

The Native Plant Propagation Protocol Database: 16 years of sharing information

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ABSTRACT

The Native Plant Propagation Protocol Database was launched in 2001 to provide an online mechanism for sharing information about growing native plants. It relies on plant propagators to upload their protocols (detailed directions for growing particular native plants) so that others may benefit from their experience. Currently the database has nearly 3000 protocols and can be freely searched, and the information can be downloaded without restrictions or registration. In this article, we provide some background on the database, the website where it is housed, and some basic instructions for searching the database and for uploading protocols.

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KEY WORDS

nursery management, growing regime, seedlings, restoration

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The demand to produce more species of native plants continues to increase, but nursery managers often lack propagation information for many of these species. This bottleneck reduces nursery efficiency and stymies the use of native plants for a range of objectives, from landscaping to ecosystem restoration. Usually, knowledge about successful propagation techniques for native plants is acquired by propagators through experience but, understandably, seldom is shared with others because publishing propagation techniques in formal venues is a low priority compared to running a business.

Recognizing this in the late 1990s, the US Forest Service's National Reforestation, Nurseries, and Genetics Resources (RNGR) Team, using funding from the Cooperative Forestry Program within State & Private Forestry, provided initial funding to the University of Idaho to start a "Native Plant Network." The Network was envisioned to have two products. The first was a new journal (*Native Plants Journal*) uniquely focused on the native plants of North America (and US territories) with both refereed research and general technical articles to achieve "cross pollination" between researchers and field workers. The second product was an interactive, Internet database (Native Plant Propagation Protocol Database) to which propagators could easily upload (and receive credit for their information by way of an automatic citation) and download information about growing native plants. The first issue of the journal was published in 2000, and the database came online in 2001.

In the early 2000s, a flurry of presentations at a variety of native plant conferences and some publications explained what the Native Plant Network was and how to use it (Landis and Dumroese 2000; Dumroese 2002; Dumroese and Landis 2002; Landis and Dumroese 2002). Since then, some administrative changes have occurred. *Native Plants Journal* is now published by the University of Wisconsin Press and the protocol database recently moved (late fall 2015) to a new home on the RNGR website. Despite the site being accessed more than 10,500 times from January through July 2016, this seems like a good time to remind experienced propagators and to inform new growers about the protocol database.

NATIVE PLANT PROPAGATION PROTOCOL DATABASE

How It Works

The database is housed on the RNGR website (<http://rngr.net>; see sidebar for details about the overall website). A link to the database is located in the upper right corner under "Popular RNGR.net Resources" (Figure 1), or you can go to the database directly (<http://npn.rngr.net/>), or you can still use the original URL (<http://nativeplantnetwork.org>). Regardless, one more click is required to get you to the database.

Anyone can search the database and download information; no registration or fees are required.

URL [HTTP://RNGR.NET](http://rngr.net)

The RNGR site (<http://rngr.net>) has the largest online collection of articles on producing and establishing native plants for reforestation, conservation, or restoration (more than 11,000 articles and growing). All articles are searchable and free to download in Adobe PDF format. The publication database includes all issues of *Forest Nursery Notes* (1993–present), *Tree Planters' Notes* (1950–present), and the *National Nursery Proceedings* (1949–2015) along with many other articles and nursery manuals, such as the *Nursery Manual for Native Plants: A Guide for Tribal Nurseries* (Dumroese and others 2008), ***Tropical Nursery Manual: A Guide to Starting and Operating a Nursery for Native & Traditional Plants*** (Wilkinson and others 2014), and ***Raising Native Plants in Nurseries: Basic Concepts*** (Dumroese and others 2012). Manuals in **boldface** are available in hard copy: contact Tom Landis (see author information).

The RNGR site is used extensively by nursery and regeneration professionals around the world. The site averages one visit and one download every 10 to 12 min, with visitors from at least 200 countries. The RNGR site includes pages specific to tropical nurseries and to the Intertribal Nursery Council, and a forum that provides users a place to post job announcements and to discuss topics pertaining to plant production, outplanting strategies, and new technology. In addition, the RNGR site contains a national nursery and seed directory, a calendar of events, a list of relevant links, and information about the RNGR Program and personnel. RNGR also has a Facebook page ([facebook.com/rngr.net](https://www.facebook.com/rngr.net)) with regular postings on news, announcements, and other items of interest to those who grow or outplant trees and other native plants. For more information about the RNGR Team and its mission, products, and services, see Haase and others (2011), which is available at <http://www.treesearch.fs.fed.us/pubs/39791>.

Searching Protocols

Currently the database contains about 3000 protocols. To initiate a search, just click on "Search the Protocol Database." Searches can be customized by selections from 8 fields, including author, North America or Pacific islands, species Latin name (select from a drop down menu), Latin family name, state, product type, organization (for example, federal, state), and company name or various combinations of these parameters (Figure 2A). Leaving all of the fields blank will generate a list of every protocol in the database. From the list of matches to your search, you may select particular protocols based on species, stocktype, location, date of entry, and so on. For example, scroll down the pop-up window under Genus (species) for coyote willow (*Salix exigua*) (Figure 2B), and then hit the "Search" button. This search produces 4 different propagation protocols that can be viewed or printed individually or as a group (Figure 2C). Note that you have a choice of propagation methods (seed or vegetative) and stocktypes (container or



Figure 1. The Native Plant Propagation Protocol Database is housed on the Reforestation, Nurseries, and Genetic Resources (RNGR) website. It can be accessed from the home page (<http://rngr.net>), or directly (<http://npn.rngr.net>), or through the original URL (<http://nativeplantnetwork.org>).

bareroot). Printed protocols are in a standard format that allows them to be three-hole punched for storage in a loose-leaf binder (Figure 3).

Uploading Protocols

We strongly encourage professional and amateur plant propagators to submit any propagation information they may have. A typical protocol is a detailed, step-by-step process that starts with target plant specifications and contains information on how to collect seeds or cuttings; how to grow the plant in a nursery; how to harvest the plants, seeds, or cuttings; and how to outplant them.

We have tried to make the process relatively easy (while thwarting evil people who mess with websites) and are continually updating the process to make it friendlier. The first step is to register. Registered users are the only ones who can upload information, and registering will allow you to add multiple protocols without having to re-enter basic information such as your name, address, and contact information. And, if at a later date you wish to update any of your protocols, you may access the file using your username and password. From the main Propagation Protocol Database, select the “Become a Propagator” link in the left-hand menu. On the subsequent page, click “Register Now.” Fill in the required information and submit. You will receive a confirmation e-mail with a link to activate your account. Once you successfully set your password, you may login. The site will ask for your “company”

name, which includes names of nurseries, corporations, and public agencies. Check the list carefully and thoroughly to avoid adding duplicates. Company information, including logos, can be updated by clicking “My Settings” and “Member Company Settings.” Your logo is displayed whenever someone views your protocol(s).

The next step is accessing the protocol upload form. We recommend that you print the blank form to see what information is required by the database. Provide as much detail as possible; think of the protocol as being a recipe. Saying something such as “fertilize regularly” is akin to saying “add some salt” but “fertilize with 100 ppm N once a week” is akin to saying “add 1 teaspoon of salt” and is much more useful to others. As a grower, think about the information you would want to have if you are tasked with growing a new species, and then try to provide that level of detail to others. A good approach is to write out your protocol information in a word processing program to ensure accuracy and logical organization. You can then cut and paste it to the protocol upload form. Given the immense variety of plant types, nursery stocktypes, and propagation objectives, we realize that each entry will not include all the items but add as much detail as you can. Our intention is that the standardized form provides a basic framework for adding protocols that can still be customized for specific conditions. The main headings are fairly general, and we encourage propagators to use sub-headings under main headings when necessary to present their data. Some fields are required (for example, genus, species,

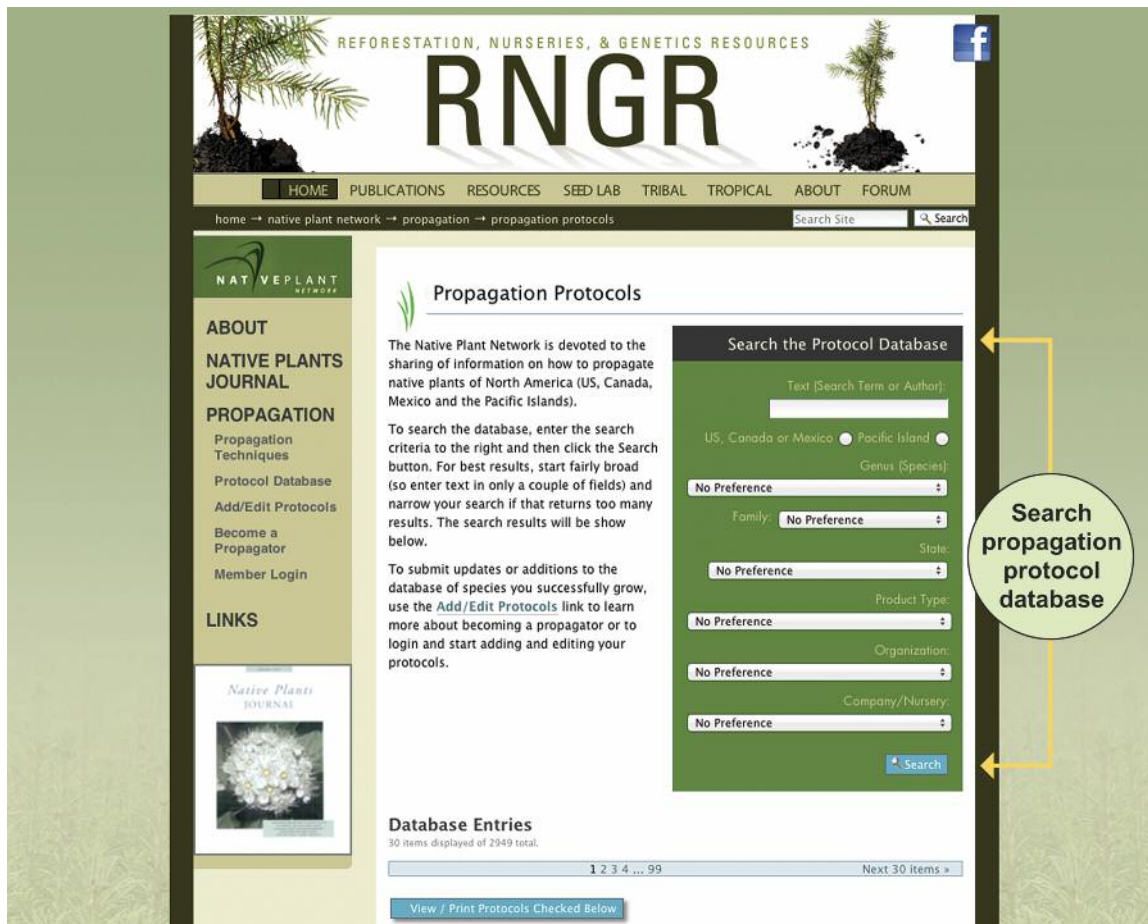


Figure 2A. The database can be searched by a variety of keywords and combinations of keywords.

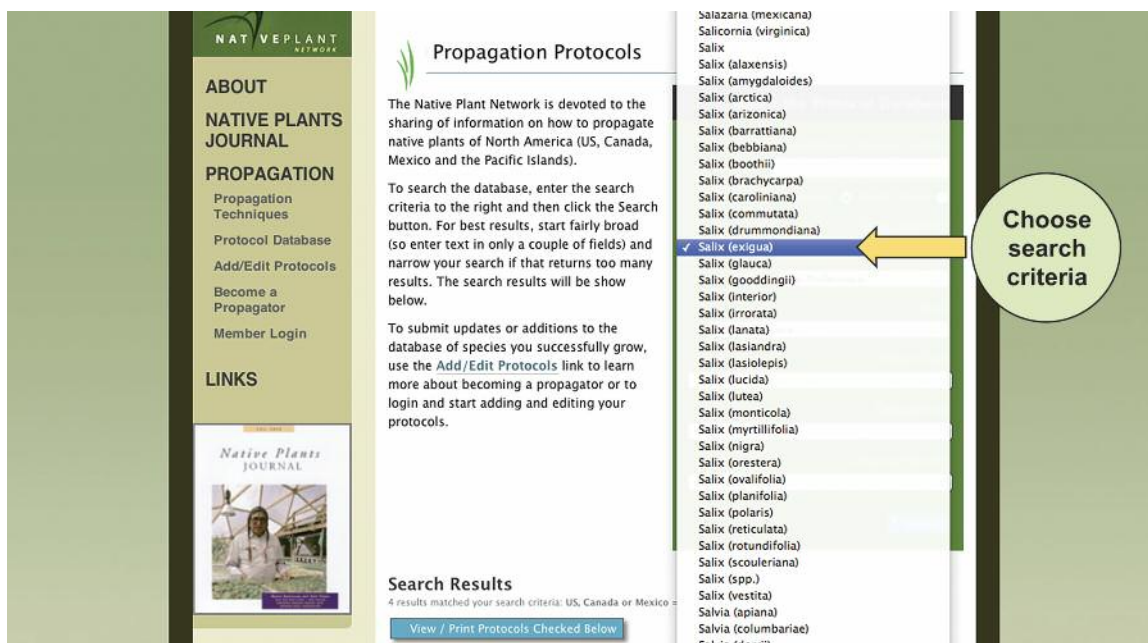


Figure 2B. In this example, the search will return results only for *Salix exigua*.

Search Results
4 results matched your search criteria: US, Canada or Mexico = True, Genus (Species) = Salix (exigua)

[View / Print Protocols Checked Below](#)

View for Printing	Genus (species)	Synonym	Propagation Method	Product Type	Stock Type	State Year
☐	Salix (exigua)	Salix interior	seed	Container (plug)		Kentucky 2002
☒	Salix (exigua)		vegetative	Container (plug)	3 L containers	Montana 2008
☐	Salix (exigua)		seed	Container (plug)	One Gallon Tree Pot, 4"x4"x14"	New Mexico 2003
☒	Salix (exigua)		vegetative	Bareroot (field grown)	1+0	Utah 2003

[View / Print Protocols Checked Above](#)

Welcome to the Native Plant Network

RNGR.net is sponsored by the USDA Forest Service and Southern Regional Extension Forestry and is a collaborative effort between these two agencies.

Figure 2C. The 4 results generated can be reviewed and printed one at a time by clicking directly on the species name, or multiple species can be viewed and printed by checking the desired boxes.

REFORESTATION, NURSERIES, & GENETICS RESOURCES

RNGR

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NATIVE PLANT NETWORK

ABOUT
NATIVE PLANTS JOURNAL
PROPAGATION LINKS

**Native Plant Network
Propagation Protocol Database**

Protocol Information

Salix (exigua)

Tara Luna
USDI NPS – Glacier National Park
West Glacier, Montana 59936
(406) 888-7835
<http://plant-materials.nrcs.usda.gov/azpmc>

Glacier National Park
Montana

Family Scientific Name: Salicaceae
Family Common Name: Willow family
Scientific Name: *Salix exigua* Nutt.
Common Name: Sandbar willow
Species Code: SALEXI
Ecotype: Sandbar along the North Fork of the Flathead River, 11 00m elev., Glacier National Park, Flathead Co., MT.

Typical protocol output

Figure 3. A typical protocol includes the propagator's name, the protocol, recommended citation, and may also include a company logo.

family) but many are not. Don't worry—if you decide data are not needed in particular fields or you simply do not have that type of data, skip those fields. Blank fields will not be displayed on the protocol output form. Once a protocol is entered you may preview it for accuracy before it is submitted. When every-

thing is correct, the protocol can be submitted to an approval queue where it will be checked for appropriateness of content before being added to the database. Protocols are generally approved within a few days and can then be found listed as part of the database.

Professional Credit

We designed the database to give credit where credit is due. The protocol input form allows the data entry person to list one or more authors for each protocol to ensure proper credit. This information appears, along with any company logos, on the output form.

SUMMARY

The Native Plant Propagation Protocol Database has been supporting the exchange of information about growing native plants in North America and US territories in the Pacific and the Caribbean for 16 years. Accessing information is free and requires no registration; the database can be searched by a variety of search parameters, and protocols can be downloaded or printed for convenience. We encourage nursery managers, propagators, and seed gatherers and cleaners to share their information with others by uploading protocols to the database.

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