Surfex SSC 02/04/15

ECOCLIMAP-SG

Proposal

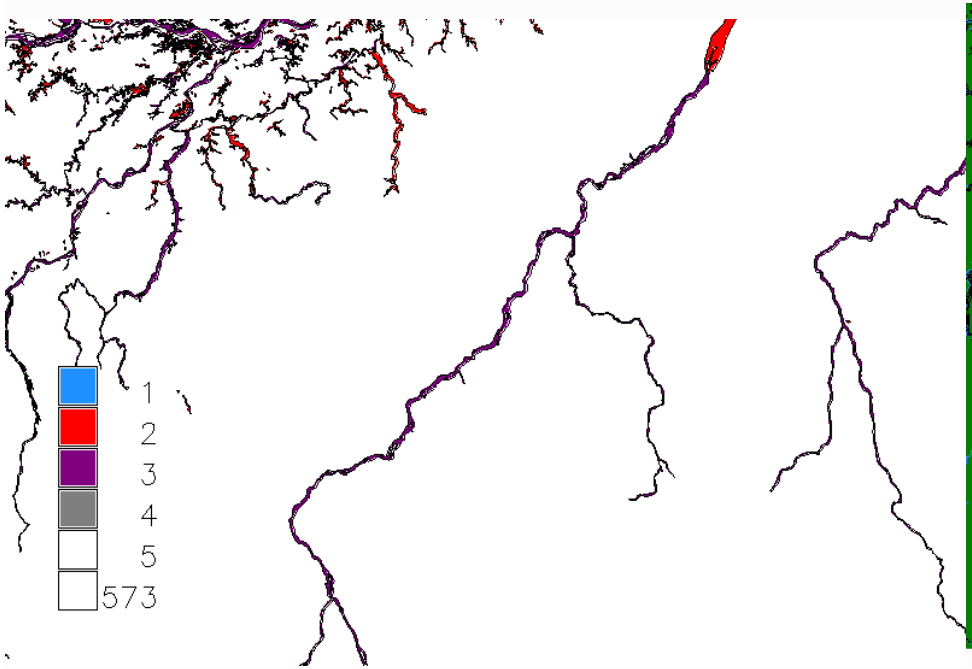
- To replace ECOCLIMAP by a map whose covers correspond more or less directly with the SURFEX vegetation types and tiles.
- To base this new map on ESA-CCI (300-m resolution).
- To minimise and automate the transformation from the ESA-CCI to the ECOCLIMAP-SG map, in order to re-do it easily when updates of ESA-CCI will be published.
- To define the surface parameters that depend not only on the vegetation types in external files read by SURFEX.
- Scheduled duration of the work: 3 years.

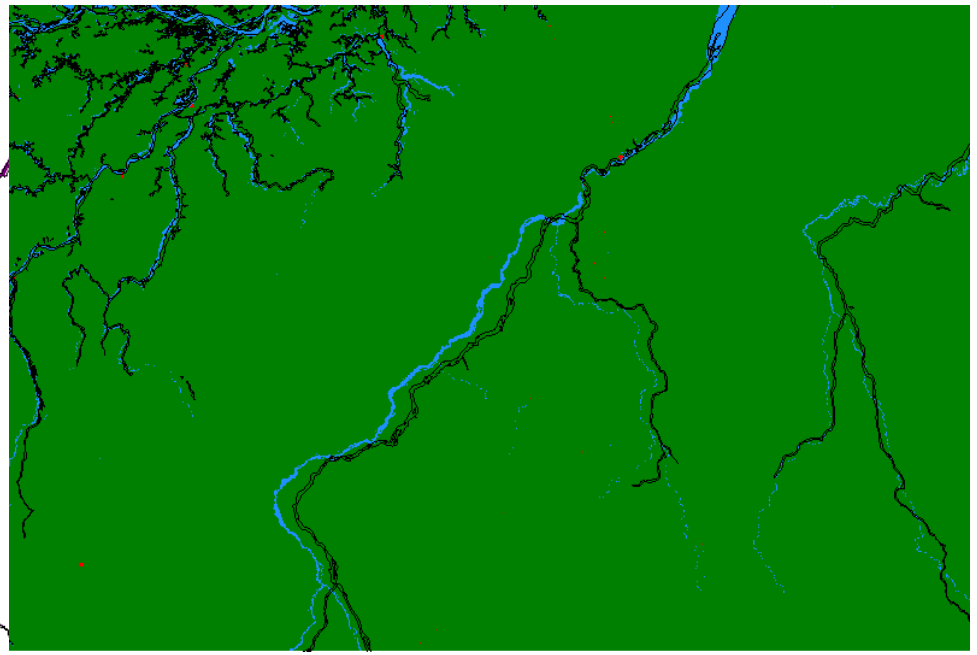
Preliminary study: comparison ESA-CCI / ECOCLIMAP

- Was done class ESA-CCI by class ESA-CCI, to determine how it could be translated in ECOCLIMAP-SG
- Writing of a synthesis document containing unresolved questions and encountered difficulties (in French)
- Diffusion of this document to the CNRM users for decisions / commentaries.

Example 1: water bodies

- PB: 1 single class for sea / lakes / rivers in ESA-CCI





Ecoclimap + GLWD (Amazone)

ESA-CCI + GLWD (Amazone)

⇒ESA-CCI will separate sea from other water bodies at the end of 2015.

⇒How can we separate rivers from lakes?

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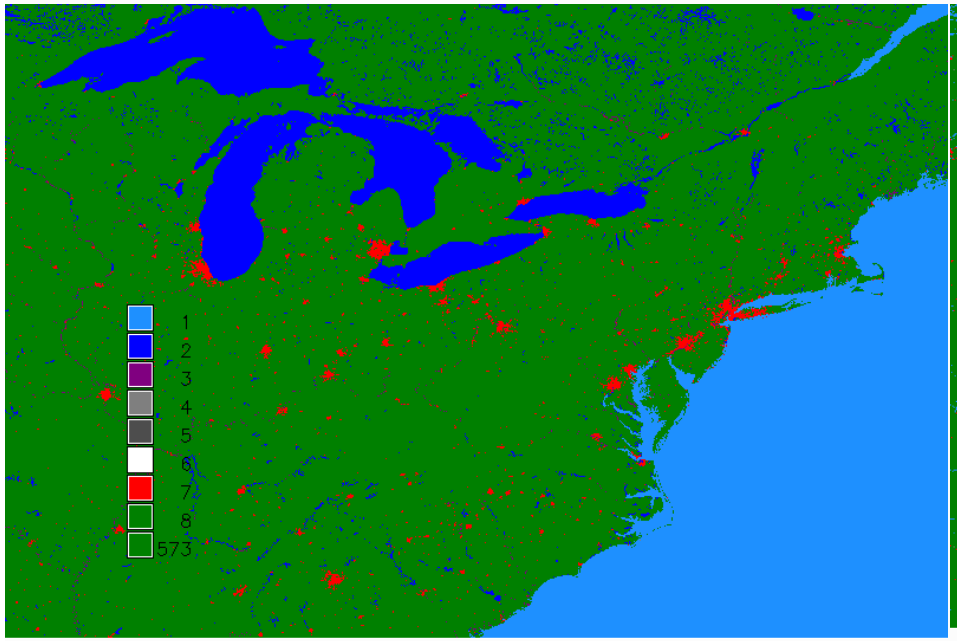
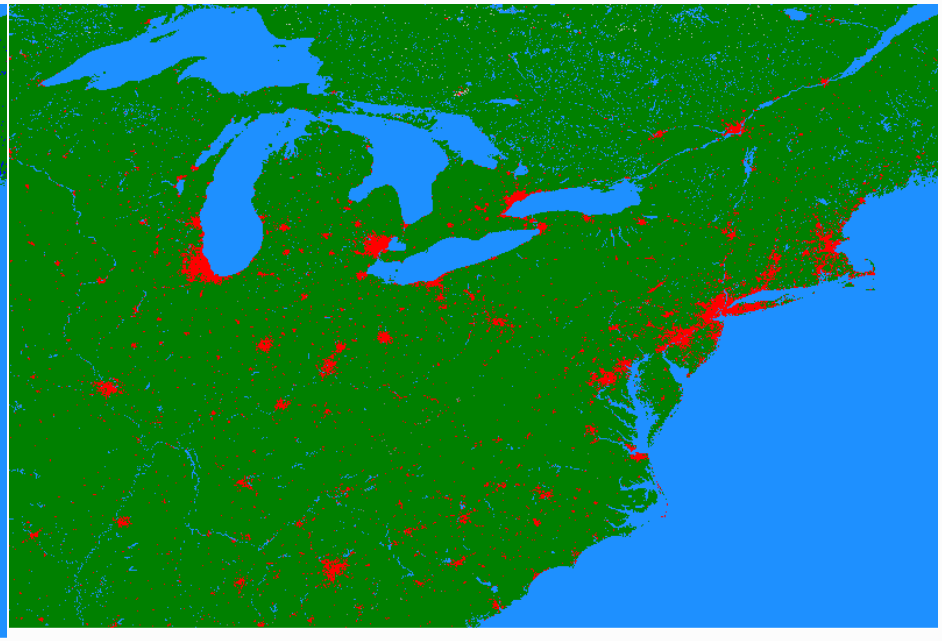
Example 2: urban areas

The urban expansion since ECOCLIMAP (2002) is well-represented by ESA-CCI (2010).



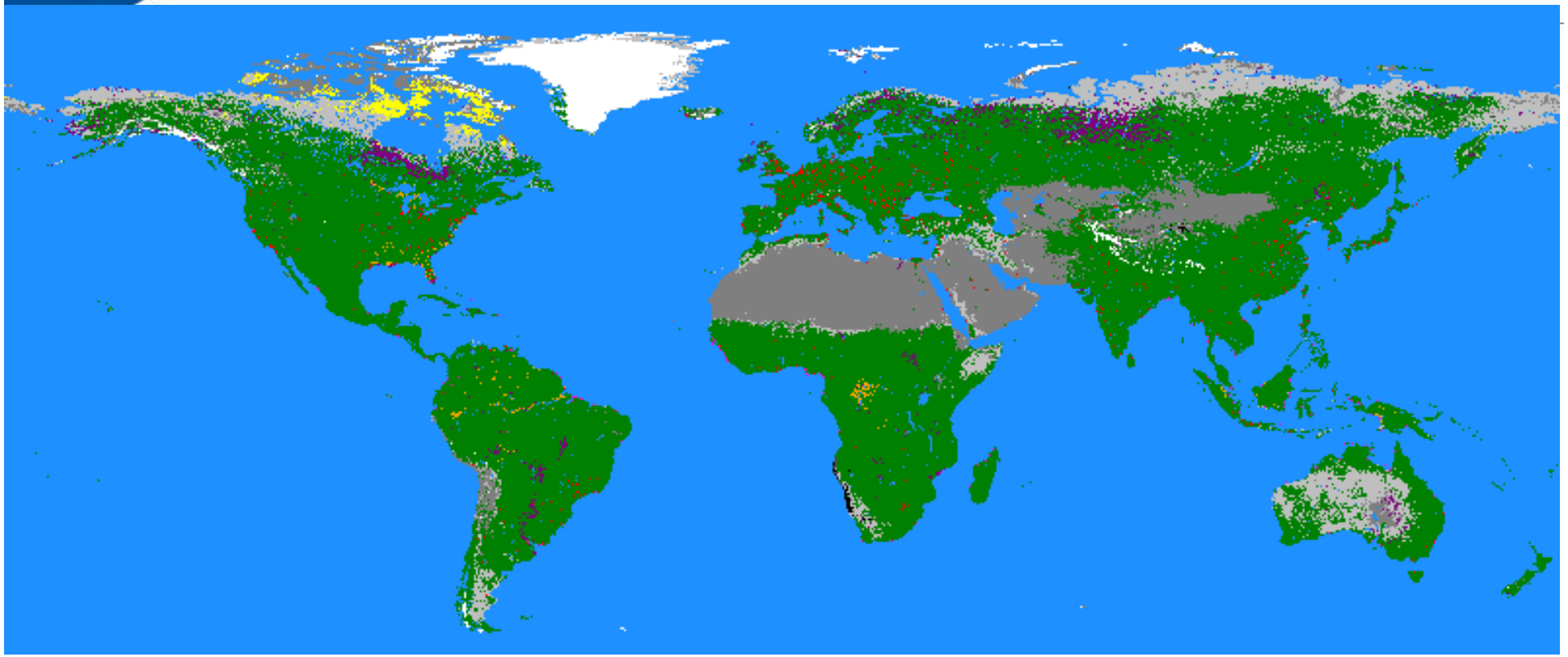
Towns in ECOCLIMAP (EU)



Towns in ESA-CCI (EU)

⇒How will we define the nature fraction in towns?

Example 3: flooded areas



ESA-CCI distinguishes the lichens & mousses (yellow), the trees flooded by saline water (pink), the trees flooded by fresh water (orange), les flooded herbaceous (violet).

⇒ How will we class these different ESA-CCI classes? Will we use the vegtype 12 (swamp areas) for all of them? Will we define specific coefficients for the swamp areas?

⇒ Who works on these areas and will be specially interested in their future representation in ECOCLIMAP-SG?

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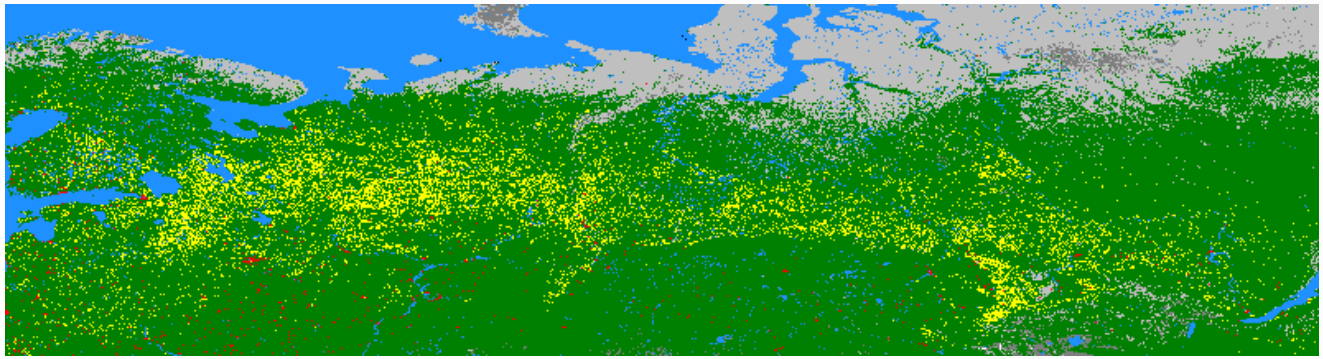
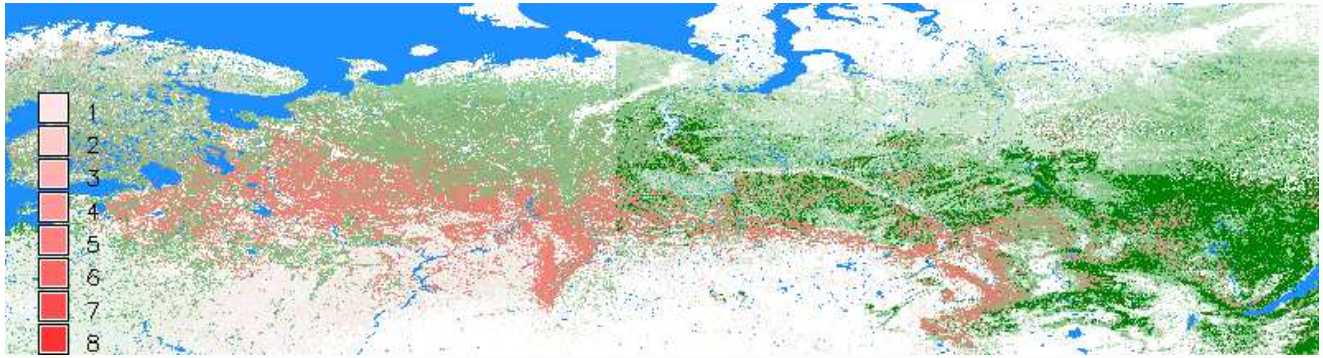
Example 4: mixed forests



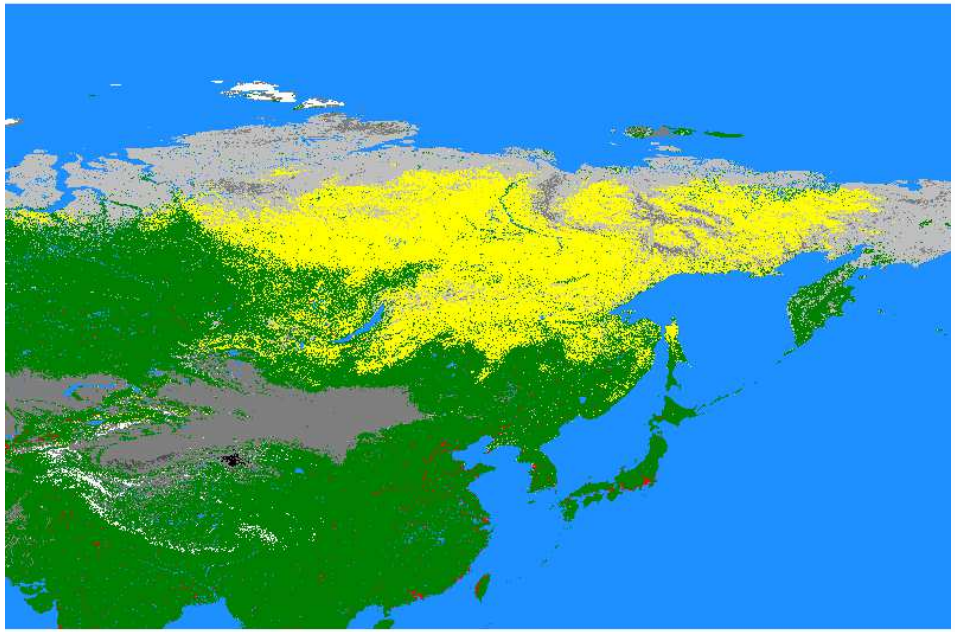
ESA-CCI mixed forest (yellow)



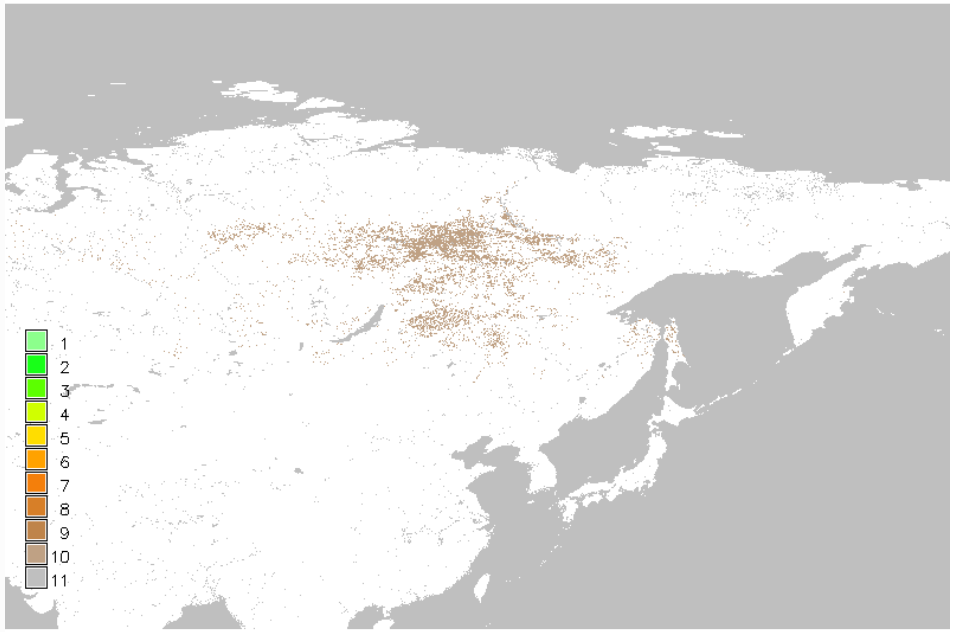
ECOCLIMAP broadleaf (pink) and needleleaf (green) trees

=> Will we randomly spread the « mixed forest » pixels between broadleaf and needleleaf, at rate 50%/50% ?

Example 5: deciduous needleleaf trees



Deciduous needleleaf trees in ESA-CCI (yellow)



Deciduous needleleaf trees in ECOCLIMAP (brown)

⇒Will we trust ESA-CCI, even in case of large differences as here?

After the rules for the pass from ESA-CCI to ECOCLIMAP map will be settled

- Needs to be done:
  - To implement the pass (possible need to write some new programs) to build the new map
  - To prepare maps for the LAI timeseries, the soil depths, the heights of trees (parameters linked to covers in current ECOCLIMAP)
  - To adapt the SURFEX code so that it will be able to read and use this new maps.
  - To test the impact of this change in familiar simulations.