**Table 5.12.** Impacts of errors in data on invasive alien species presence, distribution, socio-economic and political perceptions and potential responses to improve the efficacy of management interventions on biological invasions.

Adapted from McGeoch *et al*. (2012). See **sections 5.4** and **5.5** for details on management methods.

| **Type of error** | **Explanation** | **Effect on management or policy development** | **Management responses (instruments tools and approaches)** |
| --- | --- | --- | --- |
| Data collection | There can be a lack of survey information on the presence, extent, and population dynamics outside the native range of a species.  Resolution of data and scaling in the introduced range of the invasive alien species: he low-resolution of alien species distribution maps or geographic regions can lead to overestimation of species distribution. | a) Data on the establishment and spread is required to designate alien species as invasive. Insufficient survey information results in failure to recognize invasive alien species.  b) Invasive alien species assemblages are dynamic, and the lack of regular surveys can lead to inaccurate species lists and data on distribution and population sizes.  c) Populations may be incorrectly delimited (prevalence known) leading to incorrect decision-making and management errors.  d) Prematurely declaring eradication campaigns successful when not enough monitoring has been done to ensure confidence in eradication as cryptic populations remain un-detected. | Increased attention to detail and taking care to record data correctly, and increasing efforts to search for information to ensure correct species identification (including synonyms, name changes, incorrect names).  Increased frequency of data surveys for a better recognition and definition of invasive alien species distribution (Chapter 6, sections 6.6.2.4 to 6.6.2.7). |
| Data and knowledge not documented or not readily or widely accessible | Data are not available in books and peer-reviewed literature, electronic, or online databases. Information may exist (and specialists may recognize invasive alien species), but is not yet documented, or is outdated.  Grey literature is not easily accessible and may be in different languages. Some of the new taxa data are published in obscure journals. A wide range of data sources exist, but are not always sufficiently well collated, published or easily accessible. | This may result, for example, in a time delay between discovery and publication. This may influence the likelihood of eradication opportunities. Eradicated or extirpated species may also remain on species lists.  Inadequate native range information (e.g., cryptogenic species – see **Glossary**), may result in subjective or incorrect listing of species as being alien or not.  Identifying an alien species incorrectly, a lack of information on how to implement management, and a lack of specific/appropriate management tools. | Enhance connectedness of global repositories (**section 5.4**), especially for data and grey literature (**section 5.4**).  Use of taxonomic expertise (Pyšek *et al*., 2013) and identification tools to assist in correct species identification (**section 5.4; Chapter 6, section 6.6.2.2**) |
| Incomplete information/literature searches and species misidentification | Erroneous information in lists and databases may be perpetuated. | Misidentification of species, without recognizing synonyms, changing names and other errors in data entry.  Lack of comprehensive information searches can result in incomplete lists.  Alien species can be misidentified as a result of lack of taxonomic data, such as undescribed species or taxa where the systematics have not been fully resolved. | Conscientious and thorough reviews and assessments before decision-making (**section 5.2; Chapter 6, section 6.6.1**). |
| Socio-economic and perception data | Differing perspectives leading to different perceptions in the community concerning management. E.g., hunters have a vested interest not to reduce density of an invasive alien species of their interest or completely eliminate the target species. | Difficulty to gain consistent perspectives on invasive alien species management directions and planning. | Collaborative and adaptive co-management (**section 5.4; Chapter 1, section 1.5.2; Chapter 6, section 6.7.2.4**). |
| Political perspectives | Political will may vary with different political perspectives and situations. | Management of biological invasions is not a priority item for some countries and may receive only limited/intermittent funding.  Jurisdictional boundaries complicate management responses (**section 5.5**). | Globally, implementing treaties and conventions (**section 5.5; Chapter 6, section 6.1.3**).  Locally, initiatives such as Trans-frontier protected areas or biospheres reserves provide vehicles for collaboration  (**section 5.3; Chapter 6, section 6.3**). |