

21st May 2014 - Workshop

ESCP Group Notes

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Water Quality

Question 2

1. Limitations of the process - lack of GIS
2. Silt run off - sandy soils
 - a. Dunwich
 - b. Tunstall
3. Hydrocarbons + Spills
 - a. A12 near water courses
4. (Combined) Sewers
 - a. Urban
 - b. Phosphate removal - small scale economics
5. Methaldehyde etc
 - a. Upstream of Sproughton River Gipping) (AW abstraction for Alton Res)
 - b. Heavy Clays near watercourses (general issue)
 - c. Protect in hand
6. Nitrates
 - a. Reydon - groundwater
 - b. Westerfield - groundwater
 - c. ??Livestock??
 - d. General - sandy soils infiltration
7. Saline intrusion - Woodbridge groundwater at Reydon

Space for Wildlife

Question 1- Ecosystem Services Provided

Key Features

Variety of habitats - moving from open sea to coastal / estuarine, heaths & marshes to clay-based grasslands & woodlands

Many protected areas - large % of total area

Many different types of land management

What's important for wildlife

Sympathetic management

Connectivity

Water Quality / Quantity - often crucial to habitat quality

What do we know

- Landscape character assessment - provides detailed information & basic management guidelines (Suffolk County Council - available as a GIS layer)
- WFD River Surveys 0 every watercourse - 500m sections photos/habitat types/land use (Suffolk Wildlife Trust)
- IFCA - fish shellfish surveys
- Seascapes Assessments (Suffolk Coastal District Council)
- Species Surveys on watercourses (EA)

Opportunity

- Collate existing data & make available to everyone
- Allow data sets to be updated and improved by partnerships

Question 2 – Which Ecosystem Services are Constrained (Problems)

Non-native Species

- Crayfish
- Water Plants

Farming Practices

- buffer zones on watercourses
- timing of particular operations
- chemical use
- food vs. fuel
- soil management

Increasing Resilience

- climate change / coastal squeeze

Balancing economic growth with landscape protection and wildlife habitat

- looking for the solution to achieve both
- accepting some development but demanding reparation

Recognising the value of ecosystem services by those that use them

- e.g. visitor payback scheme (like AONB making revenue raised in the area work to benefit wildlife)

Strategic Plan for Key Habitat Creation

- linked to historic landscapes
- Bap Species
- Current grants available
- Landowner links / local networks/ schools etc
- WFD data
- Existing “nature reserves”

Important to cross reference these with water quality / flood risk issues

Low Flows & Flooding

Question 1 – Characteristics

Soil Type

- Clay headwaters (winter floods & summer low flows)
- Sands & gravels = better winter recharge + good summer baseflow

Abstraction: PWS & Other

Land Use

- East Suffolk Rural therefore Farmland
- Abstraction / Irrigation for sand soils
 - o Demand is greater than Water Available
 - Need to be water efficient
 - Need therefore winter storage (reservoirs / Ground water recharge)

Field Slope / Run-off

- Soil loss → estuary sedimentation → greater flood risk upstream
- Soil loss greater on non-drained clay soils
- → greater risk with potatoes (education & research)

Development

- Developers “wriggling” out of SUDS obligations
- Greater development → greater water demand

Habitats / SUDS

- Forests
- Heaths → greater Winter recharge *therefore* greater summer base flows + less winter flooding
- Reed beds / infiltration Areas = groundwater recharge
 - o Small farm scale in headwaters
 - o Larger downstream areas (e.g proposed in Deben?)
 - o Also ‘clean’ water

Flood Plain

- Keep saturated before storm surge *therefore* reduced saline intrusion

River Structures

- Mills, sluices
- Potential bottle necks

Question 2 – Which Ecosystem Services are Constrained (Problems)

Key link: Paul Bradford’s work (on Deben - Holistic Water Management Project)

Habitats:

- Heathland: Existing are protected
- Woodland: Attenuation on clay soils
- Salt Marsh:
 - o Climate Change / Sea Level rise
 - o Limited freshwater run off
 - o Tourism / erosion
 - o Crab (shore)
- Grazing Marsh: physically constrained so difficult to recreate

Habitats Cont

- Floodplain: now limited as cultivated
- Rural SUDS (*sustainable draining systems*) + Recharge Lagoons
 - o Finding the best place
 - o Funding (CSF 50% grants)
 - o More research / education currently little priority
 - o Needs to link in with other ecosystem services

HMWBs (*Heavily Modified Water Bodies*)

- Too efficient = little attenuation
 - o E.g. Deben & Gipping
 - Deben e.g. Brandeston Weir / Naturalisation
- Too Narrow river corridor
- Too straight therefore constrains biodiversity

High Flow Storage

- Current licensing system
- Funding
- Planning consent
- Landscape impact
- Location:
 - o Clay vs. lined
 - o Beneficiaries - need for expensive pipelines

Education
JON

Aquifer recharge:

- As above (High Flow storage) - possibilities
- More research

- Viability (hydrogeology)
- Wider biodiversity benefits
- Still needs balancing reservoir
 - Cost?

River Structures

- Sluices needed for water level management
 - PWS
 - River gauging stations

Point Source Pollution

Question 1 –

Septic Tanks - deregulation, an area where EA are losing information

Points Sources of concern

Potential Damage from point source pollution to fisheries stocks & shellfisheries

Pollution incidents

- response of authorities
- importance of linking up emergency response

Orwell & Stour - fisheries+ shellfisheries. Cliff Key, Ipswich Discharge

Butley Oysterage - diffuse pollution threats, cattle sheep & septic tanks

Blyth Estuary

Deben, Melton & Martlesham Creek

Small STW's can be dominant flow in dry summer - flow vs pollution

Bixleyheath, Ipswich - misconnections, new housing estate - detergents, foul water in clean water - EA & Council

Post **SO's** - separate rainwater (clean) from foul water - kitchens etc

Hasketon Ditch grey looking water looks like from local households.

Storm Overflows - raw sewage

Combined Sewage Overflow at Felixstowe

Southwold Issue?

- Sewage Works / combined overflow in storms / some from livestock/birds
- Back on the map this year - bathing water blue flag award

Industrial Discharges

- Big Ones
 - o Muntons Maltings Gipping near Stowmarket
 - o Bernard Mathews - Wang
- Car Parks washing / pop up car washes
 - o ? Discharging into surface water drains - not designed for detergents. Phosphates in detergents.

Deben - Tidal Deben discharges + WQ in Estuary

- 2 problems
 - o Pollution Mill River leaching from Foxhall tip
 - o Pollution from boatyards
 - Guidance no control

- Oil, fuel, antifouling agents
- Domestic sewage discharge - direct discharge
- Local residents / tourists complaints about raw sewage being discharged
Woodbridge STW - outfall flooded - Martlesham Creek
- Sewage from houseboats & greywater discharges
 - Guidance leaflets for boatowners - but nowhere to empty tanks can provide facilities to empty.
 - Can CSF approach be rolled out to boatyards/boats. Small Boatyards.
- Anglian Water abstract at Bucklesham Mill River
- Tidal Deben - high nitrates
- Ramsholt - Shellfish - Roger Simper

Mitigation

- Sewage Works
 - P Stripping
 - Iron Dosing
- Treat at source
 - Reduce P in detergents
- Food additives
 - Pigs
 - Humans
- Sewage Sludge
 - Returned to land
 - Reedbeds at small STWs
 - More settlement
 - Well maintained septic tanks & package treatment plants

Question 2 – Mitigation

Sewage Treatment works / Water Recycling centres (Anglian Water)

- Iron Dosing
- Phosphate removal
- Recycling sewage sludge (nutriBio regulated)

What's possible at small STWs?

- Reedbeds? Tertiary treatment
- Pump elsewhere for treatment
- Close the works

Domestic

- Septic tank campaign
- Awareness raising - targeted where there is a particular local issue
- Leaflet with parish magazine

Talk to developers about new build provision?

Real problem old developments

Reedbeds for filtering - headwaters, farms - yards/fields

Less people → if not phosphate free villages (e.g. Welland) detergent use

Boatyards

- Discharge points in place (most areas) not in place in Deben
- Fertiliser & pesticide storage
 - o Vandals / thefts
 - o Raise awareness of security & bunding

Car Park - car washes - supermarkets

- Can catchment partnership influence / engage with supermarkets?
- Smaller sites / old garages etc

FIO's (*Faecal indicator organisms*) from farmyard - slurry & manure storage

- CSF advice

Landfill / tips ? Regulates sites

Point source - dumping of waste / flytipping (e.g. Cans of mecoprop example from Anglian Water)

Valuing groundwater sources

- Domestic wells more vulnerable due to being shallower

Recreation

Question 1

Recreational Access

- River angling declining nationally (Carp Lakes preferred)
- Is physical access
- Issues of river maintenance
- Need for mapping
 - o Who maintains river (EA/IDB/Council etc)
 - o Angling Clubs
 - o Flood Risk
- EA involve angling clubs in river surveys
- Discussions
 - o Between kayakers / anglers
- Limited kayak access
- Access
 - o Footpaths - hard to access without car
- Powered craft

Question 2 – Positive & Negative Impacts of Activity on Other Ecosystem Services

1. Angling

- Positive
 - o People caring about the river
 - o Eyes on the ground
 - o Voice for the river
 - o Money for local economy (e.g. Broads Angling worth = £71m per year)
 1. Local Shops
 2. B&Bs
 3. Pubs
 4. Campsites
 5. Rural jobs
 - o Additional income - modifying barriers to allow trout upstream
- Negative
 - o Disturbance - protected species (birds/fish/otter/ wolverine)

- Driving - CO2 emissions
- 2. Same issues for walking, kayaking, cycling
- 3. Powered boats - same issues plus
 - a. Fuel pollution (ecological damage)
 - b. Noise
 - c. Boatwash
 - d. Litter

Business & Public Participation

Question 1 – Who to engage

Local Government / Council Support

- Waste bins on public sites
- Specialised work help
- Public meetings (to raise awareness)

Organise Work Groups. Decide Campaign Slogan (Competition)

- a. Litter Picking
- b. Tree Maintenance
- c. Culvert Clearing
- d. Talks in Schools

Question 2 – How to encourage engagement

Education / Information / Raising Awareness

2. Social Media
3. Public Events

Engagement (with General Public & Business)

4. Phosphate / detergent use
5. Waste Segregation / Correct use of bins!
6. Water Wastage - encourage simple things to save it
7. Promotion of the countryside
8. Beach Clean in exchange for a pint!

(See Corporate summaries for Muntons Plc, Aspal Cyder & Adnans Plc)

Carbon Sequestration

Q1 – What services are provided by the catchment

1. Providing (Habitats)
 - a. Woodland (Conifer & Broadleaved)
 - b. Wetland
 - c. Wet Woodland / scrub
 - d. Grassland
 - e. Saltmarsh
 - f. Soil Types (Clay / peat → sand)
2. Risks / Conflicts / Producers
 - a. Land management (inc HLS/ELS)
 - b. Loss of trees
 - c. Loss of grassland
 - d. Built Environment
 - i. Urban
 - ii. Industrial
 - iii. Landfill
 - iv. Transport
 1. Ports
 2. Roads
3. Opportunities
 - a. Best Practice Farming
 - i. Min tillage
 - ii. Soils
 - b. Targeted Protection / Restoration
 - c. Carbon (Offset) Natural Catchment - PES for making it viable

Q2 How could we develop a way of determining locations for this service

We felt that through readily available maps of soil types, habitats, landscape character and land use that we could easily produce maps depicting both

1. Where this service was already being provided and were therefore at risk (needing protection)
2. Where this service could be provided (opportunity)

We felt that this could lead to a economically "saleable" service for industry off setting - again either by protecting or providing new.

We then discussed how we would package this to business and had the following thoughts.

1. We would need to be able to attribute robust values of carbon storage/potential for habitats across the catchment.
2. We would need to be able to offer packages of "local investment" hence the need to know 1 above.
3. If we had investment then we would direct the measures to those areas providing multiple benefits for other services rather than those delivering the greatest amount of carbon sequestration.