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Weaving Knowledge

How traditional and scientific knowledge can contribute to management of good beargrass harvesting sites for basketry

Forest Service

Pacific Northwest Research Station

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Why study beargrass?

Beargrass (*Xerophyllum tenax*) is a culturally important plant throughout California, Oregon, and Washington. Of its many uses, beargrass is particularly valued by tribal weavers for adding design and structure to baskets.

Just as basketry techniques are passed from one weaver to another, so too is the skill of identifying whether a site produces enough suitable beargrass to spend time harvesting its leaves.

In recognition of potential harvesting sites on federal land and the significance of beargrass to tribal cultures, scientists with the USDA Forest Service sought to learn what characteristics are related to harvest site quality.

Specifically, what makes a site good for harvesting beargrass for basketry?

Chris Schnepf, University of Idaho, Bugwood.org

Beargrass in bloom. Its basal leaves are harvested for use in basketry.

How can the study results be used?

- To help implement management practices on national forests and other lands conducive to producing the quality and quantity of beargrass leaves used in basket weaving.
- To show that traditional ecological knowledge, in combination with scientific methods, can expand our understanding of forests beyond what either knowledge type achieves alone.
- To provide additional resources that expert weavers could use to describe the characteristics of good harvesting sites for beargrass, both while communicating with land managers and while training novice weavers.
- To advance methods applicable to studying other culturally important plants and the means to sustain them.

Who participated and where?

Six expert weavers volunteered to cooperate with scientists from the USDA Forest Service Pacific Northwest Research Station and Pacific Southwest Research Station. The study participants, members of the Grand Ronde, Karuk, Siletz, and Yakama tribes, use beargrass leaves with twined and coiled weaving.

Study sites were selected in California, Oregon, and Washington that covered a range of potential harvest conditions. Some sites had a history of beargrass harvesting. Other considerations for selecting the study sites included accessibility to a road, terrain, and location on tribal ancestral lands.

Combining two ways of knowing:

The weavers visited study sites with a Forest Service researcher (Karuk descendant) and assistant (Penobscot) and classified each site as good, marginal, or poor according to personal observation.

Then, on 72 sample plots at the sites classified by the weavers, Forest Service staff measured the characteristics they thought might be important factors in beargrass leaf quality. They included:

- Number and diameter of all trees
- Amount and size of dead, down wood
- Color of beargrass leaves
- Density of beargrass plants
- Number of bundles of new leaf growth
- Elevation

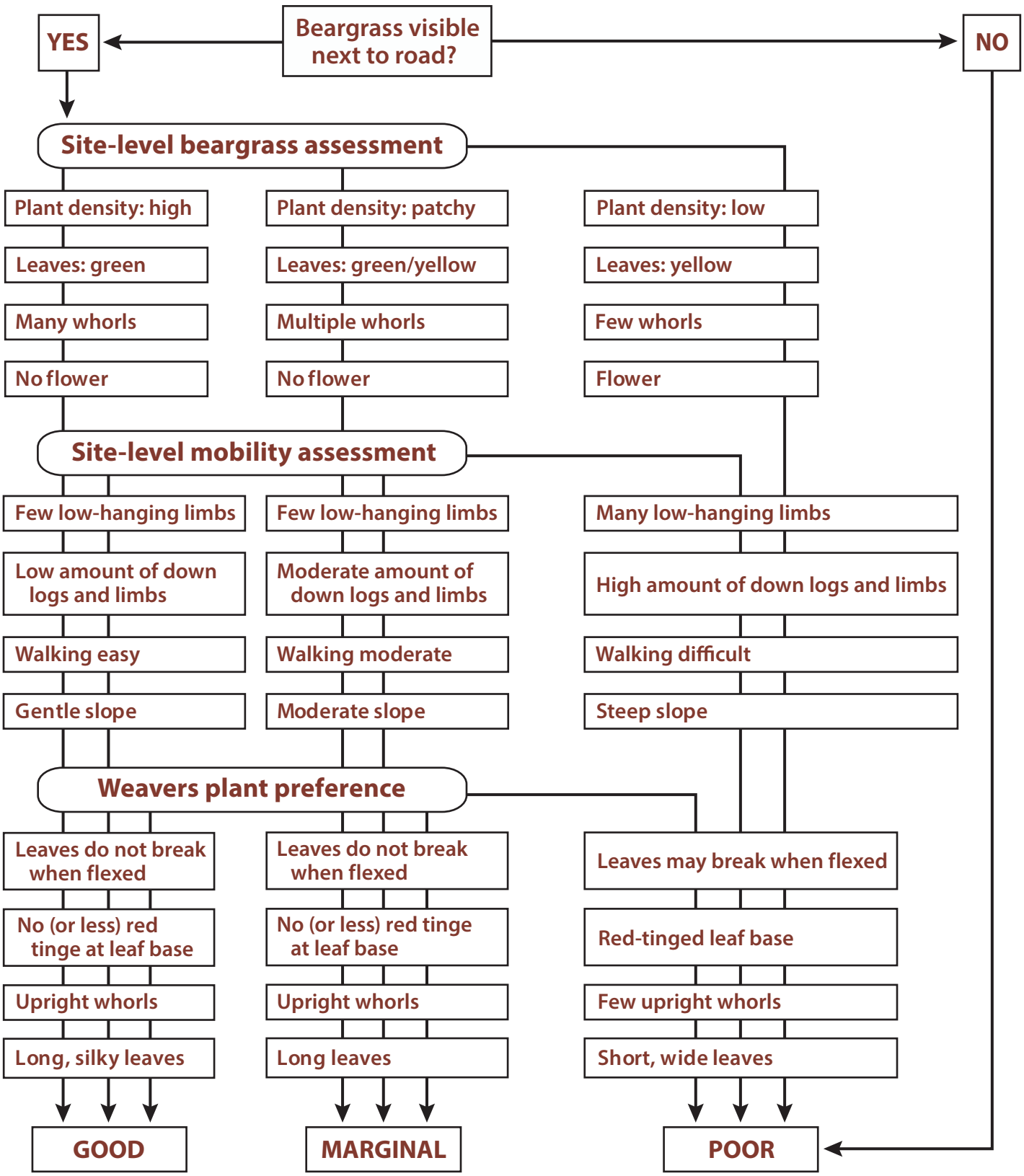
The field visits helped produce a decision key (next page) which shows how the weavers classified the sites during summer 2012.

Analysis of the field data later revealed clear differences in good and poor harvest sites across the three states and two weaving styles. In contrast, the characteristics of marginal sites were less obvious: sometimes they were classified as poor and other times as good.

B. Gervais

Common features of good beargrass harvesting sites existed for all weaving styles and tribal affiliations included in the study.

This diagram illustrates some of the key factors considered by expert weavers when deciding if a beargrass harvesting site is good, marginal, or poor. These factors were shared by weavers during their field visits with USDA Forest Service staff.



Good sites had:

- Lower levels of dead, down wood.
- Fewer, larger trees per acre.
- Consistency in the mid-leaf color of beargrass on many plants.

B. Gervais

An example of a good harvesting site in Oregon: it contained many beargrass plants and had low levels of down wood.

B. Gervais

An example of a good beargrass harvesting site in California: it had low levels of down wood and fewer, larger trees.

Poor sites had:

- Higher amounts of dead, down wood, which was also larger in diameter.
- More trees per acre, which were smaller in diameter.
- Variability in the mid-leaf color of beargrass, including more yellowish hues.

B. Gervais

This poor harvesting site in Oregon had many small trees and beargrass leaves with undesirable coloring.

B. Gervais

An example of a poor harvesting site in Washington. Large amounts of down wood affect mobility on a site.

What was learned?

- Some characteristics of good and poor sites for harvesting beargrass can be measured and described in terms useful for Forest Service management.
- Combining traditional and scientific ecological knowledge can yield helpful information for sustaining culturally important plant populations.
- More comprehensive information will require a larger sample of sites and more participants from different tribes and weaving traditions.

What was not studied but was heard?

- Site quality considerations for harvesting beargrass ranged from individual leaf properties to landscape history.
- Gaining access to federal land to harvest culturally important plants can be difficult for tribal weavers.
- Culturally important plants often grow together; the weavers were interested in medicinal, food, and other basketry plants at the study sites.

For more information, contact Susan Hummel (shummel@fs.fed.us, 503-808-2084), or Frank Lake (franklake@fs.fed.us).

Twined weaving can include many plants harvested from forests. In this example, the primary traditional materials shown are hazel (Corylus cornuta *var.* californica)*, beargrass* (Xerophyllum tenax)*, alder bark-dyed woodwardia fern* (Woodwardia fimbriata) *and northern maidenhair fern* (Adiantum pedatum)*. Unknown Karuk artist, Woman's Hat, ca. 1900. Courtesy of Portland Art Museum, Portland, Oregon. Gift of Miss Mary Forbush Failing. Accession number 18.2.8.*

Front cover photographs:

Upper photo: example of coiled basket. Primary traditional weaving materials shown are western redcedar (*Thuja plicata*) and beargrass (*Xerophyllum tenax*). Large Cedar Root Berry Basket, 1983, by Nettie Jackson (Klickitat). Courtesy Maryhill Museum of Art, Goldendale, Washington. Gift of Mary Dodds Schlick, in memory of William T. (Bud) Schlick, 1925–1992. Accession number 2010.03.001.

Lower photo: beargrass (*Xerophyllum tenax*) on a plot transect (photo by J. Johnson).

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Pacific Northwest Research Station

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