

# Temporary Ponds of Peninsular Spain (TemPoPS): An Integrative Dataset Supporting Research and Conservation of an Endangered Habitat

## Abstract

This dataset integrates georeferenced records of temporary ponds derived from multiple sources. It harmonizes nomenclature, coordinates, protected-area codes, and source provenance, providing a consolidated reference for ecological, conservation, and biogeographical analyses.

## Creators

- Christian Arnanz christian.duge@gmail.com (Inland-Water Ecosystems Team (I-WET), Departamento de Ecología, Universidad Autónoma de Madrid, Madrid, Spain; Centro de Investigación en Biodiversidad y Cambio Global, Universidad Autónoma de Madrid, Madrid, Spain)
- Margarita Florencio margarita@ebd.csic.es (Department of Ecology and Evolution, Doñana Biological Station (CSIC), Seville, Spain)
- Daniel Boix dani.boix@udg.edu ()
- Sandra Brucet sandra.brucet@uvic.cat ()
- Andréu Castillo-Escrivà ()
- Salvador Mollá salvador.molla@uam.es (Inland-Water Ecosystems Team (I-WET), Departamento de Ecología, Universidad Autónoma de Madrid, Madrid, Spain; Centro de Investigación en Biodiversidad y Cambio Global, Universidad Autónoma de Madrid, Madrid, Spain)
- Íñigo Martínez-Solano inigomsolano@mcn.csic.es ()
- Carlos Caballero-Díaz carlitoscd9@gmail.com ()
- Maria Sahuquillo sahuquillo\_marlli@gva.es ()
- Jesús Sánchez-Dávila jesus.sanchez.davila0@gmail.com ()
- Carmen Díaz-Paniagua poli@ebd.csic.es (Department of Ecology and Evolution, Doñana Biological Station (CSIC), Seville, Spain)
- Antonio Camacho antonio.camacho@uv.es ()
- Daniel Morant daniel.morant@uv.es ()
- Miguel Ángel Rodríguez miguela.rodriguez@uah.es ()

## Contact

Christian Arnanz - christian.duge@gmail.com

## Keywords

Temporary ponds, Mediterranean wetlands, Habitat inventory, Geospatial dataset, Freshwater ecosystems

## Coverage

- Geographic: Geographical extent of all temporary ponds included in the dataset (peninsular Spain)
- Bounding box: West=-9.12, East=3.3, South=36, North=43.7
- Temporal: 1976-01-01 to 2025-12-27

## Methods

The dataset was developed through the integration of multiple sources documenting temporary ponds, including bibliographic references, administrative datasets, expert-contributed databases obtained through direct consultation, citizen science platforms and visual interpretation. To ensure consistency, all sources were harmonized using a standardized workflow, implemented either manually or through R processing. Initially, a subset of sources was manually processed to establish a foundational dataset. Subsequently, the R-based workflow was applied to expand and refine the dataset by consolidating duplicate records into unique entries. Each pond was assigned synthetic identifiers and coordinates, while original descriptive information available from the sources (NAME, ID, coordinates) was preserved to maintain data integrity. Polygons corresponding to polygon-based sources were compiled into a synthetic GeoPackage file included with the dataset, with each pond linked to its associated polygon(s) via newly created identifiers. Information about Protected Areas associated to each pond is provided, for both Natura 2000 and other Protected Areas. Detailed methods can be consulted in the original data paper

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## Project

Towards the conservation perspective of temporary ponds to face climate change and alien species invasions (ClimaRiskinPond)

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## Attributes

Name	Definition
Name	Synthetic name assigned to each temporary pond based on original source information, if available (not unique).
ID	Unique identifier for each pond, combining an abbreviation for province names with a numeric value ranging from 0 to 1000.
X_4326	Longitude coordinate in EPSG:4326.
Y_4326	Latitude coordinate in EPSG:4326.
N2K_CODE	Code identifying the Natura 2000 site(s). If multiple codes are provided, they are separated by semicolons (;).
N2K_NAME	Official name of the Natura 2000 site(s). If multiple names are provided, they are separated by semicolons (;).

Name	Definition
OTHER_PAs_site_designation	Designation for other Protected Area categories(s). If multiple designations are provided, they are separated by semicolons (;).
OTHER_PAs_site_name	Site name for other Protected Areas(s). If multiple names are provided, they are separated by semicolons (;).
OTHER_PAs_max_protection	Designation corresponding to the highest level of protection for the site, considering other Protected Areas, based on IUCN protected area categories
NAME_SOURCE_1	Toponym of the temporary pond as reported in source 1, when available.1
ID_SOURCE_1	Identifier or code of the temporary pond as reported in source 1, when available
SOURCE_1	Short citation identifying information source 1 from which the associated pond data were derived.
X_4326_SOURCE_1	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 1, when available.
Y_4326_SOURCE_1	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 1, when available.
ID_POLYGON_SOURCE_1	Identifier of the polygon associated with the pond in source 1, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_1	Full reference corresponding to SOURCE_1, describing the original source of the pond information.
NAME_SOURCE_2	Toponym of the temporary pond as reported in source 2, when available.2
ID_SOURCE_2	Identifier or code of the temporary pond as reported in source 2, when available
SOURCE_2	Short citation identifying information source 2 from which the associated pond data were derived.
X_4326_SOURCE_2	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 2, when available.
Y_4326_SOURCE_2	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 2, when available.
ID_POLYGON_SOURCE_2	Identifier of the polygon associated with the pond in source 2, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_2	Full reference corresponding to SOURCE_2, describing the original source of the pond information.
NAME_SOURCE_3	Toponym of the temporary pond as reported in source 3, when available.3

Name	Definition
ID_SOURCE_3	Identifier or code of the temporary pond as reported in source 3, when available
SOURCE_3	Short citation identifying information source 3 from which the associated pond data were derived.
X_4326_SOURCE_3	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 3, when available.
Y_4326_SOURCE_3	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 3, when available.
ID_POLYGON_SOURCE_3	Identifier of the polygon associated with the pond in source 3, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_3	Full reference corresponding to SOURCE_3, describing the original source of the pond information.
NAME_SOURCE_4	Toponym of the temporary pond as reported in source 4, when available.
ID_SOURCE_4	Identifier or code of the temporary pond as reported in source 4, when available
SOURCE_4	Short citation identifying information source 4 from which the associated pond data were derived.
X_4326_SOURCE_4	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 4, when available.
Y_4326_SOURCE_4	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 4, when available.
ID_POLYGON_SOURCE_4	Identifier of the polygon associated with the pond in source 4, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_4	Full reference corresponding to SOURCE_4, describing the original source of the pond information.
NAME_SOURCE_5	Toponym of the temporary pond as reported in source 5, when available.
ID_SOURCE_5	Identifier or code of the temporary pond as reported in source 5, when available
SOURCE_5	Short citation identifying information source 5 from which the associated pond data were derived.
X_4326_SOURCE_5	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 5, when available.
Y_4326_SOURCE_5	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 5, when available.

Name	Definition
ID_POLYGON_SOURCE_5	Identifier of the polygon associated with the pond in source 5, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_5	Full reference corresponding to SOURCE_5, describing the original source of the pond information.
NAME_SOURCE_6	Toponym of the temporary pond as reported in source 6, when available.
ID_SOURCE_6	Identifier or code of the temporary pond as reported in source 6, when available
SOURCE_6	Short citation identifying information source 6 from which the associated pond data were derived.
X_4326_SOURCE_6	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 6, when available.
Y_4326_SOURCE_6	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 6, when available.
ID_POLYGON_SOURCE_6	Identifier of the polygon associated with the pond in source 6, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_6	Full reference corresponding to SOURCE_6, describing the original source of the pond information.
NAME_SOURCE_7	Toponym of the temporary pond as reported in source 7, when available.
ID_SOURCE_7	Identifier or code of the temporary pond as reported in source 7, when available
SOURCE_7	Short citation identifying information source 7 from which the associated pond data were derived.
X_4326_SOURCE_7	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 7, when available.
Y_4326_SOURCE_7	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 7, when available.
ID_POLYGON_SOURCE_7	Identifier of the polygon associated with the pond in source 7, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_7	Full reference corresponding to SOURCE_7, describing the original source of the pond information.
NAME_SOURCE_8	Toponym of the temporary pond as reported in source 8, when available.
ID_SOURCE_8	Identifier or code of the temporary pond as reported in source 8, when available

Name	Definition
SOURCE_8	Short citation identifying information source 8 from which the associated pond data were derived.
X_4326_SOURCE_8	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 8, when available.
Y_4326_SOURCE_8	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 8, when available.
ID_POLYGON_SOURCE_8	Identifier of the polygon associated with the pond in source 8, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_8	Full reference corresponding to SOURCE_8, describing the original source of the pond information.
NAME_SOURCE_9	Toponym of the temporary pond as reported in source 9, when available.
ID_SOURCE_9	Identifier or code of the temporary pond as reported in source 9, when available
SOURCE_9	Short citation identifying information source 9 from which the associated pond data were derived.
X_4326_SOURCE_9	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 9, when available.
Y_4326_SOURCE_9	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 9, when available.
ID_POLYGON_SOURCE_9	Identifier of the polygon associated with the pond in source 9, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_9	Full reference corresponding to SOURCE_9, describing the original source of the pond information.
NAME_SOURCE_10	Toponym of the temporary pond as reported in source 10, when available.
ID_SOURCE_10	Identifier or code of the temporary pond as reported in source 10, when available
SOURCE_10	Short citation identifying information source 10 from which the associated pond data were derived.
X_4326_SOURCE_10	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 10, when available.
Y_4326_SOURCE_10	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 10, when available.

Name	Definition
ID_POLYGON_SOURCE_10	Identifier of the polygon associated with the pond in source 10, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_10	Full reference corresponding to SOURCE_10, describing the original source of the pond information.
NAME_SOURCE_11	Toponym of the temporary pond as reported in source 11, when available.11
ID_SOURCE_11	Identifier or code of the temporary pond as reported in source 11, when available
SOURCE_11	Short citation identifying information source 11 from which the associated pond data were derived.
X_4326_SOURCE_11	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 11, when available.
Y_4326_SOURCE_11	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 11, when available.
ID_POLYGON_SOURCE_11	Identifier of the polygon associated with the pond in source 11, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_11	Full reference corresponding to SOURCE_11, describing the original source of the pond information.
NAME_SOURCE_12	Toponym of the temporary pond as reported in source 12, when available.12
ID_SOURCE_12	Identifier or code of the temporary pond as reported in source 12, when available
SOURCE_12	Short citation identifying information source 12 from which the associated pond data were derived.
X_4326_SOURCE_12	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 12, when available.
Y_4326_SOURCE_12	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 12, when available.
ID_POLYGON_SOURCE_12	Identifier of the polygon associated with the pond in source 12, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_12	Full reference corresponding to SOURCE_12, describing the original source of the pond information.
NAME_SOURCE_13	Toponym of the temporary pond as reported in source 13, when available.13
ID_SOURCE_13	Identifier or code of the temporary pond as reported in source 13, when available

Name	Definition
SOURCE_13	Short citation identifying information source 13 from which the associated pond data were derived.
X_4326_SOURCE_13	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 13, when available.
Y_4326_SOURCE_13	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 13, when available.
ID_POLYGON_SOURCE_13	Identifier of the polygon associated with the pond in source 13, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_13	Full reference corresponding to SOURCE_13, describing the original source of the pond information.
NAME_SOURCE_14	Toponym of the temporary pond as reported in source 14, when available. <sup>14</sup>
ID_SOURCE_14	Identifier or code of the temporary pond as reported in source 14, when available
SOURCE_14	Short citation identifying information source 14 from which the associated pond data were derived.
X_4326_SOURCE_14	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 14, when available.
Y_4326_SOURCE_14	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 14, when available.
ID_POLYGON_SOURCE_14	Identifier of the polygon associated with the pond in source 14, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_14	Full reference corresponding to SOURCE_14, describing the original source of the pond information.
NAME_SOURCE_15	Toponym of the temporary pond as reported in source 15, when available. <sup>15</sup>
ID_SOURCE_15	Identifier or code of the temporary pond as reported in source 15, when available
SOURCE_15	Short citation identifying information source 15 from which the associated pond data were derived.
X_4326_SOURCE_15	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 15, when available.
Y_4326_SOURCE_15	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 15, when available.



Name	Definition
ID_POLYGON_SOURCE_15	Identifier of the polygon associated with the pond in source 15, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_15	Full reference corresponding to SOURCE_15, describing the original source of the pond information.
NAME_SOURCE_16	Toponym of the temporary pond as reported in source 16, when available.
ID_SOURCE_16	Identifier or code of the temporary pond as reported in source 16, when available
SOURCE_16	Short citation identifying information source 16 from which the associated pond data were derived.
X_4326_SOURCE_16	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 16, when available.
Y_4326_SOURCE_16	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 16, when available.
ID_POLYGON_SOURCE_16	Identifier of the polygon associated with the pond in source 16, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_16	Full reference corresponding to SOURCE_16, describing the original source of the pond information.
NAME_SOURCE_17	Toponym of the temporary pond as reported in source 17, when available.
ID_SOURCE_17	Identifier or code of the temporary pond as reported in source 17, when available
SOURCE_17	Short citation identifying information source 17 from which the associated pond data were derived.
X_4326_SOURCE_17	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 17, when available.
Y_4326_SOURCE_17	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 17, when available.
ID_POLYGON_SOURCE_17	Identifier of the polygon associated with the pond in source 17, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_17	Full reference corresponding to SOURCE_17, describing the original source of the pond information.
NAME_SOURCE_18	Toponym of the temporary pond as reported in source 18, when available.
ID_SOURCE_18	Identifier or code of the temporary pond as reported in source 18, when available

Name	Definition
SOURCE_18	Short citation identifying information source 18 from which the associated pond data were derived.
X_4326_SOURCE_18	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 18, when available.
Y_4326_SOURCE_18	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 18, when available.
ID_POLYGON_SOURCE_18	Identifier of the polygon associated with the pond in source 18, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_18	Full reference corresponding to SOURCE_18, describing the original source of the pond information.
NAME_SOURCE_19	Toponym of the temporary pond as reported in source 19, when available.
ID_SOURCE_19	Identifier or code of the temporary pond as reported in source 19, when available.
SOURCE_19	Short citation identifying information source 19 from which the associated pond data were derived.
X_4326_SOURCE_19	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 19, when available.
Y_4326_SOURCE_19	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 19, when available.
ID_POLYGON_SOURCE_19	Identifier of the polygon associated with the pond in source 19, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_19	Full reference corresponding to SOURCE_19, describing the original source of the pond information.
NAME_SOURCE_20	Toponym of the temporary pond as reported in source 20, when available.
ID_SOURCE_20	Identifier or code of the temporary pond as reported in source 20, when available.
SOURCE_20	Short citation identifying information source 20 from which the associated pond data were derived.
X_4326_SOURCE_20	Longitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 20, when available.
Y_4326_SOURCE_20	Latitude coordinate (reprojected to EPSG:4326) of the temporary pond as reported in source 20, when available.

Name	Definition
ID_POLYGON_SOURCE_20	Identifier of the polygon associated with the pond in source 20, when available. The polygon can be found in the associated spatial layer 'Associated_polygons_Temporary_ponds_database_V0.gpkg', matching with field 'ID_POLYGON'.
REFERENCE_SOURCE_20	Full reference corresponding to SOURCE_20, describing the original source of the pond information.