



Guidelines and best practices to avoid threats imposed by alien invasive species on forest ecosystem in Jordan

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Invasive alien plant species

Plants that are non-native to an ecosystem, and which may cause economic or environmental harm or adversely affect human health. In particular, they impact adversely upon biodiversity, including decline or elimination of native species - through competition, predation, or transmission of pathogens - and the disruption of local ecosystems and ecosystem functions.

Technical Definition

Naturalized plants that produce reproductive offspring, often in very large numbers, at considerable distances from parent plants (approximate scales being more than 100 m in less than 50 years for taxa spreading by seeds and other propagules; more than 6 m/3 years for taxa spreading by roots, rhizomes, stolons or creeping stems) and thus have the potential to spread over considerable areas (Richardson *et al.*, 2000a).



Facts about invasive alien plants

- It is difficult to identify traits that consistently predict invasiveness.
- Natives are considered invasive when they spread into human-made habitats such as farms or gardens, or when they increase in abundance or range following novel changes, especially human-caused changes, in their natural habitats like increasing soil fertility for example



Invasiveness

- ◆ **Broad native range**
- ◆ **Rapid dispersal**
- ◆ **Short generation time**
- ◆ **Long fruiting period**
- ◆ **Large seed number**
- ◆ **Small seed size**
- ◆ **Prolonged seed viability and transport by wind or by animals**

Hypothesis success

- **Escape from natural enemies: Predators, parasites and diseases.**
- **Increased competitive ability outcompete native species.**
- **Pre –adapted to disturbed environments.**



Why invasive species matters??

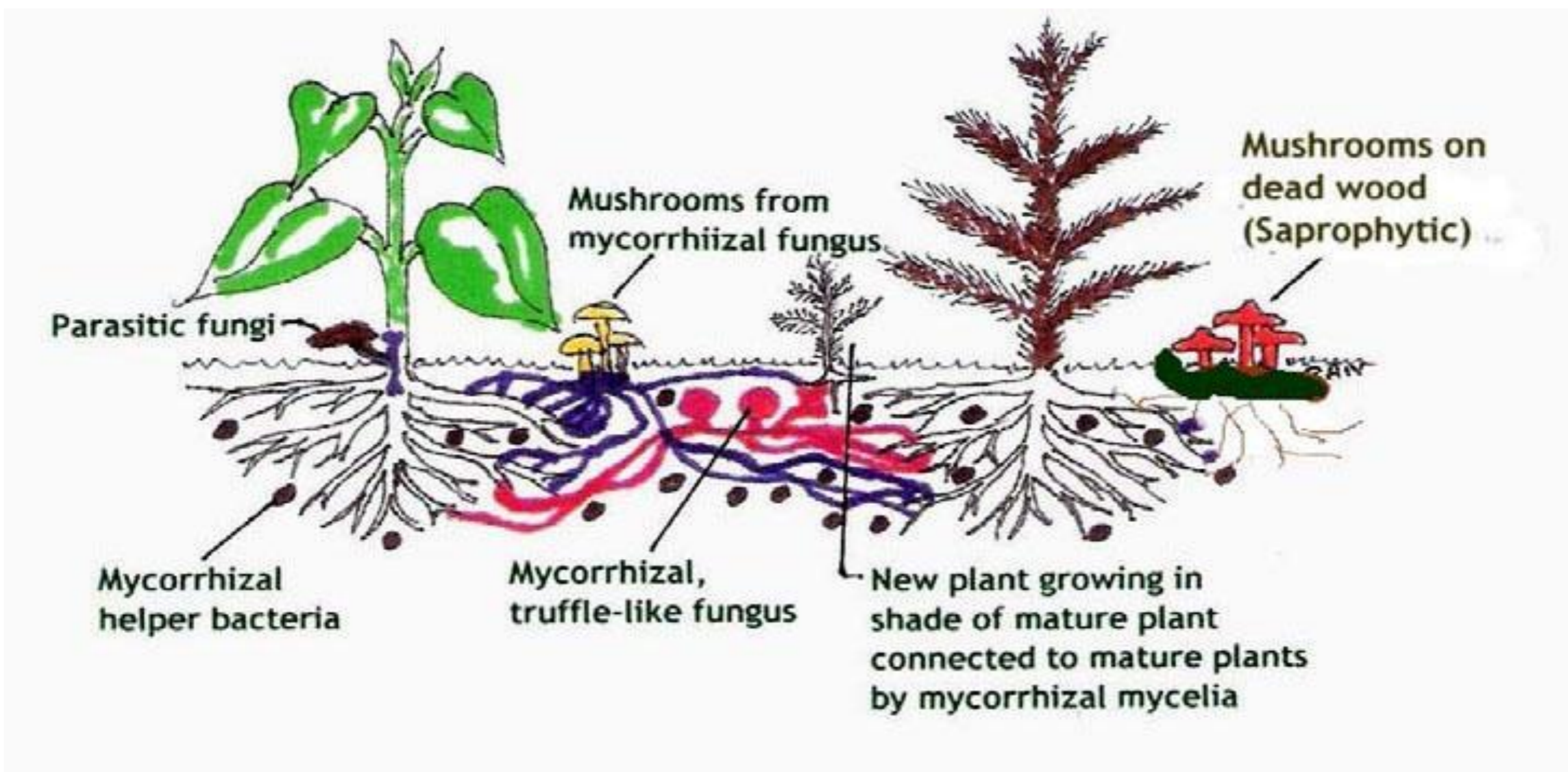
- By some estimates alien invasive species may be costing the global economy \$1.4 trillion.
- The Delivering Alien Species Inventories for Europe says there are 11,000 invaders in Europe of which 15 % cause economic damage and threaten native flora and fauna.
- Affected native biodiversity in almost every ecosystem type on earth and are one of the greatest threats to biodiversity.

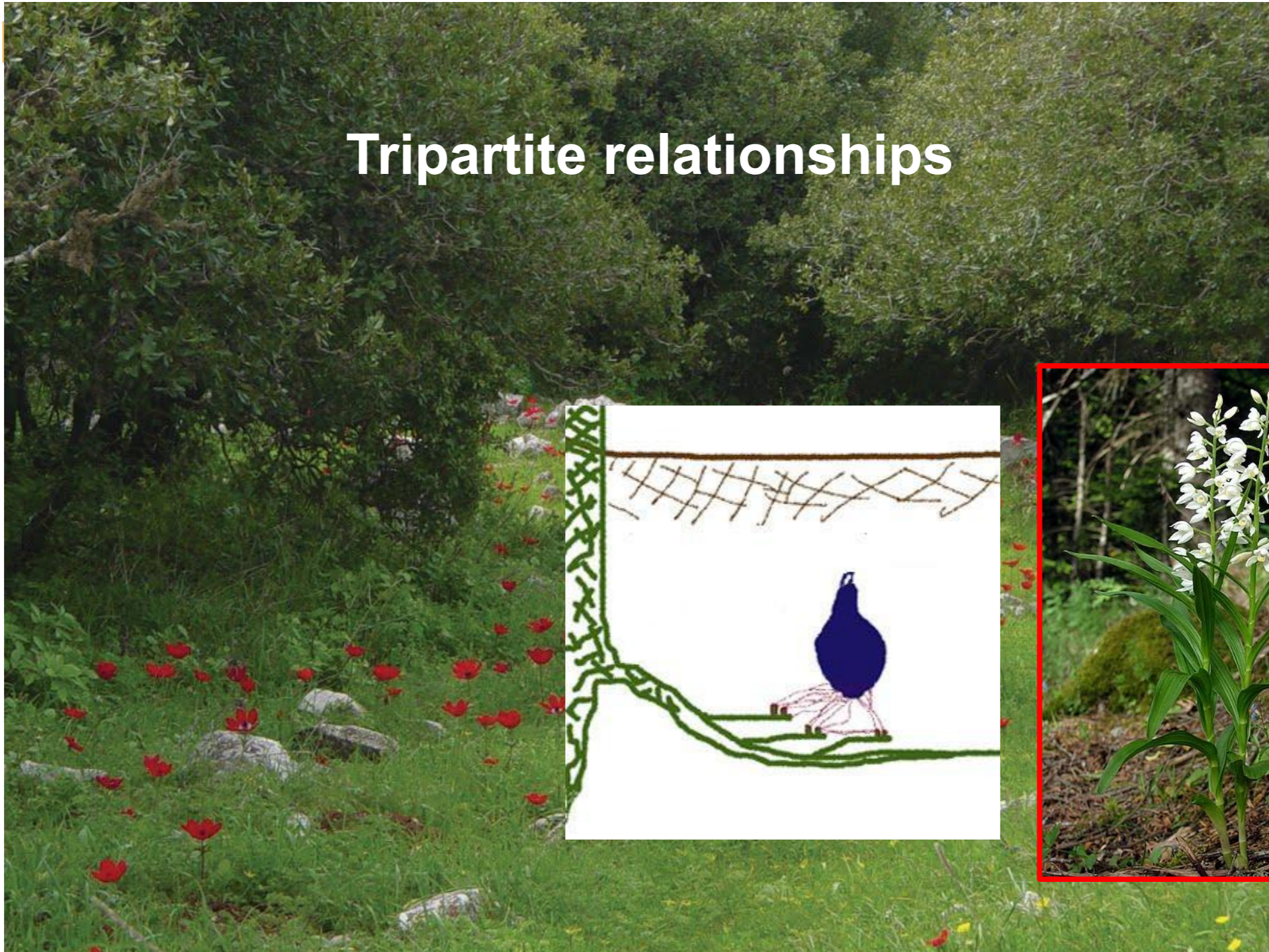
The ecological threat levels

- (a) The allelopathic properties of the species,
- (b) Its ability to form dense stands, and
- (c) Its propensity to invade natural undisturbed areas.



Interconnection of natural ecosystem





Tripartite relationships

Tackling the issue



- **Compiling a list of Jordan's alien plant**
- **Any private or public entity requesting to plant alien species submit in advance the full list intended for use for examination**
- **Any taxon listed in the document should be banned from the planting.**
- **A policy document for Planners and local authorities on the use of plants is inevitable.**



Steps.....

- **Address Invasive species**
- **Describe their areas of occurrence**
- **Estimate size of their populations**
- **Determine various stages of invasion.**
- **Detailed study on alien plant taxa that occur and/or invade, natural and semi-natural areas in Jordan**
- **Prioritize taxa which plant taxa**
- **Prioritize populations for control in natural areas throughout the country**



Management strategies (in case of invasion)

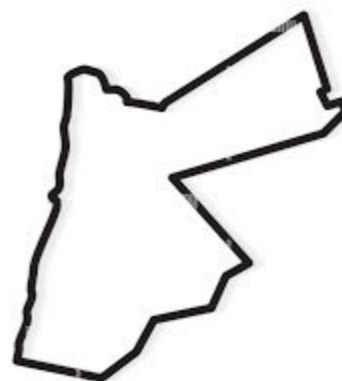
- **Eradication** (prevention failed, cost-effective, Public support)
- **Containment** (restrict the spread of the population in a defined geographical range)
- **Control** (long-term reduction in density and abundance to below a pre-set acceptable threshold)
- **Mitigation** (To "live with" this species in the best achievable way and mitigate impacts on biodiversity and endangered species).



Second B2B event in Jordan
on Grazed Woodlands
Amman - March 15th, 2023



Jordanian Case Study

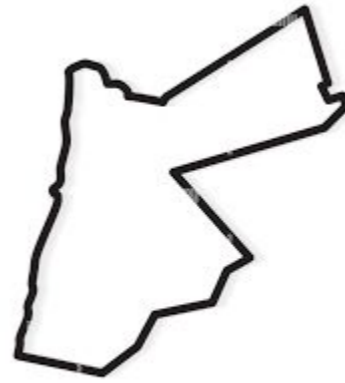


On the national level, an undertaking has been initiated to tackle this growing problem of alien species designated as invasive in various local habitats as measures adopted to protect local biodiversity as well as part of Jordan's commitment to the ratified international conventions like the CBD and the Aichi target 9 and SDG goals (article 17.9).





Jordanian Case Study



In late 2017 a summary report was issued as a resolution of technical meetings of a range of plant specialists representing local ministries, NGOs and universities discussing the growing threat of the invasive and alien species in Jordan with an aim to reach a policy document to be submitted to the planners and local authorities on the use and precautions of alien plants.




Summary of the colors legend for nomination

 **Alien plant present only in places in which was planted**

 **Casual alien: that may reproduce occasionally, but unable to form sustainable populations.**

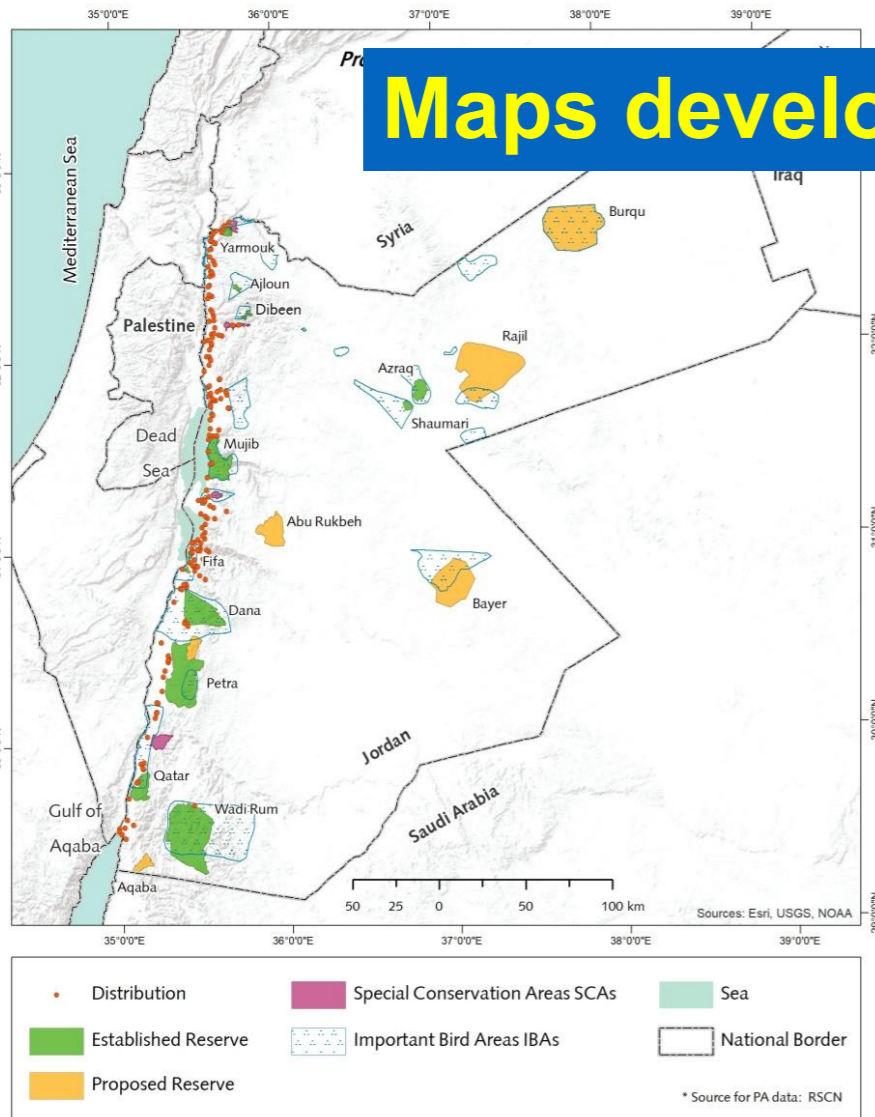
 **Naturalized aliens: form self-replacing populations without human intervention for a period of at least 10 years.**

 **Invasive aliens :fall under the definition for naturalized plants, but produce a large number of reproductive offspring, at considerable distances from the parent plants.**



Sensitivity Maps of Priority Species VS protected areas

Maps developed as per local experts consultations





General conclusions and recommendations

- A holistic collaborative approach should be adopted on the regional as well as global levels to address the consequences of the wide spread of the IAS especially in the natural habitats.
- Managing an invasive species is not the management goal, but a tool to achieve a habitat restoration



Thank you very much

