

CONVEX: Intense rainfall and flash flooding workshop

Introduction and scene setting

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CCRA1 didn't include a variety of important risks related to intense rainfall because of a lack of evidence



- CCRA1 Synthesis Report: “Key evidence gaps include extreme value estimation in a ‘non-stationary’ climate, spatial extents, duration and clustering that are all poorly resolved in climate models. Overall confidence in extreme hot and cold events and coastal flooding is greater than for surface water flooding, storms, gales and drought. As well as continued monitoring, further research on climate change and extreme events is needed to improve future risk assessments”.
- CCRA2 needs to address the following question: based on our latest understanding of climate risks, vulnerability and adaptation, what should the priorities be for the next National Adaptation Programme?

Key issues for CCRA2 (and NAP2) to consider



- ⦿ Update on whether UKCP09 is still fit for purpose
- ⦿ UK-wide projections of flooding, including surface water flooding (Paul Sayers project)
- ⦿ Coincidence effects of extreme weather (heavy rain) on infrastructure, transport links.
- ⦿ Risks to the ability of the land to support natural capital.
- ⦿ Effects on businesses; employees, distribution, supply chains, availability of insurance.
- ⦿ Rain damage to buildings (mould etc.)
- ⦿ Vulnerability of the emergency services to extreme weather events – are they well-enough prepared?

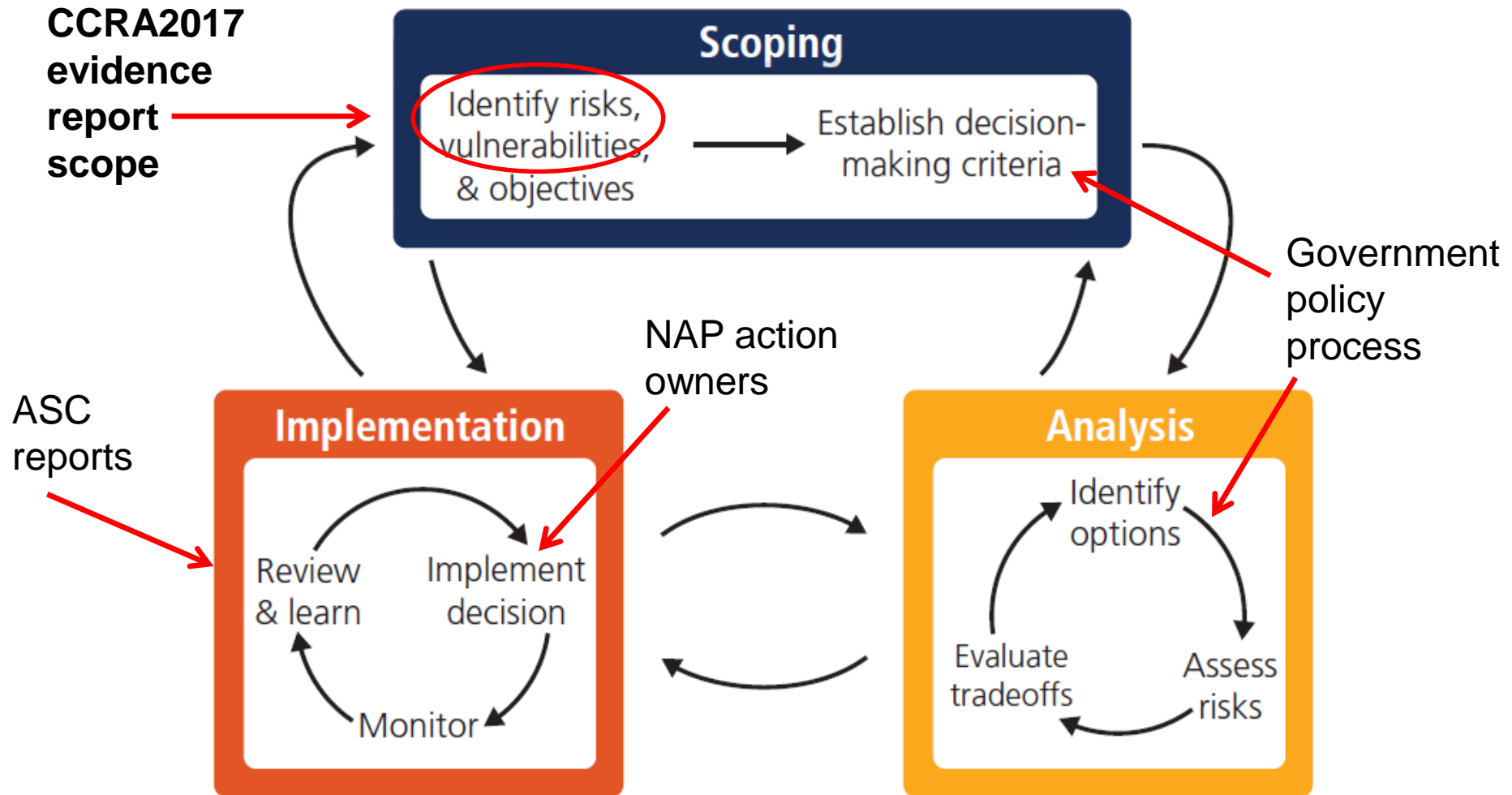
Comparison of evidence reports- 2012 and 2017 CCRAs



CCRA2012	CCRA2017
100+ threats and opportunities	Smaller number of threats/opportunities
Scored risks by magnitude, urgency and confidence	Still using urgency, magnitude and confidence
2020s, 2050s and 2080s	Current, 2020s (2050s and 2080s)
Mix of existing data and new analysis	Mostly synthesis of existing analysis
Used UKCP09 to explore different climate scenarios	Will use evidence that is based on UKCP09 and other approaches
Did not include effects of planned adaptation or socio-economic change (beyond population growth)	Will include an assessment of the effects of adaptation and socio-economic change on risk.
Did not quantify international effects	Will include a chapter on international effects.
11 sector reports + 1 synthesis	1 evidence report
Authored by consultants (signed off by Defra)	Authored by ~80 independent authors and signed off by ASC
Independently peer reviewed	Independently peer reviewed

Adaptation is moving away from 'predict then act' – but we still need a range of plausible futures

IPCC Iterative risk management cycle (WGII SPM 2014)

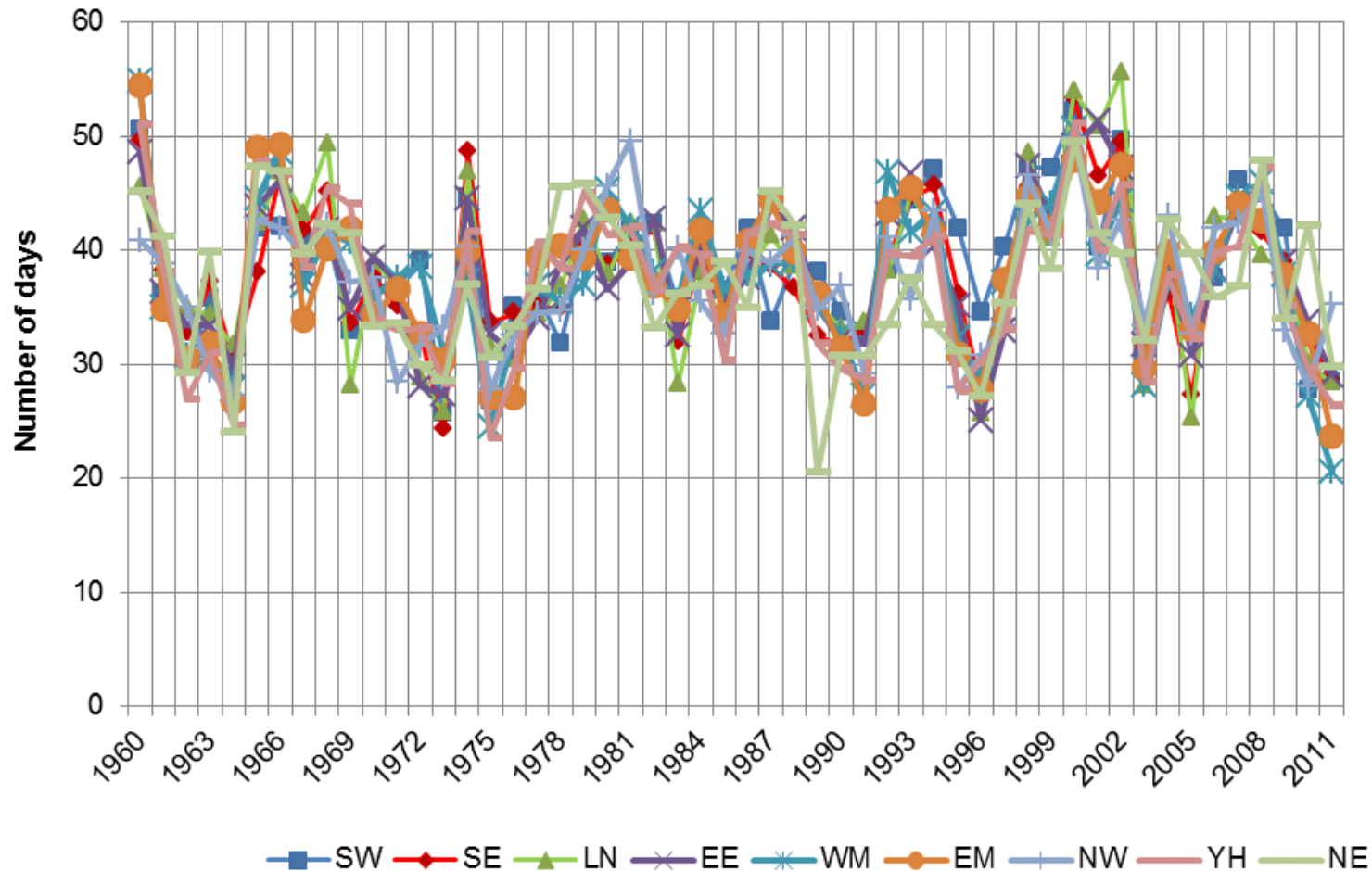


Other key questions for the ASC – how might risks in the national risk register change in future? (answer - we don't really know)

Return periods for major weather hazards as shown in the national risk register, showing how they could change by 2050 (depicted by arrows; solid arrows have higher confidence than dashed arrows)

Greater than 1 in 51, up to 1 in 200	Greater than 1 in 2, up to 1 in 50	1 in 2 or lower
Coastal flooding (2013-type surge event) ¹	← - - - - -	
	Low temperatures and heavy snow ²	
Inland flooding (current 1 in 100 year events) ³	- - - - - →	
	Heatwaves (2003-type event) ⁴	→
Drought ⁵	- - - - - →	
	Storms and gales	
Severe wildfire		

Other key questions for the ASC – how is exposure to heavy rain changing? (we don't really know)

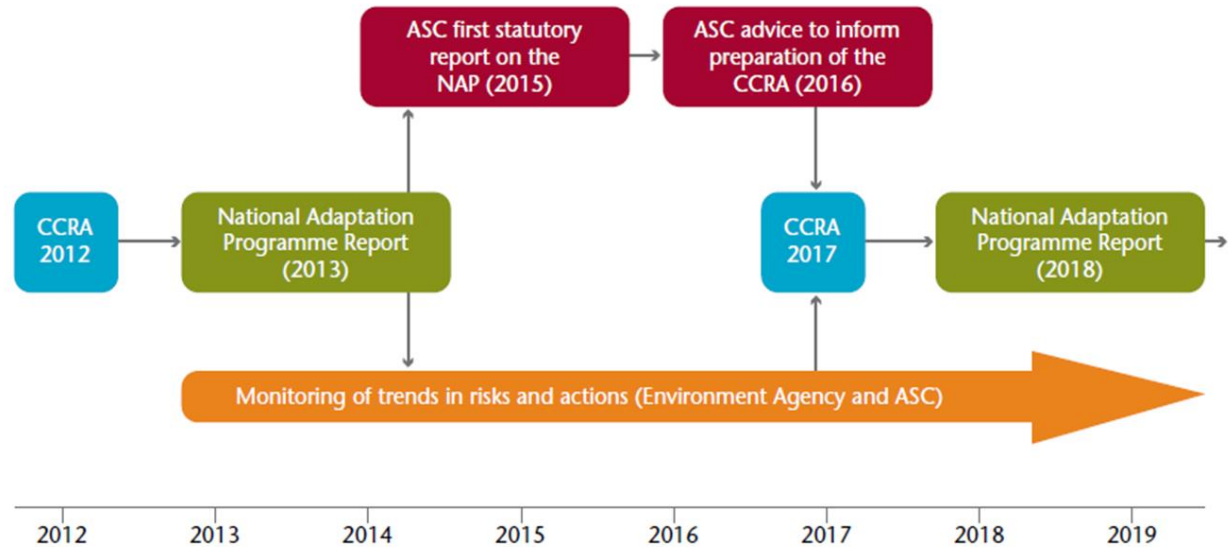


Number of single-day rainfall events per year that exceed the 1961-1990 90th percentile (annual) for English regions – metric shows no change since 1960

Where CONVEX can feed more widely into the statutory adaptation process



- 2015-16:
 - CCRA research and evidence report
- Summer 2015:
 - ASC evaluation of the NAP
- January 2016 – January 2017:
 - CCRA Government Report
- 2018:
 - National Adaptation Programme
- 20??:
 - UKCPnext?
- Ongoing:
 - LWEC process



Adaptation Sub-Committee

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