Form HR02: Proforma for FRM stage 3 appropriate assessment

Part A: Technical consideration

1 Table 1 – Plan details

Type of plan:	Catch	ment Flo	od Ma	nagem	ent Plan					
Agency reference no:	Catchment Flood Management Plan As HR01									
National Grid Reference:	As HR01									
Site reference:	East Cornwall									
				11	(OF:	1D)				
Plan Flomenta/Components				Haz	ard (CFN	1P)	10			
Plan Elements/Components (refs)	<u>i</u>	σĦ					\			
(1613)	Change in storage capacity	More/less flood water / frequent inundation	Faster/slower flowing water			Ф	<u> </u>	e =	ger	
	rage ∃i	is f req on	lov wat	o o	늘	l o	g t	ti dr	늘	
	ge	/les - / f dati	r/s ng	us ge	ner fer	rba	es	ပို့ ပို့	F C it	
	Change in storage ca	More/less f water / freq inundation	ste	Land use change	Sediment transfer	Disturbance	lug	Watercourse modification	orte atic	
	र र	N W	Fa flo	ੋ ਦ	Se	□	Changes to groundwater levels	ŽΈ	Shorter/I longer duration of inundation	
FRM Plan Component and time s	pan				ı				٠, ٠, ١	
a. Policy 6 – Increase flooding in	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Bodmin Moor Policy Unit										
b. Policy 5 – Reduce flood risk in	×	✓	✓	×	✓	✓	×	✓	✓	
Camel Tidal Policy Unit c. Policy 5 – Reduce flood risk in	×	✓	√	×	✓	✓	×	✓	✓	
South Coast Tidal Policy Unit		•	•			•	~			
d. Policy 4 – Sustain current risk	×	×	×	×	×	×	×	×	*	
into the future in Fowey and										
Seaton Valleys Policy Unit										
e. Policy 4 – Sustain current risk	×	×	×	×	×	×	×	×	*	
into the future in North Coast										
Rivers Policy Unit										
f. Policy 5 – Manage flood risk at	×	✓	√	×	✓	×	✓	×	✓	
the current level in Bude and										
Stratton Policy Unit g. Policy 3 – Manage flood risk at	×	√	√	×	✓	×	✓	×	✓	
the current level in Gannel and		•	•		,		-	"	-	
Mawgan Vale Policy Unit										
h. Policy 4 – Manage flood risk at	×	✓	✓	×	✓	×	✓	×	✓	
the current level in Camel Valley										
Policy Unit										
i – Policy 1 – No active	×	×	×	×	×	×	×	×	×	
intervention in Welcombe and										
Coombe Valleys Policy Unit	l (if are	ropriota	`							
Other Environment Agency Plans Tamar CFMP (Bodmin Moor)	ы (птарр П	ropriate								
River Camel Salmon Action Plan	√	√	√	√	✓	✓	*	√	✓	
Tamar CFMP (Phoenix United	✓	→	√	✓	· ✓	√	<i>√</i>	✓	✓	
Mine and Crow's Nest SAC)										
Other External plans (if appropria	ite)						1	1		
Land's End to Hartland Point SMP	×	?	×	×	?	?	×	?	?	
Rame Head to Lizard Point	×	?	×	×	?	?	×	?	?	
Shoreline Management Plan										
(SMP)										
South West RSS (in consultation)	×	×	×	?	?	?	×	?	×	

2 Table 2 - Site details:

Name, Legal Status, and Priority of	River Camel	SAC
the European site:	Tintagel-Marsland-Clovelly Coast	SAC

3 Table 3 - Features List:

	Features	Plan has associated hazards to which features are sensitive?	Details of Hazard (plan component reference)	Condition (SSSI Refs; Size)
River	Camel			
91A0	Old sessile oak woods	√	More/ less flood water/ frequent inundation (a, b, h) Changes to groundwater (a)	River Camel Valley And Tributaries SSSI Broadleaved, mixed and yew woodland - lowland 390.71ha unfavourable no change. Related to presence of non-native species.
91E0	Alluvial forests	√	More/ less flood water/ frequent inundation (a, b, h) Changes to groundwater (a)	River Camel Valley And Tributaries SSSI Broadleaved, mixed and yew woodland – lowland: 390.71ha unfavourable no change. Related to presence of non-native species
1163	Bullhead	√	Sediment transfer (b) Watercourse modification (b). Reduced freshwater flow (a, b)	River Camel Valley And Tributaries SSSI Rivers and Streams: 4.21ha unfavourable declining; 53.76ha unfavourable no change. Water quality and flow targets not being met.
1355	Otter	√	Watercourse modification (b)	River Camel Valley And Tributaries SSSI Rivers and Streams: 4.21ha unfavourable declining; 53.76ha unfavourable no change. Water quality and flow targets not being met.
1106	Atlantic salmon	✓	Sediment transfer (leading to smothering or removal of gravels) (b). Reduced freshwater flow (a, b) Sediment transfer (b) Watercourse modification (b)	River Camel Valley And Tributaries SSSI Rivers and Streams: 4.25ha favourable; 4.21ha unfavourable declining; 53.76ha unfavourable no change. Water quality and flow targets not being met.
Tintag		-Clovelly Coast		
91A0	Old sessile oak woods	√	More/ less flood water/ frequent inundation(f,)	Steeple Point to Marsland Cliffs SSSI. Broadleaved, mixed and yew woodland – lowland: 69.24ha favourable; 8.64ha unfavourable no change; 6.62ha unfavourable recovering. Related to presence of non-native species

4 Report content

This report describes the potential impacts to SACs within the East Cornwall Catchment Flood Management Plan. The plan has selected five out of the possible six policies for flood management including P1: No Active Intervention; P3: Continue with existing actions at the current level, P4: Take further action to sustain the current level of flood risk into the future, P5 take further action to reduce flood risk and P6: Take action to increase the frequency of flooding to deliver benefits.

Our preferred policies are as follows:

- Bodmin Moor P6
- Bude and Stratton P5
- Camel Tidal P5
- Camel Valley P4
- Fowey and Seaton Valleys P4
- Gannel and Mawgan Vale P3
- North Coast Rivers P4
- South Coast Tidal P5
- Welcombe and Coombe Valleys P1

Eight SACs lie within the East Cornwall CFMP area (see Figure 1); significant effects as a result of the CFMP are identified in Table 3. Significant effects are predicted to occur to features of River Camel SAC and Tintagel-Marsland Clovelly Coast SAC. Conservation objectives are set for each SAC by Natural England. Of the preferred policies selected, P4, P5 and P6 are considered to have the potential to impact upon the features of interest of the SACs. The impacts are discussed below and summarised in Table 4. Any mitigation identified in this report has been carried forward to the Action Plan for the CFMP.

In order to assess in-combination effects, the River Camel Salmon Action Plan, Land's End to Hartland Point SMP, Rame Head to Lizard Point, West Cornwall CFMP, Tamar CFMP and North Devon CFMP have been reviewed. None of these plans contain any actions or policies that will act in-combination with the East Cornwall CFMP.

Old sessile oak woodland is the only feature of interest of the Tintagel-Marsland-Clovelly Coast SAC that is likely to be impacted by the CFMP activities. Actions to reduce flood risk (P5) in Bude and Stratton Policy Unit have the potential to alter the hydrological regime and therefore the structure and composition of the woodland feature. Proposed flood risk management actions to implement P5 should be modelled to ensure maintenance of the variety of hydrological and drainage patterns on site. It has been determined that the implementation of this mitigation will be sufficient to ensure that there is no significant impact to the Tintagel-Marsland-Clovelly Coast SAC in the short or long term.

The River Camel SAC supports several features of interest that are likely to be affected by the CFMP activities including old sessile oak woodland, alluvial forests, bullhead, Atlantic salmon and otter. Flood storage on Bodmin Moor (P6) could result in changes to groundwater. In addition P6 on Bodmin Moor, P4 in Camel Valley and P5 in Camel Tidal could result in the alteration of the frequency of inundation of the woodland features. These flood risk management actions should be modelled to ensure maintenance of the variety of hydrological and drainage patterns on site. It has been determined that the implementation of this mitigation will be sufficient to ensure that there is no significant impact to the River Camel SAC in the short or long term.

Watercourses which support Atlantic salmon and bullhead must have good quality water, flow, natural habitat structure and suitable vegetation. They must also be free from obstruction. Actions to reduce flood risk including P6 on Bodmin Moor, P4 in Camel Valley and P5 in Camel Valley have the potential to lead to smothering of spawning gravels

through sediment transfer, reduced fresh water flow and watercourse modification which could all have significant impacts to these species. Any plans/projects to implement P4, P5 or P6 should be modeled to ensure that flow is not altered significantly, water quality is not reduced, and that fish passage is not obstructed. At least 90% of the naturalised daily mean flow should remain in the river throughout the year. It has been determined that the implementation of this mitigation will be sufficient to ensure that there is no significant impact to the River Camel SAC in the short or long term.

Reducing flood risk (P5) in Camel Tidal Policy Unit has the potential to significantly impact otters by reducing foraging access along the river banks. Any measures to reduce flood risk should ensure that riverbank access is maintained at all flow levels. It has been determined that the implementation of this mitigation will be sufficient to ensure that there is no significant impact to the River Camel SAC in the short or long term.

The CFMP Action Plan lists actions that may or may not be consistent with the implementation of the policy selected for that policy unit . In the following table only those actions which are to implement a change are assessed. Actions to commission further studies or strategies are not assessed. It is assumed that any further studies will incorporate understanding of the potential impact on the SACs and undertake their own assessment under the Habitats Regulations.

If the CFMP is implemented in accordance with the mitigation described in table 4a and Part B, then the plan is unlikely to affect the integrity of the sites. The plan could also be utilised to benefit the sites; the potential means for this are described in the same tables. It is essential to remember that:

- The policies will not be implemented uniformly across the policy unit, and that actions consistent with other policies may locally be more applicable
- The policies will be implemented via strategies or schemes, which will include a habitats regulation assessment to the level of detail appropriate to the modelling data available and the purpose of the study.

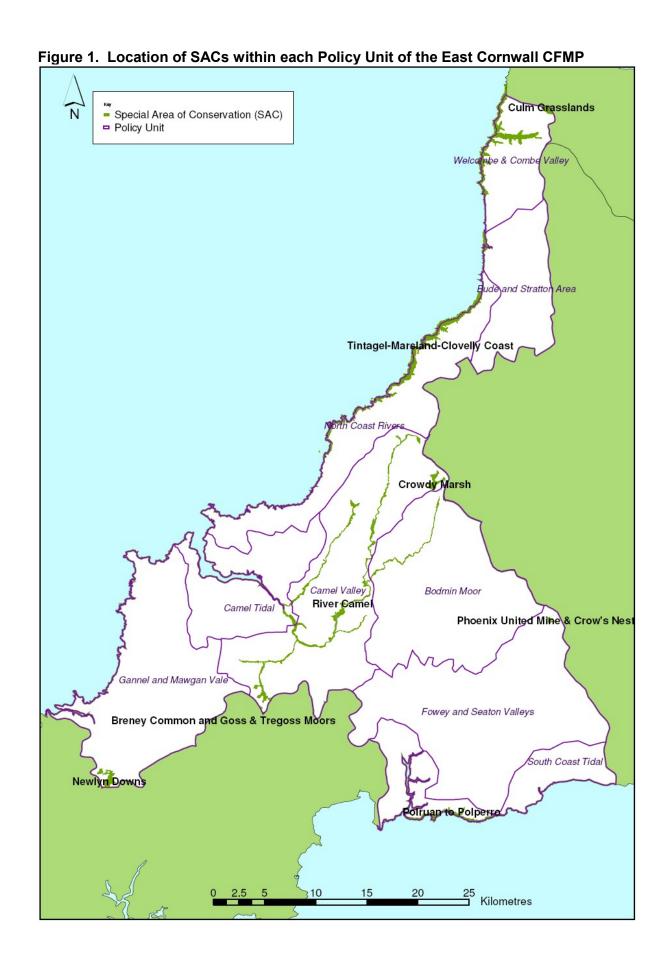


 Table 4a
 Appendix 12: Proforma for Stage 3 (Appropriate Assessment Record)

Summarised Conclusions:

River Came	I SAC							
			Contrib	ution of:	Adverse	Effect of:		
Habitat	Interest feature	Relevant favourable condition target for attribute ¹	attribute ¹ to ecological structure and function of site	management ² or other unauthorised sources to attribute / feature condition	proposal alone on attribute ¹ and/or feature	plan in combination with other plans or projects, on attribute ¹ / feature	Can adverse affects be avoided?	Adverse affect on integrity; long term, short term. Yes, No or uncertain ³ ?
Plan	0-20 years							
Timespan								
Hazard	Change in t	flow due to plan compo	nent a, b & h					
Semi- natural woodland	Alluvial forest (Residual alluvial woodland NVC W7)	No loss of ancient semi-natural stands At least current area of recent semi-natural stands maintained At least the current level of natural hydrological features should be maintained	Natural processes and structural development	No management actions are currently in place	Flood storage on Bodmin Moor P6 will regulate high flows on the River Camel. There is not anticipated to be a decrease in low flow levels P4 at Camel Valley and P5 at Camel Tidal may alter hydrological regime of this habitat type.	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature.	Yes. FRM Actions in all policy units will consider changes in flow regime to ensure no detrimental change to woodland area and structure as a result of proposed actions.	No, short term, if identified mitigation is implemented

River Came	el SAC							
			Contril	oution of:	Adverse	Effect of:		
Habitat		Relevant favourable condition target for attribute ¹	attribute ¹ to ecological structure and function of site	management ² or other unauthorised sources to attribute / feature condition	proposal alone on attribute ¹ and/or feature	plan in combination with other plans or projects, on attribute ¹ / feature	Can adverse affects be avoided?	Adverse affect on integrity; long term, short term. Yes, No or uncertain ³ ?
Semi- natural woodland	Old oak woodlands with Ilex and Blechnum (NVC W10)	No loss of ancient semi-natural stands At least current area of recent semi-natural stands maintained	Area	No management actions are currently in place	Flood storage on Bodmin Moor P6 will regulate high flows on the River Camel. There is not anticipated to be a decrease in low flow levels P4 at Camel Valley and P5 at Camel Tidal may alter hydrological regime of this habitat type.	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature.	Yes. FRM Actions in all policy units will consider changes in flow regime to ensure no detrimental change to woodland area and structure as a result of proposed actions.	No, short term, if identified mitigation is implemented

River	Atlantic	Flow regime should	Flow	No management	P6 on	SMP policy for	Yes. FRM	No, if identified
	Salmon	be characteristic of		actions are	Bodmin Moor	Camel Tidal is	actions to	mitigation is
		the river.		currently in place	may change	hold the line,	implement P6	implemented
					flow regime	therefore there	on Bodmin	
		There are several	Water quality and			is no predicted	Moor P4 at	
		targets setting	river substrate		P5 Reducing	impact on this	Camel Valley	
		minimum standards	mon odbotrato		flood risk will	feature.	and P5 at	
		for biological and			reduce urban	roataro.	Camel Tidal	
		chemical water			pollution	The River	will consider	
		quality, and			entering the	Camel Salmon	changes in	
		suspended solids.			river. May	Action Plan	flow regime to	
		Susperided solids.			lead to a	does not have	ensure no	
		Maintain habitat,	Habitat structure		decline in	any actions	detrimental	
		form, vegetation, and	Tiabilal Structure		natural river	that would	change to flow	
		function of river			condition and	result in an in-	regime. At	
		channel to support all			barriers to	combination	least 90% of	
		life stages of			migration (if	impact with the	the naturalised	
		species.			hard	CFMP	daily mean	
		species.			defences are	policies.	flow will	
		No artificial barriers	Access			policies.	remain in the	
		significantly impairing	Access		created), or similar		river	
		adult and smolt						
					impacts to		throughout the	
		migration.			P6.		year.	
							Any	
							plans/projects	
							to implement	
							P5 should be	
							modelled to	
							ensure that	
							flow is not	
							altered	
							significantly,	
							water quality is	
							not reduced,	
							and that fish	
							passage is not	
							obstructed.	
							No FRM	

							actions will be implemented that impact on the Atlantic salmon habitat, migration flows and suitable food source.	
River	Bullhead	Flow regime should be characteristic of the river. Maintain and where necessary restore the characteristic physical form of the river channel.	Flow	No management actions are currently in place	Flood storage on Bodmin Moor P6 will regulate high flows on the River Camel. There is not anticipated to be a decrease in low flow levels, therefore there will be no impact. Reducing flood risk may lead to a decline in natural river condition. However, this is likely to be in towns and cities where the river form is not currently	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature.	Yes, FRM actions to implement P6 on Bodmin Moor P4 at Camel Valley and P5 at Camel Tidal will consider changes in flow regime to ensure no detrimental change to flow regime Any plans/projects to implement P5 will be modelled to ensure that flow is not altered significantly, water quality is not reduced and natural river condition does not decline.	No, if identified mitigation is implemented

					natural.		No FRM actions will be implemented that impact on the Bullhead habitat and suitable food source.	
River	Otter	To maintain, in favourable condition, the habitats which support otter.	Habitat Structure Flow	No management actions are currently in place	Flood storage on Bodmin Moor P6 will regulate high flows on the River Camel. There is not anticipated to be a decrease in low flow levels, therefore there will be no impact. Reducing flood risk may lead to a decline in natural river condition. However, this is likely to be in towns and cities where the river form is not currently natural.	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature.	Yes. FRM actions in all policy units will maintain riverbank passage for otter at times of high flow. Strategy / plan to implement P6 on Bodmin Moor P4 at Camel Valley and P5 at Camel Tidal will consider changes in flow regime to ensure no detrimental change to flow regime. Any plans/projects to implement P5 will be modelled to ensure that flow is not altered	No, if identified mitigation is implemented

			significantly, water quality is not reduced and natural river condition does not decline.	
			No FRM actions will be implemented that impact on Otter habitat and suitable food source.	

Plan Timespan	20-50 years										
Hazard	Change in f	low due to plan compo	nent a, b & h								
Semi- natural woodland	Alluvial forest (Residual alluvial woodland NVC W7)	No loss of ancient semi-natural stands At least current area of recent semi-natural stands maintained At least the current level of natural hydrological features should be maintained	Natural processes and structural development	No management actions are currently in place	Flood storage on Bodmin Moor P6 will regulate high flows on the River Camel. There is not anticipated to be a decrease in low flow levels, therefore there will be no impact. P4 at Camel Valley and P5 at Camel Tidal may alter hydrological regime of this habitat type.	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature.	Yes, FRM actions to implement P6 on Bodmin Moor P4 at Camel Valley and P5 at Camel Tidal will need to consider changes in flow regime to ensure no detrimental change to woodland area and structure. No FRM actions will be implemented that impact on the Alluvial Forest	No, long term, if identified mitigation is implemented			
Semi- natural woodland	Old oak woodlands with Ilex and Blechnum (NVC W10)	No loss of ancient semi-natural stands At least current area of recent semi- natural stands maintained	Area	No management actions are currently in place	Flood storage on Bodmin Moor P6 will regulate high flows on the River Camel. There is not anticipated to be a decrease in	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature.	Yes, FRM actions to implement P6 on Bodmin Moor P4 at Camel Valley and P5 at Camel Tidal will consider changes in flow regime to	No, long term, if identified mitigation is implemented			

				low flow levels, therefore there will be no impact. P4 at Camel Valley and P5 at Camel Tidal may alter hydrological regime of this habitat type.		ensure no detrimental change to woodland area and structure. No FRM actions will be implemented that impact on the old oak woodlands	
Atlantic Galmon	Flow regime should be characteristic of the river. There are several targets setting minimum standards for biological and chemical water quality, and suspended solids. Maintain habitat, form, vegetation, and function of river channel to support all life stages of species. No artificial barriers significantly impairing adult and smolt migration.	Water quality and river substrate Habitat structure Access	No management actions are currently in place	P6 on Bodmin Moor may change flow regime P5 Reducing flood risk will reduce urban pollution entering the river. May lead to a decline in natural river condition and barriers (if hard defences are created), or similar impacts to P6.	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature. The River Camel Salmon Action Plan does not have any actions that would result in an incombination impact with the CFMP policies.	Yes, FRM actions to implement P6 on Bodmin Moor P4 at Camel Valley and P5 at Camel Tidal will consider changes in flow regime to ensure no detrimental change to flow regime. At least 90% of the naturalised daily mean flow should remain in the river throughout the year. Any plans/projects to implement	No, long term, if identified mitigation is implemented

River	Bullhead	Flow regime should be characteristic of the river. Maintain and where necessary restore the characteristic physical form of the river channel.	Flow	No management actions are currently in place	Flood storage on Bodmin Moor P6 will regulate high flows on the River Camel. There is not anticipated to be a decrease in low flow levels, therefore there will be no impact.	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature.	P5 should be modelled to ensure that flow is not altered significantly, water quality is not reduced, and that fish passage is not obstructed. No FRM actions will be implemented that impact on the Atlantic salmon habitat, migration flows and suitable food source. Yes, FRM actions to implement P6 on Bodmin Moor P4 at Camel Valley and P5 at Camel Tidal will consider changes in flow regime to ensure no detrimental change to flow regime. Any	No, long term, if identified mitigation is implemented
					Reducing flood risk		Any plans/projects	

					may lead to a decline in natural river condition. However, this is likely to be in towns and cities where the river form is not currently natural.		to implement P5 will be modelled to ensure that flow is not altered significantly, water quality is not reduced and natural river condition does not decline.	
River	Otter	To maintain, in favourable condition, the habitats which support otter.	Habitat Structure Flow	No management actions are currently in place	Flood storage on Bodmin Moor P6 will regulate high flows on the River Camel. There is not	SMP policy for Camel Tidal is hold the line, therefore there is no predicted impact on this feature.	No FRM actions will be implemented that impact on Bullhead habitat and suitable food sources. Yes, any new/ improved defences will maintain riverbank passage for otter at times of high flow.	No, long term, if identified mitigation is implemented
					anticipated to be a decrease in low flow levels, therefore there will be no impact. Reducing flood risk		Strategy / plan to implement P6 on Bodmin Moor P4 at Camel Valley and P5 at Camel Tidal will consider changes in	

may lead to a	flow regime to
decline in	ensure no
natural river	detrimental
condition.	change to flow
However,	regime. At
this is likely	least 90% of
to be in	the naturalised
towns and	daily mean
cities where	flow should
the river form	remain in the
is not	river
currently	throughout the
natural.	year.
The state of the s	Journ
	Any
	plans/projects
	to implement
	P5 will be
	modelled to
	ensure that
	flow is not
	altered
	significantly ,
	water quality is not reduced
	and natural
	river condition
	does not
	decline.
	No FRM
	actions will be
	implemented
	that impact on
	Otter habitat
	and suitable
	food source.

Tintagel-Ma	arsland-Clovel	ly Coast						
	Interest feature	Relevant favourable condition target for attribute ¹	Contribution of:		Adverse Effect of:			
Habitat			attribute ¹ to ecological structure and function of site	management ² or other unauthorised sources to attribute / feature condition	proposal alone on attribute ¹ and/or feature	plan in combination with other plans or projects, on attribute ¹ / feature	Can adverse affects be avoided?	Adverse affect on integrity; long term, short term. Yes, No or uncertain ³ ?
Plan Timespan	0-20 years							,
Hazard	Change in f	low due to plan compo	nent f					
Semi- natural woodland	Old oak woodlands with Ilex and Blechnum (NVC W10)	No loss of ancient semi-natural stands At least current area of recent semi-natural stands maintained	Area	No management actions are currently in place	Taking further action to reduce flood risk in Bude and Stratton (P5) could result in changes to the hydrological regime.	SMP policy for is hold the line, therefore there is no predicted impact on this feature.	Yes, FRM actions to implement P5 at Bude and Stratton and will consider changes in flow regime to ensure no detrimental change to woodland area and structure.	No, short term, if identified mitigation is implemented
Plan Timespan	20-50 years							
Hazard	Change in f	low due to plan compo	nent f					
Semi- natural woodland	Old oak woodlands with Ilex and Blechnum (NVC W10)	No loss of ancient semi-natural stands At least current area of recent semi-natural stands maintained	Area	No management actions are currently in place	Taking further action to reduce flood risk in Bude and Stratton (P5) could result in changes to the hydrological regime.	SMP policy for is hold the line, therefore there is no predicted impact on this feature.	Yes, FRM actions to implement P5 at Bude and Stratton and will consider changes in flow regime to ensure no detrimental change to woodland area and structure.	No, short term, if identified mitigation is implemented

Notes:

- 1 ATTRIBUTE = Quantifiable aspects of interest features (subject to natural variation in some cases) that can be used to help define favourable condition for that feature. See Site Conservation Objectives
- 2 MANAGEMENT = in this context management refers to management of the **European site** 3 If uncertain consider time-limited consent, or other legally enforceable modifications

Stage 3 Environment Agency conclusion

Can it be ascertained that the plan will not adversely effect the integrity of the european site(s)? Yes

This CFMP has been signed off as setting the strategic direction for managing flood risk in the catchment on the basis that it cannot be put into effect until more detailed appraisal and assessment has taken place on plans or projects arising out of this CFMP to show it and they have met the requirements of the Habitats Regulations.

Implementation of the proposed mitigation measures should result in the avoidance of detrimental impacts to the features of designated sites, and no effect on site integrity.

Name of EA officer undertaking appropriate assessm Signed:	ent: Date:
Endorsed by (if appropriate) e.g. team leader and date	
NE COMMENTS ON APPROPRIATE ASSESSMENT: IS THERE AGREEMENT WITH THE CONCLUSION? YE (Please provide summary and explanation for answer gives)	
Signed: (NE local team manager)	nte: