



Figure 1. Flood plain reconnection being undertaken [left & right] and a completed cutting to enable flood water to spread out on the flood plain during high flows [middle].

## End of Year Summary 2020-21

Sussex Flow Initiative (SFI) is a Natural Flood Management (NFM) project on the River Ouse catchment in Sussex. The project is a collaboration between Sussex Wildlife Trust, the Woodland Trust, the Environment Agency and Lewes District Council. This report summarises SFI's achievements this financial year. For further details see our full end of year report.

### Practical Delivery

#### Woodland and hedgerows

- We planted 13,381 native shrubs/trees as cross-slope hedgerows (1,175m) and floodplain woodland (0.3 ha).
- When mature we estimate that our new cross-slope hedgerows will help to store and slow down at least 3,500 m<sup>3</sup> of water (3,500,000 L).<sup>1</sup>

#### Floodplain washland storage

- We have lowered unnecessary embankments, reconnecting the floodplain and opening up approximately 3.3 ha of additional washland storage (storing ~6,600,000 L of water every flood event, at flood depths of 0.2 m).

#### Scrapes, pond and temporary flood storage

- We have created a series of seasonal scrapes which hold approximately 132,513 L of floodwater, whilst providing important temporary habitat for waders, amphibians and aquatic invertebrates.



Figure 2. Surface water flows [left], stored in scrapes/ponds [middle] and slowed by brash bundles [right].

<sup>1</sup> Hedgelink, <https://bit.ly/2ilPKRJ> [accessed 2020] - A 50m hedgerow at the bottom of a 1ha field can store between 150 and 375 cubic metres of water during rainy period.



Figure 3. Depth gauge installed by the University of Brighton to monitor water attenuation [left] and the same leaky dam following a heavy rainfall event with depth completely submerged and recording the effect of the leaky dam [right].

### Leaky Dams

- We have constructed 11 leaky natural woody dams, which hold back an estimated 11,000 L<sup>2</sup> of water per flood event.

### Catchment wide influence of SFI

- We have delivered NFM on approximately 537.25 hectares of land (1,727.6 hectares if we include all advice given to landowners), of which approximately 77.39 hectares is floodplain (Flood Zone 2).
- We have influenced at least 550m of the river network with our in-stream work, and at least 7.6 km through land based activities<sup>3</sup> (50.5 km including all land where advice was given).
- We have created/restored 11.72 hectares of priority habitat (8.36 ha of woodland<sup>4</sup> and 3.36 ha of open/standing water) contributing to Environment Agency targets.
- We have given advice on land adjacent to >4.3 km of watercourse failing to meet Water Framework Directive (WFD) environmental quality standards for phosphorous.
- Our NFM delivery has taken place upstream of 17 properties considered to be at “very significant risk” of flooding, according to the Environment Agency.



Figure 4. Series of scrapes created along on a surface water flow path [left] and scrapes filling and storing surface water [right].

<sup>2</sup> Based on 50 m per woody structure

<sup>3</sup> Only including waterbodies downslope and adjacent to tree planting (i.e. not including downstream effects)

<sup>4</sup> Including hedgerow (320 m of hedgerow is equivalent to 1 ha of woodland in terms of number of trees/shrubs planted)





Figure 5. Planting tree at high numbers without plastic protection [left] and saplings ready to be planted [right].

### Ecosystem services

- Our work has contributed to providing natural capital and provisioning services, including biodiversity, food, shelter, and timber
- SFI has contributed to regulating services, including pollination (>13,000 native flowering trees/shrubs planted within Buglife B-line pollinator corridors), carbon storage (up to 114.5 tonnes of CO<sub>2</sub> p.a. stored by planting), water purification and flood water storage
- SFI has contributed to cultural services benefitting human health and welfare, connecting people with their environment and restoring historic landscape features.

### In kind support

- Main partner organisations have contributed at least £69,151 of their time in kind, and other landowners and organisations have contributed at least £12,000 of their time in kind.

### Advocacy

Sussex Flow Initiative is an advocate of Natural Flood Management. Each year we train and communicate with others about how NFM can help them. Our advocacy this year includes:-

#### Engaging with landowners

- Visiting 40 landowners of 53 sites, covering approximately 3.7% of the land upstream of Lewes, on a total of at least 1,610 hectares of land.
- Of these 53 sites, 20 included floodplain areas on 'main river' or 'ordinary watercourses'

#### Working in partnership and local communities

- Working with over 23 local and national groups and stakeholders

#### Events, conferences, websites and social media

- Presenting at national and local events reaching audiences of over 400 people
- Our articles and social media have reached at least 146,000 people