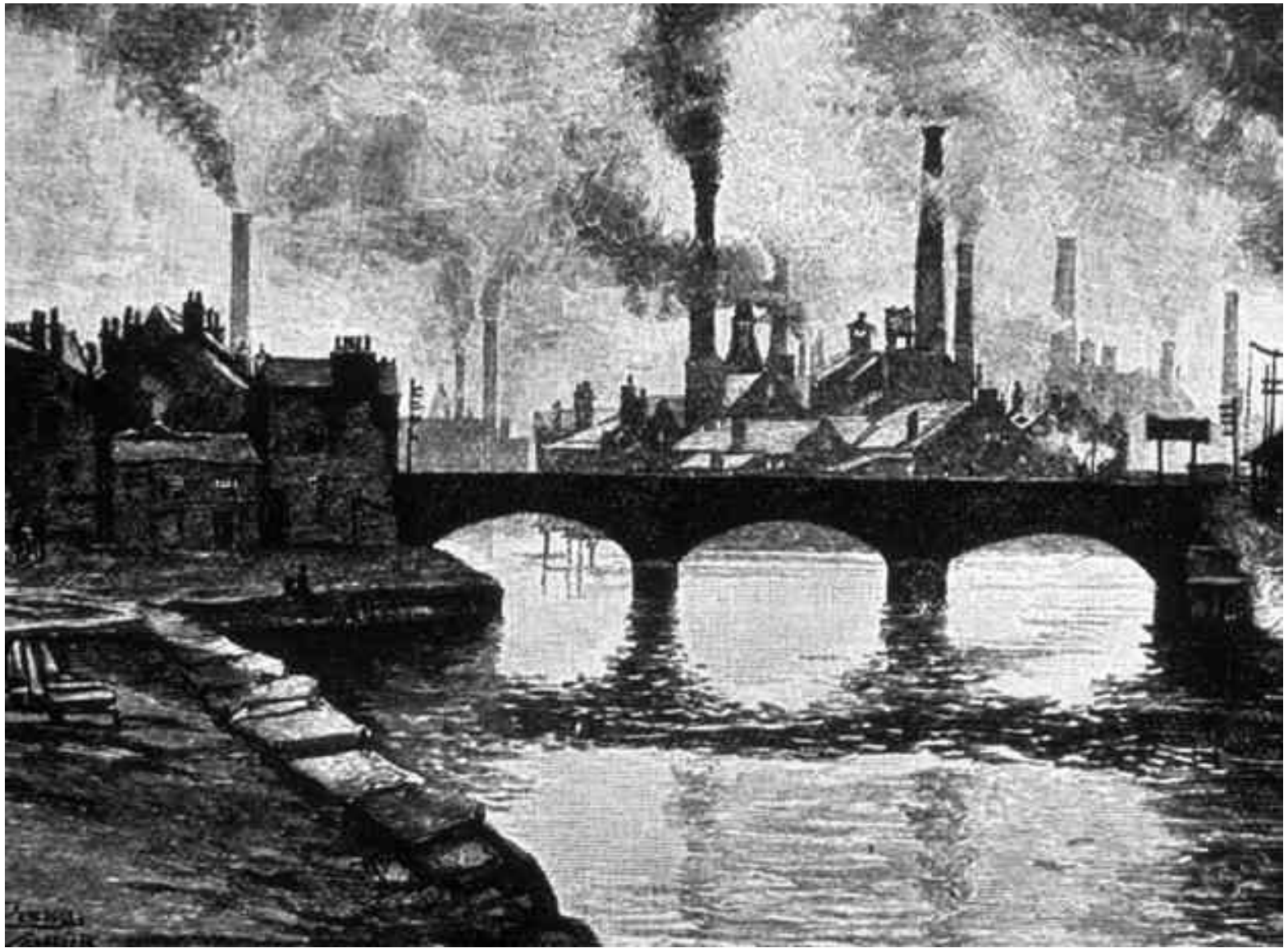


# Ecosystem services and water industry regulation

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Regulation for a sustainable water industry  
SOAS, London

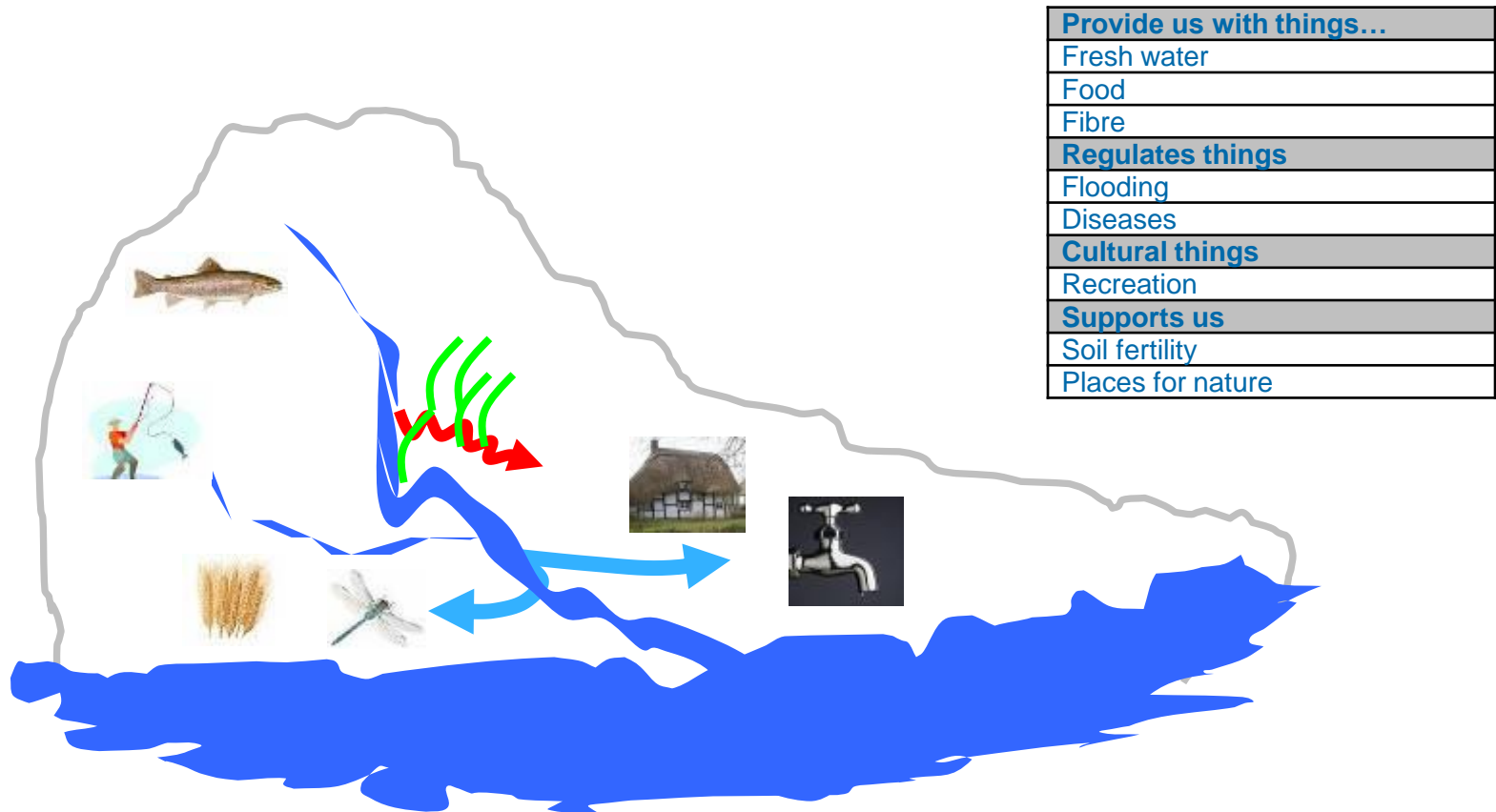


# Aside from equity and sustainability issues...

## ...why should ecosystem services guide our work?

- **Defra Ecosystem Services Action Plan (2007 and 2010 update)**
- **‘Environmental outcomes’ are not enough**
- **Public engagement agenda**
  - ❑ What does ‘improvement’ mean beyond all the technical standards?
- **Partnership working**
  - ❑ Solutions beyond individual remits)
- **Forthcoming requirements and ‘game-changers’:**
  - ❑ NEA, NVP, NEF, NEWP, WWP, ‘Big Society’, TEEB, Nagoya, Lawton, etc...

# ‘What have rivers ever done for us?’



- Intuitive
- Linking people’s needs/economics benefits with ecosystems
- Making the ‘triple bottom line’ understandable and tractable

# The MA ecosystem services classification...

<b>Provisioning services</b>
Fresh water
Food (eg crops, fruit, fish, etc)
Fibre and fuel (eg timber, wool, etc)
Genetic resources (used for crop/stock breeding and biotechnology)
Biochemicals, natural medicines, pharmaceuticals
Ornamental resources (eg shells, flowers, etc)

<b>Regulatory services</b>
Air quality regulation
Climate regulation (local temp. /precipitation, GHG sequestration, etc)
Water regulation (timing/scale of run-off, flooding, etc)
Natural hazard regulation (ie storm protection)
Pest regulation
Disease regulation
Erosion regulation
Water purification and waste treatment
Pollination

<b>Cultural services</b>
Cultural heritage
Recreation and tourism
Aesthetic value
Spiritual and religious value
Inspiration of art, folklore, architecture, etc
Social relations (eg fishing, grazing, cropping communities)

<b>Supporting services</b>
Soil formation
Primary production
Nutrient cycling (water recirculation in landscape)
Water recycling
Photosynthesis (production of atmospheric oxygen)
Provision of habitat

# Lessons for the water industry learned from ecosystem services case studies

1. System-level consideration leads to different conclusions than reductive assessment
2. Ecosystem-based solutions maximise value relative to engineered schemes
3. It is important to recognise all stakeholders in decision-making
4. Ecosystems language helps communicate/engage in socially meaningful terms
5. Local schemes can contribute to catchment sustainability
6. Markets have a key role to play
  - Recognising all 'winners' and 'losers' across the catchment systems
  - Potentially linking 'beneficiaries' with 'providers'
7. We need to mainstream systemic perspectives into pragmatic tools
  - Novel tools
  - Existing tools (EIS, SEA, CAP, etc.)
  - HM Treasury 'Green Book'
  - Asset Management Planning?

# Source protection

# Downstream treatment



## Provisioning Services

- More/better quality fresh water
- Food, fibre, fuel

## Regulatory Services

- Climate regulation
- Water (run-off) regulation
- Erosion regulation
- Water purification

## Cultural Services

- Aesthetics
- Recreation and tourism
- Social relations

## Supporting Services

- Soil formation
- Nutrient cycling
- Provision of habitat

## Provisioning Services

- Food, fibre, fuel

## Regulatory Services

- Climate regulation
- Water purification (chemical use)

## Cultural Services

- -

## Supporting Services

- Habitat take from landfill waste



# Sludge recycling

# Sludge disposal

- Landfill, incineration

## Provisioning Services

- Food, fibre, fuel

## Regulatory Services

- Climate regulation

## Cultural Services

- Neutral if applied right!

## Supporting Services

- Soil formation
- Nutrient cycling
- Provision of habitat

## Provisioning Services

- Food, fibre, fuel

## Regulatory Services

- Air quality regulation
- Climate regulation

## Cultural Services

- Neutral or negative (incinerators/landfill)

## Supporting Services

- Habitat take from landfill/incineration

# Ecosystem services implications for a sustainable water industry

- **We must plan at whole-catchment-scale (all disciplines)**
- **We must also plan at societal service scale**
  - ❑ plc regulation is not enough, just because we've privatised this societal service
- **Counting all benefits and impacts**
- **Innovation, not perpetuation, of technologies**
- **Linkage across societal sectors**
  - ❑ Payments for benefits realised...
  - ❑ ...beneficiaries should pay
  - ❑ Integration with agri-environment payments
  - ❑ Transparency; implications of all options are understood
- **You can not have a sustainable industry in an unsustainable society!**