Online Supporting Information

Contents

1. Literature search

Case studies of wetland extent change were collected through a peer-reviewed scientific literature review, data collection from non-governmental research institutes and online databases, and personal communication with relevant experts.

As in Dixon et al. (2016)[1], the peer-reviewed literature search was conducted using SciVerse's Scopus[2] online bibliographic database. The search was conducted in three languages: English, Spanish and Portuguese. Database titles, abstracts and keywords were queried using a search string that consisted of synonyms for "area" combined with synonyms for "change" (using the Boolean operator "AND") (Tables S1-S3). These terms were combined with different wetland type terms (using the Boolean operator "OR"), *e.g.* marine wetlands, subtidal aquatic beds and seagrass. Results were limited to the following subject areas: 'Environmental science', 'Agricultural and biological sciences', 'Earth and planetary sciences', and 'Engineering'.

Three searches of peer-reviewed scientific literature have been conducted to date to build the WET database:

- Search 1: 1st August 2013 – titles, abstracts and keywords queried up to August 2013.
- Search 2: 6th March 2014 – search limited to publications dated August 2013 to March 2014 to gather any additional data published since the first search date.
- Search 3: 17th January 2017 – original search was repeated in Spanish and Portuguese for all dates to January 2017. English search was limited to publications dated March 2014 – January 2017.

Search 1 (2013) produced 7,148 results. Articles were filtered to 4,283 papers by excluding papers that did not contain the words "wetland(s)" or "area(s)" in their title or abstract. Title and abstract review was undertaken for articles that explicitly stated or implicitly suggested the inclusion of wetland extent time series data. Of the 294 articles that passed the title and abstract review stage, 99 were not obtainable within the time and resources available and were excluded, leaving 195 articles for further review. Of these, 86 peer-reviewed articles contained data suitable for inclusion in the Wetland Extent Trends (WET) database.

[1] Dixon, M.J.R., Loh, J., Davidson, N.C., et al. (2016). Tracking global change in ecosystem area: The Wetland Extent Trends index. *Biological Conservation*, **193**, 27–35. https://doi.org/10.1016/j.biocon.2015.10.023.

[2] SciVerse Scopus: http://www.scopus.com/

Search 2 (2014) returned 965 peer-reviewed articles, filtered as above to 578. Articles that had been screened in Search 1 were removed, leaving 352 articles. After title and abstract review, 46 papers progressed to full text review, of which 28 had available data. After full text review, 12 articles containing data suitable for inclusion were added to the WET database.

Search 3 (2017) returned 1,960 results using the English search string. After title and abstract review, 19 papers progressed to full text review, of which 11 articles contained data suitable for inclusion. In the Spanish search, the search string returned 106 results, and 10 papers progressed to full text review, of which 6 articles contained data suitable for inclusion. In the Portuguese search, the search string returned 19 results, of which none contained data suitable for inclusion.

Table S1. Long English keyword search string used in SciVerse's Scopus online bibliographic database.

TITLE-ABS-KEY ("Size*" OR "Area*" OR "Extent" OR "Distribution" Or "Surface area" OR "Surface areas" OR "Remote sensing" OR "Landsat" OR "Map*" OR "Inventory" OR "Status" OR "Evaluation" OR "Ramsar")

AND TITLE-ABS-KEY ("Change*" OR "Spatial pattern" OR "Spatial patterns" OR "Spatial change" OR "Spatial changes" OR "Spatiotemporal dynamic" OR "Spatiotemporal dynamics" OR "Rate of change" OR "Land Reclamation" OR "Loss of" OR "Increase in" OR "Trend*")

AND TITLE-ABS-KEY ("Wetland*")

AND TITLE-ABS-KEY ("Surface water" OR "Water" OR

"Marine wetlands" OR "Coastal wetlands" OR "Sea bays" OR "Subtidal aquatic beds" OR "Kelp beds" OR "Seagrass*" OR "Sea-grass" OR "Coral reefs" OR "Reef*" OR "Shellfish reefs" OR "Estuarine" OR "Estuaries" OR "Deltas" OR "Mud flats" OR "Sand flats" OR "Salt flats" OR "Intertidal marshes" OR "Salt marsh" OR "Salt marshes" OR "Salt meadows" OR "Brackish" OR "Freshwater marsh" OR "Freshwater marshes" OR "Intertidal forested wetlands" OR "Mangrove*" OR "Swamp*" OR "Lagoon*"

OR "Palustrine" OR "Riverine" OR "Lacustrine" OR "Freshwater" Or "Rivers" OR "Streams" OR "Creeks" OR "Lake*" OR "Marsh*" OR "Ponds" OR "Pools" OR "Peatland*" OR "Peat lands" OR "Fen*" OR "Bog*" OR "Alpine wetlands" OR "Tundra wetlands" OR "Peatswamp forests" OR "Springs" OR "Oases" OR "Subterranean hydrological systems" OR "Subterranean water" OR "Floodplain"

OR "Human-made wetlands" OR "Human made wetlands" OR "Artificial wetlands" OR "Artificial lakes" OR "Shrimp ponds" OR "Fish ponds" OR "Aquaculture ponds" OR "Irrigated land" OR "Rice fields" OR "Paddy fields" OR "Irrigation channels" OR "Seasonally flooded agricultural land" OR "Salt exploitation sites" OR "Salt pans" OR "Water storage areas" OR "Reservoir*" OR "Barrages" OR "Dam*" OR "Wastewater treatment areas" OR "Waste-water treatment areas" OR "Waste water treatment areas" OR "Sewage farms" OR "Canals" OR "Drainage channels")

Table S2. Long Spanish keyword search string used in SciVerse's Scopus online bibliographic database.

TITLE-ABS-KEY ("Tamaño*" OR "Área*" OR "Extensión" OR "Distribución" OR "Área superficie" OR "Teledetección" OR "Landsat" OR "Mapa*" OR "Estado" OR "Evaluación" OR "Ramsar")

AND TITLE-ABS-KEY ("Cambio*" OR "Patrón espacial" OR "Patrones espaciales" OR "Cambio espacial" OR "Cambios espaciales" OR "Dinámica espaciotemporal" OR "Dinámicas espaciotemporales" OR "Tasa de cambio" OR "Recuperación de terreno" OR "Perdida de" OR "Aumento de")

AND TITLE-ABS-KEY ("Humedal*")

AND TITLE-ABS-KEY ("Agua superficial" OR

"Humedales marinos" OR "Humedales costeros" OR "Bahía" OR "Lechos acuáticos" OR "Quelpo" OR "Algas" OR "Pradera marina*" OR "Hierba marina" OR "Arrecife coral" OR "Arrecifes*" OR "Arrecifes de moluscos" OR "Estuarios" OR "Deltas" OR "Barro" OR "Arenales" OR "Salinas" OR "Marismas" OR "Salobre" OR "Marisma agua dulce" OR "Humedales forestales" OR "Zona Intermareal" OR "Litoral" OR "Manglar*" OR "Pantano*" OR "Laguna*"

OR "Palustre" OR "Lacustre" OR "Ribereño" OR "Fluvial" OR "Agua dulce" OR "Ríos" OR "Lagunas" OR "Piscinas" OR "Marisma" OR "Oasis" OR "humedal tundra" OR "Pantanal" OR "Humedal Alpino" OR "Bosques de turbera" OR "Turberas" OR "Arroyo" OR "Estanque" OR "Riachuelo" OR "Lagos" OR "Lago" OR "Oasis" OR "Sistemas hidrológicos subterráneos" OR "Aguas subterráneas" OR "Llanura de inundación"

OR "Humedales artificiales" OR "Humedales humanos" OR "Lagos artificiales" OR "Estanque de gambas" OR "Estanque de peces" OR "Piscinas de acuacultura" OR "Tierras de irrigación" OR "Campos de arroz" OR "canales de irrigación" OR "Tierras agrícolas inundadas" OR "Salineras" OR "Pantano" OR "Almacén de agua" OR "Áreas de tratamiento de aguas residuales" OR "Águas residuales" OR "Canales" OR "Canales de drenaje")

Table S3. Long Portuguese keyword search string used in SciVerse's Scopus online bibliographic database.

TITLE-ABS-KEY (“Tamanho” OR “Área" OR “Extensão” OR “distribuição” OR “Área de cobertura" OR "Área remota" OR “Mapa” OR “inventário” OR “Status” OR “avaliação” OR "Ramsar”)

AND TITLE-ABS-KEY ("Mudança" OR "Padrão espacial" OR "Padrões espaciais" OR "Mudança espacial" OR "Mudanças espaciais" OR "Dinâmica spatiotemporal" OR "Dinâmica spatiotemporal" OR "Taxa de mudança" OR "Recuperação de terra" OR "Perda de" OR "Aumento de" OR "Tendência”)

AND TITLE-ABS-KEY (“Pantanal”)

AND TITLE-ABS-KEY (“Água superficial” OR "Água" OR

"Mangueiras marinhas" OR "Mangueiras costeiras" OR "Litorais marinhos" OR "Litorais aquáticos subtidal" OR "Leitos de algas marinhas" OR "Seagrass" OR "Recife de coral" OR "Recifes" OR "Recifes de marisco OR "Estuários" OR "estuários" OR "Deltas" OR "Pisos de barro" OR "Pisos de areia" OR "Pisos de sal" OR "Pântanos intertidais" OR "Pântanos salgados" OR "Pântano de água doce" OR "Pântanos de água doce" OR "Pântanos florestais intertidais" OR "Manguezais" OR "Pântano" OR "Lagoa"

OR “Palustrine” OR "Riverine" OR "Lacustrine" OR "De água doce" OR "Rios" OR "Riachos" OR "Lago" OR "Pântano" OR "Lagoas" OR “Turfeiras” OR " OR "Fenologia" OR "Pântanos artificiais" OR “Planície de inundação“

OR "Lagos artificiais" OR "Lagoas de camarão" OR "Lagoas de peixes" OR "Lagoas de aquicultura" OR "Canais de irrigação" OR “Arrozal” OR "Terras agrícolas sazonalmente inundadas" OR "Sítios de exploração de sal" OR "Salinas" OR "Áreas de armazenamento de água" OR "Reservatório" OR "Barragens" OR "Barragem" OR "Tratamento de águas residuais” OR "Áreas de tratamento de águas residuais" OR "Estações de tratamento de águas residuais" OR "Canais" OR "Canais de drenagem")

Additional data sources

The following wetland databases were included and/or updated during the 2017 data search, Search 3:

- Food and Agriculture Organization of the United Nations (FAO). (2007). *The world's mangroves 1980-2005.* (p. 75). Rome.
- Food and Agriculture Organization of the United Nations (FAO) (2015) Global Forest Resource Assessment 2015. How are the World's Forests Changing? Rome (Italy)
- Food and Agriculture Organization of the United Nations (FAO) (2017) Area harvested, Rice paddy. *FAOSTAT (Database)*. Rome (Italy). Retrieved March 6, 2017, from http://faostat3.fao.org/faostat-gateway/go/to/home/E
- Joosten, H., 2012. International Mire Conservation Group (IMCG) Global Peatland Database. Greifswald Mire Centre. Retrieved May 4, 2012, from www.imcg.net/gpd/gpd.htm
- Waycott, M., Duarte, C. M., Carruthers, T. J. B., Orth, R. J., Dennison, W. C., Olyarnik, S., … Williams, S. L. (2009) Accelerating loss of seagrasses across the globe threatens coastal ecosystems. *Proceedings of the National Academy of Sciences of the United States of America*, *106*(30), 12377–12381. doi:10.1073/pnas.0905620106. [NB. Original references from this meta-database are included in Appendix 4].
- Hamilton, S.E., Casey, D., (2016) Creation of a high spatio-temporal resolution global database of continuous mangrove forest cover for the 21st century (CGMFC-21). *Global Ecology and Biogeography 25*, 729–738.

A call for information on wetland trend data was issued by the Secretariat of the Ramsar Convention on Wetlands in December 2016 which was followed up with targeted emails to relevant experts through UN Environment World Conservation Monitoring Centre (UNEP-WCMC)'s network of contacts and focal points of Ramsar's Scientific and Technical Review Panel (STRP). This data drive resulted in the review of 100 sources of grey literature, of which 30 included data suitable for inclusion in the WET database.

2. Data sources

In total, data from 306 source references are included in the WET database (Table S4).

Table S4. Number of published data sources by Ramsar region and wetland type

Ramsar Region	Inland	Marine/coastal	Human-made	TOTAL
Africa	22	13	3	**38**
Asia	71	40	37	**148**
Europe	27	36	6	**69**
Latin America & Caribbean	10	14	1	**25**
North America	35	51	4	**90**
Oceania	8	33	3	**44**
Total	**173**	**187**	**59**	**306**

NB. Some references are duplicated as they hold data for multiple sub-regions and wetland classes

Wetland Extent Trends references included in the WET database

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3. Data matrices: marine/coastal, inland and human-made

Data on individual wetlands trends were sorted into the six Ramsar regions and three Ramsar wetland types, making 18 groups (Figure S1). To account for geographical unevenness, the data were first subdivided into 130 sub-regions, 57 terrestrial (inland and human-made) and 73 marine/coastal according to the sub-regional breakdown used in Dixon et al. (2016). Secondly, records were allocated to one of 17 wetland classes (*i.e.* sub-types). There are 7 inland, 6 marine/coastal and 4 human-made wetland classes, which are a simplification of the 42 Ramsar wetland classification categories[3]. This methodology created 1,065 possible combinations of sub-region and wetland class (57 x 11 terrestrial; 73 x 6 marine/coastal).

The average trend in wetland extent was then calculated for all wetlands in each cell of the matrix for which one or more time-series were available, making 424 average trends in total (40% of cells had data). A summary of the number of time-series by Ramsar region and wetland types is shown in Figure S1. Matrices of time-series data by sub-region and wetland class can be found in the Tables S5-7.

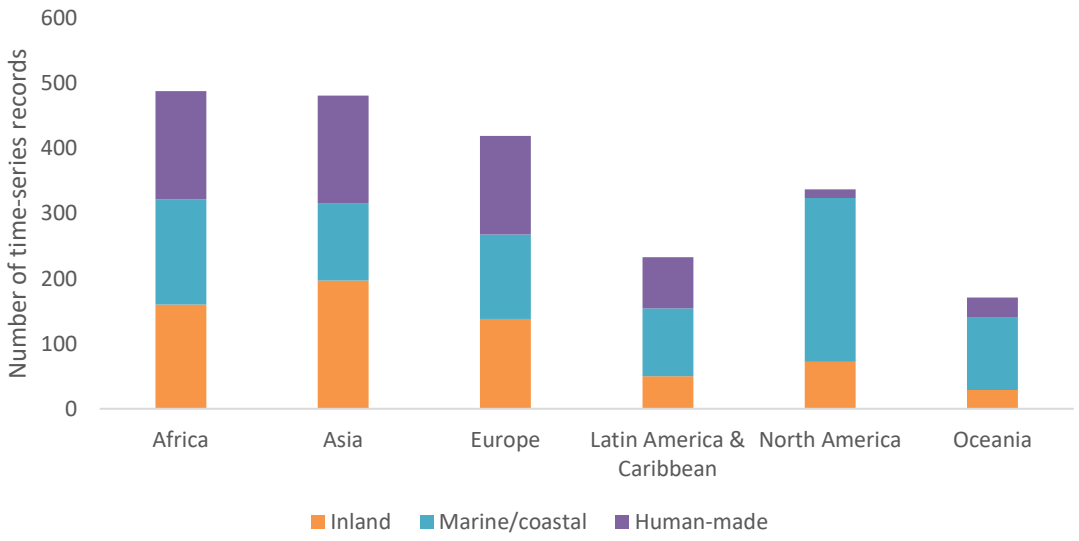

Figure S1. Number of wetland extent time-series records by Ramsar region and wetland type.

[3] Finlayson, C.M. (2018). *Ramsar Convention Typology of Wetlands. In Finlayson CM, Everard M, Irvine K, McInnes RJ, Middleton BA, van Dam AA & Davidson NC (eds) 2018, pp. 1529-1532. The Wetland Book I: Structure and Function, Management and Methods.* Springer Publishers, Dordrecht. https://doi.org/10.1007/97.

Table S5. Marine/coastal wetland data matrix showing the number of time-series in each sub-region by wetland class. Green colour scale indicates the number of data sources.

Wetland class: Marine/Coastal

Number of Time-series Records in each Sub-region x Wetland Class

Region	Sub-region	Marine/Coastal wetland classes						TOTAL
		Coastal shores	Estuarine waters	Intertidal wetlands	Lagoons	Permanent shallow marine waters	Mixed marine/ coastal wetland	
Africa	Atlantic Northern Africa	0	2	22	3	0	0	**27**
	Atlantic Southern Africa	0	0	1	0	0	0	**1**
	Congolian Coast	0	0	7	0	0	0	**7**
	Gulf of Guinea	0	2	17	1	0	0	**20**
	Indian Ocean East Africa	0	0	8	0	0	0	**8**
	Indian Ocean Southern Africa	0	2	12	0	1	0	**15**
	Red Sea	0	0	4	0	0	0	**4**
	Southern Mediterranean	1	12	2	56	5	1	**77**
	Other	0	0	3	0	0	0	**3**
	TOTAL AFRICA	**1**	**18**	**76**	**60**	**6**	**1**	**162**
Asia	Andaman Sea	0	0	0	0	0	0	**0**
	Bay of Bengal	1	3	5	0	0	0	**9**
	Bohai Bay and Yellow Sea	0	1	8	0	1	1	**11**

	Caspian Sea	0	0	0	0	0	0	**0**
	China	2	2	10	1	1	1	**17**
	East China Sea	0	1	5	0	2	1	**9**
	Eastern Mediterranean	2	1	0	0	0	1	**4**
	Gulf and Arabian Sea	0	0	13	0	0	0	**13**
	Gulf of Thailand	0	0	4	0	0	0	**4**
	India	1	2	7	1	2	0	**13**
	Indian Ocean Asia	1	0	4	1	0	0	**6**
	Indonesia	0	0	3	0	0	0	**3**
	Japan	0	0	1	0	1	0	**2**
	Philippines	0	0	2	0	0	0	**2**
	South China Sea North	1	2	8	1	0	1	**13**
	South China Sea South & Strait of Malacca	0	0	7	0	0	0	**7**
	Other	0	1	4	1	0	0	**6**
	TOTAL ASIA	**8**	**13**	**81**	**5**	**7**	**5**	**119**
Europe	**Adriatic Sea**	0	2	1	5	0	0	**8**
	Aegean Sea	0	3	2	2	0	0	**7**
	Arctic Ocean East	0	0	0	0	0	0	**0**
	Atlantic Europe North	0	0	0	0	0	0	**0**
	Atlantic Europe South	0	0	6	1	6	0	**13**
	Baltic Sea	0	0	0	0	0	0	**0**
	Black Sea	0	1	0	12	0	0	**13**
	Britain	0	0	0	0	0	1	**1**

	North Sea	1	1	11	0	7	0	**20**
	Skagerrak and Kattegat	0	0	0	0	11	0	**11**
	Western Mediterranean	0	17	2	24	12	1	**56**
	Other	0	1	0	0	0	0	**1**
	TOTAL EUROPE	**1**	**25**	**22**	**44**	**36**	**2**	**130**
Latin America & Caribbean	**Atlantic Brazil and Guianas**	0	0	7	0	0	0	**7**
	Atlantic Southern South America	0	0	0	0	1	0	**1**
	Caribbean Sea	0	0	63	0	3	0	**66**
	Chile	0	0	1	0	0	1	**2**
	Pacific Central America	0	0	16	1	0	0	**17**
	Pacific Northern South America	0	0	5	0	0	0	**5**
	Other	0	0	6	0	0	0	**6**
	TOTAL LATIN AMERICA & CARIBBEAN	**0**	**0**	**98**	**1**	**4**	**1**	**104**
North America	**Arctic Ocean West**	0	1	0	0	0	0	**1**
	Atlantic Canada	1	0	1	0	0	0	**2**
	Atlantic Northeast USA	0	0	5	0	49	0	**54**
	Atlantic Southeast USA	0	0	4	0	10	0	**14**
	Atlantic USA	2	0	2	0	2	0	**6**
	Bering Sea	0	1	0	0	1	0	**2**
	Chesapeake Bay	0	0	5	0	21	0	**26**
	Gulf of Alaska	0	0	0	0	6	0	**6**

	Gulf of Mexico Mexico	0	0	8	0	3	0	**11**
	Gulf of Mexico US East	0	0	4	0	27	1	**32**
	Gulf of Mexico US West	1	2	10	0	17	9	**39**
	Gulf of Mexico USA	2	0	2	0	2	0	**6**
	Hudson Bay	0	0	0	0	0	0	**0**
	Mexico	0	0	2	0	0	0	**2**
	Pacific Canada	0	0	0	0	0	0	**0**
	Pacific Mexico	0	0	16	1	1	0	**18**
	Pacific USA	1	0	6	0	2	5	**14**
	USA	4	0	7	0	7	1	**19**
	TOTAL NORTH AMERICA	**11**	**4**	**72**	**1**	**148**	**16**	**252**
Oceania	**Melanesia**	0	0	7	0	0	0	**7**
	Micronesia	0	0	5	0	0	0	**5**
	New Zealand	0	0	2	0	2	0	**4**
	PNG Solomons	0	0	7	0	0	0	**7**
	Polynesia	0	0	5	0	0	0	**5**
	Queensland	0	0	4	1	5	0	**10**
	Rest of Australia	0	0	2	0	0	0	**2**
	South Australia	0	0	0	0	1	0	**1**
	Southeast Australia	0	0	31	0	19	2	**52**
	Western Australia	0	0	1	0	16	1	**18**
	TOTAL OCEANIA	**0**	**0**	**64**	**1**	**43**	**3**	**111**
ALL INLAND		**21**	**60**	**413**	**112**	**244**	**28**	**878**

Table S6. Inland wetland data matrix showing the number of time-series in each sub-region by wetland class. Green colour scale indicates the number of data sources.

Wetland class: Inland

Number of Time-series Records in each Sub-region x Wetland Class

Region	Sub-region	Inland wetland classes							TOTAL
		Alpine Tundra Wetlands	Flowing water	Geothermal & subterranean	Lakes Pools & Marshes	Marshes on Peat Soils	Shrub or Tree-dominated Wetlands	Mixed Inland Wetland	
Africa	Central Africa	0	0	0	0	8	0	0	**8**
	East Africa	0	1	0	7	11	9	3	**31**
	Northeast Africa	0	0	0	15	6	0	2	**23**
	Northwest Africa	0	5	0	54	8	2	5	**74**
	Southern Africa	0	0	0	1	7	1	1	**10**
	West Africa	0	1	0	0	13	0	0	**14**
	TOTAL AFRICA	**0**	**7**	**0**	**77**	**53**	**12**	**11**	**160**
Asia	Central Asia	0	0	0	1	6	0	0	**7**
	China	3	2	0	9	1	2	1	**18**
	Far East	0	2	0	5	3	2	2	**14**
	India	0	1	0	1	1	0	0	**3**
	Island Southeast Asia	0	0	0	0	3	0	0	**3**

	Mainland Southeast Asia	0	0	0	2	6	0	0	**8**
	Mongolia	0	0	0	2	1	0	0	**3**
	Mountain Asia	0	4	0	5	5	3	5	**22**
	Northeast China	0	4	0	4	0	1	3	**12**
	Northeast Subcontinent	0	2	0	0	0	1	1	**4**
	Northwest China	0	1	0	2	0	0	1	**4**
	Northwest Subcontinent	0	0	0	1	2	1	1	**5**
	South Subcontinent	0	1	0	1	2	1	0	**5**
	Southeast China	0	0	0	1	0	0	2	**3**
	Southwest China	0	2	0	2	0	1	2	**7**
	West Asia	0	11	0	23	10	0	15	**59**
	Yangtze Basin	0	4	0	13	0	2	1	**20**
	TOTAL ASIA	**3**	**34**	**0**	**72**	**40**	**14**	**34**	**197**
Europe	**Eastern Europe**	0	0	0	0	5	0	0	**5**
	Nordic	0	0	0	0	8	0	3	**11**
	Northeast Europe	0	0	0	0	8	0	0	**8**
	Northwest Europe	0	1	0	10	23	3	8	**45**
	Siberia	1	0	0	0	1	0	0	**2**
	Southeast Europe	0	1	0	19	14	5	3	**42**
	Southwest Europe	0	1	0	10	6	0	8	**25**
	TOTAL EUROPE	**1**	**3**	**0**	**39**	**65**	**8**	**22**	**138**
Latin America & Caribbean	**Andean**	0	1	0	2	4	0	1	**8**
	Brazil Paraguay	0	0	0	0	3	0	0	**3**
	Caribbean	0	0	0	0	12	0	0	**12**

	Central America	0	0	0	0	7	1	0	**8**
	Northern South America	0	0	0	0	5	2	0	**7**
	Pacific South America	0	0	0	0	3	0	0	**3**
	Southern South America	0	1	0	4	3	1	0	**9**
	TOTAL LATIN AMERICA & CARIBBEAN	**0**	**2**	**0**	**6**	**37**	**4**	**1**	**50**
North America	**Canada**	0	0	0	0	1	0	0	**1**
	Eastern USA	0	0	0	3	1	4	1	**9**
	Great Lakes	0	0	0	3	0	4	3	**10**
	Hawaii	0	0	0	0	1	0	1	**2**
	Mexico	0	2	0	3	1	4	0	**10**
	Northern USA	0	0	0	1	0	0	1	**2**
	Southern USA	0	0	0	5	0	3	0	**8**
	USA	0	4	0	5	1	5	1	**16**
	Western Arctic	0	0	0	3	1	0	1	**5**
	Western Canada	0	1	0	1	1	1	1	**5**
	Western USA	0	0	0	2	0	2	0	**4**
	TOTAL NORTH AMERICA	**0**	**7**	**0**	**26**	**7**	**23**	**9**	**72**
Oceania	**Melanesia**	0	0	0	0	2	0	0	**2**
	Micronesia	0	0	0	0	3	0	0	**3**
	New Zealand	0	0	0	0	2	1	1	**4**
	PNG Solomons	0	0	0	0	2	0	0	**2**
	Polynesia	0	0	0	0	6	0	0	**6**

	Rest of Australia	0	1	0	2	1	1	0	**5**
	Southeastern Australia	0	1	1	0	1	0	0	**3**
	Tasmania	0	0	0	0	0	0	0	**0**
	Western Australia	0	1	0	1	0	1	1	**4**
	TOTAL OCEANIA	**0**	**3**	**1**	**3**	**17**	**3**	**2**	**29**
ALL INLAND		**4**	**56**	**1**	**223**	**219**	**64**	**79**	**646**

Table S7. Human-made wetland data matrix showing the number of time-series in each sub-region by wetland class. Green colour scale indicates the number of data sources.

Wetland class: Human-made

Number of Time-series Records in each Sub-region x Wetland Class

Region	Sub-region	Human-made wetland classes				TOTAL
		Agricultural Wetland	Aquaculture & Salt Exploitation	Water Storage Areas	Mixed Human-made Wetland	
Africa	Central Africa	6	0	0	6	**12**
	East Africa	13	0	0	14	**27**
	Northeast Africa	4	0	2	25	**31**
	Northwest Africa	5	2	7	45	**59**
	Southern Africa	3	0	0	7	**10**
	West Africa	13	0	1	13	**27**
	TOTAL AFRICA	**44**	**2**	**10**	**110**	**166**
Asia	Central Asia	6	0	0	6	**12**
	China	4	3	2	3	**12**
	Far East	7	0	0	3	**10**
	India	1	1	0	1	**3**
	Island Southeast Asia	3	0	0	3	**6**
	Mainland Southeast Asia	9	0	0	7	**16**
	Mongolia	0	0	0	1	**1**

	Mountain Asia	2	1	0	2	**5**
	Northeast China	3	4	4	0	**11**
	Northeast Subcontinent	1	1	0	1	**3**
	Northwest China	0	0	1	0	**1**
	Northwest Subcontinent	1	0	0	1	**2**
	South Subcontinent	2	3	1	2	**8**
	Southeast China	1	4	1	2	**8**
	Southwest China	0	1	1	2	**4**
	West Asia	11	2	8	34	**55**
	Yangtze Basin	3	3	2	0	**8**
	TOTAL ASIA	**54**	**23**	**20**	**68**	**165**
Europe	**Eastern Europe**	3	0	0	5	**8**
	Nordic	0	0	0	6	**6**
	Northeast Europe	0	0	0	6	**6**
	Northwest Europe	2	5	1	34	**42**
	Siberia	0	0	0	0	**0**
	Southeast Europe	9	1	0	36	**46**
	Southwest Europe	4	5	3	31	**43**
	TOTAL EUROPE	**18**	**11**	**4**	**118**	**151**
Latin America & Caribbean	**Andean**	5	0	0	4	**9**
	Brazil Paraguay	2	0	0	2	**4**
	Caribbean	5	0	0	28	**33**
	Central America	7	0	0	7	**14**
	Northern South America	5	0	0	5	**10**

	Pacific South America	0	0	0	0	**0**
	Southern South America	4	0	0	5	**9**
	TOTAL LATIN AMERICA & CARIBBEAN	**28**	**0**	**0**	**51**	**79**
North America	**Canada**	0	0	0	2	**2**
	Eastern USA	0	0	0	0	**0**
	Great Lakes	0	0	0	0	**0**
	Hawaii	0	0	0	0	**0**
	Mexico	1	1	0	1	**3**
	Northern USA	0	0	0	0	**0**
	Southern US	0	0	0	0	**0**
	USA	3	1	2	2	**8**
	Western Arctic	0	0	0	0	**0**
	Western Canada	0	0	0	0	**0**
	Western USA	0	0	0	0	**0**
	TOTAL NORTH AMERICA	**4**	**2**	**2**	**5**	**13**
Oceania	**Melanesia**	1	0	0	9	**10**
	Micronesia	1	0	0	3	**4**
	New Zealand	0	0	0	1	**1**
	PNG Solomons	3	0	0	6	**9**
	Polynesia	0	0	0	3	**3**
	Rest of Australia	1	0	0	2	**3**
	Tazmania	0	0	0	0	**0**
	Southeastern Australia	0	0	0	0	**0**

	Western Australia	0	0	1	0	**1**
	TOTAL OCEANIA	**6**	**0**	**1**	**24**	**31**
ALL HUMAN-MADE		**154**	**38**	**37**	**376**	**605**

4. Fractional weights by region

The global natural WET index and disaggregated global inland and marine/coastal WET indices were calculated using regional estimates of wetlands area from the Global Lakes and Wetlands dataset[4]. Fractional weights used are presented in Table S8. The human-made WET index could not be weighted due to lack of knowledge of the global distribution of human-made wetlands.

Table S8. Natural wetland extent estimates and fractional weights for regions used to weight the global Natural Wetland Extent Trends (WET) Index (Lehner & Döll, 2005).

	Natural		Inland		Marine/coastal	
	Weights	Values	Weights	Values	Weights	Values
Africa	0.1327	1542	0.1339	1468	0.1116	74
Asia	0.1808	2101	0.1620	1776	0.4902	325
Europe	0.1652	1920	0.1669	1829	0.1373	91
North America	0.3344	3887	0.3538	3878	0.0136	9
Oceania	0.0345	401	0.0318	348	0.0799	53
Latin America & Caribbean	0.1525	1772	0.1516	1661	0.1674	111
Total	1	11623	1	10960	1	663

[4] Lehner, B. & Döll, P. (2004). Development and validation of a global database of lakes, reservoirs and wetlands. *Journal of Hydrology*, **296**, 1–22. https://doi.org/10.1016/j.jhydrol.2004.03.028.

5. Adapted R script from 'rpli' package

An adapted version of the R 'rlpi' script was used in the WET index analysis using R software[5]. The 'rpli' R package is available online via github (https://github.com/Zoological-Society-of-London/rlpi). Further WET index analysis and script details are available upon request.

WET index R script for calculating an index of change in wetland extent over time:

```
wet_index_weighted<-LPIMain(infile = infilename, REF_YEAR = 1970, PLOT_MAX =
2015, force_recalculation = 1, use_weightings = 1, use_weightings_B = 0,
title = "WET_2017_weighted", CI_FLAG = 1, LEV_FLAG = 0, WITCH_PT_FLAG = 0,
BOOT_STRAP_SIZE = 1000, save_plots = 1, plot_lpi = 1, goParallel = FALSE,
MODEL_SELECTION_FLAG = 0, GAM_GLOBAL_FLAG = 0, DATA_LENGTH_MIN = 2,
AVG_TIME_BETWEEN_PTS_MAX = 1000, GLOBAL_GAM_FLAG_SHORT_DATA_FLAG = 0,
AUTO_DIAGNOSTIC_FLAG = 1,LAMBDA_MIN = -0.3, LAMBDA_MAX = 0.3,
ZERO_REPLACE_FLAG = 2, FFSET_ALL = 0, OFFSET_NONE = FALSE, OFFSET_DIFF =
FALSE, LINEAR_MODEL_SHORT_FLAG = TRUE, VERBOSE = TRUE, CAP_LAMBDAS = FALSE)
```

[5] R Core Team (2013). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/.