

# End-of-Year Report to the Pacific Northwest Cooperative Ecosystem Studies Unit

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**End-of-Year Report  
Pacific Northwest Cooperative Ecosystem Studies Unit  
Task Agreement  
National Park Service**

**TASK AGREEMENT NO.:**

P12AC11995

**COOPERATIVE AGREEMENT NO.:**

H8W07060001

**EFFECTIVE DATES:**

08/01/2012 – 03/01/2013

**COOPERATOR:**

Oregon State University

**PROJECT TITLE:**

Virtual Research and Learning Centers Network Management

**PROJECT ABSTRACT:** Staff at Oregon State University will collaboratively work with the NPS Virtual Research Learning Centers (VRLC) network to oversee the web development team, to facilitate meetings and decision making for the VRLC consortium (Consortium), to provide VRLC with technical development capacity needed for their successful maintenance and needed expansion. OSU will use current capacity developed in the Oregon Explorer Project to take advantage of existing and newly developed tools and software. The initial project involves setting up protocols, agreements and subcontracts to ensure that the network and web portals continue to function, that critical project coordination functions are implemented, and that a long-term strategy for operations and improvements is developed. OSU will coordinate a team of web developers to meet the technical needs of the VRLC community and eight VRLC web sites. NPS will be involved in assisting with setting priorities, identifying areas needing improvement for enhanced web experiences, and providing and uploading content for websites. The public purpose is to provide easily-accessed and publicly available information on the most current and past scientific results of many studies on the cultural and natural resources of the National Park System.

**Delivery of Project Products**

1. One electronic copy of the final report will be submitted to the ATR at the following address: Dr. Ben Becker, Point Reyes National Seashore, 1 Bear Valley Road, Point Reyes Station, CA 94956, Ben\_Becker@nps.gov.
2. One electronic copy (pdf) of the final report will be submitted to the NPS PNW CESU Research Coordinator, Dr. Chris Lauver, at SEFS, Box 352100, University of Washington, Seattle, WA 98195-2100, Chris\_Lauver@nps.gov.
3. Two paper copies and one electronic (pdf) copy of the final report will be submitted to: Nancy Hori, NPS Regional Librarian, National Park Service, Pacific West Regional Library, 168 S. Jackson, Seattle, WA 98104.
4. One electronic (pdf) copy of the final report will be submitted to the following address: Carol Simpson, Technical Information Center, Denver Service Center, National Park Service, PO Box 25287, Denver, CO, 80225, Carol\_Simpson@nps.gov.

**Personnel:** Lisa Gaines (principal investigator); Theresa Burcsu (project manager); Marc Rempel, Myrica McCune.

## Tasks

- 1. Preliminary tasks: Assign a project manager to oversee the project, to serve as the network coordinator to run meetings, take notes, and assist the network in decision making.** INR assigned Theresa Burcsu to the role of project manager (PM).
- 2. Assure the project manager has a set of one-to-one meetings (via phone, video conference or webinar) with all of the NPS VRLC leads to learn their interests, priorities, any ongoing problems and ideas for future VRLC directions.** The PM conducted interviews with: Jerry Freilich (North Coast and Cascades Research Learning Network), Lisa Thomas (Learning Center of the American Southwest (LCAS)), Jessica Weinberg (LCAS), Mateo Jara (Primary developer), Janine Waller (Greater Yellowstone Science Learning Center (GYSLC)), Michelle O'Herron (San Francisco Bay Area National Parks Science and Learning), and Robert Bennetts (San Francisco Bay Area National Parks Science and Learning).
- 3. Renew the agreement with Rackspace to assure website continuity.** An agreement with Rackspace was finalized in early December 2012.
- 4. Establish a mechanism for prioritizing website updates, either by using or modifying the previously used ticketing methodology, or by offering an alternative to the network.** The Assembla® ticketing system is being used to prioritize work tasks with the Development Team. This system works well for documenting technical issues, tracking communications that relate to reported issues, and simple tracking of progress toward resolving issues. Where the system breaks down, however, is when an issue is not communicated clearly enough for the developer to identify what the task is. Related to this shortcoming is a need for a clearly developed vision that can serve to guide development over the long-term and increase development efficiency and effectiveness of the products (see "Ongoing problems and future funding needs for the VRLC" section). By meeting on a biweekly basis, we are able to fill in any lacking details for documented tasks and ensure that understanding about what is needed is achieved.
- 5. Re-establish a set of regular meetings and decision making venues for the VRLC.** Meetings have been occurring on a monthly basis using the web conferencing software GoTo Meeting®.
- 6. Establish a strategy for updating the exiting portals from Drupal 6 to Drupal 7, based on INR's experience at OSU and Portland State University.** An upgrade strategy was provided to Ben Becker and Janine Waller on December 18, 2012 (Appendix 1).
- 7. Establish a mechanism for contracting with Mateo Jara of WireMill LLC to ensure that critical Drupal programming updates continue, that VRLC specific Drupal code is obtained and understandable.** WireMill LLC was established as an Oregon State University vendor. Mateo Jara attends regular meetings with the Development Team. We emphasize that the code should be well-documented.
- 8. Deliver an annual report (final report) detailing the project accomplishments.** Completed on January 3, 2013 and mailed on January 4, 2013.

## Description of Project Products/Reports

1. The updated websites and the acceptable operations of the VRLC team are the primary products of this project.
2. The annual report (serving as the final report) will outline the work completed, accomplishments, ongoing problems and future funding needs for the VRLC.

## Work Completed and Accomplishments

The Institute for Natural INR has continued the monthly meeting schedule for the Consortium (second Monday of each month) using the web conferencing software GoTo Meeting®. The software has been useful for displaying agendas and proposals, as well as demonstrating existing and emerging features being developed for the websites. Attendees can use a telephone to call into the meeting or use a headset for voice-over-internet protocol (VOIP) to participate in the meetings. The main drawbacks with the software are that in more remote locations, internet connections are slow or otherwise limited, and the telephone call is a toll call. Occasionally call quality is unsatisfactory. Consortium call meeting notes have been regularly posted on the VRLC forum site.

INR organizes the biweekly Development Team meetings. We use GoTo Meeting® for these meetings as well. The software has been particularly useful for making decisions about website features, particularly when visual aspects of the site are discussed such as appearance or placement of items. We have also used the software to demonstrate existing and new functions as needed.

Consortium members are interested in making outreach efforts more efficient and productive. One means for doing this is to attend more local conferences. INR created a Google spreadsheet to track conference dates, locations, and deadlines (<https://docs.google.com/spreadsheets/ccc?key=0At3krCEYUgjWdDZIVjVSTFc4TIZVem50TWt5ZEdrMkE#gid=0>).

## Ongoing problems and future funding needs for the VRLC

The PM conducted telephone interviews with a number of Consortium members as described in item 2 above. From these conversations it is clear that:

- funding acquisition and contributions are a continuing challenge;
- improvements in the decision making model are desired; and
- a vision statement would benefit the Consortium partners, developer, and websites overall.

**Funding is a continuing challenge.** As in past years, few VRLC sites have secure funding sources. The primary concerns for funding are that the usual end-of-year sources will become increasingly scarce given the current economic climate. There is also moderate concern that some VRLCs are carrying too much of the financial burden and that the burden should be more equitably distributed among the partners. A solution offered by some members stated that a minimum monetary contribution be established to cover basic services such as technical support and updates for each VRLC. This solution is still under discussion. In addition, one member appears poised to withhold a portion of funds, should changes to the VRLC structure not occur.

**Improve the decision making process.** The decision making norm is consensus or near consensus among consortium members. This process is hampered by inconsistent attendance at the monthly conference calls and decreased levels of engagement among some Consortium members. Likewise the conference calls are sometimes too short to complete discussions issues at hand. A preliminary solution to the decision making process was discussed on the December 10, 2012, conference call. The solution would establish an oversight group who is composed of three – seven individuals from the Consortium (Appendix 2). Consortium members would rotate in and out of the oversight group so that everyone is able to be on the oversight committee for a period of time. The idea is that by establishing a subset of members, decision making could be expedited and simplified. Ground rules would be established to guide membership terms and decision making norms. For example a ground rule might state that decisions made at Oversight Committee meetings will be clearly written and distributed to all members with a limited time for comment or revisions.

**Establish a vision for the sites.** Until somewhat recently, the Consortium was focused on creating a consistent, usable design that everyone agreed on, and the base template was established. More recently, work has been completed to increase the number of features and sophistication of the editing tools for the websites. During the latter activity, concern emerged that partners have become less engaged, particularly in terms of funding and attendance at meetings. Through interviews with Consortium members and attendance at Consortium meetings, INR suggests it would be beneficial for the Consortium to develop a new vision to foster a renewed sense of group purpose. We expect that the vision would also bring focus and clarity to development efforts and provide a guide for decision making and prioritization of tasks such as fund raising.

A vision for the sites should contain, at minimum, clear definitions of the current and desired users of the sites and their needs. By clarifying users, goals for the websites can be identified and work tasks structured to meet their needs, such as ensuring that users can easily access the information they need from the sites. Likewise, understanding who the users are allows the developer to identify and design tools that best meet the users' needs in both the short and longer terms.

Defining goals related to website usability and design would also be useful elements of a vision. These goals will help the developer to better understand the common and diverse needs of the Consortium partners. In addition, by laying out the goals within a vision, the Development Team will be able to prioritize tasks based on the needs of the whole Consortium and decrease the risk of making development decisions with very limited utility.

#### ***Potential budget changes***

Several changes to the current budget may be required to most efficiently manage the VRFC websites and document customized code developed for the sites. Conversations with WireMill LLC suggest that the company's time is scarce and while some documentation is possible, more is desired. In order to improve documentation, it would make sense to have someone from OSU work with the WireMill developer to share some of the work load involved in code documentation and upgrade. In addition, technical support has been requested by content managers within the VRFC. In the past, additional development and technical support was provided by the PM (Pam Anning). In the future, it is recommended that these duties be distributed to other members of the OSU team. It is unlikely that total costs will change dramatically during a redistribution of responsibilities.

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## STRATEGY FOR UPGRADE FROM DRUPAL 6 TO DRUPAL 7

Strategy drafted for the Virtual Research Learning Center Consortium

Draft date: December 18, 2012

Institute for Natural Resources  
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## INTRODUCTION

The Virtual Research Learning Center Consortium (Consortium) is a group of National Park Service (NPS) networks associated with the NPS Inventory and Monitoring (I&M) Program. At present the Consortium is running a collection of six websites<sup>1</sup> built from the same fundamental template, so each of the websites has a similar look, feel, and organization; content types and terms are shared across the sites; and users familiar with one site are able to easily navigate another site's content. The web platform used for the websites is Drupal 6, an open source content management system. Drupal's advantages for content management are numerous; the Consortium takes particular advantage of Drupal's capacity for customization laid over the top of the fundamental web interface template, for customization of tools for content uploading and organization, and for there to be multiple content managers working simultaneously on the different web sites.

The Consortium websites were moved from a previous content management system to Drupal 6 in 2008. As part of its long term strategy for the maintenance of the websites, the Consortium has decided to upgrade the websites from Drupal 6 to Drupal 7. This document describes a strategy for successfully upgrading. An upgrade plan will follow at some point in the future.

## STRATEGY

### OVERVIEW

There are five primary stages for upgrading to the next version of Drupal, the first of which is to create the upgrade plan. The upgrade plan should contain specific information to guide stages 2 – 5. This document, the Upgrade Strategy, provides the information necessary to create the upgrade plan, a document that should contain specific information for stages 2 – 5. The stages are:

1. **Create the upgrade plan**
2. **Prepare the current site for the upgrade**
3. **Upgrade the site using a test copy of the site**
4. **Test the upgraded site**
5. **Release the upgraded site**

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<sup>1</sup> Pacific Islands recently pulled their site down

Each stage is composed of multiple steps. The more clearly defined each step is, the more smoothly the upgrade will progress. Defining the uncertainties and risks are also a key part of a good plan and result from a cycle of testing and revision (figure 1).

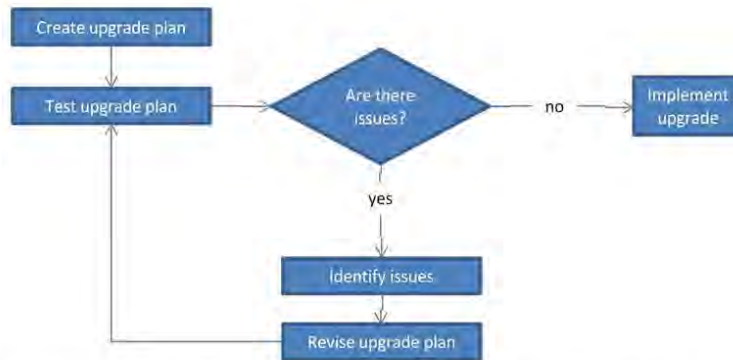


FIGURE 1. THE UPGRADE PLAN SHOULD BE TESTED AND REVISED UNTIL THE DEVELOPERS ARE CONFIDENT THAT CATESTROPHIC ISSUES HAVE BEEN IDENTIFIED.

#### DETAILED STRATEGY

##### STAGE 1. CREATING THE UPGRADE PLAN

The initial step for creating the upgrade plan is to identify the tasks that are needed to prepare the developers, administrators, and sites for upgrade [1]. The tasks include

- Determining how backups of the sites will be created
- Deciding if the upgrading personnel will use the GUI or command-line (or a mixture) to perform the upgrade
- Inventorying the modules and themes to identify
  - Unused core modules
  - Custom modules
  - Contributed modules
  - Whether custom modules will be supported in the desired Drupal version
  - Whether contributed modules are supported in the desired Drupal version

#### ADDITIONAL INFORMATION TO INCLUDE IN THE PLAN

**Understanding what modules and themes are in use, why they are used, and their availability in the desired version will help determine which will be upgraded and which will not.** Steps describing the upgrade of contributed and customized modules and themes should be included at this stage [2]. The core customizations and contributed module customizations should also be identified so that a decision can be reached and documented about which will be upgraded to Drupal 7. The customized themes used by the VRLC sites will also need to be changed to a default theme during Stage 2, so including this detail in the plan is important.

**Inventory the customized modules, themes, and packages that are likely to require special attention during the upgrade and the nature of that attention.** Custom modules, themes, and packages contain custom code that uses current Drupal technologies and language structure. A plan for assessing the upgrade of these will be essential to the upgrade plan. Time required to assess and upgrade custom modules will need to be included in the overall upgrade timeline.

**A list of risks and uncertainties accompanying the upgrade should be compiled with mitigations or possible solutions** for them, to the best ability of the plan authors. For example, once the default theme is applied, it may be difficult to navigate the site. The actions required to deal with this issue should be explored prior to the site preparations using the Drupal.org forum and other forums. A timeline for the process steps should also be included in the plan.

**The plan should also include a format for documenting errors and issues encountered** during the upgrade of the test site in Stage 3 and the site testing during Stage 4. Rules of thumb about who should be included in conversations about the errors and issues encountered will be helpful in making sure that everyone who needs to be informed stays informed. Likewise, a decision as to the best way for keeping people informed is desirable. For example, will Assembla be the primary means of communicating with the Development Team? Or will weekly updates be circulated by email to the full Consortium or only a subset of the Consortium members?

**Guidelines for site testing (for Stage 4) should be included in the plan.** The verbiage for this stage could range from extremely detailed and systematic to completely random. Our recommendation is that a core set of individuals should be given an overview of the upgraded site and provided a mixture of systematic guidelines and freedom to explore and “break things.” Details on the testing guidelines and success measures that identify when the site is ready for release to a wider audience should be included in the plan. Guidance for reporting

issues and errors for the testing stage and post-release stage should be included in the plan as well.

**The final step is to document all of the decisions and details in the upgrade plan.** The format for the plan will likely be a mixture of text and checklists. More detailed information is available on [Drupal.org](http://Drupal.org) [2, 3, 4].

#### STAGE 2. PREPARE THE CURRENT SITE FOR THE UPGRADE

Once the plan has been finalized the site will need to be prepared according to the following guidelines [5]. Prior to beginning any preparation activity, it is strongly recommended that a backup of the sites be created and that a second copy of the existing live sites are made to implement the upgrade.

- backup existing live sites and copy the site files
- stand-up the new copied site in a development environment
- determine if the database needs to be updated, possibly performing the update prior to the upgrade
- take the copied site offline

#### STAGE 3. UPGRADE THE SITE USING A TEST COPY

In this stage, a test copy will be upgraded according to the plan created in Stage 1. All issues and errors should be documented as described in the plan and communicated to the appropriate parties. Likely steps will involve:

- take the copied site offline
- change the site theme from a custom theme to the default them “Garland” (in Drupal 6)
- turn off non-core modules
- uninstall modules that will not be upgraded and storage of their data is no longer required; and
- test that you can still navigate the site under the default theme [5].
- download latest Drupal 7.x release
- re-apply modifications to core files for access and settings

- run the update script to update the database
- backup database after core upgrade has run
- update contributed modules and themes according to upgrade plan created along the lines outlined in Stage 1

#### STAGE 4. TEST THE UPGRADED SITE

Test the site according to the plan. Likely steps will involve [6]:

- navigation testing to ensure that all nodes and menus are behaving as expected
- display testing to ensure that styling is as desired
- content verification to ensure that content migrated smoothly
- user permission/views to ensure that editing and publishing permissions are working as expected

#### STAGE 5. RELEASE THE UPGRADED SITE

Once the success measures indicate that the site is ready for release, it should be released fully. Means for reporting issues should be provided to the users at the time of the release. Likely steps will involve:

- if the Drupal 7 sites are in a different server than the production server, move the new sites to the production server and ensure that the database connection works and that the site is behaving as expected.
- change the application settings to point to the new Drupal 7 site.
- set Drupal 6 sites in offline mode and test to ensure that traffic is directed to new Drupal 7 sites.

## REFERENCES

- [1] Before you begin. Community Documentation. <http://drupal.org/node/770402>. Accessed November 20, 2012.
- [2] Upgrading from Drupal 6 to 7. Community Documentation. <http://drupal.org/documentation/upgrade/6/7>. Accessed November 20, 2012.
- [3] Read UPGRADE.txt. Community Documentation. <http://drupal.org/node/550126>. Accessed November 20, 2012.
- [4] Upgrade process. Community Documentation. <http://drupal.org/node/570162>. Accessed November 20, 2012.
- [5] Preparing the site. Community Documentation. <http://drupal.org/upgrade/preparing-the-site>. Accessed November 20, 2012.
- [6] After Upgrade Checklist. Community Documentation. <http://drupal.org/node/570164>. Accessed November 20, 2012.

## GLOSSARY

**Update.** A term that usually involves applying changes related to a minor version change, as in upgrading from Drupal 6.12 to 6.14.

**Upgrade.** A change in version that involves moving from one major Drupal release to another.

## Appendix 2. Proposed Decision Making Structure

### Proposal for streamlining decision making and action in the VRLC Consortium

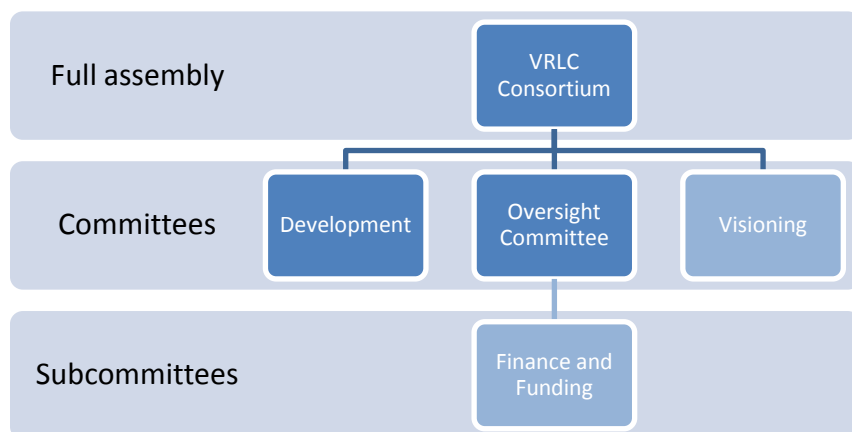


Figure 1. Several committees are proposed to improve and facilitate decision-making for the VRLC websites. The structure depicted here shows the permanent committees (VRLC Consortium, Oversight, Development) in the dark shade and *ad hoc* committees (Visioning, Finance and Funding) in light shade.

Some partners of the Consortium voiced concerns that the decision making process has become overly cumbersome resulting in slow decisions and little flexibility. To improve the situation, this proposal was prepared by OSU, with input from the partners. The goal is to provide partners the opportunity to participate in decision making without the need to commit to as many meetings as currently occur. The proposed structure is composed of three primary groups: the full VRLC Consortium, the Oversight Committee, and the Development Team. Additional committees can be formed as needed. We have included two initial *ad hoc* committees to develop the VRLC vision and to investigate and follow-up on new funding opportunities, however, some partners feel that a single Oversight Committee is sufficient.

**VRLC Consortium:** The entire set of individuals and organizations involved in the VRLC web sites. This group is the same as what is currently in place. ***This group may meet 2-4 times a year.***

**Oversight Committee:** This group operates as an oversight committee, providing direction to the Development and Finance teams. The Oversight Committee is in charge of establishing the annual goals for the VRLC in terms of new development, funding, and amendments to the VRLC vision or mission statement. The Oversight Committee works with the ephemeral Visioning Committee tasked with creating and modifying a visioning statement for the VRLC as well as with the Development Team. The proposed size of this group is three to seven members. The initial committee should consist of one representative per research learning center (RLC). These seven members should be invited to attend monthly calls with a minimum required quorum of four to make a decision or five to break a tie. Each of the seven members should be given opportunity for input. Oversight group members will be responsible for getting input from affected staff in their units. ***This team might continue to meet on a monthly basis.***

**Visioning Committee:** This *ad hoc* group is tasked with creating and modifying a visioning statement for the VRLC. The visioning statement will contain definitions of the current and targeted web site users, development and design goals for the future, and financial goals for the future. It may also be tasked with creating the initial rules for the Oversight Committee. ***This committee will be formed as needed.***

**Development Team:** This group is tasked with responding to RLC needs for development, maintaining the sites' code and modules, improving the sites' modules, and updating sites to improve their usability. The Development Team works closely with the Oversight Team. ***This team will meet biweekly.***

**Finance and Funding Subcommittee:** This group is tasked with identifying and following through with funding sources, maintaining the budget, and negotiating contracts. This group has the power to prioritize funding sources and opportunities. They are also tasked with writing funding proposals or delegating writing to appropriate individuals. ***This committee will be formed as needed.***

**RLC Project Manager:** Responsibilities for this person include facilitating communications between and within the Consortium, Oversight, and Development Committees, organizing meetings, and posting meeting minutes to the Forum.