Earth Systems Data

GLOBAL CHANGE DATA BASE

Volume 2

Experimental Calibrated

Global Vegetation Index

from NOAA's Advanced Very High Resolution Radiometer (AVHRR)

In Two Versions:

1. Biweekly values, Mercator projection, April 1985 - December 1991. By Kevin Gallo, NOAA/NESDIS Office of Research and Applications.

2. Monthly values, Latitude-Longitude (Plate Carree) projection, April 1985 - December 1990. Temporally aggregated and reprojected by the U. S. Geological Survey, re-registered for integrated application in the Global Change Data Base at NOAA's National Geophysical Data Center.

Prepared and Distributed for Integrated Use by:

National Oceanic and Atmospheric Administration
National Environmental Satellite, Data, and Information Service
National Geophysical Data Center
325 Broadway
Boulder, Colorado 80303

June 1992

Trademark Acknowledgements

Disclaimer

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The user must be cautious when using these data and computer programs. Because this is an experimental database constructed from existing sources, errors and omissions can be expected. The user is referred to peer evaluations of this product and subsequent revisions for determination of suitability for any given purpose.

Request

We invite anyone to propose corrections or offer additions to the Global Change Data Base, or documentation. We do not guarantee that we will be able to incorporate these changes. Nevertheless, we will endeavor to make corrections where appropriate, and where our resources allow us to do so.

Comments may be addressed to:

National Geophysical Data Center, Mail Code E/GC1
325 Broadway, Boulder, Colorado 80303, USA

Tel: (303) 497-6125
FAX: (303) 497-6513

TABLE OF CONTENTS

INTRODUCTION

This disc contains two versions of an experimental Global Vegetation Index (EGVI), developed by Kevin Gallo of the Land Sciences Branch, Office of Research and Applications, National Environmental Satellite, Data, and Information Service (NESDIS), National Oceanic and Atmospheric Administration (NOAA):

Directory <u>\1MONTH</u> contains monthly maxima derived from Gallo's original biweekly EGVI computations. The data were reprojected by the U. S. Geological Survey's Earth Resources Observation Systems Data Center to a to a 10-minute latitude-longitude projection. They were then re-registered at the NOAA National Geophysical Data Center to be compatible with the Global Change Data Base[1].

Directory <u>\2BIWEEK</u> contains the original biweekly EGVIs produced by Gallo. These data are provided as a source for analysis at higher temporal resolution. As they are in the Mercator projection, they are not immediately compatible with the Global Change Data Base. In addition, they have not received all of the GCDB's quality control analysis[1].

The Satellite Data Services Division of NOAA/NESDIS' National Climatic Data Center distributes operational Global Vegetation Indices (GVIs) derived from the Advanced Very High Resolution Radiometer of the NOAA Polar Orbiting Environmental Satellites. These data may be obtained from:

National Oceanic and Atmospheric Administration
National Environmental Satellite, Data, and Information Service
National Climatic Data Center
Satellite Data Services Division (E/CC6)
Princeton Executive Square, Suite 100
Washington, DC 20233
Telephone: (301) 763-8400

The experimental GVI (EGVI) contained on this CD-ROM was developed by Kevin Gallo to investigate the benefits of using pre-launch calibration information to improve the usefulness of the GVI. In addition, screening the data for low sun angle and clouds makes the data more useful for some studies (though use of such masked data in spatial analysis systems should be conducted with care).

In its support of pluralistic research and education on the Earth's environment, the National Geophysical Data Center distributes other experimental monthly compilations of NOAA's operational GVI data. Additional versions of GVI are planned.

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1. Additional information is contained in the hardcopy documentation, and in the README file in this directory.

Why so many versions of a data set?

Simply put, single versions of a data set were traditional in past years. Such information was often compiled by a committee of experts into a single map on the topic. Such maps often involved considerable (sometimes heated!) discussion on how to represent the subject. Legend categories were the result of (often agonizing) compromise that didn't completely satisfy any member of the authorship committee, but which were generally recognized as valuable instigators of scientific discussion, analysis, and interpretation.

With digital representations, we can now offer several different attempts to represent the same subject. Each representation provides a basis for discussion, analysis, and learning.

The original NOAA operational GVI, available from the Satellite Data Services Division (see above) have been widely accessible, and have been used by many scientists for qualitative and semi-quantitative analysis. One of the major comments of the operational GVI is that the lack of calibration of the data degrades the use of the GVI. Different AVHRR instruments on different satellites have different calibration characteristics, and these characteristics change with time.

The Gallo EGVI was an investigation into the use of simple pre-launch calibration information in producing a GVI.

This documentation contains a selected bibliography to discussions on the Normalized Difference Vegetation Index. These references cover a variety of approaches to the data, their computation, characteristics, and use.

We encourage you to compare this experimental GVI with others that may be available to you, from the Global Change Data Base or from other sources. We believe that increased investigation of alternative methods of producing and analyzing the GVI will result in an improved understanding of the value of such data. Such study will also lead to increased understanding of global environmental phenomena, including those of global change.

NOTE:

If you plan to use these data with the Global Change Data Base, you should use the data contained in the \1MONTH directory.

If you plan to use Kevin Gallo's original data, or if you want to try different ways to integrate these original data into the Global Change Data Base, use the data contained in the \2BIWEEK directory.

DATA SET DESCRIPTION:

DATA ON \2BIWEEK DIRECTORY

TITLE: EXPERIMENTAL CALIBRATED BIWEEKLY GLOBAL VEGETATION INDEX FROM NOAA's AVHRR

PRINCIPAL INVESTIGATOR: Kevin Gallo,
NOAA/NESDIS Office of Research and Applications

DATE: 1992

PRIMARY LITERATURE REFERENCE: Enclosed "Development of These Data"

CONTRIBUTOR: Kevin Gallo, NOAA/NESDIS/ORA

DATA DISTRIBUTION CENTER: NOAA National Geophysical Data Center
NOAA National Climatic Data Center
USGS EROS Data Center

GEOGRAPHIC SAMPLING: 1038 lines x 2048 columns, nominal 10.4 minute grid at the Equator

COVERAGE: 75^{o}N - 55^{o}S Latitude, 180^{o}W - 180^{o}E Longitude

PROJECTION: Mercator

TIME SAMPLING: Biweekly averages from weekly temporal composites of AVHRR data

PERIOD: April 1985 - December 1991

LINEAGE:

(1) AVHRR (Global Mercator Weekly GVI Channel Data)
NOAA/NESDIS/National Climatic Data Center
Satellite Data Services Division (E/CC6)
Princeton Executive Square, Suite 100
Washington, DC 20233
(301) 763-8400

(2) Reprocessed into calibrated biweekly averages by
Kevin P. Gallo
NOAA/NESDIS/ORA, EROS Data Center, Sioux Falls, SD
(now at NOAA/NESDIS/National Climatic Data Center
Federal Building
Asheville, NC 28801
(704) 259-0878)

DATA SET IDENTIFICATION:

> Gallo, Kevin P., 1992. Experimental biweekly global normalized difference vegetation index from NOAA's AVHRR (April 1985-December 1991). Digital Data. NOAA National Geophysical Data Center, Boulder, Colorado.

ADDITIONAL REFERENCES:

> See reference list in this documentation

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EXPERIMENTAL CALIBRATED BIWEEKLY GLOBAL VEGETATION INDEX FROM NOAA's AVHRR

DATA FILE STRUCTURE

FILE NAMES: BW8516 - BW9152 (175 files)

IMAGE TITLES: KGALLO BIWEEKLY GVI : weeks X-Y : Mercator Projection
(where X and Y are the period of data sampling in the image)

STRUCTURE:

Data type	: byte
File type	: binary
Rows	: 1038
Columns	: 2048
Minimum	: 0
Maximum	: varies by image
Flag values	: 0, 1, 2 (see Product Description)
Cell size	: nominal 10.4 min. at Equator
Data units	: calibrated unitless NDVI
Projection	: Mercator

DATA SET DESCRIPTION

DATA ON \1MONTH DIRECTORY

TITLE: EXPERIMENTAL CALIBRATED MONTHLY GLOBAL VEGETATION INDEX FROM NOAA's AVHRR REPROCESSED FROM KEVIN GALLO'S BIWEEKLY GVIs

PRINCIPAL INVESTIGATOR: Kevin Gallo,
NOAA/NESDIS Office of Research and Applications
(with subsequent reprocessing)

DATE: 1992

PRIMARY LITERATURE REFERENCE: Enclosed "Development of These Data"

CONTRIBUTOR: (Original Data Set): Kevin Gallo, NOAA/NESDIS/ORA
(Reprocessing to Monthly Lat/Lon) Douglas Binnie, USGS EROS Data Center

DATA DISTRIBUTION CENTER: NOAA National Geophysical Data Center
NOAA National Climatic Data Center
USGS EROS Data Center

GEOGRAPHIC SAMPLING: 10-min grid, resampled from 1038x2048 Mercator grid

COVERAGE: 75^{o}N - 55^{o}S Latitude, 180^{o}W - 180^{o}E Longitude
for actual data coverage.

PROJECTION: Latitude/Longitude

TIME SAMPLING: Monthly maxima from Biweekly averages of

PERIOD: April 1985 - December 1991

LINEAGE:

(1) AVHRR (Global Mercator Weekly GVI Channel Data)
NOAA/NESDIS/National Climatic Data Center
Satellite Data Services Division (E/CC6)
Princeton Executive Square, Suite 100
Washington, DC 20233
(301) 763-8400

(2) Reprocessed into calibrated biweekly averages by
Kevin P. Gallo
NOAA/NESDIS/ORA, EROS Data Center, Sioux Falls, SD
(now at NOAA/NESDIS/National Climatic Data Center
Federal Building
Asheville, NC 28801
(704) 259-0878)

(3) Reprocessed into monthly maxima (of biweekly values)
in latitude-longitude (Plate Carree) projection by
Douglas R. Binnie
U. S. Geological Survey
EROS Data Center
Sioux Falls, SD 57198
(605) 594-6142

(4) Re-registered to fit the Global Change Data Base by
NOAA/NGDC
(303) 497-6125

DATA SET IDENTIFICATION:

Gallo, Kevin P., 1992. Experimental biweekly global normalized difference vegetation index from NOAA's AVHRR (April 1985-December 1991). Digital Data. NOAA National Geophysical Data Center, Boulder, Colorado.

ADDITIONAL REFERENCES:

See reference list in this documentation

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EXPERIMENTAL CALIBRATED MONTHLY GLOBAL VEGETATION INDEX FROM NOAA's AVHRR

DATA FILE STRUCTURE

FILE NAMES: M8504 - M9012 (69 FILES)

IMAGE TITLES: KGALLO MONTHLY GVI : (APRIL 1985-DECEMBER 1990)

STRUCTURE:

Data type	: byte
File type	: binary
Rows	: 1080
Columns	: 2160
Minimum	: 0
Maximum	: varies by image
Flag values	: 0, 1, 2 (see Product Description)
Cell size	: 10 minute
Data units	: calibrated unitless NDVI
Projection	: Latitude/Longitude

DIRECTORY STRUCTURE ON THIS CD-ROM

```
|-------1MONTH.........monthly lat-lon EGVIs
|       |-ADOC.........see note 1
|       |-BDOC.........see note 2
|       |-CDOC.........see note 3
|       |-CELL.........gridded data
|       |-CELLHD3......see note 4
|       |-CELLHD4......see note 5
|
|-------2BIWEEK........biweekly Mercator EGVIs
        |-ADOC.........see note 3
        |-BDOC.........see note 2
        |-CELL.........gridded data
        |-CELLHD.......see note 6
```

Note 1: The subdirectories ADOC contain standard IDRISI 3 header (.doc) files. The maximum and minimum data value is that for the actual data set. You may want to use this directory for most applications, if using IDRISI.

Note 2: The subdirectories BDOC contain standard IDRISI 3 header (.doc) files. The maximum and minimum data values in each file are those for the entire data base, and are the same for each file. Use this directory to get consistent displays with autoscaling in IDRISI’s COLOR a command.

Note 3: The subdirectory CDOC contains standard IDRISI 4 header (.doc) files. You may want to use these if you are running IDRISI 4. There is no CDOC subdirectory in directory \2BIWEEK, as IDRISI 4 requires projection labeling, yet cannot yet handle the Mercator projection at the time of writing this documentation.

Note 4: The subdirectory CELLHD3 contains GRASS3 header (cellhd) files. These use a column-row pixel referencing scheme.

Note 5: The subdirectory CELLHD4 contains GRASS4 header (cellhd) files. These use a Latitude-Longitude projection, with coordinates in degrees and minutes.

Note 6: The subdirectory CELLHD contains GRASS3-style header (cellhd) files. GRASS does not yet handle Mercator projections, so both GRASS3 and GRASS4 must use column-row pixel referencing.

DEVELOPMENT OF THESE DATA

Experimental Biweekly
Global Normalized Difference Vegetation Index
from NOAA's AVHRR
by

Kevin P. Gallo
National Oceanic and Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Office of Research and Applications

An experimental normalized difference vegetation index (NDVI) was developed and produced during 1988 through 1990, from weekly visible and near-infrared AVHRR channel data available from NOAA's Global Vegetation Index product (Kidwell, 1991) distributed by the:

NOAA/NESDIS National Climatic Data Center
Satellite Data Services Division (E/CC6)
Princeton Executive Square, Suite 100
Washington, DC 20233

Tel: 301-763-8400
FAX: 301-763-8443.

NOAA's Mercator-projected product was utilized. The data are produced for the region between 75 degrees North latitude and 55 degrees South latitude. Data resolution in the Mercator projection varies from 19.6 km pixel size at the equator to 15 km at 40 degrees (North or South). The reflectance values of the visible and near-IR data were computed from pre-launch calibration coefficients. The NDVI was computed as:

NDVI = (nearIR - visible)/(nearIR + visible).

The calibrated visible and near-IR data, and solar zenith angle data included on the NOAA GVI product were utilized to screen the NDVI data for cloud contamination and low (less than 15 degrees) solar elevation at the time of data acquisition. Data were also screened for data drops. Two successive weeks of the screened NDVI data were then composited based on the maximum NDVI value of the two weeks. The biweekly data were processed for April 1985 through 1989. The start date of the biweekly composite intervals was 099 (9 April) in 1985. The start dates in 1986, 1987, 1988 were 001 (1 January). Processing intervals changed in 1988 on 11 April to a Monday through Sunday weekly cycle. The start date in 1989 was 002 (2 January), in 1990 was 001 (1 January) and for 1991 was 007 (7 January).

The biweekly NDVI data have been scaled to a byte format from the original ND value (a real number with a range from -1.00 to 1.00) computed with the above equation, using the following conversion:

byteNDVI = (realNDVI x 100) + 100.

Thus, a byte NDVI value of 151 in the data set is equivalent to a computed real NDVI value of 0.51. A byte NDVI value of 100 is equivalent to a computed real NDVI of 0.0. Data tagged by the cloud, data drop, or solar elevation algorithms will include values of 0 through 2, respectively.

There are 26 biweekly files for each year but 1985, for which the 19 last biweekly periods have files. The file naming convention is YYWW. For example, file 8602 covers the first two weeks of 1986. Each biweekly data file includes 1038 lines and 2048 samples of data in a byte format. The value that occupies the first line and sample of each file is located at 75 N and 180 W. A FORTRAN program that computes line and sample location from latitude and longitude is appended to this documentation.

Additional information about the data is found in the README file in the \2BIWEEK directory; more information can be provided by Kevin Gallo, NOAA/NESDIS, National Climatic Data Center, Federal Building, Asheville, North Carolina 28801, (704) 259-0878, or from the NGDC Global Change Data Base help line at (303) 497-6125.

Reference: Kidwell, K. B., (ed), 1991. Global Vegetation Index Users Guide. NOAA/NESDIS, NCDC Satellite Data Services Division (E/CC6), Princeton Executive Square, Suite 100, Washington, DC 20233.

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Experimental Monthly
Global Normalized Difference Vegetation Index
from NOAA's AVHRR

Computed From Kevin Gallo's Biweekly Experimental GVIs

These monthly maxima of the Gallo experimental GVIs were computed by taking the maximum values of biweekly GVIs for each month, then reprojecting the original mercator-projected data to latitude-longitude projection. The compilation was produced from Gallo's data by the U. S. Geological Survey's EROS Data Center.

Inspection of these data at NOAA's National Geophysical Data Center showed that the computed data were internally consistent to within one grid cell (the locational accuracy usually attributed to the NOAA Polar Orbiting Environmental Satellites that house the AVHRR sensor). However, the data were misregistered to the Earth by 1 grid cell (to the south). After colleague confirmation by the GeoSPACE project at the Canada Centre for Remote Sensing, the data were reregistered at NGDC by removing the northernmost row of data, and inserting a new row at the bottom of each data file. As these rows contained no GVI values, no data were lost in the process.

The README file in the \1MONTH directory contains more information on these data.

PROGRAM TO CONVERT LATITUDES & LONGITUDES INTO MERCATOR *MI* AND *MJ* COORDINATES

```
c------------------------------------------------------------
c
c This program converts input latitude and longitude values into
c MI and MJ coordinates associated with the NOAA Vegetation
c Index products with Mercator projections described in Kidwell
c (1991).  Written by K. P. Gallo, 11 November 1987.
c
c--------------------------------------------------------------
c
c
      real lat,long, mi, mj, in,lonc, x,y,i,j,reply
      data pi/3.1416/,in/2500.0/,lonc/o.o/
c
  20  write(*,701) ' enter latitude and longitude in degrees '
      read(*,'(BN,2f7.2)') lat, long
      write(*,*) lat, long
  701 format(a\)
c
      x=in*(long-lonc)/360.
      y=in*(lat)/360.
c
      i=x+1250.0
      j=-y+522.0
c
      mi=(i*.8192)
      mj=662.0-(log(tan(-0.00126*j+1.44136))*325.95)
c
      write(*,2001) ' mj(line#)= ', mj, ' mi(sample#)= ', mi
 2001 format(a,f7.2,a,f7.2)
      write(*,701) ' enter a "1" for another lat,long '
      read(*,'(BN,f1.0)') reply
      if (reply .eq. 1) goto 20
      end
```

HOW TO USE THIS DISC?

If you use GRASS-GIS (public domain, designed for environmental analysis), you will want to build a link between a fully constructed global data base on your hard disk and the CELL and CELLHD subdirectories in either the /1MONTH or /2BIWEEK directories on the CD-ROM. These subdirectories fulfill their functions in the GRASS directory structure. You may also want to link to a working directory for global data to which you could add GRASS support files, etc. When using GRASS, you will have to use entire filenames (e.g. BW8516.IMG).

For example, you might want to use (subject to the style of YOUR UNIX):

```
ln /usr/mnt/1month/cellhd3 /usr/grass3/data/global/username/cellhd
ln /usr/mnt/1month/cell /usr/grass3/data/global/username/cell
```

to run GRASS3 where:

/usr/mnt is the address of your CD-ROM drive
/usr/grass3/data/global is the location of your global data base on your hard disk
username is your user name

If you are running GRASS4, you may wish to link the CELLHD4 instead of the CELLHD3 subdirectory in the /1MONTH directory. GRASS4 hand- les latitude-longitude data better than GRASS3. The CELLHD4 subdirectory contains appropriate CELLHD files for this. As GRASS handles data in the Mercator projection only as unprojected images, the CELLHD3 directory in /2BIWEEK should be used by all GRASS users of these data.

If you are using IDRISI (a low-cost educational GIS), you may want to run programs MONTH or BIWEEK in the enclosed software (see the Software Guide in this manual). Otherwise use the DOS APPEND command to append the ADOC or BDOC subdirectory with the CELL subdirectory of the \1MONTH or the \2BIWEEK directories on this CD-ROM.

The standard unheadded binary raster grid of each data file consists of a string of 8-bit byte values (0-255), placed adjacent to each other in the file. This format can be ingested into virtually any image processing system, or any geographic information system that can handle raster data. Most such systems have routines for ingesting these data. For example, in ERDAS™ you download the file from your CD-ROM drive, run FIXHEAD and BSTATS, using the appropriate number of lines and samples, as described in the Product Description, and shown in the CELL, ADOC and BDOC subdirectories and README file for each version of the data.

Some software (such as GRASS and IDRISI) will allow you to work with the data on the CD-ROM. Some other software, especially that which embeds a header into the data file, will require you to copy the data to a hard disk, and work from there.

If you have any problems in using this CD-ROM, if you have any comments, or if you have any data that you would like distributed in this way, please contact NGDC at (303) 497-6125.

SOFTWARE GUIDE

Browse and Visualization Modules for the
Experimental Global Vegetation Index CD-ROM

WELCOME!

This disk contains a subset of the IDRISI Geographic Analysis System that has been specially prepared by Clark University and NOAA/NGDC for use with the Global Change Data Base. Almost any 8088-, 80286-, 80386 or compatible personal computer running IBM-DOS or compatible operating system, with EGA, VGA, or 8514A compatible graphics should be able to run these modules.

In the future, NGDC plans to have browse and visualization software that runs on IBM-PC/MS-Windows, Macintosh, and UNIX/X-Windows environments. This software will be a generalized version of NGDC's GeoVu software (which had its debut in NGDC's CD-ROM on Geophysics of North America).

This software can be run from the floppy diskette, but more practically should be copied to a separate CDROMVU (or other) program directory. You can then run the program named MENU. The MENU lists modules contained on this disk, which can then be run interactively by typing in the appropriate command name.

To get the MENU, type MENU or HELP. !

INTRODUCTORY NOTES:

1. These modules were developed especially for NGDC's Global Change Data Base, and for a cooperative project called the "Global Ecosystems Database Project" between NOAA/NGDC and the U. S. Environmental Protection Agency. Some parts of the software refer specifically to this cooperative project, which, within NGDC, is a part of the overall Global Change Database Program.

2. This disk contains two versions of the COLOR program -- one simply called COLOR for EGA and VGA systems and a second called COLOR85 for 8514/A or XGA systems (the EGA/VGA version can also be used with 8514/A and XGA systems). If you are working with an 8514/A or XGA or compatible graphics adaptor, please be sure that your applications interface (AI) driver has been loaded. If the module fails to produce a graphic image, it indicates that the AI driver is not memory resident.

3. You should have your CD-ROM drive installed, following the manufacturer's instructions. This browse and visualization assumes that your CD-ROM drive is called drive F: If your CD-ROM drive carries a different designation, pay attention to installation step 3 below.

4. If you already own a copy of IDRISI, these modules may be copied to your

IDRISI directory. However, since many of these modules are revisions that have been specially prepared for this project, you should keep these separate from the general-release versions. This is why we suggest a separate CDROMVU subdirectory.

SOFTWARE INSTALLATION:

1. The software can be run from floppy disk, but is better run from a hard disk. If you have a hard disk, copy the entire contents of the enclosed floppy diskette to a new directory in your hard disk. The software is setup to run in a CDROMVU directory on your C: hard disk.

2. If you install the software in a different environment, you should run the ENVIRON command (just go to the directory containing the software and type ENVIRON and hit the ENTER key). Follow the instructions on the screen to interactively change the drive and directory settings appropriately.

3. The BIWEEK and MONTH programs are set up to run successfully if your CD-ROM drive is your "F:" drive. If your CD-ROM drive has a different designation, you will need to perform a simple editing of these programs. To do so:

--Run your favorite word processor or text editor in ASCII mode. (That is, DON'T have it change these files into the proprietary format of your word processor, but retain the ASCII file structure.)

--Have it read the file BIWEEK.BAT, which contains a single line:

```
APPEND f:\1biweek\adoc;f:\2biweek\cell
```

--Change this line to read:

```
APPEND DLETTER:\1biweek\adoc;DLETTER:\1biweek\cell
```

Where DLETTER is the letter designation of your CD-ROM drive (perhaps D, E, F, L, or M?).

--Save this file.

--Repeat this process for the MONTH.BAT file.

4. Run ENVIRON to assign the drive and path of the directory on your hard disk that will be your working directory. This may be the destination directory to which you will write subscenes extracted from the global GVI files (if you want to work regionally rather than globally, you can do this with the enclosed utility SUBSET). Or, this may be the directory to which you might want to write output files (such as ASCII versions of the images by using the enclosed utility CONVERT). You may use the default setting (C:\CDROMVU) if you want your output data in the same location as the software; but this may not be convenient for you in the long run.

You may want to use different working directories for different purposes. This is easy to do with ENVIRON.

FURTHER NOTES:

5. Note that we are including several .pal files. These are alternate color palettes for displaying images with COLOR or COLOR85. You may want to experiment with these, especially those with GVI in their names. To use such a palette, note when COLOR or COLOR85 ask you for your choice of palette. Answer with the number for "user-defined palette." Then, when prompted, give the name of the palette (which you must know beforehand by using DOS commands).

6. All IDRISI modules belong to Clark University and are protected by International Copyright Law. The modules distributed here have been made available to the EPA and NOAA/NGDC through a special Memorandum of Understanding with Clark University. They may not be distributed independently of the Global Change Data Base. For further information about the Global Change Data Base, please contact :

NOAA/NGDC
325 Broadway
Boulder, CO 80303
USA

Tel : (303) 497-6125
FAX : (303) 497-6125
Attn: David Schoolcraft

For further information about the IDRISI Geographic Analysis System please contact :

IDRISI Project
Clark University
950 Main St.
Worcester MA 01610
USA

Tel : (508) 793-7526
FAX : (508) 793-8881

FILE NAMING CONVENTIONS

DATES OF IMAGERY ON THIS CD-ROM

\BIWEEK directory

The biweekly files are listed below. Each file is prefixed with a "BW," followed by the year (e.g. "86"), followed by a number corresponding to the sampling period of the image. Each image file has a ".IMG" extension. For example, file "BW8516.IMG" is a file covering the biweekly period of weeks 15-16 of 1985.

When using the software enclosed with this CD-ROM, you should not enter the ".IMG" when specifying an image to be displayed or processed. The ".IMG" is assumed by the software.

With GRASS-GIS, use the entire file name (e.g. "BW8516.IMG")

With other software, use the file naming conventions specified in your user's manual. With some software you may have to modify the naming conventions of these files, which would mean that they may not work from the CD-ROM.

BW8516.IMG	BW8544.IMG	BW8620.IMG	BW8648.IMG
BW8518.IMG	BW8546.IMG	BW8622.IMG	BW8650.IMG
BW8520.IMG	BW8548.IMG	BW8624.IMG	BW8652.IMG
BW8522.IMG	BW8550.IMG	BW8626.IMG	BW8702.IMG
BW8524.IMG	BW8552.IMG	BW8628.IMG	BW8704.IMG
BW8526.IMG	BW8602.IMG	BW8630.IMG	BW8706.IMG
BW8528.IMG	BW8604.IMG	BW8632.IMG	BW8708.IMG
BW8530.IMG	BW8606.IMG	BW8634.IMG	BW8710.IMG
BW8532.IMG	BW8608.IMG	BW8636.IMG	BW8712.IMG
BW8534.IMG	BW8610.IMG	BW8638.IMG	BW8714.IMG
BW8536.IMG	BW8612.IMG	BW8640.IMG	BW8716.IMG
BW8538.IMG	BW8614.IMG	BW8642.IMG	BW8718.IMG
BW8540.IMG	BW8616.IMG	BW8644.IMG	BW8720.IMG
BW8542.IMG	BW8618.IMG	BW8646.IMG	BW8722.IMG

BW8724.IMG	BW8848.IMG	BW8920.IMG	BW9144.IMG
BW8726.IMG	BW8850.IMG	BW8922.IMG	BW9146.IMG
BW8728.IMG	BW8852.IMG	BW8924.IMG	BW9148.IMG
BW8730.IMG	BW8902.IMG	BW8926.IMG	BW9150.IMG
BW8732.IMG	BW8904.IMG	BW8928.IMG	BW9152.IMG
BW8734.IMG	BW8906.IMG	BW8930.IMG	BW9102.IMG
BW8736.IMG	BW8908.IMG	BW8932.IMG	BW9104.IMG
BW8738.IMG	BW8910.IMG	BW8934.IMG	BW9106.IMG
BW8740.IMG	BW8912.IMG	BW8936.IMG	BW9108.IMG
BW8742.IMG	BW8914.IMG	BW8938.IMG	BW9110.IMG
BW8744.IMG	BW8916.IMG	BW8940.IMG	BW9112.IMG
BW8746.IMG	BW8918.IMG	BW8942.IMG	BW9114.IMG
BW8748.IMG	BW8920.IMG	BW8944.IMG	BW9116.IMG
BW8750.IMG	BW8922.IMG	BW8946.IMG	BW9118.IMG
BW8752.IMG	BW8924.IMG	BW8948.IMG	BW9120.IMG
BW8802.IMG	BW8926.IMG	BW8950.IMG	BW9122.IMG
BW8804.IMG	BW8928.IMG	BW8952.IMG	BW9124.IMG
BW8806.IMG	BW8930.IMG	BW9102.IMG	BW9126.IMG
BW8808.IMG	BW8932.IMG	BW9104.IMG	BW9128.IMG
BW8810.IMG	BW8934.IMG	BW9106.IMG	BW9130.IMG
BW8812.IMG	BW8936.IMG	BW9108.IMG	BW9132.IMG
BW8814.IMG	BW8938.IMG	BW9110.IMG	BW9134.IMG
BW8816.IMG	BW8940.IMG	BW9112.IMG	BW9136.IMG
BW8818.IMG	BW8942.IMG	BW9114.IMG	BW9138.IMG
BW8820.IMG	BW8944.IMG	BW9116.IMG	BW9140.IMG
BW8822.IMG	BW8946.IMG	BW9118.IMG	BW9142.IMG
BW8824.IMG	BW8948.IMG	BW9120.IMG	BW9144.IMG
BW8826.IMG	BW8950.IMG	BW9122.IMG	BW9146.IMG
BW8828.IMG	BW8952.IMG	BW9124.IMG	BW9148.IMG
BW8830.IMG	BW8902.IMG	BW9126.IMG	BW9150.IMG
BW8832.IMG	BW8904.IMG	BW9128.IMG	BW9152.IMG
BW8834.IMG	BW8906.IMG	BW9130.IMG	
BW8836.IMG	BW8908.IMG	BW9132.IMG	
BW8838.IMG	BW8910.IMG	BW9134.IMG	
BW8840.IMG	BW8912.IMG	BW9136.IMG	
BW8842.IMG	BW8914.IMG	BW9138.IMG	
BW8844.IMG	BW8916.IMG	BW9140.IMG	
BW8846.IMG	BW8918.IMG	BW9142.IMG	

\MONTH directory

The monthly files are listed below. Naming is as described above, in a monthly context. Thus, file "M8512.IMG" is a file covering the biweekly period of month 12 (e.g. September) of 1985. Remember that the GVIs are actually an average of two biweekly values, so that our sample image would be an average of BW8550.IMG and BW8552.IMG.

When using the software enclosed with this CD-ROM, you should not enter the ".IMG" when specifying an image to be displayed or processed. The ".IMG" is assumed by the software.

With GRASS-GIS, use the entire file name (e.g. "M8512.IMG")

With other software, use the file naming conventions specified in your user's manual. With some software you may have to modify the naming conventions of these files, which would mean that they may not work from the CD-ROM.

M8504.IMG	M8609.IMG	M8802.IMG	M8907.IMG
M8505.IMG	M8610.IMG	M8803.IMG	M8908.IMG
M8506.IMG	M8611.IMG	M8804.IMG	M8909.IMG
M8507.IMG	M8612.IMG	M8805.IMG	M8910.IMG
M8508.IMG	M8701.IMG	M8806.IMG	M8911.IMG
M8509.IMG	M8702.IMG	M8807.IMG	M8912.IMG
M8510.IMG	M8703.IMG	M8808.IMG	M9001.IMG
M8511.IMG	M8704.IMG	M8809.IMG	M9002.IMG
M8512.IMG	M8705.IMG	M8810.IMG	M9003.IMG
M8601.IMG	M8706.IMG	M8811.IMG	M9004.IMG
M8602.IMG	M8707.IMG	M8812.IMG	M9005.IMG
M8603.IMG	M8708.IMG	M8901.IMG	M9006.IMG
M8604.IMG	M8709.IMG	M8902.IMG	M9007.IMG
M8605.IMG	M8710.IMG	M8903.IMG	M9008.IMG
M8606.IMG	M8711.IMG	M8904.IMG	M9009.IMG
M8607.IMG	M8712.IMG	M8905.IMG	M9010.IMG
M8608.IMG	M8801.IMG	M8906.IMG	M9011.IMG

M9012.IMG

APPENDIX A.

SELECTED REFERENCES ON THE NORMALIZED DIFFERENCE VEGETATION INDEX FROM AVHRR

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