Magona *et al*., 2018) | Terrestrial trees | South Africa | Australia | For timber and as ornamentals | Agreeing and selecting biological control agents that only reduce propagule production (i.e., flower and seed feeding agents; Impson *et al*., 2011, 2021) |
| *Bombus terrestris*  (bumble bee) | Invertebrate (Insect) | Japan | Africa, Asia and Europe | For pollination of commercially important crops (Inoue *et al*., 2008) | In principle, introduction, breeding and release are prohibited by the Invasive Alien Species Act, but farmers may use bumble bees on the condition that measures to prevent escape be taken and official permission be obtained (Goka, 2010; Lohrmann *et al*., 2022). |
| *Capra hircus*  (goats) | Terrestrial mammal | Mexico, Guadalupe Island | Asia | Meat production | Goats were introduced in the early 19th century by fur traders to have fresh meat. Later, there were permits from Mexico’s government to use the goats as dry meat. Overgrazing by goats decreased forest coverage from 3,850 hectares to 85 hectares, while some vegetation communities disappeared. Because of the latter, with the support of federal government agencies (including the Mexican Navy), the local fishing community and the specialized private organization Grupo de Ecología y Conservación de Islas, the goats were eradicated (Aguirre-Muñoz *et al*., 2011).  The eradication of goats took place between 2003 and 2006. Seedlings of endemic trees that were absent in 2003, and species of plants believed extinct, reappeared, including species not seen in 100 years. To date, the vegetation has recovered rapidly, both naturally and through active ecosystem restoration (Luna-Mendoza *et al*., 2019). |