

**Tomoaki Miura**  
**College of Tropical Agriculture and Human Resources (CTAHR)**  
**Dept. of Natural Resources and Environmental Management (NREM)**  
 FTE Distribution: 50% A; 50% R; 0% I; 0% E

**Education**

<u>Degree</u>	<u>University</u>	<u>Major</u>
<b>B.S.</b>	Waseda University, Tokyo, Japan	Earth Science, Minor in Education
<b>M.S.</b>	University of Nevada, Reno, NV	Resource Management
<b>Ph.D.</b>	University of Arizona, Tucson, AZ	Soil and Water Science, Double Minors in Remote Sensing and Statistics

**Lifetime and Fellow Achievement Awards (peer nominated and endorsed national and International-important for those without accreditation that is peer nominated and endorsed, recognized)**

2017	Excellence in Research Award, College of Tropical Agriculture and Human Resources, University of Hawai'i at Mānoa
2011	Best Mentor for Academic Year 2010-2011, NREM Graduate Student Organization

**Professional Appointments**

<u>Title</u>	<u>Employer</u>	<u>Dates Employed</u>
Department Chair	Department of Natural Resources and Environmental Management (NREM), College of Tropical Agriculture and Human Resources (CTAHR), University of Hawai'i at Mānoa, Honolulu	01/2022-Present
Professor	NREM, CTAHR, University of Hawai'i at Mānoa, Honolulu	08/2015-Present
Visiting Principal Researcher	Earth Surface System Research Center, Research Institute for Global Change, Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan	04/2020-Present
Visiting Scientist	Earth Surface System Research Center, Research Institute for Global Change, Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan (Sabbatical Leave)	09/2018-06/2019
Graduate Chair	NREM University of Hawai'i at Mānoa, Honolulu	08/2012-08/2017
Visiting Scientist	NASA Goddard Space Flight Center, Greenbelt, MD (Sabbatical Leave)	01/2012-06/2012
Affiliate Researcher	Water Resources Research Center, University of Hawai'i at Mānoa, Honolulu	08/2010-Present
Full (Level 3) Graduate Faculty	NREM University of Hawai'i at Mānoa, Honolulu	08/2010-Present
Associate Professor	NREM, University of Hawai'i at Mānoa, Honolulu	08/2010-07/2015
Associate (Level 2) Graduate Faculty	NREM, University of Hawai'i at Mānoa, Honolulu	08/2004-07/2010
Assistant Professor	NREM, University of Hawai'i at Mānoa, Honolulu	08/2003-07/2010

Associate Research Scientist	Department of Soil, Water and Environmental Science (SWES), University of Arizona, Tucson	03/2003-07/2003
Assistant Research Scientist	SWES, University of Arizona, Tucson	10/2000-03/2003
Research Associate	SWES, University of Arizona, Tucson	07/2000-09/2000

### **Courses Taught**

#### Course Number and Title (credits)

NREM 301+Lab Natural Resource Management (3)(1)  
NREM 477 GIS for Resource Managers (4)  
NREM 491 Topics in NREM (GIS and Remote Sensing for Resource Managers) (3)  
NREM 491 Topics in NREM (Advanced GIS for Resource Managers) (3)  
NREM 677 Remote Sensing of the Environment (3)  
NREM 691 Advanced Topics in NREM (Advanced GIS and Remote Sensing for Resource Managers) (3)  
NREM 691 Advanced Topics in NREM (Remote Sensing of Tropical Island Phenology) (3)  
NREM 695 Capstone Preparation in NREM (1)  
NREM 696 MS Plan B Capstone Experience (1.5)  
NREM 696 Capstone Experience in NREM (3)

### **Publications (reverse chronological order)**

#### Books

#### Book Chapters

- Miura, T. (2023). *Vegetation detection and vegetation indices (Section 5-1)*. In *Encyclopedia of Remote Sensing* (H. Tonooka, Editor-in-Chief), the Remote Sensing Society of Japan, Maruzen, Tokyo, Japan. (in Japanese)
- Miura, T. (2023). *MODIS (Section 10-12)*. In *Encyclopedia of Remote Sensing* (H. Tonooka, Editor-in-Chief), the Remote Sensing Society of Japan, Maruzen, Tokyo, Japan. (in Japanese)
- Miura, T. (2023). *NOAA's weather satellites and Suomi NPP (Section 10-29)*. In *Encyclopedia of Remote Sensing* (H. Tonooka, Editor-in-Chief), the Remote Sensing Society of Japan, Maruzen, Tokyo, Japan. (in Japanese)
- Miura, T. and Yoshioka, H. (2018). *Hyperspectral data in long-term, cross-sensor continuity studies*. In *Advanced Applications in Remote Sensing of Agricultural Crops and Natural Vegetation*, 2nd edition (Thenkabail, P. S., Lyon, J. G., and Huete, A., eds.): CRC Press, Taylor and Francis Group. doi:10.1201/9780429431166-13
- Bernardes, S., Madden, M., ..., Miura, T., ... (2018). *Image processing and analysis methods*. In *Manual of Remote Sensing*, 4th edition, Chapter 7 (in print).
- Miura, T., Obata, K., Azuma, J., Huete, A., & Yoshioka, H. (2015). *Inter- and intra-sensor compatibility of the enhanced vegetation index*. In *Remote Sensing Handbook Volume I* (Thenkabail, P. S., ed.): CRC Press, Taylor and Francis Group, pp.155-174.
- Huete, A., Miura, T., Yoshioka, H., Ratana, P., & Broich, M. (2014). *Indices of vegetation activity*. In *Biophysical Applications of Satellite Remote Sensing* (Hanes, J. M., eds.): Springer, pp. 1-41, doi:10.1007/978-3-642-25047-7
- Miura, T. and Yoshioka, H. (2011). *Hyperspectral data in long-term, cross-sensor continuity studies*. In *Hyperspectral Remote Sensing of Terrestrial Vegetation* (Thenkabail, P. S., Lyon, J. G., and Huete, A., eds.): CRC Press, Taylor and Francis Group, pp. 611-633.
- Huete, A., Didan, K., van Leeuwen, W., Miura, T., & Glenn, E. (2010). *MODIS Vegetation Indices*. In *Land Remote Sensing and Global Environmental Change: NASA's Earth Observing System and the Science of ASTER and MODIS* (Ramachandran, B., Justice, C. O., and Abrams, M. J., eds.): Springer, pp. 579-602.
- Miura, T., Huete, A. R., Ferreira, L. G., Sano, E. E., & Yoshioka, H. (2008). *A technique for reflectance calibration of airborne hyperspectral spectrometer data using a broad, multi-band radiometer*. In *Hyperspectral Remote*

*Sensing of Tropical and Sub-tropical Forests (Kalacska M., Sanchez-Azofeifa, A., eds.): CRS Press, pp. 213-232.*

Huete, A. R., Kim, Y., Ratana, P., Didan, K., Miura, T., and Shimabukuro, Y.E. (2008). Assessment of phenologic variability in Amazon tropical rainforests using hyperspectral and MODIS satellite data. In *Hyperspectral Remote Sensing of Tropical and Sub-tropical Forests (Kalacska M., Sanchez-Azofeifa, A., eds.): CRS Press, pp. 233-259.*

Elvidge, C. D., Miura, T., Jansen, W. T., Groeneveld, D. P., and Ray, J. (1998), Monitoring trend in wetland vegetation using a Landsat MSS time series. In *Remote Sensing Change Detection: Environmental Monitoring Methods and Applications (ed. by Lunetta, R. S. and Elvidge, C. D.), Ann Arbor Press, Chelsea, Michigan.*

#### Conference Proceedings

Miura, T., Nagai, S., Ichii, K., & Yoshioka, H. (2019). Monitoring vegetation dynamics in Japan using Himawari geostationary satellite. *IGARSS 2019*. doi:10.1109/IGARSS.2019.8900450

Miura, T. & Nagai, S. (2018). Multi-sensor monitoring of vegetation dynamics in tropical and temperate regions. *Proceedings of the 65th Conference of Remote Sensing Society of Japan, Kouchi, Japan, 27-28 November 2018. (in Japanese)*

Wang, J., Miura, T., Kato, A., Blanken, P. D., Brunsell, N., & Torn, M. S. (2014). Radiometric validation of satellite vegetation indices using flux tower measurements. *IGARSS 2014*. Québec, Canada, 13-18 July 2014.

Azuma, J., Miura, T., Didan, K., and Barreto-Munoz, A. (2014). An empirical approach for cross-sensor relationships of the NDVI and EVI2 across different sensors. *IGARSS 2014*. Québec, Canada, 13-18 July 2014.

Obata, K., Miura, T., Yoshioka, H., and Huete, A. R. (2014). Evaluation of MODIS-compatible EVI from VIIRS spectral bandpasses using EO-1 Hyperion data. *Proceedings of the 56th Conference of Remote Sensing Society of Japan, Tsukuba, Japan, 15-16 May 2014.*

Cabugos, L., Kaufman, A. J., Cox, L. J., Miura, T., and Easterday, D. (2007). Feasibility of rooftop landscaping with native Hawaiian plants in urban districts of Hawai'i. *Proceedings of the Fifth Annual Greening Rooftops for Sustainable Communities Conference, Minneapolis, Minnesota, USA, 29 April – 1 May 2007.*

Kim, Y., Huete, A. R., Jiang, Z., and Miura, T. (2007). Multisensor reflectance and vegetation index comparisons of Amazon tropical forest phenology with hyperspectral Hyperion data. *Remote Sensing and Modeling of Ecosystems for Sustainability IV (edited by Wei Gao and Susan L. Ustin), Proceedings of SPIE* vol. 6679, 667906, doi:10.1117/12.734974. Contribution: 15%

Huete, A. R., Miura, T., Kim, Y., Didan, K., and Privette, J. L. (2006). Assessments of inter-sensor vegetation index variability and dependencies with hyperspectral data. *Remote Sensing and Modeling of Ecosystems for Sustainability III (edited by Wei Gao and Susan L. Ustin), Proceedings of SPIE* vol. 6298, 629814, doi:10.1117/12.681382.

Yoshioka, H., Miura, T., and Yamamoto, H. (2006). Investigation on functional form in cross-calibration of spectral vegetation index. *Remote Sensing and Modeling of Ecosystems for Sustainability III (edited by Wei Gao and Susan L. Ustin), Proceedings of SPIE* vol. 6298, 629813, doi: 10.1117/12.681564.

Miura, T. and Yoshioka, H. (2005). An application of hyperspectral remote sensing to multi-sensor calibration of spectral vegetation indices for environmental monitoring. *Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (edited by A. M. Larar, M. Suzuki, and Q. Tong), Proceedings of SPIE* vol. 5655, pp. 222-232, doi:10.1117/12.579326.

Yoshioka, H., Miura, T., and Yamamoto, H. (2005). Relationships of spectral vegetation indices for continuity and compatibility of satellite data products. *Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (edited by A. M. Larar, M. Suzuki, and Q. Tong), Proceedings of SPIE* vol. 5655, pp. 233-240, doi:10.1117/12.578630.

Huete, A., Yoshioka, H., Miura, T., Kim, H.-J., Gao, X. (2002), Inter-sensor calibration of vegetation indices for synergistic monitoring and continuity studies of ecosystem variability, *the First International Symposium on Recent Advances in Quantitative Remote Sensing*, Torrent, Spain, 16-20 September 2002 (*Invited*)

Huete, A. R., Didan, K., Miura, T., Yoshioka, H., Ferreira, L., Gao, X., & Batchily, K. (2001). Validation of the

MODIS vegetation indices over a global set of test sites: preliminary results. In M. Owe, G. D'Urso & E. Zilioli (Eds.), *Remote Sensing for Agriculture, Ecosystems, and Hydrology II* (pp. 194-203, doi:10.1117/12.413945). Proceedings of SPIE Vol. 4171, Barcelona, Spain, 25 September 2000.

#### Refereed Journal Publications

- Lopes, K. H., Miura, T., Hauk, B., Kosaki, R., Leonard, J., & Hunter, C. (2023). Rapid expansion of the invasive-like red macroalga, *Chondria tumulosa* (Rhodophyta), on the coral reefs of the Papahānaumokuākea Marine National Monument. *Journal of Phycology*, 59:1107-1111. <https://doi.org/10.1111/jpy.13369>
- Shin, N., Katsumata, C., Miura, T., Tsutsumida, N., Ichie, T., Kotani, A., Nakagawa, M., Kho, L. K., Kobayashi, H., Kumagai, T., Tei, S., Pungga, R. A. S., Yamada, T., Kameda, A., Yanagisawa, M., Nasahara, K. N., Muraoka, H., Ichii, K., and Tokumoto, Y. (2023). Perspective: Improving the accuracy of plant phenology observations and land-cover and land-use detection by optical satellite remote-sensing in the Asian tropics. *Frontiers in Forests and Global Change*, 6. <https://doi.org/10.3389/ffgc.2023.1106723>
- Miura, T., Tokumoto, Y., Shin, N., Shimizu, K. K., Pungga, R. A. S., and Ichie, T. (2023). Utility of commercial high resolution satellite imagery for monitoring general glowering in Sarawak, Borneo. *Ecological Research*, 38(3), 386-402. <https://doi.org/10.1111/1440-1703.12382>
- Fraiola, K., Miura, T., Martinez, J., Lopes, K., Amidon, F., Torres-Pérez, J., Spalding, H., Williams, T., and Kosaki, R. (2023). Using commercial high-resolution satellite imagery to monitor a nuisance macroalga in the largest marine protected area in the U.S.A. *Coral Reefs*, 42, 253-259. <https://doi.org/10.1007/s00338-022-02336-6>
- Shin, N., Saitoh, T. M., Takeuchi, Y., Miura, T., Aiba, M., Kurokawa, H., Onoda, Y., Ichii, K., Nasahara, K. N., Suzuki, R., Nakashizuka, T., and Muraoka, H. (2023). Review: Monitoring of land cover changes and plant phenology by remote-sensing in East Asia. *Ecological Research*, 38(1), 111-133. <https://doi.org/10.1111/1440-1703.12371>
- Tsutsumida, N., Shin, N., & Miura, T. (2022). Evaluation of land surface phenology for autumn leaf color change based on citizen reports across Japan. *Remote Sensing*, 14(9), 2017. doi:10.3390/rs14092017
- Mamiit, R. J., Yanagida, J., & Miura, T. (2021). Productivity Hot Spots and Cold Spots: Setting Geographic Priorities for Achieving Food Production Targets. *Frontiers in Sustainable Food Systems*, 5, 327. doi:10.3389/fsufs.2021.727484
- Kato, A., Carlson, K. M., & Miura, T. (2021). Assessing the inter-annual variability of vegetation phenological events observed from satellite vegetation index time series in dryland sites. *Ecological Indicators*, 130, 108042. doi:10.1016/j.ecolind.2021.108042
- Miura, T., Smith, Z. C., and Yoshioka, H. (2021). Validation and analysis of Terra and Aqua MODIS, and SNPP VIIRS vegetation indices under zero vegetation conditions: A case study using Railroad Valley Playa. *Remote Sensing of Environment* 257:112344. doi:10.1016/j.rse.2021.112344
- Lucas, M. P., Trauernicht, C., Frazier, A. G., & Miura, T. (2020). Long-term, gridded Standardized Precipitation Index for Hawaii. *Data*, 5(4), 109. doi:10.3390/data5040109
- Tran, N. N., Huete, A., Nguyen, H., Grant, I., Miura, T., Ma, X., Lyapustin, A., Wang, Y., Ebert, E. (2020). Seasonal comparisons of Himawari-8 AHI and MODIS vegetation indices over latitudinal Australian grassland sites. *Remote Sensing*, 12(15), 2494. doi:10.3390/rs12152494
- Nagai, S., Saitoh, T. M., & Miura, T. (2020). Peak autumn leaf colouring along latitudinal and elevational gradients in Japan evaluated with online phenological data. *International Journal of Biometeorology*, 64, 1743-1754. doi:10.1007/s00484-020-01953-6
- Miura, T., & Nagai, S. (2020). Landslide detection with Himawari-8 geostationary satellite data: A case study of a torrential rain event in Kyushu, Japan. *Remote Sensing*, 12(11), 1734. doi:10.3390/rs12111734
- Mausio, K., Miura, T., & Lincoln, N. K. (2020). Cultivation potential projections of breadfruit (*Artocarpus altilis*) under climate change scenarios using an empirically validated suitability model calibrated in Hawai'i. *PLoS ONE*, 15(5), e0228552. doi:10.1371/journal.pone.0228552

- Miura, T., Nagai, S., Takeuchi, M., Ichii, K., & Yoshioka, H. (2019). Improved characterisation of vegetation and land surface dynamics in Central Japan with Himawari-8 Hypertemporal data. *Scientific Reports*, 9(1), 15692. doi:10.1038/s41598-019-52076-x
- Miura, T., Muratsuchi, J., and Vargas, M. (2018). Assessment of cross-sensor vegetation index compatibility between VIIRS and MODIS using near-coincident observations. *Journal of Applied Remote Sensing*, 12(4), 045004-045012. doi:10.1117/1.JRS.12.045004
- Nagai, S., Akitsu, T., Saitoh, T. M., Busey, R. C., Fukuzawa, K., Honda, Y., ..., Miura, T., ..., Nasahara, K. N. (2018). 8 million phenological and sky images from 29 ecosystems from the Arctic to the tropics: the Phenological Eyes Network. *Ecological Research*. doi:10.1007/s11284-018-1633-x (Data Paper)
- Nong, D. H., Lepczyk, C. A., Miura, T., & Fox, J. M. (2018). Quantifying urban growth patterns in Hanoi using landscape expansion modes and time series spatial metrics. *PLOS ONE* 13(5):e0196940. doi:10.1371/journal.pone.0196940
- Wu, J., Kobayashi, H., Stark, S. C., Meng, R., Guan, K., Tran, N. N., Gao, S., Yang, W., Restrepo-Coupe, N., Miura, T., Oliveira, R. C., Rogers, A., Dye, D. G., Nelson, B. W., Serbin, S. P., Huete, A. R., & Saleska, S. R. (2017). Biological processes dominate seasonality of remotely sensed canopy greenness in an Amazon evergreen forest. *New Phytologist*, n/a. doi:10.1111/nph.14939
- Ellsworth, L. M., Dale, A. P., Litton, C. M., & Miura, T. (2017). Improved fuel moisture prediction in non-native tropical *Megathyrus maximus* grasslands using Moderate Resolution Imaging Spectroradiometer (MODIS) derived vegetation indices. *International Journal of Wildland Fire* 26(5):384-392. doi:10.1071/WF16131
- Mtui, D. T., Lepczyk, C. A., Chen, Q., Miura, T., & Cox, L. J. (2017). Assessing multi-decadal land-cover-land-use change in two wildlife protected areas in Tanzania using Landsat imagery. *PLoS ONE* 12(9):e0185468. doi:10.1371/journal.pone.0185468
- Obata, K., Miura, T., Yoshioka, H., Huete, A., & Vargas, M. (2016). Spectral cross-calibration of VIIRS Enhanced Vegetation Index with MODIS: A case study using year-long global data. *Remote Sensing* 8(1):34. doi:10.3390/rs8010034
- Barnes, M., Miura, T., & Giambelluca, T. (2016). An assessment of diurnal and seasonal cloud cover changes over the Hawaiian Islands using Terra and Aqua MODIS. *Journal of Climate* 29:77-90. doi:10.1175/JCLI-D-15-0088.1
- Nong, D., Fox, J., Miura, T., & Saksena, S. (2015). Built-up Area Change Analysis in Hanoi Using Support Vector Machine Classification of Landsat Multi-Temporal Image Stacks and Population Data. *Land*, 4, 1213-1231. doi:10.3390/land4041213
- Shabanov, N., Vargas, M., Miura, T., Sei, A., & Danial, A. (2015). Evaluation of the performance of Suomi NPP VIIRS top of canopy vegetation indices over AERONET sites. *Remote Sensing of Environment*, 162:29-44. doi:10.1016/j.rse.2015.02.004
- Ellsworth, L., Litton, C., Dale, A., & Miura, T. (2014). Invasive grasses change landscape structure and fire behavior in Hawaii. *Applied Vegetation Science*. doi:10.1111/avsc.12110.
- Obata, K., Miura, T., Yoshioka, H., & Huete, A. R. (2013). Derivation of a MODIS-compatible enhanced vegetation index from visible infrared imaging radiometer suite spectral reflectances using vegetation isoline equations. *Journal of Applied Remote Sensing* 7(1):073467. doi:10.1117/1.JRS.7.073467
- Justice, C. O., Román, M. O., Csizsar, I., Vermote, E. F., Wolfe, R. E., Hook, S. J., Friedl, M., Wang, Z., Schaaf, C. B., Miura, T., Tschudi, M., Riggs, G., Hall, D. K., Lyapustin, A. I., Devadiga, S., Davidson, C., & Masuoka, E. J. (2013). Land and cryosphere products from Suomi NPP VIIRS: Overview and status. *Journal of Geophysical Research-Atmospheres*, 118(17), 9753-9765.
- Vargas, M., Miura, T., Shabanov, N., & Kato, A. (2013). An initial assessment of Suomi NPP VIIRS vegetation index EDR. *Journal of Geophysical Research-Atmospheres*, 118(22), 12,301-12,316.
- Miura, T., Turner, J., & Huete, A. (2013). Spectral compatibility of the NDVI across VIIRS, MODIS, and AVHRR: An analysis of atmospheric effects using EO-1 Hyperion. *IEEE Transactions on Geoscience and Remote Sensing* 51(3):1349-1359. doi:10.1109/TGRS.2012.2224118

- Jung, S., Yanagida, J., Miura, T., Robotham, M., Bruland, G., & Moncur, J. (2013). Landfill site selection by integrating a GIS analysis with an economic analysis: A case study of Oahu, Hawaii. *Journal of Solid Waste Technology and Management* 39:114-132.
- Obata, K., Miura, T., & Yoshioka, H. (2012). Scaling effects in area-averaged values of two-band spectral vegetation indices represented in a general form. *Journal of Applied Remote Sensing* 6(1):063585, doi:10.1117/1.JRS.6.063585.
- Yamamoto, H., Miura, T., & Tsuchida, S. (2012). Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Enhanced Vegetation Index (EVI) products from Global Earth Observation (GEO) Grid: An assessment using Moderate Resolution Imaging Spectroradiometer (MODIS) for synergistic applications. *Remote Sensing* 4(8):2277-2293, doi:10.3390/rs4082277.
- Obata, K., Miura, T., & Yoshioka, H. (2012). Analysis of the scaling effects in the area-averaged fraction of vegetation cover retrieved using an NDVI-isoline-based linear mixture model. *Remote Sensing* 4(7):2156-2180, doi:10.3390/rs4072156.
- Yoshioka, H., Miura, T., & Obata, K. (2012). Derivation of relationships between spectral vegetation indices from multiple sensors based on vegetation isolines. *Remote Sensing* 4(3):583-597, doi:10.3390/rs4030583.
- Obata, K., Wada, T., Miura, T., & Yoshioka, H. (2012). Scaling effect of area-averaged NDVI: monotonicity along the spatial resolution. *Remote Sensing* 4(1):160-179, doi:10.3390/rs4010160.
- Park, S. and Miura, T. (2011). Moderate-resolution imaging spectrometer-based vegetation indices and their fidelity in the tropics. *Journal of Applied Remote Sensing* 5:053555, doi:10.1117/1.3643696.
- Conroy, N. K., Fares, A., Ewel, K. C., Miura, T., and Zaleski, H. M. (2011). A snapshot of agroforestry in *Terminalia carolinensis* wetlands in Kosrae, Federated States of Micronesia. *Micronesica* 41(2):177-195.
- Yoshioka, H., Miura, T., Demattê, J. A. M., Batchily, K., and Huete, A. R. (2010). Soil line influences on two-band vegetation indices and vegetation isolines: A numerical study. *Remote Sensing* 2(2):545-561.
- Kim, Y., Huete, A. R., Miura, T., and Jiang, Z. (2010). Spectral compatibility of vegetation indices across sensors: A band decomposition analysis with Hyperion data. *Journal of Applied Remote Sensing* 4:043520, doi:10.1117/1.3400635.
- Gu, Y., Brown, J., Miura, T., van Leeuwen, W. J., and Reed, B. (2010). Phenological classification of the United States: A geographic framework for extending multi-sensor time-series data. *Remote Sensing* 2(2):526-544.
- Yoshioka, H., Miura, T., Demattê, J. A. M., Batchily, K., and Huete, A. R. (2009). Derivation of soil line influence on two-band vegetation indices and vegetation isolines. *Remote Sensing* 1(4):842-857.
- Miura, T. and Huete, A. R. (2009). Performance of three reflectance calibration methods for airborne hyperspectral spectrometer data. *Sensors* 9(2):794-813.
- Jiang, Z., Huete, A. R., Didan, K., and Miura, T. (2008). Development of a 2-band Enhanced Vegetation Index without a blue band. *Remote Sensing of Environment* 112(10):3833-3845.
- Miura, T., Yoshioka, H., Fujiwara, K., and Yamamoto, H. (2008). Inter-comparison of ASTER and MODIS surface reflectance and vegetation index products for synergistic applications to natural resource and environmental monitoring. *Sensors* 8:2480-2499.
- Martinez-Morales, R., Miura, T., and Idol, T. (2008). An assessment of Hawaiian dry forest condition with fine resolution remote sensing. *Forest Ecology and Management* 255(7):2524-2532.
- Miura, T., Huete, A. R., and Yoshioka, H. (2006). An empirical investigation of cross-sensor relationships of NDVI and red/near-infrared reflectance using EO-1 Hyperion data. *Remote Sensing of Environment* 100(2):223-236.
- Novo, E. M. L. d. M., Ferreira, L. G., Barbosa, C., Carvalho, C., Sano, E. E., Shimabukuro, Y., Huete, A., Potter, C., Roberts, D. A., Hess, L. L., Melack, J. J., Yoshioka, H., Klooster, S., Kumar, V., Myneni, R., Ratana, P., Didan, K., and Miura, T. (2005). Advanced remote sensing techniques for global changes and Amazon ecosystem functioning studies. *Acta Amazonica* 35(2):259-272.

- Bryant, R., Moran, M. S., McElroy, S., Holifield, C., Thome, K., Miura, T., and Biggar, S. F. (2003), Data continuity of Earth Observing One (EO-1) Advanced Land Imager (ALI) and Landsat TM and ETM+, *IEEE Trans. Geosci. and Remote Sens.* 41(6):1204-1214.
- Holifield, C. D., McElroy, S., Moran, M. S., Bryant, R., Miura T., and Emmerich, W. E. (2003), Temporal and spatial changes in grassland transpiration detected using Landsat imagery, *Canadian Journal of Remote Sensing* 29(2):259-270.
- Huete, A., Miura, T., and Gao, X. (2003), Land cover conversion and degradation analyses through coupled soil-plant biophysical parameters derived from hyperspectral EO-1 Hyperion, *IEEE Trans. Geosci. and Remote Sens.* 41(6):1268-1276.
- Yoshioka, H., Miura, T., and Huete, A. R. (2003), An isoline-based translation technique of spectral vegetation index using EO-1 Hyperion data, *IEEE Trans. Geosci. and Remote Sens.* 41(6):1363-1372.
- Huete, A., Didan, K., Miura, T., Rodriguez, E. P., Gao, X., and Ferreira, L. G. (2002), Overview of the Radiometric and Biophysical Performance of the MODIS Vegetation Indices, *Remote Sens. Environ.* 83(1-2):195-213.
- Miura, T., Huete, A. R., Yoshioka, H., and Holben, B. N. (2001), An error and sensitivity analysis of atmospheric resistant vegetation indices derived from dark target-based atmospheric correction, *Remote Sens. Environ.* 78:284-298.
- Gao, X., Huete, A. R., Ni, W., and Miura, T. (2000), Optical-biophysical relationships of vegetation spectra without background contamination, *Remote Sens. Environ.* 74:609-620.
- Miura, T., Huete, A. R., Yoshioka, H. (2000), Evaluation of sensor calibration uncertainties on vegetation indices for MODIS, *IEEE Trans. Geosci. and Remote Sens.* 38(3):1399-1409.
- Yoshioka, H., Huete, A. R., and Miura, T. (2000), Derivation of vegetation isolines in red-NIR reflectance space, *IEEE Trans. Geosci. and Remote Sens.* 38(2):838-848.
- Yoshioka, H., Miura T., Huete, A. R., and Ganapol, B. D. (2000), Analysis of vegetation isolines in red-NIR reflectance space, *Remote Sens. Environ.* 74:313-326.
- Tanaka, S., Miura, T., Huzikawa, S., and Tsuchida, S. (1999), Mineral discrimination with ASTER data using spectral pattern analysis and forecast of the accuracy evaluation, *Journal of the Remote Sensing Society of Japan* 19(5):382-406 (in Japanese).
- Miura, T., Huete, A. R., van Leeuwen, W. J. D., and Didan, K. (1998), Vegetation detection through smoke-filled AVIRIS images: An assessment using MODIS bandpasses, *J. Geophys. Res.* 103(D24):32,001-32,012.
- Sano, E. E., Moran, M. S., Huete, A. R., and Miura, T. (1998), C- and multi-angle Ku-band synthetic aperture radar data for bare soil moisture estimation in agricultural areas, *Remote Sens. Environ.* 64:77-90.

#### Extension Publications

- Miura, T. & Nagai, S. (2019). Monitoring terrestrial vegetation and the environment with new-generation geostationary satellites. *Journal of Remote Sensing Society of Japan.* (in press)
- Morisette, J., Nickeson, J. E., Garrigues, S., Baret, F., Huete, A., Didan, K., Miura, T., van Leeuwen, W., & Friedl, M. (2006). Report from the CEOS Land Product Validation topical workshop on the validation of global vegetation indices and their time series. *The Earth Observer*, 18(6), 34-37.

#### Creative Works (i.e., Extension Videos, Websites, Blogs, Creative Designs and Exhibitions, etc.)

- Miura, T. (2021). Himawari Look-up Table Update. In HIMAWARI 8/9 gridded full-disk (FD) data Version 02 (V20190123) release note. [http://www.cr.chiba-u.jp/databases/GEO/H8\\_9/FD/index.html](http://www.cr.chiba-u.jp/databases/GEO/H8_9/FD/index.html)
- CTAHR - University of Hawaii at Manoa (2014). *CTAHR Geoportal*. Retrieved 3 September 2014 from <http://gis.ctahr.hawaii.edu>.
- Geography Department - University of Hawaii at Manoa (2014). *Evapotranspiration of Hawaii*. Retrieved 4

September 2014 from <http://evapotranspiration.geography.hawaii.edu>.

Miura, T. (2012). *Geographic Information Systems for Resource Managers: Lab Exercise Instructional Book (Fall 2012 Edition)*. Department of Natural Resources and Environmental Management, University of Hawaii at Manoa, 80p.

Miura, T. (2008). *Geographic Information Systems for Resource Managers: Lab Exercise Instructional Book*. Department of Natural Resources and Environmental Management, University of Hawaii at Manoa, 100p.

Miura, T. (2006). *Natural Resource Management: Lab Exercise Instructional Book*. Department of Natural Resources and Environmental Management, University of Hawaii at Manoa, 70p.

Leadership Roles (Committees, Boards, Advisory, etc.)

UH Manoa Tenure/Promotion Review Committee: December 2022 – present

CTAHR Faculty Senate, Executive Committee (Liaison to the Research Committee): July 2021 – May 2022

Manoa Faculty Evaluation Review Committee: April 2022

UH Manoa Experience (CTAHR-NREM Booth): April 2, 2022

NREM Undergraduate Program Committee: August 2023 - present

NREM Departmental Curriculum Committee: May 2021 – July 2023

Co-lead, Vegetation Index Focus Area, Land Product Validation (LPV) Subgroup, Working Group on Calibration/Validation (WGCV), Committee on Earth Observation Satellites (CEOS): 2016 – present

Editorial Board Member, *Remote Sensing Applications: Society and Environment* (2015 - present)

Editorial Board Member, *Remote Sensing - Biogeosciences Remote Sensing Section* (2019 - present)

**Graduate Students**

<u>Category</u>	<u>Current Number of Students</u>	<u>Number Graduated (Career)</u>
Chair of Master’s Committees	2	19
Chair of PhD Committees	1	2
Member of Master’s Committees	1	16
Member of PhD Committees	1	15

**a. Ph.D. Students**

<b>Name</b>	<b>Dept.</b>	<b>Start</b>	<b>Finish</b>	<b>Research Topic</b>
Edmonds, Tim ( <i>withdrawn due to illness</i> )	Botany	12/04	05/08	Quantifying and predicting the ecological meltdown of a unique Hawaiian forest ecosystem by an invasive alien N-fixing tree: a remote sensing and spatial analysis based approach
Querido, Antonio	TPSS	01/06	05/08	Spatiotemporal measurement of total carbon stock in Sub-Saharan Africa soils
Martinez-Morales, Rodolfo	NREM	01/06	12/06	Assessment of Hawaiian dry forest condition with fine resolution remote sensing
Jung, Su-Kwan	NREM	08/06	12/11	Economic analysis on waste disposal site selection
Diarra-Sidibe, Aminata	TPSS	01/07	12/07	Predicting amounts of rock phosphate needed for crop production in West African soils
Wong, Tamar	Botany	03/07	12/11	Predictive modeling of past and present distributions with

a				experimental restoration of <i>Alyxia stellata</i> Guad. on Kauai, Hawaii
Ellsworth, Lisa	NREM	06/09	12/11	Improved wildfire prediction in <i>Megathyrus maximus</i> grasslands of Hawai'i
Michizuki, Junko	NREM	08/10	08/13	Cross-disciplinary analyses on lignocellulosic ethanol development in Hawaii
Liu, Wen	Geography	01/11	08/14	Regional aboveground biomass storage changes due to rubber expansion in Southeast Asia
Mtui, Devolent	NREM	01/11	10/14	The value of wildlife protected areas for conservation in Tanzania
Tran, Chinh	NREM	08/11	12/14	Bio-security adoption for the avian influenza subtype H5N1 in the Red River delta, Vietnam
*Nong, Duong	NREM	01/12	05/15	Urban growth characterization by integration of remote sensing, spatial metrics, and national census data for Hanoi, Vietnam
*Kato, Anna ( <i>changed advisor</i> )	NREM	08/12	05/19	Validation of satellite vegetation index and land surface phenology products
Longman, Ryan	Geography	01/13	05/15	High elevation climate change in Maui, Hawai'i
Mamiit, Rusyan	NREM	01/13	05/16	Biophysical assessment, socioeconomic analysis, and policy evaluation of the rice sector in Central Luzon, Philippines
Rodriguez, Roberto, III ( <i>resigned from the committee for my sabbatical leave</i> )	MBBE	05/16	05/18	Unmanned aerial systems for surveillance and control of high-value weed targets in remote, threatened ecosystems of the Hawaiian Islands
Tajfar, Elahe	CEE	06/17	08/19	Estimation of surface heat fluxes via assimilation of air temperature and specific humidity into a novel variational data assimilation system
Zhang, Qian	Geography	10/17	12/21	Mapping forest aboveground biomass in the Brazilian Amazon using airborne LiDAR, Landsat imagery, and deep learning
Huang, Yu-Fen	NREM	1/20	-	TBD
Wise, Bradley	NREM	08/20	08/21	<i>Withdrawal from the PhD program</i>
Lopes, Keolohilani, Jr.	NREM	01/22	-	TBD

### b. Master's Students

"MS-A" and "MA-A" are a thesis-based Master's degree, whereas "MS-B" is a non-thesis Master's degree.

Name	Dept.	Degree	Start	Finish	Research / Project Topic
Anderson, Christina	NREM	MS-B	08/04	08/05	Monitoring dry forest decline and restoration in Hawaii
Mamiit, Rusyan	NREM	MS-B	08/04	08/05	A study of landowners' investment decision and response capacity to eligible forestry projects in the Philippines under the Clean Development Mechanism
Conroy, Nobuko	NREM	MS-A	01/04	05/06	Study on the characteristics of <i>Terminalia</i> agroforestry in Kosrae Island, Federated States of Micronesia
*Suzuki, Tomoko	NREM	MS-A	10/04	08/06	Spectral separability among native and invasive plant species for satellite image analysis in Hawaii
Delisle, Laura	AGRS	MS-A	08/04	05/07	A spatial approach to estimating soil carbon stocks at

					the field level
Grigson, Greg	NREM	MS-B	01/07	05/07	Hawaii's water conservation policies: An analysis and critique
*Williams, Daniel	NREM	MS-B	08/06	05/08	Mapping tree cover on gray-scale imagery with object oriented classification
*Chillingworth, Mele	NREM	MS-B	01/07	12/09	GIS analysis of agricultural irrigation systems in Hawai'i
Decker, Thomas	NREM	MS-A	05/07	12/10	Conserving native Hawaii birds from brown tree snake: Priority species and locations for damage valuation
*Holmes, Mason	NREM	MS-B	08/07	08/14	Species review of California red-legged frog ( <i>Rana draytonii</i> )
*Dale, Alex	NREM	MS-B	01/09	08/11	Development of best management practices for Control of Madagascar Fireweed ( <i>Senecio madagascariensis</i> Poiret) in Hawaii
Bishaw, Kaiana	TPSS	MS-A	03/09	05/12	An assessment of gene transmission patterns in agricultural fields
*Chan, Sharon	NREM	MS-B	08/09	08/11	Development of best management practices for Control of Madagascar Fireweed ( <i>Senecio madagascariensis</i> Poiret) in Hawaii
Margriter, Sandra	NREM	MS-A	01/10	12/11	Assessing the condition of Hawaiian coastal wetlands using a multi-scaled approach
Muir, Jeffery	NREM	MS-B	05/11	01/12	Spatial and temporal analysis of movement, utilization, and vertical behavior of bigeye tuna ( <i>Thunnus obesus</i> ) using ultrasonic pressure sensors
*Barnes, Mallory	NREM	MS-A	08/10	08/13	An assessment of diurnal and seasonal cloud cover changes over the Hawaiian islands using MODIS
*Connor, Will	NREM	MS-A	08/11	12/13	Evaluation of AVHRR-to-MODIS cross-sensor translation using Landsat TM
*Bergstrom, Rafael	NREM	MS-A	08/11	12/13	Tropical forest phenology and satellite vegetation index validation
*Gross, Jacob	NREM	MS-A	01/13	08/14	Assessment of future agricultural land potential using GIS and regional climate projections in Hawaii
*Teng, Victor	NREM	MS-B	08/13	08/14	Assessment of utilities of remote sensing for drought monitoring in Hawaii
*Lal, Deepika	NREM	MS-B	08/13	12/14	Vegetation mapping and monitoring in Pacific island countries
Lindquist, Mahany	Geography	MA-A	08/13	12/14	Estimating canopy bulk density using remote sensing data
*Weaver, Will	NREM	MS-A	08/13	05/17	Makaha Valley vegetation mapping analysis
Evans, Nicole	NREM	MS-A	01/14	05/16	Consumer Preference for Palm Oil in Togo, Africa
*Marshall, Jonathan	NREM	MS-B	08/14	05/16	Mapping invasive species on Maui
Grafeld, Shanna	NREM	MS-A	01/15	12/15	Divers' willingness to pay for improved coral reef conditions in Guam
Lecky, Joey	NREM	MS-A	01/15	08/16	Ecosystem vulnerability and mapping cumulative impacts on Hawaiian reefs
*Muratsuchi, Jordan	NREM	MS-B	01/15	05/17	Spatial and temporal trend analysis of coastal debris in Hawaii
Lucas, Matthew	NREM	MS-A	08/16	12/17	Quantifying wildfire-driven vegetation shifts across Hawaii
*Harrison, Tanya (changed advisor)	NREM	MS-B	08/16	8/17	Management strategies for reducing the wildland fire risk in Puu Waawaa, Hawaii
Nakama, Rylen	NREM	MS-B	01/17	05/18	A symphonic representation of the imminent extinction crisis of Hawaiian forest birds

Earl, Allyson	NREM	MS-A	03/20	08/21	Understanding Shifting Fire Regime Using Remote Sensing in Seasonally Dry Tropical Forests of Southern India
*Wong-Miyasato, Alec	NREM	MEM	08/20	05/21	Predicting the Invasion: Locating Breeding Sites of the Coconut Rhinocereos Beetle ( <i>Oryctes rhinoceros</i> )
*Rossi de Leon, Claire	NREM	MEM	08/20	05/21	Potential management solutions for ecological restoration and community building in Niuli'i, North Kohala
*Opunui, Leiana	NREM	MEM	08/21	11/23	The Spatial Distribution of a Newly-discovered Alga at Manawai in the Northwestern Hawaiian Island
Shimabukuro, Taylor	NREM	MEM	09/21	-	TBD
*Teper, Aaron	NREM	MEM	08/22	-	TBD

### Grant Support

Title of Grant: ChondriaBot: Autonomous underwater vehicle for the detection of an invasive macroalgae

Source of Grant: National Philanthropic Trust

Total Dollar Value (Your share of the grant value): \$430,048

Dates of Grant: 08/2023 – 10/2025

Role (PI, CoPI): PI

Title of Grant: Developing a web-based mapping platform for cropland rating and optimum crop selection

Source of Grant: Hawaii State Department of Agriculture

Total Dollar Value (Your share of the grant value): \$199,218

Dates of Grant: 01/2023 – 12/2025

Role (PI, CoPI): PI

Title of Grant: Development of a Satellite-based Detection Algorithm for Infestations of Invasive/Nuisance Benthic Macro Algae and Other Species on Coral Reefs in the Marine National Monuments of the Pacific

Source of Grant: US Fish & Wildlife Service

Total Dollar Value (Your share of the grant value): \$85,000

Dates of Grant: 07/21 – 06/2024

Role (PI, CoPI): PI

Title of Grant: Scientific Support and Continuing Validation of JPSS Vegetation Products

Source of Grant: NOAA via University of Maryland

Total Dollar Value (Your share of the grant value): \$103,278

Dates of Grant: 05/21-06/24

Role (PI, CoPI): PI

Title of Grant: Validation and Long-term Stability Assessment of Terra MODIS and ASTER Data for Ecosystem Change Analysis from Island to Global Scales

Source of Grant: NASA

Total Dollar Value (Your share of the grant value): \$139,952

Dates of Grant: 09/19-03/21

Role (PI, CoPI): PI

Title of Grant: Scientific Support of SNPP/JPSS Vegetation Production

Source of Grant: NOAA NESDIS STAR

Total Dollar Value (Your share of the grant value): \$89,988

Dates of Grant: 09/18-11/19

Role (PI, CoPI): PI

Title of Grant: Validation of JPSS VIIRS Vegetation Index Products and Algorithm Support

Source of Grant: NOAA NESDIS STAR

Total Dollar Value (Your share of the grant value):\$127,083

Dates of Grant: 09/17-09/18

Role (PI, CoPI): PI

Title of Grant: Land Suitability Analysis for Crop Growth in Hawaii

Source of Grant: USDA Hatch

Total Dollar Value (Your share of the grant value):\$80,000

Dates of Grant: 10/17-09/22

Role (PI, CoPI): PI

Title of Grant: Hawaii Crop Suitability Model Expansion (Land Suitability Analysis for Crop Growth in Hawaii)

Source of Grant: Ulupono Initiative

Total Dollar Value (Your share of the grant value):\$12,775

Dates of Grant: 12/16-05/17

Role (PI, CoPI): PI

Title of Grant: Validation of and Enterprise Algorithm Development for the VIIRS Vegetation Index EDR

Source of Grant: NOAA NESDIS STAR

Total Dollar Value (Your share of the grant value):\$120,000

Dates of Grant: 09/16-09/17

Role (PI, CoPI): PI

Title of Grant: Validation of the Vegetation Index EDR from VIIRS - Phase III

Source of Grant: NOAA NESDIS STAR

Total Dollar Value (Your share of the grant value): \$107,880

Dates of Grant: 01/16-08/16

Role (PI, CoPI): PI

Title of Grant: Makaha Valley Vegetation Mapping Analysis

Source of Grant: Cooperative Ecosystem Studies Unit / Department of Defense

Total Dollar Value (Your share of the grant value): \$105,055

Dates of Grant: 01/14-09/16

Role (PI, CoPI): PI

Title of Grant: Monitoring Tropical Forest Dynamics Using High Temporal Resolution Remote Sensing in Hawaii

Source of Grant: USDA McIntire-Stennis

Total Dollar Value (Your share of the grant value): \$125,000

Dates of Grant: 10/12-09/17

Role (PI, CoPI): PI

Title of Grant: Validation of the Vegetation Index EDR from VIIRS - Phase II

Source of Grant: NOAA NESDIS STAR

Total Dollar Value (Your share of the grant value): \$64,361

Dates of Grant: 09/14-07/15

Role (PI, CoPI): PI

Title of Grant: Validation of the Vegetation Index EDR from VIIRS

Source of Grant: NOAA NESDIS STAR

Total Dollar Value (Your share of the grant value): \$81,654

Dates of Grant: 09/13-05/14

Role (PI, CoPI): PI

Title of Grant: Development of Validation Protocols for Vegetation Index Time Series from VIIRS - Phase II

Source of Grant: NOAA NESDIS STAR

Total Dollar Value (Your share of the grant value): \$65,450

Dates of Grant: 04/12-12/12

Role (PI, CoPI): PI

Title of Grant: CTAHR Agricultural Database

Source of Grant: Agribusiness Development Corporation / Hawaii Department of Agriculture

Total Dollar Value (Your share of the grant value):\$277,772

Dates of Grant: 02/12-04/14

Role (PI, CoPI): PI

Title of Grant: Development of Validation Protocols for Vegetation Index Time Series from VIIRS

Source of Grant: NOAA NESDIS STAR

Total Dollar Value (Your share of the grant value): \$61,923

Dates of Grant: 07/11-01/12

Role (PI, CoPI): PI

Title of Grant: Evaluation and Validation of NPP VIIRS Vegetation Index EDR for Earth System and Climate Sciences

Source of Grant: NASA

Total Dollar Value (Your share of the grant value):\$603,719

Dates of Grant: 05/11-10/14

Role (PI, CoPI): PI

Title of Grant: Evapotranspiration in Hawaii

Source of Grant: CH2M Hill, Inc.

Total Dollar Value (Your share of the grant value):\$281,079

Dates of Grant: 04/11-07/13

Role (PI, CoPI): CoPI

Title of Grant: Development of Multi-sensor Calibration Algorithm for Satellite-based High Resolution Monitoring of Land-based Pollution Influences on the Coastal Environment in Hawai'i

Source of Grant: USDA Hatch Supplemental

Total Dollar Value (Your share of the grant value): \$29,150

Dates of Grant: 01/11-09/12

Role (PI, CoPI): PI

Title of Grant: Developing Change Vector Methods for PACN Landsapce Dynamics

Source of Grant: National Park Services

Total Dollar Value (Your share of the grant value): \$35,712

Dates of Grant: 04/10-03/11

Role (PI, CoPI): PI

Title of Grant: GIS Assessment of Forest Conditions and Long-term Resource Strategy

Source of Grant: State of Hawaii Department of Land and Natural Resources

Total Dollar Value (Your share of the grant value):\$9,067

Dates of Grant:01/09-12/09

Role (PI, CoPI): PI

Title of Grant: Development of a Satellite-based Monitoring System of Tropical Forest Ecosystem Dynamics in Hawaii

Source of Grant: USDA McIntire-Stennis

Total Dollar Value (Your share of the grant value): \$60,000

Dates of Grant: 10/08-09/11

Role (PI, CoPI): PI

Title of Grant: A Remote Sensing- and GIS-based Analysis of Land-based Pollution Influences on the Coastal

Environment in Hawai'i

Source of Grant: USDA Hatch

Total Dollar Value (Your share of the grant value):\$5,000

Dates of Grant: 10/08-09/11

Role (PI, CoPI): PI

Title of Grant: Vegetation Phenology and Vegetation Index Products from Multiple Missions and Satellite Sensors

Source of Grant: NASA, Subcontract from Univ. Arizona

Total Dollar Value (Your share of the grant value): \$385,715

Dates of Grant: 08/08-08/13

Role (PI, CoPI): PI

Title of Grant: Development of Best Management Practices for Control of Madagascar Fireweed (*Senecio madagascariensis* Poiret) in Maui

Source of Grant: Maui County

Total Dollar Value (Your share of the grant value):\$54,056

Dates of Grant: 08/07-12/09

Role (PI, CoPI): CoPI

Title of Grant: Development of Best Management Practices for Control of Madagascar Fireweed (*Senecio madagascariensis* Poiret) in Hawaii

Source of Grant: Hawaii Farm Bureau Federation

Total Dollar Value (Your share of the grant value):\$40,000

Dates of Grant: 08/07-09/08

Role (PI, CoPI): CoPI

Title of Grant: An Assessment of Hawaiian Tropical Ecosystem Dynamics in Response to Climate Variability Using Long-term Satellite Data Records

Source of Grant: EPSCoR REAP

Total Dollar Value (Your share of the grant value):\$22,000

Dates of Grant: 08/07-06/08

Role (PI, CoPI): PI

Title of Grant: Large-scale Assessment of Hawaiian Dry Forest Decline and Restoration Potential with Remote Sensing and GIS

Source of Grant: USDA McIntire-Stennis

Total Dollar Value (Your share of the grant value): \$45,000

Dates of Grant: 10/05-09/09

Role (PI, CoPI): PI

Title of Grant: Hawaii Agricultural Water Use Study / Hawaii Water Resources Study

Source of Grant: Hawaii Department of Agriculture / Hawaii Commission on Water Resource Management

Total Dollar Value (Your share of the grant value):\$400,000

Dates of Grant: 07/05-08/08

Role (PI, CoPI): CoPI

Title of Grant: Short-term Assistance for Research and Training 2 (START2)

Source of Grant: University of Hawaii

Total Dollar Value (Your share of the grant value):\$12,000

Dates of Grant: 07/05-06/06

Role (PI, CoPI): PI

Title of Grant: Short-term Assistance for Research and Training (START)

Source of Grant: University of Hawaii

Total Dollar Value (Your share of the grant value):\$7,000

Dates of Grant: 07/04-08/05

Role (PI, CoPI): PI

Title of Grant: Determining the Impacts of Water Pumping and Alien Species Invasion on Stream Flow for Sustainable Water Resource Management in Makaha Valley, Hawaii

Source of Grant: USDA TSTAR

Total Dollar Value (Your share of the grant value):\$148,069

Dates of Grant: 09/04-09/07

Role (PI, CoPI): CoPI

Title of Grant: Large-scale Assessment of Hawaiian Dry Forest Decline and Restoration Potential with GIS

Source of Grant: USDA McIntire-Stennis

Total Dollar Value (Your share of the grant value):\$19,974

Dates of Grant: 09/04-09/05

Role (PI, CoPI): PI

Title of Grant: Multi-sensor Translation of EOS Reflectance and Vegetation Index Products for Long Term Continuity with AVHRR

Source of Grant: NASA

Total Dollar Value (Your share of the grant value):\$657,353

Dates of Grant: 06/04-01/09

Role (PI, CoPI): PI

Title of Grant: Validation and Performance Assessments of the MODIS Vegetation Index Product Series from the Terra and Aqua Platforms

Source of Grant: NASA

Total Dollar Value (Your share of the grant value):\$828,218

Dates of Grant: 05/04-04/07

Role (PI, CoPI): CoPI

Title of Grant: Algorithm Development and Calibration and Validation for the Advanced Earth Observing Satellite II

Source of Grant: NASDA (Japan)

Total Dollar Value (Your share of the grant value):\$22,000

Dates of Grant: 04/03-09/03

Role (PI, CoPI): CoPI

Title of Grant: Use of Airborne Remote Sensing for Uncertainty Assessments in Regional Extrapolation of Ground LBA Ecology Measurements with MODIS Data

Source of Grant: NASA

Total Dollar Value (Your share of the grant value):\$610,904

Dates of Grant: 10/01-09/04

Role (PI, CoPI): CoPI

Title of Grant: Remote Sensing Methods for Environmental Assessment and Resource Management of a Binational, Arid-zone Riparian System: the Lower Colorado River and Delta in the Gulf of California

Source of Grant: NASA

Total Dollar Value (Your share of the grant value):\$610,000

Dates of Grant: 10/01-09/04

Role (PI, CoPI): CoPI

Title of Grant: Inter-sensor Calibration of Vegetation Indices for Monitoring and Continuity Studies

Source of Grant: NASA

Total Dollar Value (Your share of the grant value): \$313,000

Dates of Grant: 01/00-12/03

Role (PI, CoPI): CoPI

Title of Grant: EO-1 and Landsat Inter-satellite Comparison at Two Established Arizona Field Sites

Source of Grant: NASA

Total Dollar Value (Your share of the grant value): \$250,100

Dates of Grant: 01/00-12/03

Role (PI, CoPI): Collaborator

### **Presentations at Conferences**

Miura, T., Yamamoto, Y., Nagai, S., Tsutsumida, N., and Ichii, K. (2023). Snow detection in Himawari-8 Advanced Himawari Imager NDVI for improved autumn phenology monitoring. *American Geophysical Union Fall 2023 Meeting, San Francisco, California and Online, 11-15 December, A21K-2457.*

Ichii, K., Yamamoto, Y., Li, W., Zhang, B., Sharma, R. C., and Miura, T. (2023). Monitoring seasonal variations in terrestrial gross primary productivity across Southeast Asia using Himawari-8 Geostationary satellite data. *American Geophysical Union Fall 2023 Meeting, San Francisco, California and Online, 11-15 December, B11D-08.*

Li, W., Ichii, K., Zhang, B., Yamamoto, Y., Yang, W., Sharma, R. C., Yoshioka, H., Matsuoka, M., and Miura, T. (2023). Improving land surface reflectance evaluation through BRDF information retrieval from Himawari-8/AHI. *American Geophysical Union Fall 2023 Meeting, San Francisco, California and Online, 11-15 December, B43J-2693.*

Zhang, B., Ichii, K., Li, W., Yamamoto, Y., Yang, W., Sharma, R. C., Yoshioka, H., Matsuoka, M., and Miura, T. (2023). Evaluation of Himawari-8/AHI land surface reflectance at mid-latitude using LEO sensor with off-nadir cameras. *American Geophysical Union Fall 2023 Meeting, San Francisco, California and Online, 11-15 December, B43J-2694.*

Huete, A., Srivastava, A., Taghadosi, M., Qin, Y., and Miura, T. (2023). Seasonal patterns of Advanced Himawari Imager vegetation index relationships with tower GPP over OzFlux sites. *Asia Oceania Geosciences Society 20th Annual Meeting (AOGS2023), Singapore, 30 July-04 August, IG05-A005.*

Opunui, L., Miura, T., Fraiola, K., Spalding, H., Williams, T., Kosaki, R., and Martinez, J. (2023). The spatial distribution of a newly-discovered alga at Manawai in the Northwestern Hawaiian islands. *2023 Hawaii Conservation Conference, Honolulu, HI, 26-29 June, No. 170.*

Swinnen, E., Toté, C., and Miura, T. (2023). CEOS WGCV LPV Vegetation Index Protocol. *LPVE23 - Workshop on Land Product Validation and Evolution, Frascati, Italy, 12-14 June.*

Miura, T., Tokumoto, Y., and Shin, N. (2023). Monitoring general flowering in Sarawak, Borneo with high resolution remote sensing. *Japan Geoscience Union Meeting 2023, Makuhari, Chiba, Japan & Online, 21-26 May, MAG33-04.*

Miura, T., Shin, N., Yamamoto, Y., Tsutsumida, N., and Ichii, K. (2023). Detecting snow contaminations in Advanced Himawari Imager NDVI time series data for improved autumn phenology characterization. *Japan Geoscience Union Meeting 2023, Makuhari, Chiba, Japan & Online, 21-26 May, ACG36-02.*

Li, W., Ichii, K., Zhang, B., Yamamoto, Y., Yang, W., Sharma, R., Yoshioka, H., Matsuoka, M., and Miura, T. (2023). Himawari8/AHI land surface reflectance estimation and preliminary evaluation. *Japan Geoscience Union Meeting 2023, Makuhari, Chiba, Japan & Online, 21-26 May, ACG36-03.*

Zhang, B., Ichii, K., Li, W., Yamamoto, Y., Yang, W., Sharma, R., Yoshioka, H., Matsuoka, M., and Miura, T. (2023). Evaluation of Himawari-8/AHI surface reflectance using LEO sensors with off-nadir observation mode for terrestrial monitoring applications. *Japan Geoscience Union Meeting 2023, Makuhari, Chiba, Japan & Online, 21-26 May, ACG36-04.*

Miura, T., Shin, N., Yamamoto, Y., and Ichii, K. (2023). Detection and reduction of snow cover in Himawari NDVI time series for improved autumn phenology monitoring. *25th Environmental Remote Sensing Symposium,*

- Chiba University, 16 February, Presentation No. 4.*
- Ichii, K., Yamamoto, Y., Zhang, B., Li, W., and Miura, T. (2023). Monitoring seasonal variations in terrestrial vegetation activities across Southeast Asia using a geostationary satellite, Himawari-8. *The iLEAPS-OzFlux Joint Conference 2023, 31 January – 03 February.*
- Miura, T., Shin, N., and Ichii, K. (2022). Inter-comparison of Himawari-8 with MODIS for tropical vegetation phenology monitoring over Malaysian Borneo. *Asia Oceania Geosciences Society 19th Annual Meeting (AOGS2022 Virtual), Online, 1-5 August.*
- Miura, T., Nagai, S., and Ichii, K. (2022). Comparison of Himawari-8 NDVI with MODIS for tropical vegetation phenology analysis over Malaysian Borneo. *24th Environmental Remote Sensing Symposium, Chiba University, 17 February, Presentation No. 15.*
- Miura, T., Nagai, S., and Ichii, K. (2021). Comparison of Himawari-8 NDVI with MODIS for tropical vegetation phenology analysis over Malaysian Borneo. *Asia Oceania Geosciences Society 18th Annual Meeting (AOGS2021 Virtual), Online, 1-6 August, IG25-A012.*
- Miura, T. and Swinnen, E. (2022). Vegetation index focus area update. *CEOS WGCV Land Product Validation Plenary, Online, 28-29 September.*
- Miura, T. (2022). High resolution remote sensing of vegetation phenology in Japan and Tropical Asia. *Research Institute for Global Change Seminar, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Yokohama, Japan, 12 July.*
- Miura, T., Nagai, S., Tsutsumida, N., and Yamamoto, Y. (2021). Himawari-8 AHI NDVI temporal signature variability of broadleaf deciduous forests along temperature, elevation, and latitudinal gradients in Northern Japan. *Japan Geoscience Union Meeting 2021, Online, 20 May – 6 June, ACG33-P02.*
- Miura, T. (2021). Vegetation phenology monitoring and characterization with geostationary and commercial satellites. *Research Institute for Global Change Seminar, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Yokohama, Japan, 8 September.*
- Miura, T., Smith, C., and Yoshioka, H. (2021). Validation and analysis of Terra and Aqua MODIS, and SNPP VIIRS vegetation indices under zero vegetation conditions: A case study using Railroad Valley Playa. *Tora No Ana Seminar Series, Tsukuba, Japan (Online), 7 June.*
- Miura, T. (2021). Exploring new remote sensing data for characterization of tropical phenology. *6th Asia-Pacific Biodiversity Observation Network (APBON) Web Seminar. 25 February.*
- Miura, T., Smith, C., and Yoshioka, H. (2021). Validation and analysis of MODIS and VIIRS vegetation indices under zero vegetation conditions. *First RadCalNet User Workshop, Online, 9 June.*
- Miura, T. and Swinnen, E. (2021). Vegetation index focus area update. *CEOS WGCV Land Product Validation Plenary, Online, 26-27 May.*
- Miura, T. and Nagai, S. (2021). Landslide detection with Himawari-8 geostationary satellite. *23rd Environmental Remote Sensing Symposium, Chiba University, 18 February.*
- Huete, A., Tran, N. N., Xie, Q., and Miura, T. (2021). Australian grassland functional phenology discrimination with Himawari-8 geostationary data. *43rd COSPAR Scientific Assembly, Sydney, Australia, 28 January-4 February.*
- Miura, T. and Loke, M. (2020). Vegetable production potential in Oahu, Hawaii with an integrated use of Sentinel-2 time series and GIS modeling. *Presented at IGARSS 2020, Virtual Symposium, 26 September-2 October. WE1.R11.1*
- Huete, A. R., Tran, N. N., Xie, Q., and Miura, T. (2020). Functional grassland phenology discrimination and analyses with Himawari-8 geostationary data. *Presented at Japan Geoscience Union-American Geophysical Union Joint Meeting, Virtual Conference, 12-16 July. Abst. ACG53-06. (Invited)*
- Miura, T. and Nagai, S. (2020). Analysis of the spatial variations in the phenology of deciduous broadleaf forests in Japan with Himawari-8 NDVI hyper-temporal signatures. *Presented at Japan Geoscience Union-American Geophysical Union Joint Meeting, Virtual Conference, 12-16 July. Abst. ACG53-P04.*

- Ichii, K., Hayashi, K., Yoshioka, H., Kobayashi, H., Matsuoka, M., Miura, T., Nagai, S., & Yamamoto, Y. (2019). Estimation and evaluation of surface reflectance from Himawari-8 AHI toward high temporal monitoring of terrestrial vegetation. *Presented at the American Geophysical Union Fall 2019 Meeting, San Francisco, CA, USA, 9-13 December*. Abst. A41T-2654.
- Miura, T., Nagai, S., Wang, W., & Nemani, R. R. (2019). Observing and attributing the differences of Himawari-8 NDVI hyper-temporal signatures across deciduous broadleaf forests in Japan. *Presented at the American Geophysical Union Fall 2019 Meeting, San Francisco, CA, USA, 9-13 December*. Abst. A34F-02.
- Miura, T., Smith, C., & Yu, Y. Y. (2019). Validation of NOAA JPSS vegetation index products for a zero vegetation condition. *Presented at the American Geophysical Union Fall 2019 Meeting, San Francisco, CA, USA, 9-13 December*. Abst. B23C-08. (**Invited**)
- Miura, T., Smith, C. Z., & Yu, Y. Y. (2019). Validation and long-term stability assessment of NOAA JPSS Vegetation Index products at a RadCalNet site. *Presented at the 2019 Joint Satellite Conference, Boston, MA, USA, 29 September-4 October*.
- Miura, T., Nagai, S., Takeuchi, M., Ichii, K., & Yoshioka, H. (2019). Observing land surface dynamics in Japan with Advanced Himawari Imager. *50th Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER), Tokyo, Japan, 10-12 June*.
- Miura, T. & Swinnen, E. (2019). Vegetation Index focus area report. *CEOS/WGCV/LPV Plenary Meeting, Milan, Italy, 15 May*.
- Hayashi, K., Ichii, K., Yoshioka, H., Murakami, K., Ide, R., Nasahara, K., Akitsu, T., Miura, T. (2019). An evaluation of feasibility of continental-scale vegetation monitoring using Himawari-8. *Presented at Japan Geoscience Union Meeting 2019, Makuhari, Chiba, Japan, 26-30 May*.
- Miura, T., Nagai, S., Takeuchi, M., Ichii, K., & Yoshioka, H. (2019). Observing vegetation seasonal dynamics in Japan with Himawari-8 hypertemporal data. *Presented at Japan Geoscience Union Meeting 2019, Makuhari, Chiba, Japan, 26-30 May*.
- Tsutsumida, N., Nagai, S., Rodriguez-Veiga, P., & Miura, T. (2019). Landsat-baed phenological classification mapping in Japan. *Presented at Japan Geoscience Union Meeting 2019, Makuhari, Chiba, Japan, 26-30 May*.
- Swinnen, E., Toté, C., Miura, T., Román, M., Camacho, F., & Nickeson, J. (2019). Establishing a CEOS WGCV LPV protocol for the inter-comparison of Vegetation Index datasets. *Living Planet Symposium 2019, Milan, Italy, 13-17 May*.
- Miura, T., Nagai, S., Ganguly, S., & Nemani, R. R. (2018). Multi-sensor integration of vegetation index products for long-term monitoring of vegetation dynamics: A case study from MODIS to VIIRS. *2018 American Geophysical Union Fall Meeting, Washington, D.C., USA, 10-14 December*.
- Miura, T., Muratsuchi, J., & Vargas, M. (2018). Assessment of cross-sensor vegetation index compatibility between VIIRS and MODIS using near-coincident observations. *CEOS/WGCV/LPV Vegetation Index Focus Area Workshop, Washington, D.C., USA, 12 December*.
- Miura, T. (2018). Spectral vegetation index data continuity from MODIS to VIIRS: Product inter-comparison. *Presented at Japan Geoscience Union Meeting 2018, Makuhari, Chiba, Japan, 20-24 May*.
- Miura, T., Muratsuchi, J., & Vargas, M. (2018). Global cross-comparison of MODIS vs. VIIRS vegetation index datasets. *Presented at Japan Geoscience Union Meeting 2018, Makuhari, Chiba, Japan, 20-24 May*. (**Invited**)
- Heavilin, H. & Miura, T. (2018). Assessment of climate change impacts to Hawaii's crop industries. *Presented at 2018 American Association of Geographers Annual Meeting, New Orleans, Louisiana, USA, 10-14 April*.
- Miura, T., Swinnen, E., Toté, C., Kato, A., Román, M., Camacho, F., and Nickerson, J. (2018). On-going activities of CEOS WGCV LPV Vegetation Index Focus Area. *Presented at LPVE - Land Product Validation and Evolution, Rome, Italy, 27 February-1 March*.
- Chen, M., Jiang, Z., Zhao, F., He, Y., Yu, Y., Csiszar, I., Vargas, M., and Miura, T. (2018). Regional to global vegetation products derived from SNPP/JPSS VIIRS data for environmental modeling and monitoring. *98th American Meteorological Society Annual Meeting, Austin, Texas, USA, 7-11 January*.

- Frazier, A., Lucas, M., Giardina, C., Giambelluca, T., Trauernicht, C., and Miura, T. (2017). Analysis of gridded SPI in Hawaii from 1920 to 2012 and management responses to drought. *Abstract H34D-02 Presented at 2017 Fall Meeting, AGU, New Orleans, Louisiana, USA, 11-15 December.*
- Lucas, M., Trauernicht, C., Carlson, K. M., Miura, T., Giambelluca, T. W., and Chen, Q. (2017). Spatially quantifying and attributing 17 years of land cover change to examine post-agricultural forest transition in Hawaii. *Abstract GC43B-1071 Presented at 2017 Fall Meeting, AGU, New Orleans, Louisiana, USA, 11-15 December.*
- Miura, T., Vargas, M., and Muratsuchi, J. (2017). Inter-comparison of MODIS and VIIRS vegetation indices using one-year global data. *Pecora 20 - Observing a Changing Earth, Sioux Falls, South Dakota, USA, 13-16 November.*
- Miura, T., Kato, A., Smith, C., and Vargas, M. (2017). Validation of JPSS VIIRS Vegetation Index products by inter-comparison. *2017 STAR JPSS Annual Science Team Meeting, College Park, Maryland, USA, 8-12 August.*
- Miura, T. and Roman, M. (2017). An overview of CEOS Land Product Validation activities. *2017 STAR JPSS Annual Science Team Meeting, College Park, Maryland, USA, 8-12 August.*
- Weaver, W. and Miura, T. (2017). A multi-sensor approach to vegetation mapping and monitoring in a Hawaiian mesic forest. *24th Annual Hawai'i Conservation Conference, Honolulu, Hawaii, USA, 18-20 July.*
- Kato, A. and Miura, T. (2017). Interannual variability in the length of growing season across the contiguous US as observed from MODIS, VIIRS, and tower vegetation index time series data. *JpGU-AGU Joint Meeting 2017, Makuhari Messa, Chiba, Japan, 20-25 May (HGG01-05).*
- Miura, T., Kato, A., and Muratsuchi, J. (2017). Spatial representativeness and scaling of spectral vegetation indices across Landsat, MODIS, and VIIRS. *JpGU-AGU Joint Meeting 2017, Makuhari Messa, Chiba, Japan, 20-25 May (MAG33-03). (Invited)*
- Vargas, M., Miura, T., Csiszar, I., Zheng, W., Wu, Y., and Ek, M. (2017). Development of JPSS VIIRS Global Gridded Vegetation Index products for NOAA NCEP environmental modeling systems. *Abstract EGU2017-7800 Presented at European Geoscience Union General Assembly 2017, Vienna, Austria, 23-28 April.*
- Vargas, M. and Miura, T. (2017). NOAA SNPP/JPSS vegetation index products, and algorithm development. *97th Annual Meeting, American Meteorological Society, Seattle, Washington, USA, 22-26 January.*
- Kato, A., Miura, T., Vargas, M., and Huete, A. R. (2016). Assessing temporal and spatial variability of satellite-derived vegetation growing season length in the conterminous US. *Presented at 2016 Fall Meeting, AGU, San Francisco, California, USA, 12-16 December.*
- Miura, T., Muratsuchi, J., Obata, K., Kato, A., Vargas, M., and Huete, A. R. (2016). Inter-comparison of MODIS and VIIRS vegetation indices using one-year global data. *Presented at 2016 Fall Meeting, AGU, San Francisco, California, USA, 12-16 December.*
- Miura, T. (2016). Overview of Vegetation Index (VI) products. *CEOS/WGCV/LPV Vegetation Index and Land Surface Phenology Focus Area Workshop, Fort Collins, Colorado, USA, 9-10 November.*
- Vargas, M., Miura, T., Jiang, Z., and Chen, M. (2016). JPSS1 and SNPP VIIRS Vegetation Index Products. *2016 STAR JPSS Annual Science Team Meeting, College Park, Maryland, USA, 8-12 August.*
- Obata, K., Yoshioka, H., and Miura, T. (2016). Simulation on spectral cross-calibration of NDVI from MODIS, ASTER, and Landsat 5-TM. *2016 Annual Meeting, Japan Geoscience Union, Makuhari Messe, Chiba, Japan, 22-26 May.*
- Vargas, M., Miura, T., and Csiszar, I. (2016). JPSS VIIRS vegetation products and algorithm development. *European Space Agency Living Planet Symposium, Prague, Czech Republic, 9-13 May.*
- Miura, T. and Vargas, M. (2016). Proposal for new LPV focus area - Vegetation Indices. *CEOS/WGCV/LPV Workshop, Prague, Czech Republic, 10-11 May.*
- Vargas, M. and Miura, T. (2016). JPSS and S-NPP vegetation index products, and algorithm development. *96th Annual Meeting, American Meteorological Society, New Orleans, Louisiana, USA, 10-14 January.*

- Miura, T., Kato, A., Wang, J., Vargas, M., and Lindquist, M. (2015). Validation of Vegetation Index Time Series from Suomi NPP Visible Infrared Imaging Radiometer Suite Using Tower Radiation Flux Measurements. *Presented at 2015 Fall Meeting, AGU, San Francisco, California, USA, 14-18 December.*
- Vargas, M. and Miura, T. (2015). JPSS1 and SNPP VIIRS Vegetation Index Products and Algorithm Development. *2015 STAR JPSS Annual Science Team Meeting, College Park, Maryland, USA, 24-28 August.*
- Lazaro, M., Crow, S., Stiles, C., Litton, C. M., Giardina, C., Selmants, P., Reeves, M., Turn, S., Taniguchi, S., Schubert, O. S., Miura, T., and Koch, N. (2015). Comparison of soil carbon mapping techniques across the Hawaiian Islands. *2015 National Cooperative Soil Survey National Conference, Duluth, Minnesota, USA, 7-11 June.*
- Vargas, M., Miura, T., Shabanov, N., Azuma, J., Huete, A., Sei, A., Danial, A., Belsma, L., Ek, M., Csiszar, I., and Wolf, W. (2014). SNPP VIIRS Vegetation Index EDR. *2014 STAR JPSS Annual Science Team Meeting, College Park, Maryland, USA, 12-16 May.*
- Wang, J., Miura, T., Kato, A., and Vargas, M. (2014). Validation of VIIRS Vegetation Index EDR using in situ radiation sensor data. *2014 STAR JPSS Annual Science Team Meeting, College Park, Maryland, USA, 12-16 May.*