

HABITAT QUANTIFICATION TOOL

A PATH TO RECOVERY FOR THE MONARCH BUTTERFLY



*Traditional conservation tools focus on acreage, but not enough on the quality of those acres. The **Habitat Quantification Tool (HQT)** – developed by EDF in conjunction with scientists and technical experts – uses a different approach designed to bring greater confidence to conservation decisions.*

The HQT evaluates both quantity *and* quality of habitat using a unit called “functional acres.” Habitat quality is determined using the best available science on a particular species’ habitat needs. By using this tool before, during and after a conservation project, investments can be directed to the highest-quality sites, thereby resulting in the most cost-effective and highest-impact outcomes for wildlife.

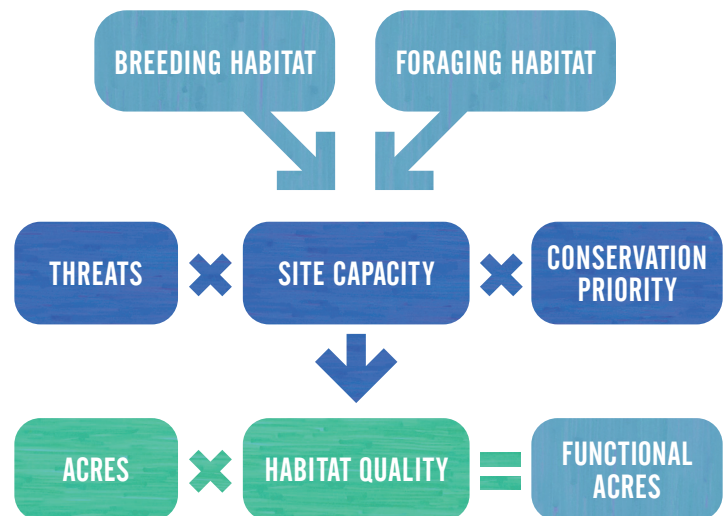
Key Attributes of the HQT

- **Science-based:** continually factors in the best available science – no guesswork involved
- **Consistent:** provides a common language – functional acres – for all parties
- **Transparent:** provides an objective measure of impacts and benefits everyone can understand – and tracks and reports outcomes to avoid “black box” decision-making
- **Comprehensive:** measures quantity and quality, direct and indirect impacts
- **Scalable:** can inform conservation projects from small- to large-scale efforts that cross state borders and jurisdictions
- **Flexible:** adjusts for changes in the landscape over time, such as climate impacts
- **Efficient:** using the HQT requires only the time to conduct a field-site survey and familiarity with biological assessments, Microsoft Excel, and GIS and mapping software, such as Google Earth
- **Strives for net benefit:** improved accounting means improved tracking of progress toward the goal of creating net benefit
- **Achieves the highest return on investment:** directs conservation dollars – both public and private – to activities and projects that provide the greatest habitat benefit

Increase Your Project’s Effectiveness

As an appraisal tool, the HQT has the flexibility to bring value and increased transparency to any conservation or restoration project. It also serves as the basis for a habitat exchange program that rewards landowners for achieving conservation outcomes rather than following pre-defined practices.

The HQT provides the scientific integrity and streamlined efficiency needed to move projects at a larger scale and faster pace, which benefits every stakeholder involved – especially the species in need.



What goes into a functional acre?

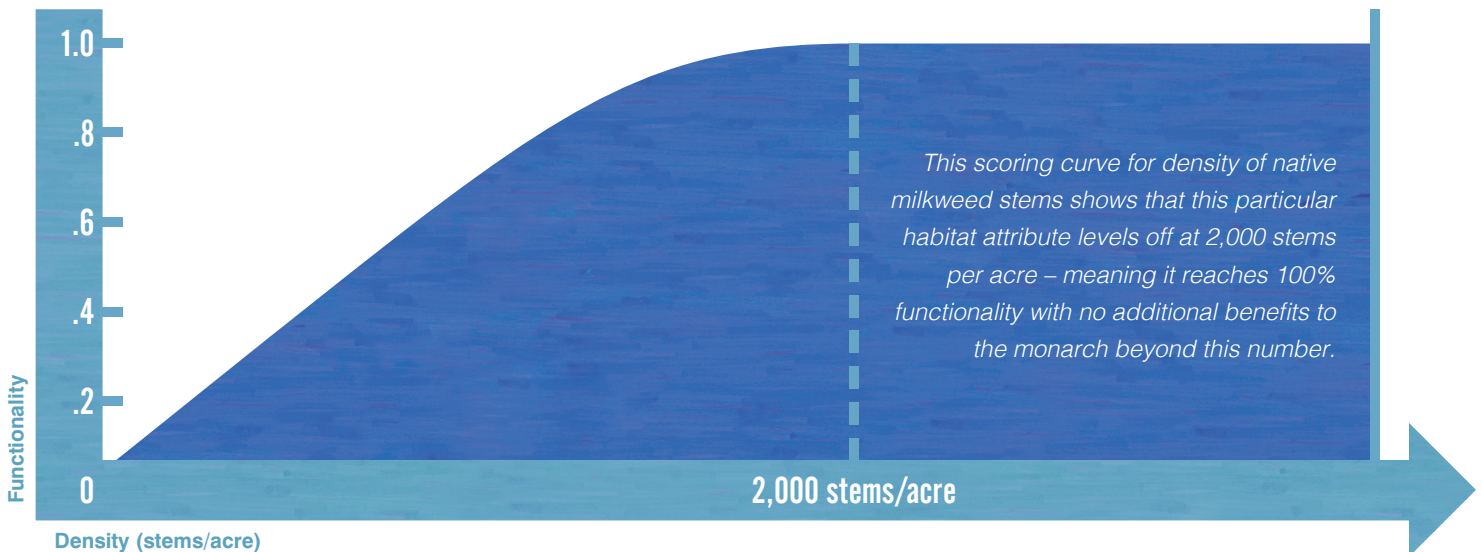


The Habitat Quantification Tool has been customized for the monarch butterfly to bring more certainty to conservation efforts for this iconic species, which will face a U.S. Fish and Wildlife Service determination in 2019.

Customized Conservation

To measure habitat quality for a given plot of land, the HQT weights site-scale features related to breeding and foraging that the monarch requires throughout its life cycle, including density and diversity of milkweeds and nectar plants. It also takes into account threats like the risk of pesticide exposure and herbicide drift. Each habitat feature is measured as a percent of optimal condition (that is, 100% functionality) using a scientifically designed scoring curve.

Scores for the different habitat features are used to determine the overall habitat quality score, which is then multiplied by the number of acres in the project area to determine functional acres for the site.



A Regional Approach

The HQT is designed to account for differences across the monarch’s expansive range by providing weights for the habitat attributes in three key regions: the Midwest, Southern Great Plains and Western Subpopulation (west of the Rocky Mountains). In this way, the HQT captures unique population dynamics of the eastern and western subpopulations. For example, in the Midwest, breeding habitat is weighted more heavily than foraging habitat because the best available science indicates that it is more limited in this region. This regional approach allows conservation efforts to be more targeted according to specific habitat needs of the species in any given place.

Another component of the monarch HQT is the conservation priority of each region, which is a subjectively determined value based on the relative contribution of a region to overwintering colony populations – the occupied area of overwintering habitats being a key indicator of overall species health.

Status of the Monarch Butterfly HQT

The monarch butterfly HQT has been tested on a diversity of agricultural sites throughout the U.S., including sites in Texas, California and Minnesota. Following external review, the HQT will be ready for full implementation through habitat exchanges and other conservation programs beginning in the spring of 2017. The HQT will be updated regularly as new science becomes available.



PUT THE HQT TO WORK FOR YOUR PROJECTS

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