



RESOURCE BRIEF

Invasive Plant Species

IMPORTANCE

The extent and number of invasive plant species in an ecosystem are indicators of the health and integrity of the ecosystem. Invasive species introductions can inflict numerous impacts on native ecosystems. These impacts include, but are not limited to, alteration of natural disturbance regimes and nutrient cycling, displacement of native species, facilitation of disease spread, and disruption of native food webs. Consequently, the invasion of non-native species can rapidly alter the dynamic relationships among plants, animals, soil, and water established over long periods of evolutionary time. In particular, invasive species have the potential to irreversibly alter the productivity of the systems they invade and represent one of the greatest threats to the integrity of Mediterranean-type ecosystems. As non-native plant species numbers and populations have increased across parks within the Mediterranean Coast Network, the need to understand the distribution and patterns of dispersal of these species (changes in the number, diversity, spatial distribution, and density of these plants) has become extremely important for protecting native communities through eradication and restoration efforts.

OBJECTIVES

- Determine the status and trend in the presence and spread of invasive non-native plants within network parks.
- Develop and maintain an early detection reporting and tracking system that disseminates information to park management on new infestations in a timely and efficient manner to allow for effective response.



Invasive species, such as Harding grass (*Phalaris aquatica*, above) can inflict numerous impacts on native ecosystems.



Perennial pepperweed (*Lepidium latifolia*), a non-native invasive species, dominates the landscape.

MONITORING EFFORTS

- Invasive plants will be monitored in conjunction with the native plant monitoring protocol. Distance sampling will be used along the path to native plant monitoring transects to detect changes in status and trend of non-native species.
- We are evaluating methods to utilize opportunistic sampling by visitors, rangers, maintenance staff, and other field staff to compliment more intensive sampling efforts using park staff and trained volunteers. The methods under evaluation include use of new iPhone and Droid applications that allow users to photograph and send location data of invasives directly to parks.
- Invasive plant tracking and reporting databases are being developed to assist with rapidly disseminating plant data to park managers.

MANAGEMENT IMPLICATIONS

- Prevention of plant invasions is the most effective, economical, and ecologically sound approach to managing invasive species. When preventive measures are not successful, approaches utilizing early detection and rapid removal of new species and new populations are the next best tactic.
- Due to the large number of non-native species present in network parks (over 250), monitoring for invasive species introduction and existing population spread must focus on species with the greatest potential to impact native ecosystems and which can be feasibly managed.
- In addition, efforts will be made to standardize data collection, data analysis, reporting, and archiving to allow for the greatest ability to compare results across parks.

For more information:

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