

Interreg 
EUROPEAN UNION
France (Channel
Manche) England

Channel Payments for Ecosystem Services

European Regional Development Fund



Case Study: Salcombe- Kingsbridge Estuary

by Dr Laurence Couldrick
Westcountry Rivers trust





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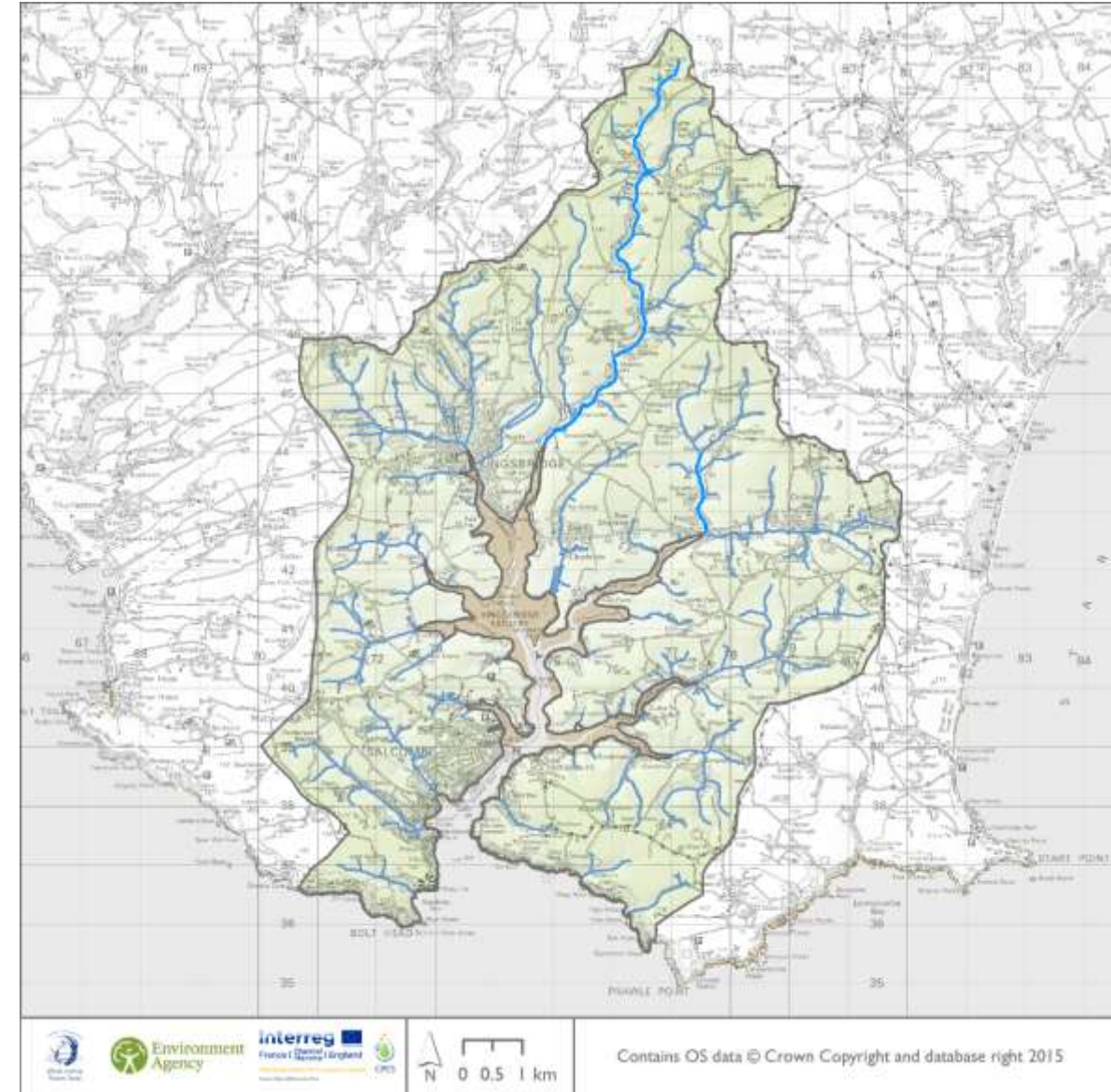
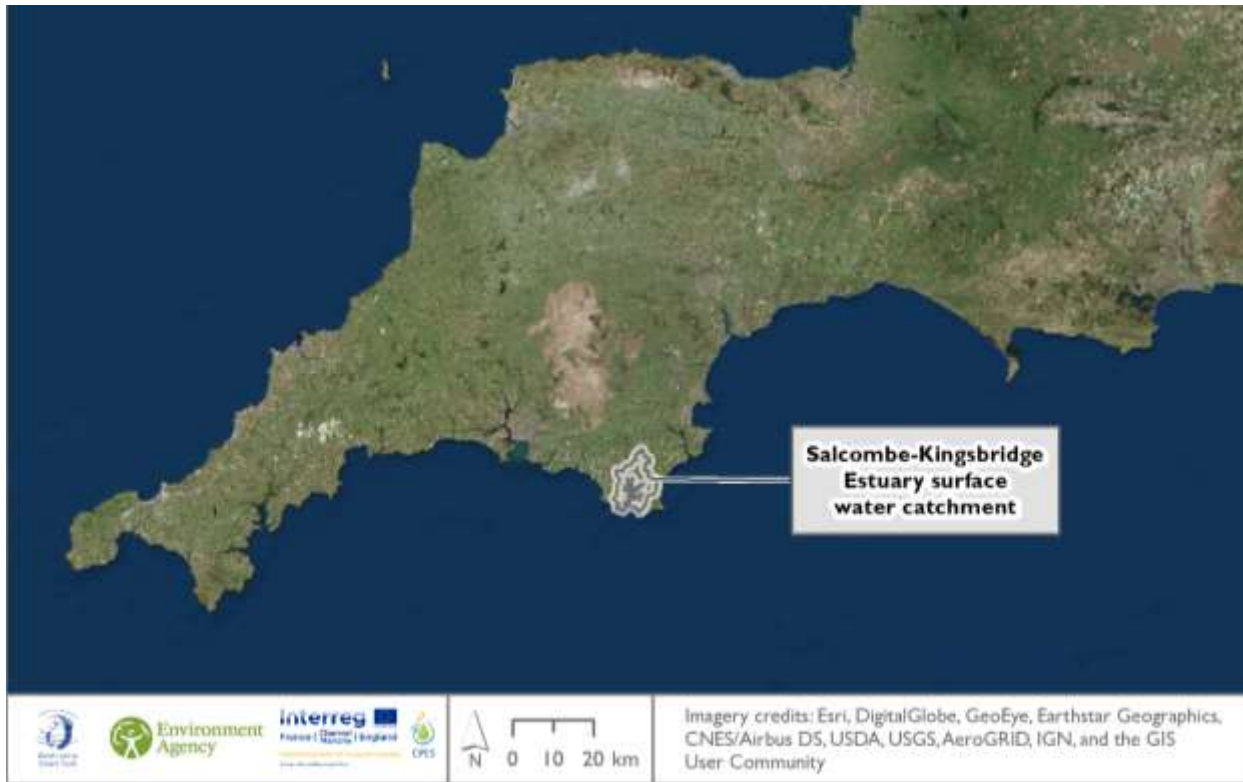


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GEOGRAPHIC
SCOPE

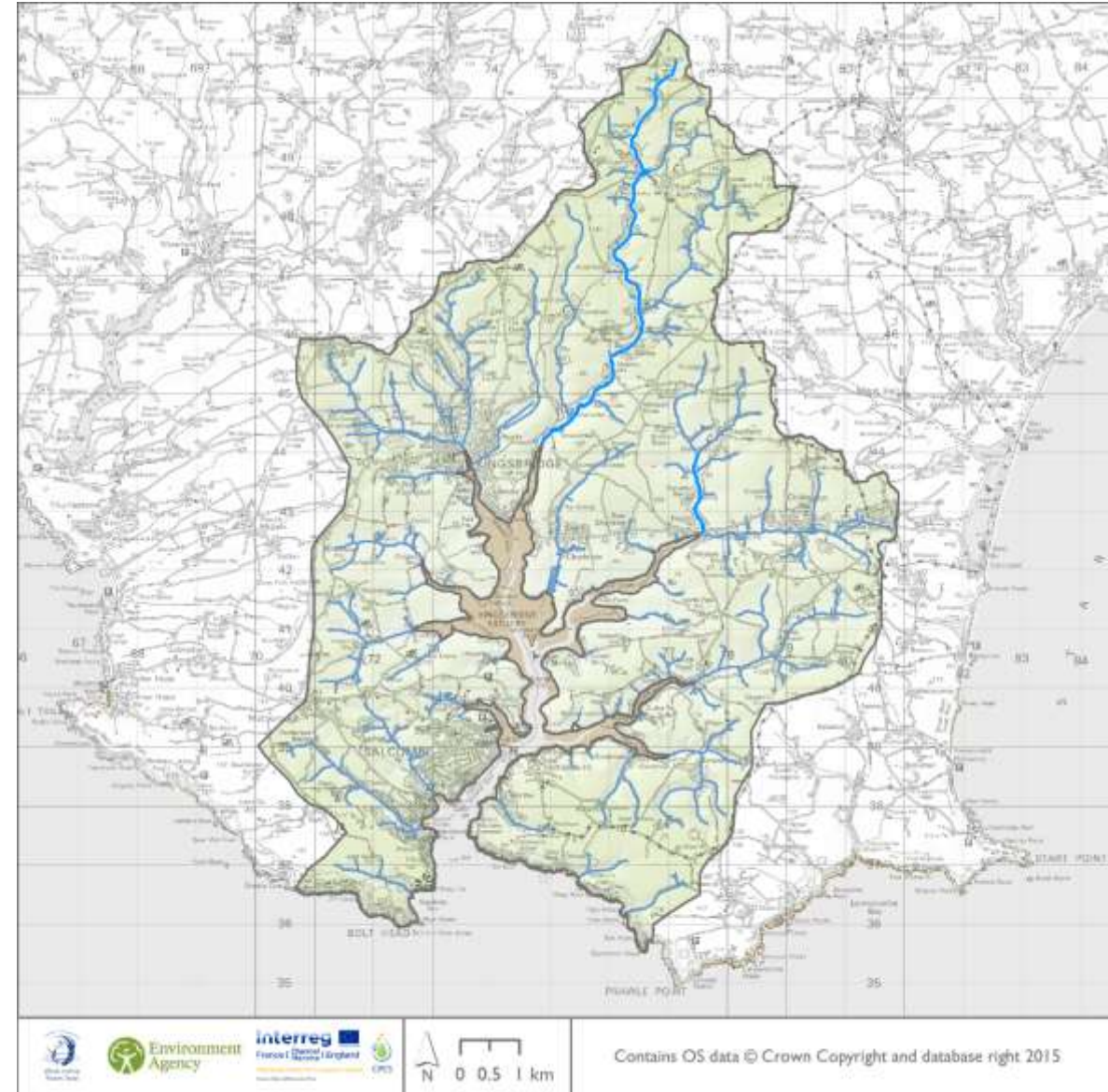


Basic Map



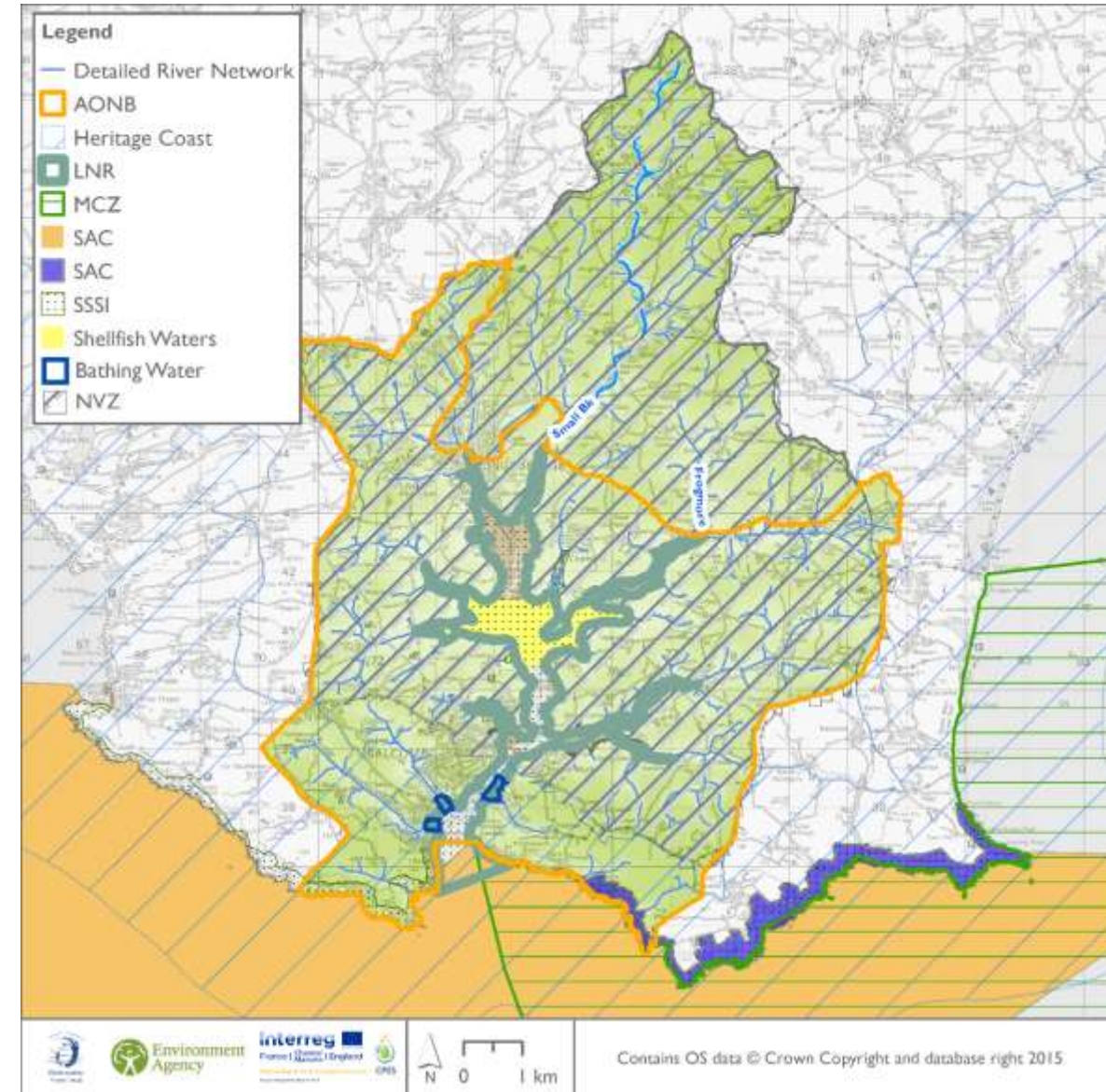
Basic Map

- Originally an unglaciated river valley - 'ria' /
à l'origine une vallée de rivière non-glaciale - 'ria'
- Predominately rural in character /
Caractère essentiellement rural
- Only small streams input into the ria /
Seulement de petits flux d'entrée dans la ria
- Many small streams entering the ria /
Beaucoup de petits cours d'eau entrant dans la ria
- Steep-sided valley edges /
Bords de vallée escarpés



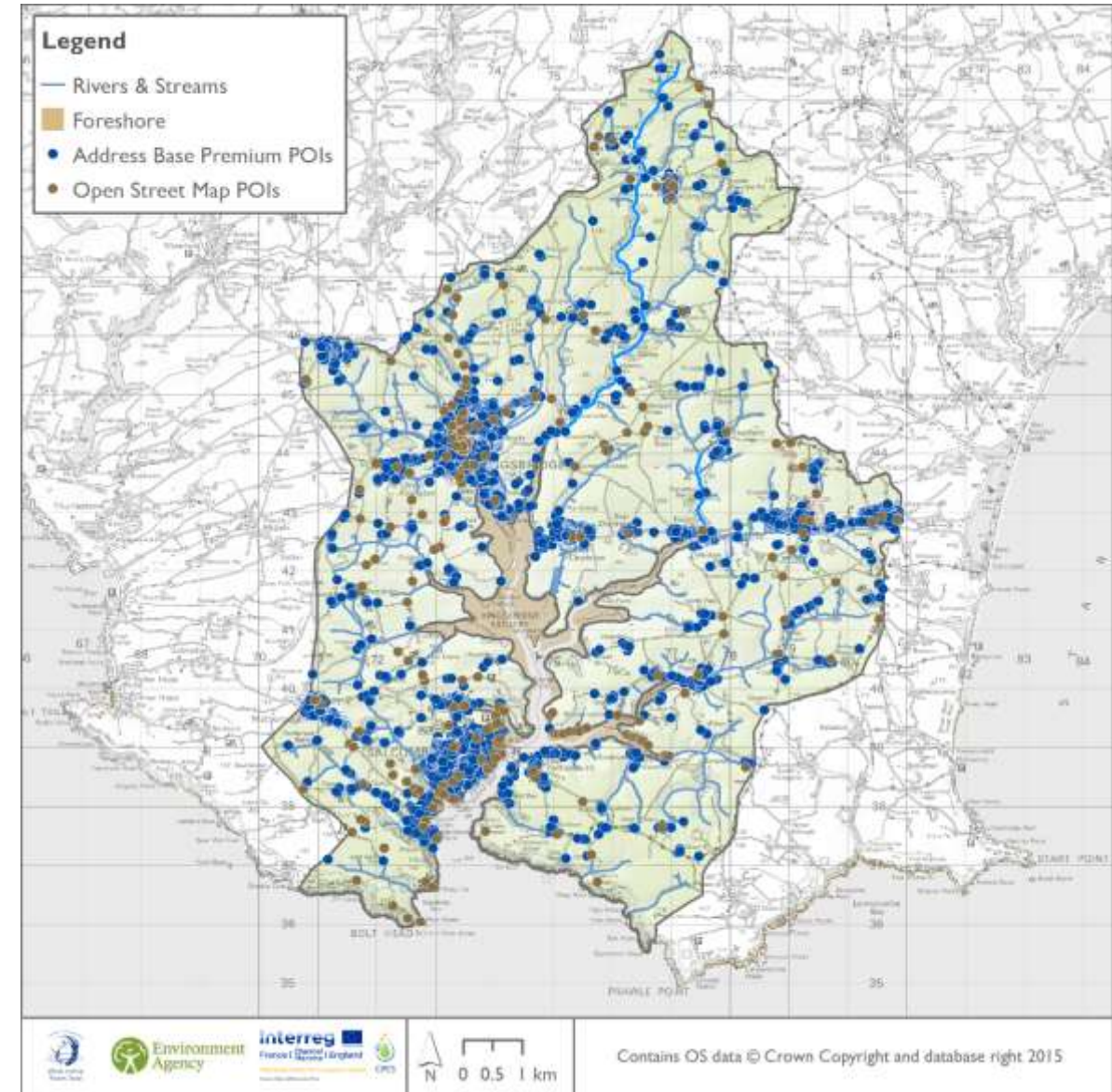
Basic Map

- Aquatic drivers include, amongst others;
 - Nitrate Vulnerable Zone
 - Bathing Waters
 - Site of Special Scientific Interest
 - 'Salcombe' Shellfish Waters
- Les zones de réglementation aquatiques comprennent, entre autres;
 - Zone vulnérable aux nitrates
 - Les eaux de baignade
 - Site d'intérêt scientifique particulier
 - Les eaux de coquillages 'Salcombe'



Stakeholder Analysis

- Businesses within the catchment assessing their level of **legitimacy** (how impacted by water quality) and **contribution** (how much they impact on water quality)
- *Les entreprises du bassin versant évaluent leur niveau de **légitimité** (impact sur la qualité de l'eau) et leur **contribution** (quelle est leur incidence sur la qualité de l'eau)*



Stakeholder Analysis

Boating / *Nautique*

- Legitimacy – high/*haute*
- Contribution – high/*haute*



Tourism / *Tourisme*

- Legitimacy – high/*haute*
- Contribution – moderate/*modéré*



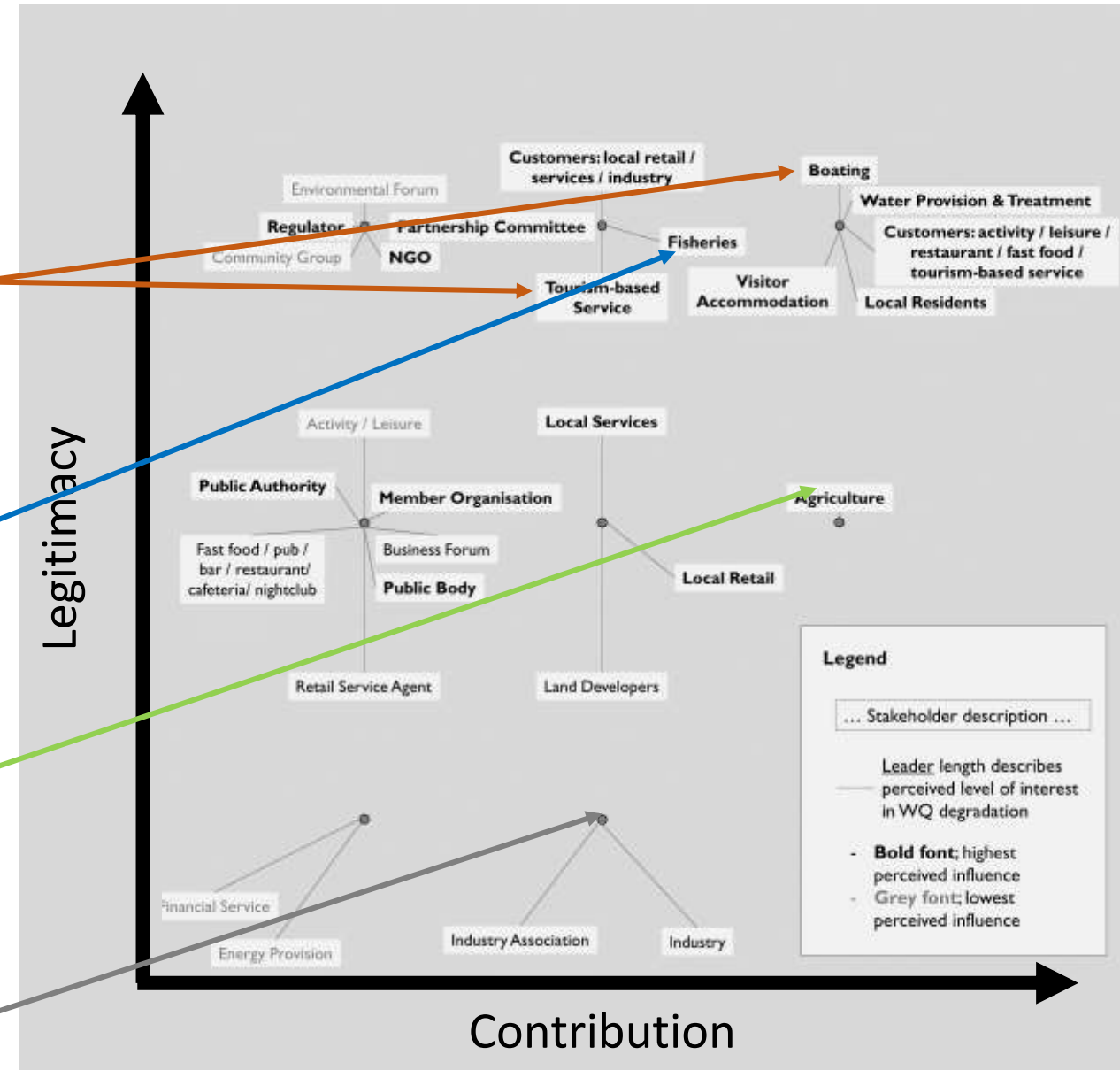
Agriculture / *L'agriculture*

- Legitimacy – moderate/*modéré*
- Contribution – high/*haute*



Sewage / *Eaux usées*

- Legitimacy – low/*faible*
- Contribution – moderate/*modérée*

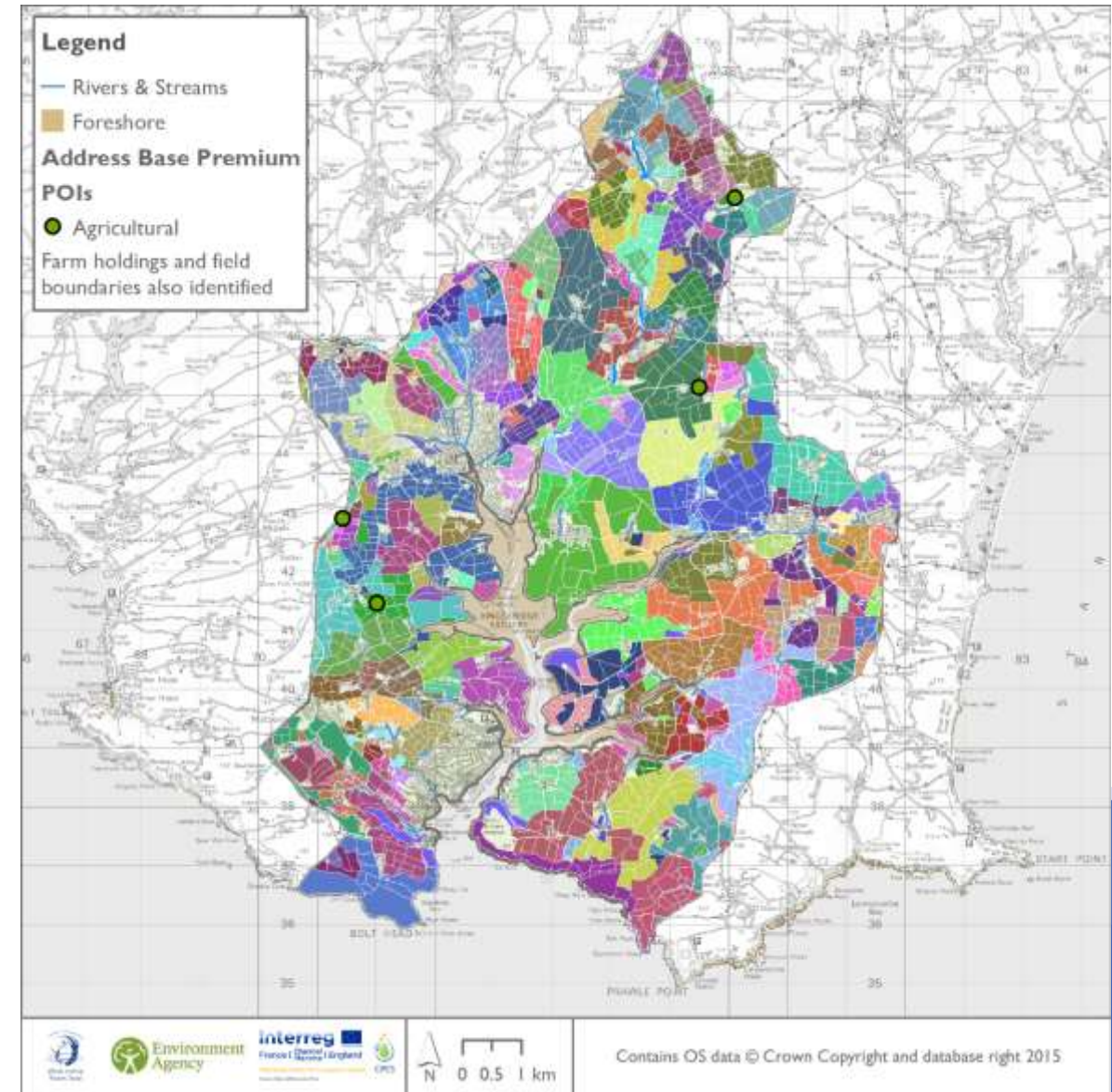


Stakeholder Analysis

- **Agriculture** Covers 88% of the total catchment area: 88.4 km² / *L'agriculture couvre 88% de la zone totale du bassin: 88,4 km²*
- Catchment displays pressures as a result from elevated nutrients / *Le bassin hydrologique présente des pressions résultant d'éléments nutritifs élevés*

Legitimacy – moderate/*modéré*

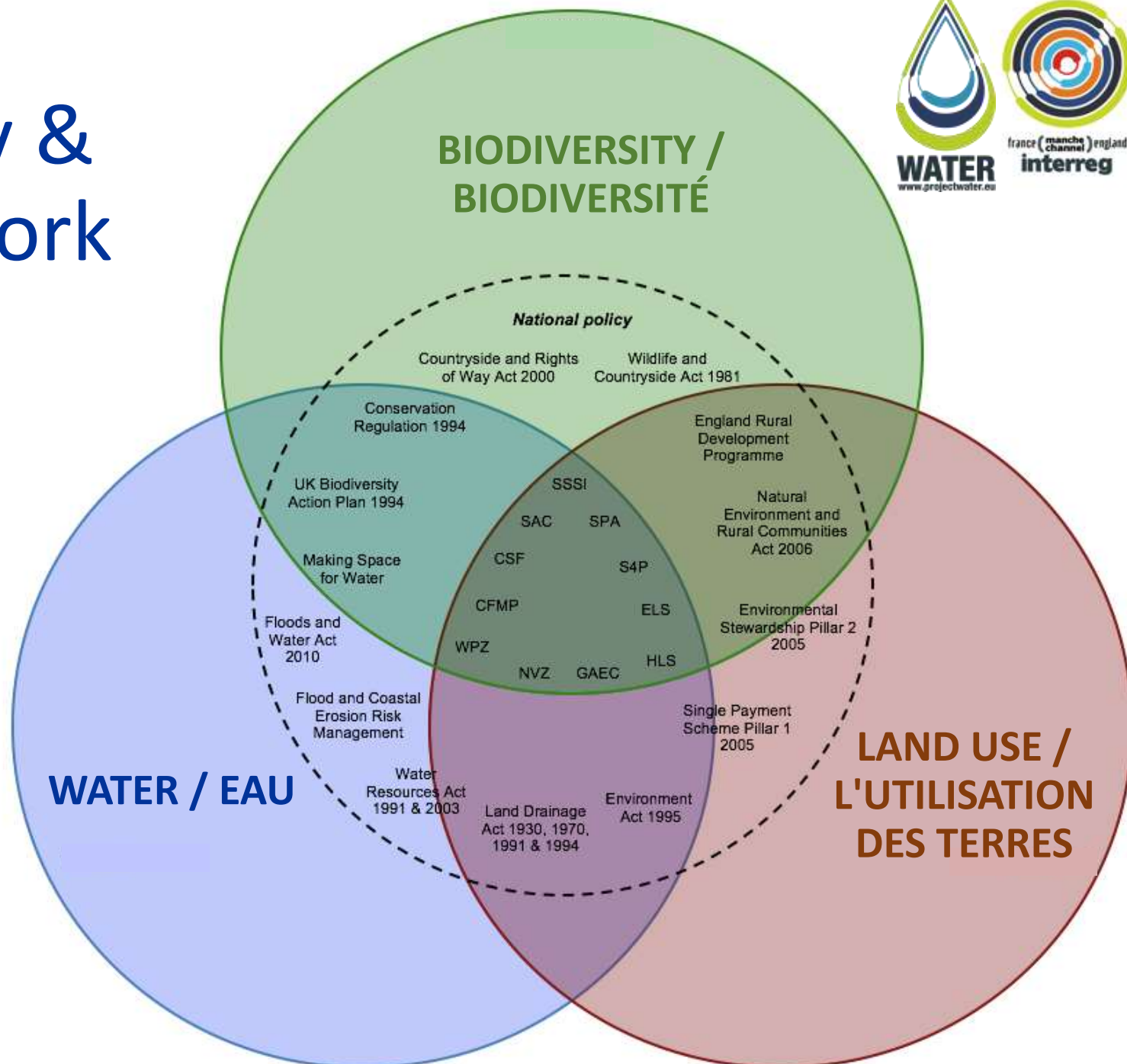
Contribution – high/*haute*



Existing regulatory & economic framework



- SSSI = Site of Special Scientific Interest
- SPA = Special Protection Area
- SAC = Special Area of Conservation
- CSF = Catchment Sensitive Farming
- WPZ = Water Protection Zones
- NVZ = Nitrate Vulnerable Zones
- S4P = Soils 4 Profit / Catchment Soils schemes
- ELS = Entry Level Scheme (Countryside Stewardship)
- HLS = Higher Level Scheme (Countryside Stewardship)
- GAEC = Good Environmental and Agricultural Condition/
New Farming Rules for Water
- CFMP = Catchment Flood Management Plan



Cost of Inaction

- Increased agricultural costs to cover lost nutrients /
Coûts agricoles accrus pour couvrir les pertes de nutriments
- Increased costs in purging shellfish /
Coûts accrus de la purge des coquillages
- Increased costs of boat maintenance /
Augmentation des coûts de maintenance des bateaux
- Tightening of standards for Sewage Treatment Works /
Resserrement des normes pour les stations d'épuration des eaux usées



Economic Impact of Intervention



- Agricultural engagement and grants / *Engagement agricole et subventions*
- Advice to septic tank owners / *Conseils aux propriétaires de fosses septiques*



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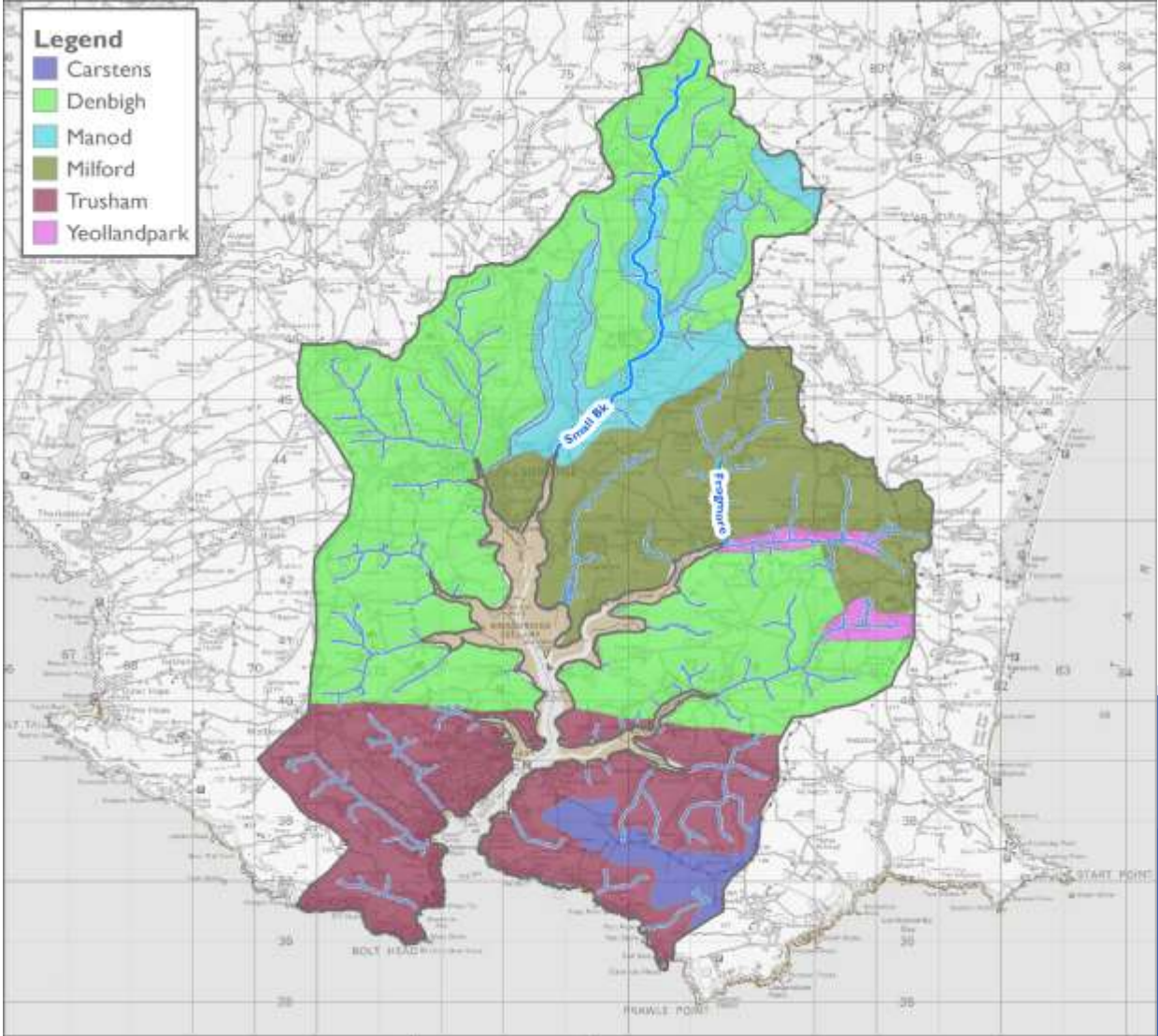
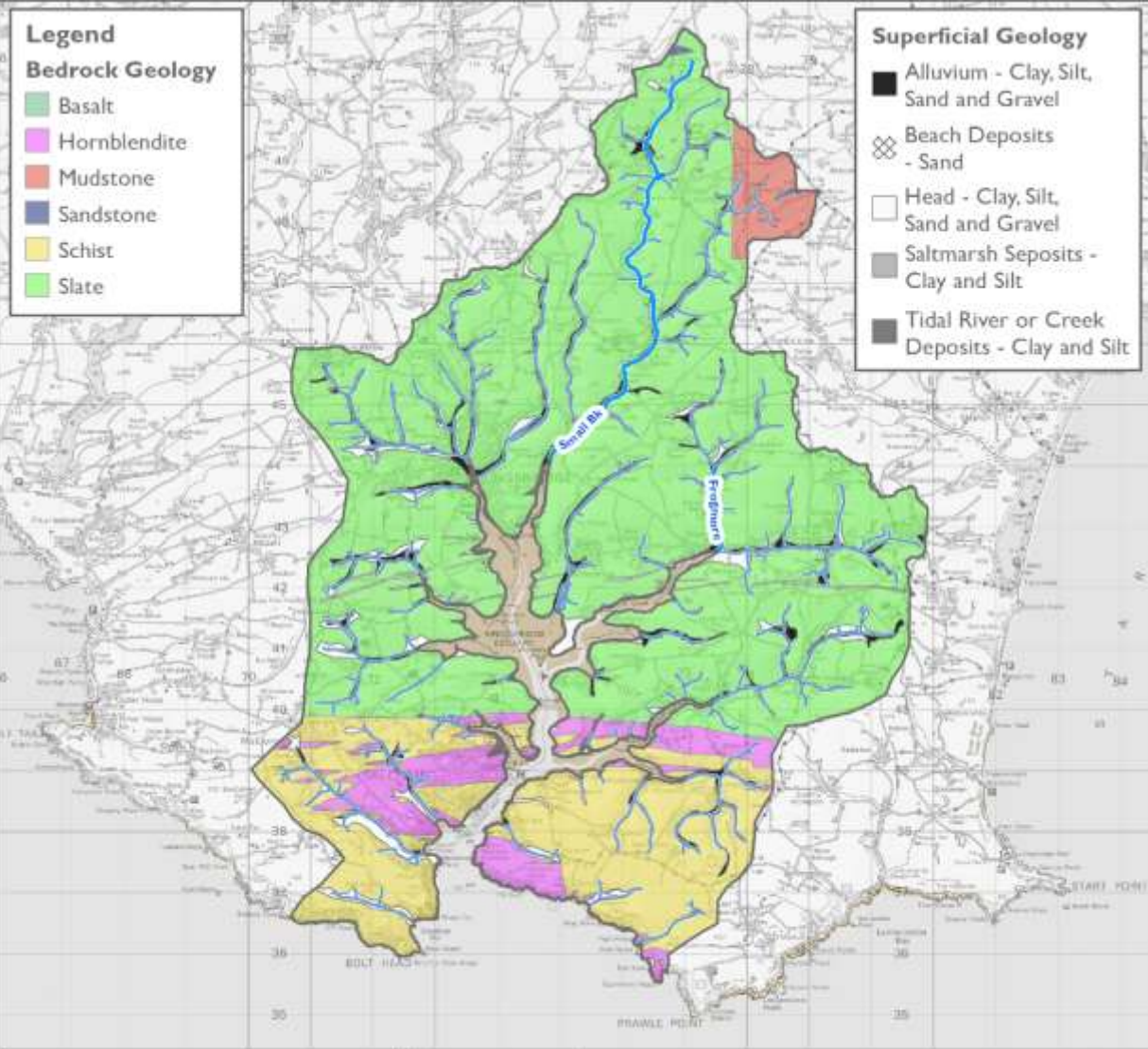
CPES

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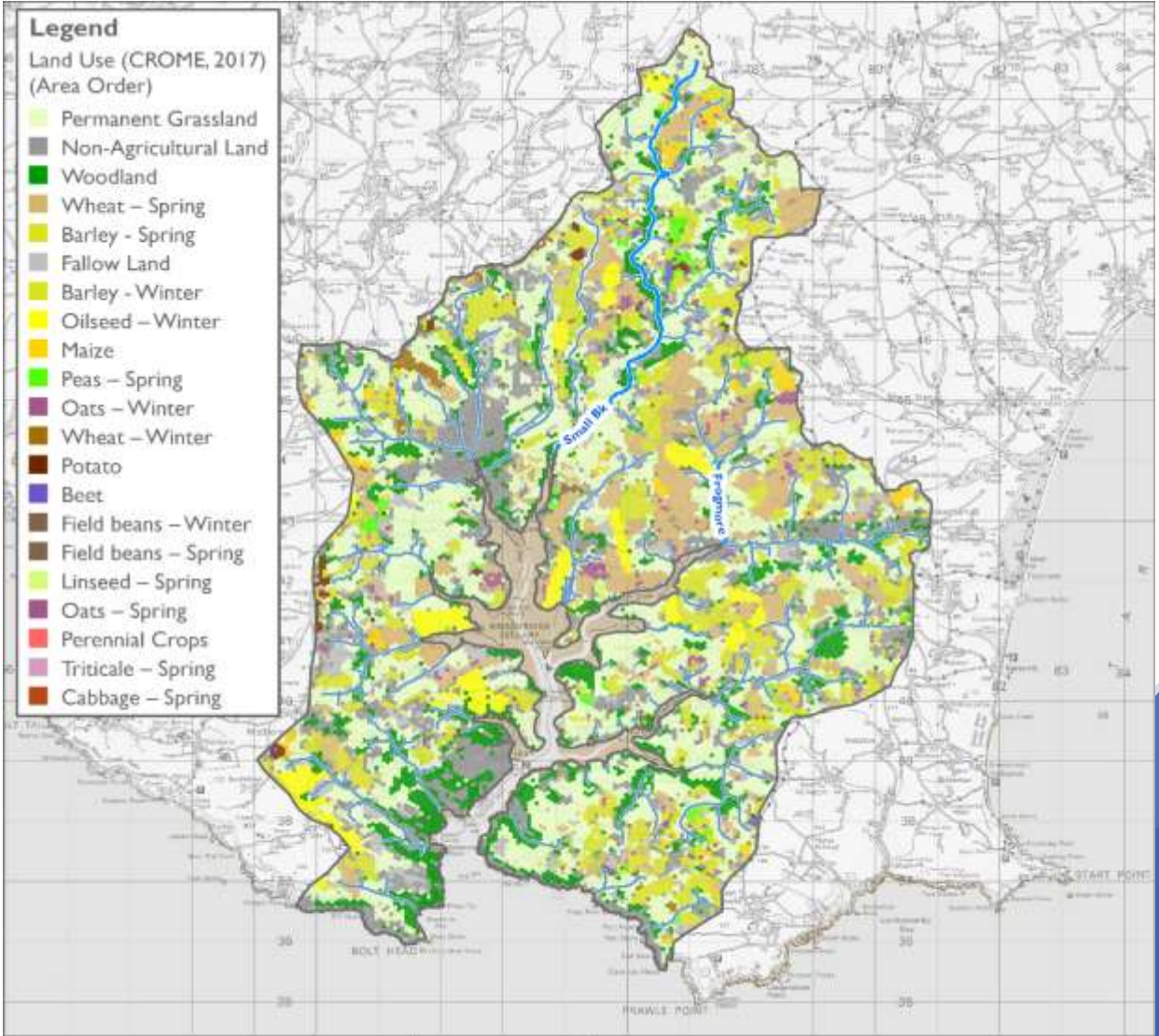
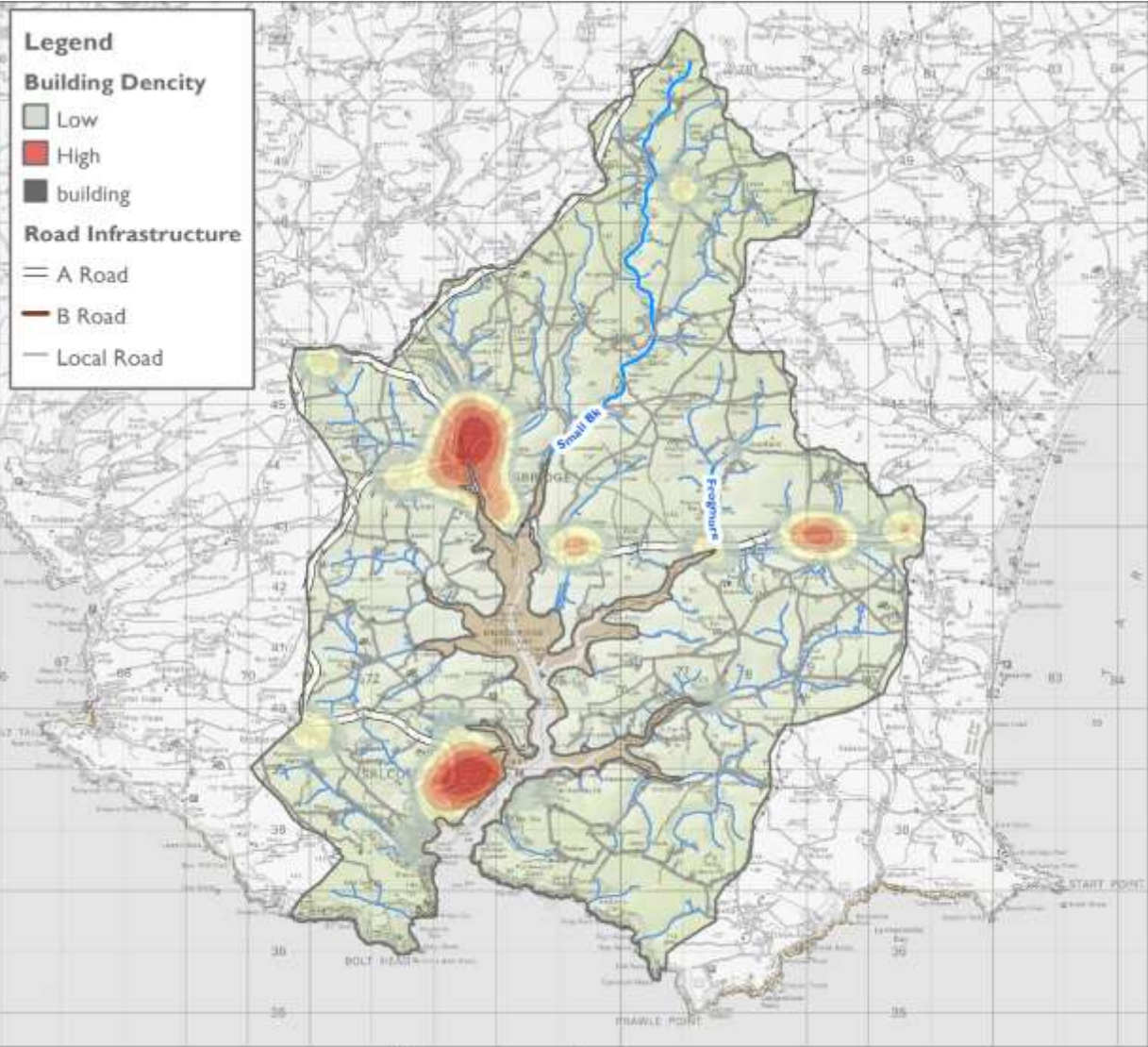
STATE OF THE
ENVIRONMENT

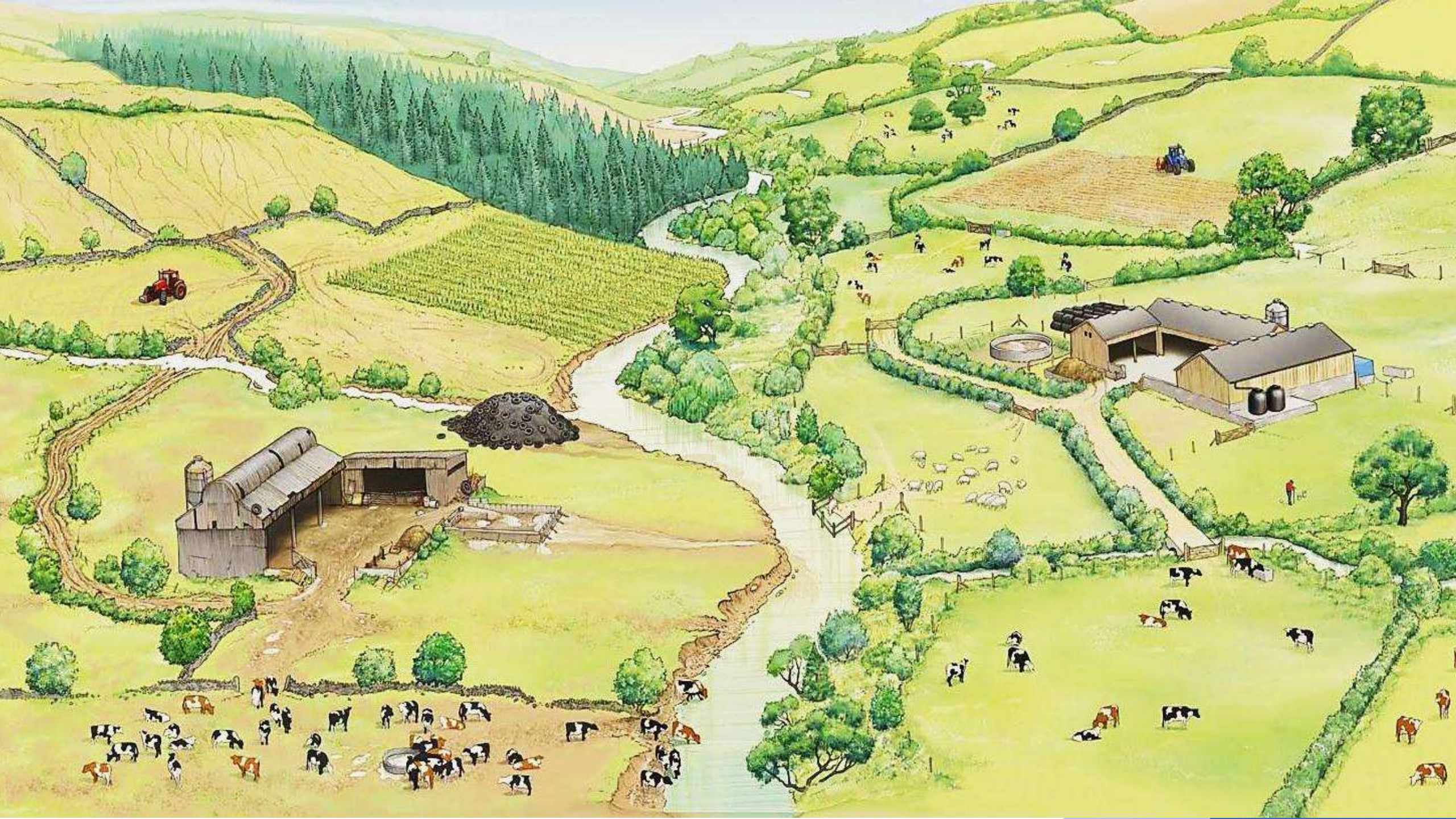


Catchment overview



Catchment overview



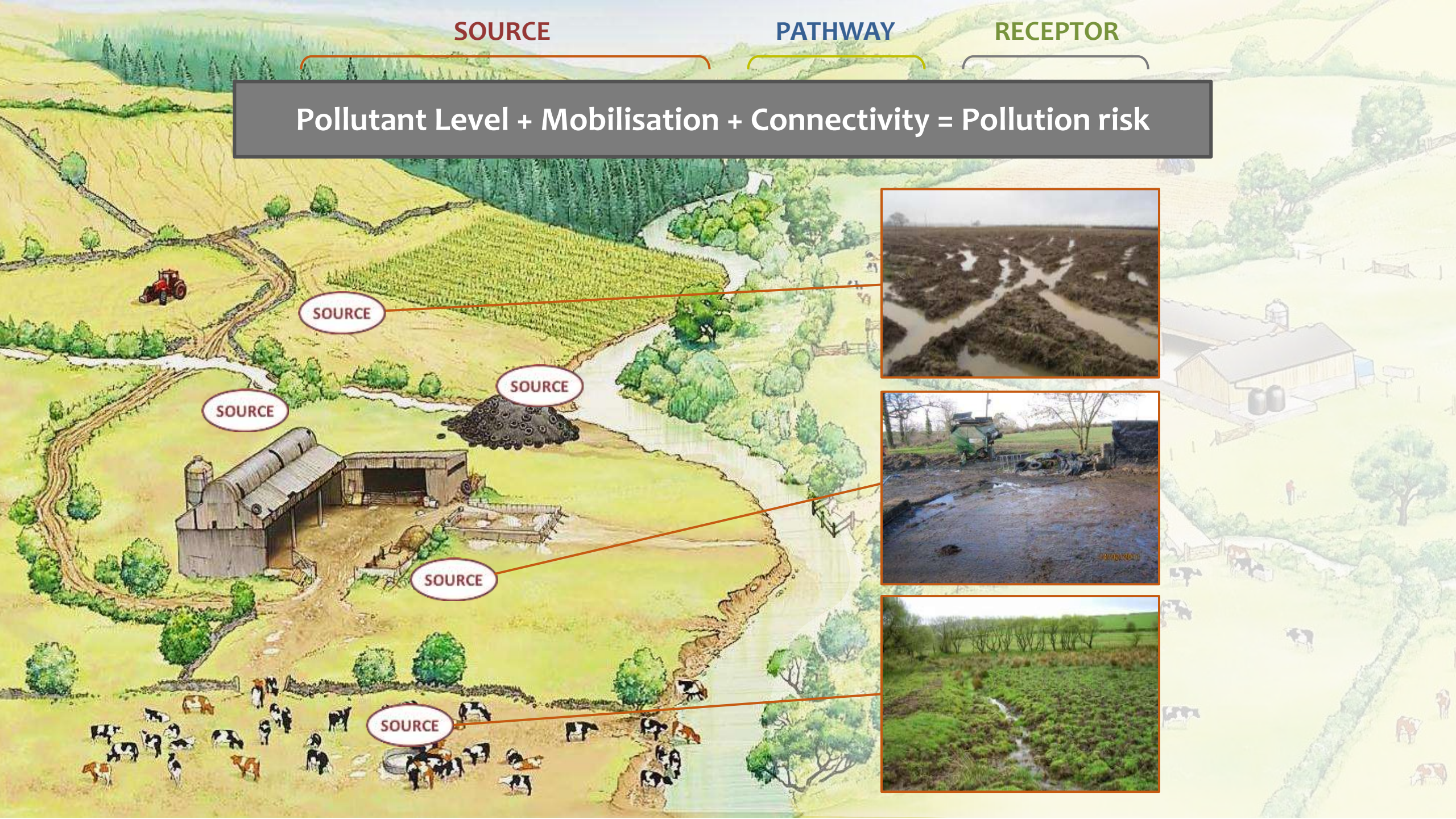


SOURCE

PATHWAY

RECEPTOR

Pollutant Level + Mobilisation + Connectivity = Pollution risk

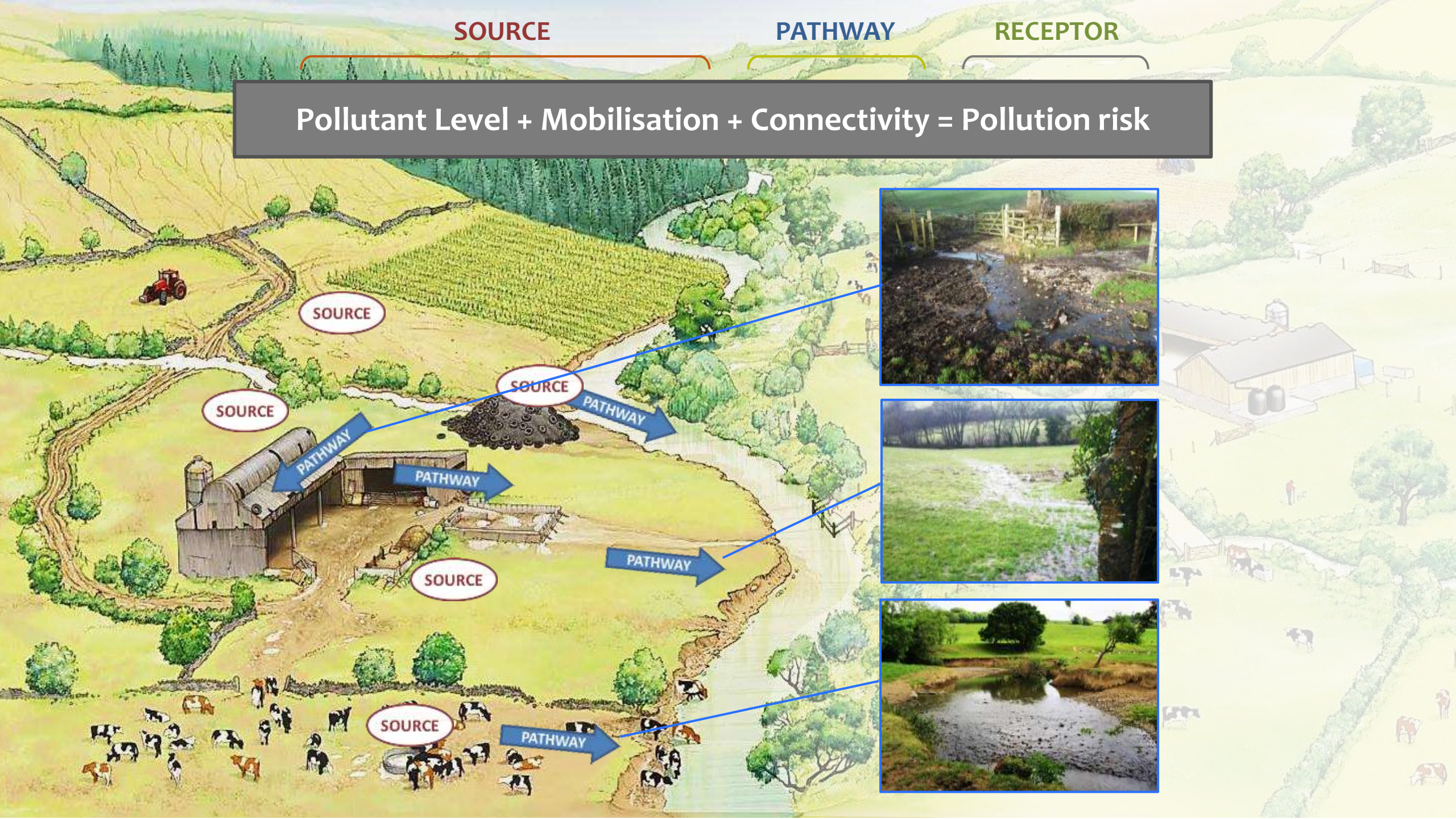


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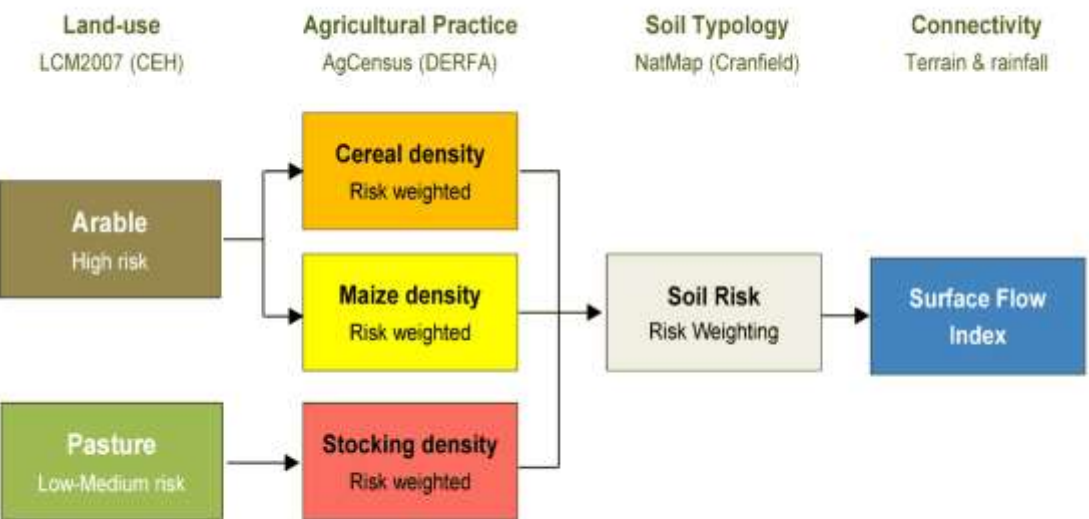
RECEPTOR

Pollutant Level + Mobilisation + Connectivity = Pollution risk



Source & pathway Sediment

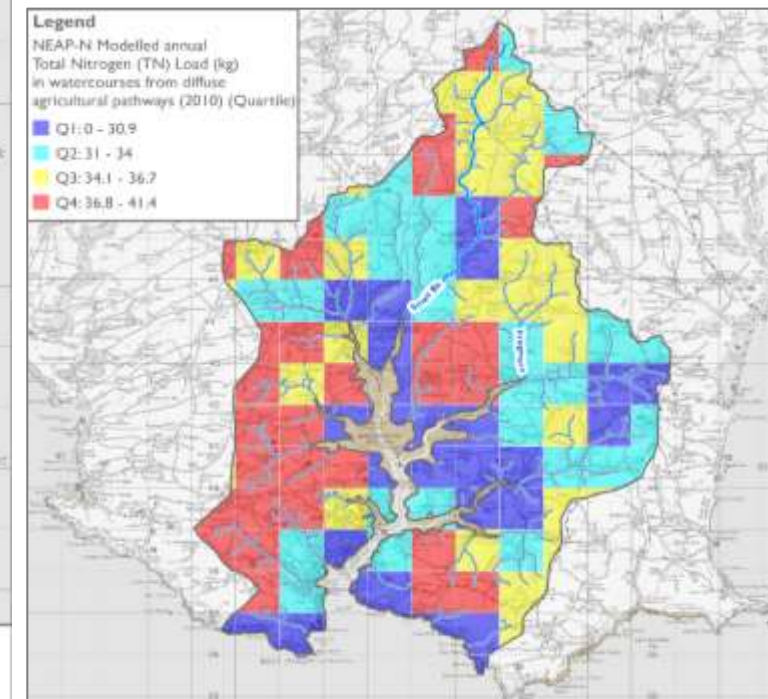
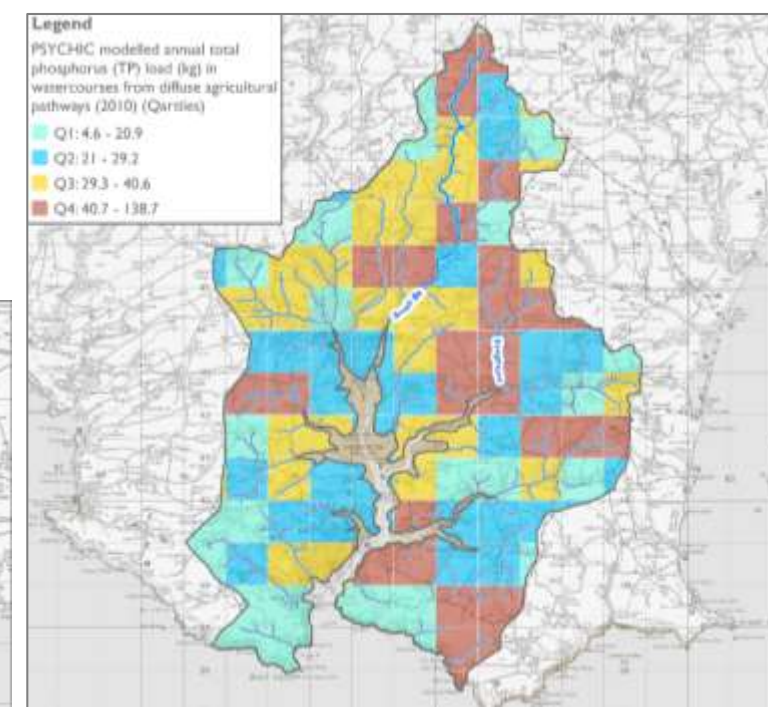
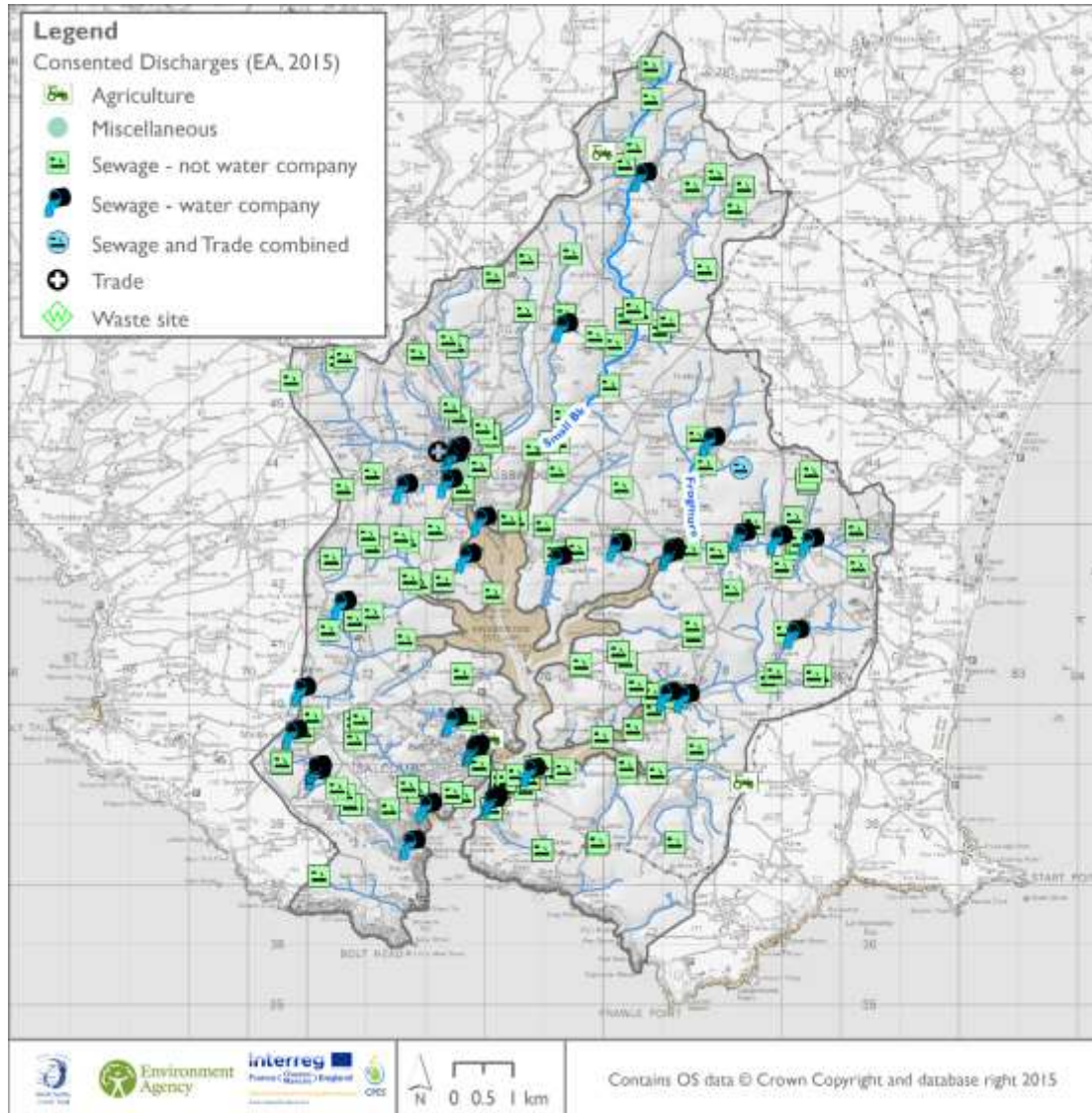
Source & itinéraire : sédiment



Source Phosphorus & Nitrogen

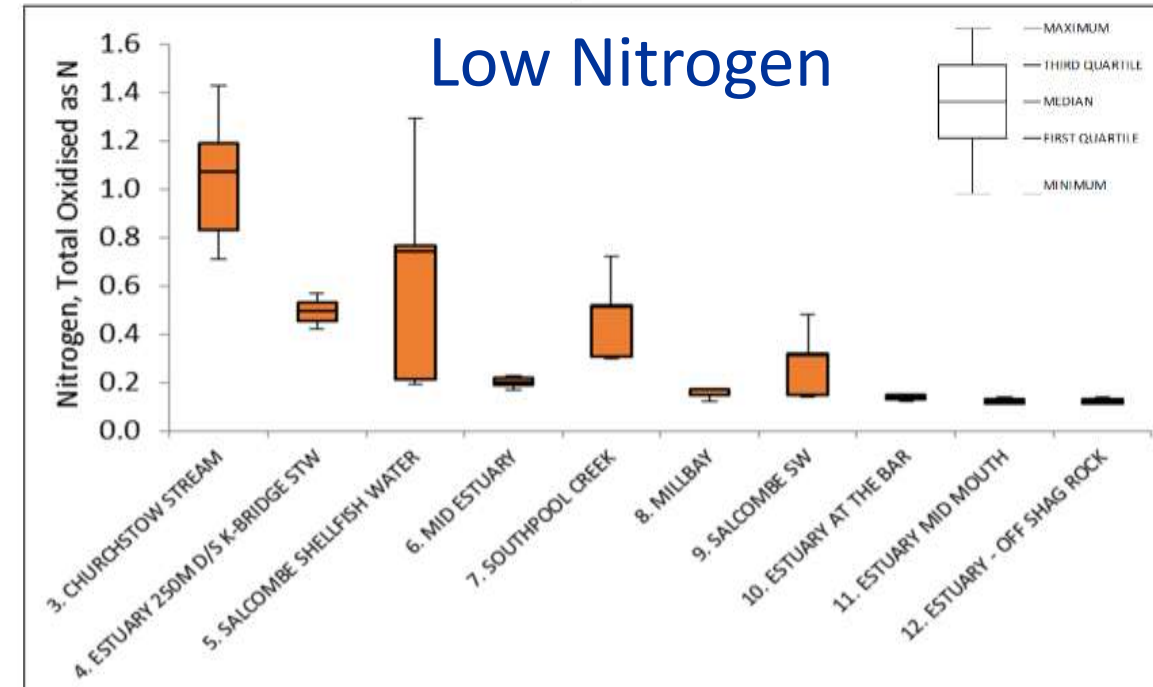
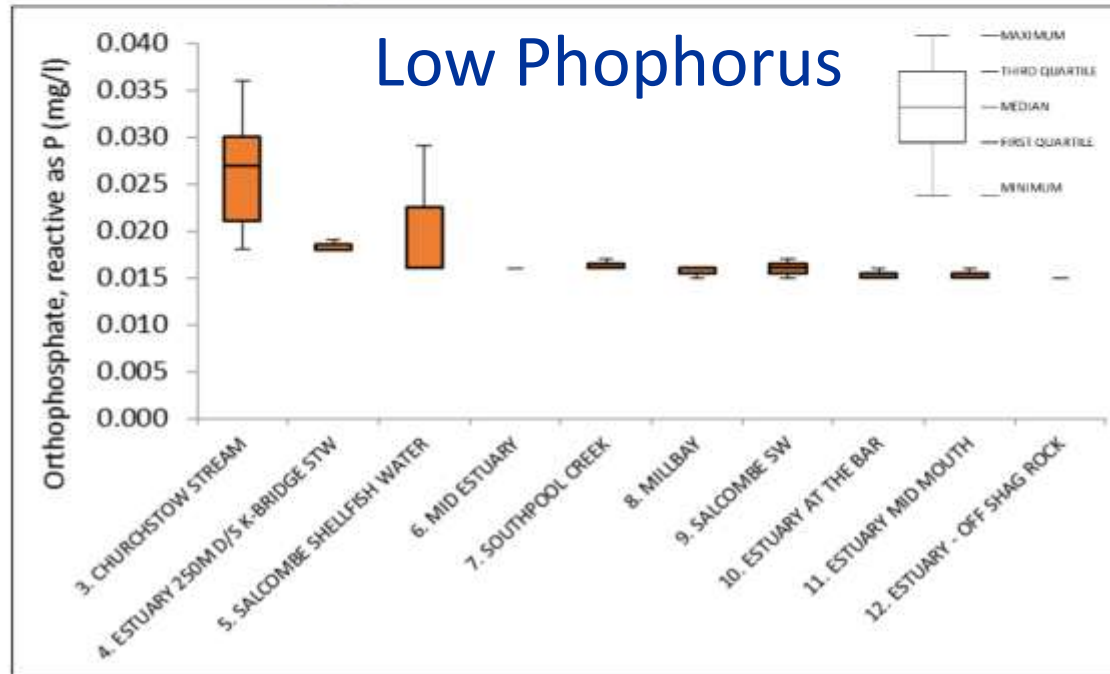
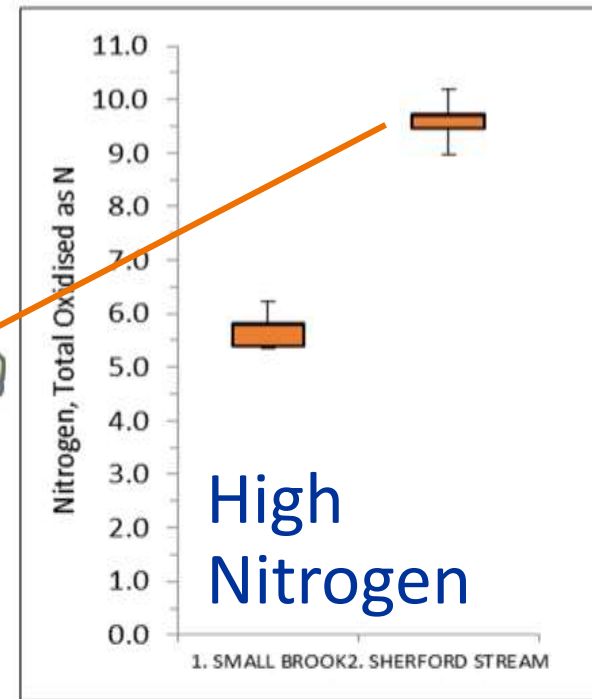
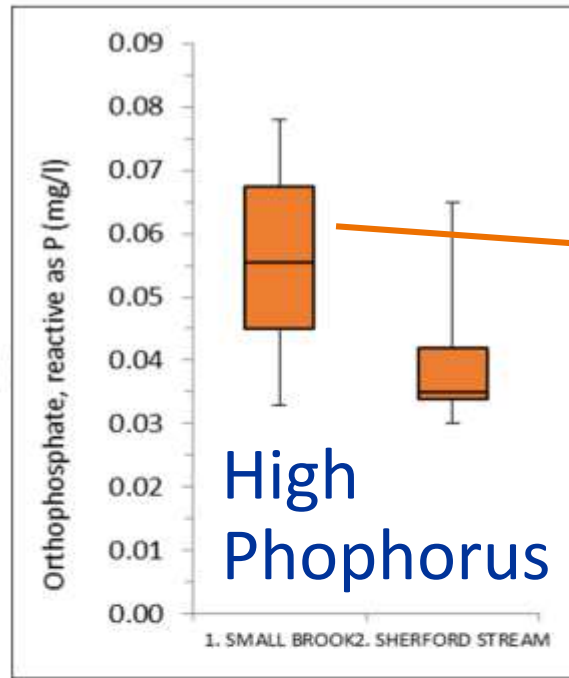
Source : Phosphore & Azote

- Agricultural / *Agricole*
- Sewage Treatment Works / *Traitement des eaux usées*
- Septic Tank / *Fosses Septiques*

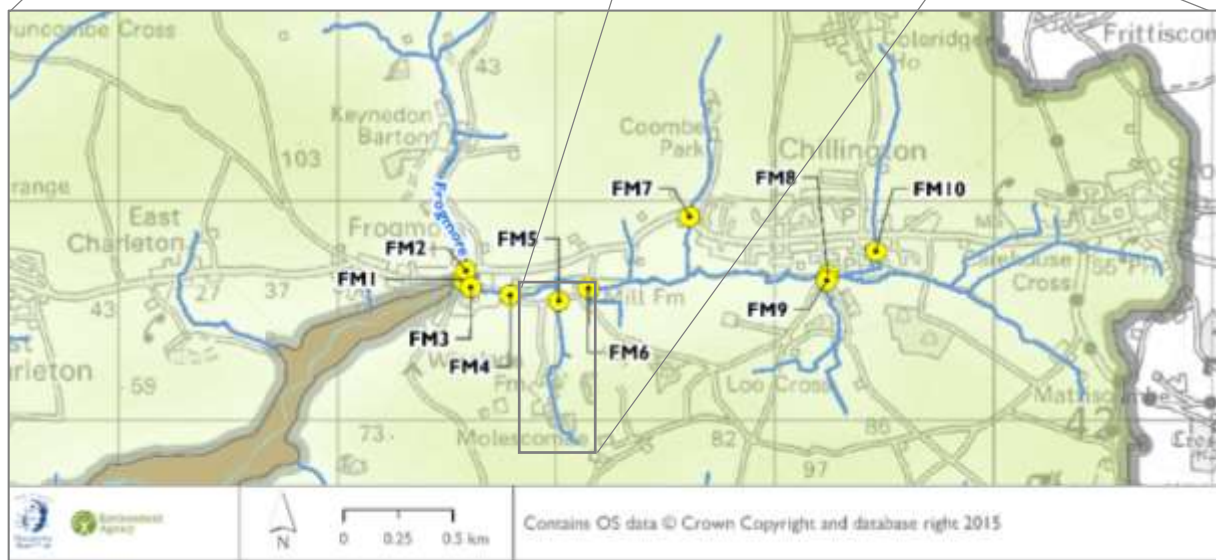
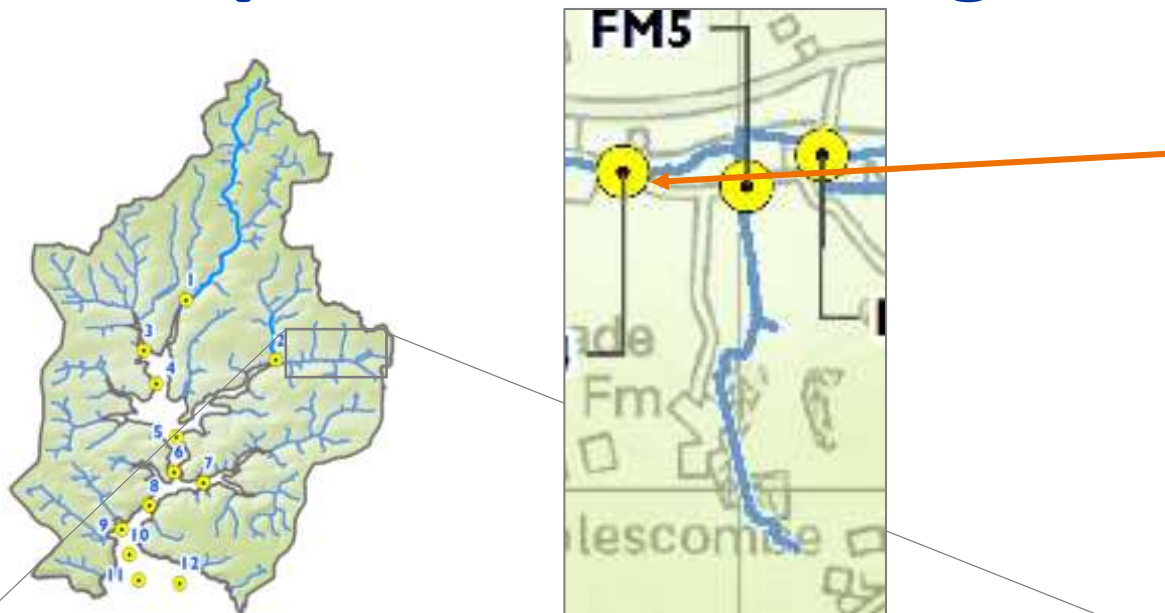


Receptor Nutrients

Récepteur :
Les nutriments



Receptor Monitoring



Site Name	Conductivity (us/cm)	Total Dissolved Solids (ppm)	Colour (pt CO)	Suspended Solids (mg/l)	Turbidity (FAU)	PO4 (mg/l)	Tryptophan (count)	NO3 (mg/l)
FM1	453	293	0	7	4	0.15	0	8.7
FM2	385	273	22	7	6	0.11	0	8.7
FM3	447	314	65	9	1	0.54	15	8.9
FM4	451	304	49	7	8	0.72	4	12.8
FM5	617	439	524	85	84	0.36	577	5.4
FM6	436	310	68	6	6	0.95	4	9.0
FM7	423	300	36	5	2	0	2	17.2
FM8	408	284	33	0	2	0.19	0	5.2
FM9	409	302	44	5	6	1.02	0	4.0
FM10	443	322	61	8	9	0.14	0	16.8
KE1	322	225	95	12	12	0.2	0	6.8
KE2	302	216	414	58	57	0.07	126	5.9
KE3	265	188	34	6	4	0	0	3.7
KE4	235	167	37	3	4	0.3	0	1.7
MIN	235	167	0	0	1	0.00	0	1.7
MEDIAN	416	297	47	7	6	0.20	0	7.8
MEAN	399.7	281.2	105.9	15.6	14.6	0.34	52.0	8.2
MAX	617	439	524	85	84	1.02	577	17.2
STD DEV	92.5	65.0	151.3	23.5	23.5	0.33	149.1	4.5



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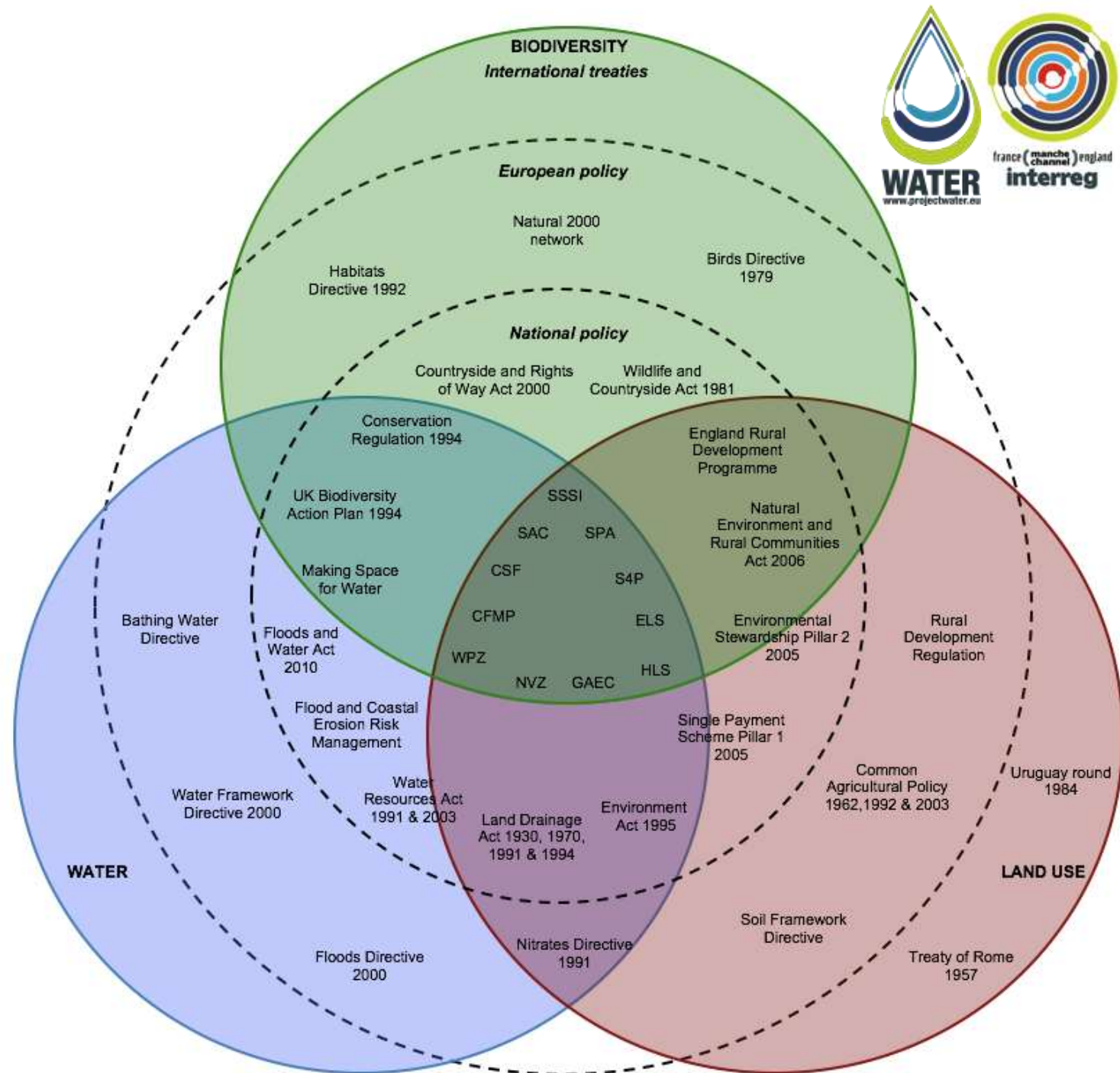
POLICY
FRAMEWORK



Policy Framework

Cadre politique

- **BIODIVERSITY / BIODIVERSITÉ**
- **WATER / EAU**
- **LAND USE / UTILISATION DES TERRES**



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Thank you for listening
by Westcountry Rivers trust

