

Establishing accurate, appropriate baseline conditions and reference areas is critical to evaluating the success of revegetation efforts in a changing climate

Establishing Baseline Conditions and Reference Areas for Assessing Revegetation Success in a Changing Climate



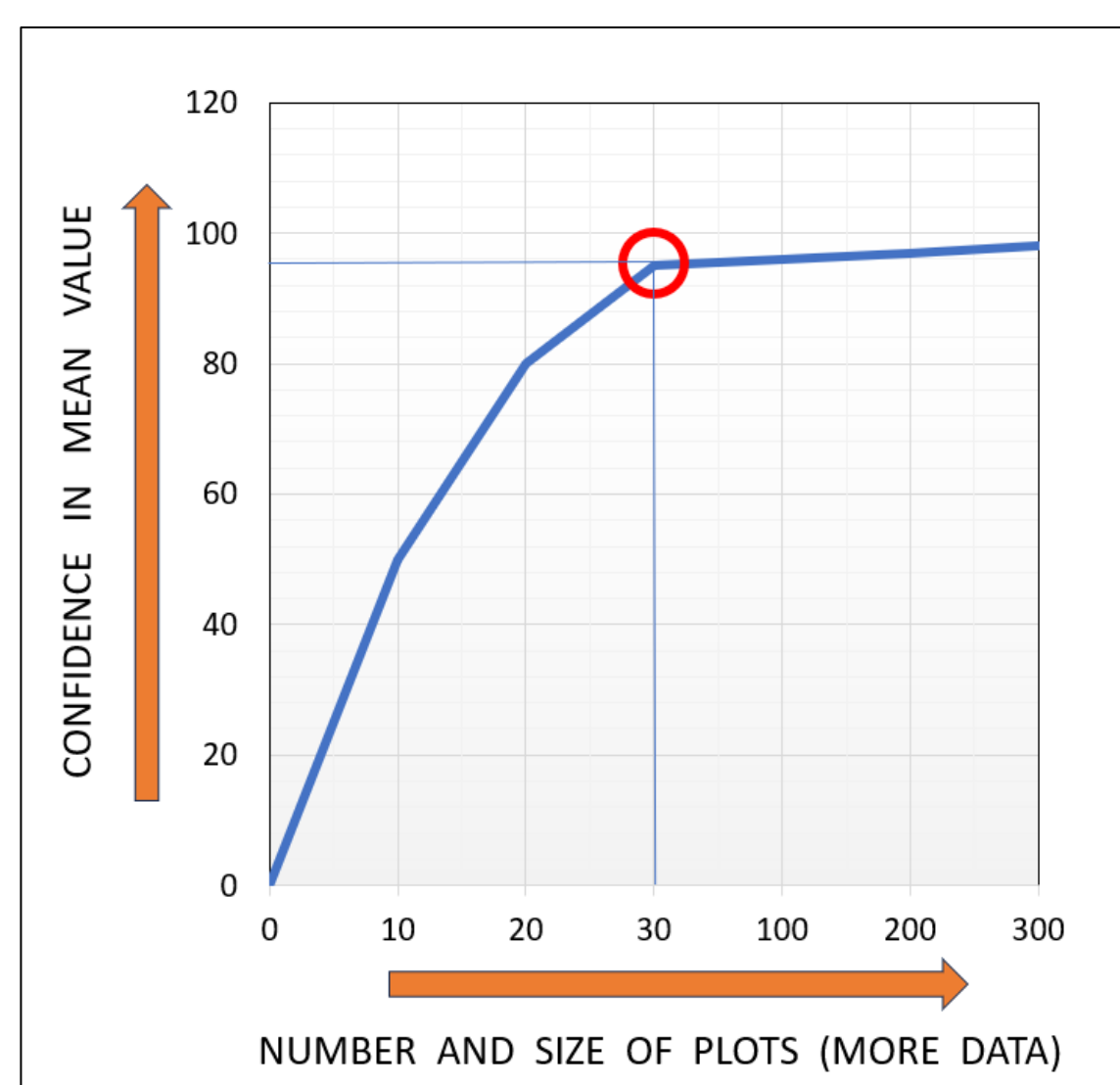
Main Authors: Carla DeMasters, MS, CERP, and Cait Rottler, PhD
 Co-Authors: Michael Van Laeken, Alisa Baadsgaard, Kate Tillotson-Chavez, Allison Bryant

Advantages of Establishing Baseline Conditions and Reference Areas

- Allow for the effects of fluctuating environmental conditions, both short- and long-term, to be factored into assessments of revegetation success
- Improve understanding of variation over time in response to climate change or where baseline scenarios have no true reference (e.g., farmland)
- Fulfill siting and permitting requirements and guiding revegetation efforts is critical
- Inform development of achievable revegetation goals

Baseline Vegetation Survey Elements

- Ground cover: vegetation, bare ground, litter
- Herbaceous plant productivity
- Species richness
- Woody plant density (if present)
- Vegetation height/structure
- Presence of invasive or non-native species



A conceptual graph showing how confidence in the sample mean increases with sample size (Elzinga et al. 1998).



References

Elzinga, Caryl L., et al. 1998. Measuring & Monitoring Plant Populations. Denver Colorado. Arlington, Virginia: US Dept. of the Interior, Bureau of Land Management; Nature Conservancy.

Contact Info: cdemasters@west-inc.com; crotter@west-inc.com

Reclamation	Restoration	Revegetation
The process of bringing disturbed land back into productive use	The process of assisting the recovery of a degraded, damaged or destroyed ecosystem (Society for Ecological Restoration)	The process of reestablishing vegetation on a disturbed site. (Both restoration and reclamation)

Choosing an Appropriate Reference Area

To accurately integrate climate and the effects of climate change and weather, the site should be:

- Subject to the same environmental conditions as the disturbed site (important to consider how surrounding area may affect local site conditions)
- Representative of the state of the ecosystem prior to disturbance
- On the same or very similar soil
- Located on similar topography (slope and aspect)
- Located near the disturbed area, but distant enough not to be affected by activities in the disturbed area



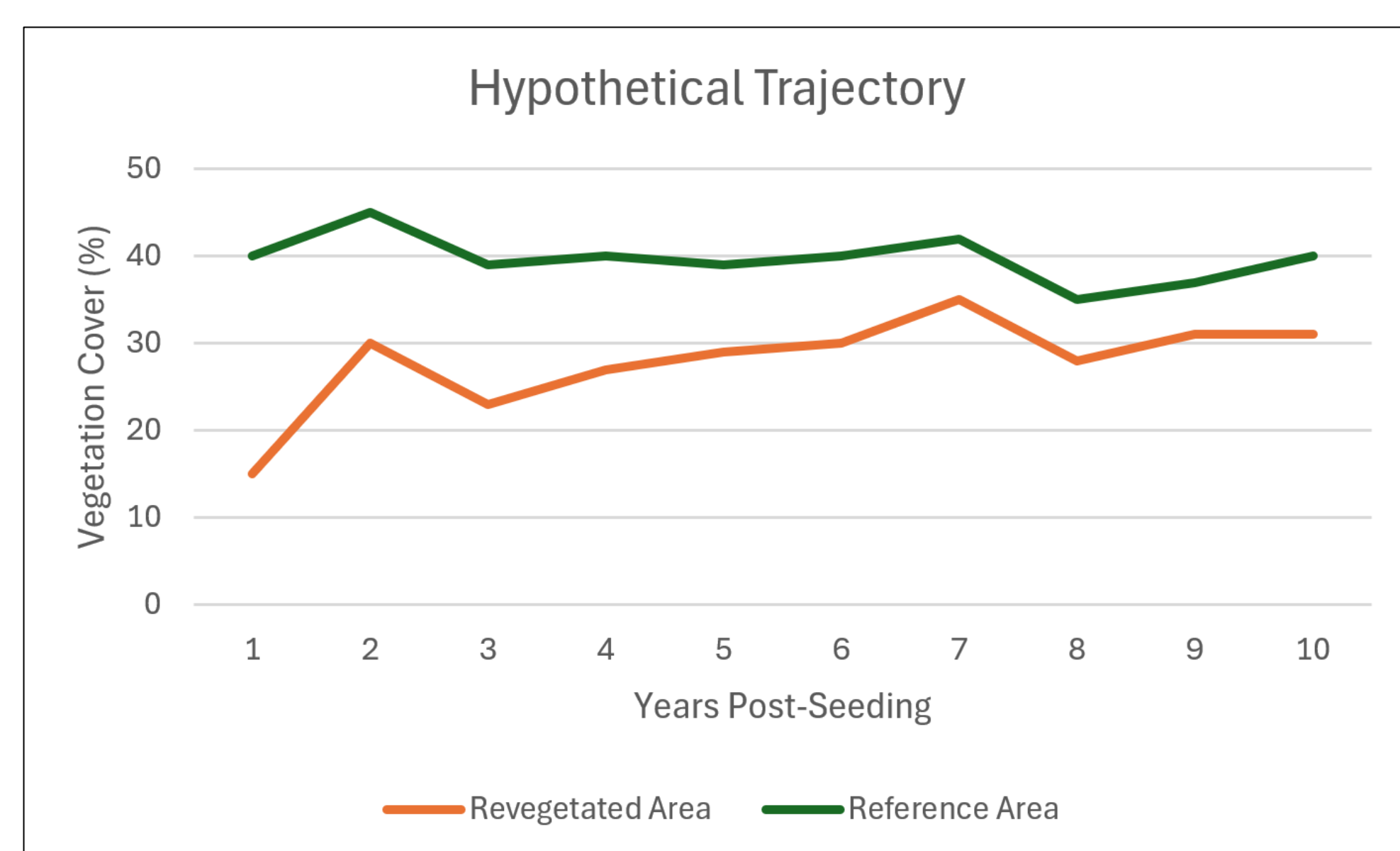
Baseline



Disturbed



Reclaimed



A conceptual graph showing the recovery trajectory of a hypothetical site. A reference area makes it possible to discern where peaks and valleys of vegetative cover in the revegetated area are partially the result of changing environmental conditions.