



Emergency Management

CEMS Week – EFAS Annual Meeting 2021

How your feedback improves EFAS service

BREAKOUT SESSION





In this breakout session:

1. Stations metadata and discharge time series (Cinzia Mazzetti - COMP)
2. Partner feedback and data for flash flood verification (Calum Baugh - COMP)
3. How your feedback is used by DISS (Ilias Pechlivanidis - DISS)



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Stations data and discharge time series

Cinzia Mazzetti – EFAS COMP @ ECMWF
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Asking for potential EFASNext calibration stations

Stations and discharge time series are the backbone of any new EFAS calibration

- ❑ Suggest to **exclude** station from EFASNext calibration by selecting 'yes'/'no' in [Exclude from calibration] column.
- ❑ Suggest stations they strongly would like to be **included** in EFASNext calibration by selecting 'yes'/'no' in [Recommend as calib station] column



Email to all the Partners from EFAS@HYDRO



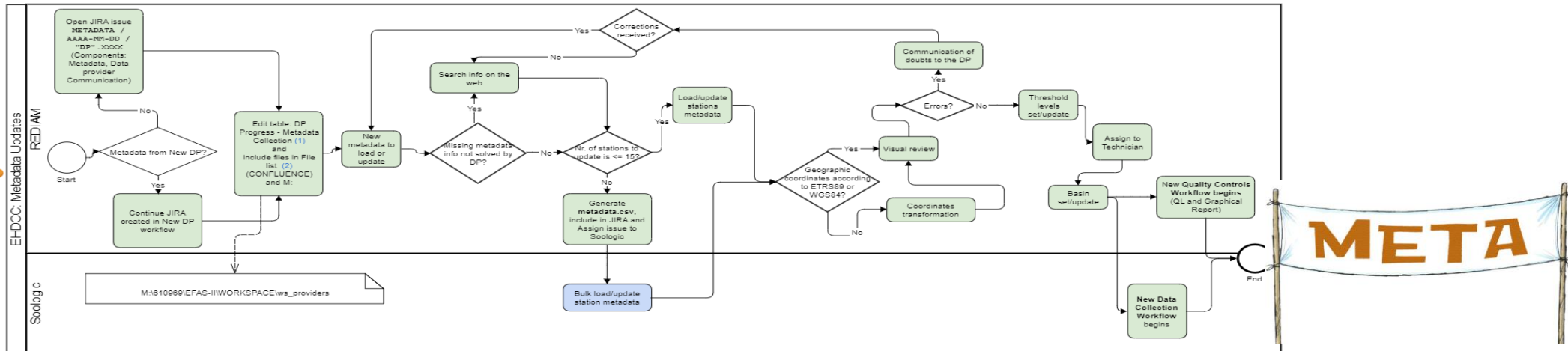
ObsID	National_Station_Identifier	StationName	Exclude from calibration	Recommend as calib station	Comments
775	44119	Bistra	✔		Issues with the rating curve
776	44220	Satu Mare		✔	
777	44210	Beclean		✔	New station
778	44459	Zerind	✔		Under maintenance



Processing the data...

Once received excel tables according to the request....the process starts in the EHDCC to **integrate the new stations** into the database:

- ❑ Checking of coordinates and transformation if applicable.
- ❑ Metadata loading
- ❑ Stations parameter setting: maximum, minimum, thresholds level, etc.
- ❑ Start of data loading
 - Historical data
 - NRT data





New stations added to the database

A total of **980 new stations** have been added to the database, which will join the existing ones for recalibration...

Data Provider	Organisation name	count(*)
1004	Bundesanstalt fuer Gewaesserkunde - DE	11
1005	Slovenian Environment Agency - SI	102
1007	Saxon State Agency for Environment and Geology - DE	1
1009	Hessian Agency for Nature Conservation, Environment and Geology - DE	2
1010	Landesamt für Umwelt Rheinland-Pfalz - DE	3
1011	Finnish Environment Institute - FI	12
1012	Confederación Hidrográfica del Ebro - ES	78
1018	Slovak Hydrometeorological Institute - SK	29
1019	Czech Hydro-Meteorological Institute - CZ	2
1020	Republic Hydrometeorological Service of Serbia - RS	11
1021	Ministère de l'Ecologie et du Développement Durable Service Central d'Hydrométéorologie et d'Appui à la Prévision des Inondations - FR	161
1024	Institute of Meteorology and Water Management Wroclaw Branch - PL	11
1028	Estonian Environmental Agency - EE	5
1029	Office of Public Works - IE	26

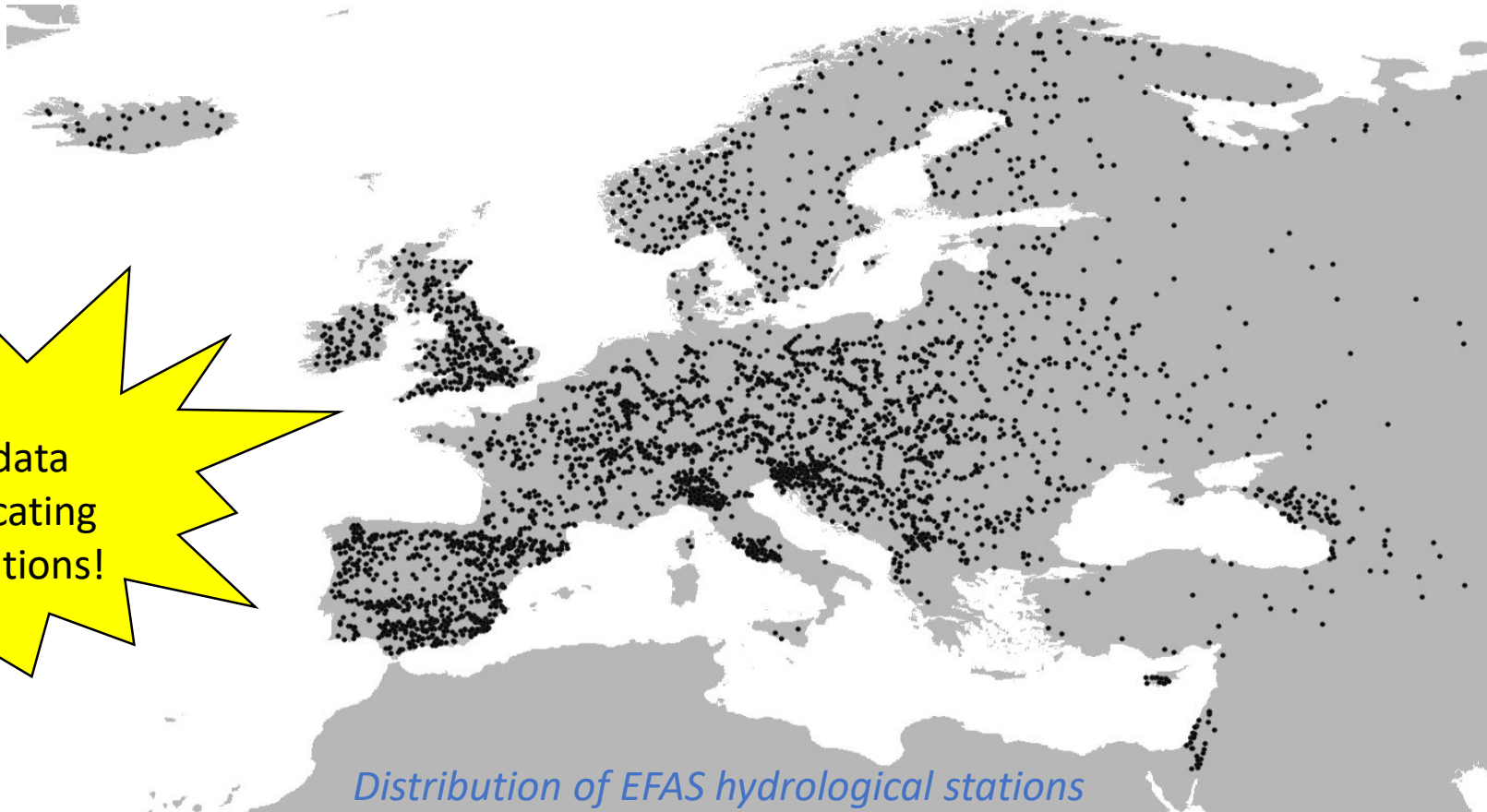
1031	Meteorological and Hydrological Service - HR	29
1037	Catalan Water Agency - ES	15
1039	Confederación Hidrográfica del Duero - ES	12
1046	Service Public de Wallonie - BE	10
1048	Hydrometeorological Institute of Kosovo - XK	15
1049	Institute of GeoSciences Eney Water and Environment - AL	16
1055	Confederación Hidrográfica del Guadiana - ES	65
1057	Confederación Hidrográfica del Júcar - ES	63
1063	ARPA Lombardia - IT	55
1064	LEPL National Environmental Agency - Ministry of Environmental Protection and Agriculture of Georgia - GE	5
1065	Icelandic Meteorological Office - IS	28
1070	Confederación Hidrográfica del Segura - CHS	81
1071	Water management Agency of Luxembourg (AGE)	23
1072	Agenzia Regionale di Protezione Civile - Protezione Civile Lazio - IT	88
1075	Israel Fire & Rescue - IL	11
1076	Republic HydroMeteorological Service of the Republic of Srpska - BA	8
	Total	980



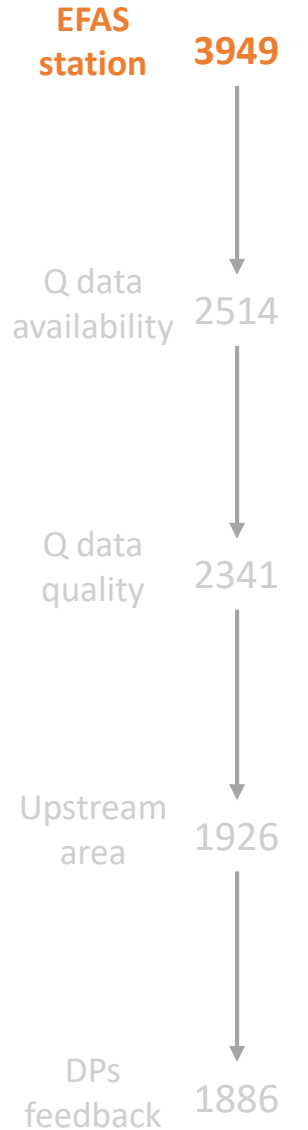
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Selecting calibration stations for EFASNext

3949 hydrological stations with water level and/or discharge data in EFAS hydro database
All station are **mapped on EFASNext 1arcmin drainage network**
Reservoirs and lakes also mapped on EFASNext 1arcmin drainage network



Metadata
help locating
your stations!

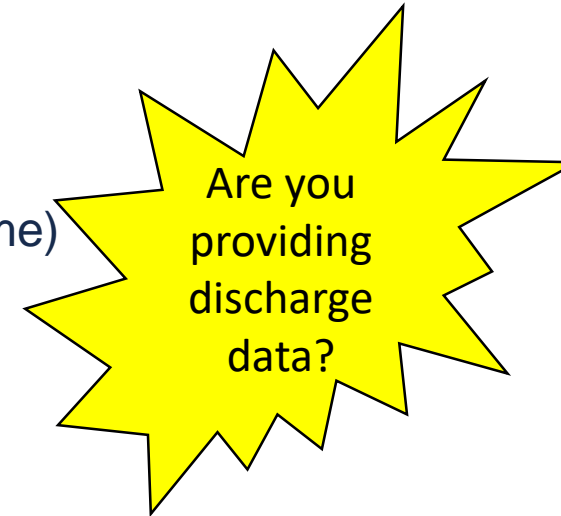




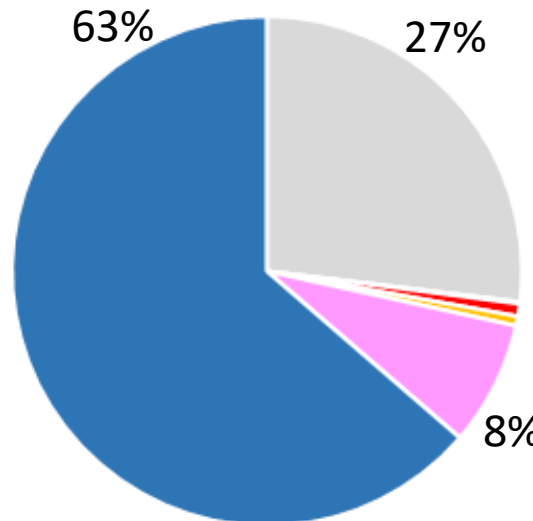
Selecting calibration stations for EFASNext: data availability

Only discharge data can be used for EFASNext calibration

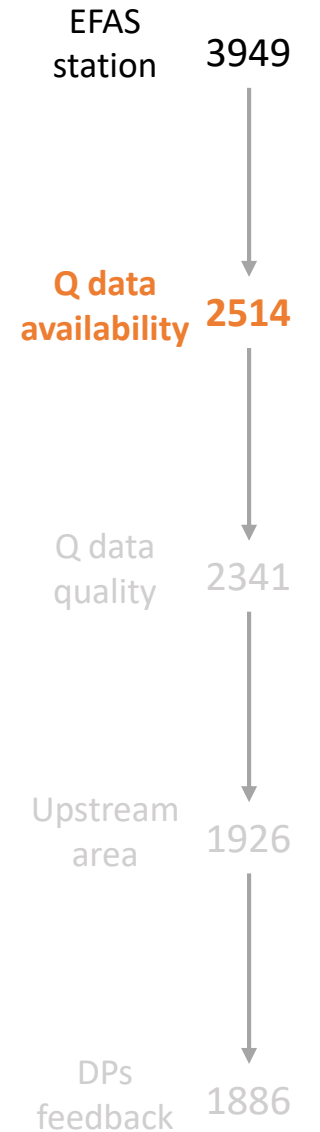
- ✓ Discharge data available (historical and/or near real-time)
- ✓ Inside the model domain
- ✓ Correctly mapped on EFASNext drainage network
- ✓ **Minimum 4 yrs equivalent of observations**



Description	N of stations
Outside modelling domain	5
No discharge data available	1063
Minor mapping issues	24
Major mapping issues	31
Discharge data available >4yrs	2514
Discharge data available <4yrs	312



- No discharge data available
- Outside model domain
- Major mapping issues
- Minor mapping issues
- Discharge data available <4yrs
- Discharge data available >4yrs



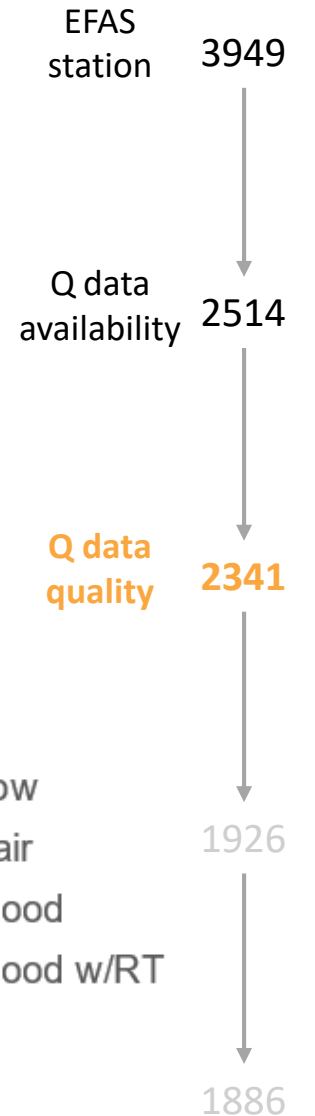
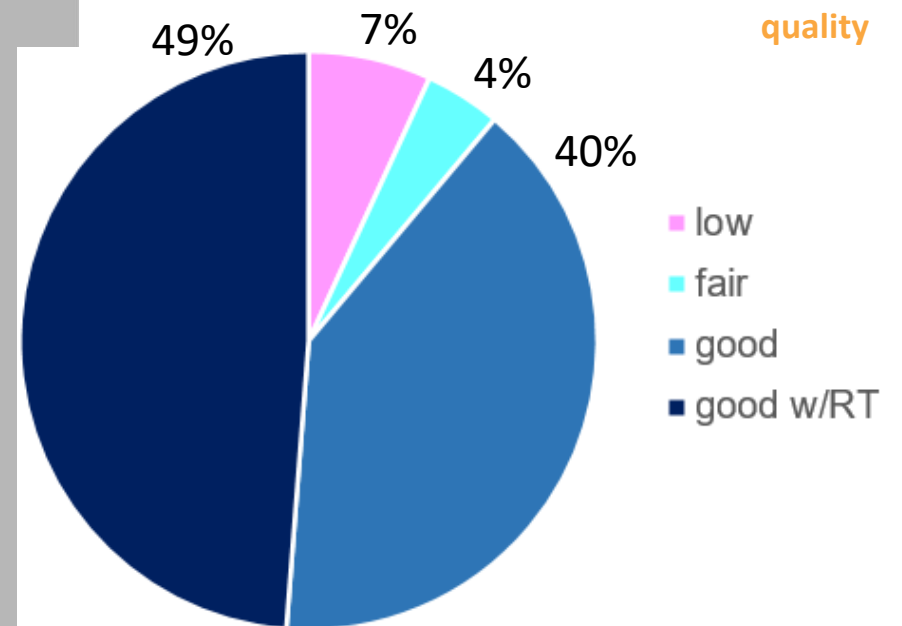
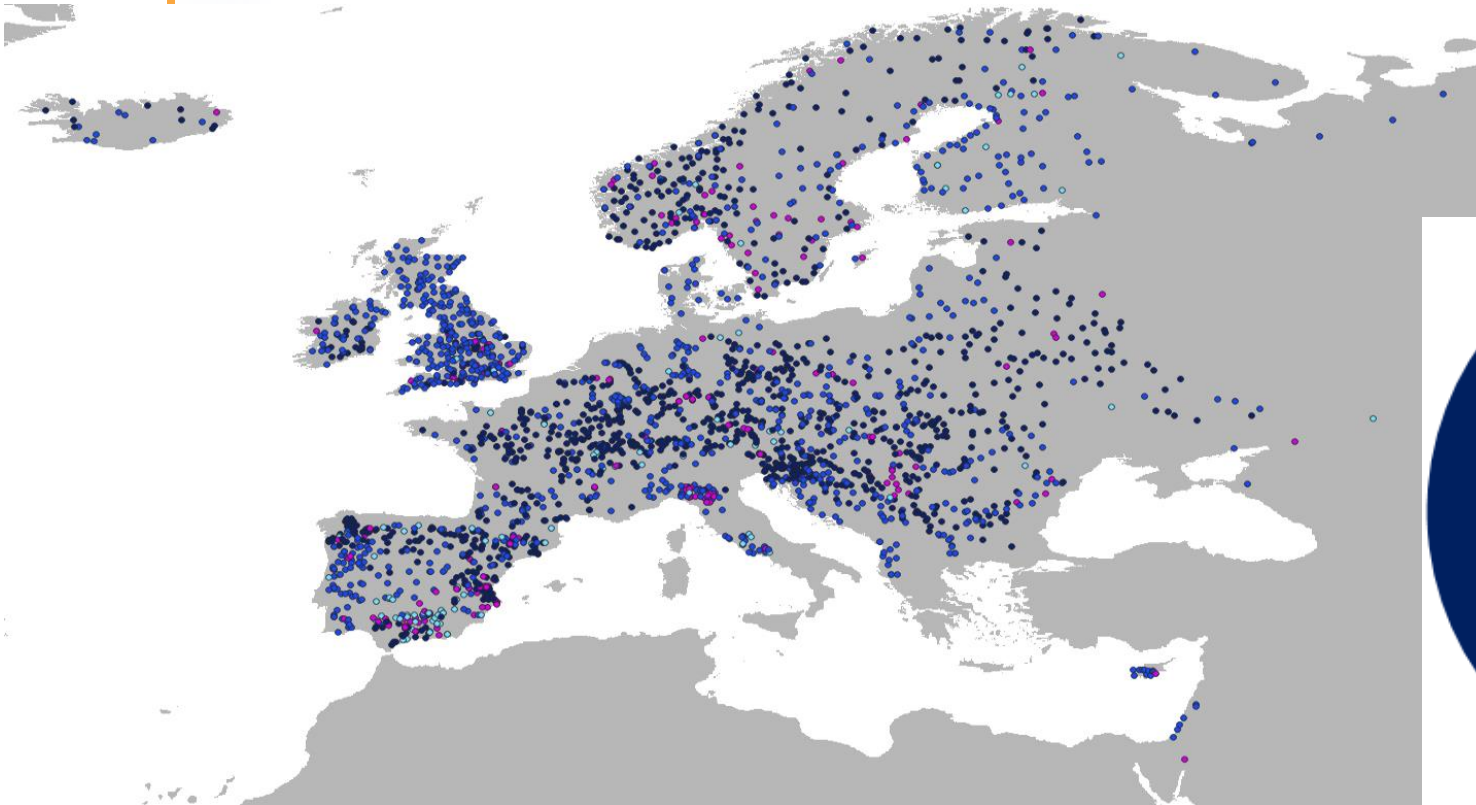


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Selecting calibration stations for EFASNext: data quality checks

Quality check was performed on discharge data for all stations with more than 4yrs of discharge data that can be potentially used for EFASNext calibration:

- ✓ Based on visual inspection of time series
- ✓ Consistency with upstream and downstream stations
- ✓ Confluences
- ✓ Reservoirs and lakes

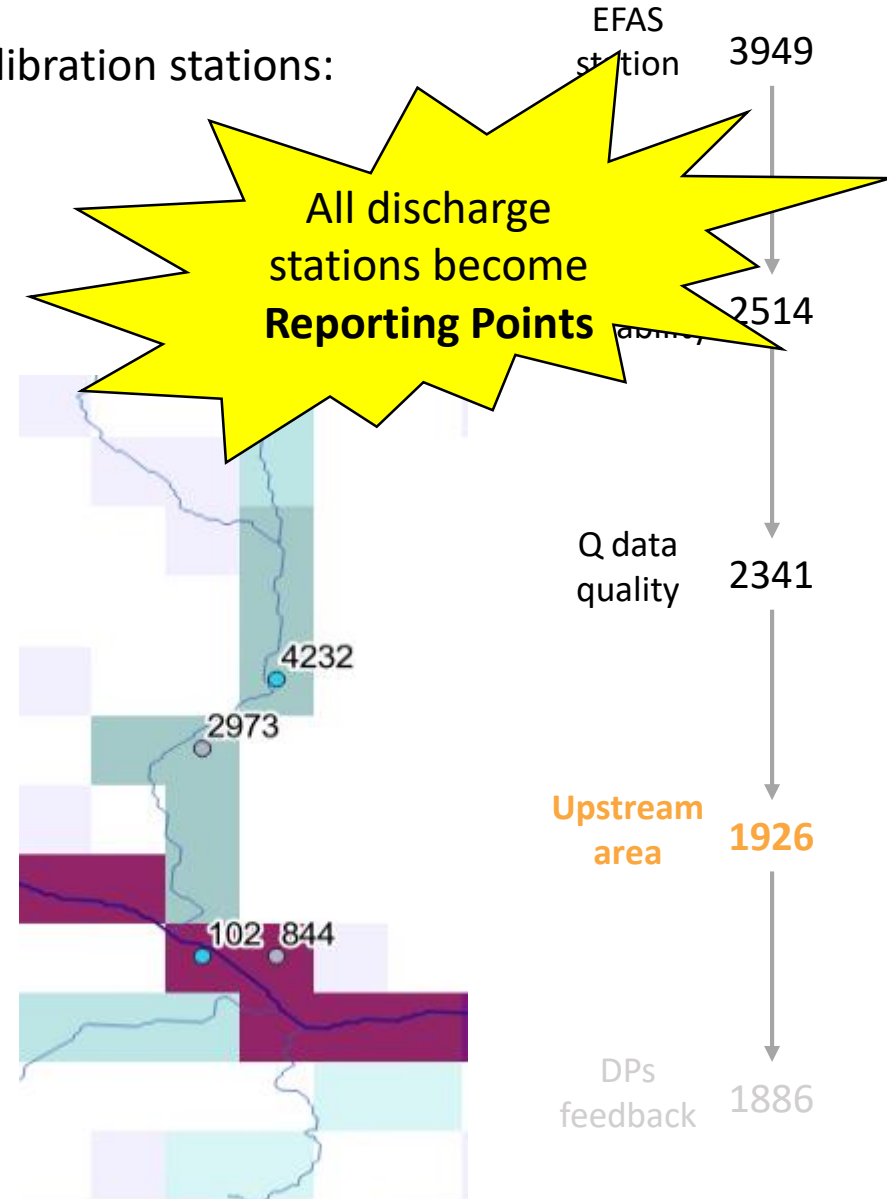
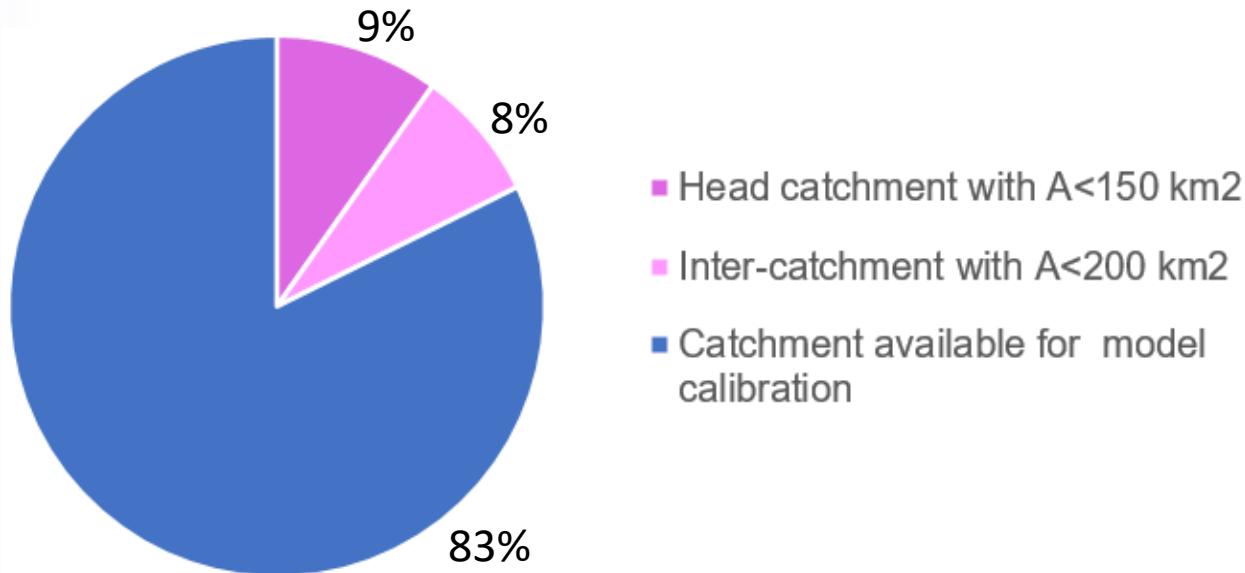




Selecting calibration stations for EFASNext: minimum upstream area

We are decreasing the minimum upstream drainage area for calibration stations:

- ✓ **Minimum upstream area for head catchments is 150 km²**
- ✓ Minimum upstream area for inter-catchments is 200 km²
- ✓ Best time series quality, longest time series, real-time data, used in previous calibrations, most downstream
- ✓ Loops, head catchments first





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Selecting calibration stations for EFASNext: DPs feedback

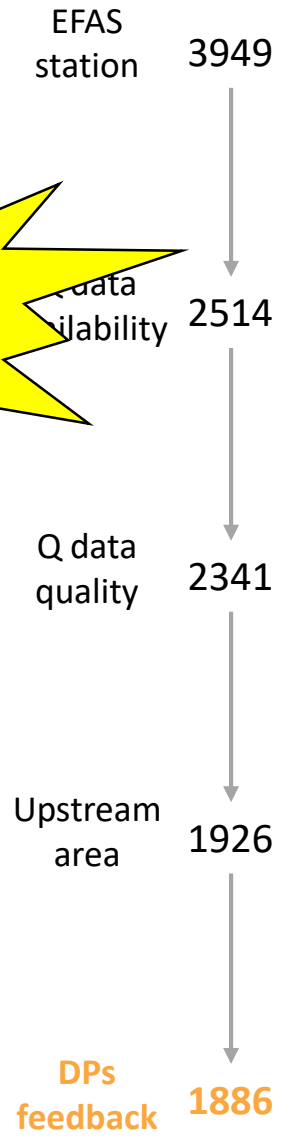
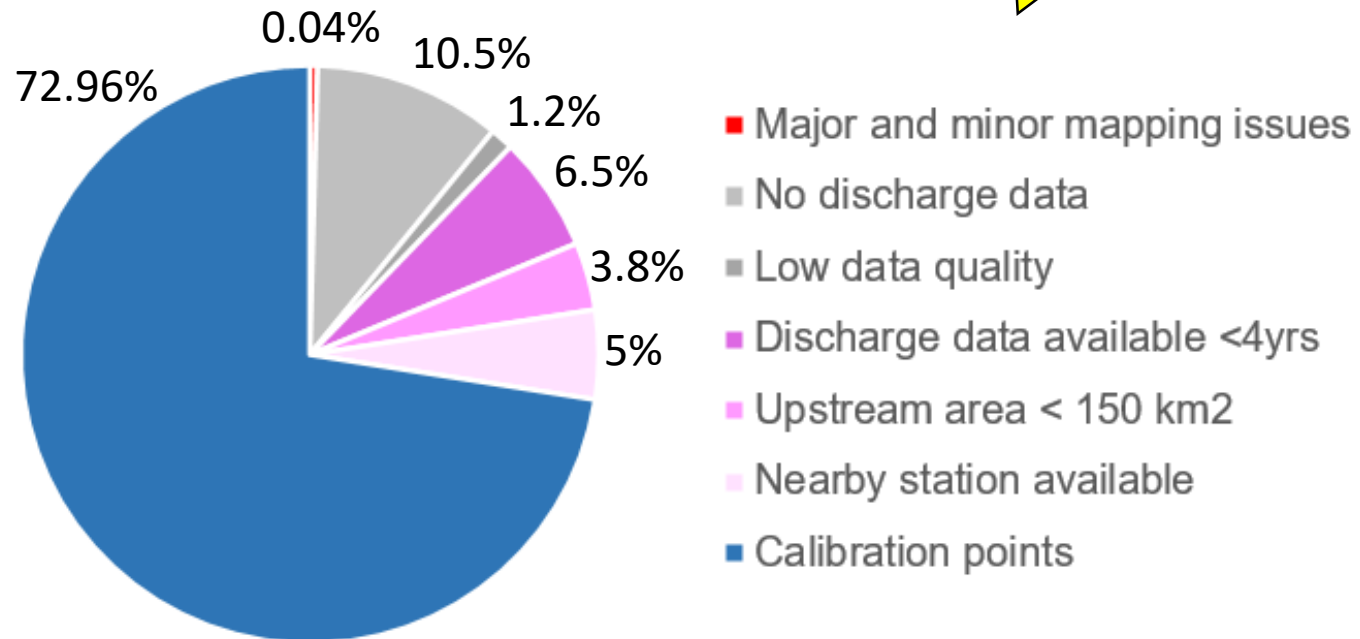
Received feedback from **33 DPs on 991** stations

67
to be excluded

- ✓ only calibration station on the catchment and with good data quality (7)
- ✓ located downstream of a lake that could help with calibration (1)



924
calibration point



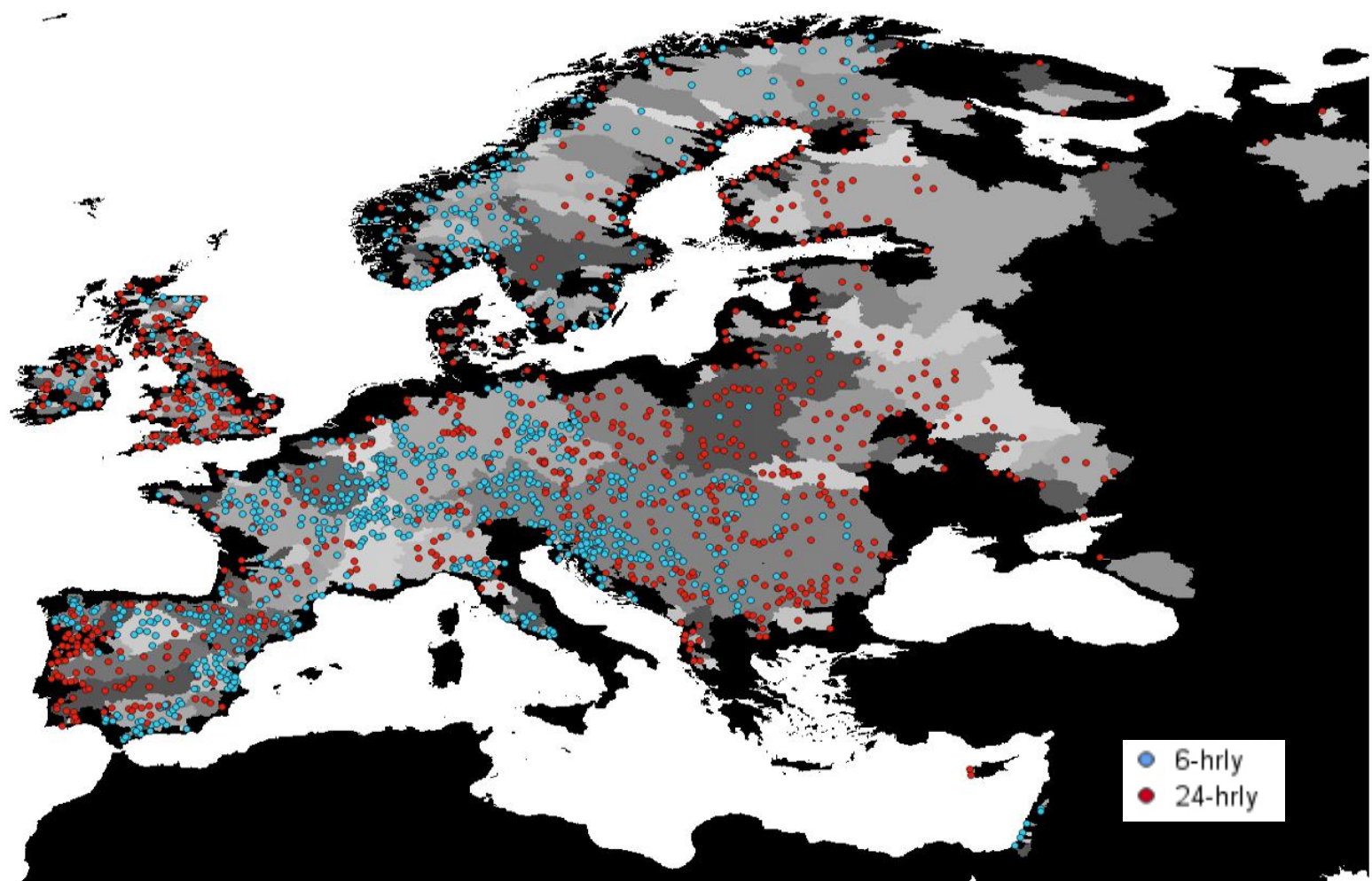


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EFASNext calibration stations

The final list of calibration stations includes **1886 stations**, 971 with 6-hourly data and 915 with daily data:

- ✓ 729 new calibration stations
- ✓ 1039 stations already used in EFAS4 calibration
- ✓ 513 stations already used in both EFAS4 and EFAS3 calibration

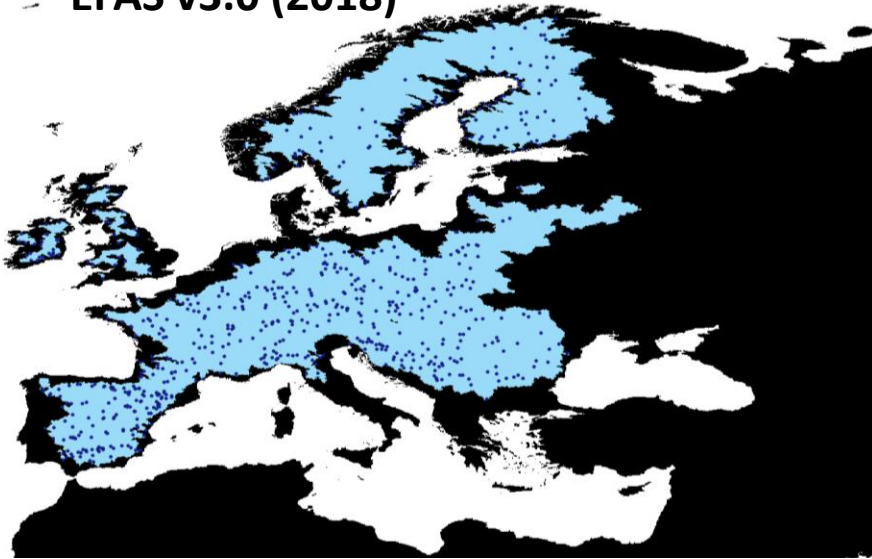




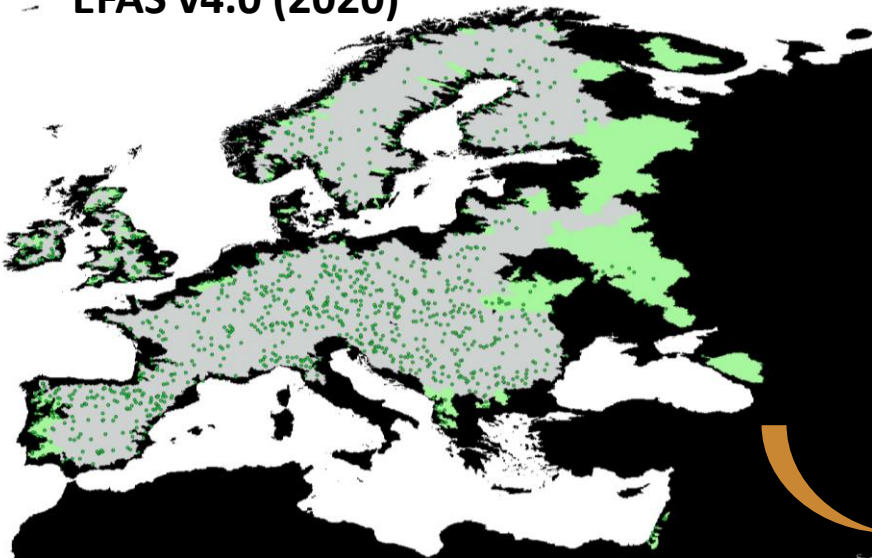
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EFAS calibration domains

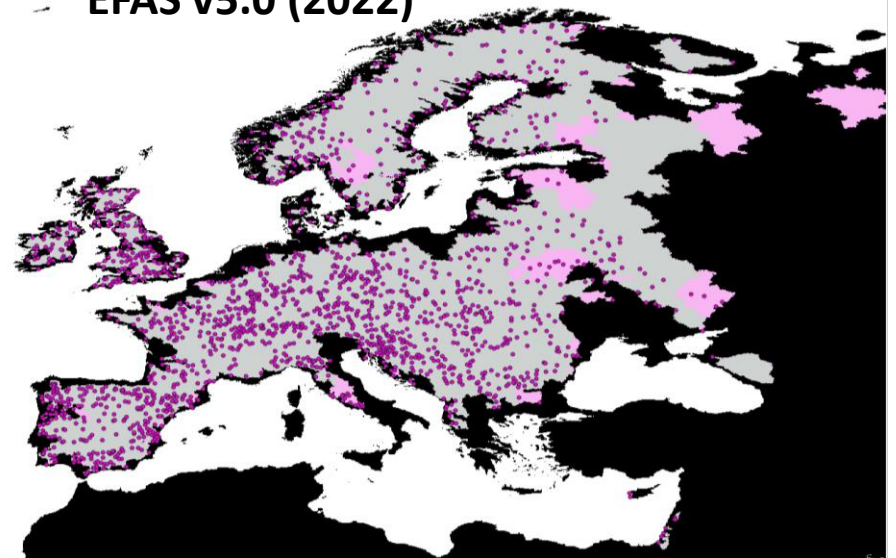
EFAS v3.0 (2018)



EFAS v4.0 (2020)



EFAS v5.0 (2022)





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... over to the next presenter...