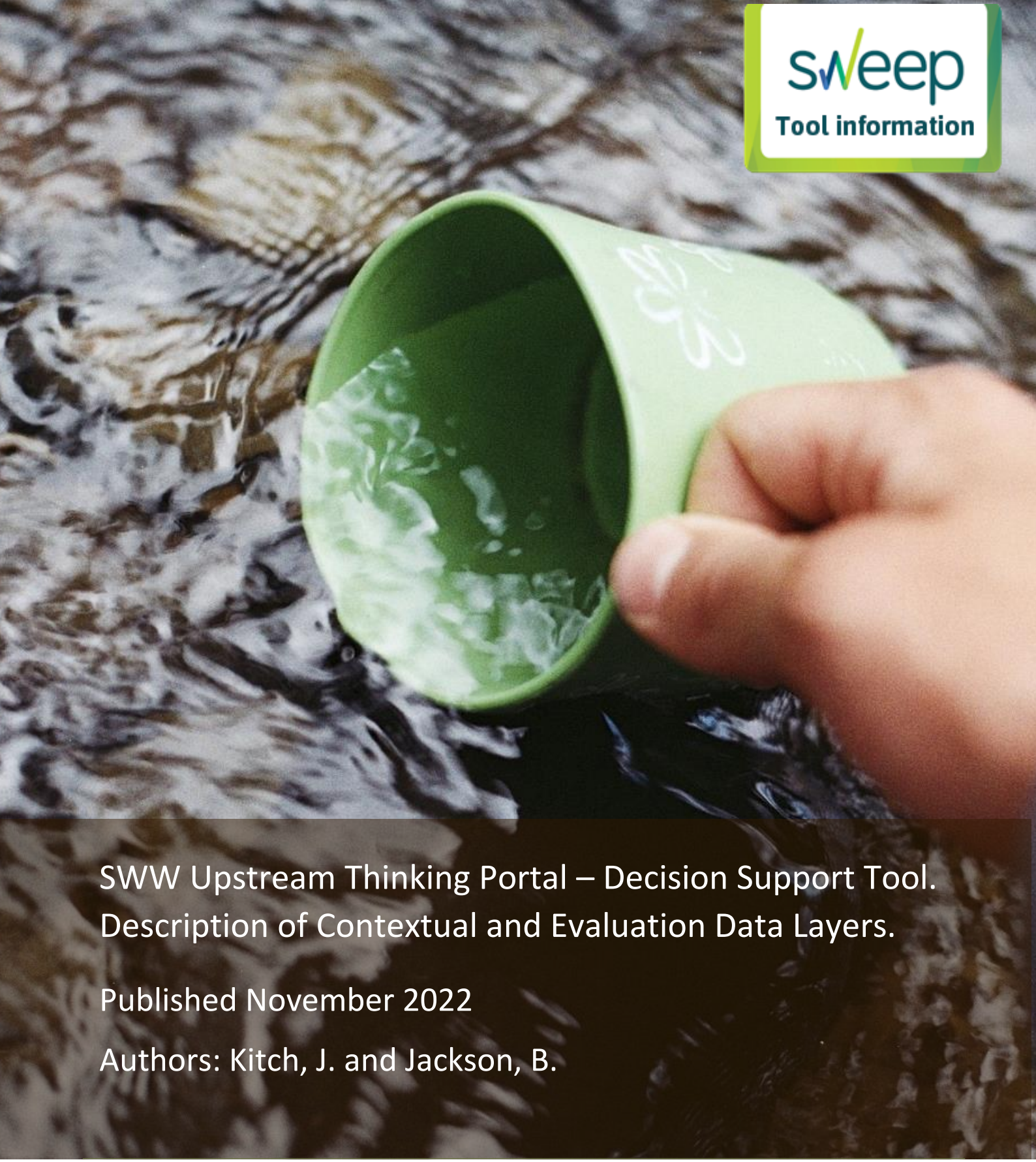

sweep
Tool information

SWW Upstream Thinking Portal – Decision Support Tool. Description of Contextual and Evaluation Data Layers.

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Cornwall Wildlife Trust

FWAG Farming & Wildlife Advisory Group

NATURAL ENGLAND

WESTCOUNTRY RIVERS TRUST

swlakestrust

South West peatland Partnership

Introduction

The South West Water **Upstream Thinking Decision Support Tool (DST)** was developed in 2022 and designed to be used alongside the **SWW Upstream Thinking Portal**.

Both the Portal and the DST were developed under the NERC-funded SWEEP project 'Whole Catchment Water Management – phase 2'. Details about this project can be found on the SWEEP website at: https://sweep.ac.uk/portfolios/whole-catchment-water-management-2/

The DST is comprised of a suite of **Contextual and Evaluation Data Layers** accessible through ArcGIS Pro and was developed by:

- An academic team from the University of Exeter funded by the SWEEP project – Jess Kitch, Dr Ben Jackson, Dr Donna Carless and Prof Richard Brazier.

- In collaboration with South West Water and Upstream Thinking Delivery Partners – Cornwall Wildlife Trust, Devon Wildlife Trust, Farming and Wildlife Advisory Group (Southwest), Natural England, Westcountry Rivers Trust, South West Lakes Trust and the South West Peatland Partnership.

The **Upstream Thinking Programme (UST)** is an award-winning catchment management scheme launched in 2010 by South West Water. The programme, which applies natural landscape-scale solutions to improve water quality and supply, is funded by South West Water and delivered in collaboration with regional environmental and conservation charities.

The **Upstream Thinking Portal** was designed for UST Delivery Partners to record interventions and activities delivered as part of the Upstream Thinking Programme. The portal uses the ArcGIS Online platform and is only accessible to SWW and the UST Delivery Partners. Details of the Portal and its Instruction Manual are located at: https://sweep.ac.uk/ust-portal/

Objectives

The Decision Support Tool 'Contextual and Evaluation Data Layers' are designed to help UST Delivery Partners and SWW improve management within catchments by being better informed about the landscape and natural processes in each catchment. With the production of these datasets, and the move to ArcGIS Pro, it is hoped that the DST tool will become easier to use and can be passed on to new partners in the future.

Initial meetings were held with each partner organisation to establish the desired datasets for the development of the DST. Partners were consulted from the start, as the tool being developed is for them to use and to continue to improve water catchment management in the South West.

Data sets produced for the Contextual and Evaluation Data Layers of the UST Decision Support Tool

Table 1. Data sets included in the Decision Support Tool designed to complement the SWW UST Portal

Dataset name	Date of data	Date accessed	Accessed from
WFD data for rivers and canals	Updated May 2022	Aug 2022	https://environment.data.gov.uk/DefraDataDownload/?mapService=EA/WFDRiverCanalAndSWTWaterBodiesCycle22019&mode=spatial
Crome	Revised January 2021	Oct 2022	https://www.data.gov.uk/dataset/be5d88c9-acfb-4052-bf6b-ee9a416cfe60/crop-map-of-england-crome-2020
Scheduled monuments	March 2018	Oct 2022	https://historicengland.org.uk/listing/the-list/data-downloads
EA flood risk	August 2022	Sept 2022	https://environment.data.gov.uk/DefraDataDownload/?mapService=EA/FloodMapForPlanningRiversAndSeaFloodZone2&Mode=spatial
Living England habitat map	Updated Sept 2022	Sept 2022	https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::living-england-habitat-map-phase-4/explore?location=52.812158%2C-2.489781%2C7.00
Ancient woodland	July 2019	Sept 2022	https://naturalengland-defra.opendata.arcgis.com/datasets/a14064ca50e242c4a92d020764a6d9df_0/explore?location=52.997084%2C-3.426194%2C8.20
SSSI	April 2017	Oct 2022	https://naturalengland-defra.opendata.arcgis.com/datasets/f10cbb4425154bfda349ccf493487a80_0/explore?location=52.799987%2C-2.496337%2C7.00
Land cover (SCIMAP)	2015	Oct 2022	https://catalogue.ceh.ac.uk/documents/0255c014-1630-4c2f-bc05-48a6400dd045
SCIMAP	Feb 2016	Nov 2022	https://scimap.org.uk/x64-scimap-for-saga-gis-february-2016-2/
LiDar	July 2013	Aug 2022	https://catalogue.ceh.ac.uk/documents/e2a742df-3772-481a-97d6-0de5133f4812
LiDar EA	Updated Oct 2022	Sept 2022	https://environment.data.gov.uk/DefraDataDownload/?Mode=survey

The datasets listed in the Table 1 have been clipped to each catchment to provide the specific information for that site. The above LiDar data was also collected for use in the production of SCIMAP erosion risk maps and the production of slope maps for each catchment.

The LiDAR data was collected from various sources due to the poor quality of data for some sites and from certain providers. The Lidar data was collected from the EA (freely available), as well as UK CEH and CEDA. Due to the nature of CEDA, only the end processed product can be shared with the partners and not the raw data. The SCIMAP model (run in SAGA GIS) was provided by Sim Reaney of Durham University, this is a freely accessible model. For this project the February 2016 version of SCIMAP was used. This model requires three data inputs: elevation, rainfall and land use. Rainfall data was acquired from CEDA and the HadUK dataset was used. Land use datasets were freely acquired from UK CEH.

Datasets for flow pathways and sub-catchments have been produced using elevation data and an ArcGIS tool called Taudem. This tool is freely available from the Utah State University hydrology research group. The tool uses elevation data to produce flow pathways, stream order and sub-catchments. Both flow pathways and sub-catchments have been produced at a large scale and fine scale, as asked for by the partners. Although, some of the LiDar data will not be accessible for the partners, the datasets produced from the LiDar data will be.

Datasets will be available to partners via ArcGIS pro. Partners will be able to add the datasets to individual projects via the catalogue or via the ‘add shapefile’ or ‘add raster’. Once the datasets are in a project they can be used and edited by the partners and included alongside data produced by the organisation. The datasets can also be layered to assist in evaluating sites.

Contact

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