

Supplementary File 3 – Factors influencing the Social Perception of Invasive Species

Categories	Factors	Description	Relevant examples of corpus presented in papers
Ecological conditions (EC)	Species traits (EC ₁)	Ecological conditions with regard to certain traits of invasive species that effect the respondents' perception, e.g. vigorous growth or charismatic appearance.	<i>"We also found that eradication of non-native species was predominantly opposed for species with a high cuddliness factor such as mammals and bird species."</i> (Verbrugge et al. 2013:1562)
	Invasion status (EC ₂)	Ecological conditions with regard to certain behavior of invasive species that effect the respondents' perception, e.g. abundance, spread or displacement of other species.	<i>"Respondents realised that the effects of invasive plants become more serious with their abundance. For instance, recently arrived species, such as Mikania, have an aggressive growth rate and significant effects compared to the earlier arrival species."</i> (Rai et al. 2012:173)
Social conditions (SC)	Socio-demographics and interests (SC ₁)	Sociodemographic characteristics refer to gender, age, income or education level that can influence the perception of invasive species. Stakeholder interests include affiliation to certain organizations or expressed interest in nature (e.g. recreational tourists with interest in enjoying 'pristine nature') that can determine the perception of invasive species.	<i>"The interviews with different stakeholders showed that 86% of farmers, 90% of urban dwellers, 57% of experts of the district agricultural office, 50% of government extension agents, 33% researchers, but none of the politicians support the planting of Eucalyptus."</i> (Mekonnen et al. 2007:318) <i>"More elderly respondents had the most negative views toward these species, preferring that boars, deer, macaques, bears, and nutria be extirpated."</i> (Sakurai et al. 2014:93)
	Power, trust and responsibility (SC ₂)	Social, political and institutional factors that determine the perception of invasive species, e.g. the power to decide on management programs, trust or distrust in governmental and decision-making structures, the willingness and ability to participate in decision-making processes and assume responsibility.	<i>"Alternatively, the higher percentage of protesting respondents, who declined to participate in the CV procedure, principally believed that the government was the responsible party and should work towards a solution, opposed a monetary contribution to manage IAS, or held distrust in the government."</i> (García-Llorente 2011:424) <i>"Even though the CFIA organized public "town hall" meetings, all the respondents complained about being excluded from the process. They felt that the CFIA did not communicate properly with them, that there was little opportunity to express their concerns, and that their insights and local knowledge were not valued. "</i> (Mackenzie & Larson 2010:1018)

	Language use and communication (SC ₃)	Linguistic and communication factors that frame the discourse of invasive species and their social perception e.g. which language is used to discuss invasive species, who is involved in communication about invasive species and who is not?	<p><i>"Since kudzu is not a plant that can be easily controlled, using language to represent it as an environmental 'other' was one way to exert power over it."</i> (Eskridge & Alderman 2010:115)</p> <p><i>"The media casts a positive light on lionfish removal events, with some headlines such as "Divers to Be Honored for Lionfish Kills" glorifying those who participate."</i> (Carballo-Cárdenas 2015:8)</p>
	Knowledge and Awareness (SC ₄)	Different types of knowledge (e.g. local ecological knowledge, scientific knowledge, indigenous knowledge, practical knowledge) concerning invasive species can create different awareness and perception of invasive species.	<p><i>"Western scientists and land managers have a major role to play in assisting Aboriginal people understand issues associated with introduced species and management alternatives. However, they need to work with Aboriginal people in a participatory way, paying regard to and combining Aboriginal ecological knowledge and understandings with those of science (...)"</i> (Vaarzon-Morel & Edwards 2012:69)</p> <p><i>"All the farmers (100 %) knew that Prosopis is an invasive alien tree. Other stakeholder groups were significantly less aware of this, and people in informal settlements had the least knowledge of this fact (37.1 %)." (Shackleton et al. 2015:573)</i></p>
Values and beliefs (VB)	Beliefs about nativeness (VB ₁)	The valuation of species' origin and the distinction between native and non-native species can influence the perception of invasive species.	<p><i>"Most interviewees agreed that invasive species were species introduced to a place they did not originally belong to."</i> (Schüttler et al. 2011:178).</p> <p><i>"In our study, species introduced in the past, such as C. carpio, D. dama, and G. genetta were recognized as non-native by a low percentage of respondents, while recent introductions such as P. clarkii or Eucalyptus spp. were largely recognized by respondents as non-native species. These results suggested that the meaning of a non-native species is a socially dynamic concept, in which the more recent the species introduction, the more recognizable that species was as non-native."</i> (García-Llorente et al. 2008:2979)</p>
	Beliefs about nature (VB ₂)	Beliefs about nature and environmental attitudes (e.g. the valuation of nature, ecosystems and species, beliefs about human-nature relationship like human stewardship of nature or companionship	<i>"If the ecological systems on the Mediterranean islands are perceived by numerous respondents to be so altered by human actions that a reversal to a natural state on a broad scale is both unlikely and undesirable, perhaps the issue of biodiversity conservation in the region must be further debated."</i> (Bardsley & Edwards-Jones 2006:207)

		with nature) shape the conception of invasive species.	<i>"However, some interviewees would not make a decision regarding a particular animal important to them; they thought that all animals were important per se, irrespective of the native/non-native dichotomy." (Schüttler et al. 2011:179)</i>
	Socio-cultural values (VB ₃)	Cultural and aesthetical values as well as social norms can shape the conception and perception of nature and thus the perception of invasive species.	<i>"While the majority of Hamilton ravine restorers were enthusiastic about growing native trees and shrubs, their choices reflected a garden aesthetic, with choices based on a plant's color or height, more than ecological understanding. Most included other objectives, such as convenience, privacy, or practicality, alongside their interest in native restoration." (Jay & Stolte 2011)</i> <i>"Veitch and Clout (2001) have suggested that the public may view invasive species differently and proposed that 'hated invasives', such as rats, were universally disliked and therefore more likely to be subject to control, whilst 'attractive invasives' such as rhododendron, were less likely to be controlled because they were liked for aesthetic reasons." (Bremner & Park 2007:15)</i>
	Sense of place (VB ₄)	Sense of place, that is the understanding of cultural identity and emotional bonding tied to living in a geographic area, can influence the perception of invasive species.	<i>"Appreciation of New Zealand's unique native fauna and flora was certainly a motive for many ravine restorers." (Jay & Stolte 2011)</i> <i>"The probability an individual would make a contribution on the hypothetical market and the amount of money donated were also influenced by a range of social factors including: respondent's active interest in nature and IAS knowledge, perception of IAS impacts on the ecological and socio-economic dimension, and sense of place defined as the emotional bonds respondents felt for the geographic area and their concern for IAS impacting their cultural identity." (García-Llorente et al. 2011:428)</i>
Impacts (I)	Ecological Impacts (I ₁)	Effects of invasive species that negatively impact biodiversity, ecosystems, species, ecosystem services etc.	<i>"In both years, seven out of ten respondents (2010: 70% and 2012: 72%) could give examples of impacts of aquatic invasive plants. The most cited impacts were proliferate plant growth, loss of native species, ecological damage, risk of carrying diseases and disturbance of balance of nature, with only very few respondents mentioning economic impacts or obstruction of waterways (...)." (Verbrugge et al. 2014:374)</i>

	Economic Impacts (I ₂)	Effects of invasive species that negatively impact the economy of a certain region or lead to economic losses of local communities or individuals.	<p><i>"The most direct economic losses in the Ebro have been related to water uptake facilities and the energy sector, whereas hydrilla has mainly affected tourism and navigation."</i> (Binimelis et al. 2007:559)</p> <p><i>"The roots are very powerful and can damage walls, roads and other structures."</i> (Bardsley & Edwards-Jones 2007:236)</p>
	Socio-Cultural Impacts (I ₃)	Effects of invasive species that negatively impact social and cultural life of local communities.	<p><i>"Even though they ignored the public health risks related to the transmission of arbovirolosis, they considered the tiger mosquito to be the most serious pest that they were exposed to, solely because of the bites."</i> (Abramides et al. 2013:712)</p> <p><i>"A more 'real' concern, as stated by 41%, was that it was a hiding place for thieves (cattle theft by people from the neighbouring Lesotho was frequently mentioned as a problem), and 52% feared walking in the forest, in particular females, who are often those entrusted with collection of firewood."</i> (de Neergard et al. 2005:225)</p>
	Benefits (B)		
	Ecological Benefits (B ₁)	Effects of invasive species that beneficially impact biodiversity, ecosystems, species, ecosystem services etc.	<p><i>"Due to its great success in the early days, prosopis became a favorite tree for dryland afforestation and soil erosion control programmes among NGOs and government agencies which spread it further."</i> (Maundu et al. 2009:35)</p>
	Economic Benefits (B ₂)	Effects of invasive species that beneficially impact the economy of a certain region or improve the economic conditions of local communities or individuals.	<p><i>"Thus, while incomes from prickly pear are modest and available only for a limited period, this activity does help a particularly vulnerable group of households to supplement their income at a time of year when the help is most needed."</i> (Shackleton et al. 2011:188)</p>
	Socio-Cultural Benefits (B ₃)	Effects of invasive species that beneficially impact social and cultural life of local communities.	<p><i>"All households use this acacia as cooking and heating fuel. It is used for construction, fencing, minor wood products and as medicine to treat stomach ailments."</i> (Kull et al. 2011:830)</p> <p><i>"The Xeni Gwet'in look back on a long socio-ecological association with wild horses, and the horse takes centre stage in cultural revitalization initiatives, spirituality, youth work, and recreation."</i> (Notzke 2013:16)</p>