

## Riverfly Surveys River Exe System 2018 Annual Report



Version 01 27 Nov 18

## Riverfly Surveys River Exe System 2018

### 2018 Introduction

The suggested periods for survey were: 12-27 May (spring), 14-29 July (summer) and 15-30 September (autumn). In practice, these dates are flexible to allow for river conditions and personal circumstances.

Average rainfall fell over the period January to September 2018 inclusive. However the months January to April were much wetter than average, including a particularly wet and wintry March when we experienced 'the beast from the east'. By contrast, May to July were very dry with less than half the average rainfall, resulting in low river conditions that have been slow to recover.

Results from 126 surveys have been received for the 52 sites across the Exe catchment. No surveys were undertaken at five sites:

Little Exe
Little Exe
Pennycombe Water
River Culm
Westermill Farm
Court Farm
Chibbet
Rewe

River Exe Bramford Speke

We try to arrange for someone else to cover, if the regular volunteers advise that they cannot survey, but this is not always possible. Another reason for the lower number (80% of the potential maximum) is the dry summer which left water levels in some rivers too low to survey.

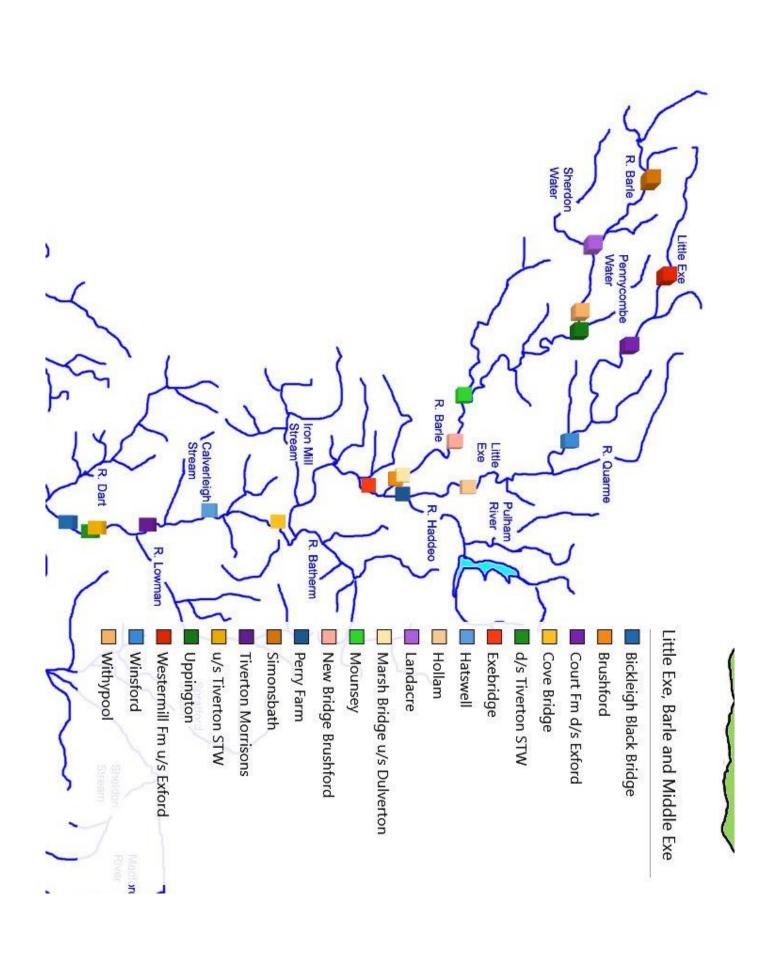
This network continues to be supported by the River Exe and Tributaries Association (RETA) and overseen by Fred Leach.

## **Summary**

Overall, the <u>scores</u> for 2018 are close to the average scores (based on between 1 and 7 years). This applies to the seasonal results and over the whole year. However the <u>number of surveys</u> with scores worse than average (69) is above the number with average or higher scores (56).

In September, the scores at nine sites (7% of surveys) fell to or below the trigger levels set by the Environment Agency:

- River Exe at Morrisons, Tiverton
- River Lowman tributary at Uplowman
- River Lowman at Chieflowman Bridge
- River Exe u/s Tiverton STW
- River Exe below Tiverton STW
- River Dart at Thongsleigh
- River Culm at Culmstock
- River Culm u/s of Uffculme
- River Yeo at Salmonhutch



# Summary Little Exe, Barle and middle Exe

	Litt	le Ex	ке &	Bar	le									
Exe	Barle	Barle	Barle	Barle	Barle	Barle	Barle	L. Exe	L. Exe	L. Exe	L. Exe	L. Exe	River	
Exebridge	New Bridge Brushford	Marsh Bridge u/s Dulverton	Brushford	Mounsey	Landacre	Withypool	Simonsbath	Perry Farm	Hollam	Winsford	d/s Exford Court Fm	u/s Exford Westermill Fm	Location	
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12			12	No longer surveyed	6	6	8	11		11			Sum	2018 score
9			10	/eyed	8	7	9	11	9	8			Aut	e e

	6	6	6	6	5	5	5	6	7	6	6	6	#	
•														
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			10	/eyed	œ	7	9	11	9	œ			Aut	(
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39%	95%	100%	<u> </u>	<u> </u>	0
21%	84%	90%	_	<u> </u>	<u> </u>
)8%	93%	93%	<u> </u>	<u> </u>	<u> </u>
78%	59%	89%	<u> </u>	<u> </u>	<u> </u>
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63% 94%

84%

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123% 133%

72%

75%

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0			7	1	-1
_			-1	1	1

## Notes:

Middle Exe

Exe Exe Exe Exe

Bickleigh d/s Black Bridge

Tiverton d/s STW

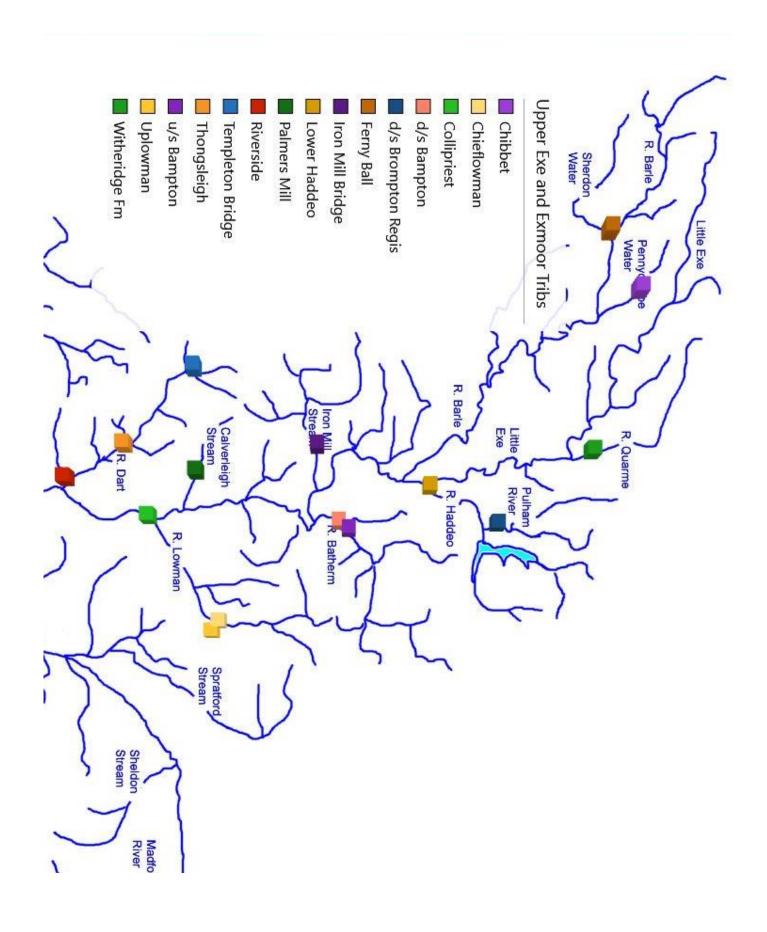
**Tiverton Morrisons** 

Tiverton u/s STW

Hatswell Cove Bridge

ΕX

- # Trigger scores are set by the EA and represent a threshold below which results should be reported. An amber background indicates that these levels were met, a red background indicates a score below.
- Averages are based on previous results up to 2017, over a maximum of 7 years.



# Summary ENP and Upper Exe Devon Tribs.

Upp	er E	Exe I	Dev	on T	ribs	<b>.</b>				Exm	noor	· NP				
Dart	Dart	Dart	Calverleigh Stream	Lowman	Lowman	Lowman Trib	Iron Mill Stream	Batherm	Batherm	Pennycombe Water	Lower Haddeo	Pulham	Quarme	Sherdon Water	River	
Riverside	Thongsleigh	Templeton Bridge	Palmers Mill	Collipriest	Chieflowman Bridge	Uplowman	Iron Mill Bridge	d/s Bampton	u/s Bampton	Chibbet	Lower Haddeo	d/s Brompton Regis	Witheridge Farm	Ferny Ball	Location	
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11	10	10	9	13	8	10		8	9		18	12	15	6	Spr	
		10	8	<u> </u>			9	8	13		17		14	6	Sur	

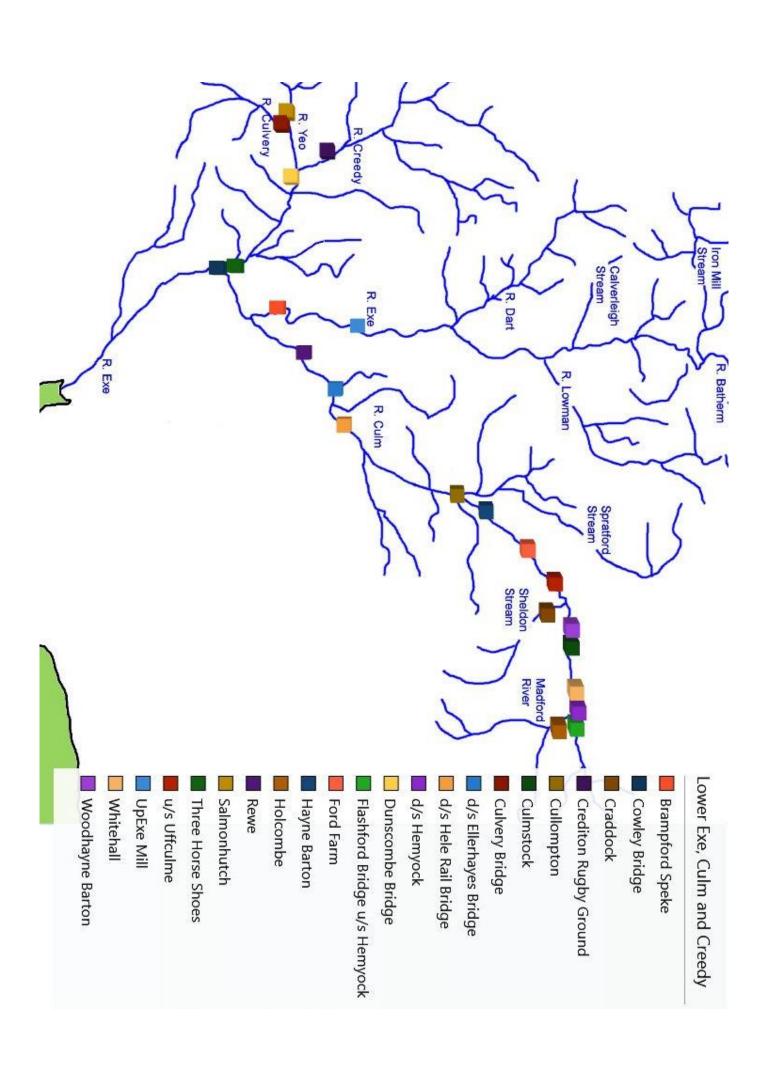
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# Notes:

- # Trigger scores are set by the EA and represent a threshold below which results should be reported. An amber background indicates that these levels were met, a red background indicates a score below.

  Averages are based on previous results up to 2017, over a maximum of 7 years.



# Summary Culm, lower Exe and Creedy/Yeo

)	Solmonk: tob	× )	r E
6	Dunscombe Bridge	Yeo	xe a
	Culvery Bridge	Culvery	and
6	Crediton Rugby Club	Creedy	Cre
7	Cowley Bridge	Exe	edy
7	UpExe Mill	Exe	
7	Brampford Speke	Exe	
5	Rewe	Culm	Culr
5	d/s Ellerhayes Bridge	Culm	n &
5	d/s Hele Rail Bridge	Culm	Trik
6	Cullompton	Spratford Stream	outa
7	Hayne Barton	Culm	ries
7	Ford Farm	Culm	
7	u/s Uffculme	Culm	
7	Craddock	Sheldon Stream	
7	Woodhayne Barton	Culm	
7	Culmstock	Culm	
7	Whitehall	Culm	
7	Flashford Br u/s Hemyock	Culm	
7	Holcombe	Madford River	
#	Location	River	

ı																						
	16	12	13	11	11	16	15		11	13	8	11	16	10	11	9	11	12	20	19	Spr	2(
	16	7	11		10	15	13		11	11	7	10	14	8	11	7	9	7	15	19	Sum	2018 score
	18	6	9		11	15	14				7	9	11	6	11	10	5	11	17	14	Aut	e
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	n/a	96%	90%	69%	92%	123%	79%		157%	186%	160%	110%	113%	94%	87%	90%	90%	109%	120%	114%	Spr	As

	As	As % Average	lge	2018	2018 Better/Worse	/orse
Ħ	Spr	Sum	Aut	Spr	Sum	Aut
4	114%	129%	101%	1	1	1
7	120%	101%	140%	1	1	1
_	109%	75%	151%	1	-1	1
01	90%	77%	58%	-1	-1	-1
0	90%	76%	118%	-1	-1	1
1	87%	99%	115%	-1	-1	1
O	94%	73%	61%	-1	-	-1
1	113%	108%	85%	1	1	-1
9	110%	103%	97%	_	_	<u> </u>
7	160%	127%	156%	_	_	1
	186%	157%		1	1	
	157%	122%		1	1	

164%	86%	138%		110%
	-1	-1	-1	<u> </u>
1	-1	-1		-1
1	<u> </u>	1		1

91% 125% 68%

> 115% 100%

> > 0

133% 64% 92%

## Notes:

ower

Yeo Creedy

Salmonhutch

6

Three Horse Shoes

- Trigger scores are set by the EA and represent a threshold below which results should be reported. An amber background indicates that these levels were met, a red background indicates a score below.

  Averages are based on previous results up to 2017, over a maximum of 7 years.

## **Total Score Analysis**

Comparing and averaging scores can only provide an indication to highlight issues for further investigation. Whilst some records are now approaching 10 years, others may consist of only one year. It should also be remembered that scores are logarithmic and so the ratio between scores does not apply the same between numbers of invertebrates. A score of three may indicate one specimen from each of three groups or 999 specimens from a single group. With these provisos:

- 1. The average scores for each season in 2018 are similar to the averages from previous surveys.
- 2. Seasonal variations show the usual downward trend, being typically one less in summer and two less in autumn than the spring scores. This is believed to be due to visible flies hatching and their progeny being harder to spot. There are exceptions and some volunteers report increasing numbers.
- 3. The Barle and Little Exe appear to have fared worse than the other tributaries. This cannot just be accounted for by the dry summer and it may be due to the wet and cold early spring.
- 4. More sites had a lower score than average than the same or higher, for each of the three season's surveys.

2018	Spring	Summer	Autumn	Total
Higher Scores	17	16	17	50
Same Scores	1	2	3	6
Lower Scores	27	20	22	69
Total	45	38	42	125

Note: there is no historic spring record at one of the sites.

As above.

As above.

As above.

- 5. The site on the Spratford Stream at Cullompton showed improvement, although previous scores had been very low with an annual average of only 5. The sites on the Culm downstream showed consequent improvement (although regrettably some surveys were not undertaken).
- 6. Results fell below the trigger levels set by the Environment Agency on six occasions, and to the trigger level on three others. All of these were September surveys except on the River Exe u/s and d/s of Tiverton STW, which occurred in May.

A poor site. Hatswell was o.k.

River Exe at Morrisons,

**Tiverton** 

River Lowman tributary at

Uplowman

River Lowman at

Chieflowman Bridge

River Exe u/s Tiverton

STW River Exe d/s Tiverton

STW

River Dart at Thongsleigh

**River Culm at Culmstock** 

River Culm u/s of Uffculme River Yeo at Salmonhutch

Reported late. Previous low scores have been investigated by the EA.

Always a 'difficult' river and water level very low. Worth

Threshold reached Spring 2018. Unfortunately Summer and

checking as autumn scores were barely half the average?

Concerns about the Culm have been raised with the EA. Neighbouring scores are o.k. but all three results are down and

the decline below Hemyock is notable.

Autumn surveys were not undertaken.

Trigger reached in September.

## **Species Score Analysis**

We do not expect to get all species at all times at all sites, due to their individual different needs. However we can look for anomalies, an unexpected presence abundance or absence, and whether there have been changes or trends.

Presence can be expressed as a percentage: for a particular site, group of sites or for the whole catchment. A value of 75% means that the group was found in 75% of surveys.

We record the average numbers that are counted in each survey. This information is converted into a logarithmic score (1 to 9 = 1, 10 to 99 = 2 etc.) that contributes to the overall score. Examination at species group level might reveal detail that the overall scores do not reflect.

## Presence

Riverfly Groups	2017	2018	Highest Presence	Lowest Presence
Cased Caddis	90.1%	84.9%	Exmoor NP	Lower Exe & Creedy
Uncased Caddis	89.4%	88.1%	Exmoor NP	Middle Exe
Mayfly	45.1%	55.6%	Exmoor NP	Middle Exe
Blue Winged Olive	52.8%	57.1%	Exmoor NP	Culm
Flat Bodied Heptagenidae	85.9%	86.5%	Exmoor NP	Culm
Olives	95.8%	96.0%	Exmoor NP	Middle Exe
Stonefly	82.4%	82.5%	Lower Exe & Creedy	Culm
Shrimp	77.5%	71.4%	Lower Exe & Creedy	Little Exe & Barle

- Percentages above for 2017 and 2018 are for the whole Exe catchment.
- The Exmoor National Park sub-catchment exhibits the highest presence of most Riverfly groups, including some that might not be expected such as mayfly. If proof was needed, it may illustrate a benefit to diversity of sensitive land management in this area.
- All Riverfly groups are present in at least 20% of the sites in all the sub-catchments.
- Variation from 2017 to 2018 is generally less than 10%. More marked changes include:
  - A reduction from 80% to 53% of sites for cased caddis in Lower Exe and Creedy
  - o An increase from 24% to 35% of sites for mayfly in the Middle Exe
  - An increase from 53% to 68% of sites for mayfly in the Culm
  - An increase from 32% to 50% of sites for blue-winged olive in the Culm
  - A reduction from 40% to 25% of site for shrimp in the Little Exe and Barle
- Sites recording mayfly have increased in all sub-catchments except the Lower Exe and Creedy

### Survey Count

- All sub-catchments record some of each group.
- Most counts average less than fifty. The only two groups that regularly exceed this are the general olives, which can be in the hundreds, and shrimp (Gammarus), which can reach thousands.
- Cased caddis numbers are higher on the upland waters and caseless on the lowland.
- Mayfly counts are usually in single figures, often only one or two. An exception in 2018 is the Lower Exe and Creedy where the average exceeded 30 (a good mayfly year in 2019?). The Culm also saw an increase from an average of less than two to almost five.
- Blue-winged olive numbers appear to be the most volatile.
- Average olive counts in the Lower Exe and Creedy sub-catchment have more than doubled in 2018.
- Shrimp numbers on the Culm continue to stand out, although lower in 2018 than in 2017. These are dominated by very high counts below Cullompton, where the Spratford Stream enters.



Percentage of sites in each sub-catchment, and the whole Exe catchment, where each Riverfly group was present.



The average survey count for each Riverfly group in each sub-catchment.

## **Other Activity**

Riverfly training was held, at Piles Mill near Porlock, mainly for the Somerset rangers of the National Trust.

The Blackdown Hills Area of Outstanding Beauty (AONB) Partnership is running a community project to help safeguard the native crayfish in the River Culm. A Riverfly Training Day was held on 12 May 2018 for the benefit of local people who want to be involved. Further works are planned.



Live crayfish have been caught during Riverfly surveying on the Culm at Whitehall (left). These were almost certainly American red-claw...

...also on the River Yeo (right), but this time a native.



A meeting was held with the Environment Agency on 11 July. We meet at least once a year to discuss Riverfly results and how these complement EA activities. Matters that were discussed included sites that fell below trigger levels in 2017, our protocol for raising concerns with the EA when trigger levels are met, and the state of the River Culm; should this be a special case for action?

The Anglers Riverfly Monitoring Initiative (ARMI) national database has continued to suffer from technical problems. Historic data that we were assured had been added was found not to be available. Efforts will (again) be made to ensure that all historic and subsequent results are included before the next season.

If any volunteer wants access to any of our historic River Exe catchment Riverfly data then Fred Leach and I will be pleased to help. We would also be pleased to receive any comments, corrections or suggestions relating to this or future reports.

Richard Horrocks Lower Exe ARMI Group Co-ordinator 29 November 2018

Cased Caddis Caseless Caddis Mayfly Blue Winged Olive Flat Bodied Hept. Olives Stonefly Shrimp Total Score	Cased Caddis Caseless Caddis Mayfly Blue Winged Olive Flat Bodied Hept. Olives Stonefly Shrimp Total Score	Cased Caddis Cased Caddis Caseless Caddis Mayfly Blue Winged Olive Flat Bodied Hept. Olives Stonefly Shrimp Total Score	River Site Trigger Level  1 2
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0	0	0	Little Exe Court farm 6 Number Score G.L'ender P.Grisley
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09-Sep-18 15:00 3 1 8 1 2 1 0 0 10 2 30 2 10 2 9	No Sample Low Water	27-May-18 13:00 20 20 20 2 10 2 1 4 4 1 2 1 30 2 20 2 20 2 20 2 2 20 2 2 2 2 2 2 2	Little Exe Hollam <b>7</b> Number Score
12-Sep-18 15:40 30 2 30 2 1 1 1 1 0 0 0 3 2 11 2 100 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	19-Jul-18 17:30 30 2 5 1 2 1 6 6 1 30 2 30 2 50 2 10 10 10 10 10 10 10 10 10 10 10 10 10	23-May-18  10 2 20 2 1 1 1 1 3 1 3 2 30 2 30 2 30	Little Exe Perry 6 Number Score J.Hughes A Searle M. W'iams
09-Oct-18 12:45 30 2 2 1 1 1 1 1 1 1 1 1 1 9 35 2 0 0 0 9	09-Aug-18 12:15 35 2 0 0 0 0 60 2 1 1 1 1 1 8	24-May-18 14:00 35 0 0 112 2 65 2 18 2 60 2 2 11 2 2 11	Barle Simonsbath 5 Number Score Alan Barrow
09-Oct-18 12:15 0 0 4 1 1 1 1 1 3 3 1 30 2 0 0 0 7	09-Aug-18 11:30 0 0 0 0 0 50 2 1 1 1 25 25 2 0 0	24-May-18 14:30 50 2 0 0 5 5 1 80 2 23 23 65 2 0 0 0 0 0 9	Barle Withypool 5 Number Score Alan Barrow
25-Sep-18 07:30 14 2 3 1 0 0 0 0 10 2 12 2 12 2 11 1 0 0	07-Jul-18 10:30 15 2 4 1 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	26-May-18 07:30 50 2 2 1 0 0 0 0 1 5 1 12 2 2 7	Barle Landacre <b>6</b> 'e Number Score <i>Jo Down</i>
12-Sep-18 50 2 15 2 0 0 0 0 100 3 100 2 10 2	19-Jul-18 16:30 3 6 10 0 15 2 10 2 20 2 0 12	23-May-18  20 20 2 20 0 0 0 100 3 150 3 40 2 0 12	Barle Brushford 6

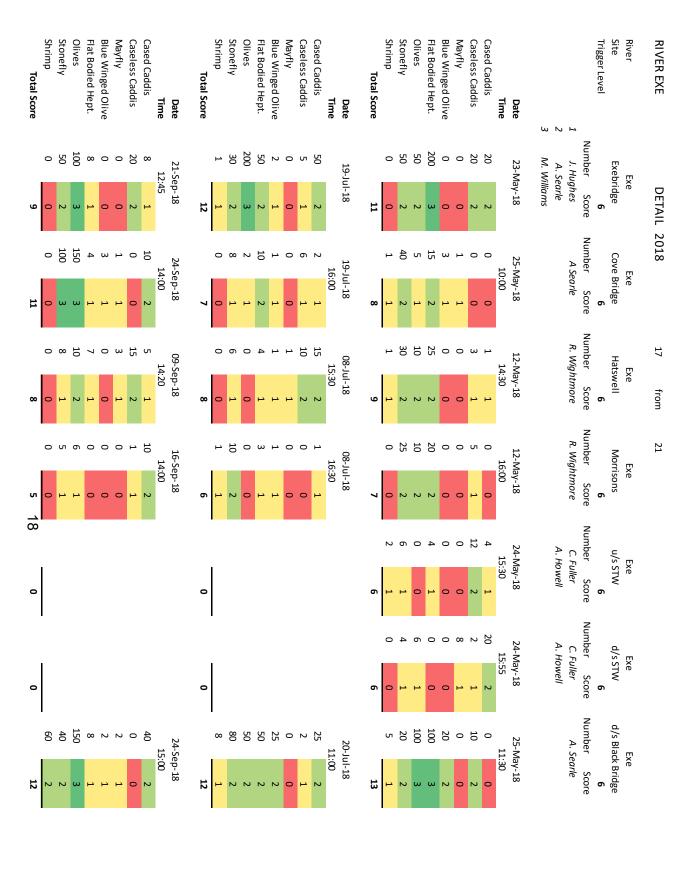
LITTLE EXE AND BARLE

DETAIL 2018

20

from

27



RIVER CULM

DETAIL

2018

39

