



Exotic Invasive Plant Monitoring

Importance

Exotic invasive plants represent one of the most significant threats to natural resources in national parks. Exotic plants are a concern because they are able to reproduce prolifically, rapidly colonize new areas, displace native species, and alter ecosystem processes across multiple scales. Established exotic invasive plants may exist in small populations for long periods, making detection difficult. However, if discovered in these early stages, control efforts are likely to cost less and achieve higher success rates than after a species has become more widespread. Therefore, it is critical to detect exotic plants during this time-lag between introduction and subsequent rapid expansion.

Long-term Monitoring

Invasive plant monitoring will take two forms. The primary form of monitoring is intended to detect new populations and new invasive species. This monitoring will emphasize key vectors and pathways for invasions, and will vary depending on the size of the park. In small parks, surveys will cover the majority of the park, while in large parks, a model based on probabilities of invasion will guide survey design. Secondary monitoring is intended to determine the status and trends of selected populations of particular invasive plant species of highest management concern.



Detection of tamarisk (*Tamarix* sp.), Capitol Reef National Park.

Management Applications

Information gathered from this monitoring will:

- Detect exotic plants early in the invasive cycle, when eradication is most effective, economical, and ecologically sound;
- Support a long-term, ecosystem-wide strategy for controlling invasive plant species (this has been shown to be more effective than a tactical approach of battling individual species or populations); and
- Provide park managers with access to systematically collected information that enables them to be well-informed about the status of ecosystems and prioritize dedication of limited resources to invasive-plant control efforts.

Contact

Dustin Perkins, dustin_w_perkins@nps.gov

Network park units where invasive exotic plants will be monitored

Arches NP	Dinosaur NM
Black Canyon of the Gunnison NP	Fossil Butte NM
Bryce Canyon NP	Golden Spike NHS
Canyonlands NP	Hovenweep NM
Capitol Reef NP	Natural Bridges NM
Cedar Breaks NM	Pipe Spring NM
Colorado NM	Timpanogos Cave NM
Curecanti NRA	Zion NP

NP = National Park; NM = National Monument;
NRA = National Recreation Area; NHS = National Historic Site



The preliminary objectives of invasive plant monitoring are to:

1. Detect incipient populations and new introductions of invasive plant species; and
2. Determine status and trends of selected populations of invasive plants of management significance.

Spotted knapweed
(*Centaurea biebersteinii*),
Cedar Breaks National
Monument.