

## Case study: River catchment at the local level The River Nar 3.1.1.6

Q1	<i>True or False?</i>	
A	The river Nar flows through the agricultural and low lying lands of west Suffolk	
B	The river is a tributary of the River Great Ouse that discharges into the North Sea	
C	The river is unusual in that it flows over chalk which is a permeable rock	
D	Much of the course is a protected SSSI – Stream of Special Scientific Investigation	
E	The river has little variation in its flow giving it a low index of flashiness	

Q2	<b>Match each acronym (abbreviated name as letters) to the correct description</b>	
A	A strategic policy by large institutions to ensure they act for more than profit	
B	A local area designated for particular protection from development	
C	A metric area that measures land in squares	
D	A global organisation for protecting natural environments and species	
E	An area with concerning fertiliser runoff into surface/underground waterways	
Select from: <b>WFF</b> <b>NVZ</b> <b>SSSI</b> <b>CSR</b> <b>km2</b>		

Q3	<b>One sentence is incorrect in each of the explanations below. Identify the wrong one.</b>
A	The River Nar flows for 42 km before entering the River Great Ouse. It commences as a series of springs on chalk and descends 60m over its course. It flows over chalk geology for its entire length making it a rare chalk stream.
B	The area drained by the River Nar is three-quarters arable agricultural land. This means the river banks have no need of protection from damage by pastoral farming. One specialist crop which requires very pure, fresh water is watercress that is eaten raw and used to be grown in fields using water from the river.
C	One of the main threats to the river water is gravel and sand extraction which releases slurry into the water that can lead to algal blooms. This is the rapid growth of water algae stimulated by additional nutrients in the water. This is particularly serious after intense storms which can wash considerable sediment into the channel.
D	Human use of the River Nar includes tourism, particularly freshwater fishing. This can provide a valuable economic and social input into the local economy. A Coca cola plant is also located near the river and allows tours of the plant as part of their responsibility to the local community.
E	In its early course on chalk much of the water is sourced from the groundwater emerging at the surface. This is supplemented by high annual precipitation which causes high base flow after severe storms. Despite flowing over chalk the water is not as pure as it might be due to surplus fertilizer being washed into the river from fields.

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Q4	Study the list of potential threats to the River Nar and identify them as 'natural' or 'human' threats. If you consider some to be 'both' – explain why.	
<i>Natural threats</i>		<i>Human threats</i>
<i>Cattle farming</i> <i>Acid rain</i> <i>Limited tributaries</i>		<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <i>Precipitation variability</i>  <i>Falling water table</i>  <i>Slurry</i> </div> <div style="text-align: center;"> <i>Nitrate runoff</i>  <i>Fishing</i>  <i>Abstraction</i> </div> <div style="text-align: center;"> <i>Algal blooms</i> </div> </div>

Q5	How should the River Nar be managed in order to be a 'sustainable' river system for the next 50 years, considering the likely changes it is likely to experience? Classify as 'Essential', 'Important', and 'Desirable' considerations.	
<b>Essential:</b>   		
<b>Important:</b>   		
<b>Desirable</b>   		