



| 36. SCIMAP | |
|--|--|
| FAIRWAY partner: Fiona Nicholson (ADAS, UK) | |
|  | |
| Brief description | |
| SCIMAP - Diffuse Pollution Risk Mapping. SCIMAP is a tool to help decision-makers, including governments, non-governmental organisations, land owners etc. to work out where to prioritise activities that protect the water environment, and so make our water clean again. SCIMAP is an approach to the generation of risk maps for diffuse pollution within catchments. SCIMAP aims to determine where within a catchment is the most probable source of diffuse pollution and is based on a probabilistic / relative approach. | |
| Contaminants covered (e.g. nitrate, pesticides etc.) | Sediment and FIOs (E.coli) |
| Intended end users (e.g. farmer, water quality manager, policy maker) | Policy makers, water quality managers |
| Level of expertise and/or training required | Knowledge of GIS is required. Training is required to run the model and export data to various GIS platforms. Training video available. http://www.scimap.org.uk/category/training/ |
| Geographical resolution (e.g. field, catchment, national) | Catchment scale model |
| Temporal resolution (e.g. daily, annual, long-term). | Long term |
| Real-time component (e.g. live weather data, soil moisture data feeds etc.) | None |
| Number and type of mitigation measures included | Not explicitly modelled |
| Platform (e.g. paper-based tool, phone app, bespoke software). | Windows software can be downloaded from: http://www.scimap.org.uk/category/software/ Also a web-based version is under development: https://my.scimap.org.uk/app/auth.php (users need to register) In English |
| Frequency of updates | Ongoing |
| Cost/availability | Free to download or access online |
| Number of users or number of copies distributed/downloaded/purchased | Not known |
| Links to demo material and other relevant information (e.g. user guides). | Comprehensive information available on the project website http://www.scimap.org.uk/ |
| Additional comments | SCIMAP is being used in the River Eden Demonstration Test Catchment (EdenDTC) project. The results will be used to design mitigation measures to reduce the impact of agricultural activity on in-stream water quality and ecology whilst maintaining agricultural production. Also Durham Wildlife Trust is using SCIMAP to identify areas with high fine sediment pollution risk within the River Wear catchment |

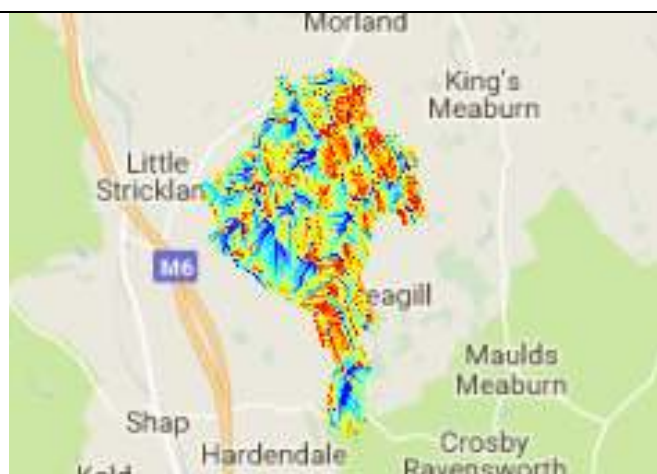
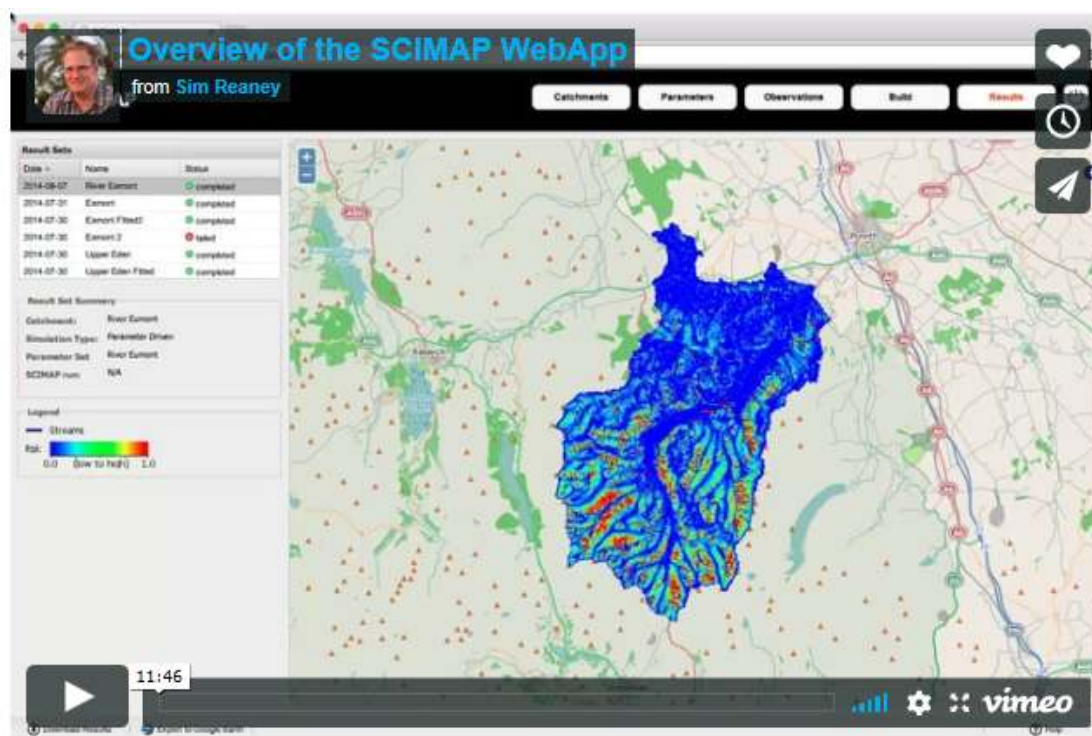
| SCIMAP | |
|--|---|
| FAIRWAY partner: Fiona Nicholson (ADAS, UK) | |
|  | |
| Input data required to run the DST | See publications. The web based version simplifies the process of developing SCIMAP risk maps by using the datasets stored on website, removing the need to install and used desktop GIS packages and allows simple export of the results to either GIS or GoogleEarth. |
| Outputs (including links to water quality and economic or financial aspects) | Maps of areas at risk of generating diffuse pollution. |
| Age/provenance of supporting data used to develop the DST | See publications |
| Country-specific calibration or data requirements (including restrictions on use) | See publications |
| Details of validation and testing | See publications |
| Date developed/released (or planned release date) | Original model developed in 2009 |
| Author/developer names and affiliations | Originally jointly developed between Durham and Lancaster Universities. SCIMAP is supported by the U.K.'s Natural Environment Research Council, the Eden Rivers Trust, the Department of the Environment, Food and Rural Affairs and the Environment Agency. |
| Member state(s) where developed | UK |
| Member State(s) where currently used | UK (has also been used in Indonesia). |
| Key publication references (including url) | <p>Perks, M.T., Warburton J., Bracken, L.J., Reaney, S.M., Emery, S.B. & Hirst S. 2017. Use of spatially distributed time-integrated sediment sampling networks and distributed fine sediment modelling to inform catchment management. <i>Journal of Environmental Management</i> 202, Part 1, 249-478. https://www.sciencedirect.com/science/article/pii/S0301479717300609</p> <p>Porter K. D.H., Reaney S. M., Quilliam R. S., Burgess C. and Oliver D. M. 2017: Predicting diffuse microbial pollution risk across catchments: The performance of SCIMAP and recommendations for future development; <i>Science of The Total Environment</i> 609, 456-465. https://www.sciencedirect.com/science/article/pii/S0048969717318909</p> <p>Milledge D. G., Lane S. N., Heathwaite A. L. and Reaney S. M. 2012: A Monte Carlo approach to the inverse problem of diffuse pollution risk in agricultural catchments; <i>Science of the Total Environment</i> 433, 434–449. http://dx.doi.org/10.1016/j.scitotenv.2012.06.047</p> <p>Reaney S. M., Lane S. N., Heathwaite A. L. and Dugdale L. J.2011: Risk-based modelling of diffuse land use impacts from rural landscapes upon salmonid fry abundance; <i>Ecological Modelling</i> 222, 1016-1029 https://www.sciencedirect.com/science/article/pii/S0304380010004175?via%3Dihub</p> |

SCIMAP

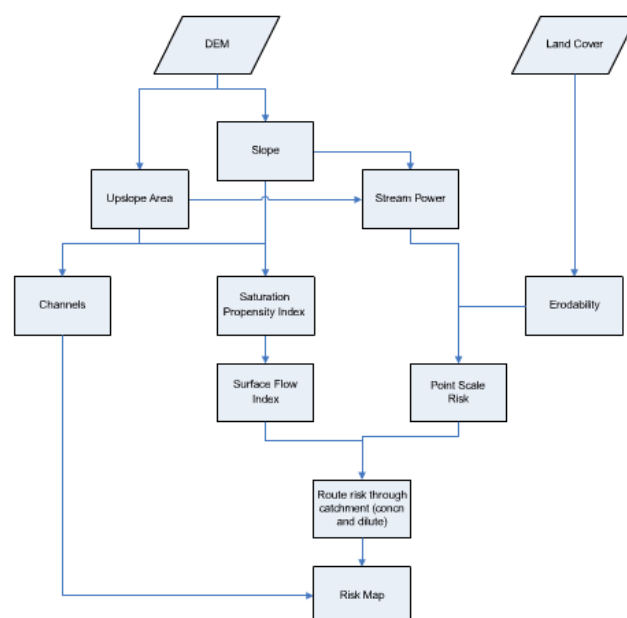
FAIRWAY partner: Fiona Nicholson (ADAS, UK)



Any other useful information (e.g. screenshots of DST input/outputs)



Map showing relative risks of sediment pollution generation in a catchment



Information flows within the model