



Community and Agency Native Plant Needs on the Navajo Nation

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Navajo Natural Heritage Program



Utah

Colorado

Arizona

New Mexico

Navajo Nation



Navajo Nation





Navajo Division of Natural Resources



Navajo Fish & Wildlife Department



Navajo Natural Heritage Program

Navajo Native Plant Program

- Native plant seedbank and nursery
- Navajo native plant internship



Navajo Nation

- Overgrazing
- Invasive species
- Resource extraction
- Drought

NAVAJO NATION
DROUGHT CONTINGENCY PLAN
2003



PREPARED BY:

NAVAJO NATION
DEPARTMENT OF WATER RESOURCES

IN COOPERATION WITH:
U.S. Bureau of Reclamation
U.S. Bureau of Indian Affairs

Navajo Nation Department of Emergency Management

United States Department of the Interior Bureau of Indian Affairs

Navajo Nation Integrated Weed Management Plan

Navajo Trust Land and Navajo Indian Allotments within Coconino, Navajo, and Apache Counties in Arizona; McKinley, San Juan, Sandoval, and Cibola Counties in New Mexico; and San Juan County in Utah



Photographed By: Rene Benally, Natural Resource Specialist

linear corridors include using techniques that reduce erosion and other disturbances to retain native vegetation, re-seed areas with native species in areas where weeds were removed, use of weed free materials (straw, wattles, fill, and seed), cleaning of vehicles and equipment before beginning treatment and before leaving a treatment area, and coordination with landowners to treat weeds on the roads and adjacent areas.

10.0 Native Vegetation Re-Planting

To successfully restore areas invaded by weeds, it is highly recommended that native species

revegetation occurs after

comprised 50% or more

long periods of time like

species recolonization.

invasive species, restore

some recommendations

plant ratios prior

10.1 Passive Restoration

Passive restoration can

removed by hand and the

cleared areas.

10.2 Active Restoration

In order to prevent invasive species recolonization, particularly in habitats that have >50% invasive species presence, native species planting techniques are utilized after invasive species clearing occurs. If a ground water source is not available to the planted vegetation supplemental

irrigation is necessary.

Lack of regionally-sourced, native plant material

Direct seeding offers many advantages over other techniques. When conditions are optimal, it is a relatively short period. Through direct seeding, native plants can out-compete other invasive species and survive harsh environmental

conditions that would decimate a small population. Seeding is also less expensive, especially for large tracts of land. Grasses and herbaceous vegetation establish best from seed. Seeds from regional genetic stock have the most success germinating and surviving in the conditions found within the Navajo Nation. However, many seeds can only be obtained from commercial growers in other regions. USDA Natural Resource Conservation Service (NRCS) can provide information on the most appropriate seeds or seed mix for the desired area (www.az.nrcs.usda.gov).

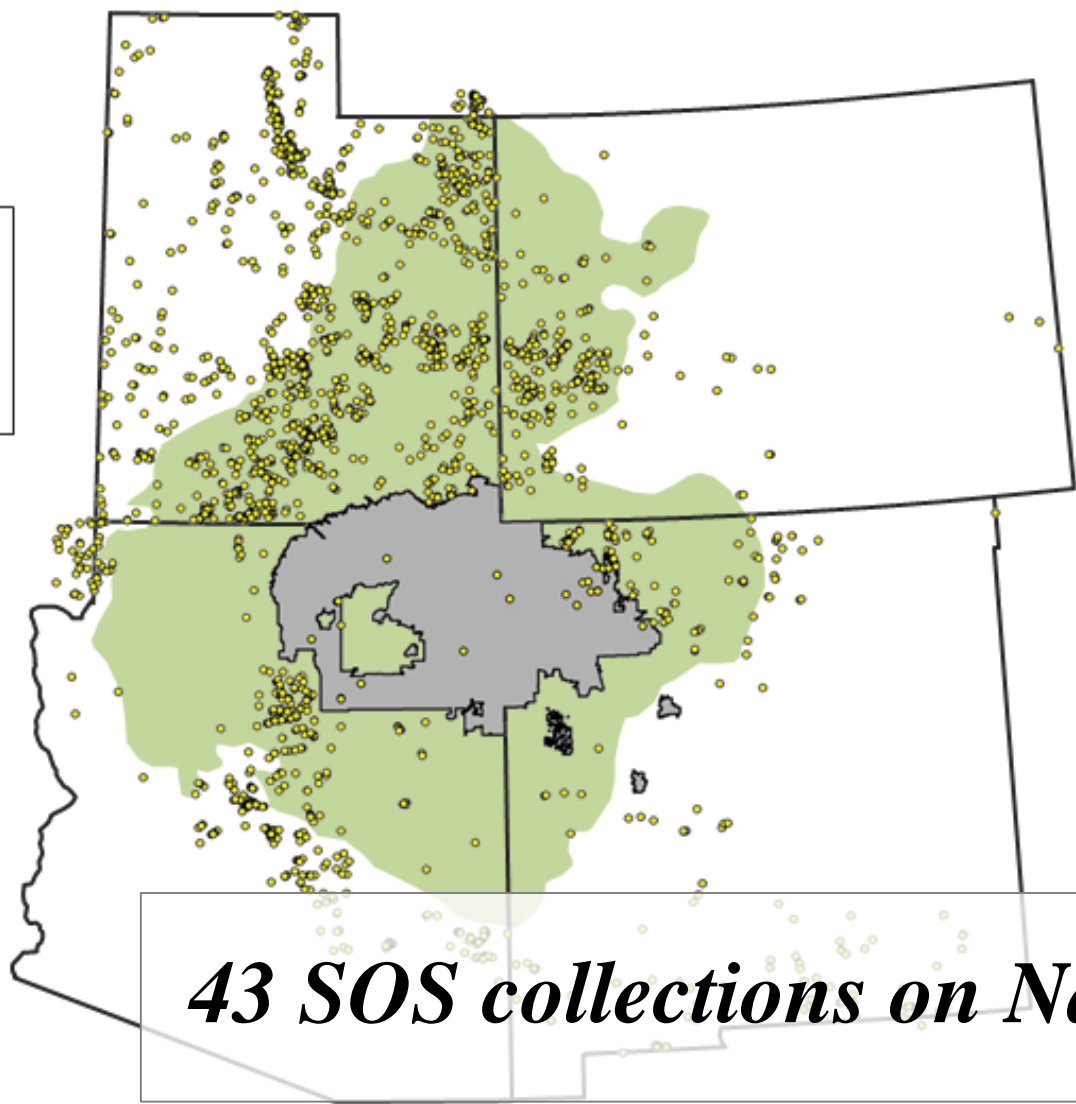
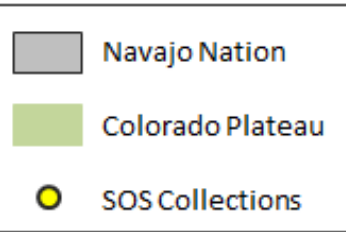
Additional native plant seed resources also include the NNDFW Botanist, State University Cooperative Extension programs, local BIA Branch of Natural Resource Office, and the Navajo Nation Department of Agriculture Window Rock Office. Planting locally gathered seeds is more successful, but requires more time and effort than purchasing seed from a commercial source.

Just prior to planting, some seeds with hard seed coats should be scarified mechanically or chemically. Scarification, a pre-germination process, opens the seed coat so water and gas can penetrate. When seeds naturally pass through the digestive tracts of animals, they undergo both chemical and mechanical scarification as part of the digestion process. As a substitute, seeds are mechanically scarified by grinding them in a blender for about 10 seconds or by scraping a hole in the coat using sandpaper. Chemical scarification uses strong acids or other chemicals to partially open the seed coat; however, it is more dangerous and less effective than mechanical methods.

10.2.2 Propagating Cuttings

Propagating stem and root cuttings is the best way to grow many





43 SOS collections on Navajo



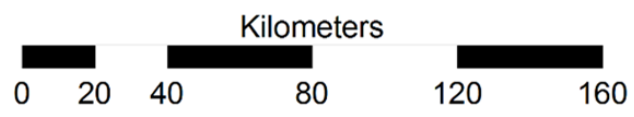
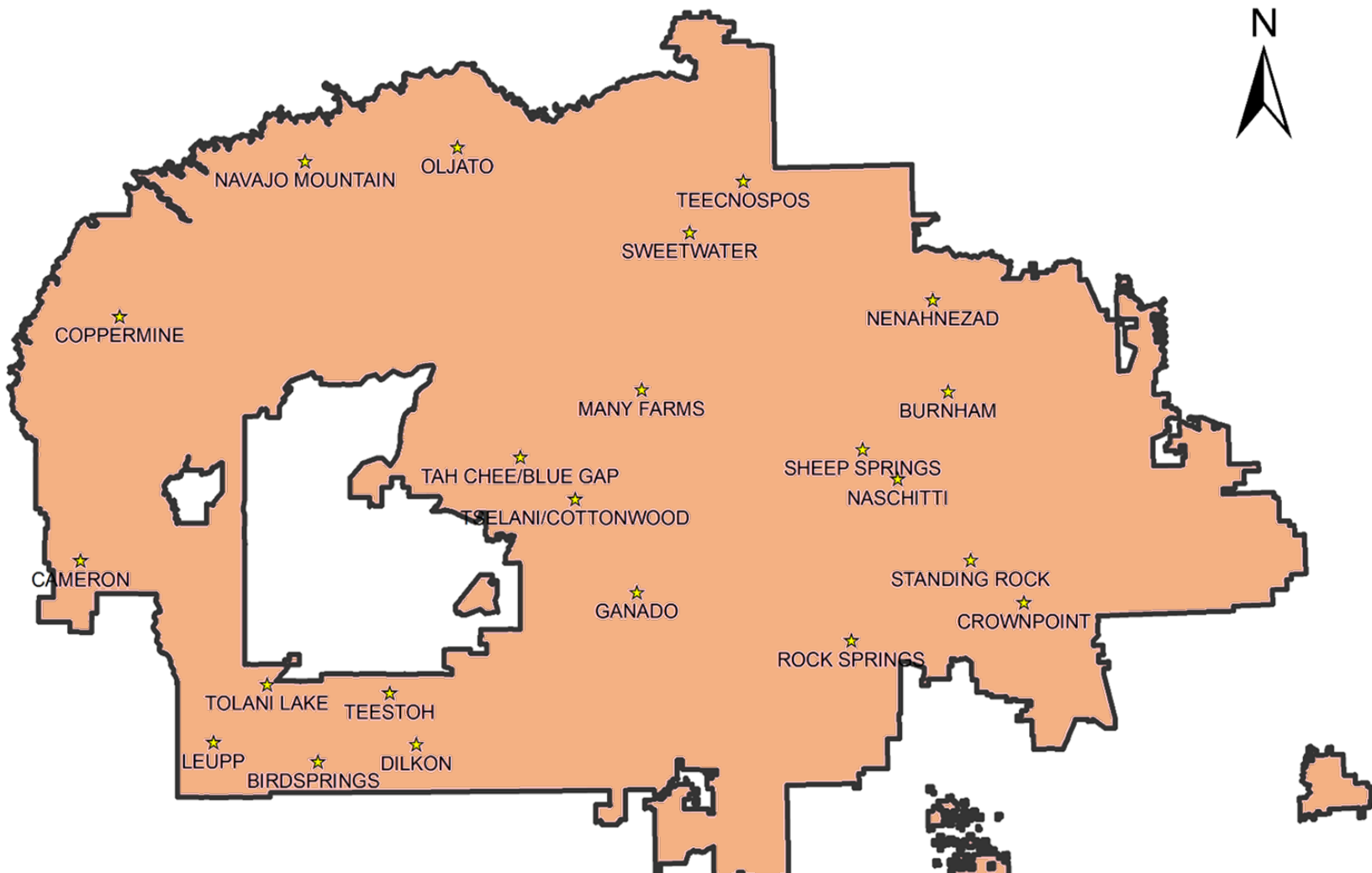
Native Plant Needs Assessment

STANDING ROCK
CHAPTER HOUSE
←

TSE'IT'AH'I
COMMUNITY SCHOOL
←

Agency Survey

Community Survey

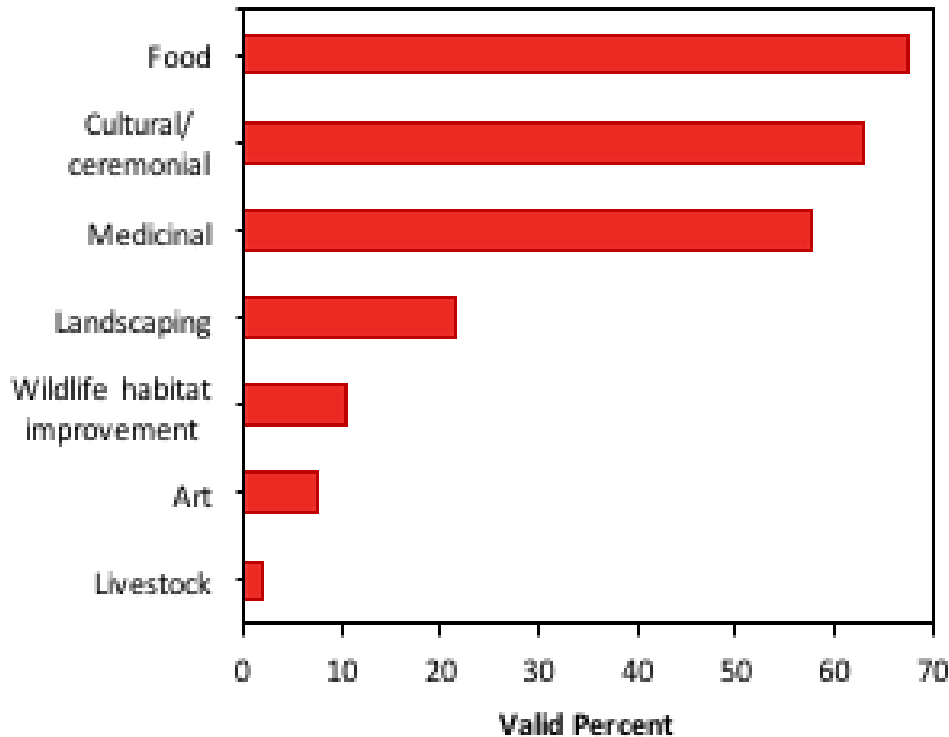


Community Survey



Community Survey (n=225)

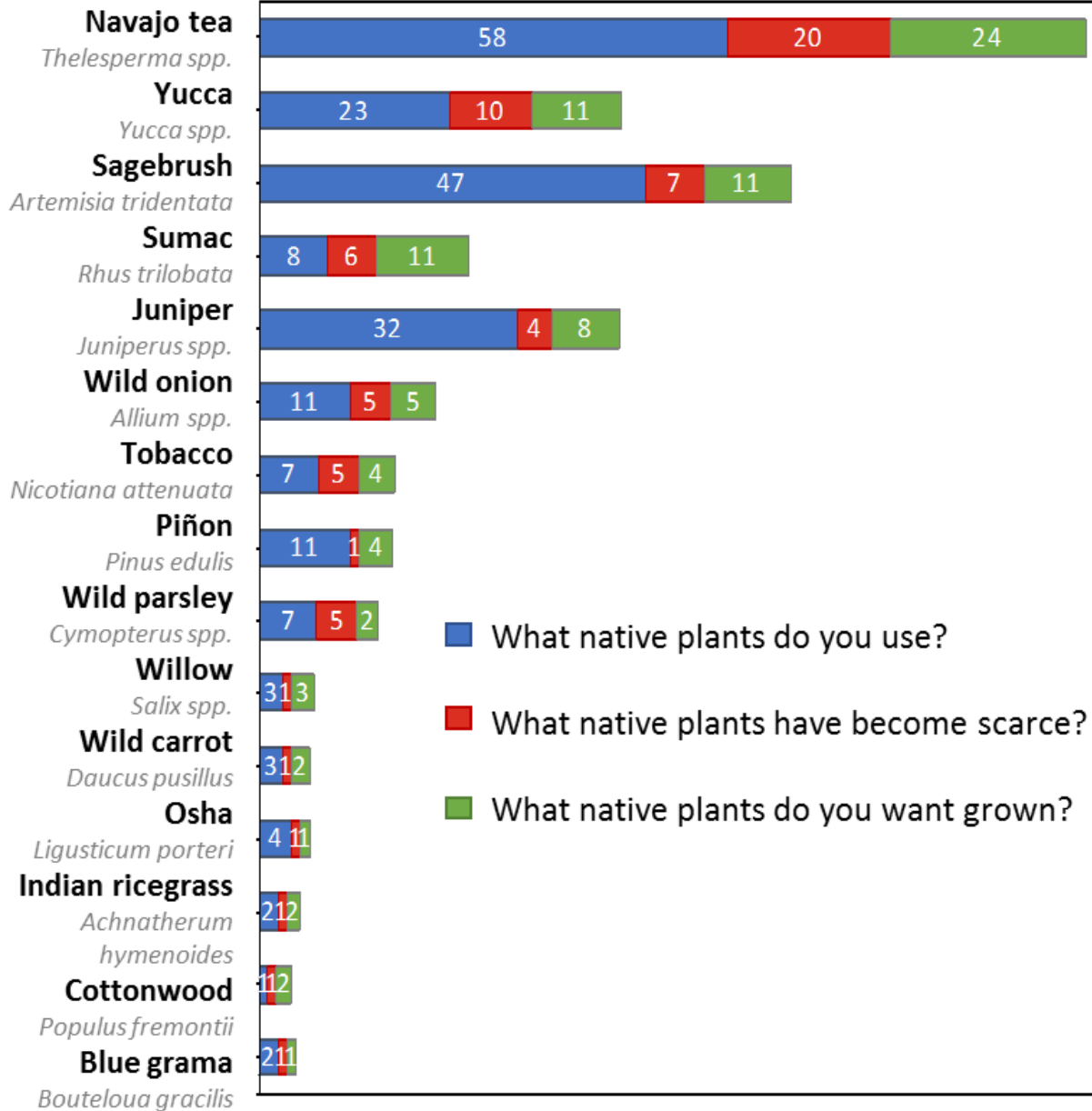
b)



95% use native plants for personal/cultural purposes

Most common means of obtaining native plants, **collect (83%)**

Valid Percent

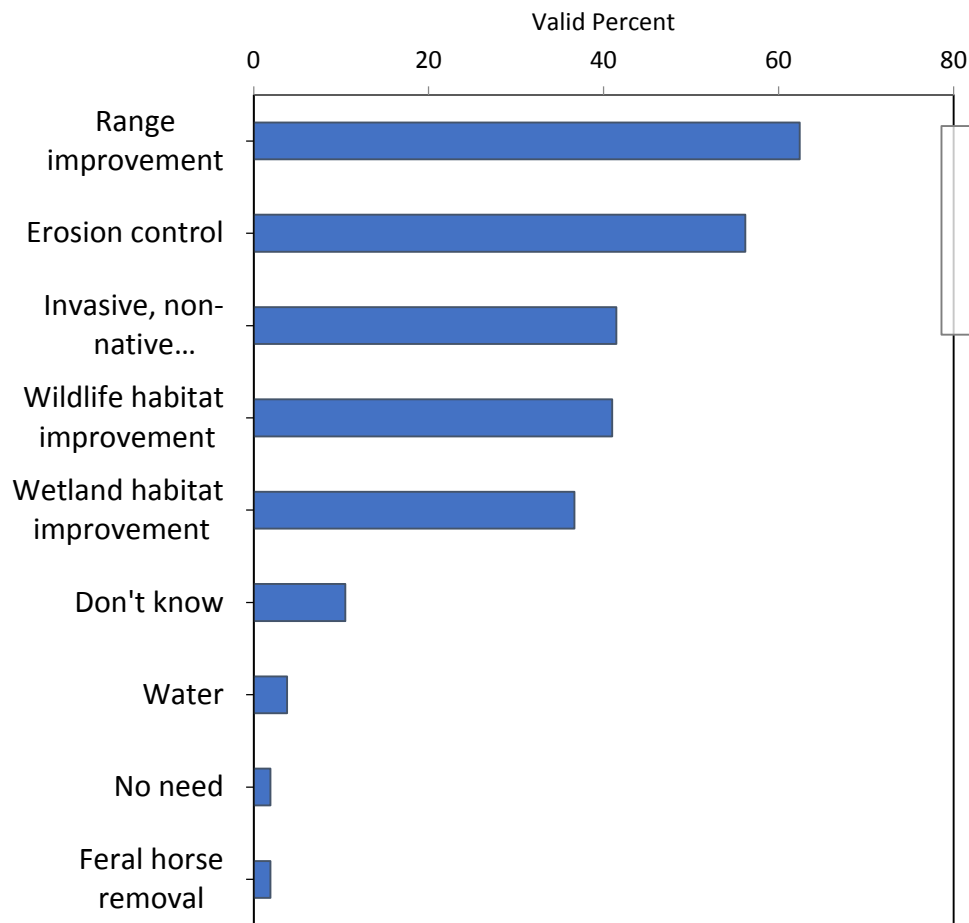


■ What native plants do you use?

■ What native plants have become scarce?

■ What native plants do you want grown?

Community Survey (n=225)



68% want to participate in native plant workshops

66% interested/very interested in growing native plants



Agency Survey

Navajo Nation Native Plant Needs Assessment Survey

Welcome

Total number and percent of survey participants by agency/organization type.

| Agency/organization type | Participants | Percent |
|--------------------------|--------------|---------|
| Navajo Nation | 18 | 39 |
| Federal | 12 | 26 |
| Nonprofit | 8 | 17 |
| State | 4 | 9 |
| Private | 3 | 7 |
| Local | 1 | 2 |
| Total | 46 | 100 |

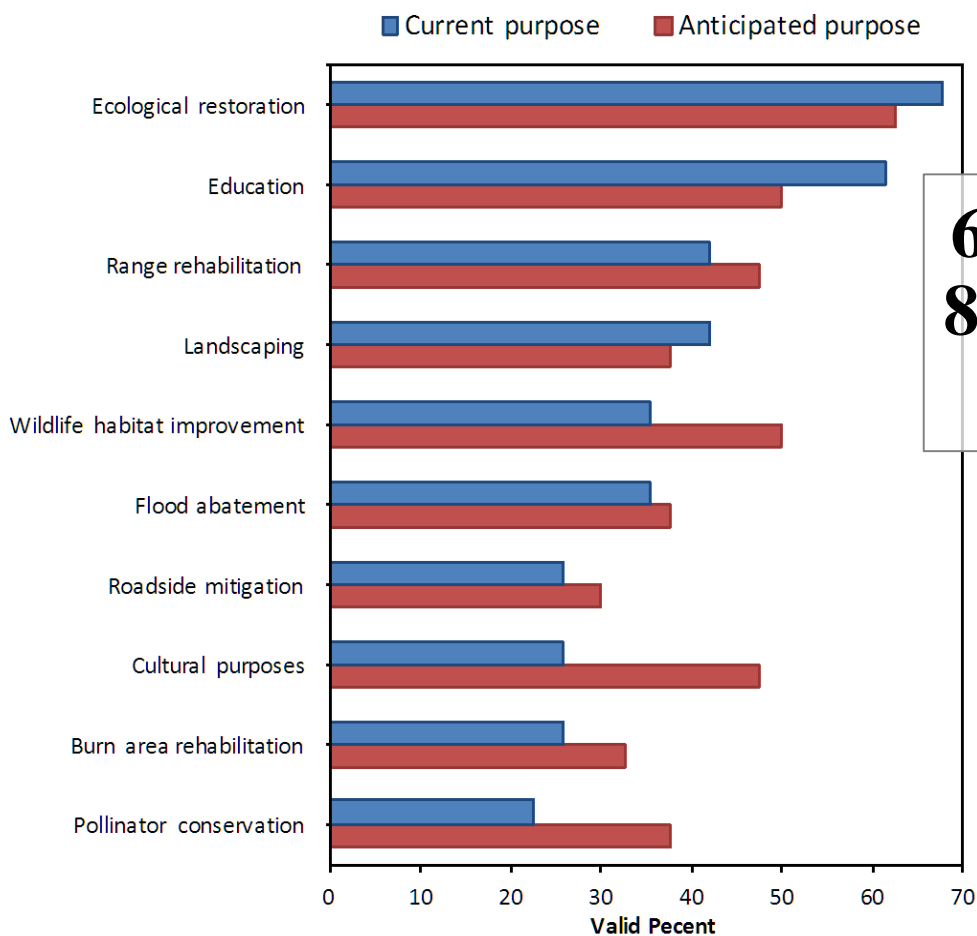
The Navajo Nation is currently conducting a survey on the Navajo Nation's native plant community. This survey will be a contribution to the NNHP's current program on the store, and grow native plant community. This survey is currently being conducted by the NNHP. If you are interested in participating in this study, please contact the NNHP.

OK

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Agency Survey (n=46)



67% currently use plant material,
80% anticipate needing **native**
plant material

81% currently use, **85%**
anticipate needing **native**
plant seed

Agency Survey (n=46)

| | Grass | Forb | Tree/shrub |
|---|--|---|---|
| 1 | Indian ricegrass <i>Achnatherum hymenoides</i> | Globe Mallow <i>Sphaeralcea spp.</i> | Willow <i>Salix spp.</i> |
| 2 | Blue grama <i>Bouteloua gracilis</i> | Rocky Mtn. beeplant <i>Cleome serrulata</i> | Cottonwood <i>Populus fremontii</i> |
| 3 | Alkali sacaton <i>Sporobolus airoides</i> | Rocky Mtn. penstemon <i>Penstemon strictus</i> | Mountain mahogany <i>Cercocarpus montanus</i> |
| 4 | Western wheatgrass <i>Pascopyrum smithii</i> | Colorado four o'clock <i>Mirabilis multiflora</i> | Winterfat <i>Krascheninnikovia lanata</i> |
| 5 | Galleta Grass <i>Pleuraphis jamesii</i> | Butterfly milkweed <i>Asclepias tuberosa</i> | Fourwing saltbush <i>Atriplex canescens</i> |

64% willing to buy from local growers and buyers

68% concerned about genetic/regional source of plant material

A photograph of a nursery or greenhouse. In the foreground, there are several trays filled with small, young plants growing in a grid pattern. The trays are made of dark material and are filled with light-colored gravel. In the background, there are more trays and a building with large windows. The text is overlaid on the image in a white box.

Feasible!

Navajo Native Plant Program
*Produce locally-sourced native plant material for
restoration, conservation, and cultural
preservation on the Navajo Nation*



Next Steps:

Native Plant Needs Assessment Report

Target species list

Secure *More* Funding

- Prioritize restoration sites
- Create database to accession seed collections
- Plan seed collecting targets/schedule
- Navajo Forestry Department greenhouse (Fort Defiance, AZ)

Next Steps:

Develop a division wide native plant policy for the Navajo Division of Natural Resources

Similar to National Seed Strategy

- Provides a framework revegetation on the Navajo Nation
- Prioritize native species over non-native
- Prioritize use of plants that provide multiple ecosystem services (erosion control, pollinator, wildlife habitat)

Questions?

Work With US!

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