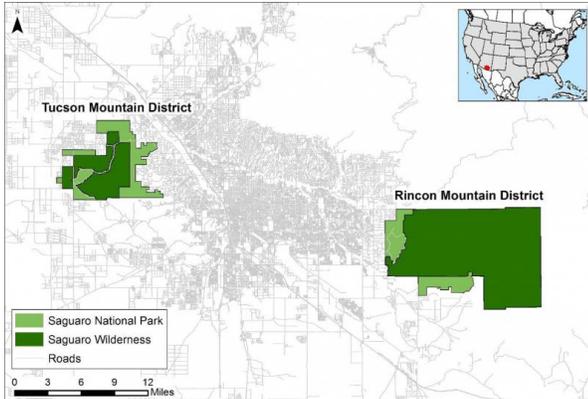




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Mapping threats to wilderness character in the Saguaro National Park Wilderness



Background & Management Issues: The purpose of this project was to develop an approach that spatially depicts threats to wilderness character and how they vary across the Saguaro Wilderness. The maps produced through this project depict the Saguaro Wilderness' current degree of departure or degradation from an "optimal condition" of wilderness character. This optimal condition reflects an ideal manifestation of wilderness character as expressed in the Wilderness Act—in other words, a state in which there are no threats to wilderness character. Each measure is depicted across the wilderness on a scale from its "optimal condition" (i.e. no threat) to its most "degraded condition" (i.e. highest current threat level). When the measures are combined accumulatively, therefore, the overall map of threats to wilderness character is similarly depicted on a scale from its optimal condition (i.e. no threats to wilderness character) to its most degraded condition (i.e. highest cumulative threat level from all measures).

Project Objective:

This mapping effort:

- Shows the current extent and magnitude of threats to wilderness character in the Saguaro Wilderness and how they vary across the landscape.
- Provides a measurement baseline from which future monitoring can show how threats to wilderness character change spatially over time.
- Allows SAGU to analyze the potential impacts of different management actions on wilderness character.
- Identifies areas within the wilderness where resource managers should make an effort to control or mitigate impacts. These efforts may include monitoring conditions, establishing thresholds, or taking direct action.
- Identifies specific activities or impacts outside the wilderness that may pose a substantial risk of degrading wilderness character inside wilderness.
- Improves internal staff communication about wilderness and wilderness character and improves external communication between the park and the public on related issues.
- Identifies and fills data gaps by collecting information from local staff and digitizing new spatial data.

Results:

- The least degraded areas (categories 71-80, 81-90, and 91-100) are found exclusively within the Rincon Mountain District (RMD) in the higher elevations on the eastern side of the wilderness.
- These high quality areas are more difficult for visitors to access, and are furthest from the impacts associated with the city of Tucson. In addition, these areas are abutted to the north, east, and south by the Forest Service administered Rincon Mountain Wilderness, which protects them from further degradation from outside pressures. The next highest category (61-70) also falls almost entirely within the RMD in mid-elevation areas, with a very small portion located in the southeast corner of the Tucson Mountain District (TMD). Approximately 75 percent of the TMD and the majority of lower elevation areas in the RMD fall into the second largest category (31-40). In both districts, the most degraded areas (categories 0-10, 11-20, and 21-30) are associated with high impact sites, including the lower elevation trail network and locations where invasive species are present or have been eradicated.

Management Implications:

❖ In the Saguaro Wilderness, there has been, and continues to be, a substantial amount of human influence—ranging from a long history of human use and resource extraction, to current high visitation levels, to reasonably foreseeable future impacts from climate change. Although the Saguaro Wilderness is far from being considered a “pristine” or “pure” wilderness, managers are nevertheless tasked with protecting and preserving its wilderness character from further degradation. Only by understanding the myriad human influences that affect—or “threaten”—wilderness character can managers meet wilderness stewardship goals. For this report, “threats” to wilderness character are defined as a combination of:

- ❖ Historical activities that continue to degrade wilderness character (e.g. resource extraction, departure from natural fire regimes).
- ❖ Current actions or influences that degrade wilderness character (e.g. non-native invasive species, administrative motorized/mechanized use).
- ❖ Impending issues that are likely to degrade wilderness character into the future (e.g. climate change impacts, night sky obfuscation).
- ❖ Owing to staff turnover of key members of the project core team and the tight time constraints for completing this project, this report is an abbreviated version of previous wilderness character mapping reports.

Publications/Products:

Tricker, J., MacEwen, B., O’Neil, R., & Landres, P. (2016). Mapping Threats to Wilderness Character in the Saguaro National Park Wilderness.

For more information...

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