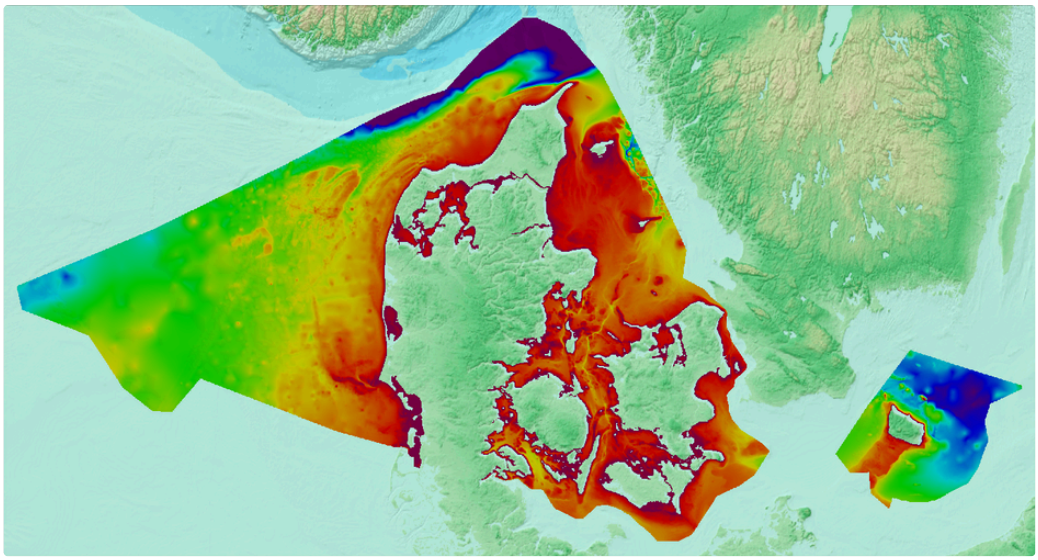
Denmark's Depth Model (2024) - Readme

Denmark’s Depth Model (DDM) is a depth-averaged digital bathymetric model, covering Denmark’s Exclusive Economic Zone (EEZ). The model has a grid resolution of 50 meters and is based on a collection of hydrographic survey datasets and other sources.



Model Creation

The model was created using a regularly-spaced grid with the resolution of 50 meters. The horizontal datum of the model is a Lambert Conformal Conic (LCC) projection on the ETRS89 ellipsoide (EPSG:3034). The vertical datum is Mean Sea Level (MSL) as defined by SDFI’s DKMSL(2022) (EPSG:10547). The extent of the model is constrained between the Danish EEZ and the coastline, generalized at 1:100,000 scale.

The selection of the depths is based on a priority mechanism so that data from modern datasets are preferred to historical sources (e.g., multibeam survey vs. leadline). Then, the representative average depth is obtained by averaging all depths allocated from the selected input source to a given grid cell. When there is a lack of available bathymetric data, a depth estimate is provided using interpolation. As such, the model depths are estimated using an averaging and interpolating approach, thus not targeted for safety of navigation. The original bathymetric datasets themselves are not distributed with the model, but described in the auxiliary layers to provide information about the bathymetric sources used for DDM.

Model Distribution

The model is distributed with three layers and a readme document:

- *ddm_50m.dybde* → The primary layer containing the depth values (in meters).
- *ddm_50m.kilde* → An auxiliary layer providing the source of the depth data for each grid cell. The layer uses the following convention:

Value	Source Type	Source Description
1	DIGI	The source is a digitized survey fairsheet
2	SB	The source depths were collected using singlebeam echosounder
3	MB	The source depths were collected using a multibeam echosounder
4	ALB	The source depths were collected using airborne lidar bathymetry

5	SDB	The source depths were collected using satellite derived bathymetry
6	CSB	The source depths were collected using crowdsourced bathymetry
7	Historical	The depth values comes from a historical dataset (e.g., leadline)
8	Interpolated	No source depths available, thus interpolation was applied

- *ddm_50m.aar* → An auxiliary layer providing the year at which the data collection has ended (only for DIGI, SB, MB, ALB, SDB and CSB datasets).
- *ddm_50m.readme* → The present document. It provides a description of the model.

The downloading services are available on the Danish Geodata Agency website. The layers are distributed as GeoTIFF files, projected in Lambert Conformal Conic (LCC) / ETRS89 (EPSG:3034). The DDM is also made available by means of Open Geospatial Consortium (OGC) web services (i.e., WMS).

For terms and conditions on how to use the model, please read the "*Terms and conditions for the use of marine data contained in Denmark's Depth Model 50 m resolution.pdf*" document.

For a list of data contributors, please see the "*Data contributors to Denmark's Depth Model, 50 m resolution.pdf*" document.

⚠ The model may not be used for navigation or navigational purposes. For navigation, please refer to the official nautical charts, chart corrections and nautical publications published by the Danish Geodata Agency.