

REACCH Data Management Web Module 3: Accessing the REACCH Analysis Library Using and analyzing REACCH data June 20, 2013 - Version 1.0



Erich Seamon, MS PMP GISP Environmental Data Manager REACCH PNA Regional Approaches to Climate Change for Pacific Northwest Agriculture College of Agricultural and Life Sciences University of Idaho 208.885.1230 erichs@uidaho.edu



REACCH Regional Approaches to Climate Change – PACIFIC NORTHWEST AGRICULTURE

<image>

More about REACCHPNA

The **Re**gional Approaches to **C**limate **Ch**ange project is a coordinated regional agricultural project, funded by the <u>National Institute for</u> <u>Food and Agriculture</u> to improve the long-term profitability of the cereal production systems in the Pacific Northwest under ongoing and projected climate change, while contributing to climate change mitigation by reducing emissions of greenhouse gases.

REACCH includes efforts in <u>research</u>, <u>extension</u>, and <u>education</u> that integrates diverse elements including <u>climate modeling</u>, <u>cropping systems modeling</u>, <u>economics</u>, agronomy, crop protection, and others in a trans disciplinary manner.

www.reacchpna.org

Summer 2013



REACCH Data Management Team

- Sanford Eigenbrode, Project Director
- Paul Gessler, PI and Objective 8 lead
- Von Walden, PI
- Rick Rupp, PI
- Erich Seamon, Data Manager
- Stephen Fricke, Programmer
- Edward Flathers, Ph.D. student
- Linda Tedrow, GIS
 Specialist
 Summer 2013

- Steve Daley-Laursen, NKN
- Greg Gollberg, NKN
- Luke Sheneman, NKN
- David Vollmer, NKN
- Jen Hinds, NKN
- Bruce Godfrey UI Library
- Jeremy Kenyon UI Library
- Alex Kyrios UI Library



From left: Ed Flathers (REACCH), Erich Seamon (REACCH), Luke Sheneman (NKN)





IDAHO





Access and Important Information Regarding REACCH DM Web Module 3

REACCH Web Modules that are associates with the GIS and Agriculture Short Course (Summer 2013) can be found at the following url:

https://www.reacchpna.org/mission/education/graduate/courses/gis-aez/

All REACCH Data Management Web Modules can also be found at the REACCH Media Library. These videos are currently only viewable to logged in REACCH members.

https://www.reacchpna.org/resources/reacch-media-library/

Summer 2013



Access and Important Information Regarding REACCH DM Web Module 3

- The REACCH DM Web Modules are meant to assist REACCH members and student to access and use the REACCH Data Library
- Alterations and updates may be made to tools as time progresses





Summary and Overview of REACCH DM Web Module 3

- This module (web module 3) is meant to provide
 - An overview of the REACCH Analysis Library and its components
 - ArcGIS Desktop access
 - THREDDS climatic data access
 - ArcGIS Online access
 - How REACCH members can search the REACCH Analysis Library
 - How REACCH members can use the analytical tools available to examine and review REACCH data in a variety of ways

REACCH Web Module 3 requires review of Web Modules 1 and 2 in advance



REACCH Analysis Library Overview

REACCHPNA.ORG

REACCH Data Library

REACCH Analysis Library

REACCH Policy Library, REACCH Publications and Presentations Library, REACCH Documentation Library, REACCH Media Library

THREDDS Climatic Data Catalog

REACCH Javascript Applications

ArcGIS Desktop Data Access



REACCH Analysis Library Approach

- The REACCH Analysis Library provides access to tools for REACCH members to access data in differing ways.
- Only REACCH members can access the REACCH Analysis Library



• The REACCH Analysis Library pulls together various technologies to allow REACCH members to access data in differing ways.





Accessing REACCH Data via a Web Browser

REACCHPNA.ORG

REACCH Data Library

REACCH Analysis Library

REACCH Policy Library, REACCH Publications and Presentations Library, REACCH Documentation Library, REACCH Media Library

THREDDS Climatic Data Catalog

REACCH Javascript Applications

ArcGIS Desktop Data Access



Accessing REACCH Data via ArcGIS Desktop

REACCHPNA.ORG

REACCH Data Library

REACCH Analysis Library

REACCH Policy Library, REACCH Publications and Presentations Library, REACCH Documentation Library, REACCH Media Library

THREDDS Climatic Data Catalog REACCH Javascript Applications

ArcGIS Desktop Data Access



REACCH and ArcGIS Desktop

- REACCH Members need to utilize the ArcGIS licensing provided by their academic institution
- UI, WSU and OSU all have ArcGIS licensing for all facuty and students, for very low cost or free.
- ArcGIS desktop training can be provided to REACCH members for free



Setting up your computer environment to access REACCH ArcGIS data

• Follow the REACCH ArcGIS Desktop connection instructions

https://www.reacchpna.org/reacch-faq/how-do-i-connect-reacch-usingarcgis-desktop/

Keys to setup:

-make sure you copy the 5 .dll files into the correct workspace.

-make sure you authenticate to the REACCH Extranet before making a database connection in ArcGIS.

-Use your REACCHPNA portal login and password for the ArcGIS DB Connection.





Accessing REACCH Data via THREDDS

REACCHPNA.ORG

REACCH Data Library

REACCH Analysis Library

REACCH Policy Library, REACCH Publications and Presentations Library, REACCH Documentation Library, REACCH Media Library

THREDDS Climatic Data Catalog

REACCH Javascript Applications

ArcGIS Desktop Data Access

Summer 2013



What is THREDDS?

 THREDDS = Thematic Real-time Environmental Distributed Data Services

http://www.unidata.ucar.edu/projects/THREDDS/

- Used by REACCH to store large climatic datasets (netcdf).
- Data is stored in THREDDS and exposed to our REACCH Data Library for searching
- You can find data via our REACCH Data Library, or go straight to THREDDS
- You can use various applications to examine THREDDS data:
 - IDV
 - NetCDF-Java ToolsUI



REACCH Regional Approaches to Climate Change –

REACCH Data Analysis Flow



Summer 2013



ArcGIS Geoprocessing Services

- Can be accessed by adding a GIS server, which contains geoprocessing services, in the ArcCatalog window.
- Click on the service of interest and input necessary parameters to run the tool.
- Output maps are easy to view within the ArcMap data viewer window. Additional data can also be easily downloaded.





REACCH Regional Approaches to Climate Change – PACIFIC NORTHWEST AGRICULTURE

Web Geoprocessing Services



REACCH Legend **REACCH** Lavers **REACCH** Data Query Select REACCH Data to view information Select Climate Model: ? CNRM-CM5 -Select Climate Scenario: ? RCP4.5 -Select Climate Variable: Maximum Near-Surface Alr Temperature Enter First Day (1-365): Enter Last Day 1-365): 50 Enter First Year (1950-2100): 2013 Enter Last Year (1950-2100): 2050 Draw Bounding Box Select Point Select Polygon Save data as rasters Draw or click on map after filling out all parameters

Summer 2013



Additional Useful Information

- Additional training videos accessible on the REACCH Media Library
- Information on the technology approach can be seen under Resources>Data Overview





REACCH GIS/AEZ Web Module 3 Assignment

- Login to the <u>reacchpna.org</u> site using your assigned login.
- Navigate to the REACH Analysis Library
- Review THREDDS catalog data
- Navigate to our REACCH ArcGIS Online portal and review/explore REACCH data
- Connect to the REACCH database using ArcGIS Desktop

