



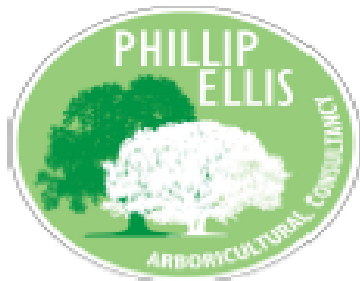
Riparian Trees for River Shade and Enhanced Habitat Benefits

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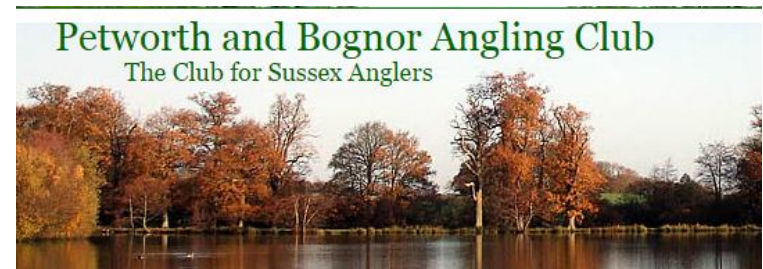
Need for More Riparian Trees along the Rother highlighted by the Recent Rother River Improvement Project at Shopham 2013/14



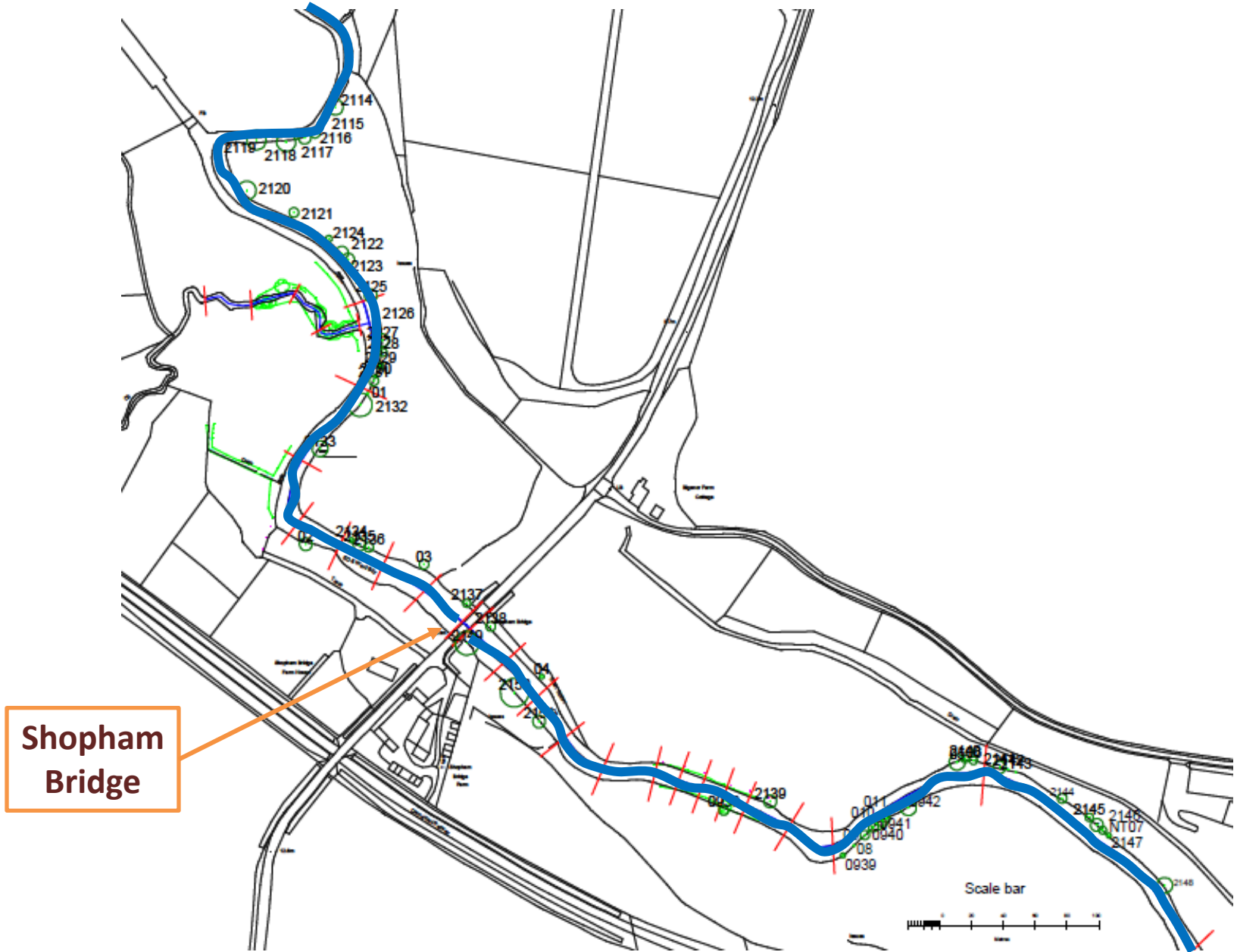
Shopham River Works: Formal Planning Consent required a Tree Assessment



**Rother Tree Survey
Shopham Bridge
2013**



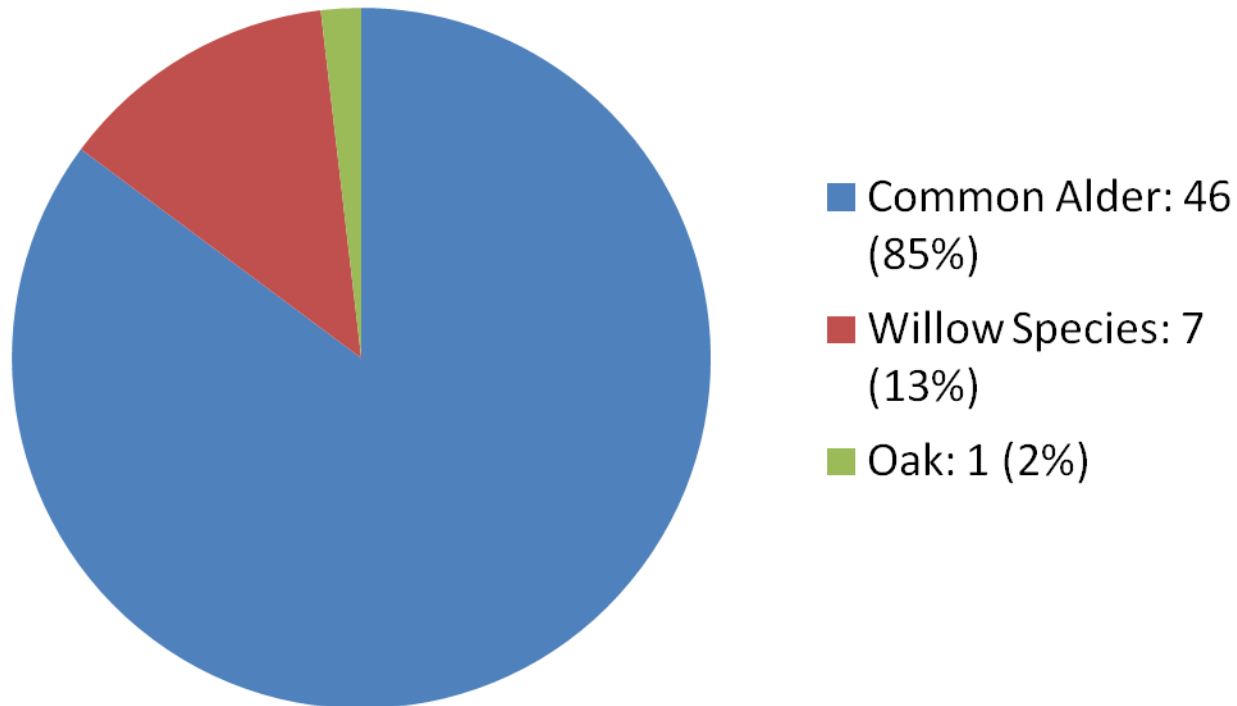
Rother Tree Survey from Shopham Bridge





- Many reaches along the main Rother channel have poor bankside tree cover
- Above photograph is fairly typical with tree cover set further back from the main channel (perhaps reflects past flood management approaches and historic canalisation works)
- Highly incised river banks – can complicate tree planting

ARRT 2013 Rother/Shopham Tree Survey: Number & Species of Riparian Trees



- Predominance of the Common Alder (*Alnus glutinosa*)
- Of which approx. 75% are mature and 25% dead
- No young Alder trees recorded
- Many Alders are in poor/declining condition due to the fungal *Phytophthora* disease

Of the Mature Alders Surviving:

- roughly 2/3 are in Poor/Declining Condition and
- approximately 1/3 are in Fair Condition



Benefits of Riparian Trees



- **Bank Stability**

- Roots Buttress Banks & Limit Erosion
- Improves Soil Strength & Drainage

- **Limits Suspended Solids (SS)**

- Reduces Runoff from Land & Bankside Erosion/Scour
- Past Research indicates up to 30% Total Fine SS in Rother may come from Bankside Erosion
- **High SS can:**
 - Smoother Potential Spawning Sites
 - Limit Oxygen to Fish Eggs & Emerging Fry
 - Limit Invertebrate/Mollusca/Plant Food Sources
 - Potential Gill Damage + ↓ Resistance to Diseases

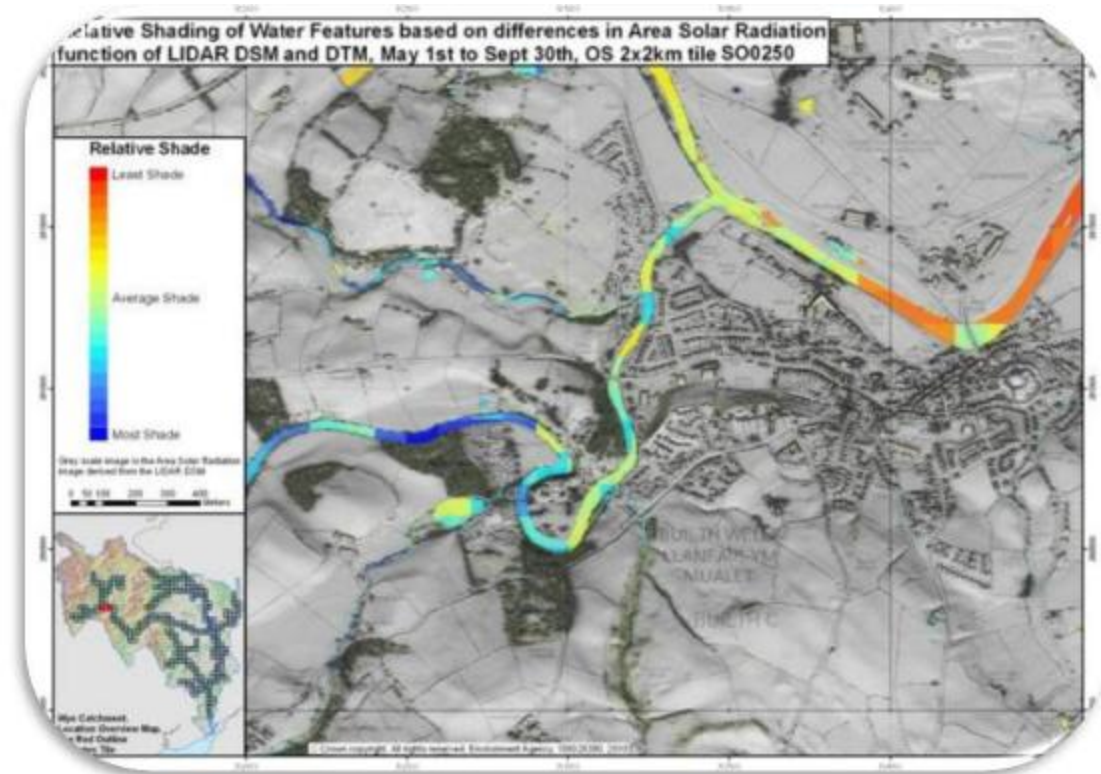
- **Promotes River Shade**

- UK Govt. Climate Change Panel Predict ↑ 2-4°C Summer Ave. Temp's by 2050
- Parts Southern England already experienced High River Temp's (e.g. > 31°C; Sea Trout threshold: 22°C)
- Rivers are Sensitive to Climate Change and will Rise in-line with Air Temperature
- Riparian Shade Lowers Max' Temps by 2-3°C compared with open unshaded rivers (1.5°C lower on average)



- **Enhances Habitat** → Provides Food Web; Protection against Predators & Flood Flows

EA Riparian Shade Maps for the Rother Catchment (& Arun & Western Streams)



- shows relative shade along the river, gaps in tree cover
- to be used alongside local knowledge, landowners & angling clubs to identify best places for riparian tree planting
- headwaters down to ~two-thirds provide best shade efficiencies
- lower reaches still benefit from thermal refugia - especially if there are impounded reaches with silt deposition
- potential financial support for stock fencing and cattle drinking

Many thanks for listening – if you would like to discuss potential riparian tree planting please get in touch with the Arun & Rother Rivers Trust (ARRT)

Thanks is given to the Woodland Trust for assisting with funding to help identify sites for riparian tree planting and the Sussex Wildlife Trust for on-going support

