GeoSmart Information

FloodSmart **Analytics**

Flood risk analytics
for the insurance
and financial sectors

FloodSmart **Analytics**

Flood – significant climate change risk for the Financial Sector

FloodSmart Analytics (FSA) is the latest flood risk product from hydrogeology experts GeoSmart Information Ltd.

GeoSmart's existing flood data and advice is used in millions of GB private property transactions and is relied upon by numerous larger enterprises whose activities impact on all aspects of our day-to-day lives.

Risk Management & Climate Change

The financial services sector has an operational requirement to understand their exposure to flood risk. Institutions are also compelled to develop long-term risk management strategies as part of their business models, to achieve environmental, social, and corporate governance (ESG) commitments, and to meet regulations issued by the Bank of England.

This has taken a new urgency, with the realisation of the impact of climate change in driving extreme events and pressure from all stakeholders to align with goals set in international climate agreements.

Financial Services Sectors

GeoSmart is excited to bring its technical flood expertise to the professional and regulated financial services sectors – insurers, reinsurers, asset managers, property lenders and financiers.

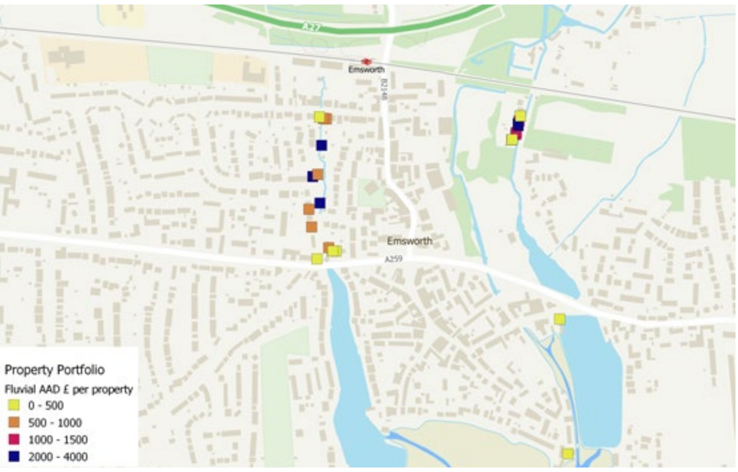
Timing Mismatch & Climate Change

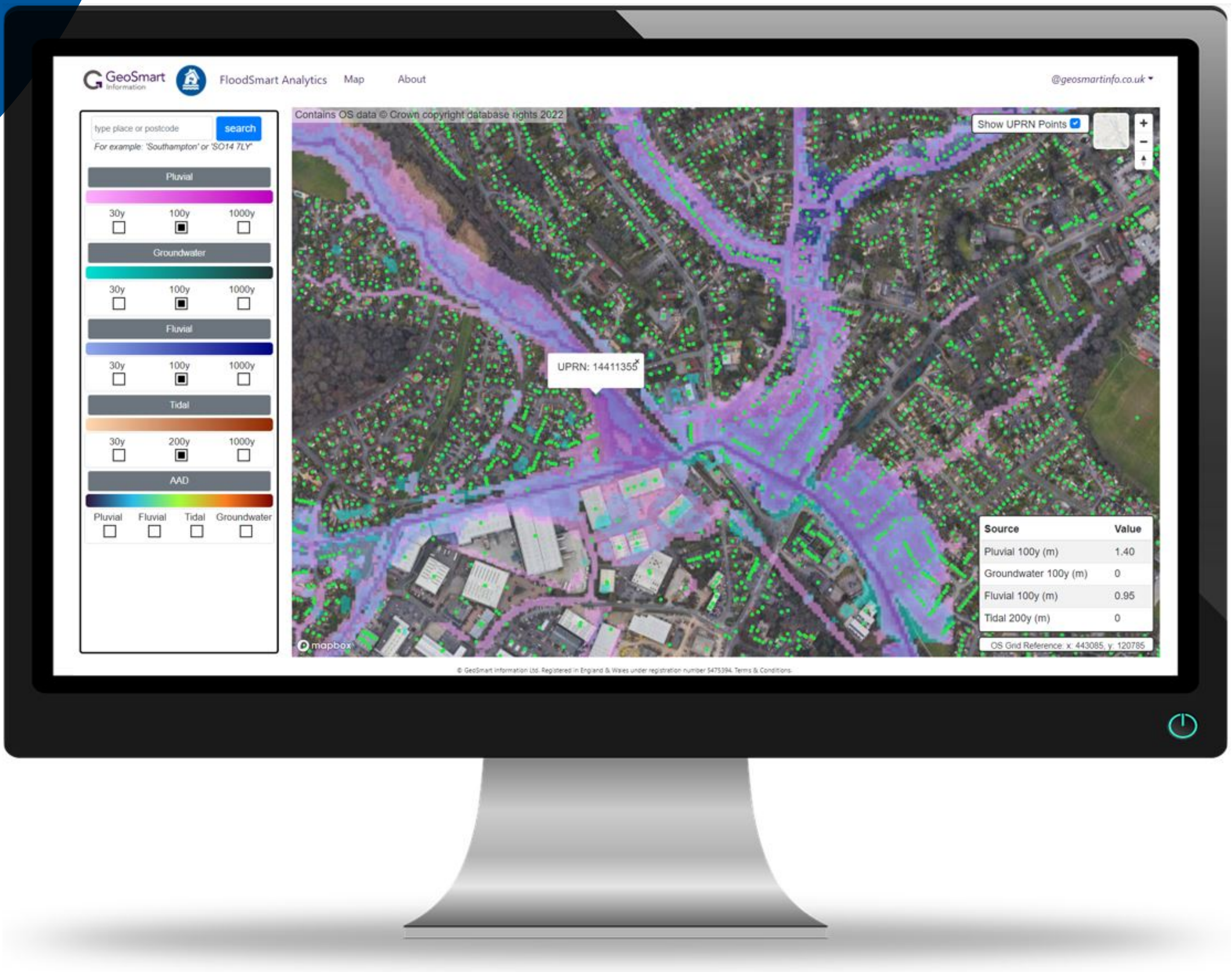
There is an obvious mismatch between the duration of most asset lending commitments and the risk transfer mechanisms used to create the efficient markets we have come to expect.

Multidecal mortgage terms rely on a series of one-year property insurance contracts – and the expectation that those insurance contracts cover the relevant perils in a manner that works for all parties.

Climate change, and in particular flood risk, will mean assessments will have to change – better understanding, better data, better scenario modelling is needed more than ever.

Identifying single address/building or entire portfolio/region


Emsworth fluvial AAD per property


GeoSmart Information
FloodSmart Analytics
Map
About
@geosmartinfo.co.uk
type place or postcode
search
For example: 'Southampton' or 'SO14 7LY'
Pluvial
30y ☐ 100y ☒ 1000y ☐
Groundwater
30y ☐ 100y ☒ 1000y ☐
Fluvial
30y ☐ 100y ☒ 1000y ☐
Tidal
30y ☐ 200y ☒ 1000y ☐
AAD
Pluvial ☐ Fluvial ☐ Tidal ☐ Groundwater ☐
Contains OS data © Crown copyright database rights 2022
Show UPRN Points ☑
mapbox

UPRN: 14411355

Source	Value
Pluvial 100y (m)	1.40
Groundwater 100y (m)	0
Fluvial 100y (m)	0.95
Tidal 200y (m)	0

OS Grid Reference: x: 443085, y: 120785

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FloodSmart Analytics – what does it do?

FloodSmart Analytics provides quantification of predicted flood depths, flood frequency, expected financial losses and risk classification based on a convenient 0-100 risk index score.

It also considers the impact of national flood defence schemes and outputs can be adjusted to account for building characteristics and property level flood defences.

FSA can be accessed as a database, linked to a customers portfolio and delivered through an API or an Online Visualisation Application. Our reporting engine can generate instant report documents to unlock important data insights for individual sites or to summarise and prioritise a portfolio of risks.

> Using FSA will result in more granular model results, which will also improve understanding and reporting of climate risk data.

GeoSmart Information’s expert team of hydrologists and risk modellers can provide expert consulting.

Flooding - from all sources

FloodSmart Analytics enables an understanding of the individual components of flood risk which can be used to inform risk management decisions and determine mitigating actions.

It is the only UK data source that includes GeoSmart's unique groundwater emergence flood hazard component which provides the most sophisticated view of this peril on the market. Historically groundwater risk has been overlooked but analysis has shown that around 5% of potential flood losses in the UK may be groundwater related.

With this distinction you can:

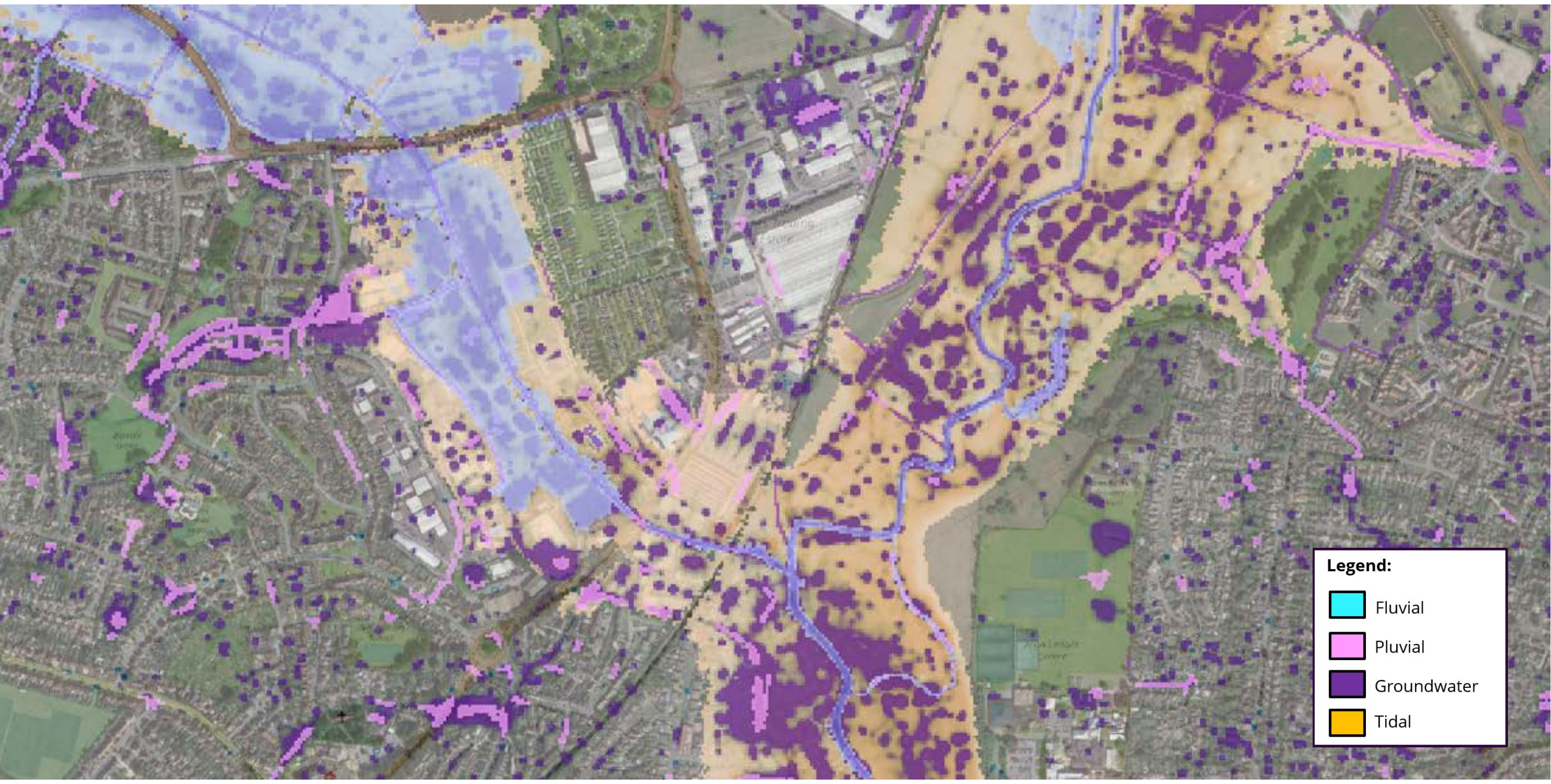
- Understand your general risk exposure to flood
- Understand the likely impairment consequences – who bears the cost?
- Allocate flood values to the correct causal component
  - Annual expected costs & stressed scenario events
  - Probability & depth values
- Propose mitigating actions that will address the correct causal component
- Understand the impact of insurance clauses that may limit risk
- Avoid wasted resources building the 'wrong' defences
- Make better planning policy – better knowledge makes this more likely
- Make more accurate 'what if' forecasts – covers all commonly used climate change emission scenarios and time epochs to meet reporting requirements

FSA is the only UK data source that includes all flood key components as individual actors.

Technical Specification

Below is a brief overview of the main product information:

Coverage	England, Wales and Scotland (Northern Ireland to follow)
Product Description	A database formed from analytics of the FloodSmart data array. It contains full exposure records which are spatially intersected through the entire stack of FloodSmart Raster layers to extract multiple fields of flood risk attribution. Additional fields contain algorithmically derived risk outputs.
Product Format	GIS Layers, Database, Software and data services
Product Components	• Flooding from All Sources Depth and Extent Map Layers • Flooding from All Sources Climate Change Map Layers • Flooding from All Sources Damage Map Layers • FloodSmart Analytics Database (With Climate Change) • FloodSmart Analytics Online Visualisation Application • FloodSmart Analytics API • FloodSmart Analytics Instant Auto Reports
Flood Sources	Fluvial, Pluvial, Tidal and Groundwater
Return Periods	England and Wales: 3 modelled return periods per flood source. Fluvial, Pluvial and Groundwater 30 year, 100 year and 1,000 year. Tidal 30 year, 200 year and 1,000 year. Scotland: Fluvial, Pluvial, Tidal and Groundwater 10 year, 200 year and 1,000 year.
Exposure Input	Emapsite Addressable and OS Open UPRN (or OS Address Base for licensed customers)
Base data grid resolution	5 x 5m
Search specification	15m buffer representative depth, or bespoke site polygon search
Flood Defences	Defended and undefended fluvial and tidal data provided. EA and NRW flood defence information incorporated.
Flood Modelling Method	For Fluvial, Tidal and Pluvial EA and NRW open flood data derived from 2D hydraulic models is incorporated. Data is post processed out in to separate return period layers and flood depths are calculated using terrain models. For Groundwater rSim water 2D hydraulic modelling is used.
Topography	Incorporates EA and NRW open LiDAR topography, infilled with OS Terrain 50 data.



FloodSmart Analytics flood depth and extent data

Coverage

How do I **learn more**?

Contact us today to arrange a demonstration and to set up a free no obligation trial of FloodSmart Analytics

www.geosmartinfo.co.uk/contact-us/

Further information can be found at

https://geosmartinfo.co.uk/risk-management-for-financial-services/floodsmart-analytics/

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