

Networked Activities

Observational networks collect data, a lot of it by sensors although some by people and citizens, and provide standard data from one web based location. These networks are primarily **infrastructure**. They stress the importance of similar data from multiple sites.

- USDA UV-B Network
- NOAA climate Reference Network
- NRCS Soil Climate Analysis Network
- USA National Phenology Network
- National Ecological Observation Network (NEON)

Affiliation networks are associations for **advocacy, information, education and organization** of the scientific resources, including field stations, critical to environmental research.

- UN Man and Biosphere program (an original site of this global network)
- Association of Ecosystem Research Centers

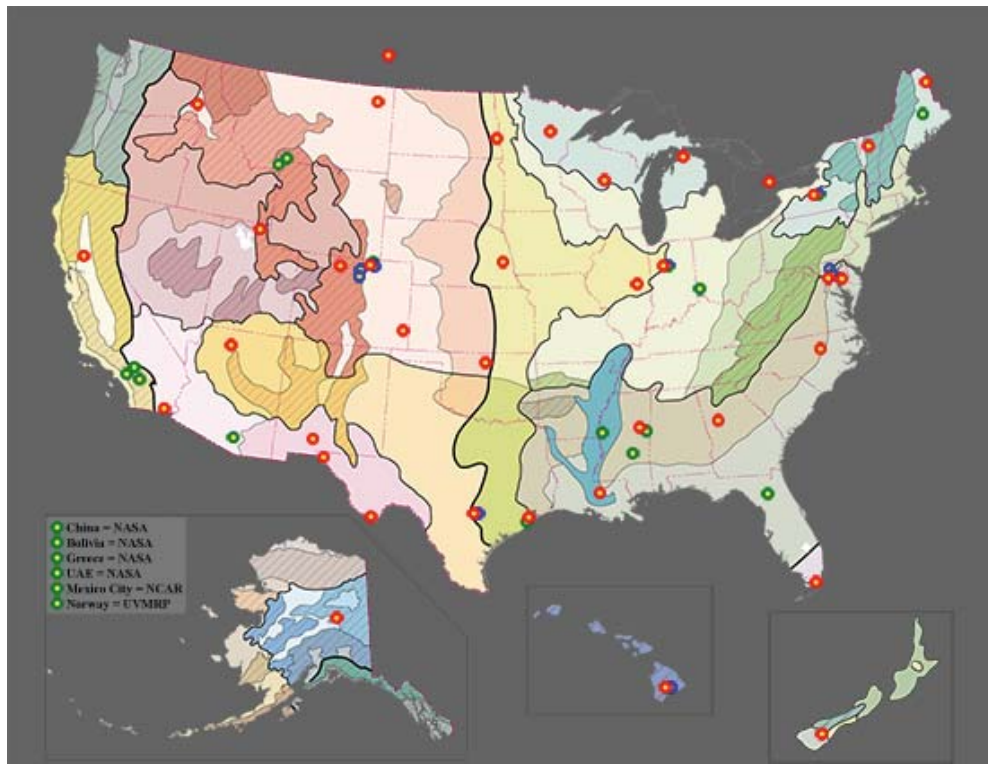
Research program networks go beyond observational networks to address joint **research** questions in addition to collecting and serving up standard data.

- International Biological Program (1964-1974), an important precursor of the LTER
- Long Term Agro-ecosystem Research (LTAR) Network
- Long Term Ecological Research (LTER) Network

➤ ***Network participation is ONE KEY value of the Jornada Range as a field station***

Observational Networks

USDA UV-B Network (1994) http://uvb.nrel.colostate.edu/UVB/uvb_network.jsf



The program's primary objective is continued operation of the 37 station national network of UV-B monitoring instruments to deliver high quality data, data products, and services in support of agricultural research describing the geographic distribution of UV-B solar irradiance, effects of increased or diminished UV-B on crops, native and invasive plants, and animals, and to facilitate the use of these measurements directly or as input to climate and crop models.



Instrument Locations:

Jornada Experimental Range



Opened / Closed	1994-09-22 /
Internal Identification	NM01 (vis-MFRSR) / NM02 (uv-MFRSR)
County	Dona Ana
Closest Town, State	Las Cruces, New Mexico
Timezone	MST,-07,Y
Latitude, Longitude	32.616 N, 106.74 W
Elevation	1317 m
Eco Region	321
Operating Agency	Agricultural Research Service

- [Google Map's Site location](#) »
- [Detailed site location's description and history](#) »
- [Location's instruments deployment history](#) »

Current Instruments Available

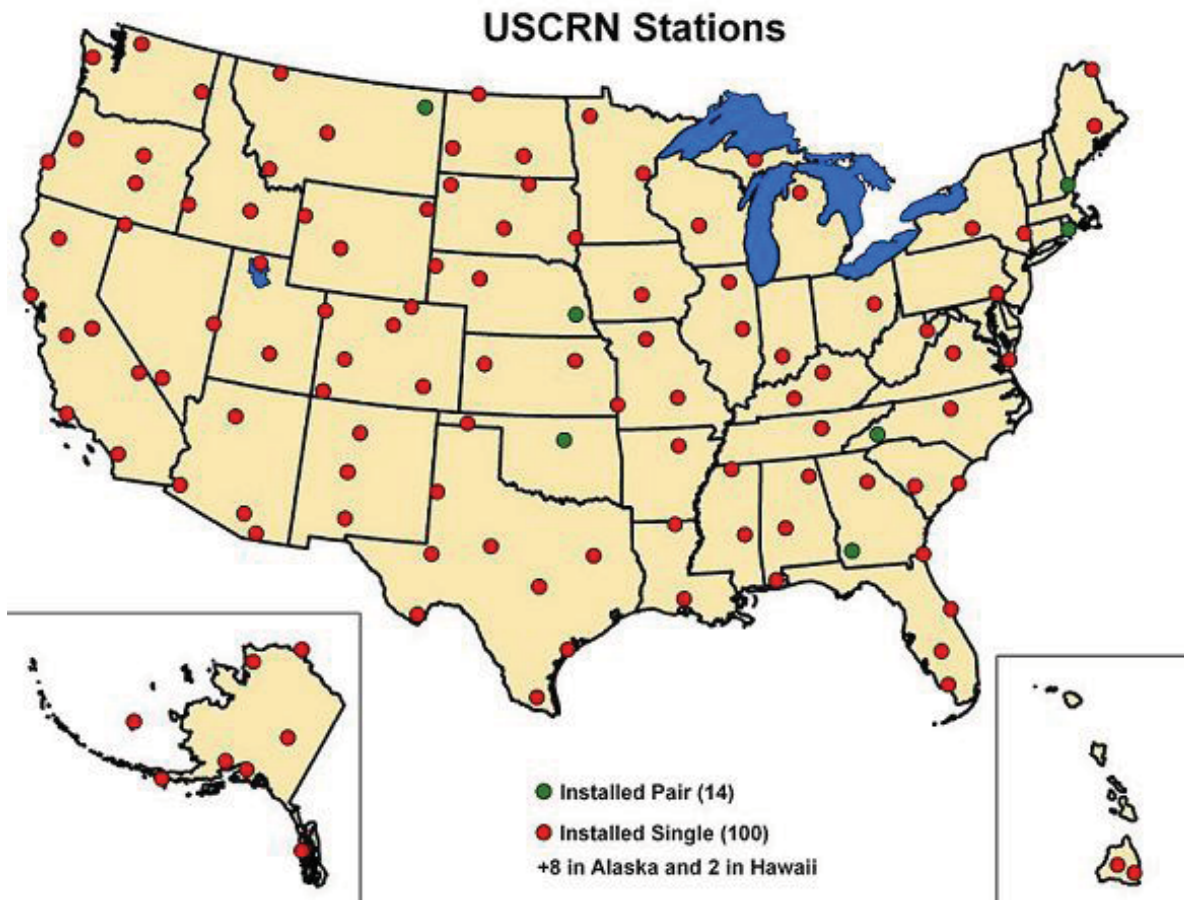
Solar Instruments	Start Date	Latest Calibration
UV-MFRSR	2008-07-07 19:00:00	2007-09-12
UVB-1 Broadband	2007-08-13 13:06:00	2006-12-06
PAR	2006-04-20 19:12:00.0	2006-01-26
vis-MFRSR	2004-06-30 17:24:00	1997-08-18

Ancillary Instruments	Start Date	Calibration Date
Licor(downward)	1994-09-22	1993-07-26
Temperature/Humidity	1994-09-22	2001-11-28

NOAA Climate Reference Network (CRN, 2007)

<http://www.ncdc.noaa.gov/isis/>

station.htm;jsessionid=465FBDDC51504971D9B1A57C68D03874.lwf3?stationid=1307



The USCRN's primary goal is to provide future long-term homogeneous temperature and precipitation observations that can be coupled to long-term historical observations for the detection and attribution of present and future climate change.



Integrated Station Information System (ISIS)

[Login](#)

[Stations](#) | [Reports](#) | [User](#) | Integrated Station Information System (ISIS)



[Station List](#) : Station History for NM Las Cruces 20 N

NM Las Cruces 20 N

Station: NM Las Cruces 20 N *Jornada USDA ARS Experimental Range (Jornada Headquarters Site)*

StationId: 1307

[Station Metadata Report](#)

[View event notes](#)

	Date	Event Type
	Fri Mar 16 18:00:00 UTC 2012	Maintenance - Unscheduled (Completed)
	Fri Feb 03 01:00:00 UTC 2012	Maintenance - Annual (Completed)
	Fri Aug 12 16:00:00 UTC 2011	Maintenance - Unscheduled (Completed)
	Mon Aug 08 17:00:00 UTC 2011	Datalogger Door Open - No Action
	Fri Aug 05 19:00:00 UTC 2011	Datalogger Door Open - No Action
	Sun Feb 20 22:00:00 UTC 2011	Maintenance - Annual (Completed)
	Mon Feb 14 13:31:07 UTC 2011	COOP ID Change
	Thu Feb 11 20:00:00 UTC 2010	Maintenance - Annual (Completed)
	Thu Feb 11 00:00:00 UTC 2010	Maintenance - Annual (Started)
	Sun Feb 08 01:00:00 UTC 2009	Maintenance - Annual (Completed)
	Sat Mar 22 22:00:00 UTC 2008	Maintenance - Annual (Completed)
	Mon Jun 11 00:00:00 UTC 2007	Commission Status Change
	Thu Mar 01 17:00:00 UTC 2007	Installation (Completed)
	Wed Feb 28 00:00:01 UTC 2007	Operational Status Change
	Wed Feb 28 00:00:01 UTC 2007	Commission Status Change
	Mon Feb 26 15:41:23 UTC 2007	Add A New Station
	Mon Feb 26 00:00:00 UTC 2007	Pre-Installation

[Station Metadata Report](#)

[View event notes](#)



[DOC](#) > [NOAA](#) > [NESDIS](#) > [NCDC](#)

[Privacy Policy](#)



[Disclaimer](#)

<http://www.ncdc.noaa.gov/isis/station?stationid=1307>

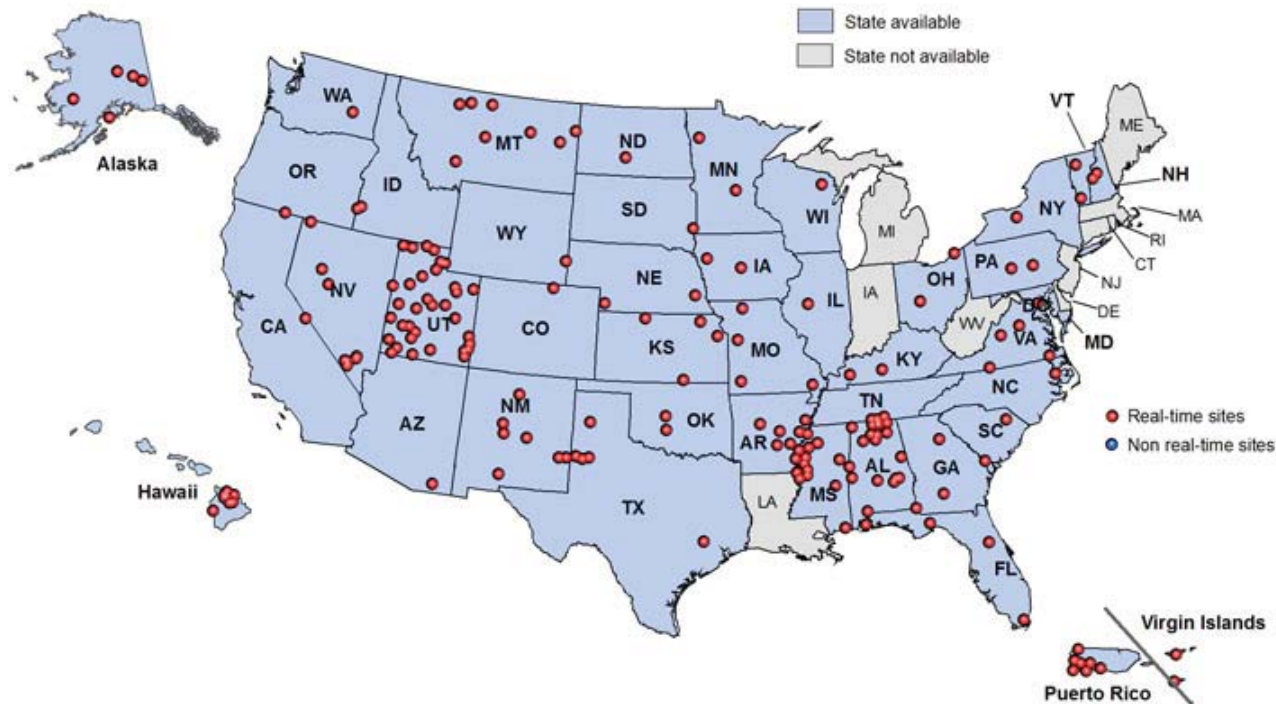
Dynamically generated 2012-06-22

Please see the [NCDC Contact Page](#) if you have questions or comments.

Author(s): isis.ncdc@noaa.gov

NRCS Soil Climate Analysis Network (SCAN, 2009)

<http://www.wcc.nrcs.usda.gov/nwcc/site?sitenum=2168&state=nm>



The Soil Climate Analysis Network consists of automated remote sites which collect soil moisture and soil temperature data along with precipitation, wind, and solar radiation data. These sites are located throughout the United States and other global locations. These data are used for the management and prediction of climatic issues affecting our natural resources.



Search

NWCC
 Enter Keywords

Water and Climate Information

Water Supply

- ▶ Water Supply
- ▶ Forecasts
- ▶ Reservoirs
- ▶ Surface Water
- ▶ Climate

Climate Monitoring

- ▶ SNOTEL Data
- ▶ SCAN Data
- ▶ Snow Course Data
- ▶ Data Search **NEW**
- ▶ Soil Search **NEW**

Climate Interpretation

- ▶ Climate Analysis
- ▶ PRISM
- ▶ Climate Data
- ▶ General Information

- ▶ Snow Survey Programs by State

- ▶ Find a Service Center

- ▶ States and Regions

- ▶ National Centers

SCAN Site: Jornada Exp Range
State: New Mexico
Site Number: 2168
County: Dona Ana
Latitude: 32 deg; 33 min N
Longitude: 106 deg; 42 min W
Elevation: 4360 feet
Reporting since: 2009-10-19



[Questions about this site.](#)

-
-
-

Site notes:

- **Data is provisional and subject to revision.**
- [More site notes.](#)
- Photograph is of the Jornada Exp Range SCAN site.
- 2012-June-22 National Water and Climate Center

Check to view temperatures in degrees Fahrenheit. Default is degrees Celcius.

Select Report Content	Select Time Series	Select Format	<input type="button" value="View Current"/>	<input type="button" value="View Historic"/>		
Standard SCAN (no chart) (2009-10-19)	Daily	table	Last 30 days	2010	Calendar Year	All days
All Sensors (no chart)	Hourly	csv	Last 7 days	2011	Water Year	01
Soil Moisture & Temperature (2009-10-19)	12 AM	chart	Last 24 hours	2012	January	02
Soil Moisture & Precipitation (2009-10-19)	3 AM		Water Year		February	03
Soil & Air Temperature (2009-10-19)	6 AM		Calendar Year		March	04
Precipitation 2009-10-19	9 AM				April	05
Atmospheric 2009-10-19	12 PM				May	06
Wind (2009-10-19)	3 PM				June	07
Solar (2009-10-19)	6 PM				July	08
===Individual elements===	9 PM				August	09

Check here to view reports in new window.

[< Back to: \[New Mexico Page\] - \[SCAN Main Page\]](#)

US National Phenology Network (USA NPN, via LTER and NEON)

<http://www.usanpn.org/about>



The USA National Phenology Network encourages people of all ages and backgrounds to observe and record phenology as a way to discover and explore the nature and pace of our dynamic world.

The Network makes phenology data, models, and related information freely available to empower scientists, resource managers, and the public in decision-making and adapting to variable and changing climates and environments.

Plant phenology long term data set at the Jornada (1992)

<http://jornada-www.nmsu.edu/studies/lter/datasets/plants/nppphen/phentran.dsd>

An example of a 20 year data set:

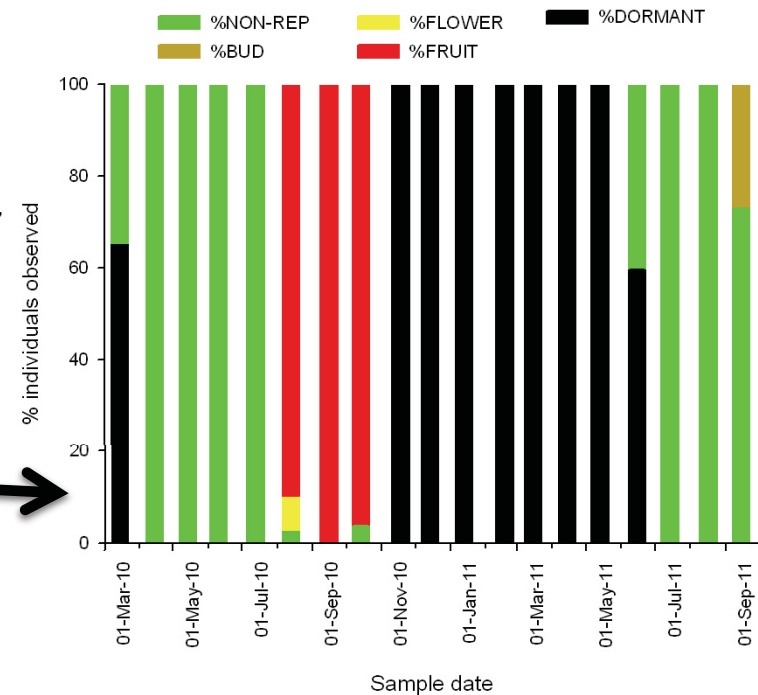
The phenological stage of key perennial plant species on the 15 net primary production sites is recorded on a monthly basis.

From the on-line available Excel raw data file:

```
DATE,JD,ZONE,SITE,SPP,DORMANT,NON-REP,BUD,FLOWER,FRUIT,OLD-FRUIT,METHOD,SEEDLING,OBSERVER,Q-FLAG,%DORMANT,%NON-REP,%BUD,%FLOWER,%FRUIT,COMMENTS,,,,,
07/15/1992,197,G,IBPE,ARSP,0,3,0,0,12,,B,,C. Sandell,G,0.00,20.00,0.00,0.00,80.00,,,,,
07/15/1992,197,G,IBPE,BOER,0,307,26,0,0,,B,,C. Sandell,G,0.00,92.19,7.81,0.00,0.00,,,,,
07/15/1992,197,G,IBPE,EPTR,0,2,0,0,3,,B,,C. Sandell,G,0.00,40.00,0.00,0.00,60.00,,,,,
07/15/1992,197,G,IBPE,MUPO,0,0,2,0,0,,B,,C. Sandell,G,0.00,0.00,100.00,0.00,0.00,,,,,
07/15/1992,197,G,IBPE,PRGL,0,0,0,0,1,,B,,C. Sandell,G,0.00,0.00,0.00,0.00,100.00,,,,,
07/15/1992,197,G,IBPE,SELE,0,0,0,0,13,,B,,C. Sandell,G,0.00,0.00,0.00,0.00,100.00,,,,,
07/15/1992,197,G,IBPE,SPFL,0,110,4,0,0,,B,,C. Sandell,G,0.00,96.49,3.51,0.00,0.00,,,,,
07/15/1992,197,G,IBPE,XANT,0,11,0,0,0,,B,,C. Sandell,G,0.00,100.00,0.00,0.00,0.00,,,,,
07/15/1992,197,G,IBPE,YUEL,0,10,0,0,0,,B,,C. Sandell,G,0.00,100.00,0.00,0.00,0.00,,,,,
07/15/1992,197,M,NORT,ARSP,0,0,0,0,3,,B,,C. Sandell,G,0.00,0.00,0.00,0.00,100.00,,,,,
07/15/1992,197,M,NORT,DAPU,0,0,0,0,16,,B,,C. Sandell,G,0.00,0.00,0.00,0.00,100.00,,,,,
07/15/1992,197,M,NORT,MUPO,0,3,0,0,0,,B,,C. Sandell,G,0.00,100.00,0.00,0.00,0.00,,,,,
```



From these raw data we can generate many different kinds of “derived data products”



National Ecological Observation Network (NEON, planned 2013)

<http://www.neoninc.org/neon-membership/neon-member-institutions.html>



Google earth

miles 1
km 3



NEON will build 62 sites across the U.S. to collect instrumental and field data. The sites have been strategically selected to represent different regions of vegetation, landforms, climate, and ecosystem performance. The data collected will focus on climate and atmosphere; soils, streams and ponds; and a variety of organisms (such as plants, animals and microbes). NEON will also collect airborne remote sensing data. These data **can** be combined with existing continental-scale data sets (e.g., **LTER**) to provide a range of scaled data products used to describe changes in the nation's ecosystem through space and time.

Affiliation Networks

- One of the original Man and Biosphere Reserves (established in 1976)

www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&code=USA+14

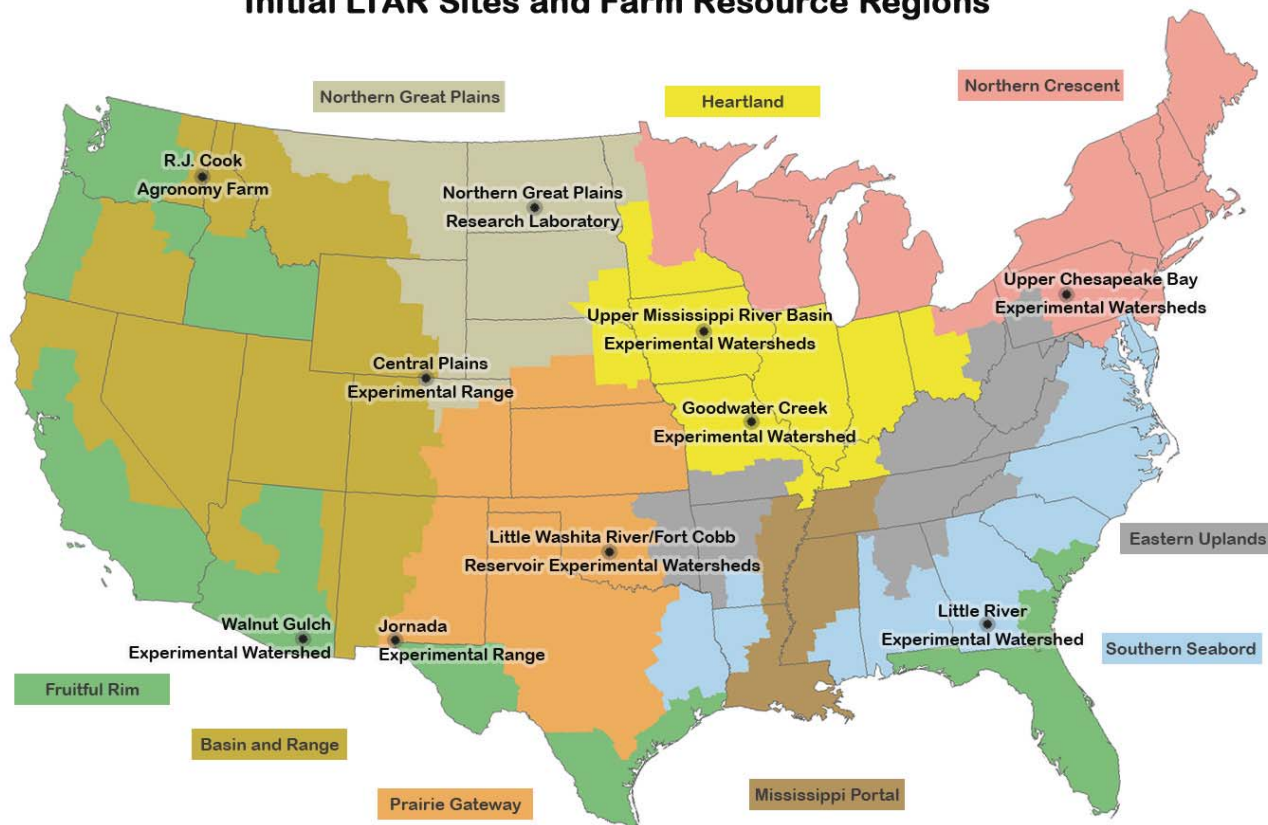
- An institutional member site of the Association of Ecosystem Research Centers (2004)

<http://www.ecosystemresearch.org/>

Research Program Networks

Long Term Agro-ecosystem Research Network (LTAR, 2012)

Initial LTAR Sites and Farm Resource Regions



Ten ARS sites in the original cohort identified early in 2012. Network, led by Mark Walbridge, is actively working to identify a shared research strategy. Initial goal is to have an initial network research activity underway early in 2013. A grand challenge of characterizing the capacities in these different systems to “sustainably intensify” agricultural production is one emerging possibility.

Long Term Ecological Research Network (LTER, 1981)



- The LTER Network is a collaborative effort involving more than 1800 scientists and students investigating ecological processes over long temporal and broad spatial scales.
- The Network promotes synthesis and comparative research across sites and ecosystems and among other related national and international research programs.
- The 26 LTER sites represent diverse ecosystems and research emphases.
- The LTER Network Office coordinates communication, network publications, and research-planning activities.
- Information management and educational activities are funded in addition to research.

Jornada LTER has been continuously funded by the National Science Foundation since 1982

ARS has been a formal partner since 1989; an ARS scientist has been Lead PI since 2003

Recently funded for the 6th cycle (2012-2018), \$5,880,000 (\$980,000/y)

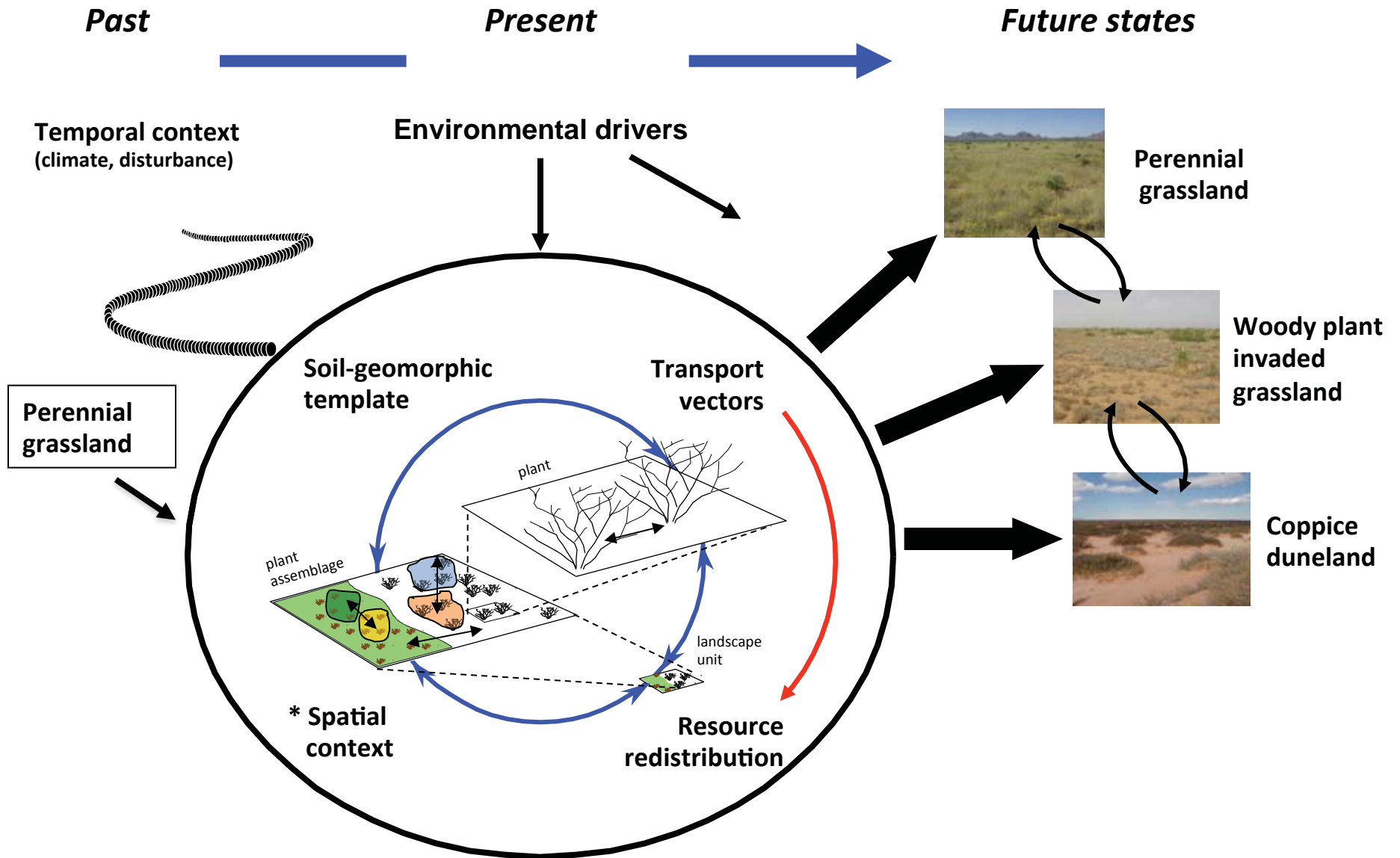
a. 18 Principal Investigators

- NMSU (n=5)
- ARS (n=5)
- USGS (n=1)
- Other universities (n=7)

Ariz State Univ, Univ Arizona, Univ Illinois, Univ Texas-El Paso, UCLA, Univ Calif-Berkeley

b. Numerous graduate and undergraduate students, staff (education coordinator, information manager, site manager, field technicians, IT), and collaborators

Jornada LTER emphases: 1982-2010



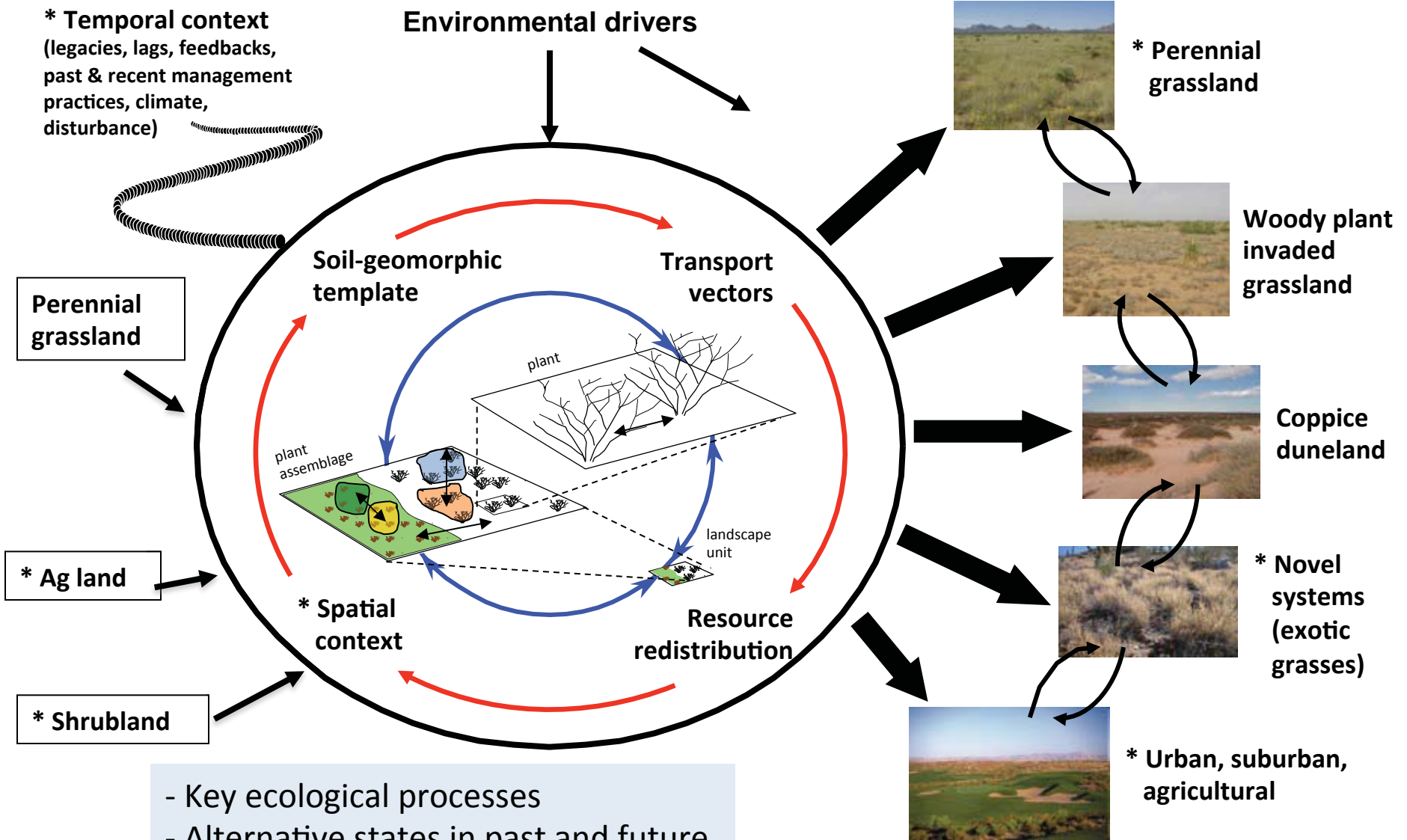
What are key ecological processes governing grassland to shrubland conversion at multiple scales?

Jornada LTER emphases: 2010 - future

Past

Present

Future states



- Key ecological processes
- Alternative states in past and future
- Multiple, interacting scales