Prolonged Dry Weather in EAN

Update for NGOs & Local Stakeholders

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Environment Agency

Introduction

Thank you for joining our East Anglia Area Prolonged Dry Weather update for NGOs and local stakeholders.

East Anglia Area moved into Prolonged Dry Weather status on Monday, 18 July 2022. This affects the following catchments:

Upper Bedford Ouse

Old Bedford and Middle Level

Cam and Ely Ouse

Broadland (excluding the rivers Wensum and Bure)

East Suffolk

Essex

Here are the slides which were presented by our Area Drought Co-ordinators.

Environment Agency

East Anglia West – Upper Bedford Ouse, Old Bedford & Middle Level and Cam & Ely Ouse

RAINFALL – July 24 -2022

Rainfall		Cambs&Beds AREA	Upper Bedford Ouse	Lower Bedford Ouse	Central Area Fenland	Cam	NW Norfolk and Wissey	Little Ouse and Lark
	mm.	4	4	8	8	2	4	2
	Category	EL	EL	EL	EL	EL	EL	EL
24 July 2022	% LTA	7%	9%	16%	16%	4%	8%	4%
	mm.	82	95	90	90	68	79	70
	Category	EL	NL	NL	NL	EL	EL	EL
3 Months	% LTA	54%	60%	62%	62%	47%	48%	46%
	mm.	196	223	202	202	178	202	181
	Category	NL	BN	BN	BN	NL	NL	EL
6 Months	% LTA	70%	74%	75%	75%	67%	67%	64%
	mm.	305	335	292	292	275	344	310
	Category	EL	NL	NL	NL	EL	EL	EL
9 Months	% LTA	69%	71%	70%	70%	67%	71%	69%
	mm.	471	508	449	449	444	523	478
	Category	NL	NL	NL	NL	NL	NL	NL
12Months	% LTA	79%	79%	79%	79%	79%	80%	78%

Forecast

Next 5 days: 0mm rain

30 Jul – 8 Aug :

- The southeast, while it may turn cloudier at times, remaining mainly dry with just some isolated showers at times.
- In northern parts of the UK temperatures are expected to remain near normal, but are trending above average elsewhere, and there is the potential for some locally hot weather in the southeast.

Ranking Rainfall

ANALYSIS BASED ON 1 MONTH TOTALS ENDING MONTH 7

Period Totals Ranked ASCENDING			
Rank 1=Lowest	Period ending Month	Year	Total (mm)
1	7	2022	3.7
2	7	1955	6.2
3	7	1921	8.5
4	7	1911	9.2
5	7	1977	9.3
6	7	1984	16.4
7	7	1952	16.7
8	7	1935	17.6
9	7	1906	18.0
10	7	1897	18.7
11	7	1990	21.9
12	7	1979	22.3

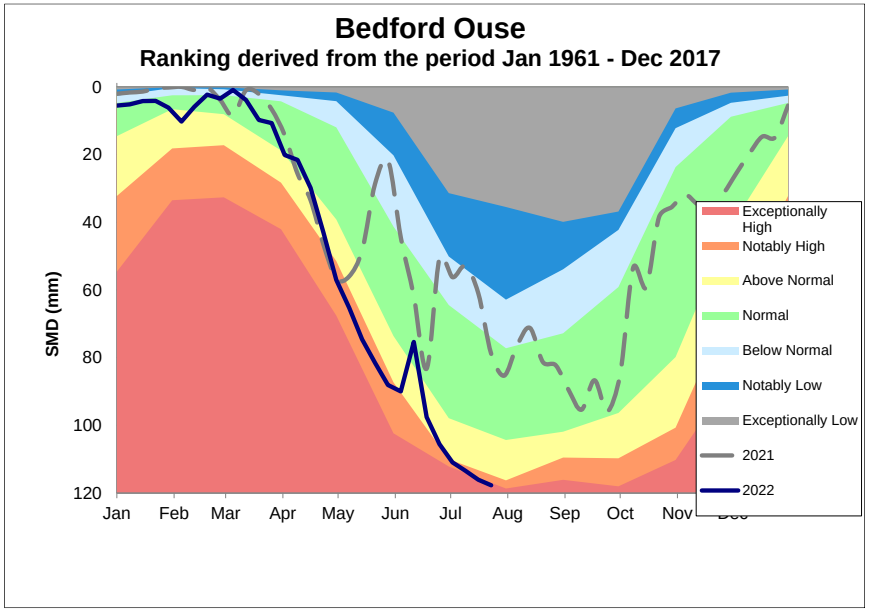
ANALYSIS BASED ON 3 MONTH TOTALS ENDING MONTH 7

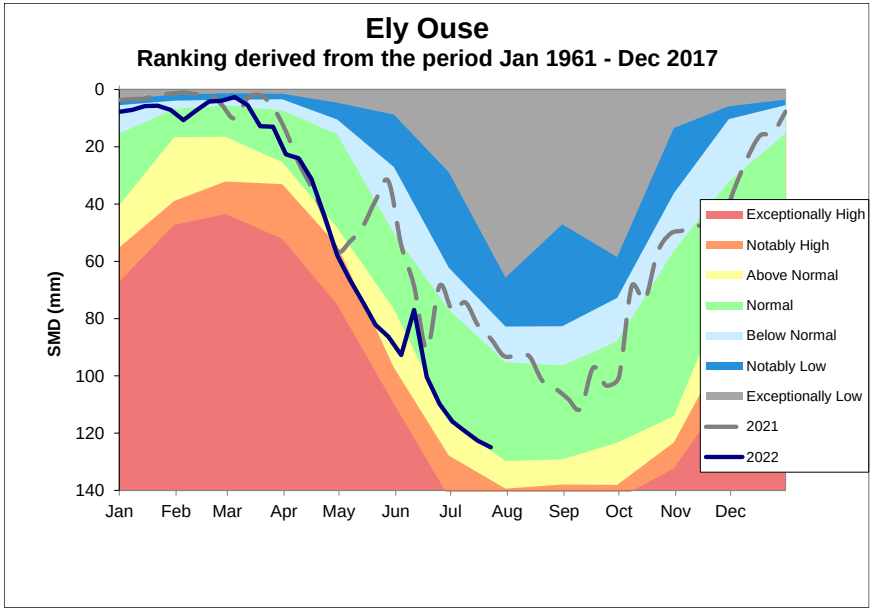
Period Totals Ranked ASCENDING			
Rank 1=Lowest	Period ending Month	Year	Total (mm)
1	7	1921	47.0
2	7	2018	71.9
3	7	1995	74.8
4	7	1976	75.2
5	7	1990	75.9
6	7	2022	81.9
7	7	1996	85.5
8	7	2010	87.4
9	7	1934	92.2
10	7	1952	96.0
11	7	1961	98.7
12	7	1970	102.1

ANALYSIS BASED ON 4 MONTH TOTALS ENDING MONTH 7

Period Totals Ranked ASCENDING			
Rank 1=Lowest	Period ending Month	Year	Total (mm)
1	7	1921	79.5
2	7	1976	90.6
3	7	1995	91.0
4	7	2022	93.5
5	7	1996	100.4
6	7	2010	102.7
7	7	1990	111.9
8	7	1938	121.1
9	7	1896	123.8
10	7	1952	133.6
11	7	2011	134.7
12	7	2013	135.5

Soil Moisture Deficit - 19 Jul 2022





River Flows – July 24 2022

Catchment	Station	Jul-22	Jun-22	May-22	Apr-22	Mar-22	Feb-22	Jan-22	Dec-21
Bedford Ouse	Cappenham, TOVE	Exceptionally low	Notably Low	Exceptionally low	Notably low	Normal	Normal	Below normal	Normal
	Willen, OUZEL	Exceptionally low	Below Normal	Notably low	Below normal	Normal	Normal	Below normal	Normal
	Blunham, IVEL	Notably low	Normal	Below normal	Below normal	Normal	Normal	Normal	Normal
	Roxton, OUSE (AN)	Notably low	Notably Low	Notably low	Notably low	Normal	Normal	Below normal	Normal
	Offord, OUSE (AN)	Notably low	Below normal	Notably low	Below normal	Normal	Normal	Below normal	Normal
Ely Ouse	Burnt Mill, RHEE	Notably low	Below Normal	Below normal	Below normal	Normal	Normal	Normal	Normal
	Dernford, CAM (AN)	Exceptionally low	Notably Low	Below normal	Below normal	Normal	Normal	Below normal	Normal
	Temple, LARK		Normal	Below normal	Normal	Normal	Normal	Normal	Notably high
	Abbey Heath, LITTLE OUSE	Exceptionally low	Notably Low	Below normal	Below normal	Normal	Normal	Normal	Normal
	Northwold Total, WISSEY	Below normal	Below normal	Below normal	Normal	Normal	Normal	Normal	Above normal
	Denver Ely Ouse, OUSE (AN)	Exceptionally low	Notably Low	Below normal	Normal	Above normal	Normal	Normal	Above normal
North Norfok	Marham, NAR	Below normal	Normal	Normal	Normal	Normal	Normal		Above normal
	Heacham, HEACHEM	Below normal	Below normal	Normal	Normal	Normal	Normal	Normal	Normal

Groundwater Levels – 24 July 2022

Aquifer	Borehole	Jul-22		Jun-22	May-22	Apr-22	Mar-22	Feb-22	Jan-22	Dec-21
Great Oolite	FRINGFORD P.S.	Normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sandstone	BIGGLESWADE	Below normal		Below normal	Below normal	Normal	Normal	Normal	Normal	Normal
Ivel Chalk	Bath Spring, Charlton			Normal	Normal	Normal	Normal	Normal	Normal	Above normal
N Herts Chalk	THERFIELD RECTORY	Normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal
	REDLANDS HALL	Below normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal
	LINTON	Below normal		Below normal	Below normal	Normal	Normal	Normal	Normal	Normal
Cam Chalk	GOG MAGOG	Below normal		Below normal	Below normal	Normal	Normal	Normal	Normal	Normal
Lark Chalk	BURY ST EDMUNDS	Below normal		Normal	Normal	Normal	Normal	Normal	Above normal	Notably high
Snail Chalk	NEWMARKET	Below normal		Below normal	Below normal	Normal	Normal	Normal	Normal	Normal
Little Ouse Chalk	KENNINGHALL	Below normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal
Wissey Chalk	BRECKLAND			Normal	Normal	Normal	Normal	Normal	Above normal	Normal
	WASHPIT FARM ROUGHAM	Normal		Normal	Normal	Normal	Normal	Above normal	Above normal	Above normal
NW Chalk	BIRCHAM NEWTON	Normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal

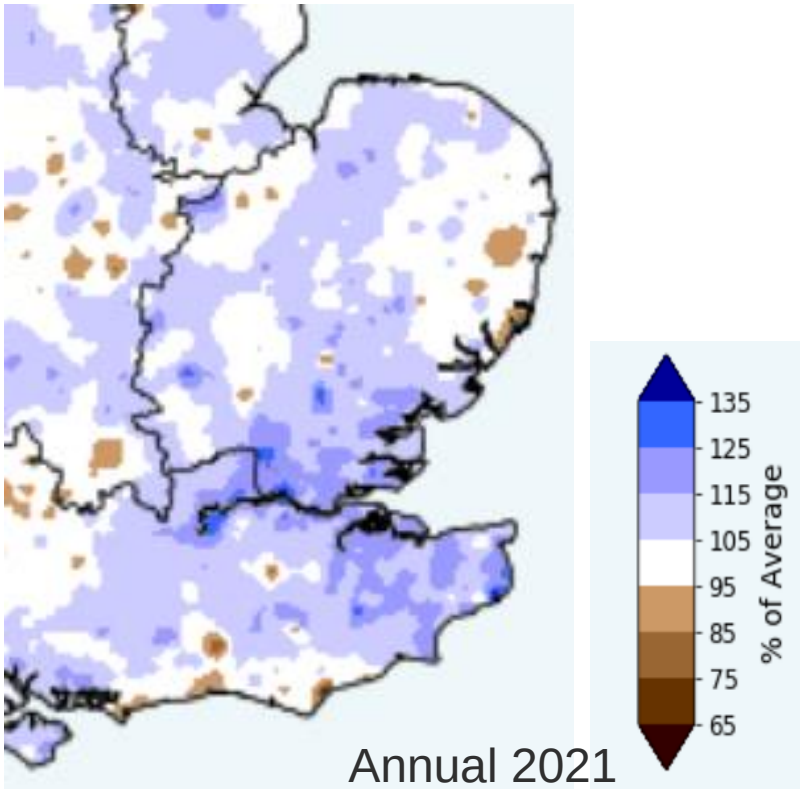
East Anglia East – Broadland, East Suffolk and Essex

- Current operational planning scenario is 60% actual rainfall.
- Actual totals since February; Norfolk 62% , Suffolk 65%, Essex 68%.
- July rainfall < 3mm at all locations (5% Long Term Average.)
- Indicator catchments exceeded triggers for Prolonged Dry Weather on 12th July with 57% rivers below notably low flows – Feb forecast 61% . No catchments exceptionally low at this point .
- Following exceptionally hot and dry second half of July we now have 70% of river in Prolonged Dry Weather and 22% in exceptionally low (Feb forecast 61% Notably Low flows and 22% Exceptionally Low flows).
- Worst affected rivers slightly to the North of forecast zone . Including Waveney, Tas and Yare . This is a result of a significantly drier spring in this zone (re Met Office anomaly maps).

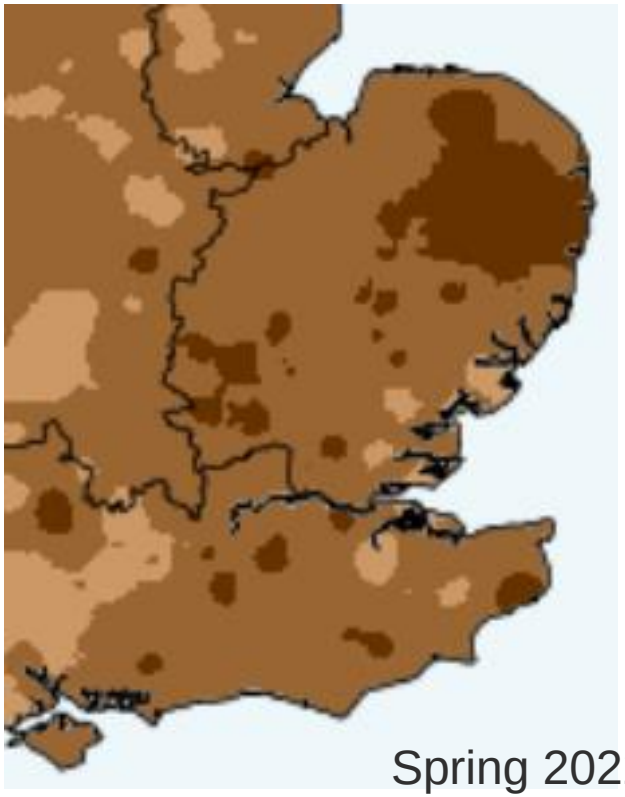
Surface water flows

AWC 60%	BFI		July	July	July	July	March	April	May	June	July	August	September	October
February Forecast	%		Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Catchment	BFI	12th to 24th month mean fall %	July to 12th	July mean flow to24th	July to 12th	July mean flow to 12th	Normal	Normal	Normal	Normal/PDW	PDW	PDW	PDW	PDW
Burn	97	10.0	Normal	0.197	Normal	0.219	Normal	Normal	Normal	Normal	Normal	Normal	Below Normal	Below Normal
Wensum	71	8.0	Notably Low	0.847	Notably Low	0.921	Normal	Normal	Normal	Normal	Normal	Below Normal	Below Normal	Below Normal
Stiffkey	79	7.3	Below Normal	0.139	Below Normal	0.15	Normal	Normal	Below Normal	Below Normal	Below Normal	Below Normal	Notably Low	Below Normal
Bure	79	6.2	Notably Low	0.54	Notably Low	0.576	Normal	Normal	Normal	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low
Ant	81	9.6	Below Normal	0.151	Normal	0.167	Normal	Normal	Below Normal	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low
Yare	60	9.5	Exceptionally Low	0.219	Notably Low	0.242	Below Normal	Below Normal	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low
Tas *	51	10.5	Exceptionally Low	0.137	Notably Low	0.153	Below Normal	Below Normal	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low
Waveney *	42	19.9	Notably Low	0.269	Below Normal	0.336	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low
Blyth	35	14.5	Exceptionally Low	0.059	Notably Low	0.069	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low
Alde *	37	16.3	Notably Low	0.041	Below Normal	0.049	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Exceptionally Low	Notably Low	Notably Low
Ore	45	14.7	Notably Low	0.058	Notably Low	0.068	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Exceptionally Low	Notably Low	Notably Low
Deben *	40	14.3	Notably Low	0.078	Below Normal	0.091	Below Normal	Below Normal	Notably Low	Notably Low	Exceptionally Low	Exceptionally Low	Notably Low	Notably Low
Gipping	48	12.4	Notably Low	0.19	Notably Low	0.217	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low
Brett *	45	9.9	Notably Low	0.075	Notably Low	0.0832	Below Normal	Below Normal	Below Normal	Notably Low	Exceptionally Low	Exceptionally Low	Notably Low	Notably Low
Box *	50	-6.8	Normal	0.078	Below Normal	0.073	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low
Stour *	51	7.1	Normal	0.299	Normal	0.322	Below Normal	Below Normal	Below Normal	Notably Low	Exceptionally Low	Notably Low	Notably Low	Notably Low
Colne *	54	13.9	Exceptionally Low	0.142	Exceptionally Low	0.165	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low
Blackwater *	48	9.2	Below Normal	0.345	Normal	0.38	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low
Chelmer	49	5.5	Notably Low	0.273	Notably Low	0.289	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low	Notably Low	Notably Low	Notably Low
Crouch	23	-2.6	Exceptionally Low	0.04	Exceptionally Low	0.039	Below Normal	Below Normal	Notably Low	Exceptionally Low	Exceptionally Low	Exceptionally Low	Exceptionally Low	Notably Low
Mardyke	31	10.0	Notably Low	0.045	Notably Low	0.05	Below Normal	Notably Low	Notably Low	Notably Low	Exceptionally Low	Exceptionally Low	Exceptionally Low	Notably Low
Suffolk crag streams	>85	5.1	Notably Low	0.037	Notably Low	0.039	Normal	Normal	Below Normal	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low
Essex gravel streams	>80	10.3	Below Normal	0.052	Below Normal	0.058	Normal	Normal	Normal	Below Normal	Below Normal	Below Normal	Notably Low	Notably Low
* Augmentation on		PDW trigger	70%		57%			4%	22%	61%	61%	70%	91%	91%
		Drought trigger	22%		9%			0	0	4%	22%	26%	8%	0%

Met Office Rainfall Anomaly Maps



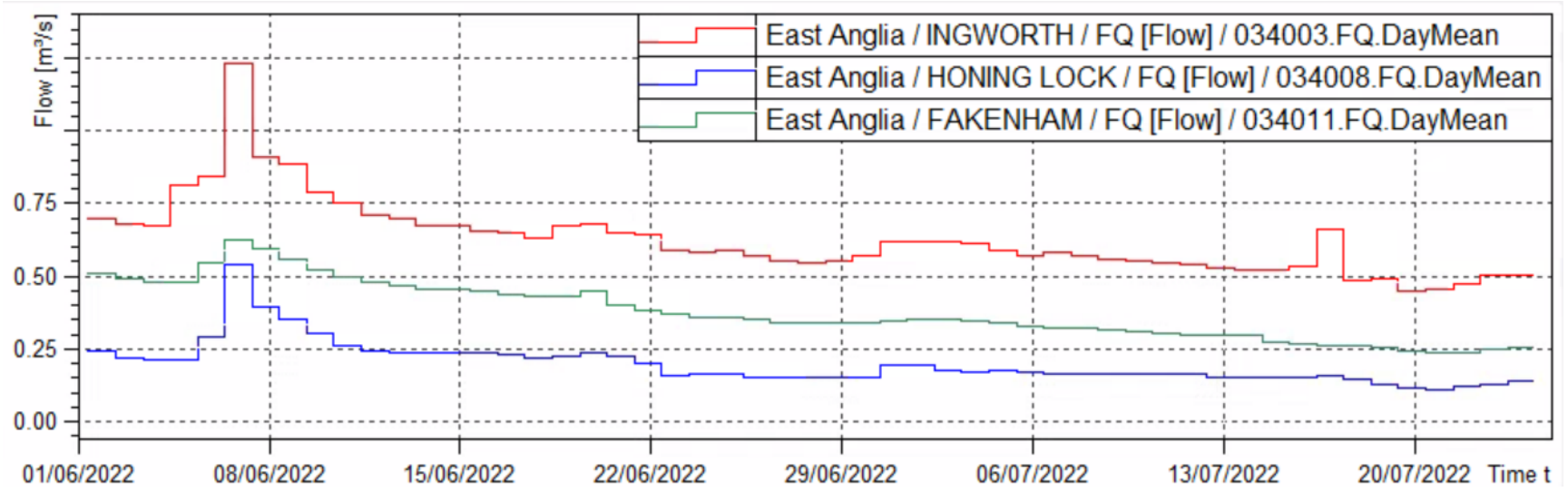
Annual 2021



Spring 2022

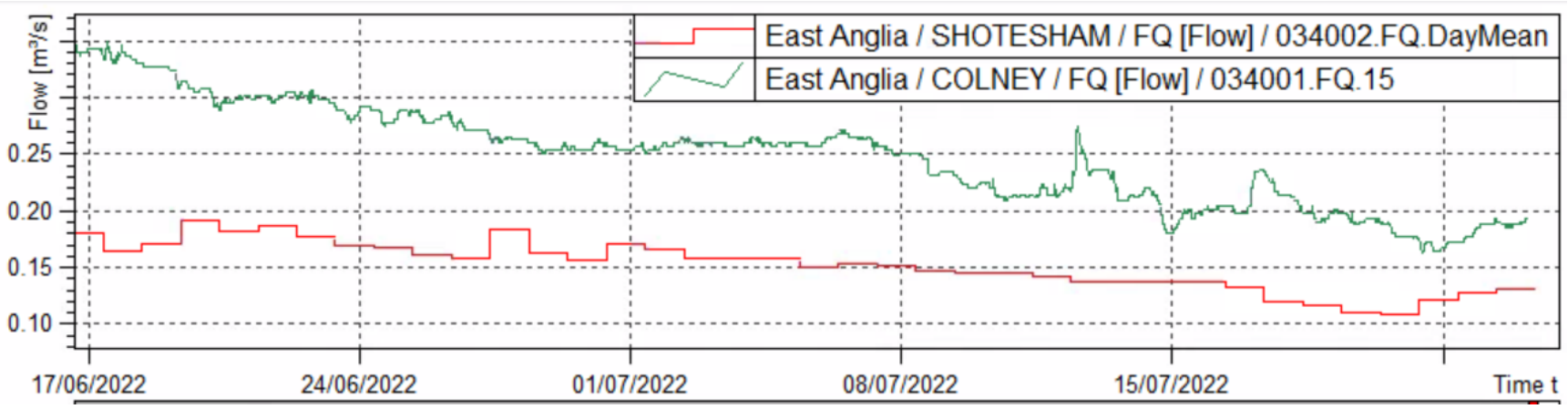
Heatwave response - Norfolk High Baseflow Groundwater dominant rivers

- Groundwater levels falling slightly below normal but of no concern
- Impact of heatwave 19th to22nd clearly observable with extreme evapotranspiration having the impact of several irrigators
- Lower temperatures have resulted in a stabilization of recession and recovery of flow in most Baseflow dominated rivers. Despite no rain



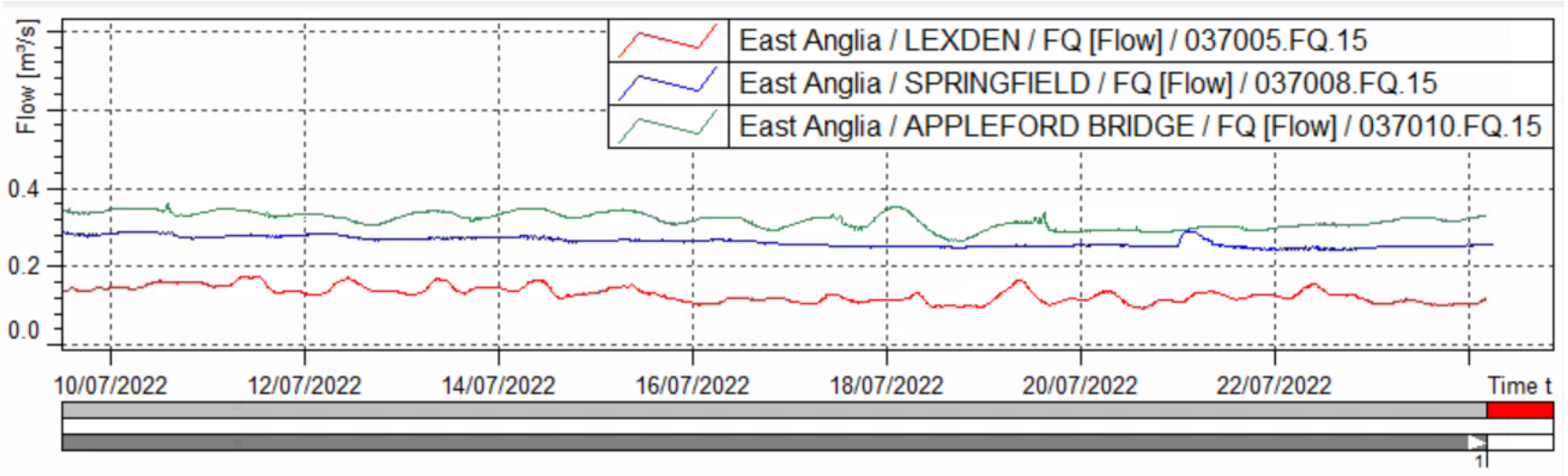
Heatwave Response - Norfolk medium baseflow rivers Yare and Tas

- Extremely rapid decline in early July
- Significant recovery post heatwave 10-15% increase from minima



Heatwave Response - Essex low baseflow rivers Colne, Chelmer, Blackwater

- Post heatwave recovery less notable but all rivers showing stabilization of recession



Summary of current flow situation 25/07/2022

- Our drought plan indicators for flow (which use gauges covering at least 70% of catchments) confirm post heatwave situation to remain in Prolonged Dry Weather .
- A number of catchments have declined rapidly in July in response to the heatwave . Worst affected were the south Norfolk , North Suffolk rivers Yare, Tas, Waveney and Blyth catchments.
- Late July flows are now below historic (2006 and 2019)triggers for Section 57 restrictions (exceptionally low rivers on table) but are stable .
- Cooler conditions and less riparian demand has resulted in a post heatwave stabilisation of flow and a 10-15% recovery in many groundwater dominated catchments .
- All Environment Agency and Water Company groundwater augmentation schemes are operational and are likely to remain so until significant rain . These schemes are holding the relevant rivers above exceptionally low rates (note table for active schemes)

Enquiries

Thank you for joining our East Anglia Area Prolonged Dry Weather update for NGOs and local stakeholders.

As discussed on the call I would encourage everyone to:

- Use water wisely & follow the advice published by water companies
- If you see an environmental incident please report it by calling our 24 Hr incident hotline on 0800 80 70 60.

If you have any questions please contact our Enquiries Team via email at Enquiries_EastAnglia@environment-agency.gov.uk

Environment Agency