

A photograph of a shallow, rocky stream with children playing in the water. One child is sitting on a rock in the background, while two others are splashing in the foreground. The water is clear, and the rocks are of various sizes and colors.

# **“Perspectives on infrastructure investment and water commons”**

**Will McBain, Associate Director, Arup**

**Water and Impact Assessment: Investment, Infrastructure, Legacy**



# Overview

- origins of my perspective;
- water as a commons or common pool resource;
- the real tragedy of the commons;
- water as a social and ecological system;
- identifying the opportunities; making the connections; using our imagination;
- case studies: Sheffield & Melbourne;
- achieving a legacy of infrastructure that reinforces co-ownership of water as a common pool resource for which we are all responsible.

# Origins of my perspective...



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“The **commons** is the cultural and natural resources accessible to all members of a society, including natural materials such as air, **water**, and a habitable earth. These resources are held in **common**, not owned privately”.

Wikipedia

“The **tragedy of the commons** is that every individual tries to reap the greatest benefit from a given resource. As the demand for the resource overwhelms the supply, every individual who consumes an additional unit directly harms others who can no longer enjoy the benefits”.

Garrett Hardin, The Tragedy of the Commons, 1968.

# Conventional solutions:

- Privatisation;
- State regulation;
- Internalising the externalities.

....but what is civil society's and/or the individual's role?



...whether we're aware of it or not, we are all stakeholders.

# The real tragedy of the commons...

*“Modern humans have largely lost our connection with water in its natural state. Instead of seeing water as the essential element in a living watershed that gives us all life, we view water as a resource for our convenience, pleasure and profit”.*

*Maude Barlow, The Role of Water Abuse in Climate Chaos  
New York City, September 20-23, 2013*

*“our wellbeing is intimately connected to the vitality of living systems; we should make them – and the interaction between them - the focus of our efforts”*

John Thackara, How to thrive in the next economy.

# The Great Transformation

“The **social contract** consolidates a culture of attentiveness (born of a sense of ecological responsibility), a culture of participation (as a democratic responsibility), and a culture of obligation towards future generations (future responsibility)”.

*German Advisory Council on Global Change: World in Transition: a social contract for sustainability.*

*“Communities of individuals have relied on institutions resembling neither the state nor the market to govern some resource systems with reasonable degrees of success over long periods of time”*

*Elinor Ostrom, Governing the Commons (1990)*



# Stewardship of common pool resources

- multi-scale governance
- data and knowledge sharing
- high levels of cooperation and social interaction
- from personal & collective stewardship of a social, economic and ecological system

“Your bioregion is effectively your backyard. It is the part of the planet you are responsible for. Bioregionalism means living a rooted life, being aware of where your resources come from and where your wastes go”, [gaianeconomics.org](http://gaianeconomics.org)

# The commons movement

*“...believes that such resources belong to mankind in common, and that the private sector as well as governments have no right to exclude stakeholders from their management through instances of privatization or bureaucratization”.*

A new paradigm of economics, politics and culture, *David Bollier*

*“Name it,  
claim it,  
protect it!”*

*On the commons*

<http://www.onthecommons.org/>



River Ravenshoe, Ladywell Field in Lewisham, UK

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# The catchment based approach...

**the River Restoration Centre**  
Working to restore and enhance our rivers

the RRC | Membership | Restoration Projects | Communications | Conference | Advice | Training | Guidance

Why Restore | UK Projects Map | EU RiverWiki | Designated Rivers | Wider Initiatives | UK River Prize

### UK River Prize

**ARUP**  
The 2016 UK River Prize & Nigel Holmes Trophy  
The 2016 Winners are:  
*The Rivers Eden, Derwent and Kent!*

**2016 UK River Prize Winners**  
Rivers Eden, Derwent and Kent  
*Partnership and multiple benefit project*

The Cumbria River Restoration Strategy (CRSS) is a partnership project between Natural England, the Environment Agency and three Rivers Trusts (Eden, West Cumbria and South Cumbria). The partnership implements river restoration across three river catchments.

This project is an excellent example of what can be achieved through working in partnership. Overall the work has restored 14 km of river across the three catchments to a more natural form, illustrating the large scale at which this project was undertaken.

Find out more >>>

**2016 UK River Prize Finalists**  
**River Aller and Horner Water**  
*Catchment-scale project*

In 2009, in response to the recommendations of the Pitt Review of the summer 2007 floods, DEFRA commissioned three new Multi-Objective Flood Management Demonstration Projects. This included the Holnicote Project on the National Trust Holnicote Estate in West Somerset.

The Holnicote project ran from 2009 to 2015 and the final project report was delivered in July of 2015. The National Trust successfully delivered multiple NFM interventions across the Aller and Horner Water catchments.

Find out more >>>

**Project Information**

Add Your Project  
Join The RRC  
Manual of River Restoration Techniques  
Monitoring Guidance

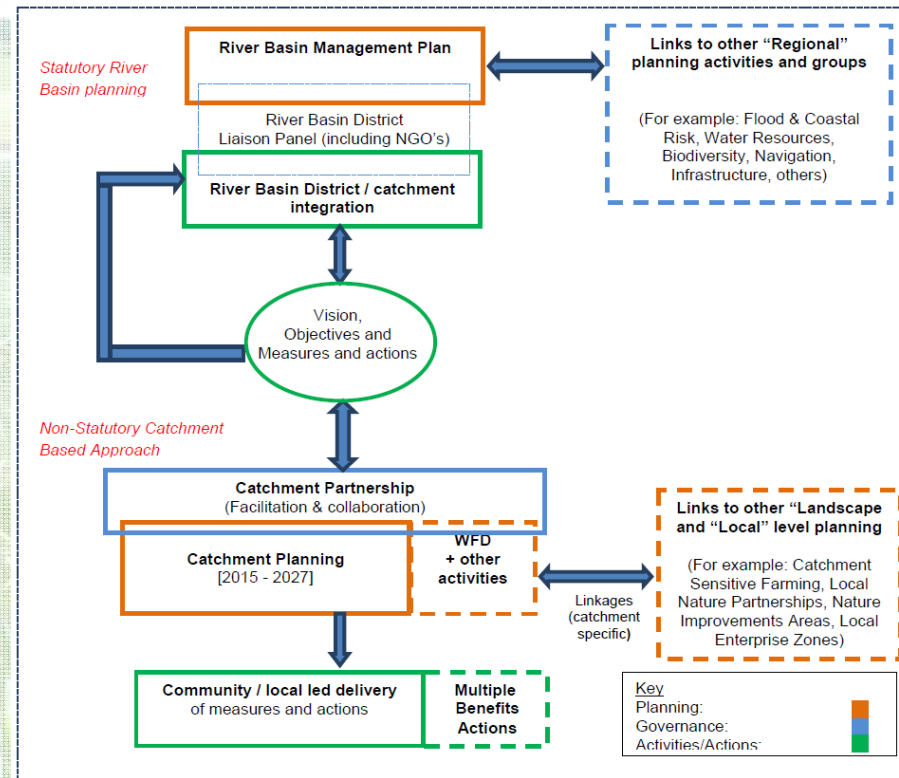
**Latest News**

New lease of life for the River Rother at Catcliffe  
Job Opportunity: Trainee Project Officer at Bristol Avon Rivers Trust  
Job Opportunities: Unlocking the Severn project

**RRC Tweets**

Aug 25 — RT @SE\_Rivers\_Trust: Lovely day for our @The\_RRC River #Vandie site visit to show our award winning #restoration work: <https://t.co/kSeqaOBRmV>

Aug 24 — Just a few places left on our site visit to the Allt Lorgy in Scotland @rafts\_scotland @ScottishNEPA @SNH\_Tweets: <https://t.co/0XPQZtradi>



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# Tools

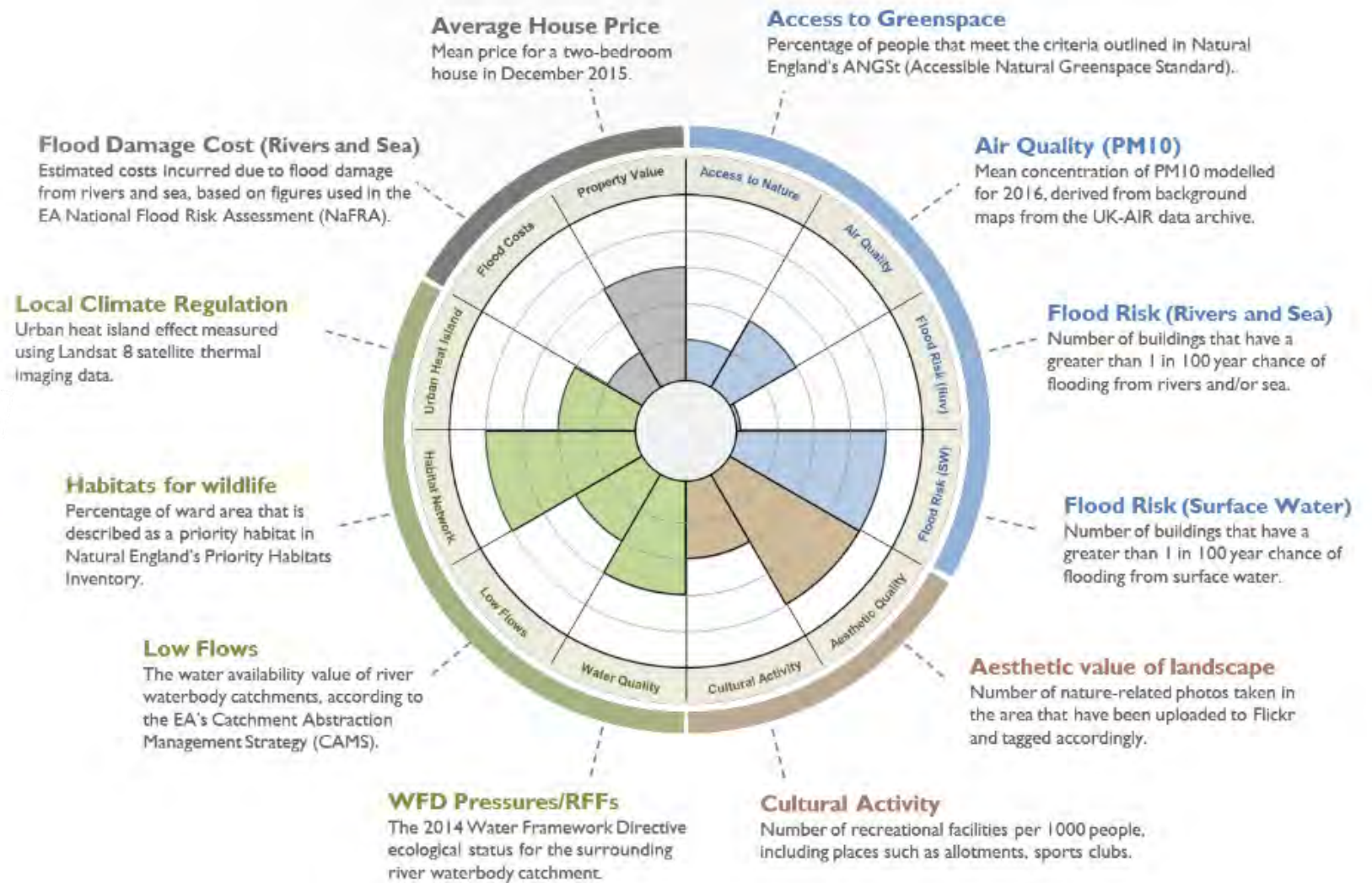
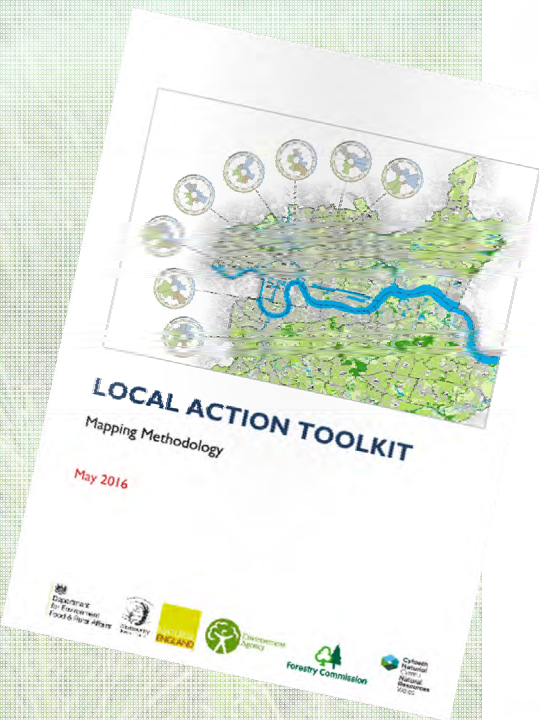


Figure1: Presentation of the metrics used to describe the economic, social, cultural and environmental benefits provided by natural capital and green infrastructure in an urban area.



# Sheffield Flood Protection Programme



Call 0114 354 0012 or email us - [click here](#)

**RSC**  
RIVER  
STEWARDSHIP  
COMPANY

**blue loop**

HOME ABOUT RSC SERVICES COMMUNITY ENGAGEMENT NEWS AND EVENTS PROJECTS CONTACT US

### Community Engagement

Involving local people in the management of the waterways near to where they live or work.



### Community Engagement

#### Volunteering

One of the ways to facilitate river stewardship is to work with and involve local people in the management of the waterways near to where they live or work. We currently host weekly volunteer days every Tuesday and Wednesday and a session every second Saturday of the month, as well as hosting short and long-term volunteer programmes for other projects. After delivering the Blue Loop Community Project, we helped to set up and continue to support the Friends Of The River Loop, carrying out practical conservation work on the River Don and the Sheffield and Tinsley Canal in Sheffield.

#### Education

We understand the importance of education for protecting our rivers in the future, and as such we organise and deliver regular interactive workshops to involve the local community in fun activities and educational sessions about the waterways in Sheffield, both on the river and within a classroom environment. Ranging from canoeing taster days and graffiti workshops on the canal for for youth groups, to raising brown trout in schools and releasing them into the river, through to minibussing and guided walks for families, our workshops are fun, engaging and highlight the value of our waterways as an important wildlife habitat. Bringing the river into the classroom and taking the class to the river.

#### Success Stories

**[Tax Relief for Contributions to Flood Defence Schemes](#)**  
The Chancellor has announced that the Government will [allow companies to claim tax relief on contributions to flood defence schemes](#).  
**[Canal-born trout released into the River Don](#)**  
Hundreds of brown trout hatched from eggs in classroom.  
**[The People and the Porter](#)**  
The River Stewardship Company has been successful in [securing the canal for the Blue Loop Project](#).  
**[RSC volunteers plant 100 new trees](#)**  
One of the UK's most dangerous plants is currently being [eradicated](#).

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# protectingsheffield FROM FLOODING

## PROTECT OUR COMMUNITIES

6,000 homes  
1,760 businesses  
32,707 jobs

£8 MILLION  
damage costs avoided every year

## GROW OUR ECONOMY

27,000 new homes  
40 new businesses

15,000 new jobs

46 hectares of developable land

£150 MILLION annual GVA growth

Reliable river  
**MAINTENANCE**

## TRANSFORMING OUR WATERWAYS

Options for sustainable  
**TRANSPORT** routes

Regenerate  
30 hectares of riverside brownfield sites

Generate  
**hydro electric** power

Improved water  
**QUALITY**

New  
**recreation** and tourism opportunities and businesses

Sheffield  
City Council

<http://www.floodprotectionsheffield.com/pages/consultation>

DP10295

# protectingsheffield FROM FLOODING

## Ways to reduce flood risk

The options for flood protection that we have considered fall into three main categories. These are described below. Wherever possible we have tried to include options that have potential to provide wider benefits such as supporting economic growth, providing recreational opportunities, protecting Sheffield's heritage or improving the environment for wildlife.

### Slowing the flow

Using techniques such as flood storage areas, land management and sustainable drainage systems to capture and store water, reducing and slowing the flow within rivers.



### Resilience

Working with local communities and businesses to deliver measures that increase the capacity of people, property and the environment to withstand the impacts of flooding and to rapidly recover after a flood.

### Options depend on each other....

...for example, slowing the flow of water upstream, by creating new storage areas to temporarily hold back flood water, will reduce the height of flood defence walls needed within the city.

We would like your views to inform the best combination of options for this project.

### Containing the flow

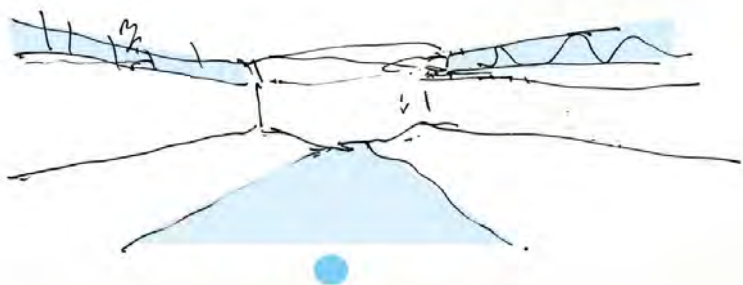
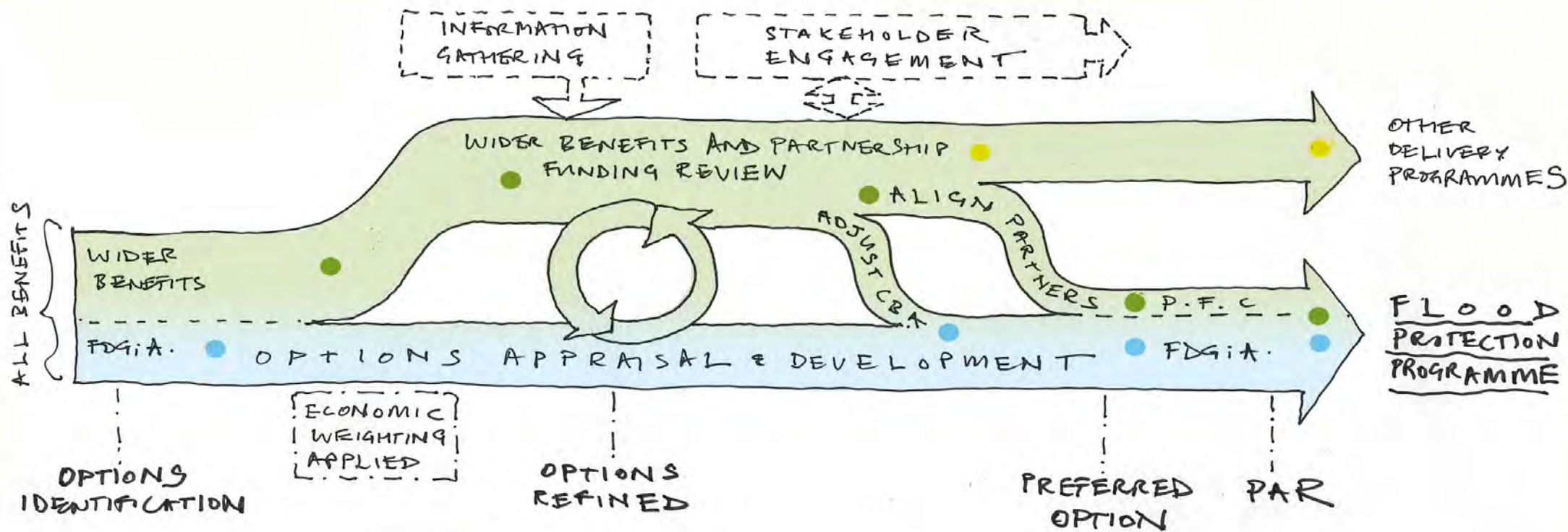
Safely containing flood water as it passes through the city. Through careful design, flood defences can enhance the river corridor and deliver wider benefits. This can be challenging depending on how high they need to be.

Sheffield  
City Council



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IAIA  
Water Lincoln 2016



## Beam Parklands, Dagenham Legacy

- Land Trust took over responsibility and appointed a managing agent;
- HCA parklands endowment for managing agent in perpetuity;
- Access to Nature Grant provides investment and resources to link communities via dedicated liaison officer;
- Ongoing community liaison by Boroughs and encouragement of use of Beam Parklands for education, leisure and recreation.



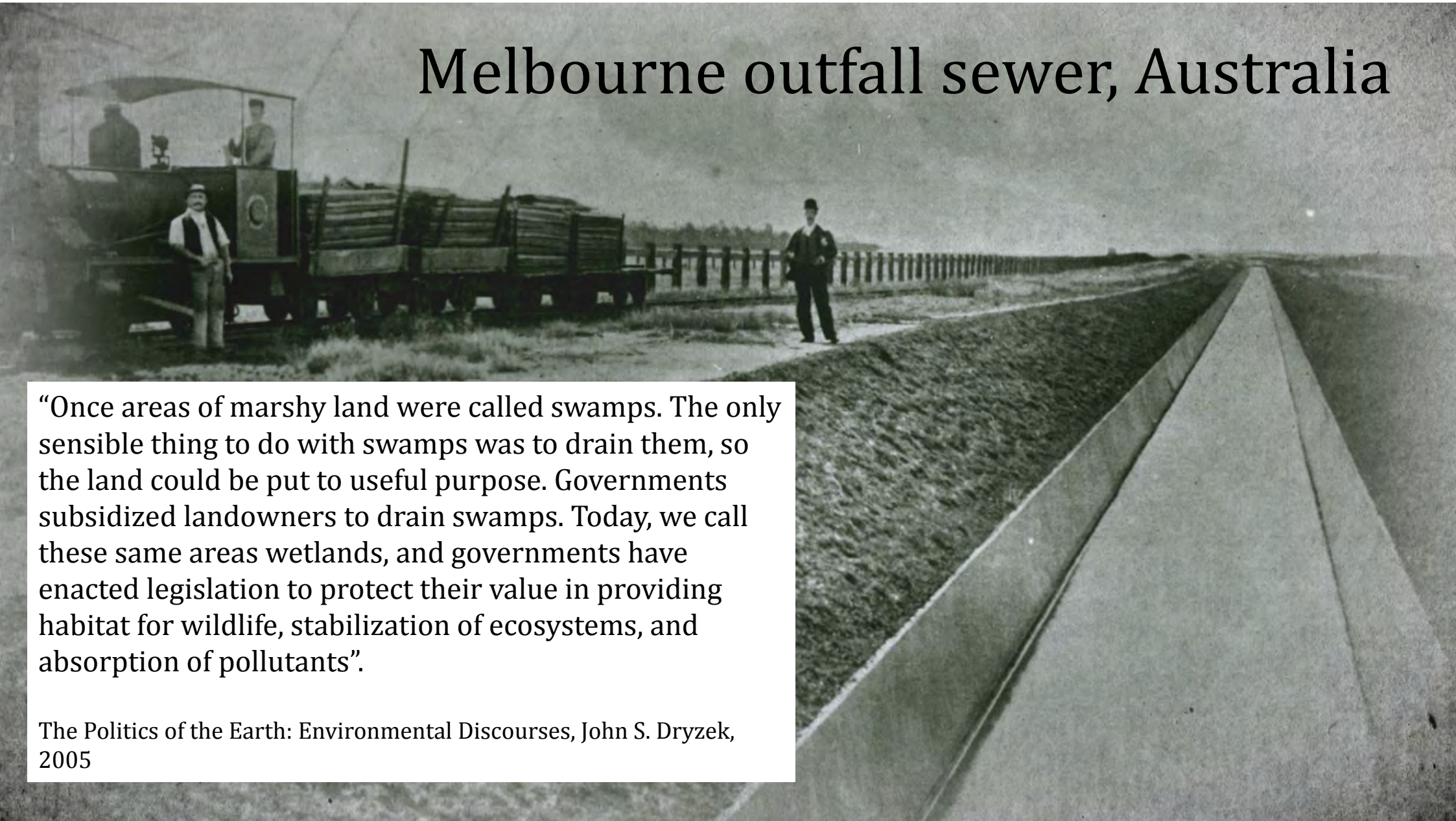
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# Melbourne outfall sewer, Australia

“Once areas of marshy land were called swamps. The only sensible thing to do with swamps was to drain them, so the land could be put to useful purpose. Governments subsidized landowners to drain swamps. Today, we call these same areas wetlands, and governments have enacted legislation to protect their value in providing habitat for wildlife, stabilization of ecosystems, and absorption of pollutants”.

The Politics of the Earth: Environmental Discourses, John S. Dryzek, 2005





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Wyndham City Councillor Peter Maynard in the pipe that might become a park. Picture: Sarah Matray

## Greening the Pipeline plan to turn heritage-listed sewer into park

Caroline Schelle, Wyndham Leader  
June 6, 2016 3:00pm

TRANSFORMING an abandoned sewer into a park is more than just a pipe dream for Wyndham Council.

*“...when groups of people assume responsibility for managing common pool resources, it also generates a sense of **community**, because the necessary communication processes create a bond. These processes (re)produce **social cohesion**, foster **responsibility** and **public spirit** and, thus, **common welfare**. A community that protects its watershed, that maintains its public places and has spaces to preserve and expand its traditional stores of knowledge creates a social fabric, a web that sustains it”.*

*“The Commons: A New Narrative for Our Times”, Silke Helfrich & Jörg Haas*

# Key messages

- Water is a common pool resource
- We all have a role in its management
- To maximise impact and achieve a positive legacy requires:
  - a proactive state
  - dynamic protagonists
  - an engaged civic society...to create the self-sustaining, social-ecological systems that healthy living catchments should rightly be.



Thank you

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