

EMENTA DA DISCIPLINA

Distúrbios antrópicos e antropoceno; Indicadores Ecológicos: conceito e importância; Indicadores de Habitat Físico; Indicadores de Qualidade de Água; Indicadores de Sensoriamento Remoto; Uso e Ocupação do Solo; Geodiversidade; Indicadores Biológicos; Serviços de Ecossistema; Critérios para seleção dos indicadores ecológicos; Aplicabilidade dos indicadores ecológicos.

PROGRAMA DA DISCIPLINA:

- Introdução e distúrbios antrópicos
- Conceitos básicos
- Habitat físico
- Qualidade da água
- Sensoriamento remoto
- Geodiversidade
- Bioindicadores I
- Bioindicadores II
- Serviços de ecossistema
- Seleção de indicadores
- Aplicação de indicadores

BIBLIOGRAFIA:

- Alba-Fernández, Virtudes & Ariza-Lopez, Francisco & Rodríguez-Avi, José & García-Balboa, José. (2020). Statistical Methods for Thematic-Accuracy Quality Control Based on an Accurate Reference Sample. *Remote Sensing*. 12. 816. 10.3390/rs12050816.
- Fleiss, J.L., Cohen, J., Everitt, B.S., 1969. Large sample standard errors of kappa and weighted kappa. *Psychol. Bull.* 72 (5), 323.
- Foody, G. M., 2021. Explaining the unsuitability of the kappa coefficient in the assessment and comparison of the accuracy of thematic maps obtained by image classification. *Remote Sensing of Environment*. 239. <https://doi.org/10.1016/j.rse.2019.111630>.
- García-Balboa, J.L.; Alba-Fernández, M.V.; Ariza-López, F.J.; Rodríguez-Avi, J. Analysis of Thematic Similarity Using Confusion Matrices. *ISPRS Int. J. Geo-Inf.* 2018, 7, 233. <https://doi.org/10.3390/ijgi7060233>
- KAMUSOKO, Courage. Land Cover Classification Accuracy Assessment. In: *Optical and SAR Remote Sensing of Urban Areas*. Springer, Singapore, 2022. p. 105-118.
- LAGE, G. B. ; MOREIRA, K. K. R. O. ; LAGE, T. B. ; NERO, M. A. ; GARCIA, R. A. . Identificação e determinação da altura das árvores de eucalyptus sp a partir de dados lidar e avaliação dos resultados por meio de ortofotos e medidas de campo. *Caminhos de Geografia*), v. 23, p. 189-201, 2022
- Landis, J.R., Koch, G.G., 1977. The measurement of observer agreement for categorical data. *Biometrics* 33, 159–174.
- Lu, M., Wu, W., You, L., See, L., Fritz, S., Yu, Q., Wei, Y., Chen, D., Yang, P., and Xue, B.: A cultivated planet in 2010 – Part 1: The global synergy cropland map, *Earth Syst. Sci. Data*, 12, 1913–1928, <https://doi.org/10.5194/essd-12-1913-2020>, 2020.
- Mack, B., Leinenkugel, P.; Kuenzer, C.; & Dech, S. A semi-automated approach for the generation of a new land use and land cover product for Germany based on Landsat time-series and Lucas in-situ data, *Remote Sensing Letters*, 2017, 8:3, 244-253, DOI: 10.1080/2150704X.2016.1249299, <https://doi.org/10.1080/2150704X.2016.1249299>
- Mallet, C. and Le Bris, A.: CURRENT CHALLENGES IN OPERATIONAL VERY HIGH RESOLUTION LAND-COVER MAPPING, *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XLIII-B2-2020, 703–710, <https://doi.org/10.5194/isprs-archives-XLIII-B2-2020-703-2020>, 2020.
- MENDEZ-QUINTERO, J. D. ; FONSECA, C. O. ; NERO, M. A. ; LOBO, C. F. F. ; RIBEIRO, S. M. C. . Quantifying Land Use Change Dynamics In Agrotourism Destinations: A Case Study From Venda Nova Do Imigrante, Brazil. *GEOGRAPHY, ENVIRONMENT, SUSTAINABILITY*, v. 16, p. 121-131, 2023.
- Monserud, R.A., Leemans, R., 1992. Comparing global vegetation maps with the kappa statistic. *Ecol. Model.* 62 (4), 275–293.
- NAKAMO, S. J. et al. Assessment of Land Cover Changes in Litumbandyosi-Gesimasowa Game Reserve using Remote Sensing and GIS. In: *IOP Conference Series: Earth and Environmental Science*. IOP Publishing, 2022.

Nero, M. A.; Cintra, J. P.; Ferreira, G. F.; Pereira, t. A. J.; Faria, T. S. . A computational tool to evaluate the sample size in map positional accuracy. *Boletim de Ciências Geodésicas*, v. 23, p. 445-460, 2017.

OLIVEIRA, W. L. ; MORAIS, B. R. ; NERO, M. A. . Avaliação da eficiência dos classificadores de imagem de sensoriamento remoto com variação na resolução espacial. *INTERESPAÇO: REVISTA DE GEOGRAFIA E INTERDISCIPLINARIDADE*, v. 8, p. 1-19, 2022.

Olteanu-Raimond, A.-M.; See, L.; Schultz, M.; Foody, G.; Riffler, M.; Gasber, T.; Jolivet, L.; le Bris, A.; Meneroux, Y.; Liu, L.; Poupée, M.; Gombert, M. Use of Automated Change Detection and VGI Sources for Identifying and Validating Urban Land Use Change. *Remote Sens.* 2020, 12, 1186. Disponível em: <https://www.mdpi.com/2072-4292/12/7/1186/pdf>

Salk, C.; Fritz, S.; See, L.; Dresel, C.; McCallum, I. An Exploration of Some Pitfalls of Thematic Map Assessment Using the New Map Tools Resource. *Remote Sens.* 2018, 10, 376. <https://www.mdpi.com/2072-4292/10/3/376/htm>

Samasse, K.; Hanan, N.P.; Tappan, G.; Diallo, Y. Assessing Cropland Area in West Africa for Agricultural Yield Analysis. *Remote Sens.* 2018, 10, 1785. <https://www.mdpi.com/2072-4292/10/11/1785/pdf>

Schepaschenko, D., See, L., Lesiv, M. et al. Recent Advances in Forest Observation with Visual Interpretation of Very High-Resolution Imagery. *Surv Geophys* 40, 839–862 (2019). <https://doi-org.ez27.periodicos.capes.gov.br/10.1007/s10712-019-09533-z>

See L, Perger C, Hofer M, Weichselbaum J, Dressel C, & Fritz S (2015). LACO-WIKI: an open access online portal for land cover validation. In: ISPRS Geospatial Week 2015, 28 September-3 October 2015, Grande Motte, France. <https://www.isprs-ann-photogramm-remote-sens-spatial-inf-sci.net/II-3-W5/167/2015/isprsannals-II-3-W5-167-2015.pdf>

See, L.; Laso Bayas, J.C.; Schepaschenko, D.; Perger, C.; Dresel, C.; Maus, V.; Salk, C.; Weichselbaum, J.; Lesiv, M.; McCallum, I.; Moorthy, I.; Fritz, S. LACO-Wiki: A New Online Land Cover Validation Tool Demonstrated Using GlobeLand30 for Kenya. *Remote Sens.* 2017, 9, 754. <https://www.mdpi.com/2072-4292/9/7/754/pdf>

Stephen V. Stehman, Raymond L. Czaplewski, Design and Analysis for Thematic Map Accuracy Assessment: Fundamental Principles, *Remote Sensing of Environment*, Volume 64, Issue 3, 1998, Pages 331-344, ISSN 0034-4257, [https://doi.org/10.1016/S0034-4257\(98\)00010-8](https://doi.org/10.1016/S0034-4257(98)00010-8). (<http://www.sciencedirect.com/science/article/pii/S0034425798000108>).