Adapting the Mediterranean to climate change

MEDACC

Demonstration and validation of innovative methodology for regional climate change adaptation in the Mediterranean area

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Protocol of database quality and homogeneity

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Reference

Sergio Martin Vicente Serrano, Javier Zabalza Martínez, Eduard Pla, Diana Pascual, Roberto Serrano, Gabriel Borràs, Robert Savé, Carmen Biel. Protocol of database quality and homogeneity. Deliverable 4. MEDACC.

Executive summary

This report shows the data sources and methods to develop the environmental data set necessary to the different tasks and objectives of the MEDACC project. The report details the different alphanumeric and cartographic information, and the quality control and homogenisation of the different datasets. Although the coordination of this deliverable is a matter of the Pyrenean Institute of Ecology (IPE-CSIC), the rest of beneficiaries have actively contributed.

Contents

1. Introduction

This report shows the description of the process related to the management of the alphanumeric and cartographic data used in the Action B1: *Definition of new Climate change adaptation measures based on the assessment of Climate change impacts and vulnerabilities and the diagnosis of existent adaptation measures*.

High data quality is necessary in the different tasks designed in the project. For this reason it has been necessary to design and apply a protocol of quality control and homogenization of the different necessary datasets. The quality control and homogenization has been applied to the historical datasets used to analyze temporal variability and change in climate, land use and water demands, but also for the future scenarios for climate and land use. This is essential for an accurate quantification of climate change processes and impacts on ecological, hydrological and agriculture systems.

Several types of information have been processed including: i) climate, ii) hydrology, iii) agriculture, natural ecosystems and land cover in order to check how recent observed climate change processes in the last decades have affected different sectors and systems in the three watershed analysed (Segre, Ter and Muga) (Figure 1).

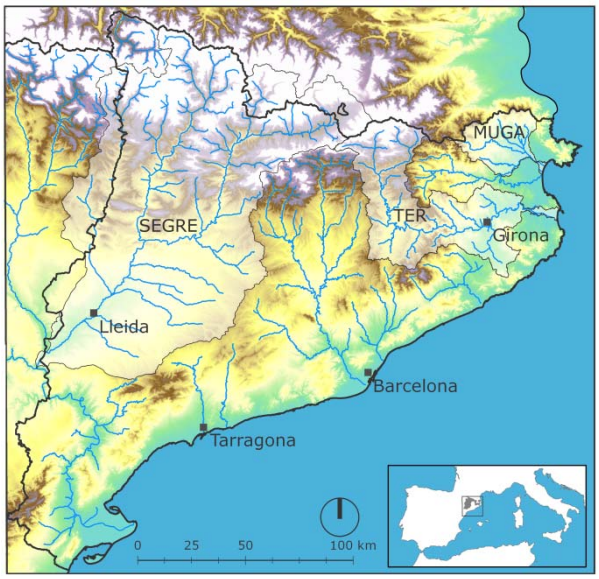

Figure 1. Study area.

Different quality control and homogeneity processes have been applied for the necessary information depending on its own characteristics and the needs of the project. Some criteria are needed to guarantee the temporal and spatial homogeneity of climate data, as is defined in the technical description of the proposed actions in MEDACC-Life (Sub-action B.1.1.):

- Identification of redundant data within the same series
- Identification of repeated series
- Detection of anomalous data
- Homogenization
- Reconstruction of precipitation and temperature time series

Furthermore, the spatial information also needs to follow an homogeneity protocol since the origin is so diverse (CREAF, Gobierno de Aragón, CORINE LandCover, NOAA AVHRRR, Universidad

de Barcelona, Instituto Pirenaico de Ecología, etc). It allows the comparison and use of all the spatial information in the sub-actions planned within the project.

The spatial information will be used to determine empirically how the observed climate change processes are affecting different environmental, hydrological and agricultural systems. In addition, this data will be used to calibrate and validate the otuputs (evapotranspiration, streamflow, forest growth, water balance, etc.) of two land surface models: Regional Hidro-Ecologic Simulation System (RHESSys) and Soil and Water Assessment Tool (SWAT). The processed information described in this deliverable will be stored and shared in the defined platform for Action B.3.

This report shows an easy structure, which sets the used software, the sources of data, the available information, the applied methodology and the results obtained. This protocol makes easier the future work on the definition of adaptation measures based on the diagnosis of climate change impacts and vulnerabilities in the study area.

2. Alphanumeric Data

2.1. Climate Data

A. Software:

Microsoft Office Excel 2007, The R Project for Statisitical Computing, ArcGis 10.1.

B. Source of data:

Agencia Estatal de Meteorología (AEMET) and Servei Meteorologic de Catalunya (SMC).

C. Information in the general database:

- Total stored stations: 541 stations
- Precipitation: 508 stations
- Temperature (max. and min.): 460 stations
- Wind speed: 83 stations
- Relative Humidity: 94 stations
- Sunshine duration (as a surrogate of solar radiation: 25 stations)
- Evaporation: 11 stations

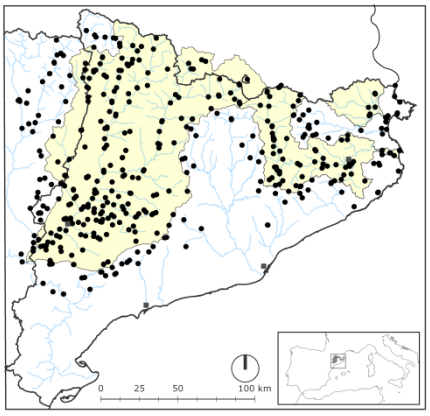

Figure 2. Spatial distribution of the climate series used

D. Methodology

As is explained in the technical description of the proposed actions, some different analysis and procedures are needed to apply the Climate Data prior spatial and temporal analysis. So, all the strategies developed in this aim are focused on (i) the *Report with the historical trends in Climate, land use and water demands*, (ii) *the Future climate series, future land use maps, vulnerability maps and quantification of climate change impacts* and (iii) the *Report with the observed climate change impacts on a variety of ecological, hydrological and agriculture systems*.

Therefore, two different procedures have been designed for two different periods of analysis, Series for historical analysis and Series for modeling and other procedures.

2.1.1. Series for historical analysis

Temporal availability of records differ largely between climate variables but there are sufficient temporal series to analyse long-term climate variability and change in the analysed basins but also high spatial density of the series to cover the entire territory (Figure 3).

Different procedures have been applied to guarantee quality and homogeneity of the available climate records. Details of the protocol applied can be found in Vicente-Serrano et al. (2010)[1]. In summary, the first step was the selection of series with more than 30 years of data, called candidate series. In the case of precipitation, the series are transformed to quantilesseries based on their empirical cumulative distribution function (ecdf). Then, a correlation matrix between candidate series and the rest ones (reference series) was calculated. We select the 10 best reference series for each candidate with at least 3 years overlapped.

In the case of precipitation, the gaps in candidate series are filled with the quantile values of a reference series. When the candidate series is filled with all the best reference series, we calculated the values of the obtained quantiles in the reconstructed series. In the case of temperature series, the gaps are filled with simple regression between the candidate series and its best correlated reference series, following an iterative approach to guarantee that all the existing data gaps are completed using only the candidate series of each variable. At the end of the protocol we obtained 95 precipitation and 76 temperature series (Figure 5). We did not filled periods prior the creation of each meteorological observatory as recommended by the World Meteorological Organization.

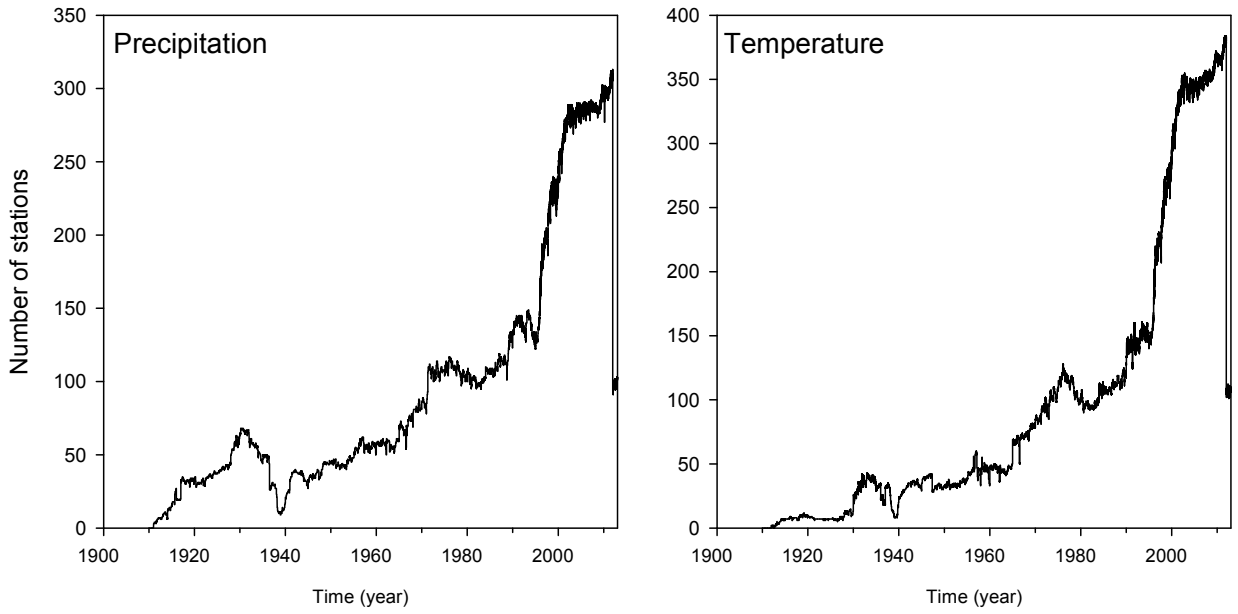

Figure 3. Evolution of the number of available series of precipitation and temperature.

[1] Vicente-Serrano, S.M., Beguería, S., Juan I. López-Moreno, Miguel A. García-Vera y P. Stepanek. (2010): A complete daily precipitation database for North-East Spain: reconstruction, quality control and homogeneity. International Journal of Climatology. 30, 1146-1163.

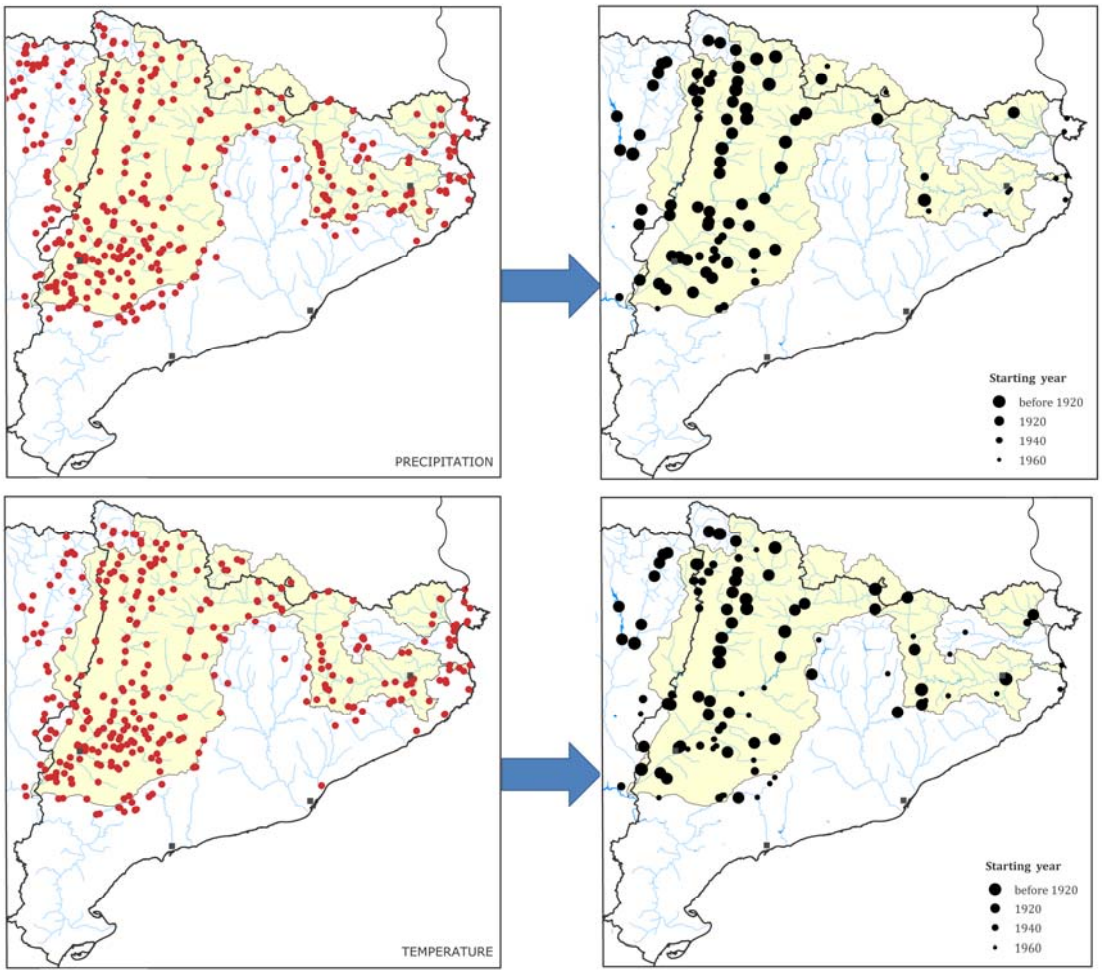

Figure 4. Precipitation and Temperature series completed and available for the analysis of climate temporal variability and change.

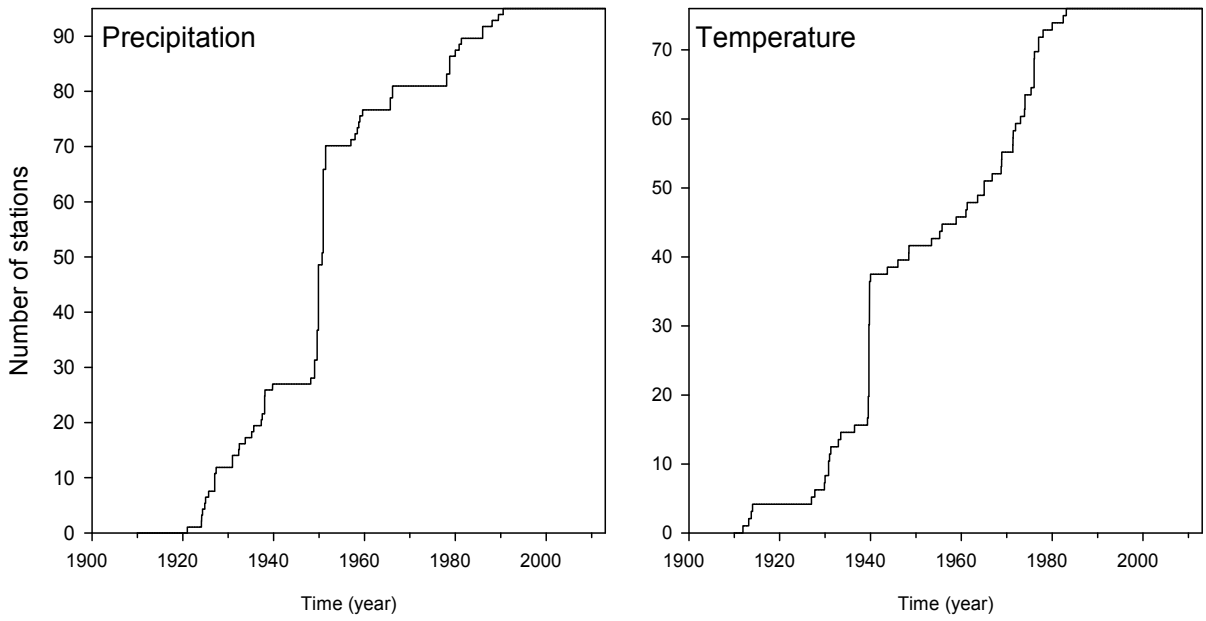

Figure 5. Precipitation (95) and Temperature (76) series obtained.

Monthly averaged values of daily maximum and minimum temperature and monthly accumulations of daily precipitation were computed and homogenized using HOMER[2]. HOMER contains as a preliminary detection tool the pairwise algorithm described in Caussinus and Mestre[3] and the two factors ANOVA model for correction presented by the same authors. HOMER allows to simultaneously compare a set of stations and estimate the number and the positions of their breakpoints. Although the later procedure could be applied in a fully automatic mode, the process has been run semi-automatically, involving expert evaluation and the use of the very few available metadata. Temporal inhomogeneities identified in the series were identified monthly but daily coefficients were interpolated and applied to correct daily series according to Vincent et al.[4] (2002). An example of the procedure of analysis, detection and correction of inhomogeneities in one station is presented in Figure 6.

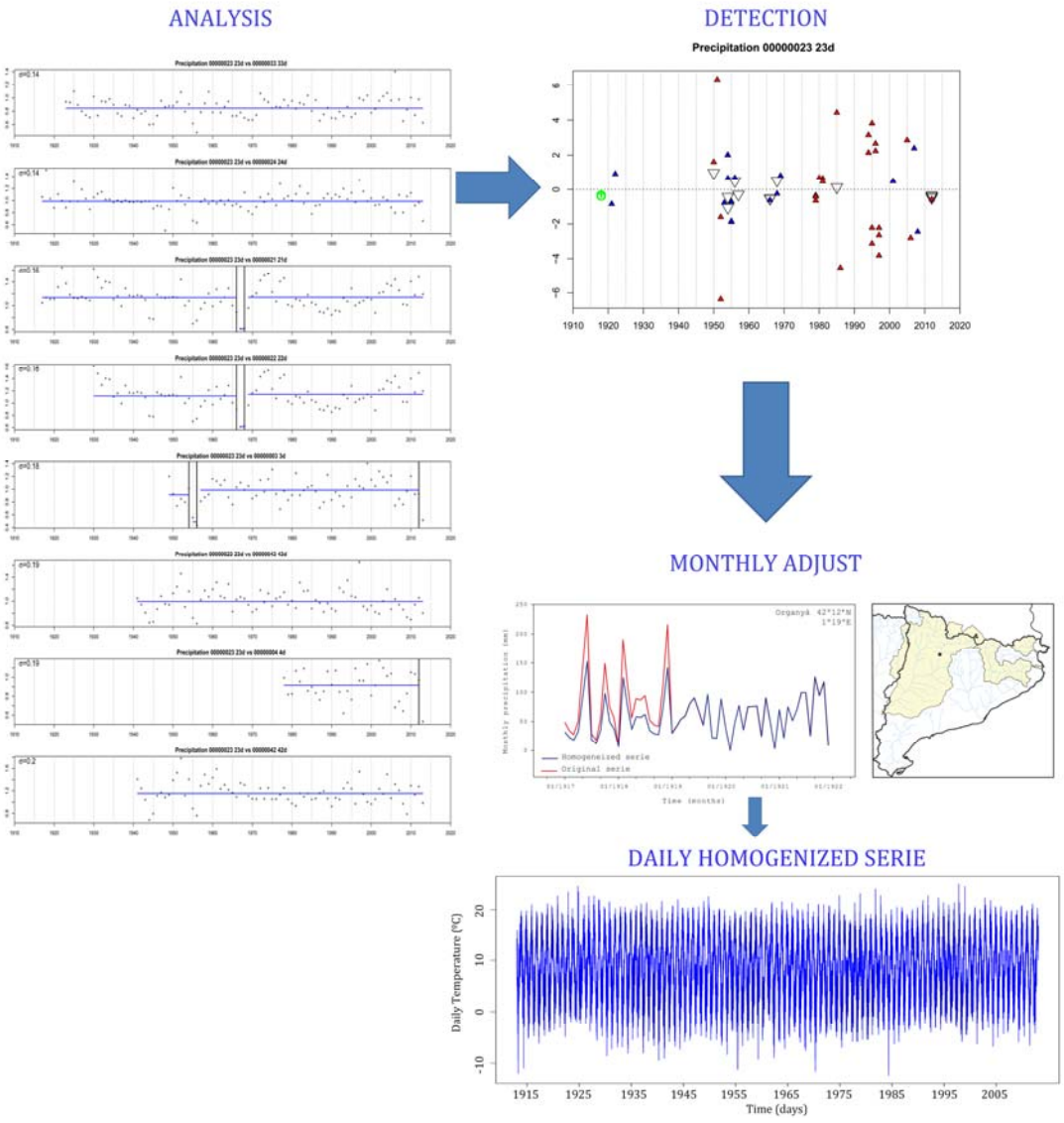

Figure 6. Example of the homogenization procedure applied in Organyà (Segre Basin).

[2] Mestre O, Domonkos P, Picard F, Auer I, Robin S, Lebarbier E, Böhm R, Aguilar E , Guijarro J, Vertacnik G, Klancar M, Dubuisson B, Stepanek P: 2013 HOMER : HOMogenisation softwarE in R- methods and applications.Időjárás 117, 47-67.

[3] Caussinus H., and Mestre, O.: 2004 Detection and correction of artificial shifts in climate series. J. Roy. Stat. Soc., Series C53, 405-425

[4] Vincent LA, Zhang X, Bonsal BR, Hogg WD. 2002. Homogenization of daily temperatures over Canada. Journal of Climate 15: 1322–1334.

2.1.2. Short series for hydrological modelling

The calibration of the hydrological models needs for accurate time series of daily climate inputs as indicated above, but for this purpose the temporal requirements are much lower but spatial density of observatories is higher than that required for studies of climate variability and change. The modeling period described in the technical descriptions of proposal actions is 2002-2011 and all the possible available climate series for this period were considered. For this purpose, not only temperature and precipitation variables have been selected but also the sunshine duration, relative humidity and wind speed. Only the series with the 80 % of the data have been selected to be processed (*Figure 7*). Although the process of rebuild, fill and homogeneity is as in the previous one (*2.1. Series for historical analysis*) another quality control exists.

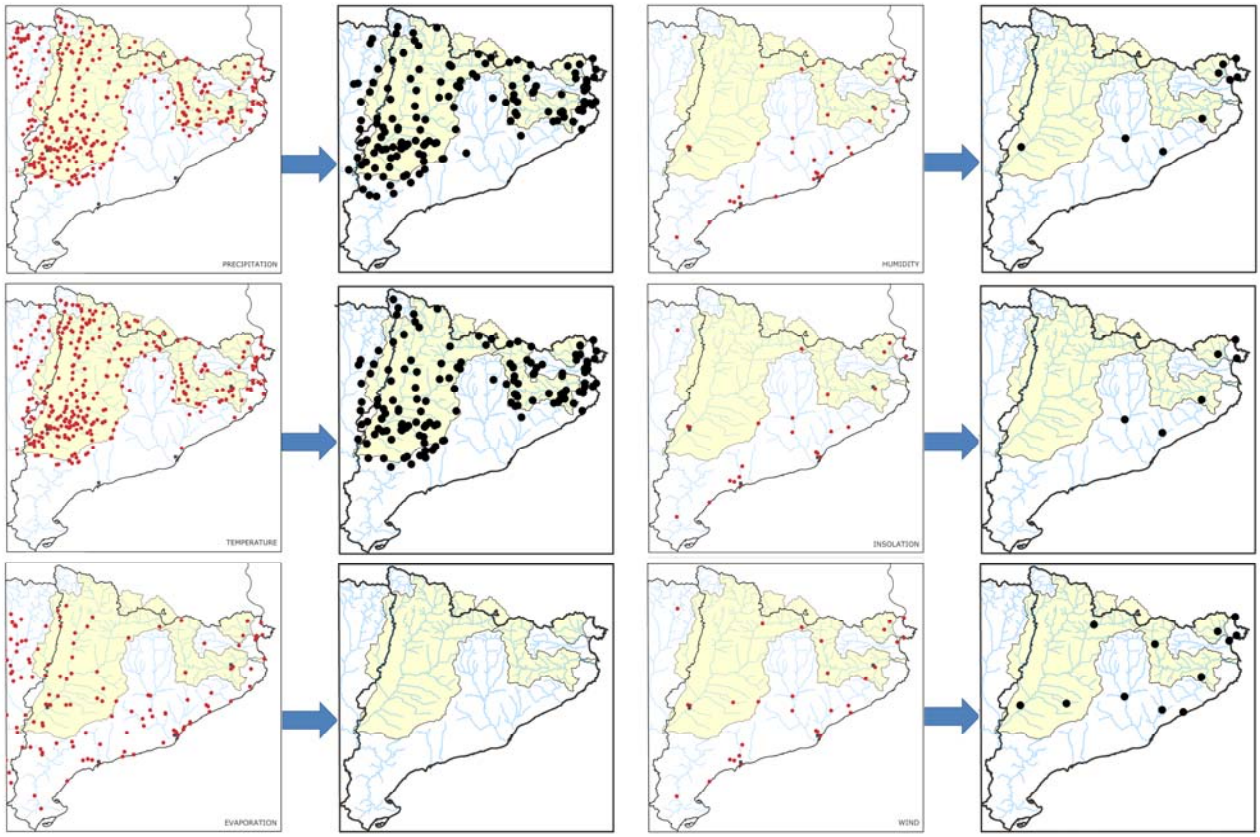

Figure 7. Selected stations for the different variables in the modeling period (2002-2011).

Gaps in these series were filled and outliers selected in relation to neighboring stations. Figure 8 shows an example of filling gaps and the modification of an outlier.

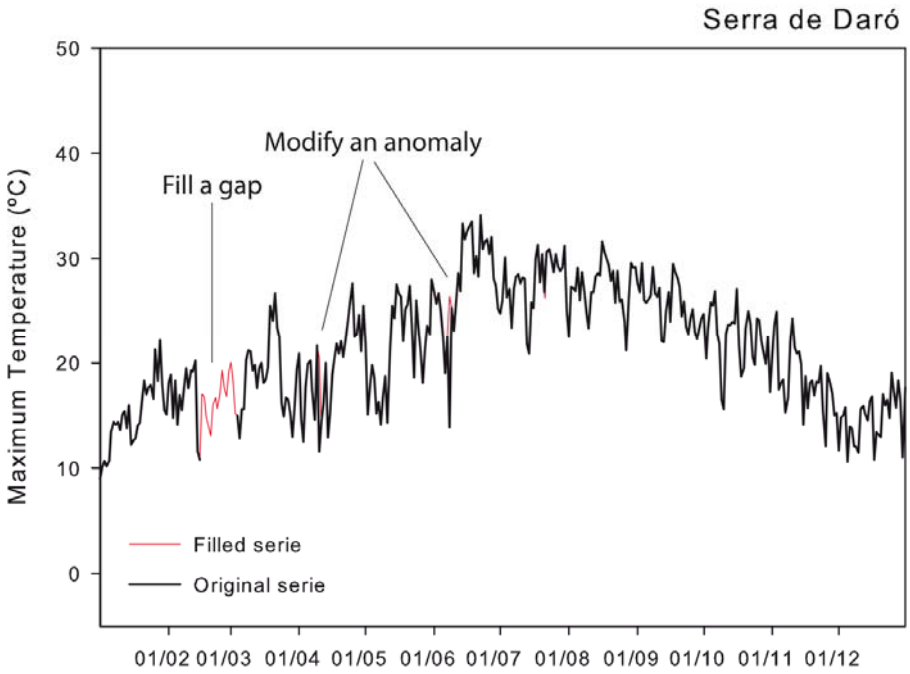

Figure. 8. Example of filling and modifying a serie.

2.2. Hydrological Data

A. Software:

Microsoft Office Excel 2007, The R Foundation for Statistical Computing, SigmaPlot 11.0, SPSS 10.0

B. Source of data:

Confederación Hidrográfica del Ebro (CHE) and Agència Catalana de l'Aigua (ACA).

C. General Database within the watersheds:

- La Muga basin
  - Gauge stations: 3
  - Channels and captations: 4
  - Dams: 1
- El Ter basin
  - Gauge stations: 7
  - Channels and captations: 13
  - Dams: 2
- El Segre basin
  - Gauge stations: 9
  - Channels and captations: 10
  - Dams: 9

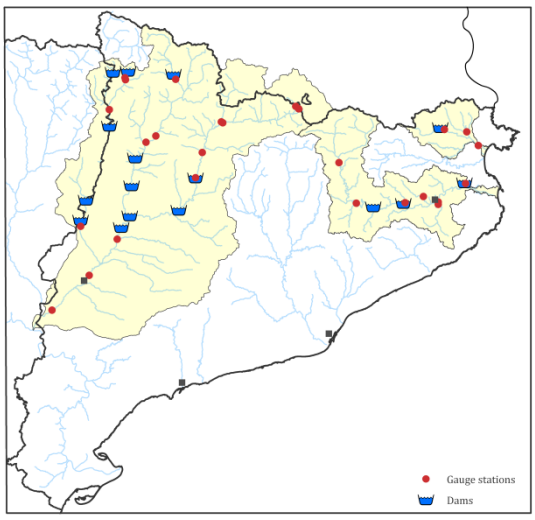

Figure 9. Spatial distribution of the hydrological series used

D. Methodology

The principal task related with hydrologic data was the organization, data homogenization and storage. This is needed because of the huge quantity of data of gauge stations, dams and water captations in the three basins. The different sources of data were also different, so some necessary formatting tasks were necessary. The availability of the hydrological records also allows for the analysis of temporal variability and change over a long period (Figure 10).

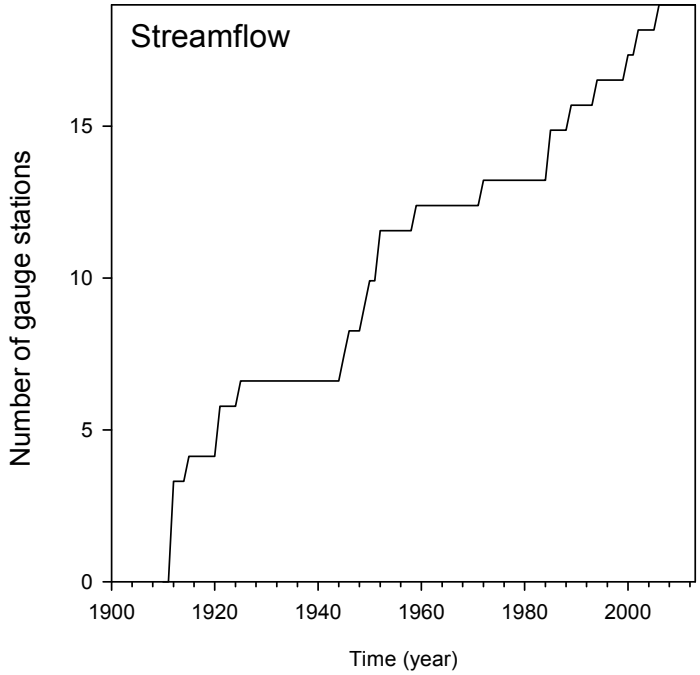

Figure 10. Temporal evolution of the number of daily streamflow series in the three basins.

Temporal gaps in streamflow records were completed using the streamflow records of stations located in the same river course of neighboring rivers. Figure 11 shows an example of daily streamflow data filling using neighboring stations. The Castelló d'Empuries gauge station (Muga river) is filled with the Perelada one (Llobregat de Muga river), which has a very high correlation coefficient (r=0.91) and it is situated on a tributary.

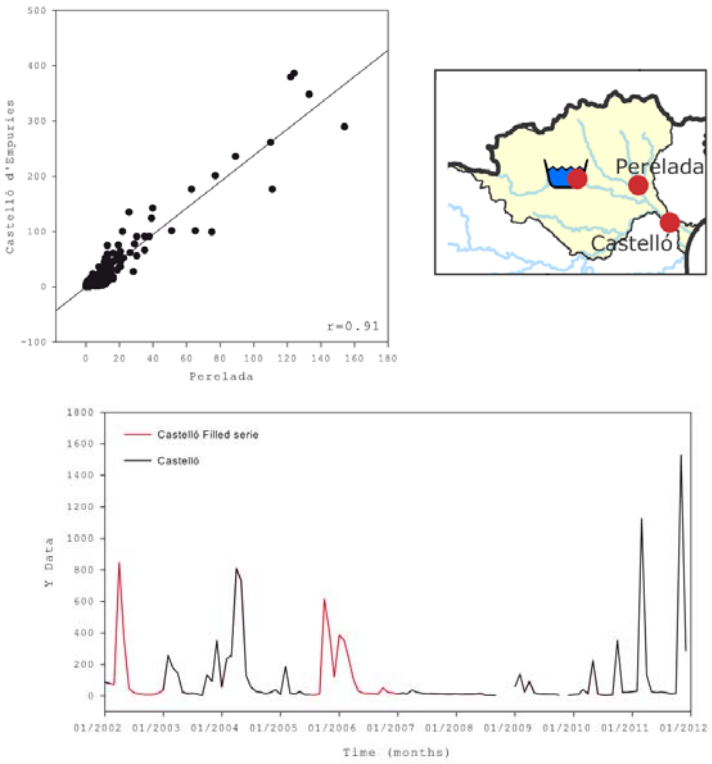

Figure 11. Example of filling a gauge station serie (Castelló d'Empuries).

In the case of La Seo d'Urgell gauge station (Figure 12), there are two near stations: (i) La Seo d'Urgell in Valira river and (ii) Isobol in Segre river. The correlation with the last one is high (r=0.84) but the lap period for filling is not adequate and the correlation with the first one is lower (r=0.78) and the filling was dismissed. Despite this, La Seo d'Urgell gauge station can be used for historical analysis of annual and seasonal trends. The Serós one is used for calibration and historical analysis.

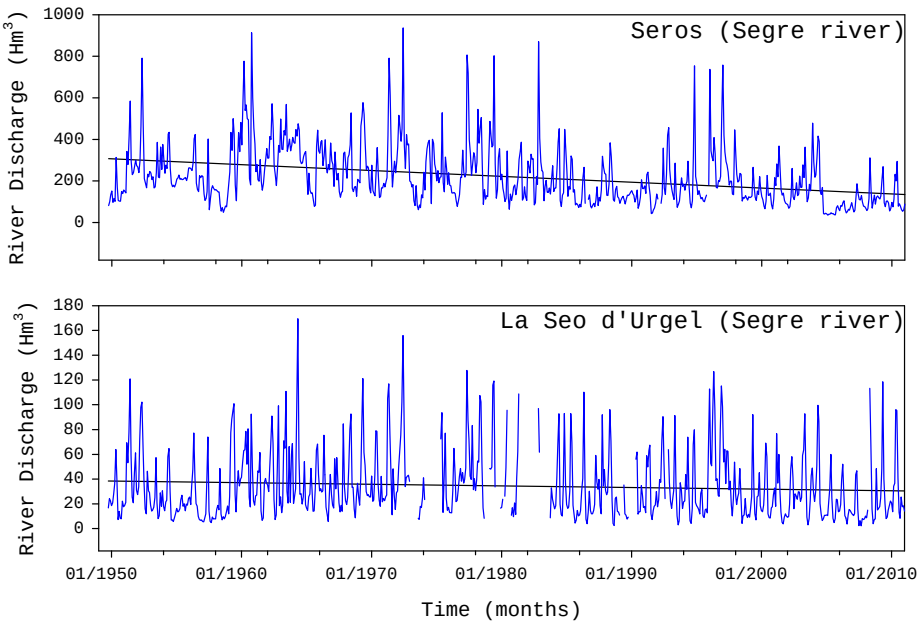

Figure 12. Example of two gauge stations in Segre river: La Seo d'Urgell in the headwater basin and Serós is located downstream.

An example of a dam data is showed in Figure 13. This kind of data is used for calibration and validation periods and also to study the management of dams along from its construction.

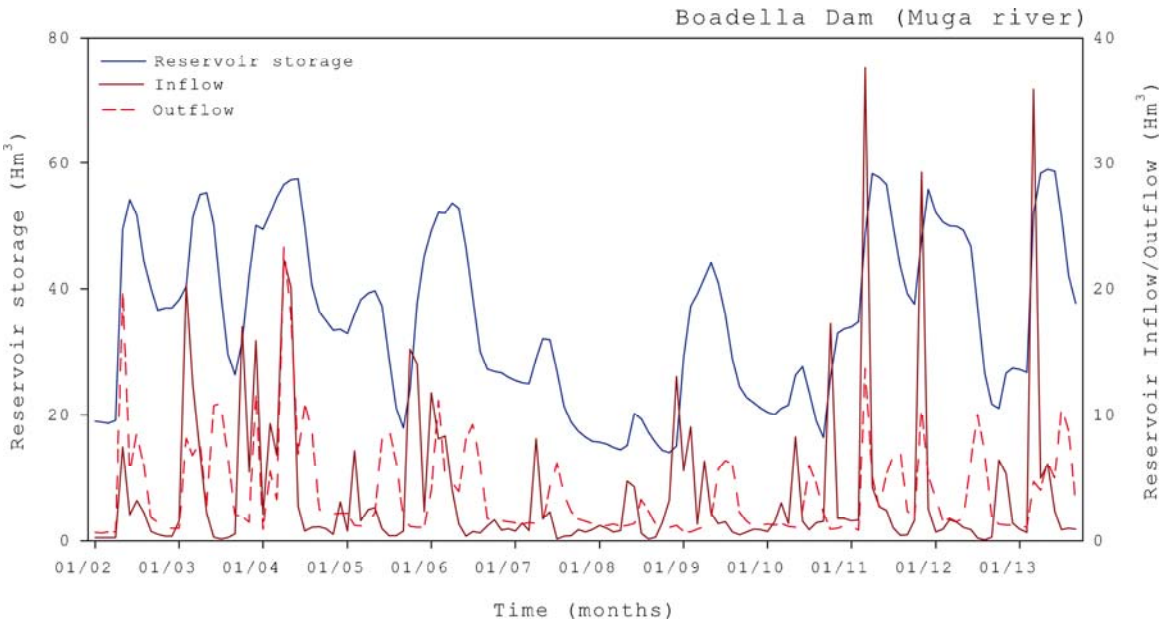

Figure 13. Example for reservoir storage data: La Muga (data used for the calibration period).

3. Spatial Data

A. Software

Geographic Resources Analysis Support System (GRASS), ArcGis 10.1, MiraMon.

B. Source of data:

Instituto Geográfico Nacional, European Environment Agency, Universidad de Barcelona, Gobierno de Aragón, Confederación Hidrográfica del Ebro (CHE), Agència Catalana de l'Aigua (ACA), Gobierno del Principat d'Andorra.

C. Information in the General Database

The spatial data had to be processed to homogenize the spatial resolution (resample), the type of data (rasterize or vectorize) and the projection (reproject into European Terrestrial Reference System 1989 – ETRS89). This projection system is adopted in Spain from 2007 to adapt all the cartography according to the rest of European Union. Details of all the spatial data managed in MEDACC-Life is explained below.

3.1. Thematic map: Soils

A soil map has been generated for the three basins. This information has been generated specifically for the project since previously it was not available for the three basins. The previous information about soils within the three basins is very fragmented and specific for agricultural areas. In order to improve the quality of the results, some sources of soil information have been consulted:

- Soils Map of Catalonia.
- European Soils Map (scale 1:1000000)
- Data from soil profiles from specific studies and the European Soils Database
- Geologic Map of Catalonia
- Digital Elevation Map
- C Content Map in forestal soils (Spain)

The technology changes, the computational capacity and the new available geostatistical techniques allowed to face the progress in soils maps from a new point of view. A Digital Soil Map has been developed, based on the spatial correlation between the most important soil properties with environmental variables (climate, relief or geology). Moreover, it was possible to develop of singular soil maps with specific properties (bulk density, organic matter content, etc.), in addition to taxonomic classification.

The flexibility of the Digital Soil Mapping (DSM) depends on its quantity and quality, which is strongly associated to the threshold error. In this way, a DSM adaptation has been done to generate the maps of the parameters needed for the MEDACC-Life project. Moreover some soil parameters have been mapped attending to the needs of the SWAT and RHESSys models: soil depth, texture, field capacity and organic matter content.

The following workflow has been designed depending on the available information (Figure 14):

- Areas with available soil maps at the scale 1:50000. Layers of the required parameters generated from the soil classes.
- Areas without available soil maps at the scale 1:50000:

- Crossing the European Soils Map and the Geologic Map.
- Regression between the profile data and the unities defined in the previous point.
- The name of the available profiles is not enough for applying geostatistical techniques (except for the Fluvia river case).

- Finally, the soils have been grouped in terms of similarity through a cluster analysis.

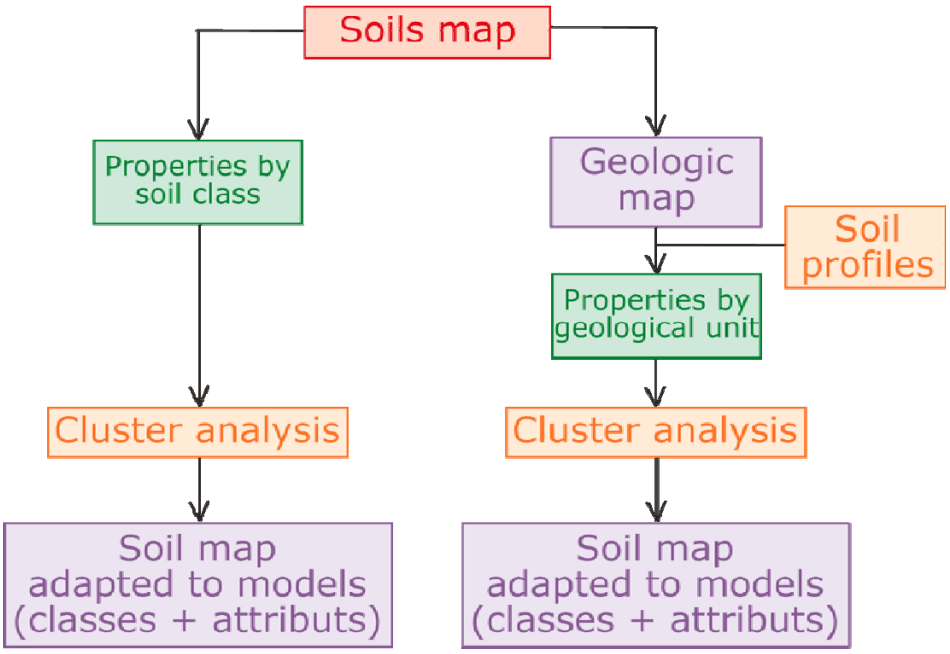

Figure 14. Soil map elaboration workflow.

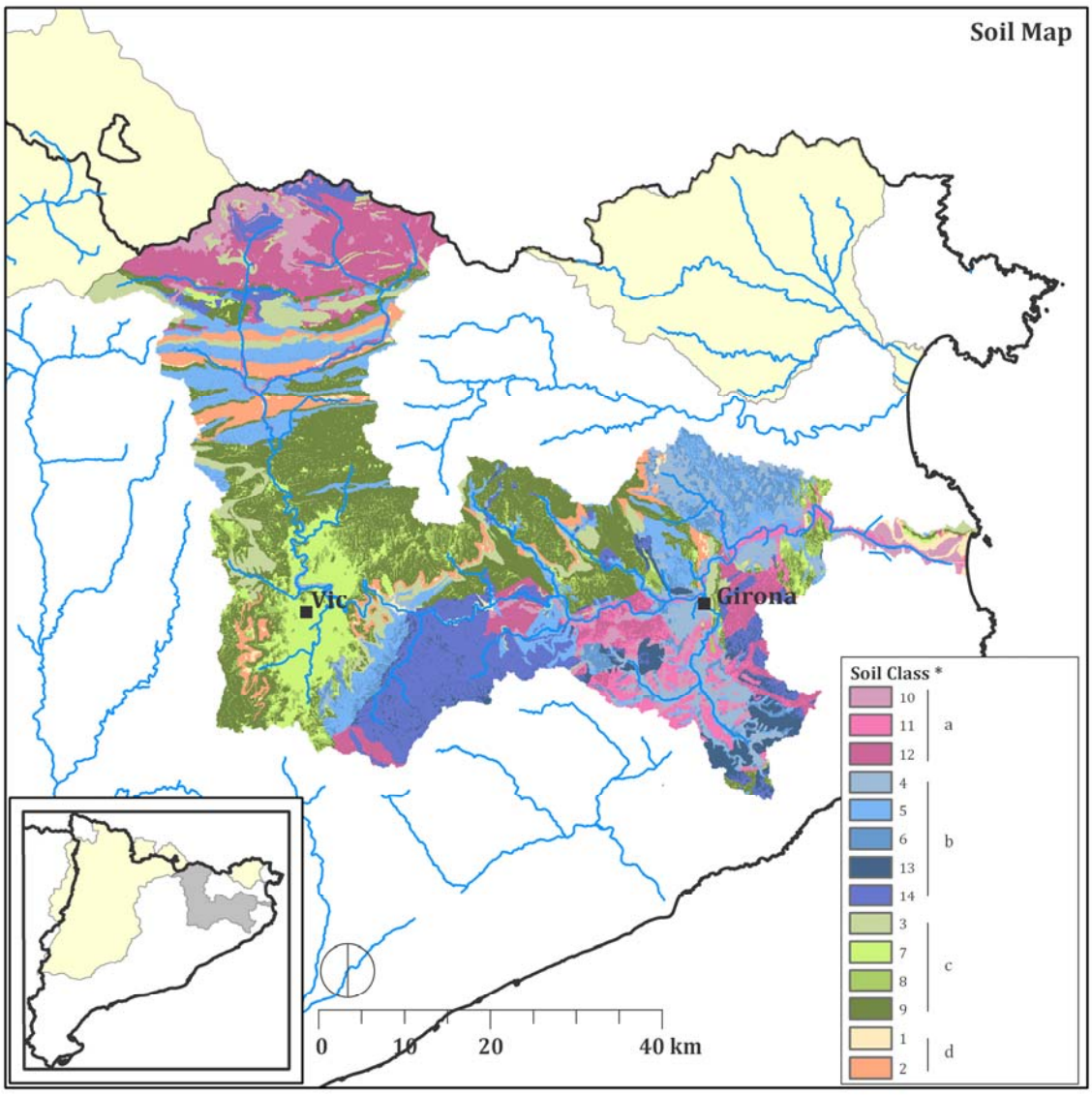

Figure 15. Soil map of the Ter basin. The soils are classified in 4 groups depending on the texture: ***a****) sandy, deep, well drained soils; deep loess; aggregated silty soils .* ***b****) sandy loams, shallow loess, moderately deep and moderately well drained soils.* ***c****) clay loam soils, shallow sandy loams with a low permeability horizon impeding drianage (soils with a high clay content), soils low in organic content.* ***d****) heavy clay soils with swelling potential (heavy plastic clays), water-logged soils, certain saline soils, or shallow soils over an impermeable layer.*

3.2. Thematic map: Land Use and Vegetation

We have developed two land cover maps for the three analysed basins. On the one hand we developed a land cover map for historical analysis based on the Maps of Agricultural and land cover types developed in the decade of 1970 by the Spanish Ministry of Agriculture at 1:50.000. On the other hand, we have created a homogeneous land cover map for 2005 using different sources of information.

The initial information is based on several vegetation and land use maps from diverse data sources (Aragon Government, CREAF, European Union, etc.). The different maps used are: i) the land cover map of Catalonia (MCSC) at the spatial scale of 1:5000, ii) The 2006 CORINE land cover and iii) the 2006 National forestry inventory III (IFN) from the Spanish Agricultural Ministry at the scale of 1:50000. The three different sources were used since although main territory corresponds to Catalonia, which is covered by MCSC, some parts of the three basins correspond to areas outside Catalonia, which were completed with CORINE and IFN (see example in Figures

16 and 17). In addition the Spanish Land use System (SIOSE) was used to enrich the MCSC information.

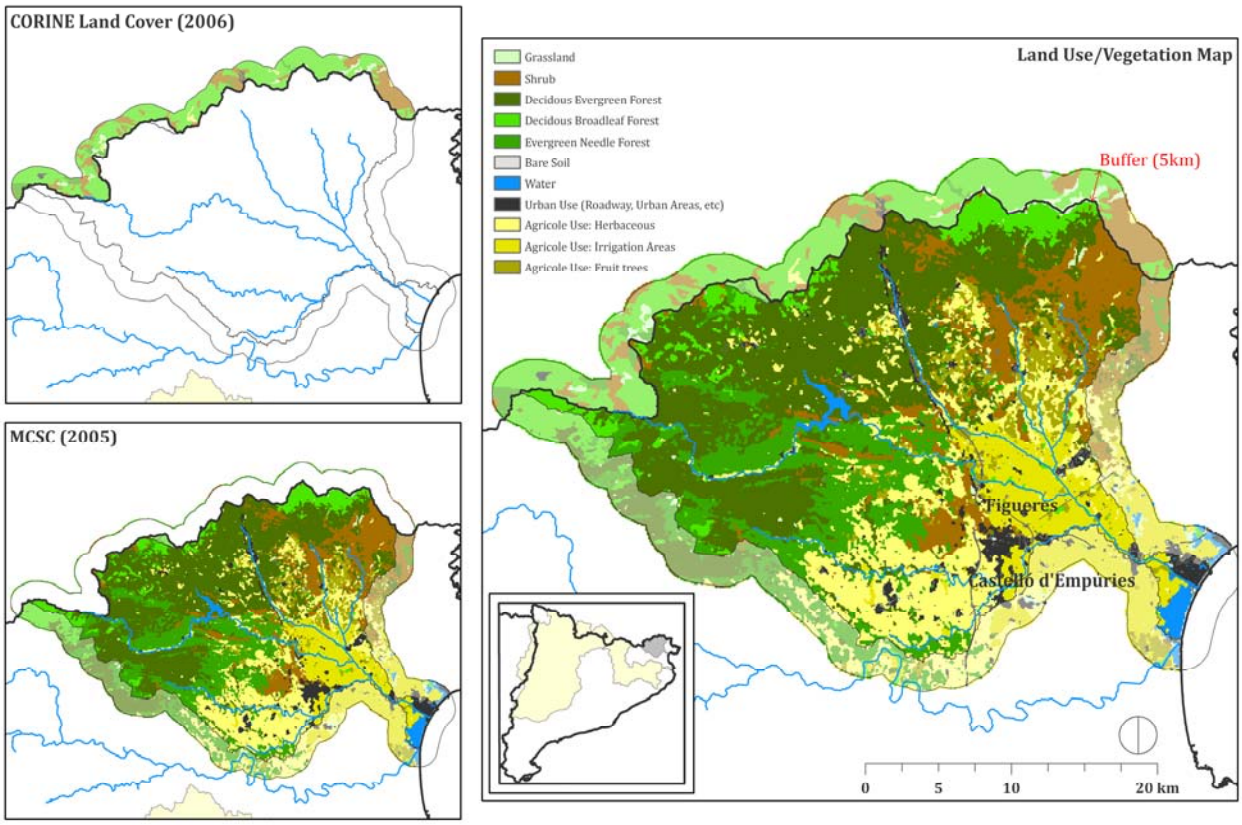

Figure 16. An example of managing Land Use/Vegetation maps merging different data sources.

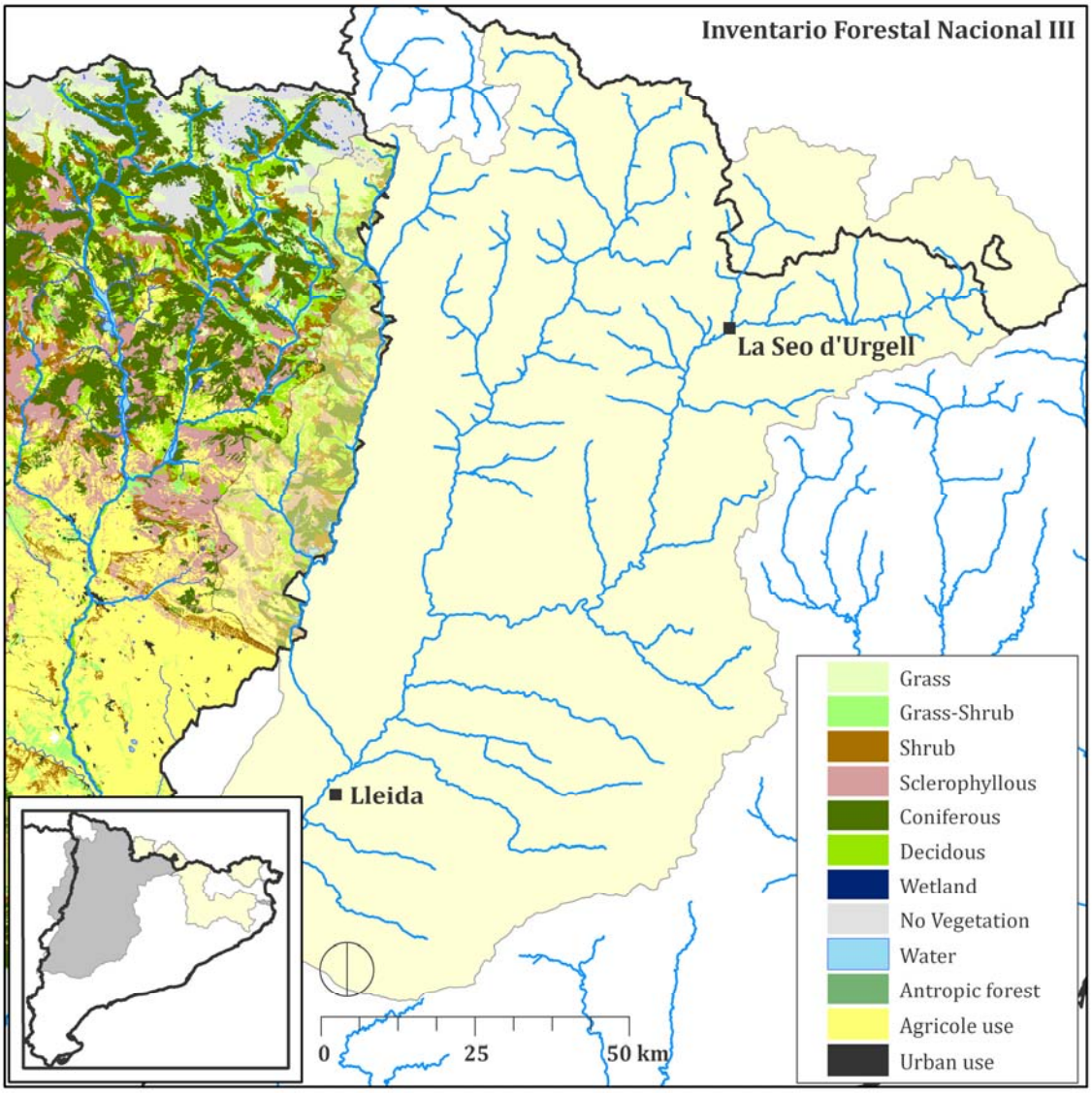

Figure 17. Land use map from IFN III used to complete the Land use map of Segre basin.

The different data sources contain different legends, which are in some cases excessively detailed. For this reason, we unified and reclassified the different thematic information, which was homogeneous in the three basins. A total number of 16 land cover categories was selected: i) Pasture and Grassland, ii) Shrub, iii) Decidous Broadleaf Forest, iv) Evergreen Needle Forest, v) Evergreen Broadleaf Forest, vi) Agricole Use: Fruit trees, vii) Agricole Use: Herbaceous, viii) Agricole Use: Herbaceous Irrigated Areas, ix) Agricole Use: Irrigated Fruit trees, x) Urban Areas, xi) Water, xii) Bare Soil, xiii) Fire, xiv) Wetland and Peat land, xv) Marsh and xvi) Glaciers. An example of the summary and reclassification of the existing information is provided in Table 1, corresponding to natural vegetation categories.

Land Use	Original class	Land Use	Original class
Decidous Broadleaf Forest	*Acer campestre*	**Evergreen Decidous Forest**	*Quecus ilex*
	Acer monspessulanum		*Quercus faginea*
	Acer opalus		*Quercus pubescens*
	Betula alba	**Shurb**	*Amelanchier ovalis*
	Betula pendula		*Buxus sempervirens*
	Betula sp.		*Juniperus oxycedrus*
	Corylus avellana		*Juniperus phoenicea*
	Fagus sylvatica		*Juniperus thurifera*
	Fraxinus angustifolia		*Pies de Quecus ilex*
	Fraxinus excelsior		*Pies de Quercus faginea*
	Populus alba		*Pies de Quercus pubescens*
	Populus nigra	**Evergreen Needle Forest**	*Abies alba*
	Populus tremula		*Cupressus arizonica*
	Populus canadensis		*Pinus halepensis*
	Salix alba		*Pinus nigra*
	Salix atrocinerea		*Pinus pinaster*
	Salix elaeagnos		*Pinus pinea*
	Salix fragilis		*Pinus sylvestris*
	Salix purpurea		*Pinus uncinata*
	Salix sp.	**Grassland**	*Festuca sp.*
	Sorbus aria		*Trifolium alpinus*
	Tilia cordata		*Brachipodium pinnatum*
	Tilia spp.		*Gallium verum*
	Ulmus minor		*...*

Table. 1. Classification of species into Land Use/Vegetation classes (SIOSE to MEDACC Life Land Use/Vegetation map).

Figure 17, shows an example of the final land cover maps for 2005 used in the project and corresponding to La Muga basin, which is mostly dominated by natural vegetation categories (forests).

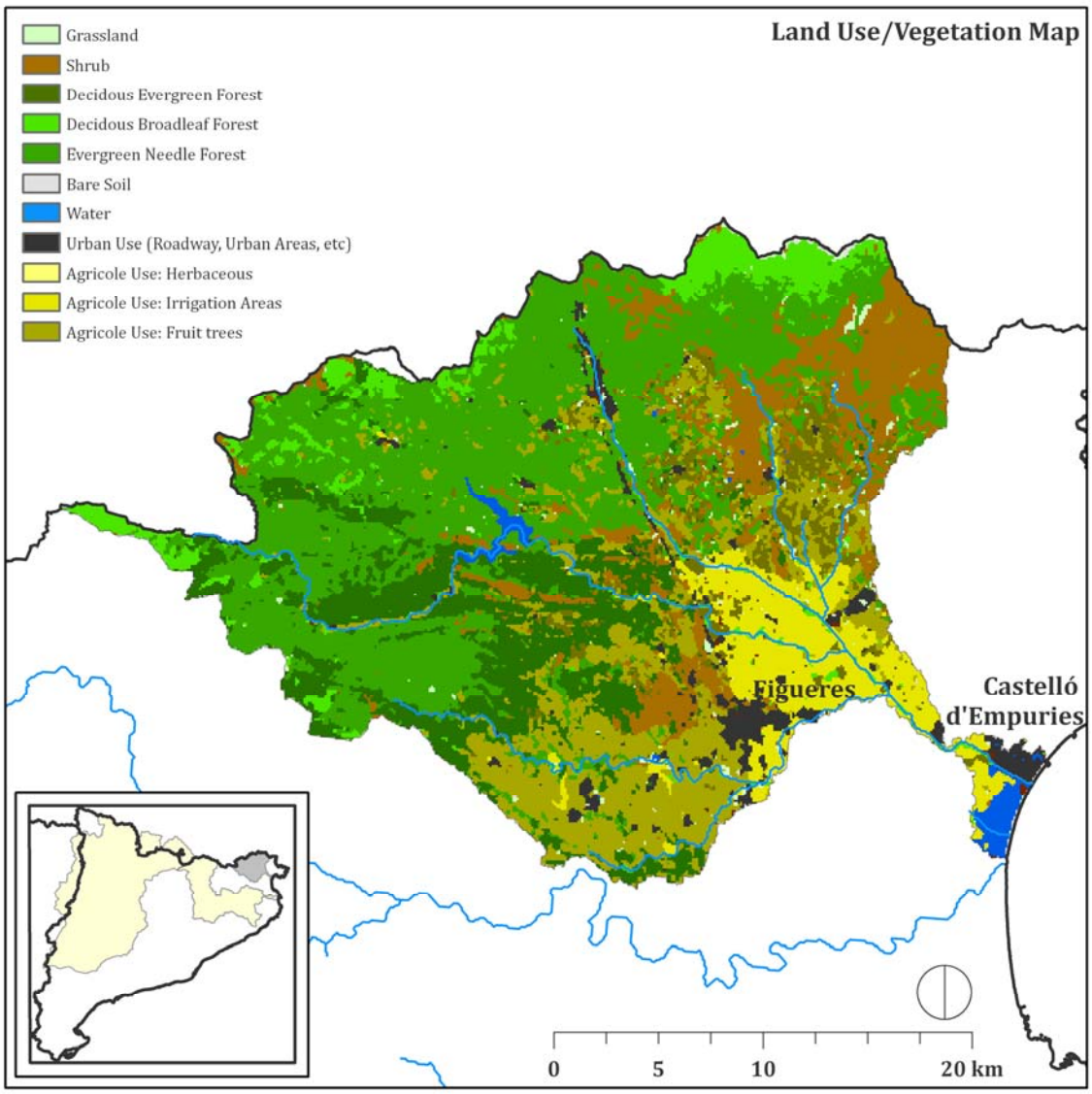

Figure. 18. Land use map of Muga basin

3.3. Thematic map: Digital Elevation Model

The Digital Elevation Model (DEM) was provided by the Catalan Government (Cartographic and Geologic Institute of Catalonia) at a spatialresolution of 10 m. Digital Elevation Model is the basic information for almost all the hydrologic models, since it allows to obtain different essential information: slope, aspect, hydrologic response unit (HRU), wetness index, etc. Spatial resolution was resampled according to the needs of the project (i.e. 100m for La Muga Basin and 500m for El Ter and El Segre ones). Figure 18 shows the spatial distribution of elevation according to the available DEM at the spatial resolution of 500 m.

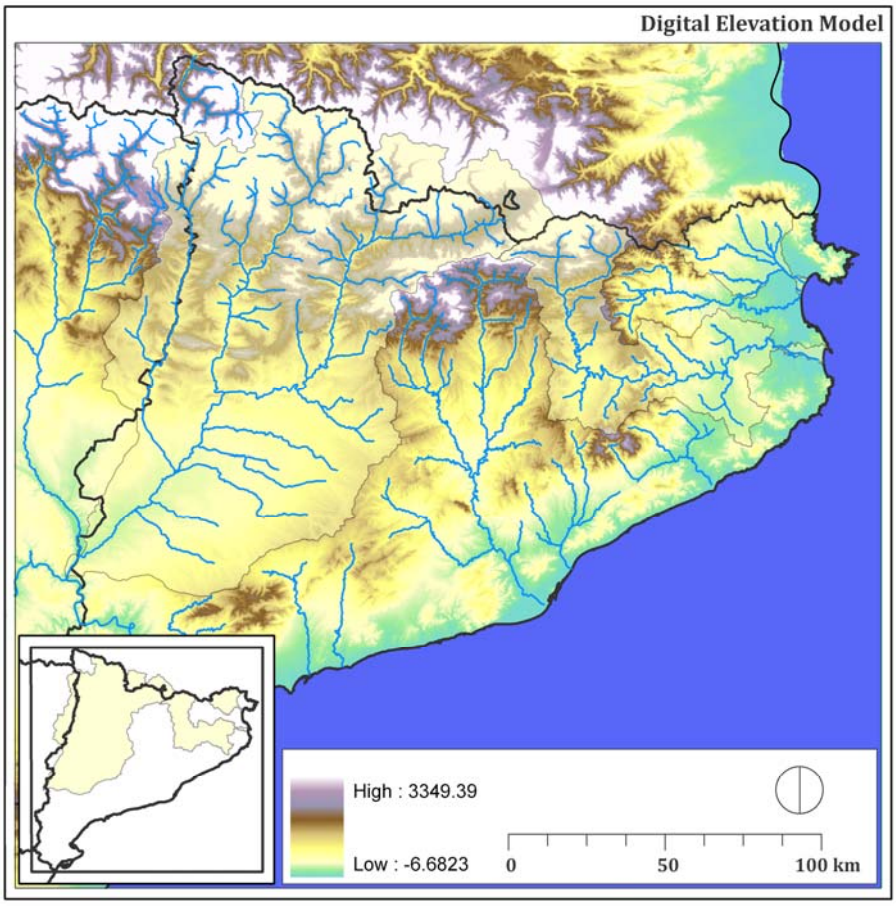

Figure 19. Digital Elevation Model

4. Available formats of the data

The different hydrological and climatic information has been stored in ascii files whereas the cartographic data has been stored in ESRI formats. Vectorial layers (e.g., land cover, soil, etc) were in shapefile format (shp) whereas raster datasets are stored in grid format. These information will be available in the platform to integrate the information of the project (Action B3) which will be created along 2015.

5. Annex

1. Meteorological stations used.

CODE	NAME	X	Y	Z
19	VIMBODI (RIUDABELLA)	336180.7	4581929.9	590.0
22	MONTBLANC	346691.0	4582162.8	340.0
24	ROCAFORT DE QUERALT	356508.2	4593222.7	510.0
25	SARRAL	353699.6	4589731.0	400.0
99	BORREDA (PUIGCERCOS)	421215.3	4665328.4	790.0
114	PRATS DE LLU?ANES	419492.6	4651127.8	700.0
120	MOIA	424970.8	4629568.9	735.0
128	SANT LLOREN? DE MORUNYS	384296.5	4665528.6	925.0
132	SOLSONA	377152.4	4650840.4	677.0
133	RINER (EL MIRACLE)	378374.4	4641564.0	800.0
166	CALAF	376640.7	4621232.3	715.0
167	COPONS	376459.6	4610715.6	432.0
203	ELS HOSTALETS DE BALENYA	438505.9	4633850.0	570.0
204	CENTELLES	435915.5	4627858.4	526.0
233	SANTA COLOMA DE GRAMANET	278643.7	4592103.2	25.0
234	SANT ADRIA DE BESOS	278587.0	4590252.6	6.0
239	TIANA (VILA)	278757.2	4595804.3	125.0
254	CALELLA	283377.8	4610482.1	6.0
255	MALGRAT	283489.5	4614183.2	5.0
256	LA CASTANYA (RECTORIA)	433633.7	4638088.4	762.0
257	MONTSENY (SANT MAR?AL)	451839.7	4627887.4	1100.0
275	SILS	478957.1	4628681.3	76.0
303	VALLTER 2000	439636.6	4698336.5	2180.0
310	MOLLO	450876.7	4688347.1	1180.0
311	CAMPRODON	447464.2	4684855.5	950.0
316	FRESSER (SUPERIOR ELECTRICA)	432139.6	4691032.9	1425.0
317	NURIA	430497.8	4693856.1	1967.0
320	RIBES DE FRESSER	431666.6	4684744.9	940.0
321	CAMPDEVANOL	430885.2	4675128.5	738.0
323	RIPOLL (PROGRES)	433789.5	4671923.5	678.0
324	RIPOLL (SAPHIL)	433647.9	4669056.2	680.0
328	LA FARGA DE BEBIE	434501.2	4664575.7	608.0
333	SANT VICEN? DE TORELLO (BORGONYA)	436641.6	4657461.9	521.0
334	VIDRA	443218.7	4663698.2	964.0
341	TONA (ESCOLA)	435894.0	4633163.6	611.0
348	GURB DE LA PLANA (BAR HOSTAL)	435380.1	4645135.6	440.0
353	PANTA DE SAU (VILANOVA DE SAU)	451826.8	4646423.8	440.0
356	VILANOVA SAU (EL TORTADES)	453296.1	4638826.7	850.0

CODE	NAME	X	Y	Z
357	PANTA DE SUSQUEDA (HECSA)	461482.6	4648554.6	370.0
359	EL PASTERAL	466883.0	4647077.8	196.0
360	LES PLANES D(HOSTOLES	461571.6	4656480.6	347.0
361	AMER	466946.3	4650778.5	214.0
363	OSOR (MINES)	466226.1	4644459.3	240.0
367	GIRONA/COSTA BRAVA	480372.7	4639995.8	143.0
370	GIRONA	485501.6	4647200.4	94.0
378	FONCOBERTA (L)ANGLADA)	482968.9	4665803.6	180.0
385	TORROELLA DE MONTGRI	510184.7	4654255.6	15.0
392	OLOT (ESTACIO DEPURADORA)	457645.1	4672418.2	380.0
394	LA VALL DE BIANYA (PUJALET)	451500.2	4675912.4	445.0
395	CASTELLFOLLIT DE LA ROCA	462814.5	4674239.6	296.0
403	BESALU	475232.7	4672025.9	151.0
413	MA?ANET DE CABRENYS	479420.3	4692368.9	370.0
416	CAPMANY	493140.1	4692342.0	107.0
417	DARNIUS	486158.2	4691583.9	194.0
423	PERALADA	500732.6	4684196.1	25.0
429	FIGUERES	497365.6	4679693.5	40.0
9579	MEQUINENZA	772251.0	4589814.2	321.0
9582	LLIVIA	910971.7	4713887.6	1260.0
9583	FONT ROMEU	912320.3	4716661.0	1500.0
9584	PUIGCERDA	412630.9	4698653.0	1145.0
9585	LA MOLINA	412467.3	4687395.2	1704.0
9586	ALP	408052.6	4691092.0	1158.0
9589	BOR DE BELLVER	401164.6	4689334.8	1170.0
9590	MARTINET	392377.1	4690821.8	1038.0
9593	CASTELLNOU DE CARCOLZE	877348.5	4702607.7	1200.0
9596	ESTAMARIU	873330.1	4700535.2	0.0
9597	CERC CAN COLL	870682.7	4698537.9	900.0
9599	SOLDEU SKI2	883090.7	4723717.0	2030.0
9605	ENGOLASTERS	875431.1	4718161.6	1500.0
9607	LES ESCALDES	873941.0	4718205.0	1200.0
9619	LA SEO D'URGELL	373105.5	4690527.5	690.0
9621	ADRALL	367683.0	4686956.1	642.0
9633	LA VANSA	374851.8	4676796.9	955.0
9635	ORGANYA	362106.7	4674659.5	540.0
9638	OLIANA (PANTA)	359621.5	4660422.4	480.0
9640	PINELL (LA CODINA)	367420.8	4647313.3	648.0
9644	CALONGE DE SEGARRA	872712.7	4633675.4	615.0
9645	CASTELLFOLLIT DE RIUBREGOS	869845.0	4635382.2	482.0
9648	BIOSCA	862540.5	4642430.7	454.0
9649	PONTS	350548.6	4643266.9	360.0
9650	ARTESA DE SEGRE	337866.2	4639872.7	320.0
9651	VILANOVA DE MEI?	336489.4	4651167.9	590.0
9655	BOREN (PRESA)	343244.2	4724308.2	1070.0

CODE	NAME	X	Y	Z
9656	BONAIGUA	334736.2	4725771.3	2263.0
9657	ESTERRI D'ANEU	346264.1	4720784.0	940.0
9660	SANT MAURICI (LLAC)	336263.5	4716167.4	1920.0
9661	ESPOT (CENTRAL ELECTRICA HECSA)	343178.1	4715328.9	1310.0
9662	PEGUERA	398124.4	4669017.5	1701.0
9662	PEGUERA (PANTA)	340707.8	4713039.6	2026.0
9663	ESPOT (ESQUI)	342527.3	4712782.1	2020.0
9664	ESPOT (TORRASA CENTRAL)	347365.4	4714896.2	930.0
9669	TAVESCAN	356682.3	4722042.2	1100.0
9675	LLAVORSI	353073.8	4706533.7	850.0
9677	PORT AINE	352785.9	4698300.4	2080.0
9680	SORT	346054.7	4696840.8	680.0
9681	VILAMUR	843038.3	4700838.2	1264.0
9683	ESTAC MENCUY	832059.4	4700307.7	1256.0
9684	ESCOS	340477.9	4692984.8	790.0
9685	BAHENT EL SOY	839190.5	4695084.0	1420.0
9686	GERRI DE LA SAL	340905.0	4687605.3	595.0
9687	TORT-TRULLO (LLAC)	339571.8	4712263.3	2320.0
9688	ESTANY-GENTO (LLAC)	335753.6	4708093.3	2120.0
9689	CABDELLA	334203.6	4703408.0	1270.0
9690	ELS MOLINS (MONROS)	332675.9	4696870.6	1020.0
9691	LA PLANA DE MONROS (CENTRAL BENJAC SA)	331247.0	4694528.5	860.0
9694	XERALLO	324331.9	4692507.3	974.0
9695	SENTERADA	329696.5	4687220.6	660.0
9696	LA POBLA DE SEGUR (P F E)	332261.5	4679535.7	525.0
9700	TALARN (PRESA)	326552.6	4671186.9	425.0
9702	BON REPOS (SANT SALVADOR TOLO)	338692.7	4655931.5	1050.0
9703	ABELLA DE LA CONCA	838709.2	4676506.8	956.0
9704	GAVET DE LA CONCA	324986.3	4663571.6	380.0
9705	VILAMOLAT DE MUR	818303.7	4669990.2	731.0
9707	LLIMIANA	326261.4	4659342.8	515.0
9708	LLIMIANA (PANTA DE TERRADETS)	324833.5	4657402.8	399.0
9709	LA PASARELA	821565.1	4659009.2	400.0
9710	CAMARASA (PANTA DE SANT LLOREN?)	320148.7	4635885.1	245.0
9712	FREIXANET ALTADILL	866352.1	4622210.4	681.0
9713	AGRAMUNT	341983.0	4627961.7	349.0
9714	MONTGAI	329687.0	4629509.6	280.0
9715	BALAGUER (INSTITUT)	318571.5	4628302.0	212.0
9717	CERVERA	356402.5	4614636.8	540.0
9719	VERDU ESCOLES	844410.9	4615556.0	434.0
9720	TARREGA	345042.7	4612466.5	375.0
9722	PENELLAS (GRAMJA SANT VICEN?)	326734.4	4622019.8	242.0
9725	VILANOVA DE LA BARCA	309970.7	4617568.8	180.0

CODE	NAME	X	Y	Z
9726	VALLBONA DE LES MONJES (ROCALLAURA)	345352.7	4596723.6	660.0
9728	VILANOVA DE BELLPUIG	830605.9	4613051.8	290.0
9729	MOLLERUSSA (IES AGRARIA L'URGELL)	322264.9	4609569.0	245.0
9730	ELS ARCS	318307.7	4617908.1	215.0
9734	VILALLER (SENET)	312514.3	4712693.1	1093.0
9735	BONO	805156.3	4712804.8	1050.0
9736	VILALLER	310891.2	4703352.9	960.0
9738	CALDAS DE BOI	322093.4	4712410.6	1280.0
9740	ERILL LA VALL	814921.6	4714352.9	1280.0
9741	BOI (CENTRAL)	319248.2	4708317.0	1096.0
9742	BOI TAHULL	324648.1	4705092.3	2020.0
9744	LLESP (PRESA)	317846.5	4707118.8	1090.0
9745	EL PONT DE SUERT	313470.6	4697233.3	845.0
9749	ESCALES 'EMBALSE'	808690.1	4692343.1	717.0
9755	PUENTE DE MONTAANA	805739.9	4673143.3	528.0
9756	BENABARRE 'COMARCAL'	291561.5	4665220.9	740.0
9757	TOLVA	794875.6	4668971.9	695.0
9758	ESTOPIAN	793496.5	4655626.5	731.0
9759	CANELLES 'EMBALSE-ASINEL'	799156.5	4653700.0	512.0
9761	SANTA ANA 'EMBALSE'	796906.7	4642975.1	390.0
9762	ALFARRAS	297939.2	4633918.4	280.0
9764	ALBESA CAMPORRELLETS	803502.0	4628543.0	231.0
9765	TORRELAMEU	308621.4	4619024.5	0.0
9766	ELS OMELLONS	830551.6	4602105.8	386.0
9767	LES BORGES BLANQUES	320611.2	4598963.1	304.0
9768	JUNEDA	317903.9	4601962.8	264.0
9769	TORREFARRERA	801119.1	4619171.5	214.0
9770	LLEIDA (ENHER)	302819.6	4609922.1	221.0
9771	LLEIDA (OBSERVATORI)	301442.0	4610361.3	199.0
9772	EL VILOSELL	327194.1	4583280.4	665.0
9773	L(ALBAGES	310659.6	4590946.4	377.0
9774	ASPA	806494.3	4600146.3	270.0
9775	SUNYER	798745.0	4603251.0	200.0
9776	GRANYENA DE LES GARRIGUES	804991.2	4593376.8	368.0
9777	LLARDECANS	796946.1	4586553.0	397.0
9778	TORRES DE SEGRE	793396.1	4604019.8	120.0
9779	SARROCA DE LLEIDA	797421.1	4595934.8	190.0
9780	SOSES	790577.3	4604832.4	119.0
9781	AITONA (FECSA)	287053.9	4593764.3	150.0
9838	BENASQUE 'VIVERO'	788919.0	4722186.2	1120.0
9840	ERISTE 'CENTRAL'	786477.8	4721034.3	1100.0
9841	SESUE CENTRAL	784803.3	4716206.4	930.0
9842	VILLANOVA 'PRESA'	784918.6	4715624.0	928.0
9843	SEIRA CENTRAL	782486.6	4708541.2	816.0

CODE	NAME	X	Y	Z
9847	CAMPO	779763.4	4701726.2	691.0
9849	GRAUS 'VENTAS DE SANTA LUCIA'	777109.0	4680826.4	498.0
9850	GRAUS P F E	775293.0	4675595.4	604.0
9851	LAS PAULES 'DGA'	302401.9	4704794.2	1440.0
9852	VILAS DEL TURBON	790780.9	4700538.5	1343.0
9853	SERRADUY 'DGA'	299677.6	4687861.4	775.0
9855	LASCUARRE DGA	294938.6	4674630.6	647.0
9856	LA PUEBLA DE CASTRO PRESA	774132.4	4669989.0	710.0
9857	LA PUEBLA DE CASTRO 'CENTRAL SAN JOSE'	774132.4	4669989.0	710.0
9858	TORRES DEL OBISPO	779643.2	4670205.4	542.0
9870	PERALTA DE LA SAL 'D.G.A.'	780744.7	4654615.4	540.0
9912	ZAIDIN	772255.3	4610603.1	155.0
9914	ALBELDA LA SERRANIA	788741.1	4636490.1	282.0
9916	ALTORRICON	783768.2	4633695.0	262.0
9917	TAMARITE DE LITERA 'TORRE PUIG'	781033.7	4635038.8	357.0
9918	TAMARITE DE LITERA 'LA MELUSA'	281609.8	4628564.9	218.0
9919	TAMARITE DE LITERA 'VENTAFARINAS'	779939.3	4627581.1	233.0
9920	ALMACELLAS	789109.2	4622817.2	250.0
9921	RAIMAT CAC	790689.5	4620965.5	320.0
9922	SUQUETS	285044.0	4619693.3	287.0
9923	GIMENELLS (STA MARIA)	283514.6	4615016.0	265.0
9924	FRAGA 'SILO'	777509.4	4601227.6	120.0
9953	LA PALMA D'EBRO	807391.9	4576791.2	336.0
9959	VILANOVA DE PRADES	329896.7	4579606.1	889.0
9990	ARTIES	325271.0	4729800.3	1185.0
9991	VIELHA	318476.1	4731148.3	940.0
9995	LES (CLEDES)	313377.4	4744619.9	760.0
0020O	VIMBODI (MONESTIR DE POBLET)	339618.9	4582902.1	494.0
0044E	SANTA COLOMA DE QUERALT (SANT ROC)	365205.1	4599225.3	680.0
0114D	OLOST DE LLU?ANES (MORE)	425056.4	4648630.0	560.0
0114G	L(ESTANY	426302.9	4635662.2	870.0
0114X	PRATS DE LLU?AN?S	419515.6	4651127.5	700.0
0120X	MOI?	424970.5	4629538.1	735.0
0127O	PORT DEL COMTE	381040.5	4669902.1	1800.0
0131U	SOLSONA (BOMBEROS)	375416.1	4650253.7	690.0
0166I	VECIANA (CAN VIURE)	369531.0	4614046.6	725.0
0236E	SANTA COLOMA GRAMANET (IRLANDA)	278643.7	4592103.2	35.0
0260H	LA MORERA	444511.7	4629266.9	890.0
0268U	ARBUCIES (EL PARDELL)	457161.1	4630166.7	365.0
0272U	SANTA COLOMA DE FARNERS (VIVER EL TEIX)	474369.3	4636159.8	140.0
0284C	CASTELL D'ARO - EST. DEPURADORA	502330.5	4628403.9	19.0

CODE	NAME	X	Y	Z
0284X	CASTELL PLATJA D?ARO	502561.2	4628434.8	14.0
0292A	BEGUR (LOS ALGARROBOS)	515797.7	4642453.6	185.0
0294B	LA BISBAL (D'EMPORDA 3)	503613.5	4646322.9	51.0
0312A	SANT PAU DE SEGURIES (ERA DE BAIX)	447556.1	4678778.4	863.0
0312X	SANT PAU DE SEGURIES	447901.9	4679053.4	863.0
0320I	PLANOLES	426063.8	4685356.9	1149.0
0324A	RIPOLL	433739.3	4671461.3	671.0
0332E	MONTESQUIU (CARBURO)	434691.5	4662815.8	650.0
0332F	MONTESQUIU (CASTELL)	434965.4	4662628.2	690.0
0336B	TORELLO (AFORES)	438761.7	4655469.2	503.0
0337A	SANT HIPOLIT DE VOLTREGA (ESCOLA FAMILIA)	434539.6	4653841.4	565.0
0338B	MANLLEU (ANGELA ROCA)	440672.3	4650271.2	460.0
0340A	TARADELL (CATALUNYA)	440715.6	4636144.5	623.0
0340E	VIC (LA GUIXA)	438610.8	4640665.5	515.0
0347D	VIC (SANT CRISTOFOL)	438164.8	4642365.7	505.0
0347E	VIC (GERMANS MARISTES)	438348.8	4642333.3	500.0
0347F	VIC (VIVERS)	438576.4	4642022.9	480.0
0354B	VILADRAU (AIGUES)	452216.0	4632387.8	865.0
0360X	LES PLANES D?HOSTOLES	462187.7	4655644.6	337.0
0363U	BESCANO (ELS BANCALS)	475327.5	4646580.8	190.0
0363X	SANT HILARI	459620.3	4636659.9	810.0
0366L	SALT	483427.8	4646094.6	84.0
0366O	SANTA COLOMA DE FARNERS (FONTDEGLORIA)	472011.4	4634410.7	134.0
0370A	GIRONA (BELL-LLOC)	484188.8	4646709.7	90.0
0370B	GIRONA (ANTIC INSTITUT)	485457.7	4648249.1	95.0
0370E	GIRONA-PARC MIGDIA	485109.6	4646831.1	79.0
0370X	GIRONA (BELL LLOC AUTOMATICA)	484188.8	4646709.7	90.0
0370Y	GIRONA (SANT DANIEL)	486609.0	4648647.7	91.0
0372A	BANYOLES (CENTRE CULTURAL)	478943.1	4662761.1	165.0
0385A	TORROELLA DE MONTGRI (JARDINERIA)	510874.7	4654102.4	20.0
0385B	TORROELLA DE MONTGRI (RAMON BOI)	510667.4	4654348.8	22.0
0385I	L(ESTARTIT	516549.1	4655963.9	12.0
0385J	L'ESTARTIT (PASSEIG MARITIN)	516618.4	4655809.8	2.0
0385X	L?ESTARTIT	516664.5	4655779.1	1.0
0388E	LA VALL D'EN BAS (CAN GRONXA)	453878.9	4664607.6	475.0
0390B	OLOT (ESCOLES PIES)	457861.5	4670257.8	435.0
0390D	OLOT (PARC NOU)	457086.1	4671002.8	450.0
0394X	VALL DE BIANYA	451477.3	4675912.5	440.0
0396A	OIX (SANT MIQUEL DE PERA)	457612.7	4682257.6	773.0
0396E	VALL DE BIANYA (VALL DEL BAC)	453927.7	4679073.0	648.0
0406C	SANTA PAU (LA FAGEDA)	460152.7	4665710.5	590.0
0406D	SANTA PAU 'SACOT'	462291.5	4666469.9	610.0

CODE	NAME	X	Y	Z
0406I	MIERES	470222.3	4663995.4	278.0
0410E	PONTOS (CAN GELI)	491488.3	4668995.8	85.0
0411O	CASTELLO D'EMPURIES (EL CORTALET)	507679.7	4674546.5	0.0
0411X	CASTELLO D?EMPURIES	507679.5	4674731.6	4.0
0421E	ESPOLLA 'LES ALBERES'	500571.6	4693171.5	94.0
0421I	MOLLET DE PERELADA (COOP VINICOLA)	499954.2	4689717.0	59.0
0421X	ESPOLLA, LES ALBERES	500548.7	4693140.7	94.0
0429C	FIGUERES (ELS ASPRES)	496838.3	4678645.1	47.0
0429X	FIGUERES, LES ASPRES	496838.3	4678614.3	47.0
0431D	AMPURIABRAVA (AERODROM)	509004.2	4678526.8	3.0
0431E	AMPURIABRAVA (CARLIT)	508547.5	4677230.8	1.0
0432A	ROSES (CENTRE ESCOLAR EMPORDA)	515117.6	4680357.0	65.0
0432C	ROSES (ESTACIO DEPURADORA)	514799.2	4679276.8	18.0
0433E	EL PORT DE LA SELVA	516818.4	4687485.7	4.0
0433K	PORT DE LLAN?A (EL CASTELLAR)	513402.1	4691087.0	3.0
9578U	MEQUINENZA EMBALSE ASINEL	773300.0	4584818.8	125.0
9582I	PUIGCERDA (POLIESPORTIU)	412341.6	4699273.6	1210.0
9583B	SAILLAGOUSE	913855.6	4713965.5	1400.0
9583C	DORRES	905523.6	4715332.5	1500.0
9583F	LA TOUR DE CAROL	901519.4	4713243.0	1300.0
9583G	VALCEBOLLERE	915723.0	4705716.5	1600.0
9583H	PORTE PUYMORENS	896878.6	4722263.5	1600.0
9584U	LA MOLINA (COSTA RASA)	412751.0	4686281.1	2050.0
9585D	LA MASELLA (ESQUI)	409425.5	4689346.5	1630.0
9589C	BELVER DE CERDANYA	399270.8	4691305.4	1045.0
9589D	BELLVER DE CERDANYA (BOMBERS)	399029.4	4692018.4	1030.0
9589E	PRULLANS	397100.9	4693095.4	1100.0
9601U	RANSOL	880457.7	4724593.4	1720.0
9610U	ANSALONGA	870772.5	4722676.4	1400.0
9610V	ORDINO	872088.1	4721602.0	1304.0
9632O	JOSA TUIXEN (ESCOLA MUNICIPAL)	382068.4	4676456.3	1198.0
9632X	JOSA-TUIXEN	381951.7	4676334.8	1190.0
9638D	COLL DE NARG?	360535.8	4668303.3	603.0
9638E	OLIANA "TEULER?A"	360277.7	4657570.7	444.0
9647X	TOR?	366718.6	4629462.6	435.0
9649A	PONTS CAMI DE LA BARCA	350188.8	4642595.7	356.0
9650E	MONSONIS (C.U.)	336949.1	4639091.3	334.0
9650X	ARTESA DE SEGRE	343066.0	4638336.7	400.0
9651U	ARTESA DE SEGRE BALDOMAR	832802.4	4648490.9	325.0
9652E	ALOS DE BALAGUER (FORESTAL)	328704.2	4646228.7	860.0
9652Z	CAMARASA (CENTRAL ELECTRICA FECSA)	324444.7	4641672.6	290.0
9655C	ISIL BONAIGUA	834709.0	4735161.3	1160.0
9657X	ESTERRI D??NEU	346334.5	4720875.1	940.0

CODE	NAME	X	Y	Z
9658E	UNARRE (PRESA)	348881.4	4723750.9	1480.0
9686O	ORTONEDA	834137.6	4685564.5	996.0
9688B	LA TORRE DE CABDELLA (CENTRAL SALLENTE)	334316.5	4708158.2	1770.0
9689X	CABDELLA-CENTRAL	334206.5	4703531.3	1278.0
9695B	SENTERADA "AJUNTAMENT"	329716.0	4688022.5	728.0
9695O	TORALLA	328175.8	4681239.3	940.0
9696A	LA POBLA DE SEGUR (FECSA)	332262.2	4679566.6	550.0
9698U	TALARN	322514.5	4674929.4	799.0
9700B	TREMP (CGE)	326533.7	4670415.8	468.0
9700C	TREMP (BOMBERS)	325150.8	4670203.1	461.0
9703F	ABELLA DE LA CONCA "L'ISIDRE"	341385.5	4668276.0	760.0
9709I	CUBELLS	329826.8	4635369.7	480.0
9710P	OS DE BALAGUER ROCA ROJA	814384.7	4640511.7	510.0
9712E	PUJALT	868841.7	4627906.2	770.0
9712N	GUISSONA	358731.1	4627117.1	484.0
9712O	GUISSONA (FLOREJACS)	356684.9	4626417.3	479.0
9713A	AGRAMUNT (PONT DE FERRO)	341454.8	4628096.8	326.0
9714I	LA SENTIU DE SIO (SIFO DE SIO)	318618.5	4630152.6	240.0
9715A	VALLFOGONA DE BALAGUER (S.E.A.)	318562.9	4627962.7	235.0
9715B	BALAGUER (CREU ROJA)	318564.4	4628024.4	250.0
9715C	BALAGUER (BOMBERS)	304759.1	4630055.3	270.0
9717A	CERVERA (BOMBERS)	355767.0	4614094.2	510.0
9718C	ELS PLANS DE SIO (EL CANOS)	350621.5	4616976.5	430.0
9718X	TORDERA - GRANYANELLA	351865.5	4615623.9	478.0
9719A	VERDU (GRANJA A.G)	343710.4	4606540.2	410.0
9720A	TARREGA (BOMBERS)	345603.2	4612701.3	383.0
9720N	LA GUARDIA D(URGELL	340188.4	4621027.8	290.0
9720O	ANGLESOLA (C U)	338940.7	4614884.3	315.0
9720X	T?RREGA	345603.2	4612701.3	363.0
9721F	TORNABOUS (EL TARROS)	336518.6	4619259.2	280.0
9721G	CASTELLSERA (AGRAMUNT)	334013.3	4625889.7	320.0
9721I	PENELLAS (CASTELL DEL REMEI)	330859.5	4620501.6	252.0
9722E	BELLCAIRE D(URGELL	325424.3	4625168.6	263.0
9722O	VALLFOGONA DE BALAGUER	317091.0	4624605.4	221.0
9724E	OS DE BALAGUER (AVELLANES)	313292.4	4638407.2	535.0
9724U	TERMENS	314217.0	4620728.9	205.0
9724X	OS DE BALAGUER	313285.9	4638160.5	515.0
9725C	VILANOVA DE LA BARCA (CENTRAL TERMENS)	311399.2	4619105.1	188.0
9726E	LLORAC	359023.3	4601996.9	660.0
9726O	CIUTADILLA	344741.8	4602815.2	510.0
9727E	BELLPUIG (RAFEL)	334685.3	4608933.0	302.0
9727I	BELLPUIG	833956.1	4616360.3	295.0
9727O	CASTELLNOU DE SEANA	830656.6	4618495.5	269.0
9727U	VILANOVA DE BELLPUIG C U	830147.1	4612938.0	300.0

CODE	NAME	X	Y	Z
9729A	MOLLERUSSA 'CANAL D'URGELL'	323686.9	4610891.8	241.0
9729E	EL PALAU D(ANGLESOLA)ESCARABAT)	322387.1	4614503.7	235.0
9729I	LINYOLA	323904.4	4619743.4	245.0
9729R	SIDAMON	319508.6	4610470.9	235.0
9729X	MOLLERUSSA	322261.9	4609445.6	250.0
9730E	BELLVIS	318243.6	4615379.0	206.0
9737U	CAVALLERS (LLAC)	323577.9	4716941.0	1700.0
9737V	CAVALLERS (LLAC ASINEL)	323566.2	4716478.3	1737.0
9738A	CALDES DE BOI BALNEARI	816038.3	4719968.3	1502.0
9740A	ERILL LA VALL BOSC	814921.6	4714352.9	1280.0
9744A	LLESP (CENTRAL ELECTRICA)	314995.1	4702965.0	1000.0
9744B	BARRUERA	317870.7	4708044.2	1092.0
9748U	ESCALES EMBALSE ASINEL	808439.9	4694897.7	823.0
9755A	PUENTE DE MONTAANA 'D.G.A.'	805349.6	4673126.4	535.0
9756I	PURROY DE LA SOLANA	779849.2	4660357.5	750.0
9759E	CAMPORRELS DGA	294593.0	4648461.6	628.0
9760E	SANTA ANA CENTRAL	797095.0	4642890.2	315.0
9760F	SANTA ANA EMBALSE ASINEL	797339.5	4643116.7	380.0
9764C	ALBESA	804128.4	4628507.9	220.0
9765U	VINAIXA	832178.7	4594019.3	475.0
9766E	ARBECA	326229.0	4601109.0	321.0
9766F	ARBECA (C U)	326228.3	4601078.2	340.0
9767A	LES BORGES BLANQUES (CREU ROJA)	321979.8	4598034.2	305.0
9767I	JUNEDA (MIRAVALL)	317850.9	4599865.5	270.0
9768B	CASTELLDANS	814665.4	4600869.2	370.0
9768C	BELL-LLOCH (SEMILLAS)	313962.6	4610921.1	199.0
9768E	PUIGVERT (LLEIDA)	309531.3	4600975.7	207.0
9768J	VILANOVA DE SEGRIA	301721.1	4620446.8	220.0
9769E	ALPICAT	795509.1	4620359.3	315.0
9769I	LLEIDA TORRERIBERA	807940.5	4613033.2	217.0
9770E	LLEIDA (SAN MIGUEL)	302828.1	4610230.5	150.0
9771A	LLEIDA (INSTITUT)	302870.5	4611772.6	150.0
9771B	LLEIDA (1)	300065.5	4610831.6	175.0
9771C	LLEIDA	298682.1	4611055.4	192.0
9771D	LLEIDA SEGONA	795204.4	4617071.4	247.0
9771E	TERMENS (CH)	314172.9	4619032.6	150.0
9771G	LLEIDA (AJUNTAMENT)	302819.6	4609922.1	169.0
9771O	ALBATARRECH (C U)	299866.4	4603676.1	165.0
9772E	LA POBLA DE CERVOLES	324367.8	4581743.7	663.0
9772I	CERVIA DE LES GARRIGUES	822503.9	4593426.5	450.0
9772O	JUNCOSA	816458.1	4586452.4	575.0
9772X	LA POBLA DE C?RVOLES	324364.9	4581620.3	671.0
9775U	EL SOLERAS	806399.4	4591427.7	410.0
9775X	EL SOLER?S	303600.1	4587523.7	410.0

CODE	NAME	X	Y	Z
9776I	TORREBESSES	800122.9	4590206.6	300.0
9776U	LLARDECANS BASSA NOVA	798200.7	4588304.0	350.0
9776Z	MAIALLS 'GRANJA'	289559.7	4584121.7	320.0
9777C	MAIALS	290892.0	4581953.3	375.0
9779A	SARROCA DE LLEIDA AIGUES	798060.5	4593396.6	304.0
9780C	SOSES I.F.A.	790838.7	4605831.7	145.0
9780E	UTXESA (PANTA)	291291.2	4595770.5	170.0
9780U	AITONA (VALL DELS MASOS)	286973.9	4591050.2	160.0
9837E	BENASQUE 'REFUGIO DE ESTOS'	785279.5	4730719.3	1890.0
9838A	BENASQUE ESCUELA DE MONTANA	788662.8	4722855.5	1150.0
9838B	BENASQUE-G.C.	788731.5	4722302.0	1120.0
9838C	BENASQUE 'CGE'	789886.2	4722535.6	1138.0
9839U	CERLER-SKI	790520.6	4721016.9	1540.0
9850A	GRAUS 'RESIDENCIA'	775348.6	4675937.4	480.0
9870D	PERALTA 'CALASANZ DGA'	779513.4	4657779.9	743.0
9913I	ALFARRAS (COLL DE FOIX)	296569.2	4634451.2	340.0
9914D	TAMARITE DE LITERA 'COMARCAL'	286117.0	4637844.6	355.0
9914E	TAMARITE DE LITERA	282882.0	4636954.5	318.0
9914I	ALBELDA EL SALADAR	786928.8	4639599.3	361.0
9921A	RAIMAR COL.LEGIT	791230.1	4620771.2	310.0
9922E	ESPLUS LA CLAMOR	775852.6	4625568.6	200.0
9923B	ALPICAT (GIMENELLS)	282124.0	4614965.5	258.0
9923E	BELVER CINCA SAN MIGUEL	776066.7	4620016.2	196.0
9923U	FRAGA 'MATAMOROS'	777884.2	4606555.5	180.0
9924B	FRAGA 'COMARCAL'	279311.3	4600355.7	170.0
9924E	FRAGA LAS BALAS C A C	782825.7	4600075.0	150.0
9926H	ALMATRET	786538.1	4578441.0	420.0
9952B	LA GRANADELLA	304830.3	4581441.1	510.0
9959C	PRADES AFORES	833900.1	4580898.4	889.0
9959D	PRADES	833783.8	4580893.1	889.0
9959F	ALBARCA	827947.8	4579545.0	800.0
9960E	LA BISBAL DE FALSET	812673.9	4577016.7	372.0
9988E	TREDOS (BAQUEIRA 1800)	332080.9	4728983.4	1880.0
9988F	TREDOS (BAQUEIRA 1500)	330723.2	4729325.2	1500.0
9990X	ARTIES	325271.0	4729800.3	1185.0
9993I	ES BORDES (BENOS)	313092.5	4734100.9	890.0
9994U	BOSSOST (CENTRAL TERMICA)	310516.3	4739727.8	760.0
9994X	BOSS?ST-CENTRAL	310484.1	4738555.6	725.0
C6	Castellnou de Seana [C6]	329547.0	4613880.0	264.0
C7	TËrrega [C7]	347109.0	4614634.0	427.0
C8	Cervera [C8]	358263.0	4615360.0	554.0
CA	Clariana de Cardener [CA]	382829.0	4645816.0	693.0
CB	les Llosses [CB]	433925.0	4667040.0	700.0
CC	Or¦s [CC]	434629.0	4658497.0	626.0
CD	la Seu d'Urgell [CD]	371054.0	4692344.0	849.0

CODE	NAME	X	Y	Z
CF	Lloret de Mar [CF]	487020.0	4619290.0	63.0
CG	Moll¥ [CG]	451896.0	4692025.0	1405.0
CI	Sant Pau de SegÀries [CI]	447659.0	4678865.0	852.0
CJ	OrganyË [CJ]	362364.0	4675337.0	566.0
CK	Santa Coloma de Farners [CK]	472250.0	4635015.0	163.0
CN	Guardiola de BerguedË - Escola [CN]	407400.0	4676020.0	720.0
CO	Torres de Segre - Depuradora [CO]	293775.0	4600310.0	144.0
CP	Sant RomË d'Abella [CP]	338034.0	4667301.0	690.0
CQ	Vilanova de MeiË [CQ]	336571.0	4651361.0	594.0
CR	la Quar [CR]	414270.0	4659419.0	873.0
CS	Viladrau - centre [CS]	449295.0	4632955.0	777.0
CT	el Pont de Suert [CT]	314390.0	4696649.0	823.0
CU	Vielha e Mijaran [CU]	319403.0	4729904.0	1002.0
CV	la Pobla de Segur [CV]	332135.0	4678566.0	513.0
CW	l'Espluga de Francolˆ [CW]	341160.0	4584267.0	446.0
CX	Vic - 1 [CX]	436970.0	4643135.0	498.0
CY	Muntanyola [CY]	431948.0	4636775.0	816.0
CZ	Ulldemolins - Zona Esportiva [CZ]	322546.0	4576555.0	631.0
D1	Margalef [D1]	311998.0	4573056.0	404.0
D4	Roses [D4]	515073.0	4680048.0	24.0
D6	Portbou [D6]	513765.0	4698310.0	196.0
DC	Olot [DC]	457375.0	4671366.0	422.0
DF	la Bisbal d'EmpordË [DF]	503029.0	4647484.0	29.0
DG	NÀria (1.971 m) [DG]	430564.0	4694570.0	1971.0
DJ	Banyoles [DJ]	482708.0	4662940.0	176.0
DM	Girona - Bombers [DM]	484096.0	4645571.0	90.0
DN	AnglÌs [DN]	469522.0	4645711.0	150.0
DO	Castell d'Aro [DO]	502786.0	4628728.0	14.0
DP	Das [DP]	406780.0	4693467.0	1097.0
U1	Cabanes [U1]	496369.0	4684011.0	31.0
U2	Sant Pere Pescador [U2]	508088.0	4669656.0	4.0
U5	Prades - los Hortals [U5]	332361.0	4575699.0	969.0
UB	la Tallada d'EmpordË [UB]	505220.0	4655976.0	15.0
UC	Monells [UC]	499849.0	4647456.0	60.0
UD	Serra de Dar¥ [UD]	505248.0	4653197.0	12.0
UE	Torroella de Montgrˆ [UE]	513107.0	4652553.0	4.0
UI	Gisclareny [UI]	398005.0	4680120.0	1386.0
UJ	Santa Coloma de Queralt [UJ]	363966.0	4598950.0	709.0
UL	Castelldans [UL]	312634.0	4600137.0	228.0
UM	la Granadella [UM]	305024.0	4581539.0	505.0
UN	CassË de la Selva [UN]	494031.0	4636048.0	171.0
UO	Fornells de la Selva [UO]	485224.0	4640516.0	97.0
UY	Os de Balaguer - Monestir d'Avellanes [UY]	314312.0	4638982.0	576.0
V1	Vallfogona de Balaguer [V1]	319720.0	4628372.0	238.0
V3	Gurb [V3]	436501.0	4644962.0	509.0

CODE	NAME	X	Y	Z
V4	Montesquiu [V4]	435184.0	4663022.0	684.0
V5	Perafita [V5]	427253.0	4654737.0	774.0
V6	Viladrau - Aig│es de Viladrau [V6]	452469.0	4632660.0	871.0
V7	Embassament de Sau [V7]	450249.0	4647440.0	435.0
V8	el Poal [V8]	323404.0	4615827.0	223.0
V9	Miralcamp [V9]	323130.0	4609228.0	256.0
VD	el Can¥s [VD]	350614.0	4617053.0	429.0
VE	Aitona [VE]	288096.0	4596129.0	97.0
VF	AlcarrËs - Torrent d'AlcarrËs [VF]	295806.0	4604563.0	122.0
VH	Gimenells [VH]	283029.0	4615308.0	259.0
VI	Lleida [VI]	299860.0	4611600.0	190.0
VJ	Lleida - Pla de Lleida [VJ]	304067.0	4608194.0	161.0
VK	Raimat [VK]	287749.0	4617960.0	286.0
VL	Ser=s [VL]	283418.0	4593291.0	100.0
VM	Vilanova de SegriË [VM]	302801.0	4620999.0	222.0
VN	Vilob¦ d'Onyar [VN]	478739.0	4636960.0	117.0
VO	Lladurs [VO]	370074.0	4660885.0	785.0
VP	Pin¥s [VP]	378688.0	4629343.0	659.0
VR	Tornabous - Montargull [VR]	337316.0	4617403.0	291.0
VS	Lac Redon (2.247 m) [VS]	317992.0	4723250.0	2247.0
VX	Tagamanent - PN del Montseny [VX]	442135.0	4622193.0	1030.0
VZ	Espolla [VZ]	500699.0	4692665.0	83.0
W1	Castell¥ d'EmpÀries [W1]	507535.0	4677438.0	2.0
W2	Torroella de FluviË [W2]	504869.0	4670256.0	7.0
W3	Ventall¥ [W3]	505459.0	4666644.0	4.0
W5	Oliana [W5]	360703.0	4659884.0	490.0
W8	Blancafort [W8]	346382.0	4589704.0	438.0
W9	la Vall d'en Bas [W9]	455020.0	4666287.0	461.0
WA	Oliola [WA]	346924.0	4637964.0	443.0
WB	Albesa [WB]	306419.0	4625996.0	267.0
WC	Golm ┌s [WC]	327223.0	4611694.0	261.0
WF	Vilablareix [WF]	481511.0	4644926.0	108.0
WG	Algerri [WG]	304698.0	4630564.0	301.0
WH	Bellv¦s [WH]	318035.0	4616032.0	196.0
WI	Maials [WI]	289374.0	4581699.0	350.0
WK	AlfarrËs [WK]	298910.0	4632775.0	268.0
WL	Sant Mart¦ de Riucorb [WL]	340704.0	4604266.0	413.0
WQ	Montsec d'Ares (1.572 m) [WQ]	312204.0	4658169.0	1572.0
WS	Viladrau [WS]	451837.0	4632388.0	953.0
WV	Guardiola de BerguedË [WV]	407253.0	4676590.0	788.0
WX	Camarasa [WX]	324435.0	4643023.0	668.0
X3	Alguaire [X3]	295188.0	4624359.0	370.0
X6	Baldomar [X6]	336658.0	4643168.0	366.0
X7	Torres de Segre [X7]	295925.0	4599478.0	215.0
XA	la Panadella [XA]	366821.0	4607091.0	785.0

CODE	NAME	X	Y	Z
XD	Ulldemolins [XD]	323136.0	4576641.0	687.0
XH	Sort [XH]	346203.0	4696679.0	679.0
XI	Mollerussa [XI]	322789.0	4609774.0	247.0
XJ	Girona [XJ]	484094.0	4648026.0	72.0
XK	Puig Sesolles (1.668 m) [XK]	453364.0	4624999.0	1668.0
XM	els AlamÀs [XM]	311328.0	4607517.0	235.0
XN	Ser=s - Depuradora [XN]	285270.0	4593642.0	89.0
XO	Vic [XO]	437077.0	4643040.0	499.0
Z1	Bonaigua (2.266 m) [Z1]	334902.0	4723778.0	2266.0
Z2	Bo¦ (2.535 m) [Z2]	326136.0	4703893.0	2535.0
Z3	Malniu (2.230 m) [Z3]	399672.0	4702450.0	2230.0
Z4	Ulldeter (2.364 m) [Z4]	438589.0	4697112.0	2364.0
Z5	Certascan (2.400 m) [Z5]	358563.0	4729185.0	2400.0
Z6	Sasseuva (2.228 m) [Z6]	314539.0	4737984.0	2228.0
Z7	Espot (2.519 m) [Z7]	340345.0	4711119.0	2519.0
Z8	el Port del Comte (2.316 m) [Z8]	378209.0	4671302.0	2316.0
Z9	Cad¦ Nord (2.143 m) - Prat d'Aguil¥ [Z9]	394159.0	4683273.0	2143.0
ZB	Sal=ria (2.451 m) [ZB]	365871.0	4708943.0	2451.0
ZC	Ulldeter (2.410 m) [ZC]	438033.0	4697020.0	2410.0
9829E	ARCUSA	752957.9	4690355.8	869
9833	EL GRADO	767032.5	4671662.8	425
9856D	SECASTILLA COVISA	771228.1	4674943.3	600
D7	VINEBRE	298285	4562288.0	53
H1	ÒDENA	387823	4604938	333
VA	ASCO	291431	4563754	257
VC	RIBAROJA D’EBRE	284966	4569242	69
149D	MANRESA (LA CULLA)	902587	4630222.4	291
9898	HUESCA	721151.4	4662570.8	541
208	GRANOLLERS	940951.3	4619819.5	154
WR	TORROJA DEL PRIORAT	315460	4566311	300

2. Meteorological stations for historical analysis: Precipitation

CODE	NAME	X	Y	Z
0272U	SANTA COLOMA DE FARNERS (VIVER EL TEIX)	474369.3	4636159.8	140.0
0292A	BEGUR (LOS ALGARROBOS)	515797.7	4642453.6	185.0
0336B	TORELLO (AFORES)	438761.7	4655469.2	503.0
0340A	TARADELL (CATALUNYA)	440715.6	4636144.5	623.0
0347D	VIC (SANT CRISTOFOL)	438164.8	4642365.7	505.0
0347E	VIC (GERMANS MARISTES)	438348.8	4642333.3	500.0
0366O	SANTA COLOMA DE FARNERS (FONTDEGLORIA)	472011.4	4634410.7	134.0
0370A	GIRONA (BELL-LLOC)	484188.8	4646709.7	90.0
0370B	GIRONA (ANTIC INSTITUT)	485457.7	4648249.1	95.0
0385B	TORROELLA DE MONTGRI (RAMON BOI)	510667.4	4654348.8	22.0
0385J	L'ESTARTIT (PASSEIG MARITIN)	516618.4	4655809.8	2.0
0432A	ROSES (CENTRE ESCOLAR EMPORDA)	515117.6	4680357.0	65.0
0433E	EL PORT DE LA SELVA	516818.4	4687485.7	4.0
9584	PUIGCERDA	412630.9	4698653.0	1145.0
9585	LA MOLINA	412467.3	4687395.2	1704.0
9619	LA SEO D'URGELL	373105.5	4690527.5	690.0
9621	ADRALL	367683.0	4686956.1	642.0
9635	ORGANYA	362106.7	4674659.5	540.0
9638	OLIANA (PANTA)	359621.5	4660422.4	480.0
9649	PONTS	350548.6	4643266.9	360.0
9650	ARTESA DE SEGRE	337866.2	4639872.7	320.0
9656	BONAIGUA	334736.2	4725771.3	2263.0
9657	ESTERRI D'ANEU	346264.1	4720784.0	940.0
9660	SANT MAURICI (LLAC)	336263.5	4716167.4	1920.0
9669	TAVESCAN	356682.3	4722042.2	1100.0
9675	LLAVORSI	353073.8	4706533.7	850.0
9680	SORT	346054.7	4696840.8	680.0
9684	ESCOS	340477.9	4692984.8	790.0
9686	GERRI DE LA SAL	340905.0	4687605.3	595.0
9688	ESTANY-GENTO (LLAC)	335753.6	4708093.3	2120.0
9689	CABDELLA	334203.6	4703408.0	1270.0
9690	ELS MOLINS (MONROS)	332675.9	4696870.6	1020.0
9695	SENTERADA	329696.5	4687220.6	660.0
9696A	LA POBLA DE SEGUR (FECSA)	332262.2	4679566.6	550.0
9700	TALARN (PRESA)	326552.6	4671186.9	425.0
9702	BON REPOS (SANT SALVADOR TOLO)	338692.7	4655931.5	1050.0
9704	GAVET DE LA CONCA	324986.3	4663571.6	380.0

CODE	NAME	X	Y	Z
9708	LLIMIANA (PANTA DE TERRADETS)	324833.5	4657402.8	399.0
9710	CAMARASA (PANTA DE SANT LLOREN?)	320148.7	4635885.1	245.0
9713	AGRAMUNT	341983.0	4627961.7	349.0
9714	MONTGAI	329687.0	4629509.6	280.0
9714I	LA SENTIU DE SIO (SIFO DE SIO)	318618.5	4630152.6	240.0
9715	BALAGUER (INSTITUT)	318571.5	4628302.0	212.0
9717	CERVERA	356402.5	4614636.8	540.0
9720	TARREGA	345042.7	4612466.5	375.0
9722	PENELLAS (GRAMJA SANT VICEN?)	326734.4	4622019.8	242.0
9724E	OS DE BALAGUER (AVELLANES)	313292.4	4638407.2	535.0
9726	VALLBONA DE LES MONJES (ROCALLAURA)	345352.7	4596723.6	660.0
9726O	CIUTADILLA	344741.8	4602815.2	510.0
9729	MOLLERUSSA (IES AGRARIA L'URGELL)	322264.9	4609569.0	245.0
9729A	MOLLERUSSA 'CANAL D'URGELL'	323686.9	4610891.8	241.0
9729E	EL PALAU D(ANGLESOLA)ESCARABAT)	322387.1	4614503.7	235.0
9729I	LINYOLA	323904.4	4619743.4	245.0
9734	VILALLER (SENET)	312514.3	4712693.1	1093.0
9736	VILALLER	310891.2	4703352.9	960.0
9738	CALDAS DE BOI	322093.4	4712410.6	1280.0
9741	BOI (CENTRAL)	319248.2	4708317.0	1096.0
9744A	LLESP (CENTRAL ELECTRICA)	314995.1	4702965.0	1000.0
9745	EL PONT DE SUERT	313470.6	4697233.3	845.0
9762	ALFARRAS	297939.2	4633918.4	280.0
9767	LES BORGES BLANQUES	320611.2	4598963.1	304.0
9768	JUNEDA	317903.9	4601962.8	264.0
9768C	BELL-LLOCH (SEMILLAS)	313962.6	4610921.1	199.0
9770E	LLEIDA (SAN MIGUEL)	302828.1	4610230.5	150.0
9771C	LLEIDA	298682.1	4611055.4	192.0
9771E	TERMENS (CH)	314172.9	4619032.6	150.0
9772	EL VILOSELL	327194.1	4583280.4	665.0
9772E	LA POBLA DE CERVOLES	324367.8	4581743.7	663.0
9773	L(ALBAGES	310659.6	4590946.4	377.0
9777C	MAIALS	290892.0	4581953.3	375.0
9780E	UTXESA (PANTA)	291291.2	4595770.5	170.0
9914E	TAMARITE DE LITERA	282882.0	4636954.5	318.0
9918	TAMARITE DE LITERA 'LA MELUSA'	281609.8	4628564.9	218.0
9990	ARTIES	325271.0	4729800.3	1185.0
9991	VIELHA	318476.1	4731148.3	940.0
9579	MEQUINENZA	772251.0	4589814.2	321.0
9582	LLIVIA	910971.7	4713887.6	1260.0

CODE	NAME	X	Y	Z
9601U	RANSOL	880457.7	4724593.4	1720.0
9605	ENGOLASTERS	875431.1	4718161.6	1500.0
9607	LES ESCALDES	873941.0	4718205.0	1200.0
9727U	VILANOVA DE BELLPUIG C U	830147.1	4612938.0	300.0
9749	ESCALES 'EMBALSE'	808690.1	4692343.1	717.0
9761	SANTA ANA 'EMBALSE'	796906.7	4642975.1	390.0
9769I	LLEIDA TORRERIBERA	807940.5	4613033.2	217.0
9779	SARROCA DE LLEIDA	797421.1	4595934.8	190.0
9829	MEDIANO 'EMBALSE'	763900.8	4690141.6	504.0
9833	EL GRADO	767032.5	4671662.8	425.0
9838	BENASQUE 'VIVERO'	788919.0	4722186.2	1120.0
9840	ERISTE 'CENTRAL'	786477.8	4721034.3	1100.0
9841	SESUE CENTRAL	784803.3	4716206.4	930.0
9842	VILLANOVA 'PRESA'	784918.6	4715624.0	928.0
9843	SEIRA CENTRAL	782486.6	4708541.2	816.0
9849	GRAUS 'VENTAS DE SANTA LUCIA'	777109.0	4680826.4	498.0
9856	LA PUEBLA DE CASTRO PRESA	774132.4	4669989.0	710.0
9924E	FRAGA LAS BALAS C A C	782825.7	4600075.0	150.0

3. Meteorological stations for historical analysis: Temperature (max.-min.)

CODE	NAME	X	Y	Z
19	VIMBODI (RIUDABELLA)	336180.7	4581929.9	590.0
22	MONTBLANC	346691.0	4582162.8	340.0
24	ROCAFORT DE QUERALT	356508.2	4593222.7	510.0
25	SARRAL	353699.6	4589731.0	400.0
114	PRATS DE LLU?ANES	419492.6	4651127.8	700.0
120	MOIA	424970.8	4629568.9	735.0
132	SOLSONA	377152.4	4650840.4	677.0
203	ELS HOSTALETS DE BALENYA	438505.9	4633850.0	570.0
254	CALELLA	283377.8	4610482.1	6.0
317	NURIA	430497.8	4693856.1	1967.0
323	RIPOLL (PROGRES)	433789.5	4671923.5	678.0
328	LA FARGA DE BEBIE	434501.2	4664575.7	608.0
356	VILANOVA SAU (EL TORTADES)	453296.1	4638826.7	850.0
367	GIRONA/COSTA BRAVA	480372.7	4639995.8	143.0
395	CASTELLFOLLIT DE LA ROCA	462814.5	4674239.6	296.0
423	PERALADA	500732.6	4684196.1	25.0
429	FIGUERES	497365.6	4679693.5	40.0
9584	PUIGCERDA	412630.9	4698653.0	1145.0
9585	LA MOLINA	412467.3	4687395.2	1704.0
9619	LA SEO D'URGELL	373105.5	4690527.5	690.0
9621	ADRALL	367683.0	4686956.1	642.0
9638	OLIANA (PANTA)	359621.5	4660422.4	480.0
9649	PONTS	350548.6	4643266.9	360.0
9829E	ARCUSA	752957.9	4690355.8	869.0
9833	EL GRADO	767032.5	4671662.8	425.0
9650	ARTESA DE SEGRE	337866.2	4639872.7	320.0
9657	ESTERRI D'ANEU	346264.1	4720784.0	940.0
9660	SANT MAURICI (LLAC)	336263.5	4716167.4	1920.0
9675	LLAVORSI	353073.8	4706533.7	850.0
9688	ESTANY-GENTO (LLAC)	335753.6	4708093.3	2120.0
9689	CABDELLA	334203.6	4703408.0	1270.0
9690	ELS MOLINS (MONROS)	332675.9	4696870.6	1020.0
9695	SENTERADA	329696.5	4687220.6	660.0
9700	TALARN (PRESA)	326552.6	4671186.9	425.0
9704	GAVET DE LA CONCA	324986.3	4663571.6	380.0
9708	LLIMIANA (PANTA DE TERRADETS)	324833.5	4657402.8	399.0
9710	CAMARASA (PANTA DE SANT LLOREN?)	320148.7	4635885.1	245.0
9713	AGRAMUNT	341983.0	4627961.7	349.0
9720	TARREGA	345042.7	4612466.5	375.0
9729	MOLLERUSSA (IES AGRARIA L'URGELL)	322264.9	4609569.0	245.0
9734	VILALLER (SENET)	312514.3	4712693.1	1093.0

CODE	NAME	X	Y	Z
9736	VILALLER	310891.2	4703352.9	960.0
9741	BOI (CENTRAL)	319248.2	4708317.0	1096.0
9745	EL PONT DE SUERT	313470.6	4697233.3	845.0
9761	SANTA ANA 'EMBALSE'	796906.7	4642975.1	390.0
9770	LLEIDA (ENHER)	302819.6	4609922.1	221.0
9772	EL VILOSELL	327194.1	4583280.4	665.0
9838	BENASQUE 'VIVERO'	788919.0	4722186.2	1120.0
9842	VILLANOVA 'PRESA'	784918.6	4715624.0	928.0
9843	SEIRA CENTRAL	782486.6	4708541.2	816.0
9849	GRAUS 'VENTAS DE SANTA LUCIA'	777109.0	4680826.4	498.0
9856	LA PUEBLA DE CASTRO PRESA	774132.4	4669989.0	710.0
9918	TAMARITE DE LITERA 'LA MELUSA'	281609.8	4628564.9	218.0
9990	ARTIES	325271.0	4729800.3	1185.0
0127O	PORT DEL COMTE	381040.5	4669902.1	1800.0
0292A	BEGUR (LOS ALGARROBOS)	515797.7	4642453.6	185.0
0340A	TARADELL (CATALUNYA)	440715.6	4636144.5	623.0
0347D	VIC (SANT CRISTOFOL)	438164.8	4642365.7	505.0
0370A	GIRONA (BELL-LLOC)	484188.8	4646709.7	90.0
0370B	GIRONA (ANTIC INSTITUT)	485457.7	4648249.1	95.0
0385J	L'ESTARTIT (PASSEIG MARITIN)	516618.4	4655809.8	2.0
0388E	LA VALL D'EN BAS (CAN GRONXA)	453878.9	4664607.6	475.0
9696A	LA POBLA DE SEGUR (FECSA)	332262.2	4679566.6	550.0
9714I	LA SENTIU DE SIO (SIFO DE SIO)	318618.5	4630152.6	240.0
9726O	CIUTADILLA	344741.8	4602815.2	510.0
9729A	MOLLERUSSA 'CANAL D'URGELL'	323686.9	4610891.8	241.0
9729E	EL PALAU D(ANGLESOLA)ESCARABAT)	322387.1	4614503.7	235.0
9769I	LLEIDA TORRERIBERA	807940.5	4613033.2	217.0
9770E	LLEIDA (SAN MIGUEL)	302828.1	4610230.5	150.0
9771C	LLEIDA	298682.1	4611055.4	192.0
9913I	ALFARRAS (COLL DE FOIX)	296569.2	4634451.2	340.0
9914E	TAMARITE DE LITERA	282882.0	4636954.5	318.0
9924E	FRAGA LAS BALAS C A C	782825.7	4600075.0	150.0
9829E	ARCUSA	752957.9	4690355.8	869.0
9833	EL GRADO	767032.5	4671662.8	425.0

4. Meteorological stations for modelling: Precipitation

CODE	NAME	X	Y	Z
9579	MEQUINENZA	772251.0	4589814.2	321.0
9619	LA SEO D'URGELL	373105.5	4690527.5	690.0
9650	ARTESA DE SEGRE	337866.2	4639872.7	320.0
9660	SANT MAURICI (LLAC)	336263.5	4716167.4	1920.0
9686	GERRI DE LA SAL	340905.0	4687605.3	595.0
9713	AGRAMUNT	341983.0	4627961.7	349.0
9717	CERVERA	356402.5	4614636.8	540.0
9726	VALLBONA DE LES MONJES (ROCALLAURA)	345352.7	4596723.6	660.0
9729	MOLLERUSSA (IES AGRARIA L'URGELL)	322264.9	4609569.0	245.0
9756	BENABARRE 'COMARCAL'	291561.5	4665220.9	740.0
9761	SANTA ANA 'EMBALSE'	796906.7	4642975.1	390.0
9768	JUNEDA	317903.9	4601962.8	264.0
9772	EL VILOSELL	327194.1	4583280.4	665.0
9773	L(ALBAGES	310659.6	4590946.4	377.0
9840	ERISTE 'CENTRAL'	786477.8	4721034.3	1100.0
9841	SESUE CENTRAL	784803.3	4716206.4	930.0
9853	SERRADUY 'DGA'	299677.6	4687861.4	775.0
9855	LASCUARRE DGA	294938.6	4674630.6	647.0
9918	TAMARITE DE LITERA 'LA MELUSA'	281609.8	4628564.9	218.0
0044E	SANTA COLOMA DE QUERALT (SANT ROC)	365205.1	4599225.3	680.0
0127O	PORT DEL COMTE	381040.5	4669902.1	1800.0
0131U	SOLSONA (BOMBEROS)	375416.1	4650253.7	690.0
0272U	SANTA COLOMA DE FARNERS (VIVER EL TEIX)	474369.3	4636159.8	140.0
0294B	LA BISBAL (D'EMPORDA 3)	503613.5	4646322.9	51.0
0324A	RIPOLL	433739.3	4671461.3	671.0
0336B	TORELLO (AFORES)	438761.7	4655469.2	503.0
0347D	VIC (SANT CRISTOFOL)	438164.8	4642365.7	505.0
0366L	SALT	483427.8	4646094.6	84.0
0385B	TORROELLA DE MONTGRI (RAMON BOI)	510667.4	4654348.8	22.0
0385J	L'ESTARTIT (PASSEIG MARITIN)	516618.4	4655809.8	2.0
0388E	LA VALL D'EN BAS (CAN GRONXA)	453878.9	4664607.6	475.0
0390D	OLOT (PARC NOU)	457086.1	4671002.8	450.0
0411O	CASTELLO D'EMPURIES (EL CORTALET)	507679.7	4674546.5	0.0
0429C	FIGUERES (ELS ASPRES)	496838.3	4678645.1	47.0
0433E	EL PORT DE LA SELVA	516818.4	4687485.7	4.0
9582I	PUIGCERDA (POLIESPORTIU)	412341.6	4699273.6	1210.0
9632O	JOSA TUIXEN (ESCOLA MUNICIPAL)	382068.4	4676456.3	1198.0
9714I	LA SENTIU DE SIO (SIFO DE SIO)	318618.5	4630152.6	240.0
9718C	ELS PLANS DE SIO (EL CANOS)	350621.5	4616976.5	430.0
9720X	T?RREGA	345603.2	4612701.3	363.0
9722O	VALLFOGONA DE BALAGUER	317091.0	4624605.4	221.0

CODE	NAME	X	Y	Z
9729A	MOLLERUSSA 'CANAL D'URGELL'	323686.9	4610891.8	241.0
9729E	EL PALAU D(ANGLESOLA)ESCARABAT)	322387.1	4614503.7	235.0
9755A	PUENTE DE MONTAANA 'D.G.A.'	805349.6	4673126.4	535.0
9768C	BELL-LLOCH (SEMILLAS)	313962.6	4610921.1	199.0
9768J	VILANOVA DE SEGRIA	301721.1	4620446.8	220.0
9771C	LLEIDA	298682.1	4611055.4	192.0
9772E	LA POBLA DE CERVOLES	324367.8	4581743.7	663.0
9779A	SARROCA DE LLEIDA AIGUES	798060.5	4593396.6	304.0
9850A	GRAUS 'RESIDENCIA'	775348.6	4675937.4	480.0
9870D	PERALTA 'CALASANZ DGA'	779513.4	4657779.9	743.0
9914E	TAMARITE DE LITERA	282882.0	4636954.5	318.0
9924B	FRAGA 'COMARCAL'	279311.3	4600355.7	170.0
C6	Castellnou de Seana [C6]	329547.0	4613880.0	264.0
C7	TËrrega [C7]	347109.0	4614634.0	427.0
C8	Cervera [C8]	358263.0	4615360.0	554.0
CA	Clariana de Cardener [CA]	382829.0	4645816.0	693.0
CC	Or¦s [CC]	434629.0	4658497.0	626.0
CD	la Seu d'Urgell [CD]	371054.0	4692344.0	849.0
CG	Moll¥ [CG]	451896.0	4692025.0	1405.0
CI	Sant Pau de SegÀries [CI]	447659.0	4678865.0	852.0
CJ	OrganyË [CJ]	362364.0	4675337.0	566.0
CP	Sant RomË d'Abella [CP]	338034.0	4667301.0	690.0
CQ	Vilanova de MeiË [CQ]	336571.0	4651361.0	594.0
CR	la Quar [CR]	414270.0	4659419.0	873.0
CT	el Pont de Suert [CT]	314390.0	4696649.0	823.0
CU	Vielha e Mijaran [CU]	319403.0	4729904.0	1002.0
CV	la Pobla de Segur [CV]	332135.0	4678566.0	513.0
CW	l'Espluga de Francol¦ [CW]	341160.0	4584267.0	446.0
CY	Muntanyola [CY]	431948.0	4636775.0	816.0
D1	Margalef [D1]	311998.0	4573056.0	404.0
D4	Roses [D4]	515073.0	4680048.0	24.0
D6	Portbou [D6]	513765.0	4698310.0	196.0
DC	Olot [DC]	457375.0	4671366.0	422.0
DF	la Bisbal d'EmpordË [DF]	503029.0	4647484.0	29.0
DG	NÀria (1.971 m) [DG]	430564.0	4694570.0	1971.0
DJ	Banyoles [DJ]	482708.0	4662940.0	176.0
DM	Girona - Bombers [DM]	484096.0	4645571.0	90.0
DN	AnglÌs [DN]	469522.0	4645711.0	150.0
DO	Castell d'Aro [DO]	502786.0	4628728.0	14.0
DP	Das [DP]	406780.0	4693467.0	1097.0
U1	Cabanes [U1]	496369.0	4684011.0	31.0
U2	Sant Pere Pescador [U2]	508088.0	4669656.0	4.0
U5	Prades - los Hortals [U5]	332361.0	4575699.0	969.0
UB	la Tallada d'EmpordË [UB]	505220.0	4655976.0	15.0
UC	Monells [UC]	499849.0	4647456.0	60.0

CODE	NAME	X	Y	Z
UD	Serra de Dar¥ [UD]	505248.0	4653197.0	12.0
UE	Torroella de Montgr¦ [UE]	513107.0	4652553.0	4.0
UI	Gisclareny [UI]	398005.0	4680120.0	1386.0
UJ	Santa Coloma de Queralt [UJ]	363966.0	4598950.0	709.0
UL	Castelldans [UL]	312634.0	4600137.0	228.0
UM	la Granadella [UM]	305024.0	4581539.0	505.0
UN	CassË de la Selva [UN]	494031.0	4636048.0	171.0
UO	Fornells de la Selva [UO]	485224.0	4640516.0	97.0
UY	Os de Balaguer - Monestir d'Avellanes [UY]	314312.0	4638982.0	576.0
V1	Vallfogona de Balaguer [V1]	319720.0	4628372.0	238.0
V3	Gurb [V3]	436501.0	4644962.0	509.0
V4	Montesquiu [V4]	435184.0	4663022.0	684.0
V5	Perafita [V5]	427253.0	4654737.0	774.0
V8	el Poal [V8]	323404.0	4615827.0	223.0
V9	Miralcamp [V9]	323130.0	4609228.0	256.0
VD	el Can¥s [VD]	350614.0	4617053.0	429.0
VE	Aitona [VE]	288096.0	4596129.0	97.0
VF	AlcarrËs - Torrent d'AlcarrËs [VF]	295806.0	4604563.0	122.0
VH	Gimenells [VH]	283029.0	4615308.0	259.0
VJ	Lleida - Pla de Lleida [VJ]	304067.0	4608194.0	161.0
VK	Raimat [VK]	287749.0	4617960.0	286.0
VL	Ser=s [VL]	283418.0	4593291.0	100.0
VM	Vilanova de SegriË [VM]	302801.0	4620999.0	222.0
VN	Vilob¦ d'Onyar [VN]	478739.0	4636960.0	117.0
VO	Lladurs [VO]	370074.0	4660885.0	785.0
VP	Pin¥s [VP]	378688.0	4629343.0	659.0
VR	Tornabous - Montargull [VR]	337316.0	4617403.0	291.0
VS	Lac Redon (2.247 m) [VS]	317992.0	4723250.0	2247.0
VX	Tagamanent - PN del Montseny [VX]	442135.0	4622193.0	1030.0
VZ	Espolla [VZ]	500699.0	4692665.0	83.0
W1	Castell¥ d'EmpÀries [W1]	507535.0	4677438.0	2.0
W2	Torroella de FluviË [W2]	504869.0	4670256.0	7.0
W3	Ventall¥ [W3]	505459.0	4666644.0	4.0
W5	Oliana [W5]	360703.0	4659884.0	490.0
W8	Blancafort [W8]	346382.0	4589704.0	438.0
W9	la Vall d'en Bas [W9]	455020.0	4666287.0	461.0
WA	Oliola [WA]	346924.0	4637964.0	443.0
WB	Albesa [WB]	306419.0	4625996.0	267.0
WC	Golm ┌s [WC]	327223.0	4611694.0	261.0
WF	Vilablareix [WF]	481511.0	4644926.0	108.0
WG	Algerri [WG]	304698.0	4630564.0	301.0
WI	Maials [WI]	289374.0	4581699.0	350.0
WK	AlfarrËs [WK]	298910.0	4632775.0	268.0
WL	Sant Mart¦ de Riucorb [WL]	340704.0	4604266.0	413.0
WQ	Montsec d'Ares (1.572 m) [WQ]	312204.0	4658169.0	1572.0

CODE	NAME	X	Y	Z
Z1	Bonaigua (2.266 m) [Z1]	334902.0	4723778.0	2266.0
Z2	Bo¦ (2.535 m) [Z2]	326136.0	4703893.0	2535.0
Z3	Malniu (2.230 m) [Z3]	399672.0	4702450.0	2230.0
Z4	Ulldeter (2.364 m) [Z4]	438589.0	4697112.0	2364.0
Z5	Certascan (2.400 m) [Z5]	358563.0	4729185.0	2400.0
Z7	Espot (2.519 m) [Z7]	340345.0	4711119.0	2519.0
Z8	el Port del Comte (2.316 m) [Z8]	378209.0	4671302.0	2316.0
9856D	SECASTILLA COVISA	771228.1	4674943.3	600.0
D7	VINEBRE	298285.0	4562288.0	53.0
H1	ÒDENA	387823.0	4604938.0	333.0
VA	ASCO	291431.0	4563754.0	257.0
VC	RIBAROJA D'EBRE	284966.0	4569242.0	69.0
149D	MANRESA	902587.0	4630222.4	291
9898	HUESCA	721151.4	4662570.8	541
208	GRANOLLERS	940951.3	4619819.5	154
WR	TORROJA DEL PRIORAT	315460.0	4565311.0	300.0

5. Meteorological stations for modelling: Temperature (max.-min.)

CODE	NAME	X	Y	Z
22	MONTBLANC	346691.0	4582162.8	340.0
24	ROCAFORT DE QUERALT	356508.2	4593222.7	510.0
25	SARRAL	353699.6	4589731.0	400.0
203	ELS HOSTALETS DE BALENYA	438505.9	4633850.0	570.0
321	CAMPDEVANOL	430885.2	4675128.5	738.0
323	RIPOLL (PROGRES)	433789.5	4671923.5	678.0
341	TONA (ESCOLA)	435894.0	4633163.6	611.0
348	GURB DE LA PLANA (BAR HOSTAL)	435380.1	4645135.6	440.0
356	VILANOVA SAU (EL TORTADES)	453296.1	4638826.7	850.0
367	GIRONA/COSTA BRAVA	480372.7	4639995.8	143.0
378	FONCOBERTA (L)ANGLADA)	482968.9	4665803.6	180.0
394	LA VALL DE BIANYA (PUJALET)	451500.2	4675912.4	445.0
395	CASTELLFOLLIT DE LA ROCA	462814.5	4674239.6	296.0
423	PERALADA	500732.6	4684196.1	25.0
9650	ARTESA DE SEGRE	337866.2	4639872.7	320.0
9660	SANT MAURICI (LLAC)	336263.5	4716167.4	1920.0
9713	AGRAMUNT	341983.0	4627961.7	349.0
9726	VALLBONA DE LES MONJES (ROCALLAURA)	345352.7	4596723.6	660.0
9729	MOLLERUSSA (IES AGRARIA L'URGELL)	322264.9	4609569.0	245.0
9756	BENABARRE 'COMARCAL'	291561.5	4665220.9	740.0
9761	SANTA ANA 'EMBALSE'	796906.7	4642975.1	390.0
9772	EL VILOSELL	327194.1	4583280.4	665.0
9849	GRAUS 'VENTAS DE SANTA LUCIA'	777109.0	4680826.4	498.0
9853	SERRADUY 'DGA'	299677.6	4687861.4	775.0
9855	LASCUARRE DGA	294938.6	4674630.6	647.0
9918	TAMARITE DE LITERA 'LA MELUSA'	281609.8	4628564.9	218.0
0044E	SANTA COLOMA DE QUERALT (SANT ROC)	365205.1	4599225.3	680.0
0127O	PORT DEL COMTE	381040.5	4669902.1	1800.0
0131U	SOLSONA (BOMBEROS)	375416.1	4650253.7	690.0
0272U	SANTA COLOMA DE FARNERS (VIVER EL TEIX)	474369.3	4636159.8	140.0
0294B	LA BISBAL (D'EMPORDA 3)	503613.5	4646322.9	51.0
0324A	RIPOLL	433739.3	4671461.3	671.0
0336B	TORELLO (AFORES)	438761.7	4655469.2	503.0
0347D	VIC (SANT CRISTOFOL)	438164.8	4642365.7	505.0
0366L	SALT	483427.8	4646094.6	84.0
0370Y	GIRONA (SANT DANIEL)	486609.0	4648647.7	91.0
0385J	L'ESTARTIT (PASSEIG MARITIN)	516618.4	4655809.8	2.0
0388E	LA VALL D'EN BAS (CAN GRONXA)	453878.9	4664607.6	475.0
0390D	OLOT (PARC NOU)	457086.1	4671002.8	450.0
0411O	CASTELLO D'EMPURIES (EL CORTALET)	507679.7	4674546.5	0.0
0411X	CASTELLO D?EMPURIES	507679.5	4674731.6	4.0

0421E	ESPOLLA 'LES ALBERES'	500571.6	4693171.5	94.0
0429C	FIGUERES (ELS ASPRES)	496838.3	4678645.1	47.0
0433E	EL PORT DE LA SELVA	516818.4	4687485.7	4.0
9582I	PUIGCERDA (POLIESPORTIU)	412341.6	4699273.6	1210.0
9632O	JOSA TUIXEN (ESCOLA MUNICIPAL)	382068.4	4676456.3	1198.0
9700C	TREMP (BOMBERS)	325150.8	4670203.1	461.0
9714I	LA SENTIU DE SIO (SIFO DE SIO)	318618.5	4630152.6	240.0
9717A	CERVERA (BOMBERS)	355767.0	4614094.2	510.0
9718C	ELS PLANS DE SIO (EL CANOS)	350621.5	4616976.5	430.0
9720X	T?RREGA	345603.2	4612701.3	363.0
9726O	CIUTADILLA	344741.8	4602815.2	510.0
9729A	MOLLERUSSA 'CANAL D'URGELL'	323686.9	4610891.8	241.0
9729E	EL PALAU D(ANGLESOLA)ESCARABAT)	322387.1	4614503.7	235.0
9755A	PUENTE DE MONTAANA 'D.G.A.'	805349.6	4673126.4	535.0
9768J	VILANOVA DE SEGRIA	301721.1	4620446.8	220.0
9769I	LLEIDA TORRERIBERA	807940.5	4613033.2	217.0
9771C	LLEIDA	298682.1	4611055.4	192.0
9772E	LA POBLA DE CERVOLES	324367.8	4581743.7	663.0
9850A	GRAUS 'RESIDENCIA'	775348.6	4675937.4	480.0
9870D	PERALTA 'CALASANZ DGA'	779513.4	4657779.9	743.0
9914E	TAMARITE DE LITERA	282882.0	4636954.5	318.0
9924B	FRAGA 'COMARCAL'	279311.3	4600355.7	170.0
C6	Castellnou de Seana [C6]	329547.0	4613880.0	264.0
C7	TËrrega [C7]	347109.0	4614634.0	427.0
C8	Cervera [C8]	358263.0	4615360.0	554.0
CA	Clariana de Cardener [CA]	382829.0	4645816.0	693.0
CC	Or¦s [CC]	434629.0	4658497.0	626.0
CD	la Seu d'Urgell [CD]	371054.0	4692344.0	849.0
CG	Moll¥ [CG]	451896.0	4692025.0	1405.0
CI	Sant Pau de SegÀries [CI]	447659.0	4678865.0	852.0
CJ	OrganyË [CJ]	362364.0	4675337.0	566.0
CP	Sant RomË d'Abella [CP]	338034.0	4667301.0	690.0
CQ	Vilanova de MeiË [CQ]	336571.0	4651361.0	594.0
CR	la Quar [CR]	414270.0	4659419.0	873.0
CT	el Pont de Suert [CT]	314390.0	4696649.0	823.0
CU	Vielha e Mijaran [CU]	319403.0	4729904.0	1002.0
CV	la Pobla de Segur [CV]	332135.0	4678566.0	513.0
CW	l'Espluga de Francol¦ [CW]	341160.0	4584267.0	446.0
CY	Muntanyola [CY]	431948.0	4636775.0	816.0
D1	Margalef [D1]	311998.0	4573056.0	404.0
D4	Roses [D4]	515073.0	4680048.0	24.0
D6	Portbou [D6]	513765.0	4698310.0	196.0
DC	Olot [DC]	457375.0	4671366.0	422.0
DF	la Bisbal d'EmpordË [DF]	503029.0	4647484.0	29.0
DG	NÀria (1.971 m) [DG]	430564.0	4694570.0	1971.0
DJ	Banyoles [DJ]	482708.0	4662940.0	176.0

DM	Girona - Bombers [DM]	484096.0	4645571.0	90.0
DN	AnglÌs [DN]	469522.0	4645711.0	150.0
DO	Castell d'Aro [DO]	502786.0	4628728.0	14.0
DP	Das [DP]	406780.0	4693467.0	1097.0
U1	Cabanes [U1]	496369.0	4684011.0	31.0
U2	Sant Pere Pescador [U2]	508088.0	4669656.0	4.0
U5	Prades - los Hortals [U5]	332361.0	4575699.0	969.0
UB	la Tallada d'EmpordË [UB]	505220.0	4655976.0	15.0
UC	Monells [UC]	499849.0	4647456.0	60.0
UD	Serra de Dar¥ [UD]	505248.0	4653197.0	12.0
UE	Torroella de Montgr¦ [UE]	513107.0	4652553.0	4.0
UJ	Santa Coloma de Queralt [UJ]	363966.0	4598950.0	709.0
UL	Castelldans [UL]	312634.0	4600137.0	228.0
UM	la Granadella [UM]	305024.0	4581539.0	505.0
UN	CassË de la Selva [UN]	494031.0	4636048.0	171.0
UO	Fornells de la Selva [UO]	485224.0	4640516.0	97.0
UY	Os de Balaguer - Monestir d'Avellanes [UY]	314312.0	4638982.0	576.0
V1	Vallfogona de Balaguer [V1]	319720.0	4628372.0	238.0
V3	Gurb [V3]	436501.0	4644962.0	509.0
V4	Montesquiu [V4]	435184.0	4663022.0	684.0
V5	Perafita [V5]	427253.0	4654737.0	774.0
V8	el Poal [V8]	323404.0	4615827.0	223.0
V9	Miralcamp [V9]	323130.0	4609228.0	256.0
VD	el Can¥s [VD]	350614.0	4617053.0	429.0
VE	Aitona [VE]	288096.0	4596129.0	97.0
VF	AlcarrËs - Torrent d'AlcarrËs [VF]	295806.0	4604563.0	122.0
VH	Gimenells [VH]	283029.0	4615308.0	259.0
VJ	Lleida - Pla de Lleida [VJ]	304067.0	4608194.0	161.0
VK	Raimat [VK]	287749.0	4617960.0	286.0
VM	Vilanova de SegriË [VM]	302801.0	4620999.0	222.0
VN	Vilob¦ d'Onyar [VN]	478739.0	4636960.0	117.0
VO	Lladurs [VO]	370074.0	4660885.0	785.0
VP	Pin¥s [VP]	378688.0	4629343.0	659.0
VR	Tornabous - Montargull [VR]	337316.0	4617403.0	291.0
VS	Lac Redon (2.247 m) [VS]	317992.0	4723250.0	2247.0
VX	Tagamanent - PN del Montseny [VX]	442135.0	4622193.0	1030.0
VZ	Espolla [VZ]	500699.0	4692665.0	83.0
W1	Castell¥ d'EmpÀries [W1]	507535.0	4677438.0	2.0
W2	Torroella de FluviË [W2]	504869.0	4670256.0	7.0
W3	Ventall¥ [W3]	505459.0	4666644.0	4.0
W5	Oliana [W5]	360703.0	4659884.0	490.0
W8	Blancafort [W8]	346382.0	4589704.0	438.0
W9	la Vall d'en Bas [W9]	455020.0	4666287.0	461.0
WA	Oliola [WA]	346924.0	4637964.0	443.0
WB	Albesa [WB]	306419.0	4625996.0	267.0
WC	Golm ┌s [WC]	327223.0	4611694.0	261.0

WF	Vilablareix [WF]	481511.0	4644926.0	108.0
WG	Algerri [WG]	304698.0	4630564.0	301.0
WI	Maials [WI]	289374.0	4581699.0	350.0
WK	AlfarrËs [WK]	298910.0	4632775.0	268.0
WL	Sant Martį de Riucorb [WL]	340704.0	4604266.0	413.0
WQ	Montsec d'Ares (1.572 m) [WQ]	312204.0	4658169.0	1572.0
Z1	Bonaigua (2.266 m) [Z1]	334902.0	4723778.0	2266.0
Z2	Boį (2.535 m) [Z2]	326136.0	4703893.0	2535.0
Z3	Malniu (2.230 m) [Z3]	399672.0	4702450.0	2230.0
Z4	Ulldeter (2.364 m) [Z4]	438589.0	4697112.0	2364.0
Z5	Certascan (2.400 m) [Z5]	358563.0	4729185.0	2400.0
Z6	Sasseuva (2.228 m) [Z6]	314539.0	4737984.0	2228.0
Z7	Espot (2.519 m) [Z7]	340345.0	4711119.0	2519.0
Z8	el Port del Comte (2.316 m) [Z8]	378209.0	4671302.0	2316.0

6. Meteorological stations for modelling: Sunshine duration

CODE	NAME	X	Y	Z
367	GIRONA/COSTA BRAVA	480372.7	4639995.8	143.0
D4	Roses [D4]	515073.0	4680048.0	24.0
D6	Portbou [D6]	513765.0	4698310.0	196.0
U1	Cabanes [U1]	496369.0	4684011.0	31.0
149D	MANRESA	902587.0	4630222.4	291
9898	HUESCA	721151.4	4662570.8	541
208	GRANOLLERS	940951.3	4619819.5	154

7. Meteorological stations for modelling: Wind speed

CODE	NAME	X	Y	Z
367	GIRONA/COSTA BRAVA	480372.7	4639995.8	143.0
9619	LA SEO D'URGELL	373105.5	4690527.5	690.0
0324A	RIPOLL	433739.3	4671461.3	671.0
0411X	CASTELLO D?EMPURIES	507679.5	4674731.6	4.0
9720X	T?RREGA	345603.2	4612701.3	363.0
9771C	LLEIDA	298682.1	4611055.4	192.0
D4	Roses [D4]	515073.0	4680048.0	24.0
D6	Portbou [D6]	513765.0	4698310.0	196.0
U1	Cabanes [U1]	496369.0	4684011.0	31.0
208	GRANOLLERS	940951.3	4619819.5	154

8. Meteorological stations for modelling: Relative Humidity

CODE	NAME	X	Y	Z
367	GIRONA/COSTA BRAVA	480372.7	4639995.8	143.0
9771C	LLEIDA	298682.1	4611055.4	192.0
D4	Roses [D4]	515073.0	4680048.0	24.0
D6	Portbou [D6]	513765.0	4698310.0	196.0
U1	Cabanes [U1]	496369.0	4684011.0	31.0
VZ	Espolla [VZ]	500699.0	4692665.0	83.0
W1	Castell¥ d'EmpÀries [W1]	507535.0	4677438.0	2.0
149D	MANRESA	902587.0	4630222.4	291
9898	HUESCA	721151.4	4662570.8	541
208	GRANOLLERS	940951.3	4619819.5	154

9. Gauge stations used

BASIN	CODE	NAME
SEGRE	A9020	*Puigcerda (Arabo)*
	A9021	*Puigcerda (Segre)*
	A9022	*Seo de Urgel (Valira)*
	A9023	*Seo de Urgel (Segre)*
	A9024	*Lerida (Segre)*
	A9025	*Seros (Segre)*
	A9083	*Oliana (Segre)*
	A9096	*Balaguer (Segrue)*
	A9097	*Piñana (Noguera Ribagorzana)*
	A9111	*Orgaña (Segre)*
	A9116	*Caldas de Bohi (Noguera de Tor)*
	A9117	*Bohi (San Nicolas)*
	A9137	*Pont de Suert (Noguera Ribagorzana)*
	A9102	*Collegats (Noguera Pallaresa)*
	A9146	*La Pobla de Segur (Noguera Pallaresa)*
	A9252	*Escalo (Noguera Pallaresa)*

BASIN	CODE	NAME
MUGA	EA012	*Boadella d'Empordà*
	EA052	*Castelló d'Empúries*
	EA088	*Peralada*
TER	EA009	*Sant Gregori_Llèmena*
	EA033	*Ripoll (riu Ter + CH FilGenesi)*
	EA019	*Roda de Ter*
	EA085	*Masies de Roda (riu Ter + CH Malars)*
	EA120	*Masies de Roda_Gurri*
	EA060	*Pasteral I*
	EA010	*Girona (Ter + sèquia Monar)*
	EA020	*Girona_Onyar*
	EA080	*Torroella de Montgrí*

10. Dam stations used

BASIN	NAME	CODE
SEGRE	SANTA ANA	E9852
	CANELLES	E9851
	ESCALES	E9850
	BASERCA	E9865
	CAVALLERS	E9863
	SAN LORENZO	E9861
	CAMARASA	E9860
	TERRADETS	E9859
	TALARN O TREMP	E9858
	LA TORRASA	E9857
	RIALB	E9876
	OLIANA	E9862
TER	SAU	ET1
	SUSQUEDA	ET2
	EL PASTERAL	ET3
MUGA	BOADELLA	EM1