//SmartRiver: Leveraging the Internet of Things to assess the effectiveness of Natural Flood Management and its co-benefits.

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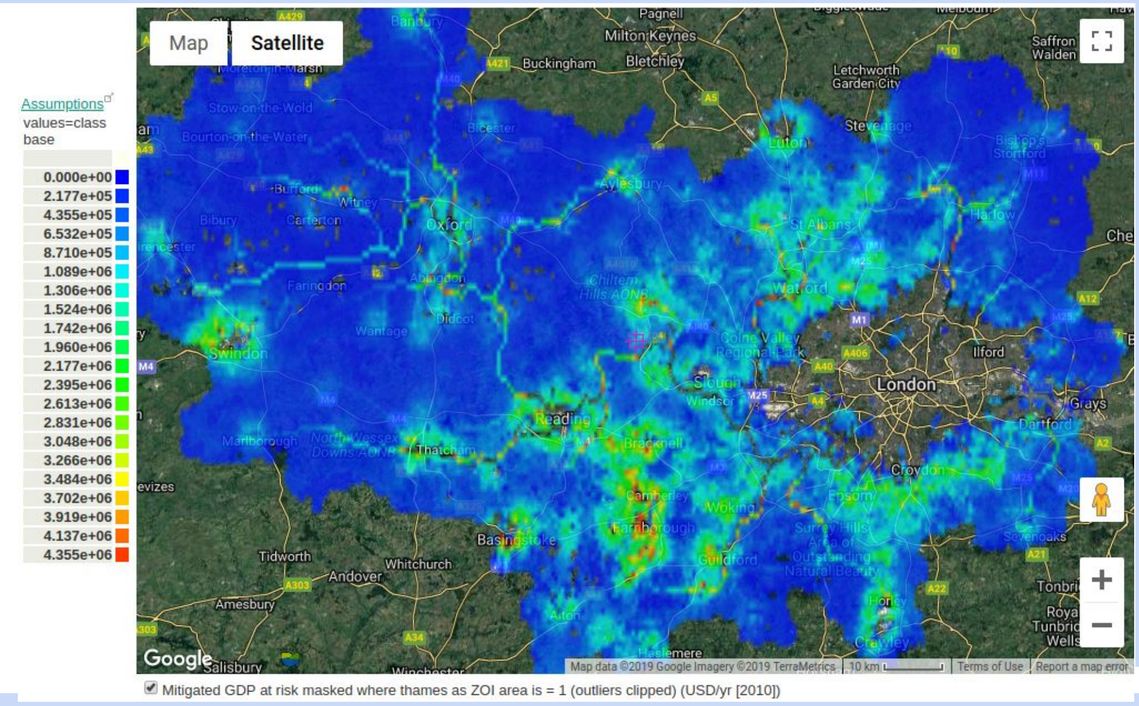
Technology Environment Knowledge
www.policysupport.org

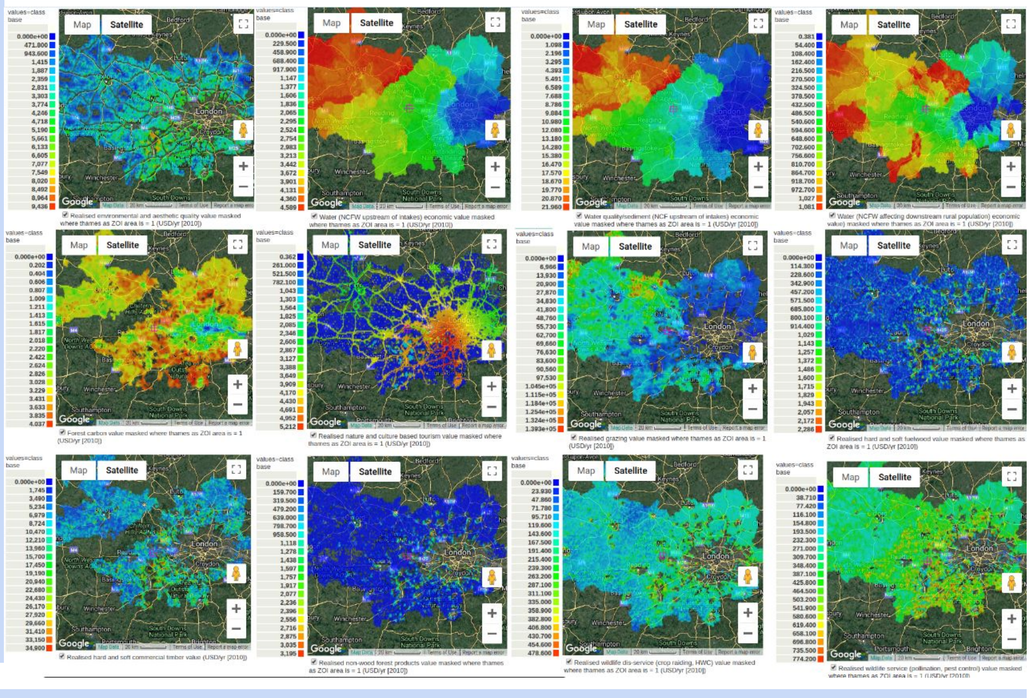
Here we use a series of tools to operationalise strategic planning and investment for Natural Flood Management

Flood mitigation is an important ecosystem service provided by natural capital. The same natural capital has a variety of co-benefits. Both can be mapped using Co$tingNature



Mitigated GDP at risk masked where thames as ZOI area is = 1 (outliers clipped) (USD/yr [2010])

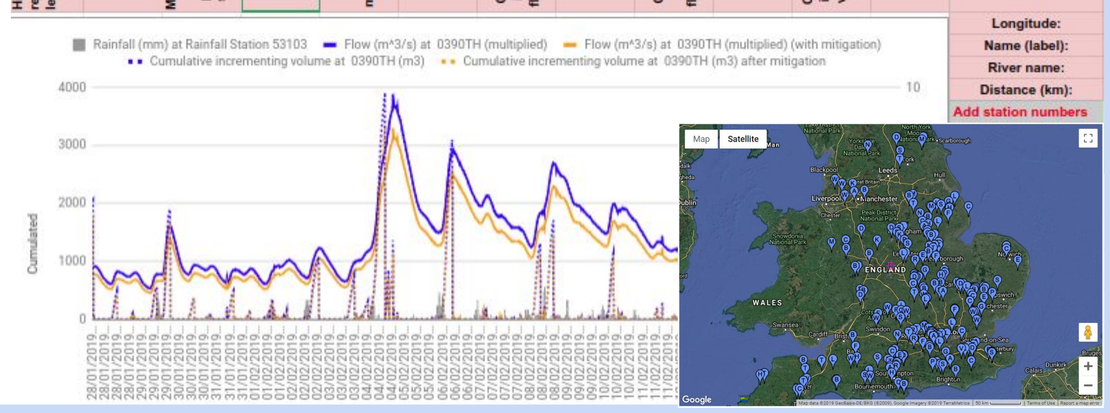
<GDP at risk mitigated by natural capital in the Thames



Co-benefits for 12 other ecosystem services>

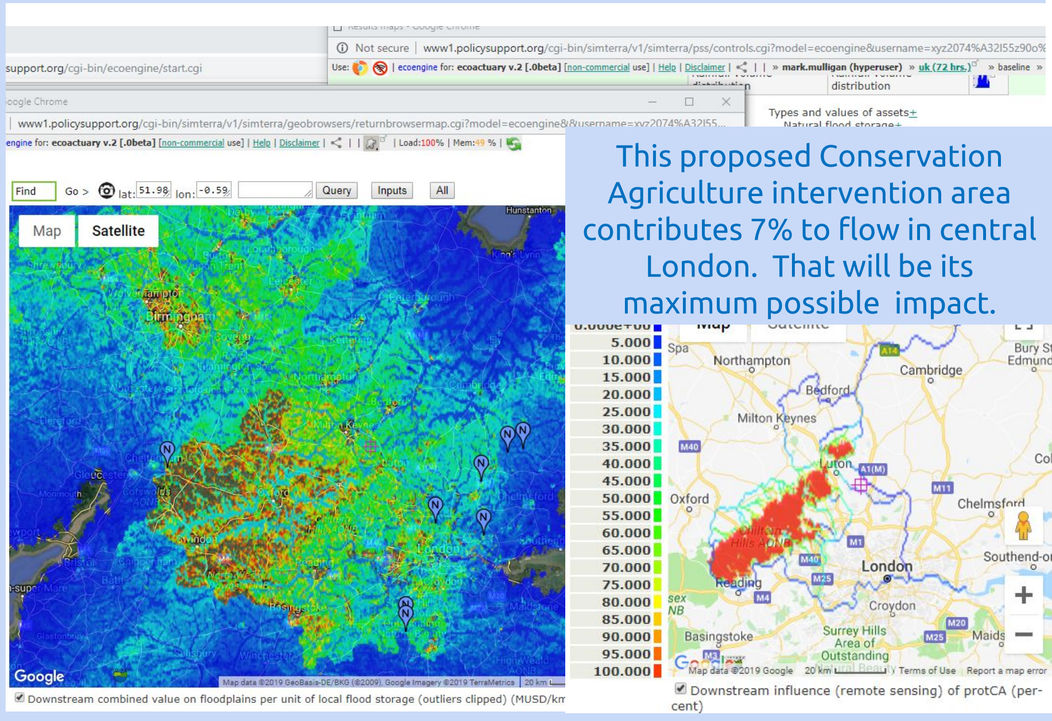
Managing these benefits involves protection of existing natural capital but also development of new, through investments in Natural Flood Management. These investments must be strategically placed to make a difference: Eco:Actuary help plan and locate the best sites for investment

River, catchment or station name	Latitude:	Longitude:	Flood peak reduction target (%)	Cost per m^3 of mitigation (leaky dams) GBP/m^3	Cost per m^3 of mitigation (conservation agriculture) GBP/m^3	Cost per m^3 of mitigation (ponded surface storage) GBP/m^3	Upstream storage volume required to meet flood risk reduction requirement (m^3), for max. observed CIV	Upstream storage volume required per % of flood peak reduction (m^3), for max. observed CIV	Cost of full mitigation (using leaky dams) GBP	Cost of full mitigation (using conservation agriculture) GBP	Cost of full mitigation (using ponded surface storage) GBP	Location of assets at risk (location)
	51.6399322	-1.82640921	15	£500.00	£100.00	£600.00	586 m^3 or 0.2 olympic swimming pools	39	£293,494	£58,699	£352,192	England
Highest recorded level (m):	2.587	Max level over period shown (m):	1.422	Flood flow multiplier:	1.82	Change in max flow (%):	15	Change in min flow (%):	15	Change in total volume (%):	-17.65	Latitude:
												Longitude:
												Name (label):
												River name:
												Distance (km):
												Add station numbers



<Eco:Actuary investment planner to examine scale of intervention needed

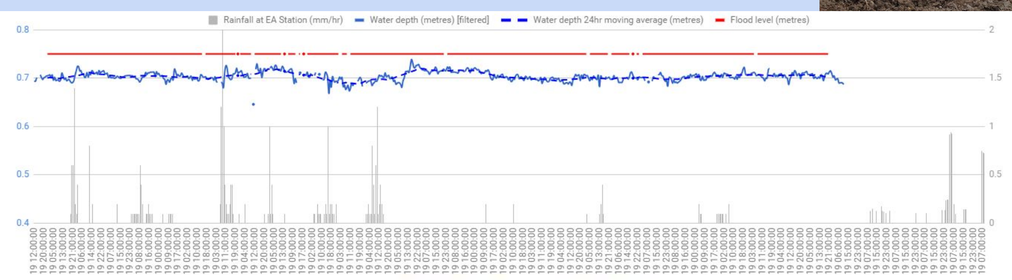
Eco:Actuary spatial model to understand where to invest for maximum return>



This proposed Conservation Agriculture intervention area contributes 7% to flow in central London. That will be its maximum possible impact.

They must also be monitored for their effectiveness: //Smart:River measures the impact of interventions on flood peak reduction downstream directly and in real time, connecting through the Internet of Things

Our //Smart:River web connected, low cost, DIY sensors are monitoring the contribution of leaky dams, retention ponds and conservation agriculture to flood mitigation at sites throughout England



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More information at

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