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About IRI: iri.columbia.edu

Mission
Enhance society's capability to understand, anticipate and manage the impacts of climate in order to improve human welfare and the environment, especially in developing countries.

Regions
- Africa
- Asia / Pacific
- Latin America / Caribbean

Topics:
- Climate
- Environmental Monitoring
  - Agriculture / Food Security
  - Health
  - Water Resources
  - Natural Ecosystems
  - Disasters / Livelihoods
About IRI: Objectives

Innovate.

Demonstrate.

Reach out.

Train/Educate.
Making Data Accessible for Climate Applications

Over 300 datasets providing a thorough image of Earth’s past, present, and near-future climate

The IRI Data Library: iridl.ldeo.columbia.edu

- Historical Model Simulations
- Hydrology
- Atmospheric Indices
- Oceanography
- Air-Sea Interface
- Seasonal Forecasts
- Topographic and Land Characteristics
- Radiation Budget
- Atmosphere
IRI/LDEO Climate Data Library

The IRI/LDEO Climate Data Library contains over 300 datasets from a variety of earth science disciplines and climate-related topics. It is a powerful tool that offers the following capabilities at no cost to the user:

- access any number of datasets;
- create analyses of data ranging from simple averaging to more advanced EOF analyses;
- monitor present climate conditions with maps and analyses in the Maproom;
- create visual representations of data, including animations;
- download data in a variety of commonly-used formats, including GIS-compatible formats.

Are you new to the world of climate data? Check out our Introduction to Climate Data page.

What's New

Mar 08 - Shapes for climate zones in Sri Lanka have been added as a new Features data set.

Mar 08 - A new “International Federation” Map Room has been added to the IRI Map Room and is accessible from the Map Room front page. It contains a forecast precipitation map tool developed in collaboration with the International Federation of Red Cross and Red Crescent Societies that features analyses to provide context for global precipitation forecasts.

Mar 08 - A new “linked pdf” image option has been added to the Figure Viewer pages of the Data Library. Clicking on the “linked pdf” button will produce a clickable PDF version of the image you are viewing that links back to the Figure Viewer page for the image in the Data Library. The following link provides an example: February 2008 SST.

Feb 08 - A k-means cluster analysis named k-mean136 has been added to the Data Library as a new function.

Finding Data

Datasets by Category
Datasets by Source
Dataset Search
Browse/Search Datasets
Browse/Search Maproom

Help Resources

Introduction Tutorial
Statistical Analysis Tutorial
Ingrid Function Documentation
Questions and Answers
Main advantages:
- Combine and analyze data from different sources
- Download data/results only for your space/time domain in different formats
If not destroyed early, Desert Locust can damage crops and cause famine across multiple countries.

Monitoring rainfall and vegetation in desert areas is required.
At the request of the UN FAO, a web-based tool was created to support Desert Locust management and control

- Eliminates NDVI-based error for identification of locust habitat
- Adds daily and 10-day CMORPH rainfall estimates for identification of potential breeding areas

**Monitoring Tools for Desert Locust Conditions**

- **Rainfall Analysis Tool**: A rainfall monitoring product based on daily rainfall estimates from the Climate Prediction Center. The interface allows users to analyze recent rainfall in the desert locust breeding areas via maps and location-specific time series.

- **Dekadal Rainfall Estimates**: Accumulated rainfall during the most recent dekad based on estimates from the Climate Prediction Center Morphing technique.

- **MODIS Image Download Tools**: Three regional tools facilitate access to MODIS images, which are provided by the United States Geological Survey. Images are available for West Africa, East Africa, and Southwest Asia.

Michael Bell, Benno Blumenthal
**Situation update**  
3 March 2008

**Locust swarms move from Oman through Yemen, Saudi Arabia and UAE to Iran**

A few small immature swarms from southern and central Oman moved during the second half of February north to the Jabal Akhdar mountains in Dhahirah and Dakhliyya regions. Other swarms moved to eastern Yemen and then crossed the Empty Quarter to farms in eastern Saudi Arabia and southern UAE. Most of the swarms continued to the Musandam Peninsula, passing over Abu Dhabi and Dubai. At least one swarm crossed the Strait of Hormuz on 20 February to the southern coast of Iran where it settled near Minab and laid eggs. Control operations were carried out in Oman, Saudi Arabia and Iran.

Remnants of the swarms in Oman and Saudi Arabia could lay eggs in or near agricultural areas. Eggs that have already been laid in Iran will hatch in about a week and small hopper bands are likely to form. Control operations should be carried out to prevent new swarms from forming later in the spring.

All countries in the Region should remain alert and take the necessary steps to monitor the situation carefully and undertake control operations as needed.

In the Horn of Africa, small immature Desert Locust swarms are still present in southern Ethiopia. Survey and control operations are hampered by the mountainous and rugged terrain. Most of the swarms are expected to move to the Ogaden region in eastern Ethiopia and lay eggs when the long rains start later this month or in April. A few swarms could also move to northern Somalia and perhaps to the southern coast of the Red Sea in Eritrea.

In Sudan, locust populations continue to decline on the Red Sea coast in the Tokar Delta.

**Latest Desert Locust Bulletin (No. 353, February 2008)**

Arabic  English  Français

**Previous Desert Locust Bulletin (No. 352, January 2008)**

Arabic  English  Français
MODIS images: composite and NDVI are now available through IRI Health Maproom

Ministry of Health in Eritrea follows NDVI indices on regular basis and provides warnings to the sub-districts
Map Room2: Health

Extracting Information

Data in this graph

Description

a) Decadal (i.e., 10-day) precipitation estimates for the selected region from Dec 1999 to the present.
Fires in Kalimantan release CO$_2$ and smoke creating human health respiratory and air traffic problems.

CARE Indonesia funded IRI to create Early Warning and Early Action Systems to manage Fires in peatland areas.
Studied rainfall impact on fire activity

Rainfall anomalies during June to October of each year influence the fire activity
Climate and Fire Resource Room

Working with researchers at Bogor Agricultural University in Indonesia and CARE Indonesia, IRI has investigated links between climate anomalies, biophysical indicators, and fire hotspots in Kalimantan. Project research has uncovered a close correlation between satellite rainfall data and fire hotspot activity. Rainfall during the dry season from June to October is particularly critical in determining fire activity.

IRI has developed an online tool to enable stakeholders to view satellite rainfall data and rainfall anomalies over Central Kalimantan, which are in turn linked to fire activity. An exploratory prediction tool based on the NINO 4 index is then used to forecast, one to two months in advance, the likelihood of high or low fire activity. It is our intention to improve the forecasting method and increase the content of the resource room by including analyses that focus on fire activity in other regions where the link between climate and fire activity has been demonstrated.

Rainfall Monitoring Tool

A rainfall monitoring product based on CMORPH data from the most recent decadal from the U.S. Climate Prediction Center. The interface allows users to analyze recent rainfall in Indonesia via maps and location-specific time series. Rainfall anomalies are correlated with fire activity in Kalimantan. Negative anomalies during June to October are associated with high fire activity.

Exploratory Predictive Tool for Fire Activity in Kalimantan

By monitoring the NINO 4 index from April to September, it is possible to estimate the fire activity one to two months in advance in Kalimantan.
Building NMA’s Capacity to Provide Improved Climate Information
To overcome data gaps ...

**Gridded data** could help, but its quality is limited by station distribution.
Satellite data have excellent spatial converge

But ...
Accuracy of satellite rainfall estimates

... there are problems with the accuracy
Blending Satellite Estimates with Observation

Observation

Satellite

Blended
**Output:** Ten-daily time series at 10 km resolution:
- Thirty-year time series of Gridded RR/TTT
- Thirty-year time series of Satellite estimates
- Thirty-year time series of Blended products

**Beyond data**
- Online Climatology
- Digital Climate Atlas
IRI-NMA Project

**Capacity Built:**

- Improved climate data/information
- Calibration and validation of satellite data
- QC and gridding of RR/TT data
- Merging satellite and station data

⇒ NMA will continue generating the products and update the digital maps
Thank You