

Wide Area Wetland Mapping in Semi-Arid Africa Using 250-Meter MODIS Metrics and Topographic Variables

Tipo Artigo de periódico

Autor Tobias Landmann

Autor Matthias Schramm

Autor Rene R. Colditz

Autor Andreas Dietz

Autor Stefan Dech

Resumo Wetlands in West Africa are among the most vulnerable ecosystems to climate change. West African wetlands are often freshwater transfer mechanisms from wetter climate regions to dryer areas, providing an array of ecosystem services and functions. Often wetland-specific data in Africa is only available on a per country basis or as point data. Since wetlands are challenging to map, their accuracies are not well considered in global land cover products. In this paper we describe a methodology to map wetlands using well-corrected 250-meter MODIS time-series data for the year 2002 and over a 360,000 km² large study area in western Burkina Faso and southern Mali (West Africa). A MODIS-based spectral index table is used to map basic wetland morphology classes. The index uses the wet season near infrared (NIR) metrics as a surrogate for flooding, as a function of the dry season chlorophyll activity metrics (as NDVI). Topographic features such as sinks and streamline areas were used to mask areas where wetlands can potentially occur, and minimize spectral confusion. 30-m Landsat trajectories from the same year, over two reference sites, were used for accuracy assessment, which considered the area-proportion of each class mapped in Landsat for every MODIS cell. We were able to map a total of five wetland categories. Aerial extent of all mapped wetlands (class "Wetland") is 9,350 km², corresponding to 4.3% of the total study area size. The classes "No wetland"/"Wetland" could be separated with very high certainty; the overall agreement (KHAT) was 84.2% (0.67) and 97.9% (0.59) for the two reference sites, respectively. The methodology described herein can be employed to render wide area base line information on wetland distributions in semi-arid West Africa, as a data-scarce region. The results can provide (spatially) interoperable information feeds for inter-zonal as well as local scale water assessments.

Data 2010/7

Idioma en

Catálogo de biblioteca www.mdpi.com

URL <https://www.mdpi.com/2072-4292/2/7/1751>

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Extra Number: 7 Publisher: Molecular Diversity Preservation International

Volume 2

Páginas 1751-1766

Título da publicação Remote Sensing
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Edição 7
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Etiquetas:

land cover, Landsat, class homogeneity, MODIS time-series, West Africa, wetland mapping

Anexos

- Snapshot
- Full Text PDF

Uso do sensoriamento remoto para estimar a umidade do solo na zona radicular do cafeeiro(1).

Tipo Artigo de periódico
Autor Bruno Montoani Silva
Autor Geraldo César de Oliveira
Autor João José Marques
Autor Nilton Curi
Idioma pt
Catálogo de biblioteca Zotero
Páginas 4
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Anexos

- Silva et al. - Uso do sensoriamento remoto para estimar a umidade.pdf

Towards climate-responsible peatlands management

Tipo Livro
Organizador Riccardo Biancalani
Organizador Armine Avagyan
Organizador Food and Agriculture Organization of the United Nations
Data 2014
Idioma en
Catálogo de biblioteca Library of Congress ISBN
Número de chamada QH87.3 .T69 2014

Extra OCLC: ocn897821077

Lugar Rome

Editor Food and Agriculture Organization of the United Nations (FAO)

ISBN 978-92-5-108546-2

Série Mitigation of climate change in agriculture series

Número na série 9

de páginas 100

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Etiquetas:

Climate change mitigation, Peatland conservation, Peatland management

Anexos

- Biancalani et al. - 2014 - Towards climate-responsible peatlands management.pdf

The use of the Normalized Difference Water Index (NDWI) in the delineation of open water features

Tipo Artigo de periódico

Autor S. K. McFEETERS

Resumo The Normalized Difference Water Index (NDWI) is a new method that has been developed to delineate open water features and enhance their presence in remotely-sensed digital imagery. The NDWI makes use of reflected near-infrared radiation and visible green light to enhance the presence of such features while eliminating the presence of soil and terrestrial vegetation features. It is suggested that the NDWI may also provide researchers with turbidity estimations of water bodies using remotely-sensed digital data.

Data May 1, 1996

Catálogo de biblioteca Taylor and Francis+NEJM

URL <https://doi.org/10.1080/01431169608948714>

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Edição 7

ISSN 0143-1161

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Anexos

- Snapshot

The Challenges of Remote Monitoring of Wetlands

Tipo Artigo de periódico

Autor Alisa L. Gallant

Resumo Wetlands are highly productive and support a wide variety of ecosystem goods and services. Various forms of global change impose compelling needs for timely and reliable information on the status of wetlands worldwide, but several characteristics of wetlands make them challenging to monitor remotely: they lack a single, unifying land-cover feature; they tend to be highly dynamic and their energy signatures are constantly changing; and steep environmental gradients in and around wetlands produce narrow ecotones that often are below the resolving capacity of remote sensors. These challenges and needs set the context for a special issue focused on wetland remote sensing. Contributed papers responded to one of three overarching questions aimed at improving remote, large-area monitoring of wetlands: (1) What approaches and data products are being developed specifically to support regional to global long-term monitoring of wetland landscapes? (2) What are the promising new technologies and sensor/multisensor approaches for more accurate and consistent detection of wetlands? (3) Are there studies that demonstrate how remote long-term monitoring of wetland landscapes can reveal changes that correspond with changes in land cover and land use and/or changes in climate?

Data 2015/8

Idioma en

Catálogo de biblioteca www.mdpi.com

URL <https://www.mdpi.com/2072-4292/7/8/10938>

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Volume 7

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Título da publicação Remote Sensing

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Etiquetas:

remote mapping, remote monitoring, water, wetlands

Anexos

- Snapshot
- Full Text PDF

Temperature and soil organic matter decomposition rates – synthesis of current knowledge and a way forward

Tipo Artigo de periódico

Autor Richard T. Conant

Autor Michael G. Ryan

Autor Göran I. Ågren

Autor Hannah E. Birge

Autor Eric A. Davidson

Autor Peter E. Eliasson

Autor Sarah E. Evans

Autor Serita D. Frey

Autor Christian P. Giardina

Autor Francesca M. Hopkins

Autor Riitta Hyvönen

Autor Miko U. F. Kirschbaum

Autor Jocelyn M. Lavalley

Autor Jens Leifeld

Autor William J. Parton

Autor Jessica Megan Steinweg

Autor Matthew D. Wallenstein

Autor J. Å Martin Wetterstedt

Autor Mark A. Bradford

Resumo The response of soil organic matter (OM) decomposition to increasing temperature is a critical aspect of ecosystem responses to global change. The impacts of climate warming on decomposition dynamics have not been resolved due to apparently contradictory results from field and lab experiments, most of which has focused on labile carbon with short turnover times. But the majority of total soil carbon stocks are comprised of organic carbon with turnover times of decades to centuries. Understanding the response of these carbon pools to climate change is essential for forecasting longer-term changes in soil carbon storage. Herein, we briefly synthesize information from recent studies that have been conducted using a wide variety of approaches. In our effort to understand research to-date, we derive a new conceptual model that explicitly identifies the processes controlling soil OM availability for decomposition and allows a more explicit description of the factors regulating OM decomposition under different circumstances. It explicitly defines resistance of soil OM to decomposition as being due either to its chemical conformation (quality) or its physico-chemical protection from decomposition. The former is embodied in the depolymerization process, the latter by adsorption/desorption and aggregate

turnover. We hypothesize a strong role for variation in temperature sensitivity as a function of reaction rates for both. We conclude that important advances in understanding the temperature response of the processes that control substrate availability, depolymerization, microbial efficiency, and enzyme production will be needed to predict the fate of soil carbon stocks in a warmer world.

Data 2011
Idioma en
Catálogo de biblioteca Wiley Online Library
URL <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-2486.2011.02496.x>
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Edição 11
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Etiquetas:

review, decomposition, soil carbon, experiments, new conceptual model, temperature sensitivity

Anexos

- Snapshot

Spectral vegetation indices of wetland greenness: Responses to vegetation structure, composition, and spatial distribution

Tipo Artigo de periódico
Autor Sophie Taddeo
Autor Iryna Dronova
Autor Nicholas Depsky
Resumo Land conversion and fragmentation threaten the resilience and biodiversity of wetland ecosystems which makes the future of their services to humans uncertain. Remote sensing can provide frequent and consistent data to facilitate wetland monitoring from regional to national scales and support their conservation and adaptive management. However, unique characteristics of wetlands, particularly land cover heterogeneity and background reflectance from soil, water and dead biomass, limit the efficacy of remote-sensing based metrics developed for

terrestrial ecosystems. To identify the factors impacting satellite-based measurements of wetland greenness, we tested how six spectral vegetation indices responded to the land surface characteristics and regional climatic and edaphic context of 1,138 wetlands sites surveyed by the U.S EPA's National Wetland Condition Assessment. Spectral vegetation indices (SVIs) were estimated using all cloud-free surface reflectance data captured in 2011 by Landsat 5 TM and 7 ETM+. We tested two annually aggregated metrics —maximum and median greenness— for each SVI to facilitate the analysis of such a large dataset of satellite images. Using univariate and multivariate ordinary least square regression, we assessed how the annual maximum and median of each SVI responded to indicators of vegetation structure and composition, presence of dead biomass, open water, bare soil, and climatic/edaphic variables. Results show that, in the full national-scale dataset, the normalized difference vegetation index (NDVI) and the green normalized difference vegetation index (GNDVI) were most responsive to field-based metrics of vegetation structure and composition. However, the responses of SVIs differed significantly among wetland types, suggesting that their use should be tailored to the specific characteristics of the monitored wetlands. Annually aggregated metrics showed different sensitivity in multivariate models, with median greenness being more sensitive to structure and composition, but also to confounding site variables including litter, open water, and bare soil. This study represents a first-time effort to study relationships between the on-site properties of wetlands and their spectral characteristics at a national scale.

Data December 1, 2019

Idioma en

Título curto Spectral vegetation indices of wetland greenness

Catálogo de biblioteca ScienceDirect

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Etiquetas:

Wetland, Annually aggregated greenness, Landsat, NWCA, Spectral vegetation index

Anexos

- ScienceDirect Snapshot

Spectral analysis of wetlands using multi-source optical satellite imagery

Tipo Artigo de periódico

Autor Meisam Amani

Autor Bahram Salehi

Autor Sahel Mahdavi

Autor Brian Brisco

Resumo The separability of wetland types using different spectral bands is an important subject, which has not yet been well studied in most countries. This is particularly of interest in Canada because it contains approximately one-fourth of the total global wetlands. In this study, the spectral separability of five wetland classes, namely Bog, Fen, Marsh, Swamp, and Shallow Water, was investigated in Newfoundland and Labrador (NL), Canada, using field data and multi-source optical Remote Sensing (RS) images. The objective was to select the most useful spectral bands for wetland studies from four commonly used optical satellites: RapidEye, Sentinel 2A, ASTER, and Landsat 8. However, because the ultimate objective was the classification of wetlands in the province, the separability of wetland classes was also evaluated using several other features, including various spectral indices, as well as textural and ratio features to obtain a high level of classification accuracy. For this purpose, two separability measures were used: The T-statistics, calculated from the parametric t-test method, and the U-statistics, derived from the non-parametric Mann-Whitney U-test. The results indicated that the Near Infrared (NIR) band was the best followed by the Red Edge (RE) band for the discrimination of wetland class pairs. The red band was also the third most useful band for separation of wetland classes, especially for the delineation of the Bog class from the other types. Although the Shortwave Infrared (SWIR) and green bands demonstrated poor separability, they were comparatively more informative than the Thermal Infrared (TIR) and blue bands. This study also demonstrated that ratio features and some spectral indices had high potential to differentiate the wetland species. Finally, wetlands in five study areas in NL were classified by inserting the best spectral bands and features into an object-based Random Forest (RF) classifier. By doing so, the mean Overall Accuracy (OA) and Kappa coefficient in the study areas were 86% and 0.82, respectively.

Data October 1, 2018

Idioma en

Catálogo de biblioteca ScienceDirect

URL <http://www.sciencedirect.com/science/article/pii/S0924271618301977>

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Volume 144

Páginas 119-136

Título da publicação ISPRS Journal of Photogrammetry and Remote Sensing

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ISSN 0924-2716

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Etiquetas:

Canada, Wetlands, Remote sensing, Separability measures, Spectral analysis

Anexos

- ScienceDirect Snapshot

Spatial distribution of tropical wetlands in Central Brazil as influenced by geological and geomorphological settings

Tipo Artigo de periódico

Autor Alfredo Borges De-Campos

Autor Diego Antônio Botelho de Cedro

Autor Francisco Leonardo Tejerina-Garro

Autor Maximiliano Bayer

Autor Gabriel Tenaglia Carneiro

Resumo Tropical wetlands in Central Brazil are located in savanna areas and are made up of more terrestrial-type wetlands – campo limpo úmido (grassland-type savanna), campo sujo úmido (shrub-type savanna), mata galeria (riverine forest); as well as more aquatic-type wetlands – vereda (valley-side marsh with palm groves of *Mauritia flexuosa*), várzea (backswamp), lake, and river. They are regulated by a seasonal climatic regime characterized by a wet-rainy season from October to March and then followed by a dry season. Underground water is abundant and rivers frequently overflow during the rainy season. Many of these wetlands which are protected by law are significant regulators of water quality. In order to predict tropical wetland function and draw up environmental management policies, it is important to understand how abiotic and biotic factors influence tropical wetland origin and spatial distribution. In this large-scale study we set out to investigate the influence that geological and geomorphological settings, i.e. geological substrates and geomorphological units, have on the spatial distribution of tropical wetlands in Central Brazil. Two watersheds, the Caiapó and Piracanjuba, were selected in order to carry out the study. They present different types of rock and unconsolidated surface materials. Planation surface, escarpment and steep slope, gentle slope, and aggradation are the dominant geomorphological units in the watersheds. Principal component analysis was conducted in order to determine the influence of the selected abiotic variables on the spatial distribution of tropical wetlands. The study showed that the presence of sedimentary and low-grade metamorphic rocks and planation surface strongly influence the spatial distribution of the more terrestrial-type wetlands. Geological and geomorphological

settings explain about 60% of the variability in the spatial distribution of these wetland types. No clear effect of the abiotic variables selected was observed on the more aquatic-type wetlands. An association between stratified layers or planar geological surfaces, groundwater discharge zones, and slope breaks is suggested to explain the influence of the geological and geomorphological settings on the wetlands under review. The study demonstrated the importance of considering abiotic factors, not usually included in classification schemes, to further understand the spatial distribution of tropical wetlands.

Data Outubro 1, 2013

Idioma en

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URL <https://www.sciencedirect.com/science/article/pii/S089598111100160X>

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Páginas 161-169

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DOI 10.1016/j.jsames.2011.12.001

Abreviatura do periódico Journal of South American Earth Sciences

ISSN 0895-9811

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Campo, Mata galeria, Seepage, Tropical wetlands, Várzea, Vereda

Anexos

- ScienceDirect Snapshot

Sentinel-2 - Missions - Sentinel Online

Tipo Página web

Autor European Space Agency

Data 12/06/2020

Título curto ESA

URL <https://sentinel.esa.int/web/sentinel/missions/sentinel-2>

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Tipo de site Publico

Título do site ESA sentinel online

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Anexos

- Sentinel-2 - Missions - Sentinel Online

Sensoriamento remoto do ambiente: uma perspectiva em recursos terrestres

Tipo Livro

Autor John R. Jensen

Resumo A necessidade de monitorar e conhecer o meio ambiente que nos cerca tem levado ao desenvolvimento de novos sistemas aerotransportados e de satélites, sempre com novas características e potencialidades. O sensoriamento remoto - a ciência pela qual se obtêm informações sobre objetos ou fenômenos a partir de dados coletados sem o contato físico com tais objetos - tem experimentado um notável crescimento em interesse. Este livro traz uma conceituação do sensoriamento remoto, uma descrição dos principais sistemas aerotransportados e satélites atuais, mostra os métodos de interpretação e análise de dados, e descreve os conceitos e métodos envolvidos em cada área específica de aplicação do sensoriamento remoto (agricultura, meio ambiente, geologia, solos, geografia urbana, recursos hídricos, etc.).

Data 2009

Idioma pt

Título curto Sensoriamento remoto do ambiente

Catálogo de biblioteca Google Books

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Editor Parêntese Editora

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Anexos

- Google Books Link

Sensoriamento remoto da vegetação

Tipo Livro

Autor Flávio Jorge Ponzoni

Autor Yosio Edemir Shimabukuro

Autor Tatiana Mora Kuplich

Resumo Começando nos anos 1980 com mapeamento da cobertura vegetal brasileira: agrícola, florestal e monitorando o desflorestamento na Amazônia e remanescentes da Mata Atlântica, o sensoriamento remoto aplicado ao estudo da vegetação aprofundou-se para permitir a obtenção de parâmetros biofísicos da vegetação como a biomassa ou o índice de área foliar. Em

suma, de uma descrição qualitativa é atualmente capaz de abordagem quantitativa, tanto no monitoramento de ecossistemas como na previsão de safras e estimativas relativas a áreas agrícolas. Nesta 2ª edição, Sensoriamento Remoto da Vegetação atualiza os principais conceitos relacionados à área, como comportamento espectral das plantas; aparência da vegetação em imagens multiespectrais; técnicas de processamento de imagens; modelo de mistura espectral; índices de vegetação; um novo capítulo sobre dados de radar no estudo da vegetação. Para ilustrar os conceitos apresentados, a obra discute sua aplicação em casos reais. Fruto de mais de 20 anos de trabalho dos autores na Divisão de Sensoriamento Remoto do Inpe, esta obra serve de referência para todos os profissionais envolvidos nesse campo, assim como pesquisadores e estudantes de pós-graduação em Geografia, Meio Ambiente, Engenharia Florestal e Engenharia Agrônômica.

Data 2015-10-20

Idioma pt-BR

Catálogo de biblioteca Google Books

Extra Google-Books-ID: pEHGCgAAQBAJ

Editor Oficina de Textos

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Etiquetas:

Technology & Engineering / Remote Sensing & Geographic Information Systems

Anexos

- [Google Books Link](#)

Sensitivity of spectral vegetation indices for monitoring water stress in tomato plants

Tipo Artigo de periódico

Autor Samuel O. Ihuoma

Autor Chandra A. Madramootoo

Resumo Innovations in irrigation water management are required to optimize agricultural water use in water stressed regions of the world, and physiological response of plants to water stress is an important criterion. Remotely sensed plant stress indicators, based on the visible and near-infrared spectral regions, provide an alternative to traditional field measurements of plant stress parameters, as this provides information about the spatial and temporal variability of crops and soil. The present study is a proof of concept on the feasibility of using narrow-band

hyperspectral derived indices for monitoring water stress in tomato plants (*Solanum Lycopersicum* L.). Spectral reflectance data were acquired from tomato plants, with five different irrigation regimes namely 100, 80, 60, 40, and 20% of plant available water, in a completely randomized design. Also, plant water stress indicators including canopy temperature (T_c) and relative leaf water content (RWC), as well as volumetric soil moisture content (SMC) were concurrently measured with spectral data acquisition. Normalized Difference Vegetation Index (NDVI), Renormalized Difference Vegetation Index (RDVI), Optimized Soil Adjusted Vegetation Index (OSAVI), Photochemical Reflectance Index centered at 570 nm (PRI570), normalized PRI (PRI_{norm}), Water Index (WI), and Normalized Water Index (NWI) were computed from the spectral data. The relationships between canopy reflectance and water stress indicators were analyzed at different water stress levels. The result showed that the PRI centered at 550 nm wavelength (PRI550), WI, OSAVI, and WI/NDVI were the most sensitive indices to distinguish water stress levels in tomato plants. This study provides an insight into the feasibility of using spectral vegetation indices to monitor water stress in tomato crops for precision irrigation water management.

Data August 1, 2019

Idioma en

Catálogo de biblioteca ScienceDirect

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Páginas 104860

Título da publicação Computers and Electronics in Agriculture

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Etiquetas:

Crop water stress, Hyperspectral data, Precision irrigation, Spectral vegetation indices, Tomato plants

Anexos

- ScienceDirect Snapshot

Remote sensing for wetland classification: a comprehensive review

Tipo Artigo de periódico

Autor Sahel Mahdavi

Autor Bahram Salehi

Autor Jean Granger
Autor Meisam Amani
Autor Brian Brisco
Autor Weimin Huang

Resumo Wetlands are valuable natural resources that provide many benefits to the environment. Therefore, mapping wetlands is crucially important. Several review papers on remote sensing (RS) of wetlands have been published thus far. However, there is no recent review paper that contains an inclusive description of the importance of wetlands, the urgent need for wetland classification, along with a thorough explanation of the existing methods for wetland mapping using RS methods. This paper attempts to provide readers with an exhaustive review regarding different aspects of wetland studies. First, the readers are acquainted with the characteristics, importance, and challenges of wetlands. Then, various RS approaches for wetland classification are discussed, along with their advantages and disadvantages. These approaches include wetland classification using aerial, multispectral, synthetic aperture radar (SAR), and several other data sets. Different pixel-based and object-based algorithms for wetland classification are also explored in this study. The most important conclusions drawn from the literature are that the red edge and near-infrared bands are the best optical bands for wetland delineation. In terms of SAR imagery, large incidence angles, short wavelengths, and horizontal transmission and vertical reception polarization are best for detecting of herbaceous wetlands, while small incidence angles, long wavelengths, and horizontal transmission and reception polarization are appropriate for mapping forested wetlands.

Data September 3, 2018

Título curto Remote sensing for wetland classification

Catálogo de biblioteca Taylor and Francis+NEJM

URL <https://doi.org/10.1080/15481603.2017.1419602>

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Volume 55

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DOI 10.1080/15481603.2017.1419602

Edição 5

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Etiquetas:

wetland, remote sensing, wetland characteristics, wetland classification, wetland inventory

Anexos

- Snapshot

PEATMAP: Refining estimates of global peatland distribution based on a meta-analysis

Tipo Artigo de periódico

Resumo Peatlands play important ecological, economic and cultural roles in human well-being. Although considered sensitive to climate change and anthropogeni...

Data 2018/01/01

Idioma pt

Título curto PEATMAP

Catálogo de biblioteca www-sciencedirect.ez54.periodicos.capes.gov.br

URL <https://www-sciencedirect.ez54.periodicos.capes.gov.br/science/article/pii/S0341816217303004>

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Anexos

- Versão aceita
- Snapshot

PEATMAP: Refining estimates of global peatland distribution based on a meta-analysis

Tipo Artigo de periódico

Autor Jiren Xu

Autor Paul J. Morris

Autor Junguo Liu

Autor Joseph Holden

Resumo Peatlands play important ecological, economic and cultural roles in human well-being. Although considered sensitive to climate change and anthropogenic pressures, the spatial extent of peatlands is poorly constrained. We report the development of an improved global peatland

map, PEATMAP, based on a meta-analysis of geospatial information collated from a variety of sources at global, regional and national levels. We estimate total global peatland area to be 4.23millionkm², approximately 2.84% of the world land area. Our results suggest that previous global peatland inventories are likely to underestimate peat extent in the tropics, and to overestimate it in parts of mid- and high-latitudes of the Northern Hemisphere. Global wetland and soil datasets are poorly suited to estimating peatland distribution. For instance, tropical peatland extents are overestimated by Global Lakes and Wetlands Database – Level 3 (GLWD-3) due to the lack of ground-truthing data; and underestimated by the use of histosols to represent peatlands in the Harmonized World Soil Database (HWSD) v1.2, as large areas of swamp forest peat in the humid tropics are omitted. PEATMAP and its underlying data are freely available as a potentially useful tool for scientists and policy makers with interests in peatlands or wetlands. PEATMAP's data format and file structure are intended to allow it to be readily updated when previously undocumented peatlands are found and mapped, and when regional or national land cover maps are updated and refined.

Data January 1, 2018

Idioma en

Título curto PEATMAP

Catálogo de biblioteca ScienceDirect

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Volume 160

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Peat, Wetlands, Geographic information system, Global, Map, PEATMAP

Anexos

- ScienceDirect Full Text PDF

Peatlands mapping and monitoring

Tipo Livro

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Anexos

- CA8200EN.pdf

NMDI: A normalized multi-band drought index for monitoring soil and vegetation moisture with satellite remote sensing

Tipo Artigo de periódico**Autor** Lingli Wang**Autor** John J. Qu

Resumo A new index, the Normalized Multi-band Drought Index (NMDI), is proposed for monitoring soil and vegetation moisture from space. NMDI is defined as $\frac{R_{860} - R_{1640}}{R_{860} + R_{1640}}$, where R represents the apparent reflectance observed by a satellite sensor. Similar to the Normalized Difference Water Index, NMDI uses the 860 nm channel as the reference; instead of using a single liquid water absorption channel, however, it uses the difference between two liquid water absorption channels centered at 1640 nm and 2130 nm as the soil and vegetation moisture sensitive band. Analysis revealed that by combining information from multiple near infrared, and short wave infrared channels, NMDI has enhanced the sensitivity to drought severity, and is well suited to estimate both soil and vegetation moisture. Typical soil reflectance spectra and satellite-acquired reflectances, are used to validate the usefulness of NMDI. Its application to areas with moderate vegetation coverage, however, needs further investigation.

Data October 1, 2007**Título curto** NMDI**Catálogo de biblioteca** agupubs.onlinelibrary.wiley.com (Atypon)**URL** <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2007GL031021>**Data de acesso** 05/06/2020 16:46:36**Extra** Publisher: John Wiley & Sons, Ltd**Volume** 34**Título da publicação** Geophysical Research Letters**DOI** 10.1029/2007GL031021**Edição** 20

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remote sensing, MODIS, drought monitoring, multi-band, NMDI, soil moisture

Anexos

- Snapshot

NDWI—A normalized difference water index for remote sensing of vegetation liquid water from space

Tipo Artigo de periódico

Autor Bo-cai Gao

Resumo The normalized difference vegetation index (NDVI) has been widely used for remote sensing of vegetation for many years. This index uses radiances or reflectances from a red channel around 0.66 μm and a near-IR channel around 0.86 μm . The red channel is located in the strong chlorophyll absorption region, while the near-IR channel is located in the high reflectance plateau of vegetation canopies. The two channels sense very different depths through vegetation canopies. In this article, another index, namely, the normalized difference water index (NDWI), is proposed for remote sensing of vegetation liquid water from space. NDWI is defined as $(\rho(0.86 \mu\text{m}) - \rho(1.24 \mu\text{m})) / (\rho(0.86 \mu\text{m}) + \rho(1.24 \mu\text{m}))$, where ρ represents the radiance in reflectance units. Both the 0.86- μm and the 1.24- μm channels are located in the high reflectance plateau of vegetation canopies. They sense similar depths through vegetation canopies. Absorption by vegetation liquid water near 0.86 μm is negligible. Weak liquid absorption at 1.24 μm is present. Canopy scattering enhances the water absorption. As a result, NDWI is sensitive to changes in liquid water content of vegetation canopies. Atmospheric aerosol scattering effects in the 0.86–1.24 μm region are weak. NDWI is less sensitive to atmospheric effects than NDVI. NDWI does not remove completely the background soil reflectance effects, similar to NDVI. Because the information about vegetation canopies contained in the 1.24- μm channel is very different from that contained in the red channel near 0.66 μm , NDWI should be considered as an independent vegetation index. It is complementary to, not a substitute for NDVI. Laboratory-measured reflectance spectra of stacked green leaves, and spectral imaging data acquired with Airborne Visible Infrared Imaging Spectrometer (AVIRIS) over Jasper Ridge in California and the High Plains in northern Colorado, are used to demonstrate the usefulness of NDWI. Comparisons between NDWI and NDVI images are also given.

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Catálogo de biblioteca ScienceDirect
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Anexos

- ScienceDirect Snapshot

Nascentes, veredas e áreas úmidas : revisão conceitual e metodologia de caracterização e determinação : estudo de caso na estação ecológica de águas emendadas - Distrito Federal

Tipo Artigo de periódico
Autor Marina Lima Queiroz
Resumo Esta dissertação propõe uma reflexão acerca de termos controversos, sob o ponto de vista técnico e legal, relativos a nascentes, veredas e áreas úmidas. As controvérsias conceituais destas feições hidrológicas têm importantes implicações jurídicas. Conforme a Lei 12.651/2012 (Brasil 2012), as áreas de faixas marginais e entorno desses bens naturais são passíveis de proteção a partir das Áreas de Preservação Permanente - APP. Nelas, o regime de proteção é diferenciado, com manutenção ou recomposição da vegetação local. A intervenção nestas áreas ou a supressão de vegetação nativa em APP somente é possível em hipóteses excepcionais previstas na legislação. Além da legislação florestal, o Brasil possui um arcabouço legal ambiental com diferentes enfoques quanto aos instrumentos de proteção, que visam restringir os impactos em corpos hídricos e orientar o uso racional desses recursos, pelas múltiplas funções ambientais desempenhadas. Porém, é necessário potencializar a aplicação das normas e aperfeiçoar a integração das políticas nacionais entre si e com tratados internacionais, como a Convenção de Ramsar. Em função das limitações impostas, questões de ocupação humana e uso alternativo do solo ficam vinculadas à adequada conceituação, determinação e caracterização dessas feições. Este trabalho busca contribuir com a revisão dos conceitos, além de propor metodologia para a caracterização e determinação de nascentes, veredas e áreas úmidas,

com base em estudo de caso na Estação Ecológica de Águas Emendadas - ESEC-AE, no Distrito Federal. Esta se insere em uma configuração hidrológica de grande relevância em termos de feições hídricas, em interface entre o sistema hidrogeológico (Província Hidrogeológica Escudo Central) e a rede hidrológica superficial (Bacia do Tocantins e Bacia do Paraná). Os atributos hídricos, ecológicos e funções ambientais fazem da Unidade de Conservação de Proteção Integral local com potencial para reconhecimento como Sítio Ramsar, constituído por áreas úmidas das classes de veredas e de solos com elevado grau de hidromorfismo. Contudo, há indícios de que as áreas úmidas vêm apresentando redução dimensional na ESEC-AE, o que requer estudos complementares quanto aos fatores que influenciam esse fenômeno e quanto às medidas de mitigação/recuperação. O fato chama atenção dado que o fenômeno das águas que se emendam, ou seja, o sistema hídrico de Águas Emendadas, constitui a essência e a identidade da Unidade de Conservação.

Data 2015-12-17

Idioma Português

Título curto Nascentes, veredas e áreas úmidas

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Anexos

- Snapshot
- Full Text PDF

Modification of normalised difference water index (NDWI) to enhance open water features in remotely sensed imagery

Tipo Artigo de periódico

Autor Hanqiu Xu

Resumo The normalized difference water index (NDWI) of McFeeters (1996) was modified by substitution of a middle infrared band such as Landsat TM band 5 for the near infrared band used in the NDWI. The modified NDWI (MNDWI) can enhance open water features while efficiently suppressing and even removing built-up land noise as well as vegetation and soil noise. The enhanced water information using the NDWI is often mixed with built-up land noise and the area of extracted water is thus overestimated. Accordingly, the MNDWI is more suitable for enhancing and extracting water information

for a water region with a background dominated by built-up land areas because of its advantage in reducing and even removing built-up land noise over the NDWI.

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Anexos

- Snapshot
- Full Text PDF

Microbial enzyme activity and stoichiometry signal the effects of agricultural intervention on nutrient cycling in peatlands

Tipo Artigo de periódico

Autor Lei Qin

Autor Chris Freeman

Autor Xueying Jia

Autor Zhongsheng Zhang

Autor Bo Liu

Autor Shaoqing Zhang

Autor Ming Jiang

Resumo Fertilization in agricultural peatlands accelerates nutrient cycling and creates a potential risk to nearby natural peatlands. Here, using undisturbed peatlands as reference, we studied soil carbon (C), nitrogen (N), phosphorus (P) and the key enzymes for nutrient cycling at 0–50 cm soil depth in agricultural, nearby disturbed peatlands in a temperate fen in Northeast China. Agricultural intervention significantly increased total P in agricultural and disturbed peatlands, and decreased soil organic carbon content and total N in surface soil of agricultural peatlands, however total N significantly accumulated at 20–30 cm soil both in agricultural and disturbed peatlands ($p < 0.05$). Both N-acetyl- β -glucosaminidase and

phosphatase significantly declined in agricultural peatlands, while only phosphatase decreased in disturbed peatlands ($p < 0.05$), and linear regression models showed strong effects of changes of soil nutrient levels on enzyme activities. The ratios of β -D-glucosidase to N-acetyl- β -glucosaminidase and phosphatase markedly increased in agricultural peatlands and showed higher ratios in deeper soil of disturbed peatlands, suggesting relatively higher microbial demand for carbon. Nonmetric multidimensional scaling analysis showed that variations of enzyme activity and stoichiometry can be used to reveal agricultural disturbance, and further redundancy analysis identified that total P and SOC explained 38.3% and 8.3% of the variance. Overall, our findings show that microbial enzymatic activity and stoichiometry can be effective and sensitive indicators of agricultural intervention and nutrient changes in peatlands, which implies that they can be used in monitoring of future fertilization management strategies aimed at fostering more sustainable agriculture.

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Idioma	en
Catálogo de biblioteca	ScienceDirect
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Anexos

- ScienceDirect Snapshot
- ScienceDirect Full Text PDF

Meeting the challenge of mapping peatlands with remotely sensed data

Tipo Artigo de periódico
Autor O. N. Krankina
Autor D. Pflugmacher
Autor M. Friedl

Autor W. B. Cohen

Autor P. Nelson

Autor A. Baccini

Resumo <p>Abstract. Boreal peatlands play a major role in carbon and water cycling and other global environmental processes but understanding this role is constrained by inconsistent representation of peatlands on, or omission from, many global land cover maps. The comparison of several widely used global and continental-scale databases on peatland distribution with a detailed map for the St. Petersburg region of Russia showed significant under-reporting of peatland area, or even total omission. Analysis of the spatial agreement and disagreement with the detailed regional map indicated that the error of comission (overestimation) was significantly lower than the error of omission (underestimation) which means, that overall, peatlands were correctly classified as such in coarse resolution datasets but a large proportion (74–99%) was overlooked. The coarse map resolution alone caused significant omission of peatlands in the study region. In comparison to categorical maps, continuous field mapping approach utilizing MODIS sensor data showed potential for a greatly improved representation of peatlands on coarse resolution maps. Analysis of spectral signatures of peatlands with different types of surface vegetation suggested that improved mapping of boreal peatlands on categorical maps is feasible. The lower reflectance of treeless peatlands in the near- and shortwave-infrared parts of the electromagnetic spectrum is consistent with the spectral signature of sphagnum mosses. However, when trees are present, the canopy architecture appears to be more important in defining the overall spectral reflectance of peatlands. A research focus on developing remote sensing methods for boreal peatlands is needed for adequate characterization of their global distribution.</p>

Data 2008/12/23

Idioma English

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Anexos

- Snapshot
- Full Text PDF

Mapping wetlands and riparian areas using Landsat ETM+ imagery and decision-tree-based models

Tipo Artigo de periódico

Autor Corey Baker

Autor Rick Lawrence

Autor Clifford Montagne

Autor Duncan Patten

Resumo The location and distribution of wetlands and riparian zones influence the ecological functions present on a landscape. Accurate and easily reproducible land-cover maps enable monitoring of land-management decisions and ultimately a greater understanding of landscape ecology. Multi-season Landsat ETM+ imagery from 2001 combined with ancillary topographic and soils data were used to map wetland and riparian systems in the Gallatin Valley of Southwest Montana, USA. Classification Tree Analysis (CTA) and Stochastic Gradient Boosting (SGB) decision-tree-based classification algorithms were used to distinguish wetlands and riparian areas from the rest of the landscape. CTA creates a single classification tree using a one-step-look-ahead procedure to reduce variance. SGB uses classification errors to refine tree development and incorporates multiple tree results into a single best classification. The SGB classification (86.0% overall accuracy) was more effective than CTA (73.1% overall accuracy) at detecting a variety of wetlands and riparian zones present on this landscape.

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Abreviatura do periódico Wetlands

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Mapping wetland using the object-based stacked generalization method based on multi-temporal optical and SAR data

Tipo Artigo de periódico

Autor Yaotong Cai

Autor Xinyu Li

Autor Meng Zhang

Autor Hui Lin

Resumo Wetland ecosystems have experienced dramatic challenges in the past few decades due to natural and human factors. Wetland maps are essential for the conservation and management of terrestrial ecosystems. This study is to obtain an accurate wetland map using an object-based stacked generalization (Stacking) method on the basis of multi-temporal Sentinel-1 and Sentinel-2 data. Firstly, the Robust Adaptive Spatial Temporal Fusion Model (RASTFM) is used to get time series Sentinel-2 NDVI, from which the vegetation phenology variables are derived by the threshold method. Subsequently, both vertical transmit-vertical receive (VV) and vertical transmit-horizontal receive (VH) polarization backscatters (σ^0 VV, σ^0 VH) are obtained using the time series Sentinel-1 images. Speckle noise inherent in SAR data, resulting in over-segmentation or under-segmentation, can affect image segmentation and degrade the accuracies of wetland classification. Therefore, we segment Sentinel-2 multispectral images to delineate meaningful objects in this study. Then, in order to reduce data redundancy and computation time, we analyze the optimal feature combination using the Sentinel-2 multispectral images, Sentinel-2 NDVI time series, phenological variables and other vegetation index derived from Sentinel-2 multispectral images, as well as time series Sentinel-1 backscatters at the object level. Finally, the stacked generalization algorithm is utilized to extract the wetland information based on the optimal feature combination in the Dongting Lake wetland. The overall accuracy and Kappa coefficient of the object-based stacked generalization method are 92.46% and 0.92, which are 3.88% and 0.04 higher than that using the pixel-based method. Moreover, the object-based stacked generalization algorithm is superior to single classifiers in classifying vegetation of high heterogeneity areas.

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Wetland, Classification, Multi-Temporal, Object-Based, Sentinel-1/2, Stacked generalization

Anexos

- ScienceDirect Snapshot
- ScienceDirect Full Text PDF

Mapping wetland characteristics using temporally dense Sentinel-1 and Sentinel-2 data: A case study in the St. Lucia wetlands, South Africa

Tipo Artigo de periódico

Autor Bart Slagter

Autor Nandin-Erdene Tsendbazar

Autor Andreas Vollrath

Autor Johannes Reiche

Resumo Wetlands have been determined as one of the most valuable ecosystems on Earth and are currently being lost at alarming rates. Large-scale monitoring of wetlands is of high importance, but also challenging. The Sentinel-1 and -2 satellite missions for the first time provide radar and optical data at high spatial and temporal detail, and with this a unique opportunity for more accurate wetland mapping from space arises. Recent studies already used Sentinel-1 and -2 data to map specific wetland types or characteristics, but for comprehensive wetland characterisations the potential of the data has not been researched yet. The aim of our research was to study the use of the high-resolution and temporally dense Sentinel-1 and -2 data for wetland mapping in multiple levels of characterisation. The use of the data was assessed by applying Random Forests for multiple classification levels including general wetland delineation, wetland vegetation types and surface water dynamics. The results for the St. Lucia wetlands in South Africa showed that combining Sentinel-1 and -2 led to significantly higher classification accuracies than for using the systems separately. Accuracies were relatively poor for classifications in high-vegetated wetlands, as subcanopy flooding could not be detected with Sentinel-1's C-band sensors operating in VV/VH mode. When excluding high-vegetated areas, overall accuracies were reached of 88.5% for general wetland delineation, 90.7% for mapping wetland vegetation types and 87.1% for mapping surface water dynamics. Sentinel-2 was particularly of value for general wetland delineation, while Sentinel-1 showed more value for mapping wetland vegetation types. Overlaid maps of all classification levels obtained overall accuracies of 69.1% and 76.4% for classifying ten and seven wetland classes respectively.

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Título curto Mapping wetland characteristics using temporally dense Sentinel-1 and Sentinel-2 data

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Wetland, Sentinel-2, Multi-level classification, Multi-sensor, Random forest, Sentinel-1

Anexos

- ScienceDirect Snapshot
- ScienceDirect Full Text PDF

Mapping Vegetation Communities Inside Wetlands Using Sentinel-2 Imagery In Ireland

Tipo Artigo de periódico

Autor Saheba Bhatnagar

Autor Laurence Gill

Autor Shane Regan

Autor Owen Naughton

Autor Paul Johnston

Autor Steve Waldren

Autor Bidisha Ghosh

Resumo Wetlands provide habitat for a wide variety of plant and animal species and contribute significantly to overall biodiversity in Ireland. Despite these known ecosystem services, the total wetland area in Ireland has reduced significantly over the past few decades leading to an ongoing need to protect such environments. The EU Habitats Directive (92/43/EEC) has recognised several wetlands types as “priority” habitats. This study concentrates on a subset of the priority habitats focussing on some groundwater dependent terrestrial ecosystems, (in particular calcareous fens and turloughs), as well as raised bogs. Monitoring these sites across the country by field visits is resource-intensive. Therefore, this study has evaluated remote sensing as a potentially cost-effective tool for monitoring the ecological health of the wetlands. Identification and presence of certain vegetation communities can indicate the condition of

the wetland, which can be used for monitoring, for example, activities causing degradation or the progress of restoration attempts. The ecological composition of the wetlands has been analysed using open-source Sentinel-2 data. 10 bands of Sentinel-2 Level-2 data and 3 indices, Normalised Difference Vegetation Index (NDVI), Enhanced Vegetation Index (EVI) and Normalised Difference Water Index (NDWI) were used to create vegetation maps of each wetland using Bagged Tree (BT) ensemble classifier and graph cut segmentation also known as MAP (maximum a posteriori) estimation. The proposed methodology has been validated on five raised bogs, five turloughs, and three fens at different times during 2017 and 2018 from which three case studies are presented. An overall classification accuracy up to 87% depending on the size of the vegetation community within each wetland has been achieved which suggests that the proposed method is appropriate for wetland health monitoring.

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Anexos

- main.pdf

Mapping potential, existing and efficient wetlands using free remote sensing data

Tipo Artigo de periódico

Autor S. Rapinel

Autor E. Fabre

Autor S. Dufour

Autor D. Arvor

Autor C. Mony

Autor L. Hubert-Moy

Resumo Although wetlands remain threatened by human pressures and climate change, monitoring and managing them are challenging due to their high spatial and temporal dynamics within a fine-grained pattern. New satellite time-series at high temporal and spatial resolutions provide a promising opportunity to map and monitor wetlands. The objective of this study was to develop an operational method for managing valley bottom wetlands based on available free remote sensing data. The Potential, Existing, Efficient Wetlands (PEEW) approach was adapted to remote sensing data to delineate three wetland components: (1) potential wetlands, mapped from a digital terrain model derived from LiDAR data; (2) existing wetlands, delineated from land cover maps derived from Sentinel-1/2 time-series; and (3) efficient wetlands, identified from functional indicators (i.e. annual primary production, vegetation phenology, seasonality of carbon flux) derived from MODIS annual time-series. Soil and vegetation samples were collected in the field to calibrate and validate classification of remote sensing data. The method was applied to a 113 000 ha watershed in northwestern France. Results show that potential wetlands were successfully delineated (82% overall accuracy) and covered 21% of the watershed area, while 44% of existing wetlands had been lost. Small wetlands along headwater channels, which are considered as ordinary, cover 56% of wetland area in the watershed. Efficient wetlands were identified as contiguous pixels with a similar temporal functional trajectory. This method, based on free remote sensing data, provides a new perspective for wetland management. The method can identify sites where restoration measures should be prioritized and enables better understanding and monitoring of the influence of management practices and climate on wetland functions.

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Catálogo de biblioteca ScienceDirect

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Random forest, Lidar, MODIS, Natural vegetations, Sentinel, Wetland functions

Anexos

- ScienceDirect Snapshot

Mapping Peatlands in Ireland using a Rule-Based Methodology and Digital Data

Tipo Artigo de periódico

Autor John Connolly

Autor Nicholas M. Holden

Autor Shane M. Ward

Resumo Peatlands have been recognized as being an important global C pool and make significant contributions to national C fluxes. In Ireland, they cover a considerable amount of the national land area, but no recent inventory or mapping has been undertaken to quantify the spatial extent of this important resource. This study used a rule-based methodology implemented as a series of hierarchical rules in ArcGIS to estimate the extent of contemporary peatlands in Ireland from soil and land-cover maps dating from the 1970s, 1980s, and 1990s. The Derived Irish Peat Map was produced at a pixel resolution of 100 m and shows Ireland's peatland resource to be 0.95 Mha or 13.8% of the national land area. This is comparable to estimates of 13.2% from CORINE land-cover data (1990s), 17.0% from the Peatland Map of Ireland (1970s), and 16.7% from the General Soil Map (1980s). The derived map depicts the spatial extent of three peatland types: raised bog and low- and high-level blanket bog. Ground truthing of the derived map enabled estimates of pixel reliability to be calculated. The derived map has an overall reliability of 75% compared with the reliability of 65% for CORINE, 58% for the Peatland Map of Ireland, and 50% for the General Soil Map. We concluded that the methodology created a value-added soil map product from a number of data sources, all of which were to some degree imperfect. The approach taken could be applied to similar survey problems not related to peatlands.

Data 2007

Idioma en

Catálogo de biblioteca Wiley Online Library

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Anexos

- Versão submetida
- Snapshot

Mapping Peatlands in Boreal and Tropical Ecoregions

Tipo Seção de livro

Autor L.L. Bourgeau-Chavez

Autor S.L. Endres

Autor J.A. Graham

Autor J.A. Hribljan

Autor R.A. Chimner

Autor E.A. Lillieskov

Autor M.J. Battaglia

Data 2018

Idioma en

Catálogo de biblioteca DOI.org (Crossref)

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Anexos

- Bourgeau-Chavez et al. - 2018 - Mapping Peatlands in Boreal and Tropical Ecoregion.pdf

Mapping Mountain Peatlands | US Forest Service

Tipo Página web

Autor U. S. FOREST SERVICE

Data 19/11/2018

URL <https://www.fs.usda.gov/features/mapping-mountain-peatlands>

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Tipo de site Publico

Título do site U.S. FOREST

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Anexos

- Mapping Mountain Peatlands | US Forest Service

Mapping coastal wetlands of China using time series Landsat images in 2018 and Google Earth Engine

Tipo Artigo de periódico
Resumo Coastal wetlands, composed of coastal vegetation and non-vegetated tidal flats, play critical roles in biodiversity conservation, food production, and...
Data 2020/05/01
Idioma en
Catálogo de biblioteca www-sciencedirect.ez54.periodicos.capes.gov.br
URL https://www-sciencedirect.ez54.periodicos.capes.gov.br/science/article/pii/S0924271620300848
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DOI 10.1016/j.isprsjprs.2020.03.014
ISSN 0924-2716
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Mapeamento de áreas de campo limpo úmido no Distrito Federal a partir de fusão de imagens multiespectrais

Tipo Artigo de periódico
Autor Andreia Maria da Silva França
Autor Edson Eyji Sano
Resumo As áreas úmidas são cientificamente reconhecidas por seus diversos valores funcionais, entretanto, apesar da importância ecológica destas áreas, são escassos os estudos e conjuntos de dados existentes que incluam informações a respeito da localização e extensão. Nesse contexto, o objetivo do presente trabalho é discriminar e quantificar áreas de Campo Limpo Úmido (CLU) no Distrito Federal por meio de fusão de imagens multiespectrais - Landsat5/TM e CBERS2B/HRC. Imagens de maio a outubro de 2008, da estação seca, foram fusionadas a partir da técnica de processamento IHS. Os resultados mostraram que houve melhora na identificação das áreas de CLU na medida em que permitiu um aumento na discriminação dos alvos já que integrou a maior resolução espacial da banda pancromática à maior resolução espectral das demais

bandas. O mapa de distribuição das áreas de CLU indicou um total de aproximadamente 8,46 km² localizadas essencialmente em unidades de conservação. Conclui-se que a técnica de fusão de imagens, é uma alternativa promissora para a melhor discriminação das áreas de CLU já que esta fitofisionomia do cerrado possui dimensões espaciais reduzidas em relação às fitofissionomias associadas a áreas secas. , Wetlands are among the most important ecosystems on the earth. Despite the importance of these ecosystems, there are few studies and data regarding their location, extent and other basic characteristics. In this study, the mapping of these ecosystems was realized by means of multispectral image fusion - Landsat5/TM and CBERS2B/HRC. Images from May to October of 2008 (dry season) were merged by IHS enhancement technique. Results showed that there was an improvement in the identification of areas occupied by humid grasslands since there was an gain in the discrimination of targets once there was an integration of higher spatial resolution of panchromatic band with higher spectral resolution of other bands. The map of distribution of humid grasslands indicated a total of 8,46 km² located essentially in conservation units.

Data	08/2011
Idioma	pt
Catálogo de biblioteca	DOI.org (Crossref)
URL	http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1982-45132011000200004&lng=pt&tlng=pt
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Volume	23
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Anexos

- França e Sano - 2011 - Mapeamento de áreas de campo limpo úmido no Distri.pdf

Localização e mapeamento de áreas úmidas na Sub-bacia hidrográfica Arroio Santa Isabel, através do método NDWI

Tipo Artigo de periódico
Autor Jonathan Duarte Marth
Autor Nina Simone Vilaverde Moura
Autor Edinei Koester

Resumo Áreas úmidas (AUs) são ecossistemas importantes, seja por providenciarem alimentos e estocarem e regularizarem o fluxo de água, ou pela biodiversidade que abrigam. No RS estes ambientes estão fortemente alterados, sendo que os 5,3 milhões de hectares de AUs, incluindo banhados e várzeas existentes originalmente, encontram-se reduzidos. As intervenções antrópicas nas AUs do RS são oriundas principalmente das atividades agrícolas e pecuárias, causando compactação, redução de porosidade, salinização do solo, variação do nível do lençol freático, etc. Os estudos das AUs tem utilizado dados de sensoriamento remoto na busca de melhores resultados, destacando-se Índice de Diferença Normalizada da Água (NDWI). O objetivo do presente estudo foi mapear, através do NDWI as áreas úmidas na Sub Bacia Hidrográfica Arroio Santa Isabel (SBHASI), localizada em importante área úmida do RS, estando próxima das várzeas do Rio Camaquã, no meio rural de Cristal e São Lourenço do Sul com área de 295 km². A metodologia consistiu em classificação dos usos da terra, aplicação do NDWI e cruzamento dos resultados para averiguação dos usos associados às AUs, utilizando-se imagem Landsat 5 e Cartas topográficas 1:50.000. Inicialmente classificou-se os usos em seis classes, sendo gerado o NDWI com duas classes (corpos hídricos permanentes, áreas inundadas temporariamente). As classes de AUs estão associadas predominantemente a campos-Pastagens (24,42km²) e solos expostos (37,55km²). O método aplicado na localização de áreas úmidas mostrou bons resultados, indicando a necessidade de uma série temporal, que permita perceber e quantificar as mudanças nas AUs.

Data 2016/08/15

Idioma pt

Catálogo de biblioteca www.uel.br

URL <http://www.uel.br/revistas/uel/index.php/geografia/article/view/21437>

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Extra Number: 1

Volume 25

Páginas 23-41

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Edição 1

ISSN 2447-1747

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Etiquetas:

Áreas úmidas, Arroio Santa Isabel, usos da terra.

Anexos

- Snapshot
- Full Text PDF

Integrating spectral indices into prediction models of soil phosphorus in a subtropical wetland

Tipo Artigo de periódico

Autor R. G. Rivero

Autor S. Grunwald

Autor M. W. Binford

Autor T. Z. Osborne

Resumo Remote sensing, in combination with multivariate geostatistical methods, has the potential to improve the prediction of soil properties at landscape scales. In the Everglades region, and particularly in Water Conservation Area 2A (WCA-2A), phosphorus enrichment has drawn a lot of attention and has led to an extensive documentation of different aspects of the degradation of the system. This study presents a hybrid geospatial modeling approach to predict soil total phosphorus (TP) using remotely-sensed data and ancillary landscape properties as supporting variables. Two remote sensors, Landsat 7 Enhanced Thematic Mapper (ETM)+ and Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER), were used to investigate relationships between spectral data and indices and soil TP. A variation of a vegetation index (Normalized Difference Vegetation Index – NDVI green) was found to be the most effective in predicting floc TP values, due to its capacity to capture small variations in chlorophyll a that are associated to TP levels in periphyton, especially in aquatic/non-impacted areas. On the other hand, NDVI, a more traditionally used vegetation index, was still a good indicator of TP variability, particularly in the soil surface layer, due to its stronger relationship with impacted areas dominated by cattail (*Typha domingensis* Pers.). Findings from this study indicate that: a) remote sensing can play an important role in optimizing monitoring of environmental variables, particularly below-ground properties of floc and soils; b) because of limitations about the numbers and frequency of soil samples that can be taken, the combination of remote sensing and geostatistics could represent a non-invasive and cost-effective method to monitor soil nutrient status in complex wetland systems, and c) variations of traditional remote sensing indices such as NDVI can be used to better capture the spatial variability associated with soil and periphyton TP.

Data November 16, 2009

Idioma en

Catálogo de biblioteca ScienceDirect

URL <http://www.sciencedirect.com/science/article/pii/S0034425709002120>

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Volume 113

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Título da publicação Remote Sensing of Environment

DOI 10.1016/j.rse.2009.07.015

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Etiquetas:

Soil, Wetlands, GIS, Phosphorus, Biogeochemistry, Ecology, Ecosystem restoration, Everglades, Prediction models, Remote sensing, WCA-2A

Anexos

- ScienceDirect Snapshot

ÍNDICES ESPECTRAIS, DIAGNÓSTICO DA VEGETAÇÃO E DA DEGRADAÇÃO DA CAATINGA DA BACIA DO RIO TAPEROÁ-PB

Tipo Artigo de periódico

Autor Iêde de Brito Chaves

Autor Paulo Roberto Megna Francisco

Idioma pt

Catálogo de biblioteca Zotero

Páginas 31

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Anexos

- Chaves e Francisco - ÍNDICES ESPECTRAIS, DIAGNÓSTICO DA VEGETAÇÃO E DA .pdf

Índices Espectrais por Sensoriamento Remoto com os Satélites LANDSAT-5 e SENTINEL-2 no entorno do reservatório Poço da Cruz - PE

Tipo Artigo de periódico

Autor Nicelle A. da S. Lima

Autor Leidjane M. M. de Oliveira

Autor Maria Luiza P. Xavier

Autor Ubiratan J. da Silva Junior

Autor Evelyn F. do Nascimento

Resumo O Sensoriamento Remoto permite analisar imagens da superfície terrestre, de forma que seja possível a realização de estudos e obtenção de informações sobre determinadas áreas, facilitando desta forma a interface entre o pesquisador, a área de estudo e o equipamento. Percebe-se que ao longo do tempo a ação antrópica tem sido um dos intervenientes em gerar modificações na superfície terrestre. Não sendo diferente para o Sertão de Moxotó, este estudo visou realizar uma comparação entre variáveis biofísicas do reservatório Poço da Cruz, para análise do comportamento do vigor vegetativo da mata ciliar, utilizando satélites de resoluções espaciais diferentes, Landsat-5 TM com 30 m e do Sentinel-2 com 10 m. Portanto, tomou-se como base a imagem coletada em 23 de setembro de 2008, referente ao Landsat-5 e a imagem do dia 07 de março de 2018 para o Sentinel-2, de forma que informações sobre três índices espectrais foram obtidas, Índice de Água por Diferença Normalizada (NDWI), Índice de Vegetação por Diferença Normalizada (NDVI) e o Índice de Vegetação Melhorado (EVI). Após análises do NDWI, NDVI e EVI, verificou-se que apesar das diferenças espectrais e espaciais dos produtos gerados utilizando os sensores ópticos TM Landsat-5 e MSI Sentinel-2, os mesmos apresentaram valores estatísticos e Índices Espectrais muito próximos, detectando com eficiência e delimitação do Reservatório Poço da Cruz-PE.

Data 2019/12/29

Idioma pt

Catálogo de biblioteca periodicos.ufpe.br

URL <https://periodicos.ufpe.br/revistas/jhrs/article/view/243694>

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Anexos

- Snapshot
- Full Text PDF

Identification and mapping of the water-logged areas in Purba Medinipur part of Keleghai river basin, India: RS and GIS methods

Tipo Artigo de periódico

Autor Abhay Sahu

Resumo The prime objective of this paper is to identify and mapping of the water-logged areas applying methods of Remote Sensing (RS) and Geographical Information System (GIS) in the part of Purba Medinipur district of Keleghai river basin, India. For this purpose, USGS Landsat 8 imagery (4th November, 2013) and topographical sheets (scale - 1:50,000; year - 1970) have been used here, processing through Arc GIS 9.3 and ERDAS Imagine 9.1, with field observations. A supervised classification of Landsat 8 imagery (2013) of the study area has been made after conversion of DN value to Top of Atmosphere (TOA) radiance value, and it is found that the amount of water-logged areas is 80-km². Based on different maps, it is observed that the factors like relief, slope, embankment density and settlement density have disproportionate relationship and canal density has direct proportion with the spatial distribution of water-logged areas. Here, RS techniques like NDVI, NDWI and modified NDWI or NDMI have been followed to corroborate water-logged areas and finally to understand the relevance of these techniques toward mapping of the water-logged areas, a Correlation Matrix has been prepared using SPSS 20 software and in result they are acceptable for an understanding on water-logged areas as values of them are significantly correlated with canal density. Keywords: Water-Logged Areas, Low-Lying Areas, Canal Density, RS Techniques, Correlation Matrix.

Data 2014/05/20

Idioma en-US

Título curto Identification and mapping of the water-logged areas in Purba Medinipur part of Keleghai river basin, India

Catálogo de biblioteca www.sciencepubco.com

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Edição 2

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Anexos

- Snapshot
- Full Text PDF

Hidrologia e fluxo de carbono em turfeiras tropicais de montanha

Tipo Tese

Autor Uidemar Morais Barral

Resumo Turfeiras são ecossistemas formados pela acumulação de tecidos vegetais em ambientes com condições anaeróbicas. Suas principais características definidoras são o solo orgânico e a retenção de água. São as propriedades hidrológicas das turfeiras que permitem a sua existência continuada. Entender a hidrologia das turfeiras é fundamental para estes ecossistemas, já que é provavelmente a condição mais importante relacionada à ecologia, ao desenvolvimento, às funções e aos seus processos de formação. O objetivo deste estudo foi avaliar o comportamento hidrológico e o fluxo de carbono em turfeiras tropicais de montanha e a influência da antropização nestes ecossistemas. Foram instalados sete medidores de nível em duas turfeiras situadas no Chapadão do Couto (MG), com intervalo de registro de trinta minutos, sendo quatro em turfeira protegida pelo Parque Estadual do Rio Preto e três em uma turfeira antropizada do alto curso do rio Araçuaí, utilizada para pastejo animal e que sofre queimadas frequentes. Também foram coletadas, a cada dois meses, amostras de água em três pontos em cada turfeira, nas quais foram analisados: Sólidos solúveis totais; Potencial de oxidorredução; temperatura; pH; oxigênio dissolvido; condutividade elétrica; demanda química de oxigênio; turbidez; cloro total; fósforo; potássio; ferro total; Alumínio; nitrato; amônia e carbono orgânico total. No exutório da área de recarga hídrica de cada turfeira foi medida a vazão, também a cada dois meses. Parâmetros climáticos da área dos estudos foram obtidos com instalação de uma estação meteorológica com registros tomados a cada hora. Com os dados obtidos pelos medidores de nível foram calculados a amplitude de variação e variação do lençol freático. Também foi calculado o rendimento específico para as turfeiras estudadas, relacionando a precipitação e a variação na elevação do lençol freático. Os dados foram analisados por fatorial/componente principal para se obter os principais processos influenciadores da qualidade da água em cada turfeira. Os valores de rendimento específico foram correlacionados com a vazão em cada turfeira. Também foi usada regressão múltipla para obter uma equação que melhor representasse a vazão em cada área. A estatística multivariada permitiu a identificação de processos que influenciam a qualidade da água, sendo que em áreas protegidas, o principal processo influenciador da qualidade das águas de suas turfeiras é a decomposição da matéria orgânica e as turfeiras em áreas sem proteção a qualidade da água é influenciada pela erosão da área de recarga. A proteção das turfeiras ainda reduz a variação do lençol freático, além de torna-las mais produtivas, em relação a quantidade de água por unidade de área e protege sua capacidade de retenção de água dos efeitos antrópicos, principalmente incêndios. Turfeiras tropicais de montanha são bastante sensíveis a antropização, que provoca redução do estoque de carbono, diminuição do volume de água armazenado e

degradação da qualidade de suas águas. Desta forma, a preservação é de fundamental importância para estes ecossistemas.

Data 2018
Idioma por
Catálogo de biblioteca acervo.ufvjm.edu.br
URL <http://acervo.ufvjm.edu.br/jspui/handle/1/1996>
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Anexos

- Snapshot
- Full Text PDF

Estimativa de áreas alagadas no período de seca e cheia em ottobacia no município de Corumbá/MS, utilizando NDVI, NDWI e atributos de textura em imagens Landsat/TM

Tipo Artigo de periódico
Autor Jonas de Assis Cinquini
Autor Adriana Rodrigues de Azevedo
Resumo The Brazilian Pantanal is characterized as an area subject to seasonal flooding. Modifications in flood regime cause changes in the vegetation cover over the inundation plain, thus influencing its economy characterized mainly by fishing and livestock agribusiness. However, more important than having know about the vegetation cover in this region, is the knowledge of water features and wetlands in the image. For this, has been used the normalized difference vegetation index (NDVI), normalized difference water index (NDWI) and co-occurrence measures as information which allow to classify features filled by water and soil, vegetations. The texture attributes allow to analyze both the local statistical properties of homogeneous regions such as the interaction between these regions. Landsat 5 TM sensor were used, for the dry (09/07/2009) and wet (03/18/2010) seasons for the 2009 and 2010 years. The images used in this study allowed visual observation of hydrological changes between high and low water seasons. Thus, the decision tree classification method based on reflectance bands of Landsat 5 TM, NDVI, NDWI, and texture attributes, proved suitable for the mapping of these areas at the Pantanal.

Data 2012
Idioma pt
Catálogo de biblioteca Zotero
Páginas 10
Data de adição 09/06/2020 09:04:33

Data de modificação 09/06/2020 09:04:34

Anexos

- Cinquini e de Azevedo - 2012 - Estimativa de áreas alagadas no período de seca e .pdf

Estimation of irrigated oats yield using spectral indices

Tipo Artigo de periódico

Autor Anderson Prates Coelho

Autor Rogério Teixeira de Faria

Autor Fábio Tiraboschi Leal

Autor José de Arruda Barbosa

Autor Alexandre Barcellos Dalri

Autor David Luciano Rosalen

Resumo Spectral indices such as normalized difference vegetation index (NDVI) and Falker chlorophyll index (FCI) are valuable tools for estimating crop yield. However, there remains a need to define the best phenological stages for the evaluation and identification of the indices' critical limits to achieve better agricultural management practices. We aimed to compare the level of accuracy in estimating grain and biomass yield of white oats (*Avena sativa* L.) as a function of NDVI and FCI at four phenological stages and to define the critical limits of the two indices. Five experimental treatments were performed in four replicates; each treatment received a different irrigation level: 11%, 31%, 60%, 87%, and 100% of crop evapotranspiration volume, respectively. The critical ranges of NDVI and FCI were set when the relative grain yield was between 90% and 110%. The mean NDVI and FCI values in each plot were determined at four phenological stages, which correlated to grain and biomass yield. Active sensors were used and the measured values were later used in regression analysis. The grain and biomass yield of white oats can be estimated with high accuracy. The NDVI presents greater accuracy of grain and biomass yield estimates of white oats than FCI. The critical ranges of the spectral indices for the "Average" class of oat grain yield as a function of the NDVI were 0.71-0.77, 0.66-0.73, and 0.63-0.71 for the phenological stages 8, 10, and 10.5.4, respectively, and of FCI were 58.4–60.2 and 58.2–61.3 for phenological stages 10 and 10.5.4, respectively.

Data August 20, 2019

Idioma en

Catálogo de biblioteca ScienceDirect

URL <http://www.sciencedirect.com/science/article/pii/S0378377419303592>

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Abreviatura do periódico Agricultural Water Management

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Etiquetas:

NDVI, Biomass yield, Chlorophyll meter, Grain yield, L, Phenological stage

Anexos

- ScienceDirect Snapshot

Estimating Peatland Water Table Depth and Net Ecosystem Exchange: A Comparison between Satellite and Airborne Imagery

Tipo Artigo de periódico

Autor Margaret Kalacska

Autor J. Pablo Arroyo-Mora

Autor Raymond J. Soffer

Autor Nigel T. Roulet

Autor Tim R. Moore

Autor Elyn Humphreys

Autor George Leblanc

Autor Oliver Lucanus

Autor Deep Inamdar

Resumo Peatlands play a fundamental role in climate regulation through their long-term accumulation of atmospheric carbon. Despite their resilience, peatlands are vulnerable to climate change. Remote sensing offers the opportunity to better understand these ecosystems at large spatial scales through time. In this study, we estimated water table depth from a 6-year time sequence of airborne shortwave infrared (SWIR) hyperspectral imagery. We found that the narrowband index NDWI1240 is a strong predictor of water table position. However, we illustrate the importance of considering peatland anisotropy on SWIR imagery from the summer months when the vascular plants are in full foliage, as not all illumination conditions are suitable for retrieving water table position. We also model net ecosystem exchange (NEE) from 10 years of Landsat TM5 imagery and from 4 years of Landsat OLI 8 imagery. Our results show the transferability of the model between imagery from sensors with similar spectral and radiometric properties such as Landsat 8 and Sentinel-2. NEE modeled from airborne hyperspectral imagery more closely correlated to eddy covariance tower measurements than did models based on satellite images. With fine spectral, spatial and radiometric resolutions, new generation satellite imagery and airborne hyperspectral imagery allow for monitoring the response of peatlands to both

allogenic and autogenic factors.

Data 2018/5

Idioma en

Título curto Estimating Peatland Water Table Depth and Net Ecosystem Exchange

Catálogo de biblioteca www.mdpi.com

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Edição 5

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Etiquetas:

bog, hydrology, Sentinel-2, CASI, hyperspectral, Landsat 8 OLI, Landsat TM5, Mer Bleue, northern peatland, SASI

Anexos

- Snapshot
- Full Text PDF

Digital mapping of peatlands – A critical review

Tipo Artigo de periódico

Autor Budiman Minasny

Autor Örjan Berglund

Autor John Connolly

Autor Carolyn Hedley

Autor Folkert de Vries

Autor Alessandro Gimona

Autor Bas Kempen

Autor Darren Kidd

Autor Harry Lilja

Autor Brendan Malone

Autor Alex McBratney

Autor Pierre Roudier

Autor Sharon O'Rourke

Autor Rudiyanto

Autor José Padarian
Autor Laura Poggio
Autor Alexandre ten Caten
Autor Daniel Thompson
Autor Clint Tuve
Autor Wirastuti Widyatmanti

Resumo Peatlands offer a series of ecosystem services including carbon storage, biomass production, and climate regulation. Climate change and rapid land use change are degrading peatlands, liberating their stored carbon (C) into the atmosphere. To conserve peatlands and help in realising the Paris Agreement, we need to understand their extent, status, and C stocks. However, current peatland knowledge is vague—estimates of global peatland extent ranges from 1 to 4.6 million km², and C stock estimates vary between 113 and 612 Pg (or billion tonne C). This uncertainty mostly stems from the coarse spatial scale of global soil maps. In addition, most global peatland estimates are based on rough country inventories and reports that use outdated data. This review shows that digital mapping using field observations combined with remotely-sensed images and statistical models is an avenue to more accurately map peatlands and decrease this knowledge gap. We describe peat mapping experiences from 12 countries or regions and review 90 recent studies on peatland mapping. We found that interest in mapping peat information derived from satellite imageries and other digital mapping technologies is growing. Many studies have delineated peat extent using land cover from remote sensing, ecology, and environmental field studies, but rarely perform validation, and calculating the uncertainty of prediction is rare. This paper then reviews various proximal and remote sensing techniques that can be used to map peatlands. These include geophysical measurements (electromagnetic induction, resistivity measurement, and gamma radiometrics), radar sensing (SRTM, SAR), and optical images (Visible and Infrared). Peatland is better mapped when using more than one covariate, such as optical and radar products using nonlinear machine learning algorithms. The proliferation of satellite data available in an open-access format, availability of machine learning algorithms in an open-source computing environment, and high-performance computing facilities could enhance the way peatlands are mapped. Digital soil mapping allows us to map peat in a cost-effective, objective, and accurate manner. Securing peatlands for the future, and abating their contribution to atmospheric C levels, means digitally mapping them now.

Data 09/2019

Idioma en

Catálogo de biblioteca DOI.org (Crossref)

URL <https://linkinghub.elsevier.com/retrieve/pii/S001282521830360X>

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Volume 196

Páginas 102870

Título da publicação Earth-Science Reviews

DOI 10.1016/j.earscirev.2019.05.014

Abreviatura do periódico Earth-Science Reviews

ISSN 00128252

Data de adição 06/06/2020 15:53:25

Data de modificação 06/06/2020 15:53:42

Anexos

- Minasny et al. - 2019 - Digital mapping of peatlands – A critical review.pdf

Delineating northern peatlands using Sentinel-1 time series and terrain indices from local and regional digital elevation models

Tipo Artigo de periódico

Resumo The spatial extent of northern peatlands remains highly uncertain in spite of rapidly developing satellite observation datasets. This is limiting prog...

Data 2019/09/15

Idioma pt

Catálogo de biblioteca www-sciencedirect.ez54.periodicos.capes.gov.br

URL <https://www-sciencedirect.ez54.periodicos.capes.gov.br/science/article/pii/S0034425719302718>

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Volume 231

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Título da publicação Remote Sensing of Environment

DOI 10.1016/j.rse.2019.111252

ISSN 0034-4257

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Data de modificação 24/03/2021 14:51:31

Anexos

- Snapshot

Construction and validation of a new model for cropland soil moisture index based on MODIS data

Tipo Conferência

Autor Huailiang Chen

Autor Hongwei Zhang

Autor Shuang-he Shen

Autor Weidong Yu**Autor** Chunhui Zou

Resumo Soil Moisture and Vegetation Growth are the most important and direct index in drought monitoring, and the spectrum interpretation of vegetation and soil are serious factors in the judgment of drought degree. To find a more real-time monitoring index of cropland soil moisture by remote sensing, a Cropland Soil Moisture Index (CSMI) was established in this paper based on the effective reflections of Normalized Difference Vegetation Index (NDVI) on deeper soil moisture and well expressions of Surface Water Content Index (SWCI) on surface soil moisture. By validation with different time-series MODIS data, the Cropland Soil Moisture Index (CSMI) not only overcome the limitation of hysteretic nature and saturated quickly of Normalized Difference Vegetation Index (NDVI), but also take the advantage of the Surface Water Content Index (SWCI) which effectively reduce the atmosphere disturbance and retrieval surface soil water content better. The index passed the significant F-tests with $\alpha = 0.01$, and is a true real-time drought monitoring index.

Data 2009/08/20**Catálogo de biblioteca** www.spiedigitallibrary.org

URL <https://www.spiedigitallibrary.org/conference-proceedings-of-spie/7454/745418/Construction-and-validation-of-a-new-model-for-cropland-soil/10.1117/12.825039.short>

Data de acesso 07/06/2020 15:27:24**Volume** 7454**Editor** International Society for Optics and Photonics**Páginas** 745418**Título dos anais** Remote Sensing and Modeling of Ecosystems for Sustainability VI**Nome da conferência** Remote Sensing and Modeling of Ecosystems for Sustainability VI**DOI** 10.1117/12.825039**Data de adição** 07/06/2020 15:27:24**Data de modificação** 07/06/2020 15:27:24

Anexos

- Snapshot

Characterization of Sentinel-2A and Landsat-8 top of atmosphere, surface, and nadir BRDF adjusted reflectance and NDVI differences

Tipo Artigo de periódico**Autor** Hankui K. Zhang**Autor** David P. Roy**Autor** Lin Yan**Autor** Zhongbin Li**Autor** Haiyan Huang

Autor Eric Vermote

Autor Sergii Skakun

Autor Jean-Claude Roger

Resumo The medium spatial resolution satellite data from the polar-orbiting Sentinel-2A Multi Spectral Instrument (MSI) and Landsat-8 Operational Land Imager (OLI) sensors provide 10 m to 30 m multi-spectral global coverage with a better than 5-day revisit. There are a number of differences between the sensor data that need to be considered before the data can be used together reliably. Sentinel-2A and Landsat-8 data for approximately $10^{\circ} \times 10^{\circ}$ of southern Africa acquired in two summer (December and January) and in two winter (June and July) months of 2016 were compared. The data were registered and each orbit projected into 30 m fixed non-overlapping tiles defined in the sinusoidal equal area projection. Only corresponding sensor observations of each 30 m tile pixel that were both not cloudy, shadow, saturated, or cirrus contaminated, and that were acquired within one-day of each other, were compared. Both the Sentinel-2A MSI and Landsat-8 OLI data were atmospherically corrected using the Land Surface Reflectance Code (LaSRC) and were also corrected to nadir BRDF adjusted reflectance (NBAR). Top of atmosphere (TOA), surface reflectance, and NBAR, for the spectrally corresponding visible, near infrared (NIR) and shortwave infrared (SWIR) MSI and OLI bands, and derived normalized difference vegetation index (NDVI) (from the narrow NIR band for MSI), were compared and their sensor differences quantified by regression analyses. Atmospheric contamination and bi-directional reflectance differences were evident in the 65 million pairs of contemporaneous MSI and OLI observations considered. The MSI surface reflectance was greater than the OLI surface reflectance for all the bands except the green, red, and the broad MSI NIR bands, and the MSI surface NDVI was greater than the OLI surface NDVI. This pattern was also found in the NBAR sensor comparisons except for the red bands. Simulated MSI and OLI reflectance derived using the sensor spectral response functions and laboratory spectra showed similar results in the red, NIR and SWIR bands as the real data comparisons. Ordinary least squares (OLS) linear regressions of the 65 million pairs of contemporaneous MSI and OLI data for the three processing levels had good fits ($r^2 > 0.87$ for the TOA data comparisons, $r^2 > 0.89$ for the atmospherically corrected data comparisons, $r^2 > 0.90$ for the NBAR data comparisons; p -values < 0.0001). The OLS regression coefficients are provided so that they can be used to help improve the consistency between Sentinel-2A MSI and Landsat-8 OLI data.

Data September 15, 2018

Idioma en

Catálogo de biblioteca ScienceDirect

URL <http://www.sciencedirect.com/science/article/pii/S0034425718301883>

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Volume 215

Páginas 482-494

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DOI 10.1016/j.rse.2018.04.031

Abreviatura do periódico Remote Sensing of Environment

ISSN 0034-4257

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Etiquetas:

Differences, Landsat-8 OLI, NDVI, Reflectance, Sentinel-2 MSI

Notas:

Artigo muito bom!!!

Anexos

- ScienceDirect Snapshot
- ScienceDirect Full Text PDF

Brazilian wetlands: their definition, delineation, and classification for research, sustainable management, and protection

Tipo Artigo de periódico

Autor W. J. Junk

Autor M. T. F. Piedade

Autor R. Lourival

Autor F. Wittmann

Autor P. Kandus

Autor L. D. Lacerda

Autor R. L. Bozelli

Autor F. A. Esteves

Autor C. Nunes da Cunha

Autor L. Maltchik

Autor J. Schöngart

Autor Y. Schaeffer-Novelli

Autor A. A. Agostinho

Resumo Although 20% of Brazilian territory is covered by wetlands, wetland inventories are still incomplete. In 1993, Brazil signed the Ramsar Convention but a coherent national policy for the sustainable management and protection of wetlands has yet to be established. Major gaps in the definition of a specific wetland policy are twofold: (1) the lack of standardized criteria by which wetlands are defined and delineated that reflects the specific ecological conditions of the country and (2) the lack of a

national classification of wetlands that takes into account specific hydrological conditions and respective plant communities. In recent years, efforts have been made at a regional level to improve public awareness of the ecology of Brazilian wetlands, their benefits to society, and the major threats endangering them. Studies have shown that wetlands play a crucial role in the regional hydrological cycle and provide multiple benefits for local populations. Furthermore, Brazilian wetlands contribute significantly to South American biodiversity. Therefore, wetland conservation and sustainable management should be given high legislative priority. This article provides a synthesis of the current body of knowledge on the distribution, hydrology, and vegetation cover of Brazilian wetlands. Their definition, delineation, and classification at the national level are proposed in order to establish a scientific basis for discussions on a national wetland policy that mandates the sustainable management of Brazil's extremely diverse and complex wetlands. This goal is particularly urgent in the face of the continuing and dramatic deterioration of wetlands resulting from large-scale agro-industrial expansion, and hydroelectric projects as well as the projected impact of global climate change on hydrological cycles. Copyright © 2013 John Wiley & Sons, Ltd.

Data 2014

Idioma en

Título curto Brazilian wetlands

Catálogo de biblioteca Wiley Online Library

URL <https://onlinelibrary.wiley.com/doi/abs/10.1002/aqc.2386>

Data de acesso 05/06/2020 17:07:59

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Extra _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/aqc.2386>

Volume 24

Páginas 5-22

Título da publicação Aquatic Conservation: Marine and Freshwater Ecosystems

DOI 10.1002/aqc.2386

Edição 1

ISSN 1099-0755

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Etiquetas:

Amazonian wetlands, cerrado wetlands, coastal wetlands, flood pulse, Pantanal, Ramsar Convention, wetland policy, wetland vegetation

Anexos

- Snapshot
- Junk et al. - 2014 - Brazilian wetlands their definition, delineation,.pdf

Avaliação de Índices Espectrais para Identificação de Áreas Queimadas no Cerrado Utilizando Dados Landsat TM

Tipo Artigo de periódico

Autor Allan Arantes Pereira

Autor Fabrício Rodrigues Teixeira

Autor Renata Libonati

Autor Emilliano Arturo Melchiori

Autor Luis Marcelo Tavares Carvalho

Resumo Resumo A alteração no regime de fogo devido à ação humana é a principal ameaça à biodiversidade do Cerrado Brasileiro e tem levado a iniciativas de melhores políticas públicas ambientais. Neste contexto, a disponibilidade de informações confiáveis sobre as distribuições espacial e temporal de áreas queimadas é crucial, não só para uma melhor gestão dos recursos naturais, mas também para estudos da química da atmosfera e de mudanças climáticas. O sensoriamento remoto via satélites constitui, neste âmbito, uma ferramenta indispensável na medida em que permite um monitoramento especialmente útil em áreas extensas e/ou de difícil acesso afetadas pelo fogo. Neste contexto, este trabalho visa aprimorar o conhecimento científico sobre o fogo na vegetação do Cerrado, especificamente através da avaliação de qual índice espectral tem o melhor desempenho na discriminação de áreas queimadas em imagens Landsat TM. Foram avaliados dez índices espectrais: Burned Area Index (BAI), Char Soil Index (CSI), Enhanced Vegetation Index (EVI), Normalized Burn Ratio (NBR), variation of Normalized Burn Ratio (NBR2), Normalized Difference Vegetation Index (NDVI), Normalized Difference Moisture Index (NDMI), Mid-Infrared Burn index (MIRBI), Soil Adjusted Vegetation Index (SAVI) e W-burn-sensitive vegetation index (W). O índice M de separabilidade foi utilizado para avaliar a eficácia de cada um dos índices espectrais em discriminar pixels queimados e não queimados. Os resultados mostram que os índices que utilizam os canais infravermelho de ondas curtas (banda 5 e banda 7), possuem maior capacidade de separabilidade de áreas queimadas na região deste estudo.

Data 2016/10/16

Idioma pt

Catálogo de biblioteca www.seer.ufu.br

URL <http://www.seer.ufu.br/index.php/revistabrasileiracartografia/article/view/44386>

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Direitos Copyright (c) 2016 Revista Brasileira de Cartografia

Extra Number: 8

Volume 68

Título da publicação Revista Brasileira de Cartografia

Edição 8

ISSN 1808-0936

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Data de modificação 07/06/2020 15:12:03

Anexos

- Snapshot
- Full Text PDF

Analysis of Surface Water Resources Using Sentinel-2 Imagery

Tipo Artigo de periódico

Autor Ujwala Bhangale

Autor Swapnil More

Autor Tanishq Shaikh

Autor Suchitra Patil

Autor Nilkamal More

Resumo Water is one of the most important resources for sustainability of most organisms on this planet. The most accessible form of water for the living creatures is surface water bodies. These water bodies should be monitored because they have a significant impact on any surrounding ecosystem. In Maharashtra, India, the drought condition has worsened with many areas suffering from water paucity and poor crop yield. Therefore, monitoring of these resources by using satellite images and spectral indices is of cardinal importance. In this study, we have targeted the identification of water bodies using spectral indices and comparison with pre-existing data about the surface water bodies. The spectral index chosen for detection of water content is Normalized Difference Water Index (NDWI). The results have shown that there is inconsistency in remote sensed data captured by the Sentinel- 2 and the pre-existing data about the surface water bodies.

Data January 1, 2020

Idioma en

Catálogo de biblioteca ScienceDirect

URL <http://www.sciencedirect.com/science/article/pii/S1877050920312801>

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Volume 171

Páginas 2645-2654

Título da publicação Procedia Computer Science

Série Third International Conference on Computing and Network Communications (CoCoNet'19)

DOI 10.1016/j.procs.2020.04.287

Abreviatura do periódico Procedia Computer Science

ISSN 1877-0509

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Etiquetas:

Geographic Information Systems (GIS), Image processing, Normalized Difference Water Index (NDWI), Satellite images, Sentinel-2, Surface water resources, Water indices

Anexos

- ScienceDirect Snapshot
- ScienceDirect Full Text PDF

ANÁLISE COMPARATIVA DE ÍNDICES ESPECTRAIS PARA A EXTRAÇÃO AUTOMÁTICA DA LÂMINA D'ÁGUA EM IMAGEM DO SATÉLITE LANDSAT 8OLI | Galoá Proceedings

Tipo Página web

URL <https://proceedings.science/sbsr-2019/papers/analise-comparativa-de-indices-espectrais-para-a-extracao-automatica-da-lamina-d-agua-em-imagem-do-satelite-landsat-8oli>

Data de acesso 07/06/2020 14:43:34

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Anexos

- ANÁLISE COMPARATIVA DE ÍNDICES ESPECTRAIS PARA A EXTRAÇÃO AUTOMÁTICA DA LÂMINA D'ÁGUA EM IMAGEM DO SATÉLITE LANDSAT 8OLI | Galoá Proceedings

An enzymic 'latch' on a global carbon store

Tipo Artigo de periódico

Autor Chris Freeman

Autor Nick Ostle

Autor Hojeong Kang

Resumo A shortage of oxygen locks up carbon in peatlands by restraining a single enzyme.

Data 2001-01

Idioma en

Catálogo de biblioteca www.nature.com

URL <https://www.nature.com/articles/35051650>

Data de acesso 21/09/2021 13:33:24

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Extra Bandiera_abtest: a Cg_type: Nature Research Journals Number: 6817
Primary_atype: Research Publisher: Nature Publishing Group
Volume 409
Páginas 149-149
Título da publicação Nature
DOI 10.1038/35051650
Edição 6817
ISSN 1476-4687
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Data de modificação 21/09/2021 13:33:24

Anexos

- Snapshot
- Full Text PDF

ALOS PALSAR - Radiometric Terrain Correction

Tipo Envio de blog
Resumo The Alaska Satellite Facility used digital elevation maps (DEMs) to radiometrically terrain-correct ALOS PALSAR data and offer it in GeoTIFF format.
Data 2019-03-08T19:29:11+00:00
Idioma en-US
URL <https://asf.alaska.edu/data-sets/derived-data-sets/alos-palsar-rtc/alos-palsar-radiometric-terrain-correction/>
Data de acesso 12/06/2020 14:27:02
Extra Library Catalog: asf.alaska.edu Section: ALOS PALSAR RTC
Título do blog ASF
Data de adição 12/06/2020 14:27:02
Data de modificação 12/06/2020 14:27:02

Anexos

- Snapshot

ALOS PALSAR

Tipo Envio de blog
Resumo ALOS PALSAR collected L-band synthetic aperture radar data. Learn about PALSAR technical specifications, products, and how to obtain PALSAR data.
Data 2019-03-08T18:58:08+00:00
Idioma en-US

URL <https://asf.alaska.edu/data-sets/sar-data-sets/alos-palsar/>

Data de acesso 12/06/2020 14:10:07

Extra Library Catalog: asf.alaska.edu Section: SAR Data Sets

Título do blog ASF

Data de adição 12/06/2020 14:10:07

Data de modificação 12/06/2020 14:10:07

Anexos

- Snapshot

A sensor-invariant atmospheric correction method: application to Sentinel-2/MSI and Landsat 8/OLI

Tipo Artigo de periódico

Autor Feng Yin

Autor Philip Lewis

Autor Jose Gomez-Dans

Autor Qingling Wu

Resumo Mitigating the impact of atmospheric effects on optical data is a critical for monitoring land processes. Consistent approaches to different sensors, which also quantify uncertainty, are required to combine surface reflectance observations from heterogeneous sensors. This paper provides a sensor agnostic approach to atmospheric correction, called SIAC. It exploits operational global datasets on (i) coarse resolution spectral surface bi-directional reflectance distribution function (BRDF) and (ii) coarse resolution atmospheric composition. The method infers aerosol optical thickness (AOT) and total columnar water vapour (TCWV) from top of atmosphere (TOA) reflectance observations, using a Bayesian framework that exploits the MODIS MCD43 BRDF descriptor product and the Copernicus Atmosphere Monitoring Service (CAMS) operational forecasts of AOT and TCWV to provide an *a priori* estimate. Spatial smoothness constraints are assumed for AOT and TCWV, and efficient statistical approximations (so-called emulators) to atmospheric radiative transfer (RT) codes are used to efficiently invert the parameters. BRDF descriptors are used to provide an estimation of surface directional reflectance (SDR) at a coarse resolution, and linear spectral mappings to convert to the target sensor spectral configuration. The method is demonstrated on Sentinel 2 and Landsat 8 data. AOT retrieval for both S2 and L8 shows a very high correlation to AERONET estimates ($r^2 > 0.9$, $\text{RMSE} < 0.025$ for both sensors), although with a small underestimate of AOT. TCWV is accurately retrieved from both sensors ($r^2 > 0.95$, $\text{RMSE} < 0.02$). Comparisons with *in situ* surface reflectance measurements from the RadCalNet network show that the proposed method provides accurate estimates of surface reflectance across the entire spectrum, with RMSE mismatches with the reference data between 0.005 and 0.02 in

units of reflectance, both for Sentinel 2 and Landsat 8. For near-simultaneous Sentinel-2 and Landsat-8 acquisitions, there is a very tight relationship ($r^2 > 0.95$ for all common bands) between surface reflectance acquired from both sensors, with no negligible biases.

Data February 14, 2019

Título curto A sensor-invariant atmospheric correction method

Catálogo de biblioteca ResearchGate

DOI 10.31223/osf.io/ps957

Data de adição 12/02/2021 08:25:18

Data de modificação 16/02/2021 10:09:42

Anexos

- ResearchGate Link
- Full Text PDF

A sensor invariant Atmospheric Correction (SIAC)

Tipo Artigo de periódico

Autor Feng Yin

Autor Jose Gomez-Dans

Autor Philip Lewis

Autor Qingling Wu

Resumo A sensor-agnostic atmospheric correction scheme. Demonstrated for Sentinel 2/MSI and Landsat 8/OLI.

Data July 31, 2018

Catálogo de biblioteca ResearchGate

DOI 10.13140/RG.2.2.32393.54881

Data de adição 12/02/2021 14:18:30

Data de modificação 16/02/2021 10:09:53

Anexos

- ResearchGate Link
- Full Text PDF

A Review of Wetland Remote Sensing

Tipo Artigo de periódico

Autor Meng Guo

Autor Jing Li

Autor Chunlei Sheng

Autor Jiawei Xu

Autor Li Wu

Resumo Wetlands are some of the most important ecosystems on Earth. They play a key role in alleviating floods and filtering polluted water and also provide habitats for many plants and animals. Wetlands also interact with climate change. Over the past 50 years, wetlands have been polluted and declined dramatically as land cover has changed in some regions. Remote sensing has been the most useful tool to acquire spatial and temporal information about wetlands. In this paper, seven types of sensors were reviewed: aerial photos coarse-resolution, medium-resolution, high-resolution, hyperspectral imagery, radar, and Light Detection and Ranging (LiDAR) data. This study also discusses the advantage of each sensor for wetland research. Wetland research themes reviewed in this paper include wetland classification, habitat or biodiversity, biomass estimation, plant leaf chemistry, water quality, mangrove forest, and sea level rise. This study also gives an overview of the methods used in wetland research such as supervised and unsupervised classification and decision tree and object-based classification. Finally, this paper provides some advice on future wetland remote sensing. To our knowledge, this paper is the most comprehensive and detailed review of wetland remote sensing and it will be a good reference for wetland researchers.

Data 2017/4

Idioma en

Catálogo de biblioteca www.mdpi.com

URL <https://www.mdpi.com/1424-8220/17/4/777>

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Volume 17

Páginas 777

Título da publicação Sensors

DOI 10.3390/s17040777

Edição 4

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Etiquetas:

wetland, remote sensing, LiDAR, optical sensor, radar

Anexos

- Snapshot
- Full Text PDF

A real-time drought monitoring method: cropland soil moisture index (CSMI) and application

Tipo Conferência

Autor Huailiang Chen

Autor Hongwei Zhang

Autor Shuang-he Shen

Autor Weidong Yu

Autor Chunhui Zou

Resumo Soil Moisture and Vegetation Growth are the most important and direct index in drought monitoring, and the spectrum interpretation of vegetation and soil are serious factors in the judgment of drought degree. To find a more real-time monitoring index of cropland soil moisture by remote sensing, a Cropland Soil Moisture Index (CSMI) was established in this paper based on the effective reflections of Normalized Difference Vegetation Index (NDVI) on deeper soil moisture and well expressions of Surface Water Content Index (SWCI) on surface soil moisture. By validation with different time-series MODIS data, the Cropland Soil Moisture Index (CSMI) not only overcome the limitation of hysteretic nature and saturated quickly of Normalized Difference Vegetation Index (NDVI), but also take the advantage of the Surface Water Content Index (SWCI) which effectively reduce the atmosphere disturbance and retrieval surface soil water content better. The index passed the significant F-tests with $\alpha = 0.01$, and is a true real-time drought monitoring index.

Data 2009/09/18

Título curto A real-time drought monitoring method

Catálogo de biblioteca www.spiedigitallibrary.org

URL <https://www.spiedigitallibrary.org/conference-proceedings-of-spie/7472/747221/A-real-time-drought-monitoring-method--cropland-soil-moisture/10.1117/12.829733.short>

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Volume 7472

Editor International Society for Optics and Photonics

Páginas 747221

Título dos anais Remote Sensing for Agriculture, Ecosystems, and Hydrology XI

Nome da conferência Remote Sensing for Agriculture, Ecosystems, and Hydrology XI

DOI 10.1117/12.829733

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Anexos

- Snapshot

A feedback based modification of the NDVI to minimize canopy background and atmospheric noise

Tipo Artigo de periódico

Autor Hui Qing Liu

Autor Alfredo Huete

Resumo The Normalized Difference Vegetation Index (NDVI) equation has a simple, open loop structure (no feedback), which renders it susceptible to large sources of error and uncertainty over variable atmospheric and canopy background conditions. In this study, a systems analysis approach is used to examine noise sources in existing vegetation indices (VI'S) and to develop a stable, modified NDVI (MNDVI) equation. The MNDVI, a closedloop version of the NDVI, was constructed by adding 1) a soil and atmospheric noise feedback loop, and 2) an atmospheric noise compensation forward loop. The coefficients developed for the MNDVI are physically-based and are empirically related to the expected range of atmospheric and background "boundary" conditions. The MNDVI can be used with data uncorrected for atmosphere, as well as with Rayleigh corrected and atmospherically corrected data. In the field observational and simulated data sets tested here, the MNDVI was found to considerably reduce noise for any complex soil and atmospheric situation. The resulting uncertainty, expressed as vegetation equivalent noise, was +0.11 leaf area index (LAI) units, which was 7 times less than encountered with the NDVI (+0.8 LAI). These results indicate that the MNDVI may be satisfactory in meeting the need for accurate, long term vegetation measurements for the Earth Observing System (EOS) program.

Data March 1995

Catálogo de biblioteca IEEE Xplore

Extra Conference Name: IEEE Transactions on Geoscience and Remote Sensing

Volume 33

Páginas 457-465

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Edição 2

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Etiquetas:

Soil, Aerosols, Atmospheric modeling, Indexes, Vegetation, Vegetation mapping

Anexos

- IEEE Xplore Abstract Record

A dynamic classification scheme for mapping spectrally similar classes: Application to wetland classification

Tipo Artigo de periódico
Resumo Applying numerous features is common for complex land cover classification, which makes feature selection necessary. Although the selected feature sub...
Data 2019/11/01
Idioma en
Título curto A dynamic classification scheme for mapping spectrally similar classes
Catálogo de biblioteca www-sciencedirect.ez54.periodicos.capes.gov.br
URL <https://www-sciencedirect.ez54.periodicos.capes.gov.br/science/article/pii/S0303243419300108>
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DOI 10.1016/j.jag.2019.101914
ISSN 0303-2434
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967-972.pdf

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