

Abstract

The Tolowa Dee-ni' Nation (TDN) is the lead applicant for this preservation and revitalization project called Tolowa Dee-ni' Tr'aa-may-dvn Xwee-nish (Tolowa Dee-ni' Living Plant Library). This project helps preserve the inherent sovereignty of the TDN, promote our tribal identity, and the wellbeing of our people, community, and environment. It also helps the TDN engage with a larger community, ensure a healthy and balanced environment, and preserve and revitalize Tolowa Dee-ni' identity. The project establishes a physical and digital native plant and seed library, and a propagation nursery; both are essential to support tribal and community education about local indigenous environmental practices, language, and cultural traditions. The library and nursery will serve as methods to preserve invaluable cultural information, revitalize community understandings of Tolowa practices, and support the Tribe's sovereignty mission. The main audience for this project includes residents living within a tri-county area in Northern California and Southern Oregon. This area includes one of the largest Native American populations in California and some of the most impoverished groups of people. The time frame of the project spans two years, from September 2019 through August 2021.

The project activities have been divided into four main categories: site preparation (site analysis, site plans, installation of hoop and shade houses, earthwork, nursery bed and irrigation installation, mapping plant placements by ecosystem, building soil bays, and sourcing soil materials), stock procurement (developing plant lists and best management practices for the nursery, identifying plant sources, developing harvest agreements, obtaining permits and procurement plans, collecting seeds and viable cuttings, propagating and procurement of plants, planting ½ an acre of land), seed and plant library physical resources (developing forms, organizing seeds for “check-out” system, developing reference lists, developing plant resources, logging materials into tracking systems, developing a QR plan and displays, designing and ordering signage, advertising library, organizing a grand opening, taking request forms, filing seed orders, and propagation for members), and seed and plant library educational resources (developing seasonal workshops, locating trainers for workshops, holding seasonal seed and plant workshops, collaborating with other libraries).

Goals for the project include: 1) TDN citizens and surrounding community members will have increased access to and improved knowledge of native plants, including plant identification, propagation, cultivation, respectful harvesting practices, and traditional uses; 2) TDN will develop and house a living collection of native plants for demonstration, NDN-tivities (tribal cultural activities) limited harvest, and species preservation/propagation; 3) TDN citizens and surrounding community members will increase proficiency in speaking and recognizing Tolowa plant names and vocabulary. Desired outcomes for the project consist of completing site plans, establishing annual schedules, harvesting cuttings, seeds, and juvenile plants of at least 30 native species, planting at least 30 native species, completing four seasonal workshops per year, completing all earthwork and infrastructure projects, propagating at least 50 of each 15 species each year, cataloging a digital and physical seed library with native, annual, and perennial food seeds and distributing seeds to at least 50 tribal citizens, and developing 30 specific QR codes. Participant outcomes include being able to identify at least 10 native plants, access to seeds for home planting, measured increases in knowledge of traditional cultivation and propagation practices, and increased Tolowa plant word proficiency.

Narrative
Statement of Need

The Tolowa Dee-ni' Nation (TDN) is a federally-recognized and self-governed Tribe of Tolowa Dee-ni' people. TDN's ancestral homelands, *Taa-laa-waa-dvn*, stretches along the Pacific coast from Northern California into Southern Oregon (Supporting Document #1). Today, the heart of the Tribe and government resides three miles south of the Oregon-California border in Smith River, California. TDN's reservation is characterized by a fragmented patchwork of land parcels within California's Del Norte County, and has increased in size from four acres to almost 900 acres since the 1980's.

The arrival of settlers to the *Taa-laa-waa-dvn* in the 1850's launched Tolowa genocide, relocation, and forced subjugation sponsored by the U.S. government. By the late 1800's, a once flourishing Tolowa population, thought to be near 10,000, was reduced to only several hundred. Today, more than 1,771 Tribal citizens live all around the world, though over half reside near or inside of the *Taa-laa-waa-dvn*. Because most tribal citizens live within the immediate five-county area, TDN's service range includes Del Norte (527 TDN citizens) and Humboldt (117 TDN citizens) counties of California, and Coos (38 TDN citizens), Curry (212 TDN citizens), and Josephine (34 TDN citizens) counties of Oregon. The audience served by this particular project include all TDN citizens, and nontribal citizens residing within the three counties located closest to the TDN's reservation in Smith River: Del Norte County (28,610 residents), Curry County (22,813 residents), and Humboldt County (134,623 residents).¹ Noncitizens are included as an organizational audience to support community-wide education of TDN history, cultural practices, and environmental stewardship.

Area residents comprise a vast array of spoken languages, cultures, socio-economic backgrounds, and educational levels. A small number of individuals in Del Norte, Curry, and Humboldt counties speak a language other than English at home (12.7%, 4.9%, and 11.6% , respectively).² Native Americans encompass the third largest racial identity in this area, comprising 9.4% of DNC (the highest in the state of California); 2.5% of CC; and 6.3% of HC.³ Concerning educational attainment, 18.6% (DNC), 9.5%, (CC) and 10.1% (HC) of citizens do not possess high school-level educations.⁴

Today, unemployment rates exceed the national average in all three counties.⁵ High unemployment may contribute to the extreme poverty levels experienced across the region: 24.6% in DNC; 15.5% in CC; and 19.7% in HC, all well above the national average rate of 12.3%.⁶

Historically, the economy of this region was vigorous. Throughout the 1900's, the local economy was driven by resource extraction and large portions of these communities worked in the logging and fishing industries. Today, the dominant economic sectors in DNC include

¹ Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2018; Source: U.S. Census Bureau, Population Division <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

² County Comparison:

<https://www.census.gov/quickfacts/fact/table/currycountyoregon,humboldtcountycalifornia,delnortecountycalifornia/PST045218>

³ Ibid.

⁴ County Comparison:

<https://www.census.gov/quickfacts/fact/table/currycountyoregon,humboldtcountycalifornia,delnortecountycalifornia/PST045218>

⁵ County Unemployment Rates: <https://fred.stlouisfed.org/categories/27281>

⁶ Income and Poverty in the US: <https://www.census.gov/library/publications/2018/demo/p60-263.html>

educational services, public administration, management, and sales.⁷ In all three counties, the fastest growing economic industry is tourism.⁸

Before Contact, the Tolowa Dee-ni' met their needs through cultural practices and relationships with the earth's bounty that they had maintained since time immemorial. The natural world served as a central force to tribal identity and provided the basis for Tolowa Dee-ni' lifeways that physically, culturally, spiritually, and socially sustained the people. Tribal populations traveled freely throughout the *Taa-laa-waa-dvn* and harvested food, seeds, medicinal supplies, and other utilitarian materials based on known seasonal cycles. Plants played a central role in the cultural, spiritual, and social norms of the Tribe. For millennia, the *Taa-laa-waa-dvn* provided rich and varied plants for Tolowa peoples to harvest from coastal, riverine, upland oak forest, and redwood forest ecosystems. They adhered to strict spiritual protocols that outlined the use of Nvn-nvst-‘a~ (Mother Earth) and the preservation of her natural resources. In addition, Tolowa Dee-ni' actively cultivated and maintained botanical resources across the *Taa-laa-waa-dvn*, employed plant propagation techniques to grow traditional plants across ecosystems, and maintained indigenous forms of agriculture based on Traditional Ecological Knowledge (TEK) passed down through generations. After colonization, TDN's access to traditional food sources and abilities to manage the *Taa-laa-waa-dvn* dramatically changed. Today, accessing traditional food sources in large enough quantities for subsistence proves difficult, if not impossible, for most tribal people.

The post-contact era began in the 1850's and included the Tolowa holocaust and subsequent reduction of tribal populations; repeated forced relocations and dramatically reduced access/rights to the *Taa-laa-waa-dvn*; boarding schools where students were forcibly deculturized from their tribal languages and cultural traditions; and the dismantling of traditional tribal resource systems; all in service of the overall separation of Tolowa Dee-ni' from their traditional lifeways.

The destruction of Tolowa settlements and constant relocation of Tolowa Dee-ni' created a reality wherein tribal citizens became unfamiliar with traditional language, landscapes, and the vast resources existing with the *Taa-laa-waa-dvn*. In place of indigenous knowledge and practices, colonizing forces brought European cultural and language traditions. These included Western agricultural practices such as the introduction of invasive species, row-cropping, and ranching of domesticated livestock. The introduction of each practice contributed to the degradation of the *Taa-laa-waa-dvn* and further destruction of the Tolowa culture. Colonizers mischaracterized indigenous water and land resources as economic commodities instead of interconnected lifeway systems; and thus, created a legacy of environmental destruction and oppressive land management across the *Taa-laa-waa-dvn*. The rise of colonial resource extraction-based economies such as logging, mining and fishing, further separated Tolowa Dee-ni' from traditional ecologically-based agricultural practices. In addition, 'protections' set forth by federal and state land management agencies created barriers for TDN citizens to access and harvest their traditional plants. Currently, almost 70% of Del Norte County is under federal land management, managed with restrictive harvest policies that do not recognize the inherent subsistence rights of the Tolowa Dee-ni'.

In addition to this loss of sovereignty, tribal citizens also experienced dramatic losses of cultural traditions, including the rights to speak the native Tolowa language. Before colonization,

⁷ Del Norte Profile: <https://www.labormarketinfo.edd.ca.gov/file/census2012/delnodp2012.pdf>

⁸ TDN: Sowing Seeds for Local Abundance Feasibility Study: <https://www.tolowa-nsn.gov/wp-content/uploads/2018/07/Sowing-Seeds-for-Local-Abundance-Feasibility-Study.pdf>

Tolowa was spoken in villages throughout the *Taa-laa-waa-dvn*. In 2011, a study on the Tolowa language found that the last fluent speaker may have died before 1990.⁹ However, according to tribal records, the last first language speaker died in 2012. Today, only one high level (speaks full narratives and tells stories) speaker exists within the Tribe. No first-language Tolowa speakers exist in the world today. However, to help preserve the language, tribal members began a revitalization program in the 1960s and have since established the Tolowa Dee-ni' Alphabet.¹⁰ Currently, the Tolowa language is listed with Reawakening status which means that the TDN community is working to establish more uses and speakers for the language. Though colonization brought a need for many cultural preservation issues to the Tribe, the two most prevalent needs addressed by this project are the need to preserve tribal sovereignty through a return to traditional land management practices; and the need to preserve tribal language and cultural knowledge around plants of the *Taa-laa-waa-dvn*.

Many other native communities, such as the Cherokee Nation, have created living libraries to increase food sovereignty in their communities.¹¹ This project was loosely inspired by the Cherokee Nation's seed library project, but further develops the educational abilities of a seed library by adding in a traditional language component, providing access to the general public, and hands-on workshop/tourism initiatives. Currently, no living libraries exist to support food sovereignty education and botanical literacy for TDN or others living within the *Taa-laa-waa-dvn*. However, TDN has started projects that make it easier to create a living library. For example, the Sri'-srwvlh (Gilbert Creek) Community Garden is currently being converted to a native plants propagation site in order to provide locally-produced plants to TDN departments, projects, and citizens. The proposed project expands the garden conversion to use Sri'-srwvlh as an educational space that houses a live collection of plants that were traditionally found throughout the *Taa-laa-waa-dvn*. These plants include those traditionally used for food, medicine, and materials at a site easily accessible to Tribal citizens year-round. In addition, the TDN Education Department houses projects that support Tolowa language learning and the cultural education of tribal peoples. The Education Department will work in tandem with the CFS department to assist with plant translations and pronunciations in the Tolowa language, as necessary. The proposed project expands the communities served by existing projects and focuses more strongly on cultural and horticultural education and thus, better supports a community-based system for cultural preservation.

TDN history illustrates pressing needs for the community to preserve its culture, languages, and practices. As the Tribe works to increase land ownership, strengthen sovereignty, and restore its cultural history, it is imperative for TDN people and the surrounding communities to be educated about traditional *Taa-laa-waa-dvn* management and harvesting practices. The proposed project establishes a living, native plant and seed library and a plant propagation nursery at Sri'-srwvlh. The library and nursery will support the preservation of important aspects of TDN cultural history and tradition. This project will repurpose Sri'-srwvlh as a learning space to house a live collection of plants found throughout the *Taa-laa-waa-dvn* including those traditionally used for food, medicine, and materials. This living library collection will educate community members about native plant identification, Tolowa plant names, respectful and sustainable harvesting, processing and uses, propagation, and cultivation techniques. Activities

⁹ Golla, Victor (2011). *California Indian Languages*. Berkeley: University of California Press.

¹⁰ Bommelyn, Loren (1995). *Now You're Talking Tolowa*. Arcata: Humboldt State University, Center for Indian Community Development.

¹¹ <https://webapps.cherokee.org/SeedBank>

will be structured to preserve and revitalize TDN traditional plant knowledge and language. Finally, establishing the living plant and seed library provides stock material for seed collection and other forms of native plant propagation. The native plants and seeds will be used for distribution to TDN citizens and other community members as part of the library program and support efforts for the TDN to produce the required native plants for many in-house economic development and restoration projects.

The project will be useful to the following audiences: All age levels of TDN citizens and nontribal citizens of California's Del Norte and Humboldt counties, and Curry County, Oregon. In addition, since the community experiences such high rates of poverty, a large portion of the audience will also include individuals at or below the federal poverty level. The project will also serve environmental scientists, botanists, linguists, agricultural entities, students, cultural preservationists from other Tribes, land managers, etc. who want to gain an understanding of TDN TEK-based science, best management practices, and culture specific to native plants and language.

The TDN's Department of Community and Family Services (CFS) was established by Tribal Council in 2006 to reassure a healthy community by providing services that address the unique social, cultural, and economic needs of the tribal family with accountability, integrity, and respect. CFS oversees multiple programs and projects to support the health of tribal citizens and to sustain the sovereign future of the Tribe. The Tribal Family Resource Library (TFRL) is located within the Tribal Family Resource Center at CFS. The TFRL is staffed and open from Monday to Friday, 8:00am-5:00pm, and during special events. The TFRL's guiding mission is to support lifelong learning, advance knowledge, and strengthen tribal citizens and the community in a manner consistent with the overall goals of IMLS. Currently, the TFRL provides 667 registered borrowers access to almost 1500 native items. The TFRL also grants members computer and Wi-Fi access for educational and job seeking purposes. The resource library is staffed by 1 employee. Also embedded within the CFS department is a food and agriculture-based project called, Srtaa~Shvm (hii) Mvlh Ghee-saa-ghit-na' (Good Food Makes Us All Healthy). This project concentrates on four main categories: design and installation of perennial food forests, support and expansion of existing community gardens, community education that promotes food security and self-sufficiency, and financial support for expanding school gardens. The Srtaa~ Shvm (hii) Mvlh Ghee-saa-ghi-na' project and Tribal Family Resource Library identify as collaborators for the proposed project.

Three main assessments were conducted from 2017-2019. During the summer of 2017, a community survey found that almost three-quarters of respondents eat locally produced food on a regular basis and 70% of tribal respondents are interested in eating more locally-sourced foods. In 2018, the TDN conducted an agricultural feasibility study and discovered that many traditional food sources have been depleted in the *Taa-laa-waa-dvn*.¹² The study indicated that losses of native food sources decreases tribal food sovereignty and increases food insecurity, but identifies opportunities for the Tribe to become an active producer in the local food system.¹³ Furthermore, the study specified tourism as a growing industry in Del Norte County, and the Sri'-srwvlh property as a high potential location for a tribal-operated agricultural tourist site. The study also recommended the development of a nursery that specializes in culturally significant traditional plants for the public and tribal citizens and assists in the propagation of other agricultural enterprises, citing the lack of any local native plant producers. Concerning language,

¹² Tolowa Dee-ni' Nation, 2008. Sowing Seeds for Local Abundance Feasibility Study.

¹³ Ibid.

a 2019 tribal analysis showed that the TDN contains only one proficient language speaker and two language teachers. The report identifies an urgent need for tribal citizens of all ages to have access to language instruction to help preserve tribal heritage and culture. Additionally, recent meetings with the TDN citizenship at large and stakeholders called for comprehensive language learning in the community. Tolowa Dee-ni' language is a living and vital language that has the ability to match any other in the world for expressiveness and beauty.

Since time immemorial, the Tolowa Dee-ni' maintained a systemic understanding of tribal needs, the *Taa-laa-waa-dvn*, and how to live in harmony within the natural world. Tolowa people lived in a sustainable manner throughout the *Taa-laa-waa-dvn* and continue to possess cultural knowledge concerning best proven plant management practices for regional ecosystems. Colonization and western progress have not proven beneficial for the overall cultural preservation of the Tribe nor for health of plant populations existing within the varied ecosystems of the *Taa-laa-waa-dvn*.

Project Design

The project consists of four phases that lead to the development of a physical living, native plant and seed library, a plant nursery that will be used for the propagation of native plants, the creation of community education workshops, and the development of a QR code-based digital plant library that contains Tolowa-derived plant information and audio files with Tolowa plant word pronunciations. The four phases of the project include site preparation, stock procurement, seed and plant library physical resource activities, and seed and plant library educational resource activities. The site preparation phase will be conducted from September 2019 to July 2020. The stock procurement phase will occur during all months of the two-year project. The development of physical resources for the seed and plant library will start in October 2019 and extend throughout the rest of the grant period. The development of educational resource activities will occur primarily on a seasonal basis throughout the grant period, highlighting the seasonality of traditional plant resource management and harvest.

The library and nursery will support the preservation and promotion of important aspects of TDN cultural history and tradition by: 1) preserving tribal food sovereignty and traditional plant management techniques through the establishment of a living, native plant and seed library and plant propagation nursery; 2) preserving cultural understandings and access to traditional TDN food, medicine, and utilitarian plant materials through the creation of the library; 3) preserving tribal language through the creation of digital audio files and written words to support native plant literacy; and 4) preserving tribal cultural plant knowledge through hands-on workshops and living library tours.

The required activities for this project include site preparation, stock procurement, seed and plant library physical resources, and seed and plant library educational resources. Community partners include the following TDN Departments: Public Works and Facilities (PWF); Natural Resources (NR); Office of Self Governance (OSG); Native American Graves and Repatriation Act (NAGPRA); Tribal Heritage Preservation Office (THPO); Educational Department (ED); and Information Technologies (IT); Community and Family Services (CFS), and particularly the CFS Food and Garden Coordinator (FG). Other community partners include Dan Burgess from California State Parks and Rural Human Services (DB); Jacobs Consulting (JC); and libraries existing within the tri-county service area (L); the US Department of Agriculture Natural Resource Conservation Service (NRCS); Community Food Council for Del Norte and Tribal Lands (FC); and the Tolowa Dee-ni' Nation Standing Natural

Resources and Harvesting Committee (HC). The use abbreviations denote organizational involvement in certain activities.

1. Activities concerning site preparation include conducting a site analysis (FG; NRCS; FC; DB), preparing site plans (FG; NRCS; FC), installing hoop and shade houses (PWF;FG), completing earthwork at site (PWF;FC), building nursery beds (PWF;FC), installing irrigation (PWF;FG), mapping plant placements (FG; NR; NRCS; FC; JC), and building soil bays (PWF; FG)
2. Stock procurement activities include developing a target plant list for the project period (FG; NR), developing best management practices for the nursery (FG; FC; NRCS; DB; JC; NR), identifying best plant sources (FG; NR), developing harvesting agreements with California State Parks and the National Park Service (some agreements are already in place but need expansion) (FG; OSG; THPO; NR; DB), obtaining permits and procurement plans for TDN properties in collaboration with the Harvest Committee (FG; NR; HC), procuring plants (NR; DB; FG), collecting seeds (NR; DB; FG), collecting viable cuttings (NR FG), propagating plants (NR, FG, DB), planting approximately ½ acre of native plants (NR; FG).
3. Seed and plant library physical resource activities include the development of plant and seed request forms (FG; JC), organizing and storing seeds for library purposes (FG), developing list of TDN plant resources (cultural, language, and recordings) (FG; NR; ED:THPO; JC), logging materials into a tracking system (FG; CFS), developing QR code plan for at least 20 plants (FG; NR; ED: IT), working with the IT department to develop QR displays (FG; IT; NR; ED), designing and ordering signage for Native Plant Library (FG; NR; ED), advertising library (FG; L), organizing a grand opening event (FG) begin taking request forms (FG), filling seed orders (FG), propagation for members (FG), etc.
4. Seed and plant library educational resource activities include the development of a seasonal workshop schedule (FG; NR; ED), locating trainers and advertising workshops (FG), holding seasonal seed and plant workshops (FG; DB; L; ED; JC), and collaborating with other libraries (FG; L).

Preliminary site assessments were conducted through an agricultural study which illustrated the best areas for constructing the living library and nursery.¹⁴ In addition, native plant lists have already been compiled. TDN is not aware of any IMLS projects that closely relate to this proposal. The digital component of the project will exist in the form of QR codes that reside within the physical library garden, beside their corresponding plants. When a workshop participant, visitor, or tribal citizen scans a QR code with a cellular phone, they will gain access to the digital plant library that contains Tolowa-derived information regarding the associated plants and audio files that indicate proper Tolowa names and pronunciations of each plant, as well as a list of corresponding resources at the Tribal Family Resource Library available for checkout.

Impact

The goals for the project include:

¹⁴ TDN: Sowing Seeds for Local Abundance Feasibility Study: <https://www.tolowa-nsn.gov/wp-content/uploads/2018/07/Sowing-Seeds-for-Local-Abundance-Feasibility-Study.pdf>

1. TDN citizens and surrounding community members will have increased access to and improved knowledge of native plants, including the plant identification, propagation, cultivation, respectful harvesting practices, and traditional purposes
2. TDN will house a living collection of native plants for demonstration, NDN-tivities, limited harvest (ex. Swamp tea), and species preservation/propagation
3. TDN citizens and surrounding community members will gain an increased proficiency in speak and recognizing Tolowa plant names and vocabulary

Desired results for this project include:

1. Completing site plans for the physical locations of the living library and propagation nursery
2. Completing an annual planting, propagation, and harvesting schedule for native species
3. Harvesting, cutting seeds, and juvenile plants of at least 30 native species for plant collection and propagation.
4. Planting at least 15 representatives of native species in the first year and an additional 15 in the second year
5. Completing four seasonal workshops per year
6. Completing all earthwork and infrastructure work for the garden library and nursery
7. Propagating at least 50 of each 15 species in the first year and an additional 50 of each 15 species the second year
8. Cataloging a digital and physical seed library with native, annual, and perennial food seeds and distributing seeds to at least 20 tribal citizens in the first year and at least 30 tribal citizens in the second year
9. Developing 15 species specific QR codes for the garden in the first year and 15 additional QR codes in the second year

Desired participant outcomes include:

1. The ability to identify at least 10 native plants.
2. The ability to readily access seeds for home planting
3. Measured increases in knowledge of traditional cultivation and propagation practices
4. Increased proficiency in speaking and recognizing Tolowa plant words

These outcomes will increase overall tribal food sovereignty and contribute to individual knowledge about the natural world, indigenous practices, and cultural appreciation. The TDN has established evaluation and monitoring processes to understand and measure impact across all activities. For example, all participants in library membership, workshops or NDN-tivities, and other educational activities will be recorded and surveyed. Progress goals will be measured through the quantitative and qualitative analysis of surveys from library and workshop participants. Surveys will be given after workshops or other NDN-tivities to measure success rates. An accurate accounting of the number and types of species planted, propagated, and harvested will support tribal efforts to measure other desired results. Progress and effectiveness of the project will be monitored through monthly reports prepared by project managers and delivered to Tribal Council and the TDN citizenship. Accurate record keeping has been a requirement of the CFS department since its inception, and thus, reliable information is expected without bias. No expected risks for inaccuracies exist.

Communications Plan

Due to the large service area, the communication plan will employ a variety of publishing options, including traditional print media and social media, the Tolowa Dee-ni' Nation's website, and community calendars around the service area to promote content, services, and workshops. The project administrator will be responsible for communicating through sites like Facebook about the program schedule of events, how people can participate in workshops, and other relevant information about becoming a member of the library. Results from the project will be shared through newsletters, presentations at Tribal Council meetings, and libraries within the three-county service area, and on social media to ensure accessibility and open-access.

The TDN will work in collaboration with other neighboring Tribes such as the Yurok Tribe (who supports this project but was unable to get on Tribal Council's agenda to draft a letter of support before the due date for this proposal), libraries in all area counties, scientists, botanists, and propagation experts to expand capacity and build community connections. Most community partners will collaborate with technical assistance, workshop facilitation, and knowledge sharing. We will work to maintain collaborative resources and continue finding other community organizations to support the project. The Project Coordinator and CFS department will be responsible for outreach, promotion, and dissemination of information.

Sustainability

The TDN will act as a secured institutional buyer for native plants that are propagated by this project. Several planned TDN landscaping projects will use plants from the nursery in the future including the modern Dat-naa-svt Housing Village and Xaa-wan'-k'wv Village and Resort. We are also working within the tribal organization to use the nursery to support TDN programmatic goals through institutional and public sales, priced to cover the cost of production and support the ongoing plant and seed library program. In this case, institutional and public sales (either by order, events, etc.) would continue to financially support ongoing IMLS activities.

The project will provide an effective way to support Tribal goals for sovereignty, preservation, and food security. Gaining sovereignty around natural resources, particularly traditional foods, can help TDN enhance citizen knowledge and establish practices to support a subsistence economy. In addition, transitioning to a state of reliance upon traditional foods will greatly improve health, nutrition, and food system control for TDN and surrounding communities. The project will also support the Tribe's ability to preserve cultural knowledge, language, and traditional practices within the tribal community, while increasing the cultural competency of the greater, general community. This may lead to systemic changes that increase community value, participation-in and appreciation-for Tolowa culture and environmental management practices. Furthermore, this project may also lead to increased access to culturally important resources, which will aid in improving the physical, mental and emotional health of the Tolowa Dee-ni' citizenship. Ultimately, creating a living plant library will invest in the education of the community and the preservation of cultural knowledge, language, and plants. This will help restore Tolowa lifeways to TDN and its people.

All digital information will be backed up on multiple physical devices and in various digital locations to preserve and protect information from being lost. The TDN Family Resources Library will maintain the digital collection for the foreseeable future.

Activity Timeline--IMLS Enhancement

Activity	2019			
	September	October	November	December
Site Preparation				
Conduct site analysis	■	■		
Prepare site plans		■	■	
Install hoop house				
Install shade house				
Complete earthworking at site		■	■	
Build nursery beds				
Install irrigation				
Map plant placements (by ecosystem)				■
Build soil bays, source soil materials		■		
Stock Procurement				
Develop target plant list for project period	■	■	■	■
Work with partners to develop Best Management Practices for nursery	■	■	■	■
Identify best sources for plant (TDN property, nursery, or other)			■	■
Develop agreements with CSP, NPS				
Work with Harvest Committee for permitting/procurement plans			■	■
Procure plants				■
Collect seeds		■	■	■
Collect viable cuttings		■	■	■
Propagate plants by various methods		■	■	■
Plant out approximately 1/2 acre of native plants onsite per plans			■	■
Seed and Plant Library--Physical resources				
Develop plant and seed request forms				■
Organize seeds for easy "check out," store at physical book library				
Develop list of relevant plant reference books			■	■
Develop list of TDN plant resources (cultural, language, recordings)			■	■
Log all materials into IMLS tracking system				
Develop QR plan for selected plants				
Work with IT to develop QR displays			■	■
Design and order signage for Native Plant Library (Ethnobotanical library?)				
Advertise library				
Grand opening event				
Begin taking request forms, filling seed orders, propagation for members				
Seed and Plant Library--Educational Resources				
Develop seasonal workshop schedule with other departments			■	■
Locate trainers, advertise workshops				
Hold seasonal seed and plant workshops (all of this language can be changed)		■		
Collaborating with other libraries	■	■	■	■

Activity Timeline--IMLS Enhancement	2021							
Activity	January	February	March	April	May	June	July	August
Site Preparation								
Conduct site analysis								
Prepare site plans								
Install hoop house								
Install shade house								
Complete earthworking at site								
Build nursery beds								
Install irrigation								
Map plant placements (by ecosystem)								
Build soil bays, source soil materials								
Stock Procurement								
Develop target plant list for project period								
Work with partners to develop Best Management Practices for nursery								
Identify best sources for plant (TDN property, nursery, or other)								
Develop agreements with CSP, NPS								
Work with Harvest Committee for permitting/procurement plans								
Procure plants								
Collect seeds								
Collect viable cuttings								
Propagate plants by various methods								
Plant out approximately 1/2 acre of native plants onsite per plans								
Seed and Plant Library--Physical resources								
Develop plant and seed request forms								
Organize seeds for easy "check out," store at physical book library								
Develop list of relevant plant reference books, purchase								
Develop list of TDN plant resources (cultural, language, recordings)								
Log all materials into IMLS tracking system								
Develop QR plan for selected plants								
Work with IT to develop QR displays								
Design and order signage for Native Plant Library (Ethnobotanical library?)								
Advertise library								
Grand opening event								
Begin taking request forms, filling seed orders, propagation for members								
Seed and Plant Library--Educational Resources								
Develop seasonal workshop schedule with other departments								
Locate trainers, advertise workshops								
Hold seasonal seed and plant workshops (all of this language can be changed)								
Collaborating with other libraries								



DIGITAL PRODUCT FORM

Introduction

The Institute of Museum and Library Services (IMLS) is committed to expanding public access to federally funded digital products (e.g., digital content, resources, assets, software, and datasets). The products you create with IMLS funding require careful stewardship to protect and enhance their value, and they should be freely and readily available for use and re-use by libraries, archives, museums, and the public. Because technology is dynamic and because we do not want to inhibit innovation, we do not want to prescribe set standards and practices that could become quickly outdated. Instead, we ask that you answer questions that address specific aspects of creating and managing digital products. Like all components of your IMLS application, your answers will be used by IMLS staff and by expert peer reviewers to evaluate your application, and they will be important in determining whether your project will be funded.

Instructions

All applications must include a Digital Product Form.

- Please check here if you have reviewed Parts I, II, III, and IV below and you have determined that your proposal does NOT involve the creation of digital products (i.e., digital content, resources, assets, software, or datasets). You must still submit this Digital Product Form with your proposal even if you check this box, because this Digital Product Form is a Required Document.

If you ARE creating digital products, you must provide answers to the questions in Part I. In addition, you must also complete at least one of the subsequent sections. If you intend to create or collect digital content, resources, or assets, complete Part II. If you intend to develop software, complete Part III. If you intend to create a dataset, complete Part IV.

Part I: Intellectual Property Rights and Permissions

A.1 What will be the intellectual property status of the digital products (content, resources, assets, software, or datasets) you intend to create? Who will hold the copyright(s)? How will you explain property rights and permissions to potential users (for example, by assigning a non-restrictive license such as BSD, GNU, MIT, or Creative Commons to the product)? Explain and justify your licensing selections.

A.2 What ownership rights will your organization assert over the new digital products and what conditions will you impose on access and use? Explain and justify any terms of access and conditions of use and detail how you will notify potential users about relevant terms or conditions.

A. 3 If you will create any products that may involve privacy concerns, require obtaining permissions or rights, or raise any cultural sensitivities, describe the issues and how you plan to address them.

Part II: Projects Creating or Collecting Digital Content, Resources, or Assets

A. Creating or Collecting New Digital Content, Resources, or Assets

A.1 Describe the digital content, resources, or assets you will create or collect, the quantities of each type, and the format(s) you will use.

A.2 List the equipment, software, and supplies that you will use to create the content, resources, or assets, or the name of the service provider that will perform the work.

A.3 List all the digital file formats (e.g., XML, TIFF, MPEG) you plan to use, along with the relevant information about the appropriate quality standards (e.g., resolution, sampling rate, or pixel dimensions).

B. Workflow and Asset Maintenance/Preservation

B.1 Describe your quality control plan. How will you monitor and evaluate your workflow and products?

B.2 Describe your plan for preserving and maintaining digital assets during and after the award period of performance. Your plan may address storage systems, shared repositories, technical documentation, migration planning, and commitment of organizational funding for these purposes. Please note: You may charge the federal award before closeout for the costs of publication or sharing of research results if the costs are not incurred during the period of performance of the federal award (see 2 C.F.R. § 200.461).

C. Metadata

C.1 Describe how you will produce any and all technical, descriptive, administrative, or preservation metadata. Specify which standards you will use for the metadata structure (e.g., MARC, Dublin Core, Encoded Archival Description, PBCore, PREMIS) and metadata content (e.g., thesauri).

C.2 Explain your strategy for preserving and maintaining metadata created or collected during and after the award period of performance.

C.3 Explain what metadata sharing and/or other strategies you will use to facilitate widespread discovery and use of the digital content, resources, or assets created during your project (e.g., an API [Application Programming Interface], contributions to a digital platform, or other ways you might enable batch queries and retrieval of metadata).

D. Access and Use

D.1 Describe how you will make the digital content, resources, or assets available to the public. Include details such as the delivery strategy (e.g., openly available online, available to specified audiences) and underlying hardware/software platforms and infrastructure (e.g., specific digital repository software or leased services, accessibility via standard web browsers, requirements for special software tools in order to use the content).

D.2 Provide the name(s) and URL(s) (Uniform Resource Locator) for any examples of previous digital content, resources, or **assets** your organization has created.

Part III. Projects Developing Software

A. General Information

A.1 Describe the software you intend to create, including a summary of the major functions it will perform and the intended primary audience(s) it will serve.

A.2 List other existing software that wholly or partially performs the same functions, and explain how the software you intend to create is different, and justify why those differences are significant and necessary.

B. Technical Information

B.1 List the programming languages, platforms, software, or other applications you will use to create your software and explain why you chose them.

B.2 Describe how the software you intend to create will extend or interoperate with relevant existing software.

B.3 Describe any underlying additional software or system dependencies necessary to run the software you intend to create.

B.4 Describe the processes you will use for development, documentation, and for maintaining and updating documentation for users of the software.

B.5 Provide the name(s) and URL(s) for examples of any previous software your organization has created.

C. Access and Use

C.1 We expect applicants seeking federal funds for software to develop and release these products under open-source licenses to maximize access and promote reuse. What ownership rights will your organization assert over the software you intend to create, and what conditions will you impose on its access and use? Identify and explain the license under which you will release source code for the software you develop (e.g., BSD, GNU, or MIT software licenses). Explain and justify any prohibitive terms or conditions of use or access and detail how you will notify potential users about relevant terms and conditions.

C.2 Describe how you will make the software and source code available to the public and/or its intended users.

C.3 Identify where you will deposit the source code for the software you intend to develop:

Name of publicly accessible source code repository:

URL:

Part IV: Projects Creating Datasets

A.1 Identify the type of data you plan to collect or generate, and the purpose or intended use to which you expect it to be put. Describe the method(s) you will use and the approximate dates or intervals at which you will collect or generate it.

A.2 Does the proposed data collection or research activity require approval by any internal review panel or institutional review board (IRB)? If so, has the proposed research activity been approved? If not, what is your plan for securing approval?

A.3 Will you collect any personally identifiable information (PII), confidential information (e.g., trade secrets), or proprietary information? If so, detail the specific steps you will take to protect such information while you prepare the data files for public release (e.g., data anonymization, data suppression PII, or synthetic data).

A.4 If you will collect additional documentation, such as consent agreements, along with the data, describe plans for preserving the documentation and ensuring that its relationship to the collected data is maintained.

A.5 What methods will you use to collect or generate the data? Provide details about any technical requirements or dependencies that would be necessary for understanding, retrieving, displaying, or processing the dataset(s).

A.6 What documentation (e.g., data documentation, codebooks) will you capture or create along with the dataset(s)? Where will the documentation be stored and in what format(s)? How will you permanently associate and manage the documentation with the dataset(s) it describes?

A.7 What is your plan for archiving, managing, and disseminating data after the completion of the award-funded project?

A.8 Identify where you will deposit the dataset(s):

Name of repository:

URL:

A.9 When and how frequently will you review this data management plan? How will the implementation be monitored?