Supplementary Table

for

Cloud-Based Remote Sensing for Wetland Monitoring—A review

Table S1. List of the 50 articles selected from the systematic literature search for review ordered by year.

Author (s)	Title	Year
(Tang et al., 2016)	Assessing Nebraska playa wetland inundation status during 1985–2015 using Landsat data and Google Earth Engine	2016
(Alonso et al., 2016)	Wetland landscape Spatio-temporal degradation dynamics using the new google earth engine cloud-based platform: Opportunities for non-specialists in remote sensing	2016
(Hird et al., 2017)	Google earth engine, open-access satellite data, and machine learning in support of large-area probabilisticwetland mapping	2017
(Amani, Brisco, et al., 2019)	A generalized supervised classification scheme to produce provincial wetland inventory maps: an application of Google Earth Engine for big geo data processing	2019
(Amani, Mahdavi, et al., 2019)	Canadian wetland inventory using Google Earth Engine: The first map and preliminary results	2019
(Lamb et al., 2019)	Evaluation of approaches for mapping tidal wetlands of the Chesapeake and Delaware Bays	2019
(Q. Wu et al., 2019)	Integrating LiDAR data and multi-temporal aerial imagery to map wetland	2019

	inundation dynamics using Google Earth Engine	
(DeLancey et al., 2019)	Large-scale probabilistic identification of boreal peatlands using Google Earth Engine, open-access satellite data, and machine learning	2019
(Mahdianpari et al., 2019)	The first wetland inventory map of newfoundland at a spatial resolution of 10 m using sentinel-1 and sentinel-2 data on the Google Earth Engine cloud computing platform	2019
(Mahdianpari, Jafarzadeh, et al., 2020)	A large-scale change monitoring of wetlands using time series Landsat imagery on Google Earth Engine: a case study in Newfoundland	2020
(Mahdianpari, Salehi, et al., 2020)	Big Data for a Big Country: The First Generation of Canadian Wetland Inventory Map at a Spatial Resolution of 10-m Using Sentinel-1 and Sentinel-2 Data on the Google Earth Engine Cloud Computing Platform	2020
(DeLancey et al., 2020)	Comparing deep learning and shallow learning for large-scalewetland classification in Alberta, Canada	2020
(Alonso et al., 2020)	Coupling high-resolution field monitoring and MODIS for reconstructing wetland historical hydroperiod at a high temporal frequency	2020
(Pereira et al., 2020)	Estimating water pH using cloud-based landsat images for a new classification of the Nhecolândia Lakes (Brazilian Pantanal)	2020
(Vanderhoof et al., 2020)	Isolating anthropogenic wetland loss by concurrently tracking inundation and land cover disturbance across the Mid-Atlantic Region, U.S.	2020
(Valenti et al., 2020)	Leveraging Google Earth Engine User Interface for Semiautomated Wetland Classification in the Great Lakes Basin at 10	2020

	m with Optical and Radar Geospatial Datasets	
(Sun et al., 2020)	Mapping coastal wetlands of the Bohai Rim at a spatial resolution of 10 M using multiple open-access satellite data and terrain indices	2020
(W. Li et al., 2020)	Monitoring and landscape dynamic analysis of alpine wetland area based on multiple algorithms: A case study of Zoige plateau	2020
(Campbell & Wang, 2020)	Salt marsh monitoring along the mid-Atlantic coast by Google Earth Engine enabled time series	2020
(Gulácsi & Kovács, 2020)	Sentinel-1-imagery-based high-resolution water cover detection on wetlands, aided by google earth engine	2020
(Hardy et al., 2020)	Tropical Wetland (TropWet) mapping tool: The automatic detection of open and vegetated waterbodies in Google Earth engine for tropical wetlands	2020
(N. Wu et al., 2021)	A classification of tidal flat wetland vegetation combining phenological features with google earth engine	2021
(Steinbach et al., 2021)	A New Conceptual Framework for Integrating Earth Observation in Large-scale Wetland Management in East Africa	2021
(Liu et al., 2021)	A novel Landsat-based automated mapping of marsh wetland in the headwaters of the Brahmaputra, Ganges and Indus Rivers, southwestern Tibetan Plateau	2021
(Fekri et al., 2021)	A training sample migration method for wetland mapping and monitoring using sentinel data in google earth engine	2021
(Cui et al., 2021)	Analysis of the causes of wetland landscape patterns and hydrological connectivity changes in Momoge National	2021

	Nature Reserve based on the Google Earth Engine Platform	
(Dervisoglu, 2021)	Analysis of the temporal changes of inland ramsar sites in turkey using google earth engine	2021
(Al-Nasrawi et al., 2021)	Changes in Mesopotamian Wetlands: Investigations Using Diverse Remote Sensing Datasets	2021
(Honorio Coronado et al., 2021)	Intensive field sampling increases the known extent of carbon-rich Amazonian peatland pole forests	2021
(Z. Li et al., 2021)	Interannual and seasonal variations of hydrological connectivity in a large shallow wetland of north china estimated from landsat 8 images	2021
(Z. Wang et al., 2021)	Mapping coastal wetlands in the Yellow River Delta, China during 2008–2019: impacts of valid observations, harmonic regression, and critical months	2021
(Long et al., 2021)	Mapping the vegetation distribution and dynamics of a wetland using adaptive-stacking and Google Earth Engine based on multi-source remote sensing data	2021
(Ashok et al., 2021)	Monitoring of dynamic wetland changes using NDVI and NDWI based landsat imagery	2021
(Amoakoh et al., 2021)	Testing the contribution of multi-source remote sensing features for random forest classification of the greater amanzule tropical peatland	2021
(Miller et al., 2021)	The potential of satellite remote sensing time series to uncover wetland phenology under unique challenges of tidal setting	2021
(Yang et al., 2021)	The spatial distribution and expansion of subsided wetlands induced by underground coal mining in eastern China	2021
(Mahdianpari et al., 2021)	The third generation of pan-canadian wetland map at 10 m resolution using	2021

	multisource earth observation data on cloud computing platform	
(Lees et al., 2021)	Using satellite data to assess management frequency and rate of regeneration on heather moorlands in England as a resilience indicator	2021
(Shi et al., 2021)	Using time series optical and SAR data to assess the impact of historical wetland change on current wetland in Zhenlai county, Jilin province, China	2021
(Amani et al., 2021)	Wetland Change Analysis in Alberta, Canada Using Four Decades of Landsat Imagery	2021
(H. Wang et al., 2022)	A Novel Approach for Monitoring the Ecoenvironment of Alpine Wetlands using Big Geospatial Data and Cloud Computing	2022
(Lourenco et al., 2022)	Angolan highlands peatlands: Extent, age and growth dynamics	2022
(Ghorbanian et al., 2022)	Application of Artificial Neural Networks for Mangrove Mapping Using Multi-Temporal and Multi-Source Remote Sensing Imagery	2022
(L. Zhang et al., 2022)	Assessing the contemporary status of Nebraska's eastern saline wetlands by using a machine learning algorithm on the Google Earth Engine cloud computing platform	2022
(Sahour et al., 2022)	Integrating sar and optical remote sensing for conservation-targeted wetlands mapping	2022
(Dervisoglu, 2022)	Investigation of Long and Short-Term Water Surface Area Changes in Coastal Ramsar Sites in Turkey with Google Earth Engine	2022
(Sothe et al., 2022)	Large scale mapping of soil organic carbon concentration with 3D machine learning and satellite observations	2022

(Gxokwe et al., 2022)	Leveraging Google Earth Engine platform to characterize and map small seasonal wetlands in the semi-arid environments of South Africa	2022
(Z. Zhang et al., 2022)	Sub-continental-scale mapping of tidal wetland composition for East Asia: A novel algorithm integrating satellite tide-level and phenological features	2022
(Gemechu et al., 2022)	Wetland Change Mapping Using Machine Learning Algorithms, and Their Link with Climate Variation and Economic Growth: A Case Study of Guangling County, China	2022

The location of the first authors

Figure S1 shows the first authors' geographic distribution and valuable insights into the research expertise and geographic coverage of remote sensing and cloud computing in wetland monitoring. These insights can help identify research gaps and facilitate collaborations across different regions, particularly for the proposed future work in the cloud computing architecture outlined in Figure 8.

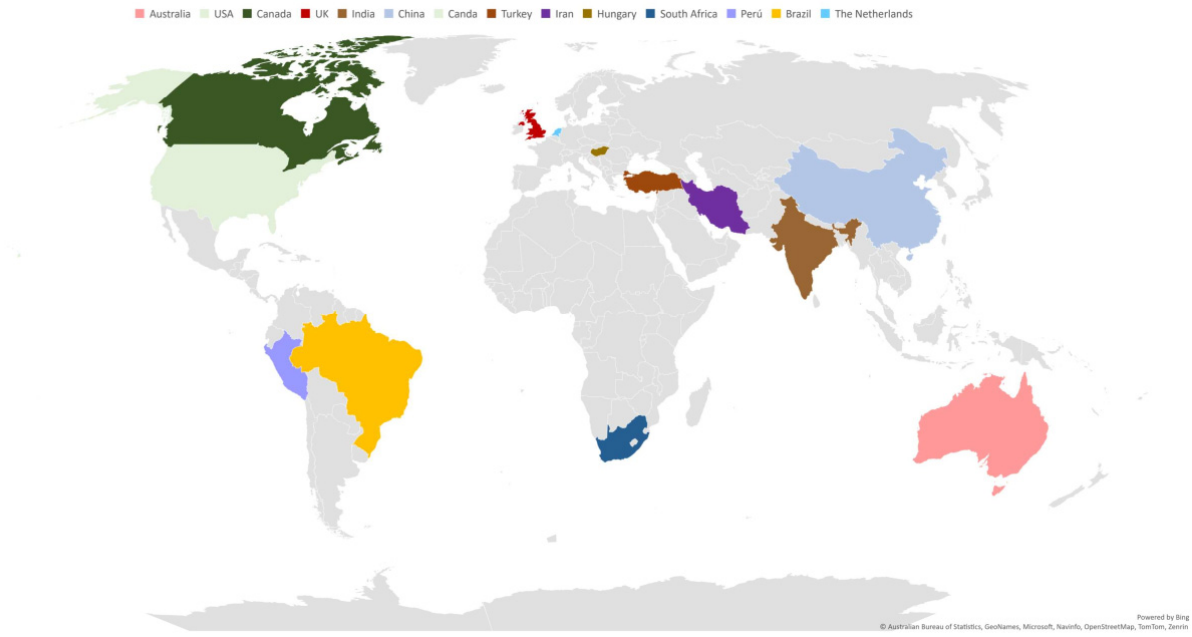

Figure S1. The geographical location of the first authors of the published articles on wetland monitoring using remote sensing and cloud computing.

The distribution of published research

Figure S2 illustrues valuable insights into the global geographic distribution of research on wetland monitoring using remote sensing and cloud computing. It can aid in identifying regions where additional research and development may be needed and aid policy-makers and conservationists in understanding the areas where wetland monitoring is a priority.

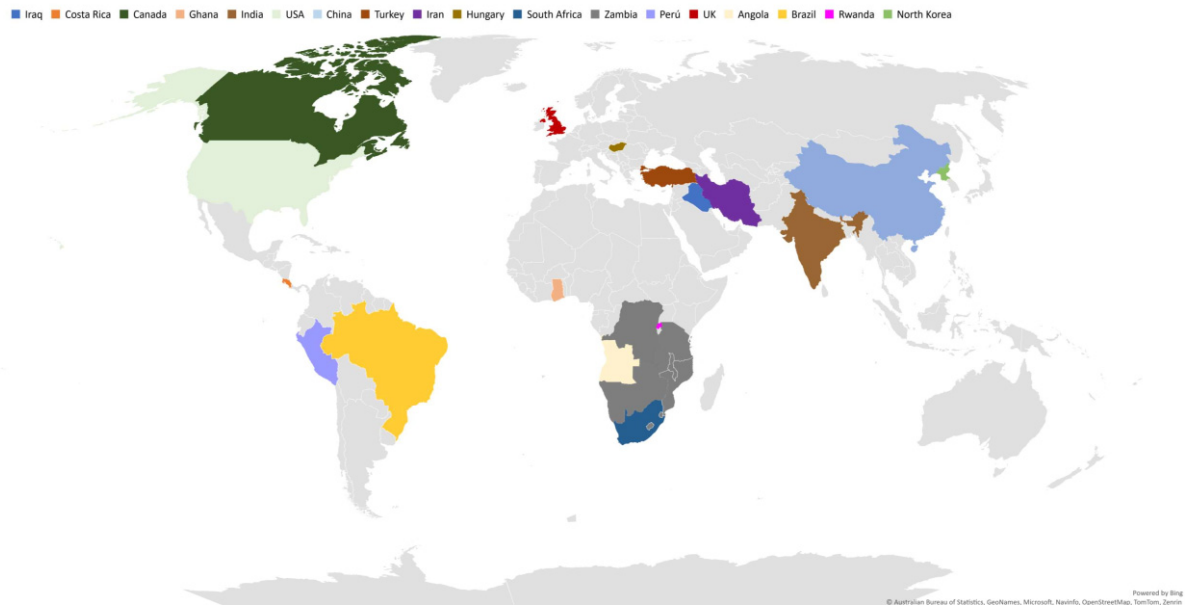

Figure S2. The global distribution of the published articles on wetland monitoring using remote sensing and cloud computing.