Explanations on the Pan-European 10 x 10 km grid to be used in reporting under Resolution No. 8 (2012)

Christopher Philipseñ
European Topic Centre on Biological Diversity (ETC/BD) / Space4Environment, Luxembourg
Overview

Emerald Network

[Map showing candidate and adopted sites, with various colored markers and a scale indicating distances in km.]
Overview

- Pan-European grid system covering EU member states as well as EEA cooperating countries and neighbouring countries to the East

- Different grid mesh sizes of the EEA Reference Grids available from EEA SDI/data catalogue
  - 1km
  - 10km
  - 100km

Pan-European Grid system

- Grids spanning from parts of eastern Canada to central Russia / Barents Sea to northern Africa
  - Covering territory of ENI neighbouring countries too
Pan-European Grid system (re-centred on E-Europe)
Pan-European Grid system

- Grids spanning from parts of eastern Canada to central Russia / Barents Sea to northern Africa
  - Covering territory of ENI neighbouring countries too

- Projection used: EPSG:3035 - ETRS89 / LAEA Europe
  - Centralized on Europe using 10° E as central meridian (Latitude of origin 52°N / Longitude 10° E)

```text
PROJCS["ETRS89 / LAEA Europe", GEOGCS["ETRS89", DATUM["European_Terrestrial_Reference_System_1989", SPHEROID["GRS 1980",6378137,298.257222101, ["EPSG","7019"]], TOWGS84[0,0,0,0,0,0,0], ["EPSG","6258"]], PRIMEM["Greenwich",0, ["EPSG","8901"]], UNIT["degree",0.0174532925199433, ["EPSG","9122"]], ["EPSG","4258"]], PROJECTION["Lambert_Azimuthal_Equal_Area"], PARAMETER["latitude_of_center",52], PARAMETER["longitude_of_center",10], PARAMETER["false_easting",4321000], PARAMETER["false_northing",3210000], UNIT["metre",1, ["EPSG","9001"]], ["EPSG","3035"]]
```
Pan-European Grid system

- Grid cells attributed with unique id based on location
  - Grid cells id (CELLCODE) constructed from lower left corner in ETRS89 LAEA (EPSG:3035)
    - e.g. 10kmE448N362

10km grid

- East 4,480,000m
- North 3,620,000m
Country reporting

- In framework of Bern convention countries are asked to report their national data on distribution information using the 10x10km grid.

- In framework of the ENI-SEIS II East project EEA/EC has provided country specific grids as excerpt from the Pan-European grid adding a buffer of 20 km around country borders
  - Grids are available online:
    - Access to the grids for all groups of countries (ENI, EIONET and Russia) via the webpage for the workshop: https://www.coe.int/en/web/bern-convention/-/workshop-on-reporting-under-res-8-2012-
Country 10x10km grids

Armenia
10x10km country reference grid
Country 10x10km grids

Azerbaïdjan
10x10km country reference grid
Country 10x10km grids

Belarus
10x10km country reference grid
Country 10x10km grids

Bosnia and Herzegovina
10x10km country reference grid
Country 10x10km grids

Georgia
10x10km country reference grid
Country 10x10km grids

Republic of Moldova
10x10km country reference grid
Country 10x10km grids

Republic of Montenegro
10x10km country reference grid
Country 10x10km grids

Norway
10x10km country reference grid
Country 10x10km grids

Russia
10x10km country reference grid
Country 10x10km grids

Serbia
10x10km country reference grid
Country 10x10km grids

Switzerland
10x10km country reference grid
Country 10x10km grids

Ukraine
10x10km country reference grid
Transformation national data to EEA grid

Example
- State reserves in Armenia
- 3 reserves
- CRS used EPSG:32638 (WGS84 UTM zone 38N)
  - Reprojection needed (more reliable position)
  - Link to grid cells
    - Reproject to epsg:3035
    - Select by location
  OR
  - Perform union/intersect or spatial join between dataset and grid

1 AUA Acopian Center for the Environment (http://ace.aua.am/gis-and-remote-sensing/vector-data/)
Intersect selection method (basic)

- Load country grid and reprojected national data
- perform “Select by location”
Union method

- Perform union (polygon) or intersect (lines) process on grid and national data
- Allows for application of thresholds (e.g. grid cell affected if area affected > 1 sqkm/1%)

- Add new field to store the area after being “cut” by the grid
- Calculate area of parts
- Select all cells where area of species/habitat/site > threshold
Intersect method

- Length threshold (e.g. 3km)
- Intersect returns line objects “cut” by grid
Thank you for your attention!

Christopher Philipsen
European Topic Centre on Biological Diversity

space4environment sàrl
48, rue Gabriel Lippmann
L-6947 Niederanven (Luxembourg)
philipsen@space4environment.com