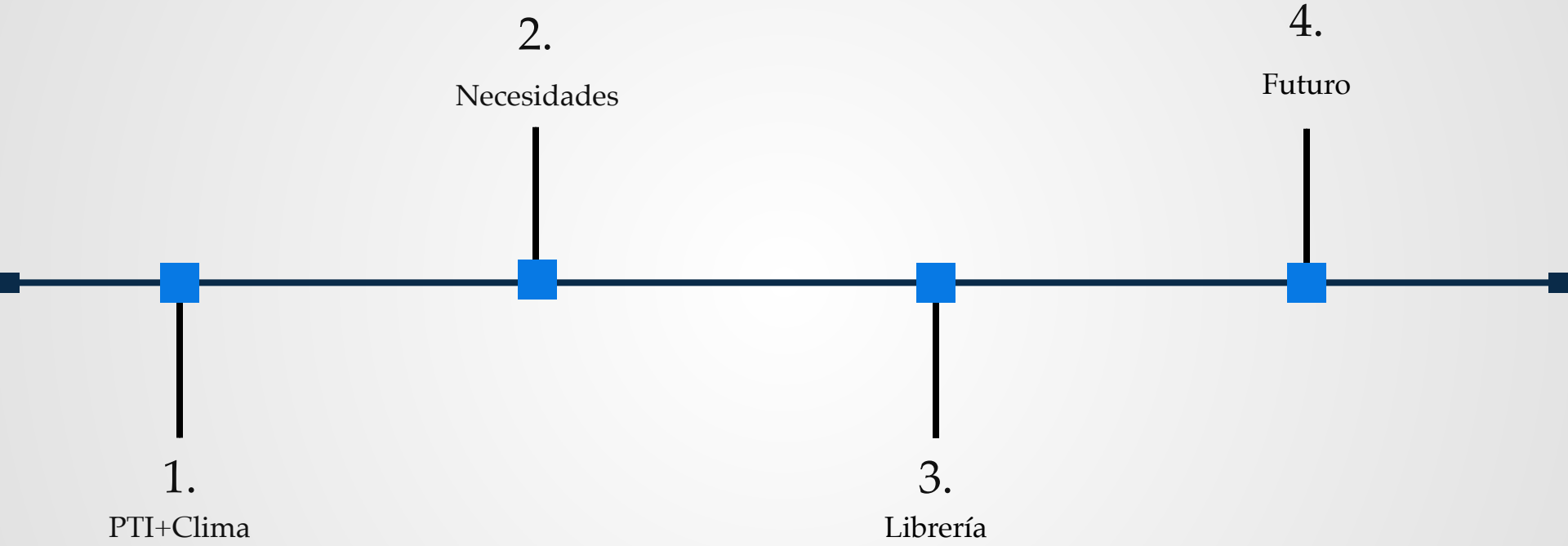
NcWebMapper

Mostrar NetCDFs espacio temporales en una web.

Fergus Reig Gracia, PTI+ Clima, CSIC

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN
PTI CLIMA CSIC
Consejo Superior de Investigaciones Científicas


2.
Necesidades
4.
Futuro
1.
PTI+Clima
3.
Librería

PTI+Clima

Plataforma del CSIC para el Clima y los Servicios climáticos.

Necesidades

SPEI

A Multiscalar Drought Index Sensitive to Global Warming: The Standardized Precipitation Evapotranspiration Index

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ABSTRACT

The authors propose a new climatic drought index: the standardized precipitation evapotranspiration index (SPEI). The SPEI is based on precipitation and temperature data, and it has the advantage of combining multiscalar character with the capacity to include the effects of temperature variability on drought assessment. The procedure to calculate the index is detailed and involves a climatic water balance, the accumulation of deficit/surplus at different time scales, and adjustment to a log-logistic probability distribution. Mathematically, the SPEI is similar to the standardized precipitation index (SPI), but it includes the role of temperature. Because the SPEI is based on a water balance, it can be compared to the self-calibrated Palmer drought severity index (sc-PDSI). Time series of the three indices were compared for a set of observatories with different climate characteristics, located in different parts of the world. Under global warming conditions, only the sc-PDSI and SPEI identified an increase in drought severity associated with higher water demand as a result of evapotranspiration. Relative to the sc-PDSI, the SPEI has the advantage of being multiscalar, which is crucial for drought analysis and monitoring.

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RMetS
Royal Meteorological Society

Standardized precipitation evapotranspiration index (SPEI) revisited: parameter fitting, evapotranspiration models, tools, datasets and drought monitoring

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ABSTRACT: The standardized precipitation evapotranspiration index (SPEI) was developed in 2010 and has been used in an increasing number of climatology and hydrology studies. The objective of this article is to describe computing options that provide flexible and robust use of the SPEI. In particular, we present methods for estimating the parameters of the log-logistic distribution for obtaining standardized values, methods for computing reference evapotranspiration (ET_0), and weighting kernels used for calculation of the SPEI at different time scales. We discuss the use of alternative ET_0 and actual evapotranspiration (ET_a) methods and different options on the resulting SPEI series by use of observational and global gridded data. The results indicate that the equation used to calculate ET_0 can have a significant effect on the SPEI in some regions of the world. Although the original formulation of the SPEI was based on plotting-positions Probability Weighted Moment (PWM), we now recommend use of unbiased PWM for model fitting. Finally, we present new software tools for computation and analysis of SPEI series, an updated global gridded database, and a real-time drought-monitoring system.

KEY WORDS drought; drought index; global warming; evaporation; Penman–Monteith; standardized precipitation index (SPI); Palmer drought severity index (PDSI)

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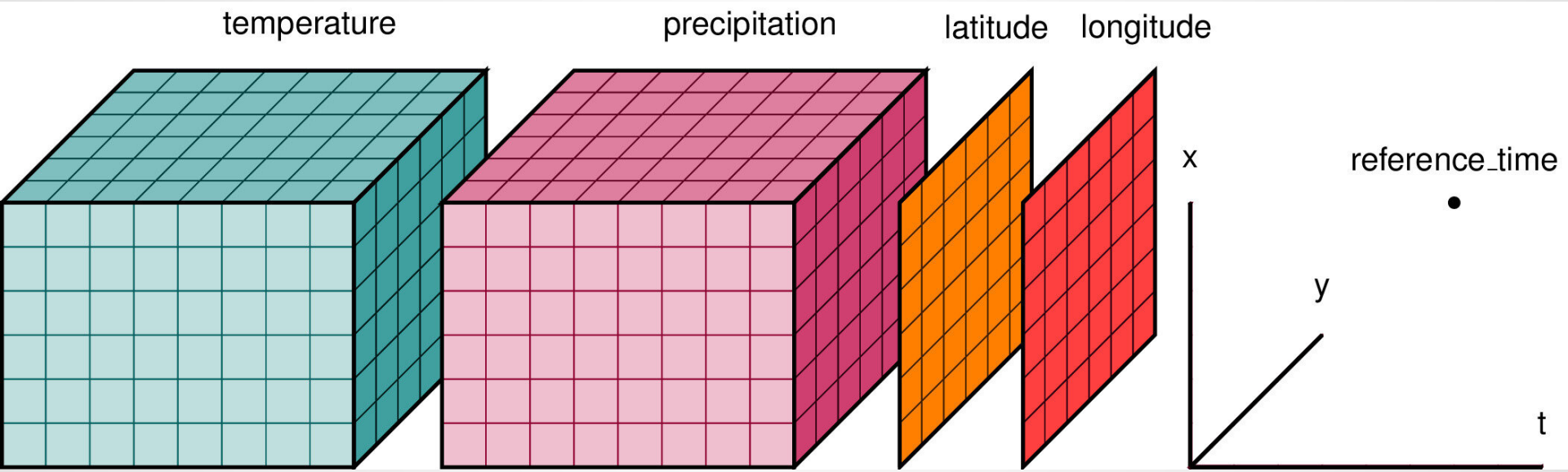
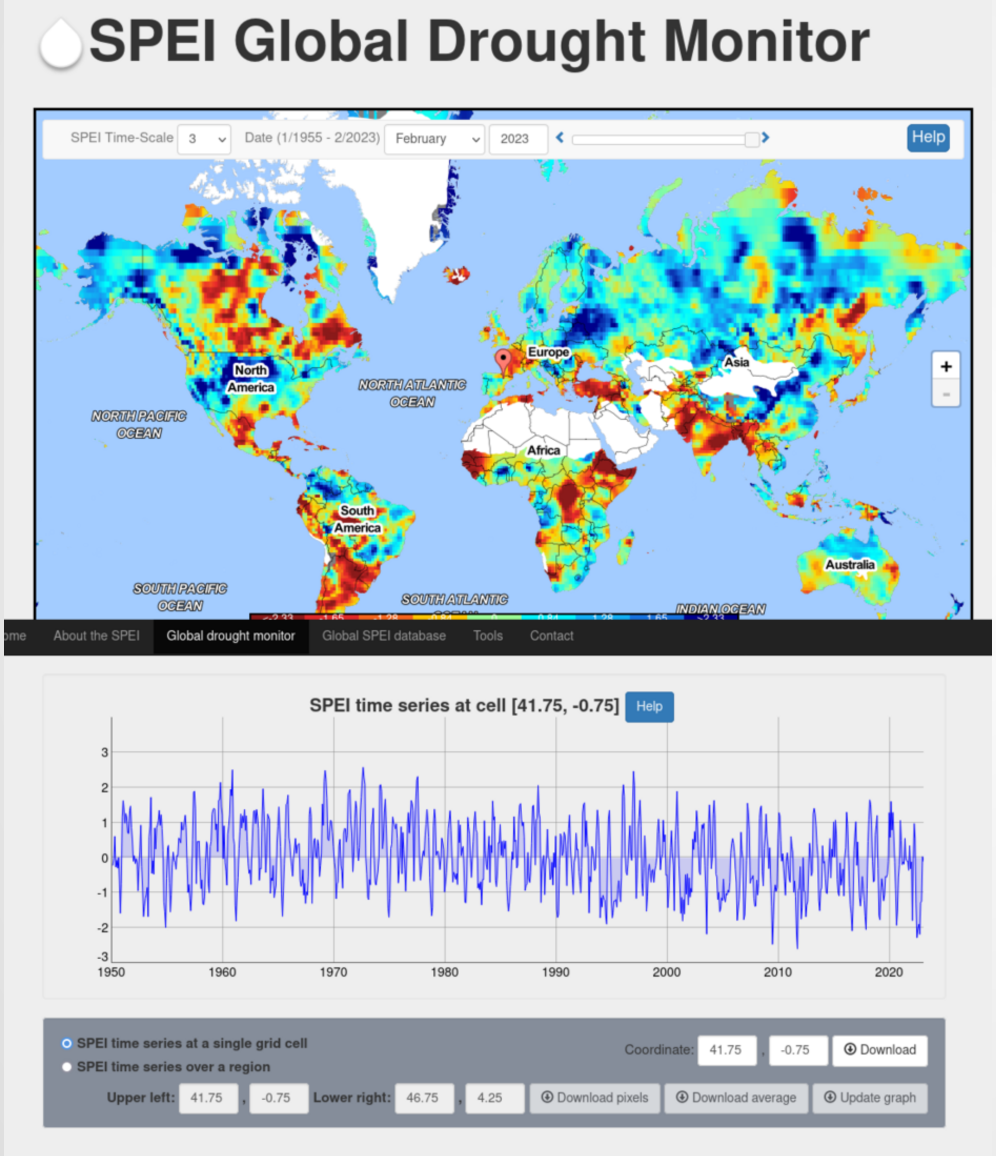
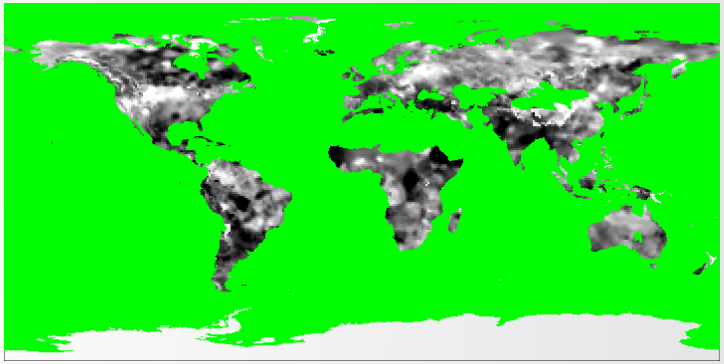
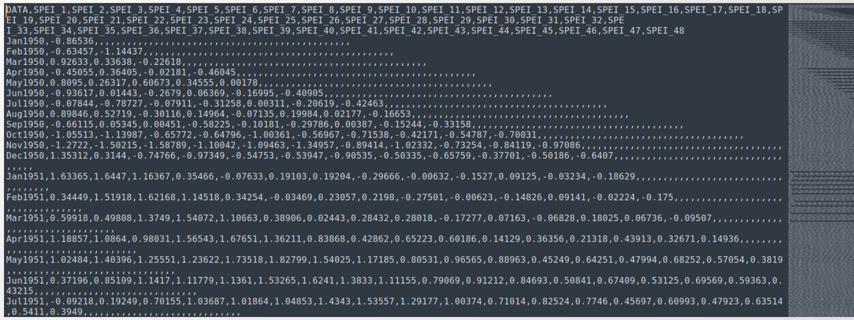
R, NetCDF y CSVs



Web



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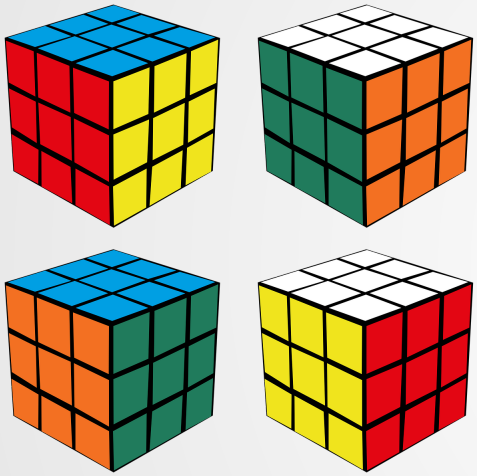
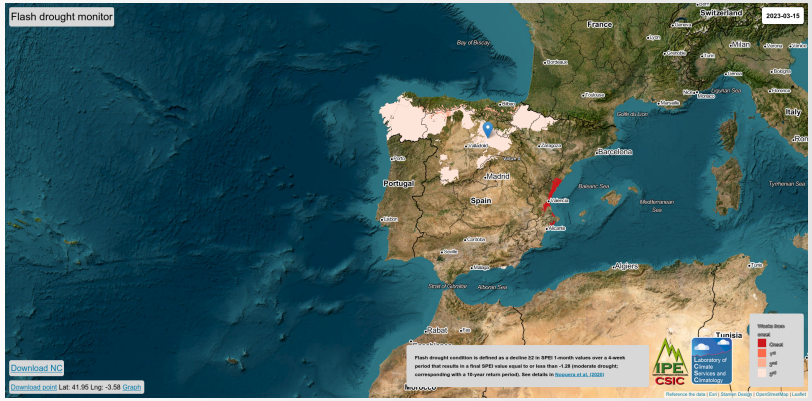
Librería

NetCDFs con diferentes variables, coordenadas y fechas

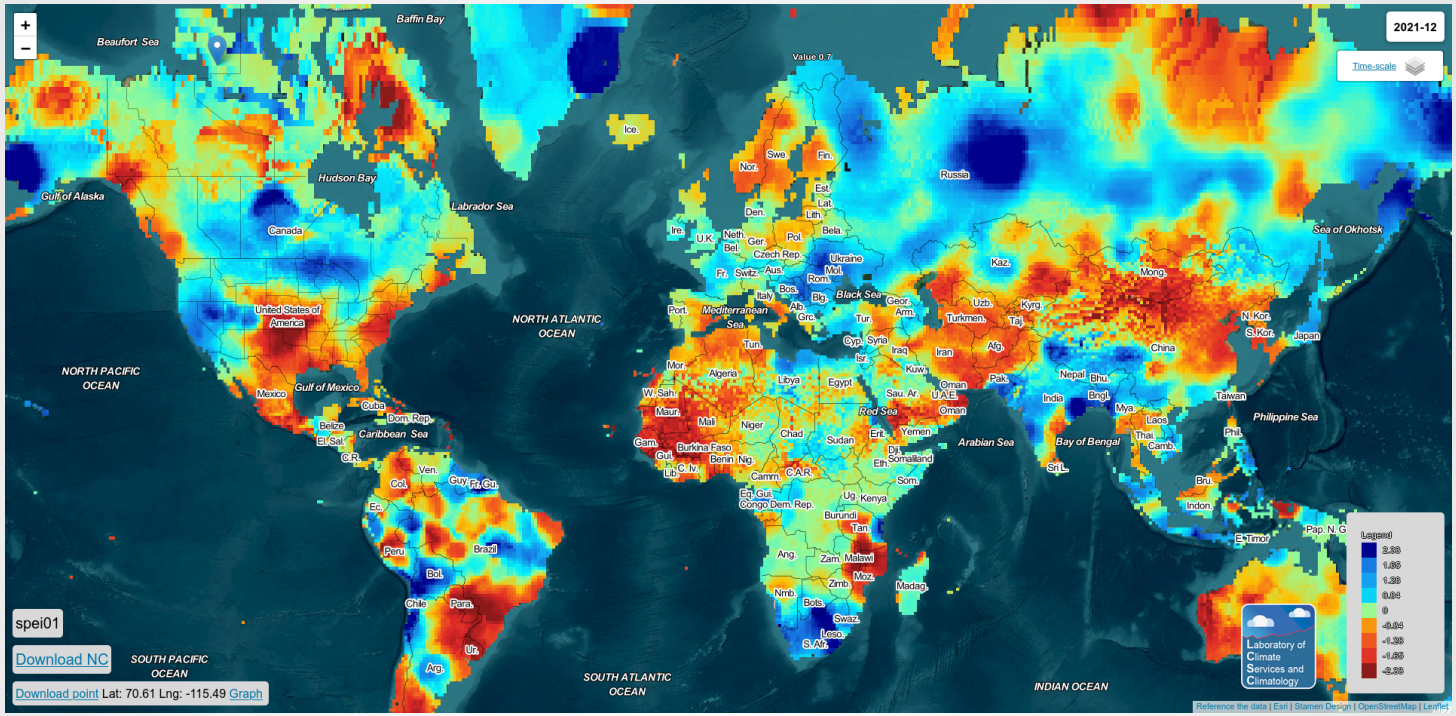


Web con CSVs y layers precalculados

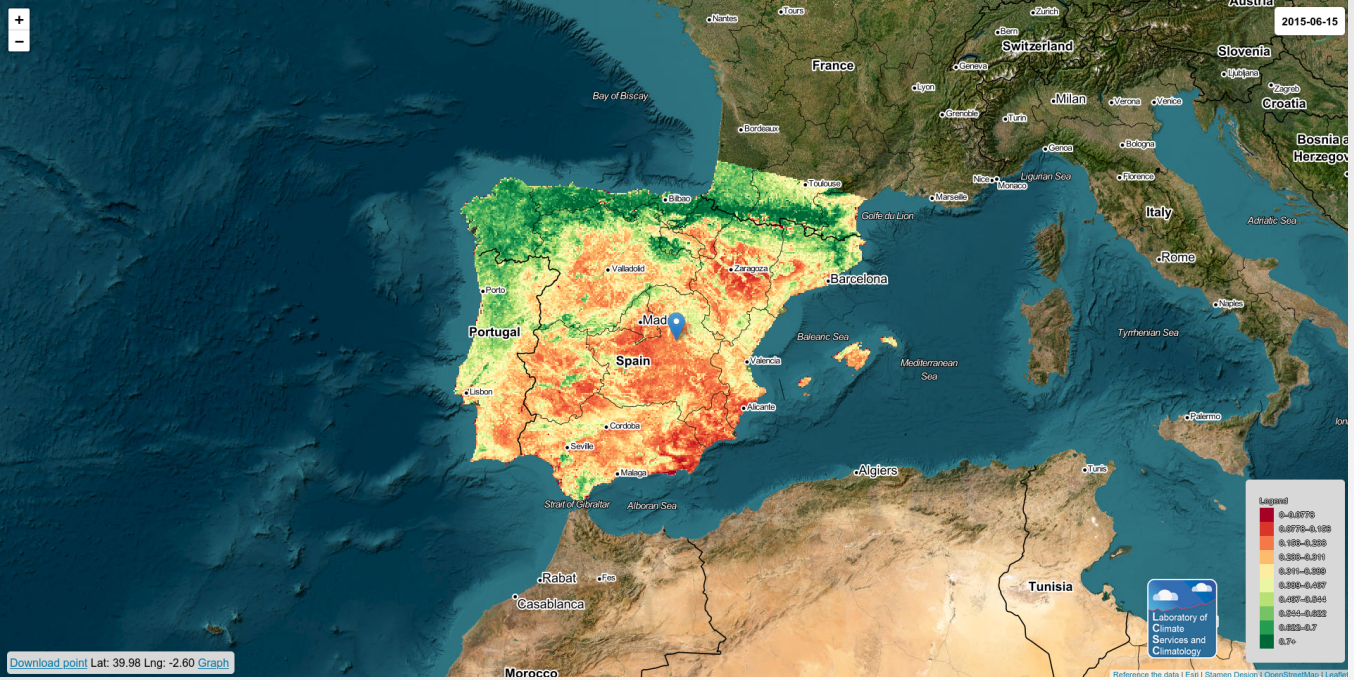


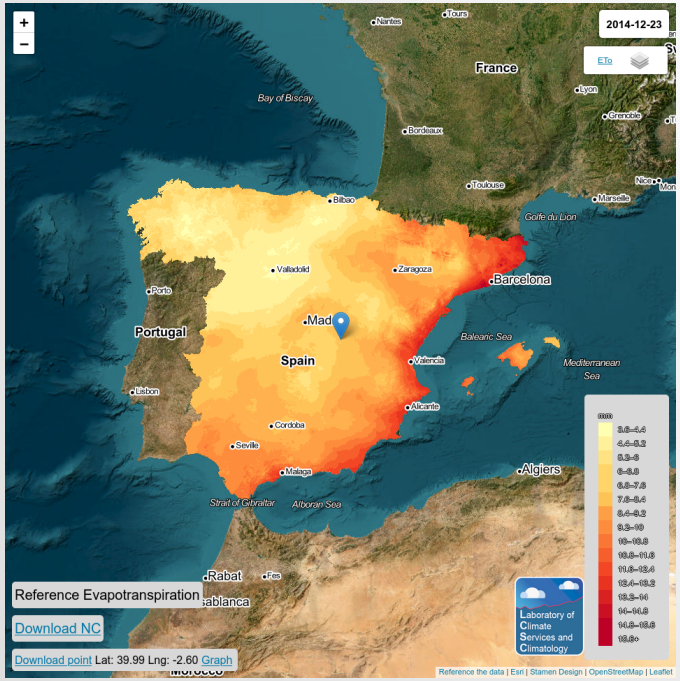
- write_csv
- write_csv_layer
- write_data_layer
- writeJs

Diferencias

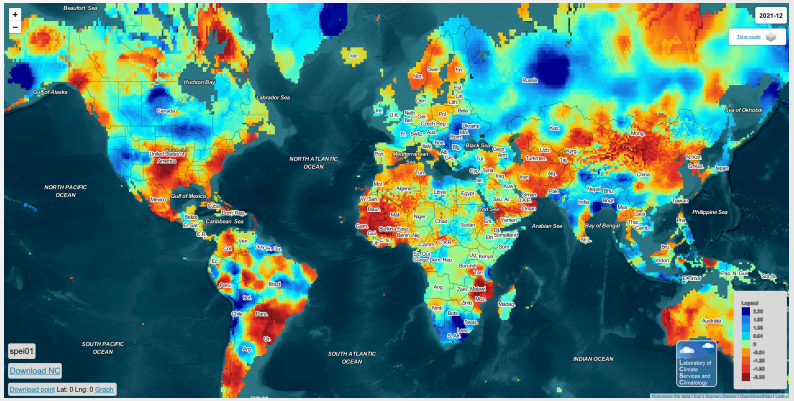


- Tiles almacenan valores numéricos
- Fácilmente personalizables
- CSVs pregenerados
- ...





12 webs y una decena en proceso



Futuro

- **Tiempo real: Generación de CSVs desde el navegador**
- Mejoras de diseño e interfaz
- Gestión de usuarios
- Integración con estándares (p. ej.: WMS)
- ...

Gracias

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https://github.com/ncwebmapper

https://pti-clima.csic.es @PTI_Clima

https://lcsc.csic.es