

## Conclusions Table

Candidate causes of WFD failures (threats to target biology)	Reach 1	Draft conclusions (E&M team)	Suggestions (E&M team)
	<b>Consistency of evidence</b>	Cause of WFD failure (or threat to the target biology): major / significant / minor / insignificant / unknown / uncertain	
<b>Agriculture</b>	[+] evidence from land use, SAGIS & EA Field Survey; [-] evidence from NIRS.	Agriculture is a significant (30-50%) part of the orthophosphate problem at Callerton, but it appears diffuse at the field(s) scale rather than there being specific point source problems.	
Agricultural (diffuse pollution) [e.g. runoff from grassland, manure heaps, farmyards?]	[+] evidence from land use, SAGIS & EA Field Survey; [-] evidence from NIRS.	Cannot confidently differentiate between slurry / manure agricultural sources and sewage sources, but sewage NIRS indicate there are sewage sources. SAGIS suggest livestock / grassland is a significant oPO4 source.	Speak to EA & CSF officers to see if there are any known problem areas. Further sampling of tributary streams under a range of flows and field conditions.
Arable field (diffuse source) [incl. sediment (Current Situation doc & WB Action Plan)]	[+] evidence for high NO3 runoff from manure/ slurry or inorganic fertiliser plus reported high sediment wash off (possible source of PO4).	The combination of reported sediment and oPO4 in rural tributary streams points towards arable land being part of the problem. SAGIS would suggest its less of a problem than grassland.	Speak to EA & CSF officers to see if there are any known problem areas. Further sampling of tributary streams under a range of flows and field conditions.
<b>Sewage</b> (in general) [phosphate highlighted]	Mainly [+] evidence for threat from sewage; but [-] evidence from no recent sewage NIRS and oPO4/T.I.N ratios are more consistent with agricultural runoff.	The amount of oPO4 is much more than SAGIS and field sampling suggest can be attributed to agriculture and there have been past sewage events. This points to a sewage problem (on top of the agricultural load) until that sewage problem can be ruled out.	
Sewage discharge (diffuse source) [e.g. sewer network & BOD mentioned in Current Situation doc]	Consistent [+] evidence	Possible significant threat	To check

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Sewage discharge (intermittent, point source) [sewage treatment works (STWs), storm discharges, CSOs & PSOs]	One piece of [0] evidence (N. Walbottle PSO). Consistent [-] evidence	N Walbottle PS overflow is a possible occasional threat which we cannot rule out currently.	To check
Sewage misconnections [phosphate highlighted]	Consistent [-] evidence	Insignificant threat	
Septic Tanks (non-mains sewerage)	One piece of [-] evidence	Insignificant threat	
<b>Transport</b>			
Transport network	No evidence	Unknown	
Road runoff – diffuse source	No evidence	Unknown	
<b>Urban areas</b>			
Drainage (housing) – diffuse source [BOD highlighted in Current Situation doc & WB Action Plan]	No evidence	Unknown	
Drainage (mixed, diffuse source)	No evidence	Unknown	
Increase in impermeable areas from new housing	No evidence	Unknown	
New urban development [upper & middle reaches mentioned]	No evidence	Unknown	
<b>Other</b>			
Trading / Industrial Estates – (diffuse source)	No evidence	Unknown	
Airport	Upstream of airport	No threat	
Golf course	Not present.	No threat	