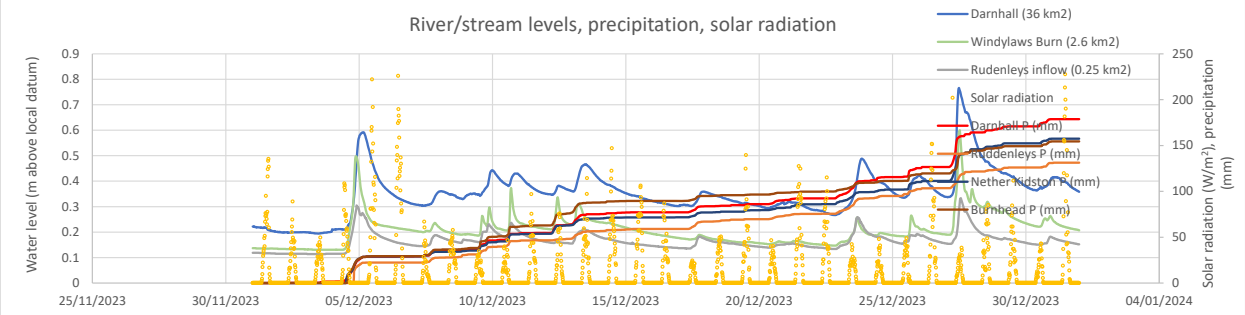
University of Dundee

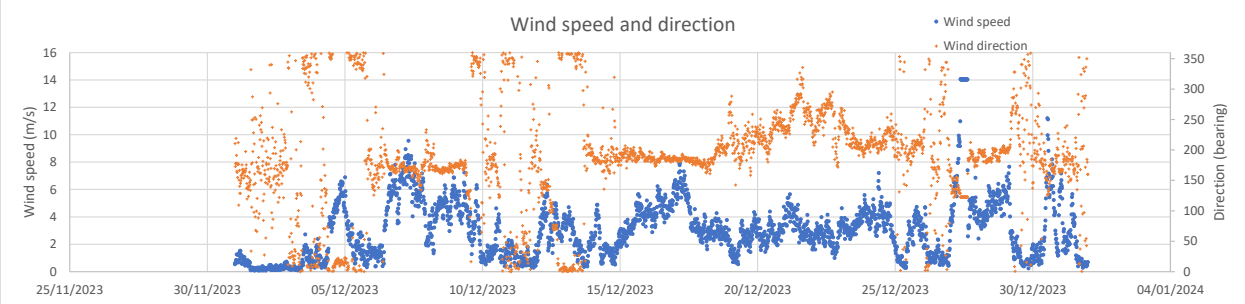
Eddleston Water Project
Monthly weather and hydrology report

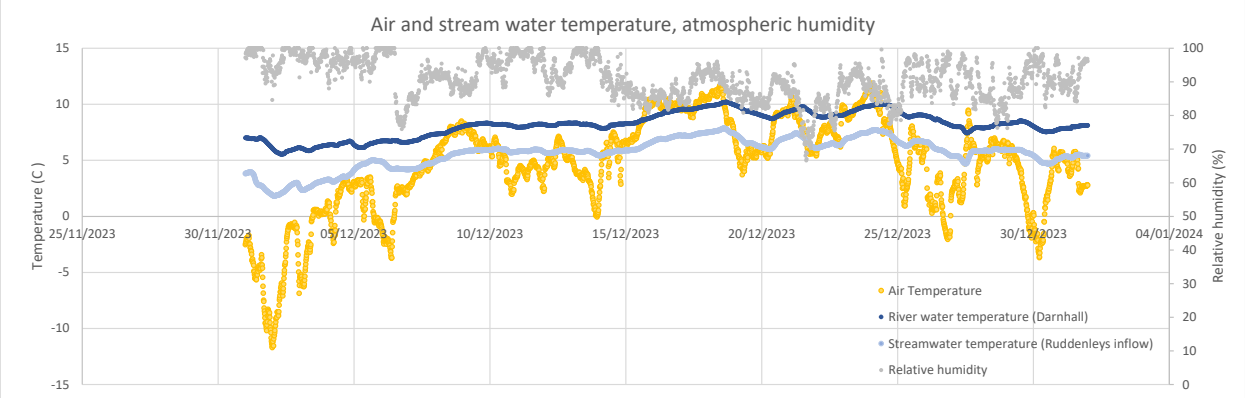
December 2023

TWEED FORUM

Monthly statistics	Hourly values				Daily values				Month	
	Max	Day/time	Min	Day/time	Max	Day	Min	Day	Average	Total
Precipitation (Darnhall Mains) (mm)	10.8	27 @ 09:15			37.6	27				178.8
Precipitation (Craigburn Farm) (mm)	9	04 @ 15:15			20.2	4				125.6
Precipitation (Wester Deans) (mm)	9.8	04 @ 14:45			27	4				120.0
Precipitation (Ruddenleys) (mm)	13.6	04 @ 20:00			19.6	4				131.2
Precipitation (Nether Kidston) (mm)	7.4	04 @ 13:15			34.6	27				157.4
Precipitation (Burnhead) (mm)	9.2	04 @ 14:15			26.6	4				154.4
Runoff depth (Darnhall Mains) (mm)										172.3
Air temperature (Darnhall Mains) (C)	11.7	24 @ 01:30	-11.5	02 @ 00:15	10.0	18	-5.8	1	4.6	
Relative humidity (Darnhall Mains) (%)									90.8	
Daily ETo evapotranspiration (mm)					0.5	17			0.2	5.3
Sunshine hours					4.5	6			0.7	23.0
									Rain days (Darnhall, 0.2 mm threshold):	*29*



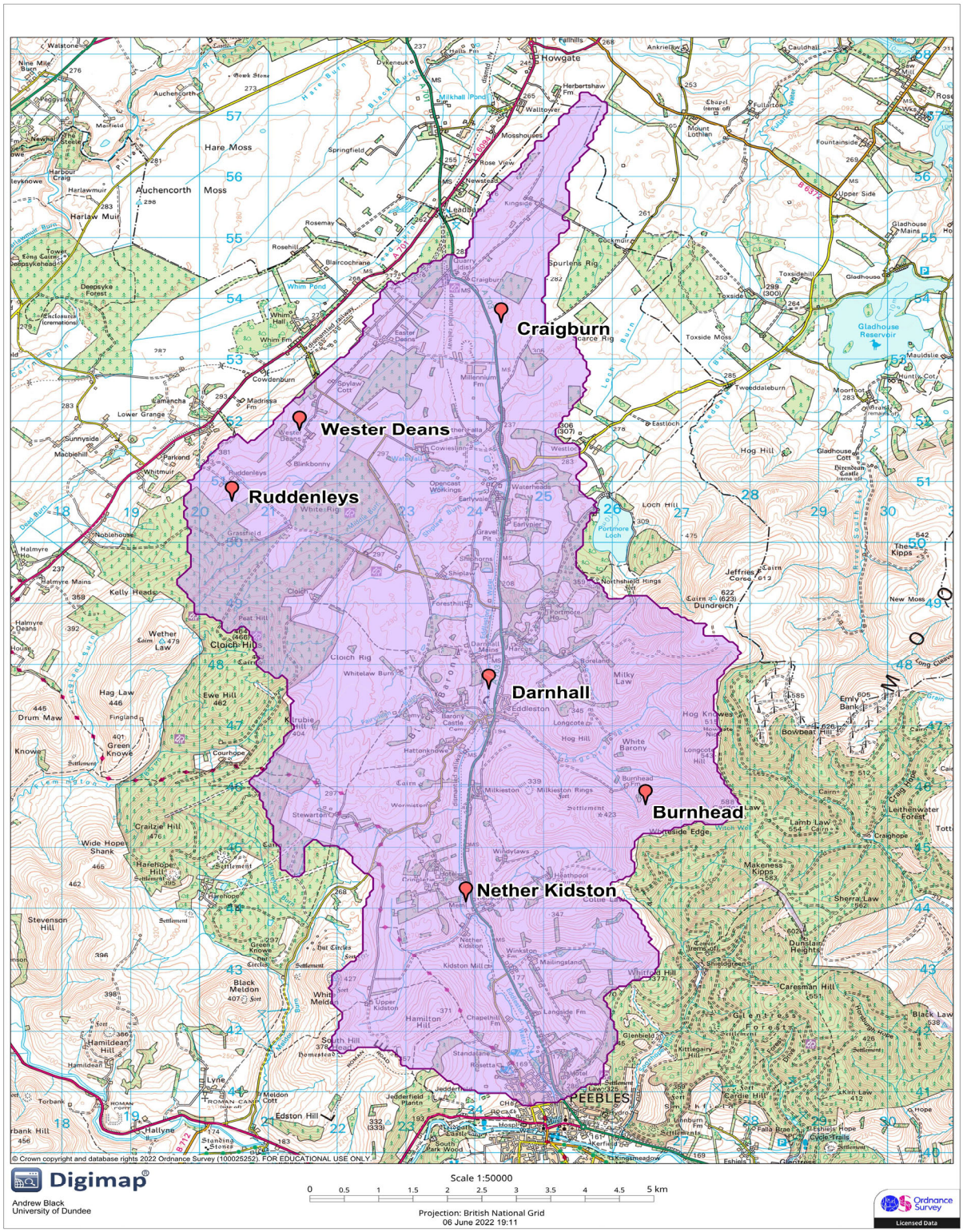




A wet month, with 44% more rainfall than the December average of 124 mm, and an impressive (?) 29 rain days out of 31, although five days registered just one tip (0.2 mm) on the Darnhall rain gauge. The water balance closes to 1.2 mm of precipitation = runoff + evaporative losses: time will tell whether this level of agreement is maintained going forward into the new year (river level suggests that the catchment ended the month wetter than it began). The runoff peak of 27 December was caused by the named storm Gerrit. The peak is not thought to have caused property flooding, but was the highest in this winter half-year to date.

The snow accumulation which had arrived on 30 November melted out on the night of the 4th December, with no signficiant snow for the remainder of the month (based on Ruddenleys data, 310 m OD). Most of the month was essentially frost-free, from 6th-26th. The mean monthly air temperature of 4.6 C was more than 4 C warmer than the relatively cold December of 2022. Note that especially cold conditions occured on the night of the 2nd, with air temperature reaching -11.7 C.

Real-time data available at: https://hydro-data.dundee.ac.uk/eddleston



The Eddleston Water Project

Funded by the Scottish Government, Interreg and the Scottish Environment Protection Agency (SEPA), this project aims to reduce flood risk and restore the Eddleston Water for the benefit of the local community and wildlife.

The project involves river re-meandering, the planting of over 300,000 trees and the creation of new wetlands. This should slow the speed and impact of floodwaters as well as creating new wildlife habitat, such as improved spawning for salmon. Our project partnership is closely monitoring the results, including any reduction in flood risk for downstream communities.

The project is a partnership initiative led by Tweed Forum, with the Scottish Government, SEPA and University of Dundee. Other key partners include British Geological Survey, Nature Scot, Scottish Borders Council, the Forestry Commission, National Farmers' Union of Scotland, the Tweed Foundation, Forest Carbon and the Woodland Trust. Tweed Forum works closely with landowners and the local community so that everyone can contribute ideas and follow the project's progress.

For more information, see: https://tweedforum.org/our-work/projects/the-eddleston-water-project/