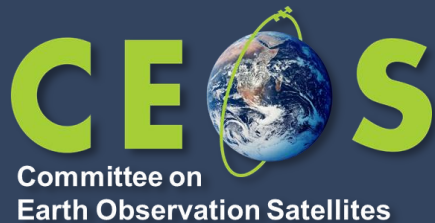




AVHRR data availability and Access from Bhoonidhi



**T.SAI KALPANA
NRSC/ISRO
WGISS-57
06th March 2024**

ISRO Acquires following satellite data of AVHRR for **Indian region only**

NOAA 11

NOAA 12

NOAA 14

NOAA 16

NOAA 17

NOAA 18

NOAA 19

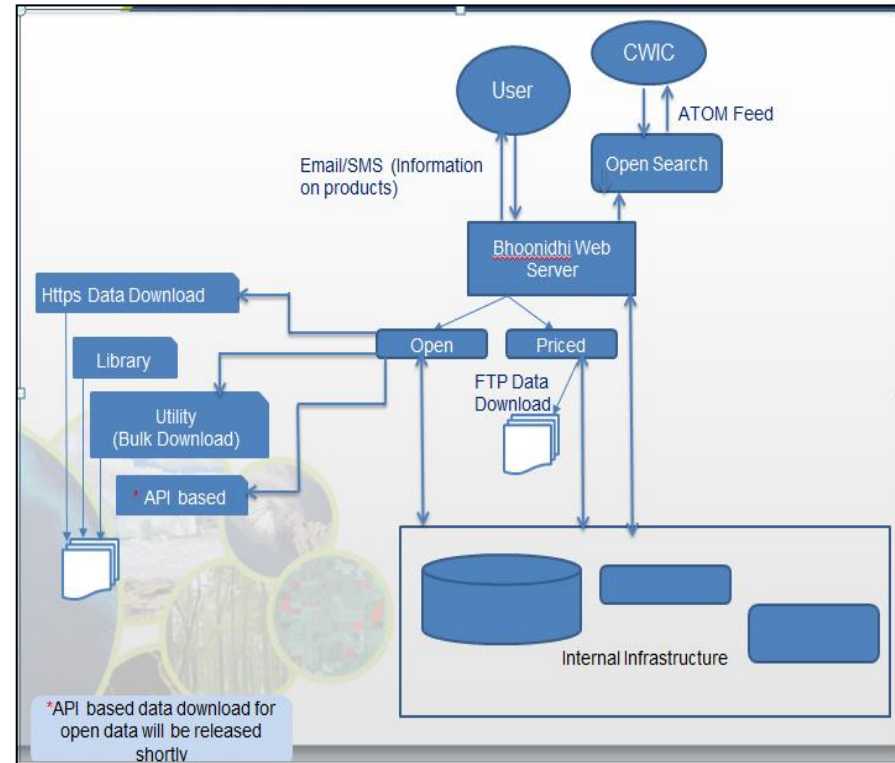
JPSS1*

Soumi-NPP*

*The satellites are active till date

Bhoonidhi (<https://bhoonidhi.nrsc.gov.in>) is data repository of remote sensing satellites including ISRO and foreign remote sensing sensors. AVHRR is one such sensor data available in the repository (NOAA series, JPSS, NPP Soumi).

- ❑ The AVHRR data of NOAA series is available as **open data on order**. The product is disseminated through FTP.
- ❑ The JPSS and NPP Soumi products are available **open data direct download** and the product is disseminated through HTTP Access.
- ❑ AVHRR - Level1B products



Bhoonidhi
ISRO's EO Data HUB

भूनिधि
इसरो ईओ डाटा हब

Explore Archives PI Actions Utilities ▾
LogOut Help

Satellite Data Availability

Select satellite from the list below:

29 April 2010
29 October 2014

<input type="radio"/> KompSat-3 (₹)	1-Jan-2018 - 29-May-2020	0.55 m
<input type="radio"/> KompSat-3A (₹)	1-Jan-2018 - 31-May-2020	0.55 m
<input type="radio"/> LandSat-8	1-Jan-2017 - till date	30 m
<input type="radio"/> LandSat-9	1-Apr-2022 - till date	30 m
<input type="radio"/> NOAA-11	25-Aug-1994 - 13-Sep-1994	1000 m
<input type="radio"/> NOAA-12	14-Sep-1994 - 4-Nov-1995	1000 m
<input type="radio"/> NOAA-14	3-Apr-1995 - 22-Sep-2010	1000 m
<input type="radio"/> NOAA-16	20-Jun-2001 - 11-Aug-2005	1000 m
<input type="radio"/> NOAA-17	20-Sep-2005 - 13-Apr-2010	1000 m
<input type="radio"/> NOAA-18	1-Oct-2005 - 9-Oct-2009	1000 m
<input checked="" type="radio"/> NOAA-19	29-Apr-2010 - 29-Oct-2014	1000 m
<input type="radio"/> AVHRR	29-Apr-2010 - 29-Oct-2014	
<input type="radio"/> Novasar-1	1-Oct-2019 - till date	6 m - 30 m
<input type="radio"/> OceanSat-1	1-Jul-1999 - 29-Jul-2009	360 m
<input type="radio"/> OceanSat-2	31-Dec-2009 - 3-May-2023	360 m
<input type="radio"/> RISAT-1	1-Jul-2012 - 30-Sep-2016	3 m - 30 m
<input type="radio"/> ResourceSat-1	7-Dec-2003 - 18-Nov-2023	5.8 m - 56 m
<input type="radio"/> ResourceSat-2	8-May-2011 - till date	5.8 m - 24 m
<input type="radio"/> ResourceSat-2A	18-Dec-2016 - till date	5.8 m - 56 m

Occurrence Index

- 1-72
- 73-143
- 144-215
- 216-287
- 288-358
- 359-430
- 431-502
- 503-574
- 575-645
- 646-717
- 718-789
- 790-860
- 861-932
- 933-1004
- 1005-1075
- 1076-1147

NOAA-19 Archives View →

The color code indicates the frequency of occurrence of the scene. The range of the frequency is shown in the color occurrence index.

The listed satellites archives can be viewed for the given date range,

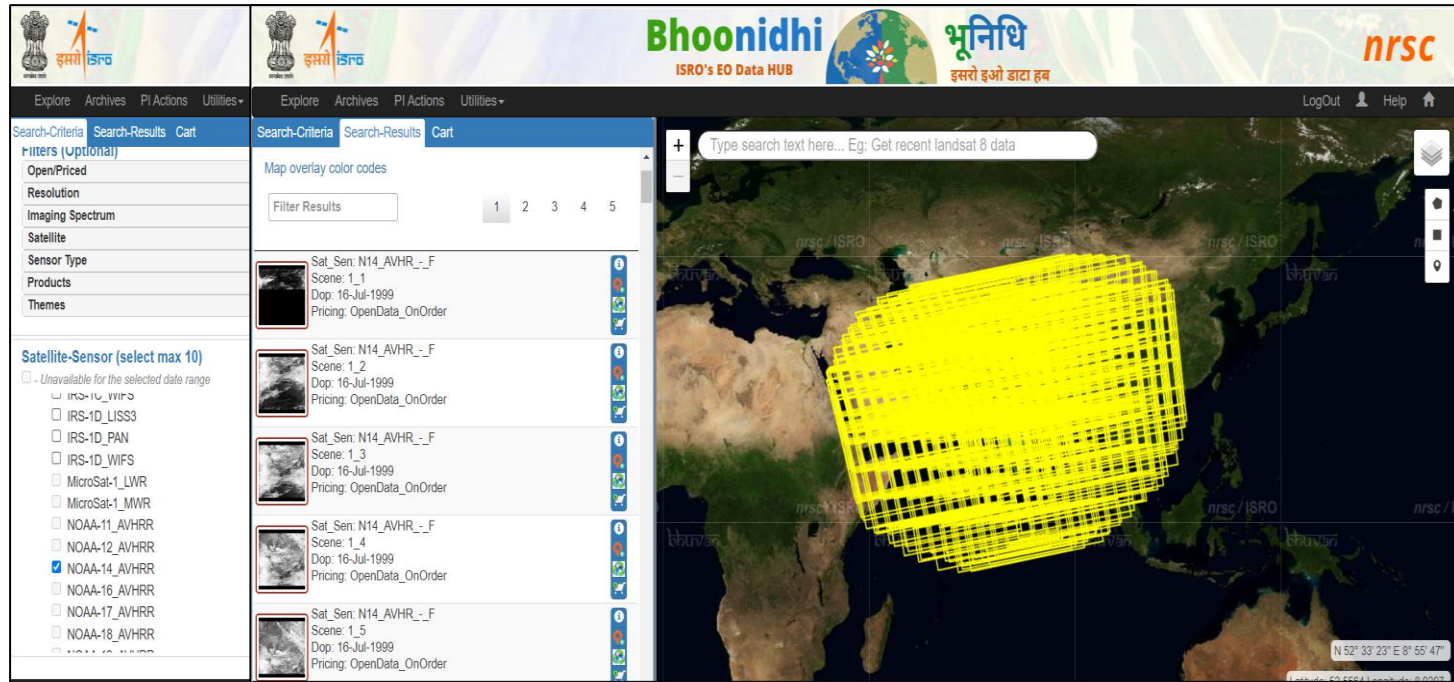
Browsing of NOAA-14



For the given Area of Interest and period of interest of the selected Satellite/Sensor the meta and browse images are displayed.

The overlay of scene over the area of interest is shown on the map.

*Soon the product catalogue will be available for instant download like JPSS-1.



The screenshot shows the Bhoonidhi web interface for AVHRR browsing. The top navigation bar includes the ISRO logo, the text "Bhoonidhi ISRO's EO Data HUB", and "भूनिधि इसरो इओ डाटा हब" with the "nrsc" logo. The main interface is divided into several sections:

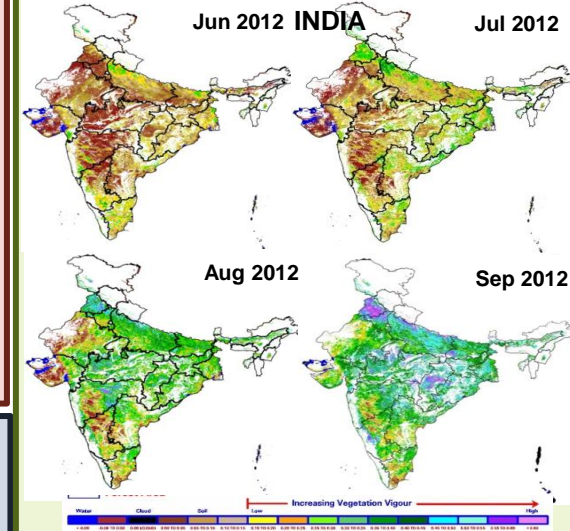
- Search-Criteria:** Includes filters for OpenPriced, Resolution, Imaging Spectrum, Satellite, Sensor Type, Products, and Themes.
- Satellite-Sensor (select max 10):** A list of satellite and sensor options with checkboxes. The "NOAA-14_AVHRR" option is selected.
- Search-Results:** A list of search results showing satellite details (Sat_Sen: N14_AVHR_-_F), scene numbers (Scene: 1_1 to 1_5), dates (Dop: 16-Jul-1999), and pricing (Pricing: OpenData_OnOrder).
- Map:** A satellite map of the Indian subcontinent with a yellow grid overlay representing the area of interest. A search bar above the map contains the text "Type search text here... Eg: Get recent landsat 8 data".

The NOAA-AVHRR was used operationally in Indian Space programme since 1989 under two important National Projects

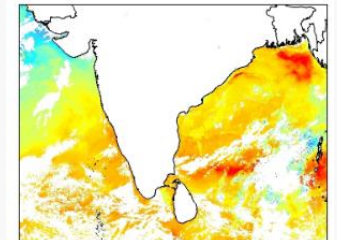
- ❑ National Agricultural Drought Assessment and Monitoring System (NADAMS) - NDVI & LST
 - The NADAMS provides Near Real Time information on prevalence, severity & persistence of agricultural drought at district level for the country
 - It helped in drought early warning and drought declaration for the country
 - The NADAMS project was institutionalized at Mahalanobis National Crop Forecast Centre (MNCFC) under Min. of Agriculture & Farmers Welfare

- ❑ Potential Fishing Zones (PFZ) project – SST
 - The Sea Surface Temperature (SST) from thermal-infrared channels of NOAA-AVHRR along with Chlorophyll retrieved from optical bands of Oceansat-II and MODIS Aqua satellites are used for the identification of Potential Fishing Zones (PFZ) along the Indian coastline.
 - The PFZ information are disseminated to the fishermen association
 - The PFZ project was institutionalized at Indian National Centre for Ocean Information Services (INCOIS) Under Min. of Earth Sciences

AVHRR BASED NDVI IMAGE OF



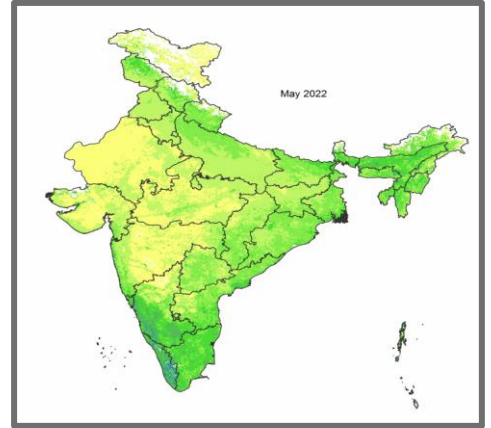
AVHRR BASED SEA SURFACE TEMPERATURE



The VIIRS on board NPP-S and JPSS are being operationally used in Indian Space programme for Evapotranspiration (ET) estimation and Snow Cover and Snowmelt rate Products under National Hydrology Project

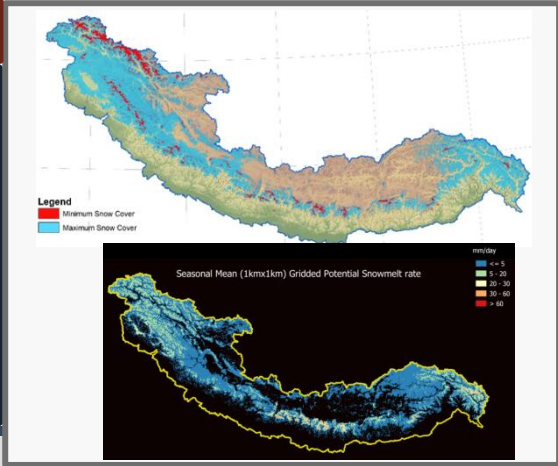
1. Satellite Based Evaporative Flux Estimation over Indian Region

- VIIRS based NDVI, LST, Albedo and other ancillary data are used in the Energy Balance model to estimate the satellite based ET at temporal scales of daily/fortnightly/monthly & creation of long term ET.
- ET products are used in the i. crop stress studies, ii. drought assessment, iii. water productivity and water use efficiency studies, iv. performance assessment of irrigation commands etc..



2. Snow Cover and Snowmelt rate Products

- VIIRS is used to generate the Snow cover and Snowmelt products over entire Indian Himalayan region during April to June each year.
- VSCMO bands namely Snow Cover, Snow Albedo and LST along with other ancillary datasets are used in the Energy balance model which generates 1km gridded Daily snowmelt gridded / 3-day snowmelt gridded forecast products during snowmelt season



Thank You

Ms. Anupama Sharma, Ms. Manju Sarma, Mr. Nitant Dube
&
Mr. K.Soma Sekhar, Mr. K.Chandrasekhar

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