

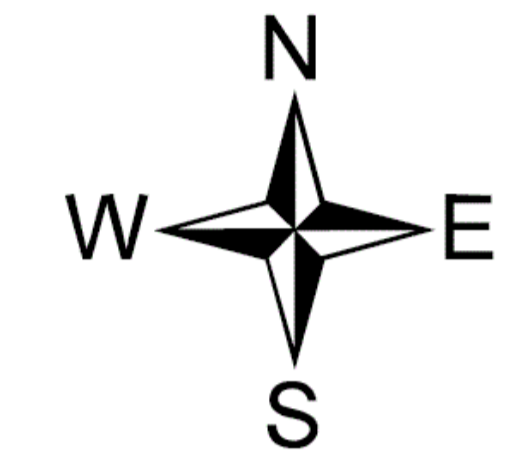
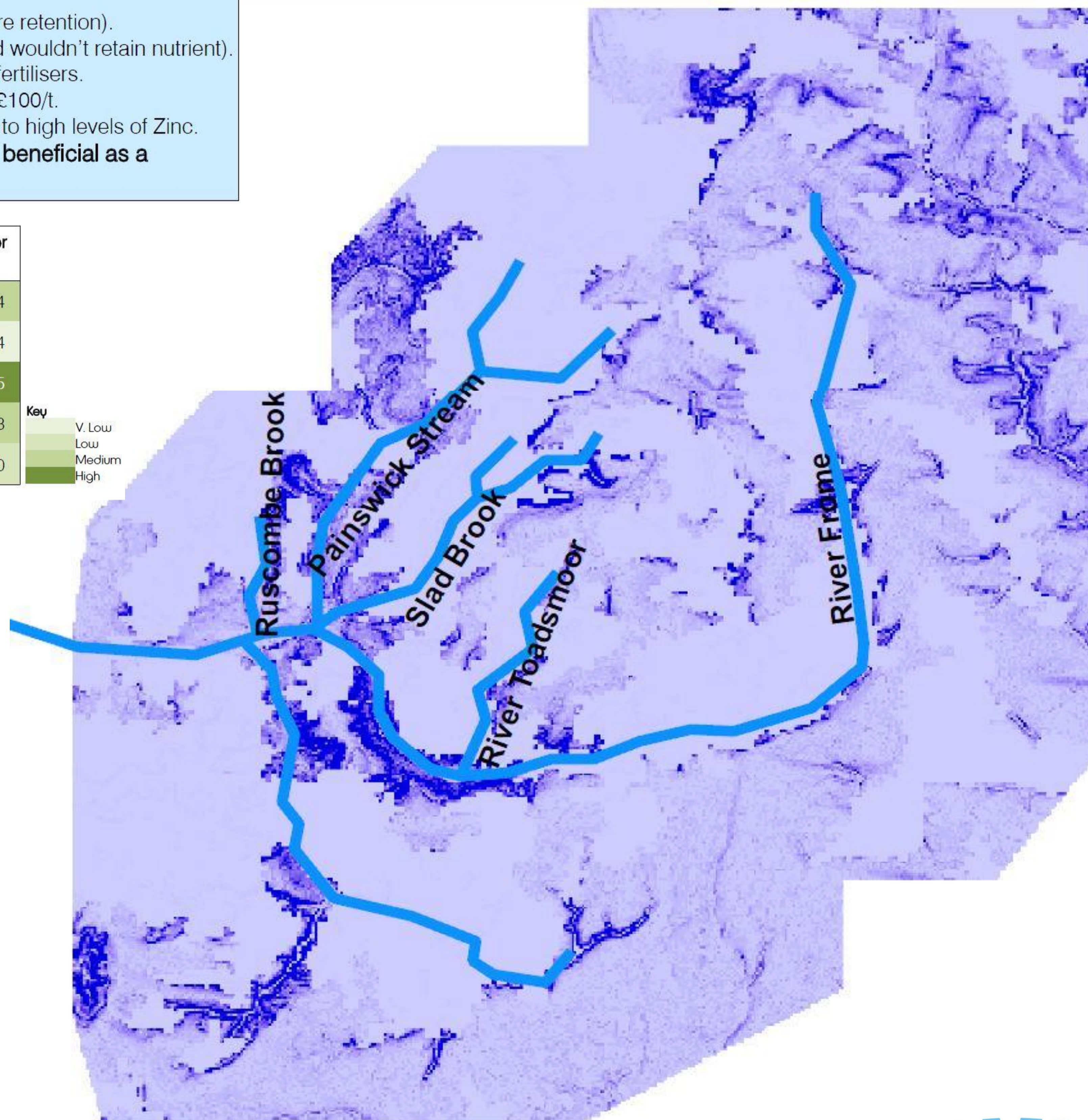
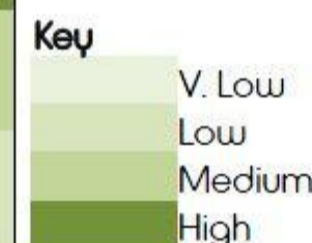
Stroud Valleys Soil Erosion Map

Key Findings

- Erosion risk map indicates high erosion rates in Stroud Valleys, with hotspots in Painswick and Ruscombe catchments. This strengthens the rationale to tackle the sediment problem.
- High proportion of silt in most samples indicates erosion occurring in catchment.
- Soil analysis to determine viability of silt re-use as a soil improver:
 - High organic carbon content (improves soil structure and moisture retention).
 - High silt content in most sites (clay would reduce infiltration, sand wouldn't retain nutrient).
 - Phosphate and Nitrogen content variable: 3-45% that of artificial fertilisers.
 - Some nutrient hotspots in Ruscombe and Painswick valued at ~£100/t.
 - Analysis indicated one site that cannot be used for silt reuse due to high levels of Zinc.

The evidence supports the anecdotal claims that silt is beneficial as a soil improver for agriculture.

River Site	Ruscombe Brook		Painswick Stream		Slad Brook		River Toadsmoor	
	P ₂ O ₅	N	P ₂ O ₅	N	P ₂ O ₅	N	P ₂ O ₅	N
1	£45.41	£66.32	£29.74	£43.91	£35.44	£57.07	£21.33	£48.54
2	£39.91	£20.80	£31.12	£54.35	£21.96	£61.69	£28.53	£19.14
3	£49.50	£33.92	£45.73	£103.89	£24.34	£22.64	£48.04	£70.85
4	£40.27	£17.27	£34.32	£25.78	£32.83	£21.97	£41.76	£42.03
5			£39.11	£32.10	£31.57	£40.49	£23.46	£24.30



Legend

Frome River System

USLE

Value



Recommendations

- Conducting comparative field trials of river silt, farmyard manure and fertiliser application to agricultural land to show impacts on soil health and crop/grass production.
- Integrate soil transport models with Erosion Risk Map to estimate availability of silt resource.
- Determine economic costs of capture and reuse at local scale
- Investigate environmental costs of silt extraction.



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