

RSSG Newsletter

Remote Sensing Specialty Group
Association of American Geographers

WINTER 1990-1991

FROM THE CHAIR

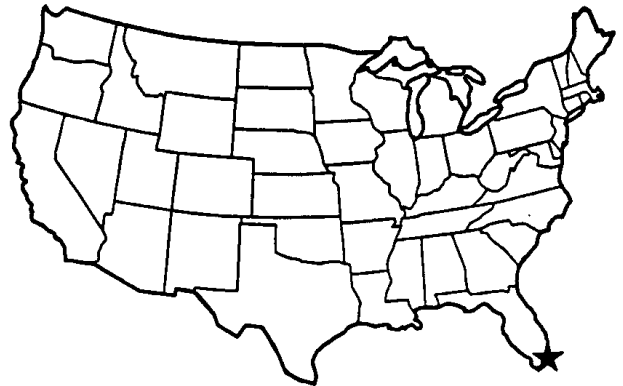
The RSSG Program Committee chaired by Vince Ambrosia (NASA-Ames) and supported by Kevin Price (University of Kansas) and Tina Cary (EOSAT) has put together another exciting program for the Miami AAG meetings. Thanks to all who agreed to participate in the RSSG-sponsored events!

Although the program looks interesting, I hope a larger group of our membership will participate in the 1992 San Diego AAG meetings. We must not lose sight of our geography disciplinary roots and the need to play an active role in the AAG. We must demonstrate our presence at the national meetings by giving papers, posters or participating in discussion sessions. Our graduate students should be encouraged to present their research efforts as well. We should also play a more active role in submitting manuscripts to the Annals and the Professional Geographer. We must not give up in our efforts to make our contributions known to the general geography community.

One new initiative approved at the Toronto AAG meetings by the RSSG and later approved by the AAG Executive Council is the "Award for Outstanding Contributions in Geographic Remote Sensing." I am in the process of naming a selection committee for the award.

I hope to see many of you at the Miami meetings. If you have specific suggestions for me regarding the RSSG do not hesitate to call or write. With best wishes for the new year!

M. Duane Nellis
Kansas State University



RSSG PROGRAM FOR 1991 MIAMI AAG MEETINGS TAKES SHAPE

The Remote Sensing Specialty Group will sponsor several paper sessions at the 1992 Miami AAG meetings. Vince Ambrosia (NASA-Ames) reports that papers currently scheduled include:

"Development of Sampling Algorithms to Aid Classification and Estimation of Community Associations Across Landscapes" by Douglas Ramsey (Utah State University).

(Continued on page 2)

AWARD FOR OUTSTANDING CONTRIBUTIONS IN GEOGRAPHIC REMOTE SENSING

The RSSG Award for Outstanding Contributions in Geographic Remote Sensing was approved by the AAG Executive Committee on June 29, 1990.

Objectives: In an effort to recognize the outstanding scholarly and service contributions by geographers in the area of remote sensing, the RSSG awards committee has recommended that an annual award be instituted. The members of the RSSG accepted this recommendation unanimously at the 1990 Toronto business meeting.

(Continued on page 2)



RSSG Program (Continued from page 1)

"Thermal Infrared Multispectral Scanner Data for Urban Thermal Landscape Assessment" by Dale Quattrochi (NASA-Stennis Space Center).

"Namibian Vegetation Changes: Integration of Analog and Digital Remotely Sensed Data" by Robert Mohler and M.J. Wilkinson (NASA-JSC) and J. Giardino (Texas A&M).

"Analysis of Hyper-Channel VIS-IR Scanner Data for Forest Stress" by Vincent Ambrosia and Jeffrey Myers (NASA-Ames).

"The Role of Remote Sensing and Geographic Information Systems in Regional Habitat Analysis" by Thomas Huber (University of Colorado-Colorado Springs).

"The Development and Accuracy Assessment of a County-Level Land Cover Map Derived from Landsat-5 Thematic Mapper Data" by Donald Luman (Northern Illinois University).

"Regional Scale Land Use/Land Cover Mapping" by Bradley Reed (New Mexico State University).

In addition, Duane Nellis and Charles Bussing (Kansas State University) have organized a session focussed on "Remote Sensing in Africa." The session will be cosponsored by RSSG and the Africa Specialty Group. Papers will include:

"Observations and Measurements of Variations in Lake Chad" by Robert Holz (University of Texas).

"Deforestation in Southeastern Central African Republic Using Landsat MSS Data" by John Harrington, Susan Berta and Paul Mausel (Indiana State University) and Robin Graham (Oak Ridge National Laboratory).

"Shuttle Photography, Macrogeomorphology and 'Immense Alluvial Cones' in Africa" by Justin Wilson (Lockheed Engineering).

"Global Change Database Pilot Project for Africa" by Jeffrey Colby (University of Colorado and NOAA).

"African Macro-Ecological Problems Documented from Space, 1962-1990" by Kamlesh Lulla and Michael Helfert (NASA-JSC).

AWARD (Continued from page 1)

Award: The award shall be in the form of a medal with a citation. The design, inscription and the size were approved by the RSSG at the 1990 business meeting.

Selection Criteria: A selection committee appointed by the RSSG Chair will invite nominations from the AAG/RSSG members and will be responsible for gathering, evaluating and finalizing the list of recommended nominees. This list will be submitted to the RSSG Chair who will, in consultation with the officers of the RSSG, select the award winner. The awards committee and selection committee may have overlapping membership.

For additional details on the Awards program contact Duane Nellis, Kansas State University, RSSG Chair (913-532-6727).

SPECIALTY GROUPS TO CONSIDER NEW PROCEDURES FOR COLLECTING DUES

The AAG Council has recently proposed the following possible changes in dues collection procedures:

1. Dues of \$1.00 or more will be collected by the AAG for all specialty groups.
2. Specialty group rebates from the AAG (currently \$0.90 per specialty group member) will be eliminated to defray the costs of collecting, apportioning and remitting dues.
3. AAG members will be able to join as many specialty groups as they wish.
4. Specialty groups will no longer be required to provide services to members who do not pay specialty group dues.

These proposals will be discussed by RSSG at its 1992 Miami business meeting. The AAG Council will be making a decision on these matters shortly after the 1992 meetings. Please convey your ideas and suggestions to Duane Nellis, RSSG Chair, as soon as possible and plan to attend the business meeting if at all possible.

INTERNATIONAL GEOGRAPHICAL CONGRESS
SOLICITS AID FOR INTERNATIONAL
PARTICIPANTS

RSSG members have been asked to consider providing assistance to potential international participants (especially those from Third World nations and Eastern Europe) in the 27th International Geographical Congress (IGC). The meeting will be held in Washington, D.C. August 9-14, 1992.

The IGC Organizing Committee has created the Host and Travel Grant Program to provide partial subsidy of travel and lodging costs for 250-300 geographers. Funds from corporations, government and individuals are being sought. AAG members are urged to contribute. One form of contribution would be to pledge to cover the \$50.00 IGC registration cost for an international participant. Funds can be designated for a representative of a particular world region or language area. Contributions are tax deductible.

Those wishing to help should contact:

Donald E. Vermeer, Chair
Host and Travel Grant Committee
27th International Geographical
Congress
17th and M Streets
Washington, D.C. 20036

NEWS NEWS NEWS

Experimental Digital Orthophotos

The U.S. Geological Survey has prepared a set of experimental digital orthophoto products for a portion of the Black Earth, Wisconsin 7.5' Topographic Quadrangle. These are prototypes for proposed nationwide products and are being made available free for review. Both hardcopy and digital versions are available. The digital data are provided along with PC display software on floppy disks or CD-ROM. Additional details are available from Mr. Alan Mikuni, U.S. Geological Survey, National Mapping Division, MS 531, 345 Middlefield Rd., Menlo Park, CA 94025 (Telephone: 415-329-4337).

Remote Sensing On-Line Retrieval System (RESORS)

RESORS is a library of remote sensing literature and related materials initially assembled by the Canada Centre for Remote Sensing (CCRS). The library contains some 70,000 documents and 7000 slides. RESORS provides automated literature searches, and can loan or reproduce many materials in the collection. During 1990 CCRS issued a license to Horler Information, Inc. to operate RESORS on a commercial basis. The fee schedule for searches and information on other services can be obtained by contacting:

Mr. Louis Marcotte
RESORS Manager
Horler Information Inc.
1547 Merivale Road
Ottawa, Ontario
CANADA K1A 0Y7
Telephone: 613-952-2706

The Earth at Night

A poster illustrating the "Earth at Night" is available from Hansen Planetarium in Salt Lake City. The poster illustrates the urban lighting patterns, burning and other illumination evident to satellites making nighttime observations. Copies can be obtained for \$6.00 plus \$1.50 shipping from Hansen Planetarium, 1098 South 200 West, Salt Lake City, Utah 84101; Telephone: 1-800-321-2369.

Bibliography of Textbooks for Remote Sensing Educators

The American Society for Photogrammetry and Remote Sensing (ASPRS) has recently published an Annotated Bibliography of Textbooks for Remote Sensing Educators. The volume was prepared by Daniel L. Civco (University of Connecticut) under the auspices of the ASPRS Education Committee. Thirty-one textbooks and references are described. Each entry includes a list of chapters and appendices, notable features, a capsule review and recommendations on audiences and users. It is anticipated that the bibliography will be periodically updated and revised. ASPRS members can purchase the book for \$15.00; the price for others is \$25.00. Contact ASPRS at 5410 Grosvenor Lane, Suite 210, Bethesda, MD 20814-2160 (Telephone 301-493-0290).

Terra-Mar City Poster Series

Terra-Mar Resource Information Services, Inc. has produced a new collection of false color posters of Landsat Thematic Mapper images showing nearly two dozen U.S. cities and surrounding areas. Most of the images were acquired during 1988. Each poster measures 24" by 36", has a black border and a glossy finish. The posters sell for \$20.00 including postage, handling and shipping tube. Teachers should be especially interested in these high quality graphics. For additional details contact:

Terra-Mar Resource Information Services, Inc.
1937 Landings Drive
Mountain View, CA 94043
Telephone: 415-964-6900

Images of the Earth from the Defense Meteorological Satellites

Images from the Defense Meteorological Satellite Program (DMSP) are available from the University of Colorado. Mosaics include the "USA at Night," "Europe at Night," and "Antarctica." Original DMSP images have about 2.7 km resolution. Both prints of various sizes and slides are offered. Prices range from about \$13 - \$30. For additional details contact:

National Snow and Ice Data Center
CIRES, Campus Box 449
University of Colorado
Boulder, CO 80309
ATTN: Greg Scharfen or Robert Bauer
Telephone: 303-492-6197

EOStacks: An Earth Observation Satellite Database

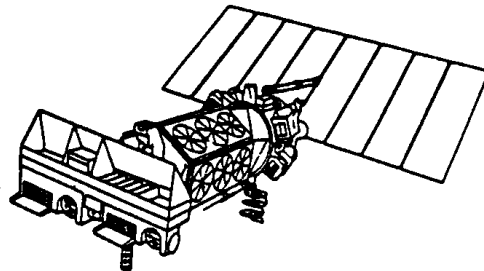
EOStacks is an electronic reference describing the technology and applications of earth observing satellites. The system was developed by Earth Observation Sciences for the Royal Aerospace Establishment, Farnborough, U.K.

More than 20 past, present and planned satellites are described in the system. These include Landsat, SPOT, MOS, IRS, ERS, Radarsat, and meteorological satellites. Textual and graphic information on the ground and space segments, data and applications, and a bibliography are provided for each satellite. In addition, EOStacks includes an overview of remote sensing.

EOStacks is based on Hypercard for the Apple Macintosh computer. For additional information contact:

Earth Observation Sciences
Branksome Chambers
Branksomewood Road
Fleet, U.K. GU13 8JS

AVHRR NEWS



Poster Portrays Global Greenness

A new full-color poster publicizing the forthcoming meeting of the International Society for Photogrammetry and Remote Sensing (ISPRS) portrays the earth's "greenness" computed for 1987 from AVHRR data. The ISPRS conference will be held August 2-14, 1992 in Washington, D.C. The poster can be obtained by contacting ISPRS 1992 Congress, P.O. Box 7147, Reston, VA 22091-7147.

CERL Produces Videotape

The U.S. Army Construction Engineering Research Laboratory (CERL), developers of the GRASS software package, have produced a videotape entitled "Global Data and the Animation of Vegetative Production." The video portrays AVHRR-derived greenness data for 1988. Both global and continental data are presented. Greenness data are shown merged with terrain data in some applications. The videotape can be borrowed free for two-week loan periods from:

U.S. Army Corps of Engineers
Construction Engineering
Research Laboratory
P.O. Box 4005 (GRASS)
Champaign, Illinois 61824-4005
Telephone: 800-252-7122

RSSG members should also ask about GRASS-related publications. Many are good resource materials even for those not using the GRASS software.



EOSAT/LANDSAT NEWS

Landsat TM Poster

EOSAT has published an excellent poster portraying TM imagery of Charleston, SC and vicinity. The poster presents information on the electromagnetic spectrum, spectral reflectance, atmospheric attenuation and the Landsat system. Color images show various color compositing techniques. Individual bands are presented in black and white. For copies contact:

Earth Observation Satellite
Company (EOSAT)
4300 Forbes Boulevard
Lanham, MD 20706
Telephone: 800-344-9933 or
301-552-0547

EOSAT to Sponsor Student Award

EOSAT has announced that it will sponsor an award for "Application of Digital Data" to be administered by the American Society for Photogrammetry and Remote Sensing (ASPRS). The recipient of the award will receive a grant of Landsat data valued at \$4000.

The award competition is open to any full-time graduate or undergraduate student engaged in remote sensing research at an accredited college or university. Students seeking the award will submit project descriptions to EOSAT for judging by mid-January of each year. The award will be presented at the Spring meeting of ASPRS. For additional details contact EOSAT or ASPRS.

"Spaceship Earth to Feature Landsat

"Spaceship Earth," a 10-part PBS television series to air in 1991 will feature Landsat and other remote sensing systems. Each episode will focus on a man-environment theme. RSSG members may wish to check with their local PBS stations for viewing dates.

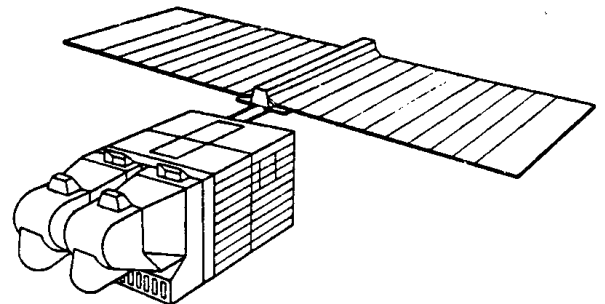


SPOT NEWS

New SPOT Products Announced

SPOT Image Inc. has announced several new products. "SPOT Quadmaps" cover USGS 7.5 minute quadrangles. Ten-meter panchromatic data are used to produce 1:24,000 geocoded products. "SPOT CountyViews" cover any U.S. county with 10-meter resolution panchromatic imagery at a scale of 1:24,000. "SPOT Metroviews" cover areas of approximately 1400 square miles surrounding major U.S. cities. "SPOT BasinViews" provide 10-meter resolution coverage of any geologic basin in the world having a minimum size of 2500 square miles. For additional details contact:

SPOT Image Corporation
1897 Preston White Drive
Reston, VA 22091-4368
Telephone: 703-620-2200



SPOT "Load and Go" Imagery

SPOT Image Corporation is now providing a "Load and Go" format for ARC/INFO users. These products are geocoded and can be entered directly into ARC/INFO's Image Integrator. Similar products are provided for SPANS GIS users, and will soon be available for Intergraph and GeoVision systems. Products include full scene panchromatic or multispectral data, SPOT Quadmaps, Metroviews, SPOT Digital Terrain Models, and Land Cover data. For more details contact SPOT Image Corporation.

VOLUNTEERS NEEDED

RSSG needs your help! Please indicate below if you would be willing to assist with RSSG activities. Send the form to:

Dr. M. Duane Nellis, Chair
RSSG Specialty Group
Department of Geography
Dickens Hall
Kansas State University
Manhattan, KS 66506
Telephone: 913-532-6727

I would like to assist RSSG in the following area(s):

_____ Planning the 1992 annual meeting program

_____ Serving on the nominating committee

_____ Serving on the awards committee

_____ Assisting with the newsletter

_____ Assisting with fund-raising

_____ Assisting with or organizing a workshop

_____ Workshop title: _____

_____ Organizing a special session or field trip for the
1992 annual meeting

_____ Session/trip title: _____

_____ Other: _____

Comments; suggestions for RSSG activities or projects:

NAME: _____

ADDRESS: _____

TELEPHONE: _____ FAX: _____

REMOTE SENSING AND GIS ACTIVITIES IN THE DEPARTMENT OF GEOGRAPHY
SAN DIEGO STATE UNIVERSITY

Instructional and research activities in remote sensing and GIS are conducted through the Stephen and Mary Birch Foundation Center for Earth Systems Analysis Research (CESAR), a computer-based research and instruction facility administered by the Department of Geography. The purpose of the Center is to apply state-of-the-art technology in image processing, remote sensing, geographic information systems (GIS), automated cartography and numerical modeling to problems with a spatial dimension. Research conducted by the CESAR is directed at both applied and fundamental problems in fields ranging from biophysical remote sensing to urban planning. The research includes computer-based map and image data processing and spatial simulation modeling as well as field experimentation. Current and in-progress grants and contracts are in excess of 1.8 million dollars.

San Diego State University and the University of California-Santa Barbara (UCSB) have recently joined resources to offer a doctoral program. This program will complement the existing Ph.D. program at UCSB. The program is designed around three systematic specialties: human, environmental and physical geography. In all programs, however, particular emphasis will be placed on analytical skills such as remote sensing, GIS, computer cartography and quantitative spatial analysis.

Administration

Research projects and contracts are primarily directed by Drs. Janet Franklin, Allen Hope, Gerard Rushton, Douglas Stow and Richard Wright. Advanced graduate students, working under the close supervision of the project directors, are used as staff on many projects. Dr. Ernst Griffin, Chairman of the Geography Department, is the general administrator and Mr. David McKinsey is the technical manager.

Faculty Participants

Principal faculty members involved include:

Janet Franklin, Ph.D. Geography, University of California, Santa Barbara, 1988; M.A. Geography, University of California, Santa Barbara, 1983; A.B. Environmental Biology, University of California, Santa Barbara, 1979.

Dr. Franklin is a specialist in remote sensing, environmental analysis, and biogeography. Her list of publications and technical papers includes more than 25 items, many of which deal with vegetation resource inventory and habitat mapping through the use of remote sensing technologies. She has served as a consultant with Dames and Moore on the subject of imagery interpretation of wild life habitats and has been involved in numerous research projects funded by the National Aeronautics and Space Administration, the California Space Institute, and the National Geographical Society. Current research is concerned with canopy reflectance modeling of vegetation structure in semiarid and savanna.

Allen S. Hope, Ph.D. Hydrology, Remote Sensing, and Climatology, University of Maryland, 1986; M.S. Eng. Hydrology, University of Natal, 1979; H.D.E. Geography, University of Natal, 1977. Honors in Geography, Hydrology, and Climatology, University of Natal, 1976; B.S. Geography and Psychology, University of Natal, 1975.

Dr. Hope is a specialist on remote sensing, radiometric studies, hydrology, climatology and landscape ecology modeling. His current research involves modeling evapotranspiration using remotely sensed observations; radiometric, remote sensing and geographic information system studies on the north slope of Alaska; modeling discharge for watersheds in the Sierra Nevada range; and conducting soil moisture measurement and modeling on vineyards in southern California. He is the principal investigator of a federally funded grant and co-principal investigator and collaborator on other federally funded grants.

Gerard Rushton, Ph.D. Geography, University of Iowa, 1984; M.A. Geography, University of Wales, 1982.

Dr. Gerard Rushton occupies the Stephen and Mary Birch Endowed Chair in Geographic Studies. Dr. Rushton is a specialist on the development of spatial decision support systems for social and economic problems. This includes the location components of service delivery systems, the design and management of urban emergency facilities and decision-making on the expansion or contraction of service facilities. He also measures the effects of geographical access on the use of service facilities and uses geographical systems technology for the study of changes in the social-economic characteristics of urban areas.

Douglas A. Stow, Ph. Geography (minor Mechanical and Environmental Engineering), University of California, Santa Barbara, 1985; inter-campus transfer Scripps Institution of Oceanography, 1981; M.A. Geography, University of California, Santa Barbara, 1978; A.B. Geography, University of California, Santa Barbara, 1976.

Dr. Stow is a specialist in remote sensing, geographic information systems, coastal geomorphology, landscape ecology and numerical modeling of dynamic spatial systems. His current research involves studying the geomorphology and sediment transport rates of coastal inlets and river mouths using computer modeling; remote sensing and geographic information system studies of arctic tundra ecology on the north slope of Alaska and desert ecology of the Jornada Basin; remote sensing based mapping of water quality, kelp resources and seismically-deformed shoreline ridges; and interfacing remote sensing and geographic information system techniques for updating regional land use data. He is the principal investigator of a federal and a state funded grant, co-principal investigator of two federally funded grants and collaborator on another federal grant.

Richard D. Wright, Ph.D. Geography, University of Kansas, 1967; M.A. Geography, Indiana University, 1961; A.B. Geology, Indiana University, 1960.

Dr. Wright is a specialist on geographic information systems, automated cartography, spatial data base development, theoretical cartography, and map interpretation. He has been a consultant to private industry and public agencies on a variety of mapping and geographic information systems projects. Recently, he has been involved with GIS education and the use of GIS in land use modeling and sensitive lands monitoring. He is a principal investigator of both public and private contracts and grants.

David McKinsey, M.A. Geography, San Diego State University, 1986. A.B. Geography, San Diego State University, 1985.

Mr. McKinsey manages the Center with responsibilities that include scheduling and coordinating project work flows, supervising data conversion projects, and maintaining hardware and software. He has worked on a number of projects and has particular expertise in the use of GIS in prescribed burning programs.

Other geography faculty who are participating in projects involving remote sensing and GIS are:

- Edward Aguado, Ph.D., Wisconsin, 1983 - Climatology, Meteorology, Solar Radiation, Quantitative Analysis
- Stuart C. Aitken, Ph.D., Western Ontario, 1985 - Spatial Behavior, Urban Analysis, Quantitative Approaches
- Larry R. Ford, Ph.D., Oregon, 1970 - Urban Design, Comparative Urbanization
- Barbara E. Fredrich, Ph.D., UCLA, 1975 - Latin America, Vegetation, Cultural Geography
- Arthur Getis, Ph.D., Washington, 1981 - Spatial Pattern Analysis, Urban Spatial Structure, Spatial Statistics, Spatial Modeling
- Ernst C. Griffin, Ph.D., Michigan State, 1972 - Latin America, Land Use Modeling, Population Dynamics
- David McArthur, Ph.D., Louisiana State, 1969 - Physical Geography, Coastal and Fluvial Geomorphology, Quantitative Methods
- John F. O'Leary, Ph.D., UCLA, 1984 - Biogeography, Physical Environmental Studies, Field Measurements and Quantitative Analysis
- Frederick P. Stutz, Ph.D., Michigan State, 1970 - Transportation Systems, Urban, Economic and Social Geography, Applied Quantitative Geography

Faculty from the Department of Biology and Geological Sciences, as well as researchers from the Systems Ecology Research Group, are also involved with activities in CESAR.

Recent and Current Funded Research

Research undertaken by the CESAR is performed under contract with public agencies as well as with private industry. The following is a listing of some of the Center's recent and current funded research projects that involve remote sensing and GIS:

- Otay Ranch Geographic Information Systems. Funding - United Enterprises, Inc.
- Modeling Evapotranspiration for the International Satellite Land Surface Climatology Project. Funding - National Aeronautics and Space Administration
- Mapping Pleistocene Shoreline Deposits from Multi-Spectral Thermal Infrared and Other Remotely Sensed Data for the Salton Trough. Funding - California Institute of Technology and National Aeronautics Space Administration
- Response, Resistance and Resilience to, and Recovery from, Disturbance in Arctic Tundra Ecosystems. Funding - U.S. Department of Energy
- Ecological Monitoring at Cuyamaca Rancho State Park with a Geographic Information System. Funding - California Department of Parks and Recreation
- Geographic Information System Technology Improvement Project. Funding - Stephen and Mary Birch Foundation
- Evaluation of the Utility of the USGS 1:24,000 Digital Elevation Model for Identifying Steep Slope Lands in San Diego County. Funding - San Diego Association of Governments
- Efficient Updates of Vector-Coded Geographic Information Systems Using Remotely Sensed Data. Funding - National Aeronautics and Space Administration
- Desertification: Responses of Arid Landscapes and Ecosystems to Resource Redistribution. Funding - National Science Foundation
- Hungry Valley State Vehicular Recreation Area ORV Impact Geographic Information System Monitoring. Funding - California Department of Parks and Recreation
- Ocotillo Wells Vehicular Recreation Area ORV Impact Geographic Information Systems Monitoring. Funding - California Department of Parks and Recreation

Crystal Cove Park Geographic Information System for Managing Park Resources. Funding - California Department of Parks and Recreation

Use of MOSS-ARC/INFO GIS for Mapping Ecological Types and Prescribed Fire Management in Pine Valley. Funding - U.S. Forest Service

Tijuana Estuary GIS for Estuary Restoration. Funding - Nature Conservancy

Facilities and Equipment

The Center is equipped with sophisticated hardware and software in image processing, GIS, and quantitative analysis. These include:

- VAX 11/750
- 620 mb RAS2 disk drive
 - TU80 tape drive
 - Ethernet modem and controller
- ARC/INFO GIS on VAX 11/750/780 cluster
- Tektronix 4207 graphic terminals (6)
 - Calcomp 1044 penplotter
 - Calcomp 9100 coordinate digitizers (2)
 - Hitachi coordinate digitizer
 - Zeta 8 pen plotter
 - TIN topographic data module
 - NETWORK
- ERDAS Image Processing/GIS Systems on IBM PC/AT (3) AND Compaq 386 (2)
- Cipher 1600 BPI magnetic tape drive
 - Cuho video digitizer
 - Matrix OCR digital color film recorder
 - Calcomp 9100 coordinate digitizers (2)
 - Tektronix 4696 color ink jet printer
 - Bernoulli disk cartridge drives (3)
- ERDAS Work Station on VAX 11/750
- ARC/ERDAS interface
 - COMPAQ 386 workstation
- TAE/VICAR ON VAX 11/750
- Raster Technology Model One/25 image display system
 - Image Based Information system (IBIS)
- Computer Cartographic Workstations on Macintosh II computers (4)
- Laser printer
 - Software: MapMaker, Excel, SuperPaint, Tektronix 4105 emulation package, PixelPaint, MacDraw II, MacDraft, Canvas, Adobe Illustrator, MacGis, Cricketgraph, Statview, Exstatix, Hypercard, GIS Tutorial, MAP II
- SUN 4/60 Sparc Station I
- 19" monochrome monitor
 - 208 mg hard drive
 - floppy disk drive
- SUN 4/60 Sparc Station 1
- 19" color monitor
 - 600 mb hard drive
 - 150 mb tape drive
- Graphics on VAX Cluster
- DISSPLA graphics package
 - Alphanumeric terminals
- Graphics and GIS on the IBM PC/AT
- Map Analysis Package (two versions)
 - SURFER contouring software
 - GRAPHER graph software
 - The Map Collection thematic map package
 - MOSS
 - IDRISI
 - HP plotter
- Biovision Color Infrared Video Camera
- Aerial Camera mount
 - Pc-based frame grabber
- Exotech Hand-held Radiometers (2)
- Omnidata Polycorder (2)
- Everest Interscience Thermal Infrared Radiometers (2)

The Center's research equipment is augmented by other facilities in the Department of Geography including two field vehicles, a wide array of field measuring devices, a class "A" eather station, a physical geography laboratory, a cartography/remote sensing laboratory, and a fully equipped cartographic darkroom.

Information

For more information about on-going research projects or services provided by CESAR, or for a demonstration of capabilities, contact:

Mr. David McKinsey
Stephen and Mary Birch
Foundation
Center for Earth Systems
Analysis Research (CESAR)
Department of Geography
San Diego State University
San Diego, CA 92182
Telephone: 619-594-4597 or
619-594-5437

For information on academic programs contact:

Department of Geography
San Diego State University
San Diego, CA 92182
Telephone: 619-594-6639

USE YOUR NEWSLETTER

The RSSG Newsletter is your vehicle for communicating with colleagues interested in remote sensing. You are invited to send news regarding publications, awards, honors, new programs, commercial ventures, student activities, jobs and other announcements to:

James W. Merchant
Conservation & Survey Division
University of Nebraska-Lincoln
113 Nebraska Hall
Lincoln, NE 68588-0517
Telephone: (402) 472-7531
FAX: (402) 472-2410

RSSG Newsletter
c/o James W. Merchant
Conservation and Survey Division
University of Nebraska-Lincoln
113 Nebraska Hall
Lincoln, NE 68588-0517

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