Listado de Publicaciones

Publications

1. **Zambrano, F.**, Anton, V., Meza, F., Duran-llacer, I., Fernández, F., Venegas-González, A., Raab, N., Craven, D., 2025. From Drought to Aridification: Land-cover fingerprints of a drying Chile. Earth's Future. https://doi.org/10.1029/2025EF006744

2. **Zambrano, F.**, Herrera, A., Olguín, M., Miranda, M., Garrido, J., & Almeida, A. M. (2025). Prediction of the daily spatial variation of stem water potential in cherry orchards using weather and Sentinel-2 data. *Agricultural Water Management, 318*, 109721. https://doi.org/10.1016/j.agwat.2025.109721

3. Amouroux, P. Larrain, R. **Zambrano, F.**. (2025). Remote sensing and Ecosystem services: Case study of the South American dung beetles, Frickius variolosus (Coleoptera: Geotrupidae). (artículo en desarrollo).

4. **Zambrano, F.** Herrea, A., Molina-Roco, M. (2025). Explainable Machine Learning for Wheat Biomass Integrating Sentinel-1/2, PlanetScope and In-Situ Weather Data. *Remote Sensing Applications: Society and Environment.* (artículo sometido, Sep. 2025)

5. Duran-Llacer, I., Gómez-Escalonilla Canales, V., Aliaga-Alvarado, M., Arumí, J.L., **Zambrano, F.**, Rodríguez-López, L., Martínez-Retureta, R., Martínez-Santos, P., 2025. Approach to mapping groundwater-dependent ecosystems through machine learning in central Chile. *Groundwater for Sustainable Development* 31, 101526. https://doi.org/10.1016/j.gsd.2025.101526

6. Duran-Llacer, I., Salazar, A. A., Mondaca, P., Rodríguez-López, L., Martínez-Retureta, R., **Zambrano, F.**, Llanos, F., & Frappart, F. (2025). Influence of Avocado Plantations as Driver of Land Use and Land Cover Change in Chile's Aconcagua Basin. *Land, 14*(4), 750. https://doi.org/10.3390/land14040750

7. **Zambrano, F.**, Vidal-Páez, P., & Hernández, B. (2024). *Comparison of crop water demand derived from sen-ET for orchards within the Aconcagua's river basin in Chile.* IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, 3631–3634. https://doi.org/10.1109/IGARSS53475.2024.10642732

8. **Zambrano, F.**, & Duran-Llacer, I. (2024). *Assessment of drought in continental Chile for 1981–2023 by climate variables of water supply and demand, soil moisture, and vegetation.* IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, 2764–2768. https://doi.org/10.1109/IGARSS53475.2024.10641240

9. Duran-Llacer, I., **Zambrano, F.**, Rodríguez-López, L., Martínez-Retureta, R., & Arumí, J. L. (2024). *Analysis of Drought in Agriculture and Natural Vegetation Areas in Central Chile.* IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, 3643–3646. https://doi.org/10.1109/IGARSS53475.2024.10642727

10. Fernández, F. J., Vásquez-Lavín, F., Ponce, R. D., Garreaud, R., Hernández, F., Link, O., **Zambrano, F.**, & Hanemann, M. (2023). The economics impacts of long-run droughts: Challenges, gaps, and way forward. *Journal of Environmental Management, 344*, 118726. https://doi.org/10.1016/j.jenvman.2023.118726

11. **Zambrano, F.** (2023). Four decades of satellite data for agricultural drought monitoring throughout the growing season in Central Chile. En R. M. Vijay P. Singh Deepak Jhajharia & R. Kumar (Eds.), *Integrated Drought Management, Two Volume Set* (p. 28). CRC Press. https://doi.org/10.1201/9781003276548

12. Molina, J., González-Orenga, S., Vicente, O., Boscaiu, M., Llinares, J. V., **Zambrano, F.**, & Santibáñez, C. (2022). Effect of acetylsalicylic acid and ammonium sulphate on productive and physiological parameters in Stipa caudata under water shortage conditions. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca, 50*(1), 12645. https://doi.org/10.15835/nbha50112645

13. Jopia, A., **Zambrano, F.**, Pérez-Martínez, W., Vidal-Páez, P., Molina, J., & Mardones, F. de la H. (2020). Time-series of vegetation indices (VNIR/SWIR) derived from sentinel-2 (A/B) to assess turgor pressure in Kiwifruit. *ISPRS International Journal of Geo-Information, 9*(11), 641. https://doi.org/10.3390/ijgi9110641

14. Rivas, Y., Rivera, D., Gallardo, R., Lagos, E., Yevenes, M., **Zambrano, F.**, & Mendoza, J. (2020). Water availability, quality, and use in rural communities of the Chilean Coastal Range. *Journal of Soil and Water Conservation, 75*(1), 75–90. https://doi.org/10.2489/jswc.75.1.75

15. **Zambrano, F.**, Vrieling, A., Nelson, A., Meroni, M., & Tadesse, T. (2018). Prediction of drought-induced reduction of agricultural productivity in Chile from MODIS, rainfall estimates, and climate oscillation indices. Remote Sensing of Environment, 219, 15-30. https://doi.org/10.1016/j.rse.2018.10.006

16. **Zambrano, F.**, Wardlow, B., Tadesse, T., Lillo-Saavedra, M., & Lagos, O. (2017). Evaluating satellite-derived long-term historical precipitation datasets for drought monitoring in Chile. *Atmospheric Research, 186*, 26–42. https://doi.org/10.1016/j.atmosres.2016.11.006

17. **Zambrano, F.**, Lillo-Saavedra, M., Verbist, K., & Lagos, O. (2016). Sixteen years of agricultural drought assessment of the BioBío region in Chile using a 250 m resolution vegetation condition index (VCI). *Remote Sensing, 8*(6), 1–20. https://doi.org/10.3390/rs8060530

Conferences

1. **Vasquez, I.**, Zambrano, F. (2025, November 12–14). *"Identification of Optimal Areas for Green Hydrogen Production in Chile Using Random Forest and Spatial Data".* 5th Conference on Energy, Efficiency and Environmental Sustainability (CEES 2025)

2. Herrera, Abel., **Zambrano, F.** (2025, Noviembre 3-7). *Detección de variaciones en niveles de aguas subterráneas mediante datos GRACE reescalados a 9 km.* SICyR Simposio Internacional Clima y Resilencia en Tiempos de Cambio, Santiago y Viña del Mar, Chile.

3. **Zambrano, F.**, Vrieling, A., Meza, F., Duran-Llacer, I., Fernández, F., Venegas-González, A., Raab, N., & Craven, D. (2025, abril). *Shifts in water supply and demand shape land cover change across Chile.* EGU General Assembly, Viena, Austria.

4. **Zambrano, F.**, Vidal-Páez, P., & Hernández, B. (2024). *Comparison of crop water demand derived from sen-ET for orchards within the Aconcagua's river basin in Chile.* IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, 3631–3634. https://doi.org/10.1109/IGARSS53475.2024.10642732

5. **Zambrano, F.**, & Duran-Llacer, I. (2024). *Assessment of drought in continental Chile for 1981–2023 by climate variables of water supply and demand, soil moisture, and vegetation.* IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, 2764–2768. https://doi.org/10.1109/IGARSS53475.2024.10641240

6. Duran-Llacer, I., **Zambrano, F.**, Rodríguez-López, L., Martínez-Retureta, R., & Arumí, J. L. (2024). *Analysis of Drought in Agriculture and Natural Vegetation Areas in Central Chile.* IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, 3643–3646. https://doi.org/10.1109/IGARSS53475.2024.10642727

7. **Zambrano, F.**, Meza, F., Raab, N., & Duran-Llacer, I. (2024, marzo 11). *Drought's trends over continental Chile using climatic variables of water demand and supply, soil moisture, and vegetation productivity.* EGU General Assembly, Viena, Austria. https://doi.org/10.5194/egusphere-egu24-19099

8. Duran-Llacer, I., **Zambrano, F.**, Gómez-Escalonilla Canales, V., Martínez Santos, P., Aliagada Alvarado, M., Rodríguez-López, L., Martínez-Retureta, R., & Arumí, J. L. (2024, abril). *The response of Groundwater-Dependent Ecosystems to drought in central Chile.* EGU General Assembly, Viena, Austria. https://doi.org/10.5194/egusphere-egu24-20738

9. **Zambrano, F.**, Kunst, J. (2023, octubre 18-20). *Un observatorio de sequía para Chile desarrollado con R-shiny.* LatinR 2023 Conferencia Latinoamericana sobre Uso de R en Investigación + Desarrollo, Montevideo, Uruguay.

10. Meza, F., Raab, N., Gil, P., Yáñez, G., **Zambrano, F.**, & Araya, J. (2023, septiembre 4-7). *Desarrollo de un modelo multivariado de predicción de sequía combinando fuentes de información meteorológica, de vegetación y de respuesta agrícola.* SICyR Simposio Internacional Clima y Resilencia en Tiempos de Cambio, Santiago y Viña del Mar, Chile.

11. **Zambrano, F.**, Meza, F., & Raab, N. (2023, diciembre 11-15). *Water supply and demand drought indices to assess its impact over land cover change and vegetation development in continental Chile for 2000-2023 by ERA5-Land and MODIS datasets.* AGU Fall Meeting, San Francisco, CA.

12. Craven, D., Fuentes, N., Saldaña, A., **Zambrano, F.**, & Lopatin, J. (2023, septiembre 4-7). *Matches and mismatches of biodiversity components and anthropogenic threat complexes across Chile.* SICyR Simposio Internacional Clima y Resilencia en Tiempos de Cambio, Santiago y Viña del Mar, Chile.

13. Meza, F., Raab, N., & **Zambrano, F.** (2023, diciembre 11-15). *Multivariate Drought Index Combining Meteorological Information, Remote Sensing data and Biophysical Crop Simulation Models: Application in the Araucanía Region, Chile.* AGU Fall Meeting, San Francisco, CA.

14. Whitcraft, A. K., Sanchez Galvez, A., Puricelli, E., Humber, M., McNairn, H., Witkowski, K., Santos, C., Barbosa, L., Copati, E., Tiscornia, G., Fuentes, M., & **Zambrano, F.** (2020). *Agricultural Monitoring in the Americas (AMA): Bringing GEOGLAM and GEOSS to the Americas.* EO for Agriculture under Pressure 2020. ESA, Italia.

15. **Zambrano, F.** (2019, septiembre). *Predicción de la sequía agrícola en Chile: regresión lineal vs deep learning.* LatinR, Santiago, Chile.

16. **Zambrano, F.** (2019, agosto). *Prediction of Seasonal Agricultural Productivity Anomalies Derived from MODIS Data for the Cultivated Land of Chile.* 2019 Joint Satellite Conference. American Meteorological Society (AMS), Boston, USA.

17. **Zambrano, F.**, Vrieling, A., Nelson, A., Meroni, M., & Tadesse, T. (2018, diciembre). *Prediction of agricultural drought in Chile from multiple spatio-temporal data sources.* AGU Fall Meeting, Washington D.C., USA.

18. **Zambrano, F.** (2018, octubre). *Desarrollo de una plataforma web R-Shiny para alerta temprana de sequía agrícola.* IV Foro Nacional de Percepción Remota y SIG, Santiago, Chile.

19. **Zambrano, F.**, Lillo-Saavedra, M., & Verbist, K., Lagos, O. (2016, octubre 25). *Sixteen years of agricultural drought assessment of the BioBío region in Chile using a 250 m resolution Vegetation Condition Index (VCI).* Proc. SPIE 9998, Remote Sensing for Agriculture, Ecosystems, and Hydrology XVIII. https://doi.org/10.1117/12.2235345

20. **Zambrano, F.**, Wardlow, B., & Tadesse, T. (2016, noviembre 29). *Evaluating satellite-derived long-term historical precipitation datasets for drought monitoring in Chile.* Proc. SPIE 9998, Remote Sensing for Agriculture, Ecosystems, and Hydrology XVIII. https://doi.org/10.1117/12.2241032

21. **Zambrano, F.**, Lillo-Saavedra, M., & Zambrano-Bigiarini, M. (2014, noviembre). *Drought analysis using the SPI and VCI indices in the Bío-Bío región.* International Expert Symposium 'Coping with Droughts', Santiago, Chile.

22. **Zambrano, F.**, Lillo-Saavedra, M., & Lagos, O. (2014, octubre). *Evaluación de la sequía agrícola, usando el índice VCI a 250m en la región del Bío-Bío, Chile.* 11th Latin American and Caribbean Conferences of Agricultural Engineering, Bogotá, Colombia.

23. **Zambrano, F.**, Lillo-Saavedra, M., & Lagos, O. (2014). *Evaluación de la sequía agrícola usando el índice VCI a 250m entre 2000-2012, en la región del Bío-Bío, Chile.* 65 Congreso de la Sociedad Agronómica de Chile, Chillán, Chile.

24. Lillo-Saavedra, M., Gonzalo, C., **Zambrano, F.**, & Merino, F. (2008). *Clasificación de imágenes fusionadas, un problema de explosión de información.* Actas del XIII Simposio SELPER La geomática al servicio de la Geociencia por un Desarrollo Sostenible, La Habana, Cuba.

25. Gonzalo, C., Lillo-Saavedra, M., Merino, F., & **Zambrano, F.** (2008). *Fusión iHS ponderada mediante dimensión fractal.* XIII Simposio de la Sociedad de Especialistas Latinoamericanos en Percepción Remota y Sistemas de Información Espacial (XIII SELPER), La Habana, Cuba.