

Integration of science and policy – Where to for integrated water resource management on Tweed?

Prof Chris J Spray – May 27th 2015



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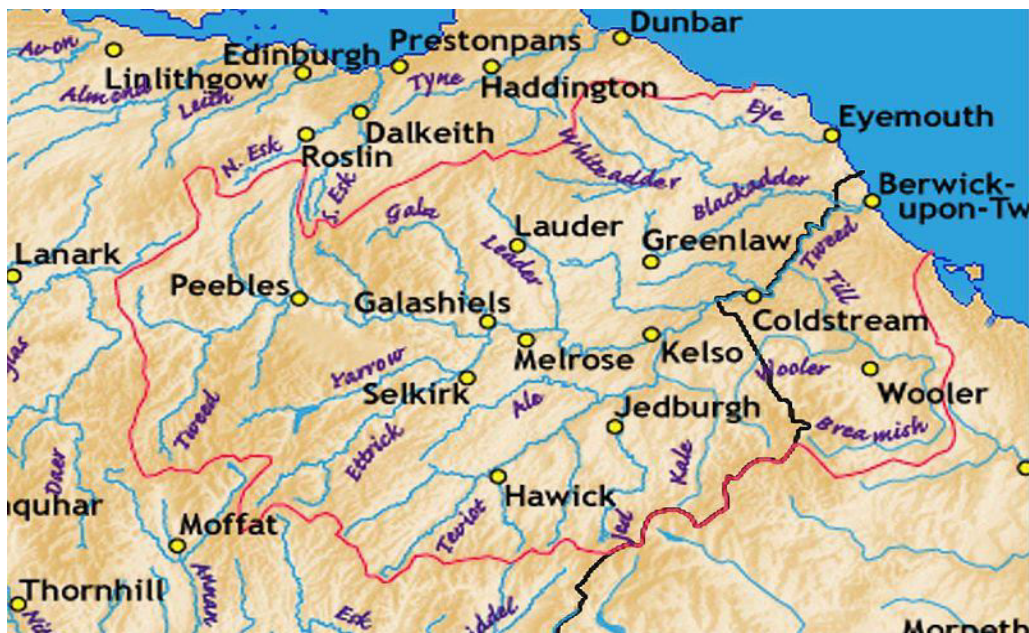
The Tweed Catchment

- 1. History of Catchment management on Tweed**
- 2. Drivers of change in governance – formal and informal**
- 3. The rise of an alternative governance system**
- 4. Key features of Catchment management delivery on Tweed**
- 5. Integrated Catchment Management, science into policy, the Land Use Strategy and future directions?**

1. History of Tweed Catchment Management

A story of the gradual alignment of science and policy for catchment management - in law and practice

Designated a UNESCO HELP Basin (Hydrology for the Environment, Life and Policy (HELP)) in 2009 - and Winner of the first ever UK Rivers Prize - May 2015



Catchment: 5,000 sq km, from 840m to sea level.

Tweed river length: 156 kms

Scotland (84%): England (16%)

Mainly agricultural & valley towns

130,000 population - tourism, farming (sheep & cereals), Salmon, Rugby, Tweed wool

HELP network established 1999 c.90 basins “*delivering social, economic and environmental benefits to stakeholders through research towards sustainable and appropriate use of water*”

The Tweed - Landscape characteristics



Tweed - nature conservation interests

River - Otter, Salmon, Lampreys, Water Crowfoot (Ranunculus) beds, beetle assemblages of River gravels

Estuary - Mute swans, Turnstone, Redshank



History of Sectoral Basin management (1)

FISHERY management dominates – Salmon

Fishery Acts: 1857, 1859 & 1969

•Tweed Commission established 1807

Since 2006, River Tweed Commissioners role:

the general preservation and increase of Salmon, Sea Trout, Trout and other freshwater fish in the River Tweed and its tributaries, and in particular with the regulation of fisheries, the removal of nuisances and obstructions and the prevention of illegal fishing.

81 Commissioners - 38 elected by the Fishery Proprietors, 43 appointed by the Local authorities, of which 23 are from local angling clubs and 20 from independent interests.

Over 13,000 salmon caught each year

500 jobs

£18 million to local economy



Tweed Foundation 1983

Habitat & stock monitoring enhancement

History of Sectoral Basin management (2)

NATURE CONSERVATION interests: - river channel species focus

Main river, all tributaries and estuary have gained site protection through European and national legislation

Scottish Natural Heritage (Nature Conservancy Scotland)

UK Site of Special Scientific Interest 1976

EU Special Areas of Conservation 2005

Atlantic Salmon, 3 species of Lamprey, Otter,
Beetle assemblages of river gravels

WATER QUALITY: - chemistry focus

Point source pollution, then Diffuse agricultural pollution

Scottish Environment Protection Agency (Tweed River Purification Board)



2. Drivers of change in Governance

a. Formal – legislation and policy

- European

Water Framework Directive

Floods Directive,

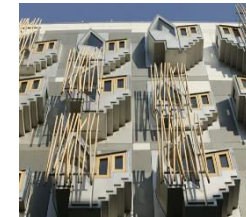
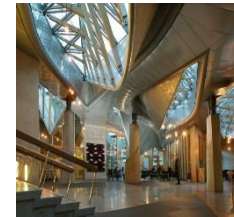
Habitats & Wild Birds Directives

- Nationally

Water Environment Water Services Act

Floods Risk Management (Scotland) Act

Nature Conservation (Scotland) Act;



WFD and Floods recognise a ‘Catchment approach’

Leading to formal, ‘top-down’ River Basin Management Planning

Still focus by sectors, but beginnings of (theoretical) integration

2. Drivers of change in Governance

b. Informal – the evolution of Tweed Forum

The “Yellow Digger” in the river...



Tweed Forum owes its existence to a single event, at a single location - the ultimate “Bottom up” origin...who is responsible for ‘managing/controlling river works?....

Tweed Commissioners
Scottish Natural Heritage
Tweed River Purification Board

3. Rise of alternative governance systems

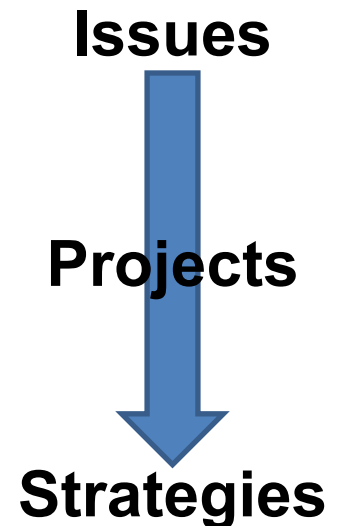
The rise of a stakeholder-led, 'bottom up' governance

Three Phases of Forum:

(1) 1991 – 1999: the **Forum** - *informal talking shop, loose membership, reactive*

(2) 1999 – 2008: the **Limited company** and *the 1st Tweed Catchment Management Plan*

(3) 2008 → the **Stakeholder "institution"** *engaging in policy local & nationally*



Increasing engagement with science into policy, with government and statutory bodies, and the local community. Increasing scale of ambition and connections

Phase 1 Loose association and reactive “talking shop”

- Co-ordination of activities, knowledge exchange, clarification
- Cross-border representation from outset
- Voluntary, flexible membership, made up of local Tweed based environmental, regulatory and planning organisations
- Increasing membership groups

Deliveries:

- Technical notes – e.g. use of “*midstream*” herbicide near water courses
- Tweed Fact Pack – who is responsible for what?
- Resource directory
- Advisory notes – e.g. Canoeists and Fishermen
- Working protocols for undertaking river works

Phase 2 – the Limited Company (1999 –2008) - Catchment-wide project delivery through major funding bid

Moving towards Local Communities' own goals

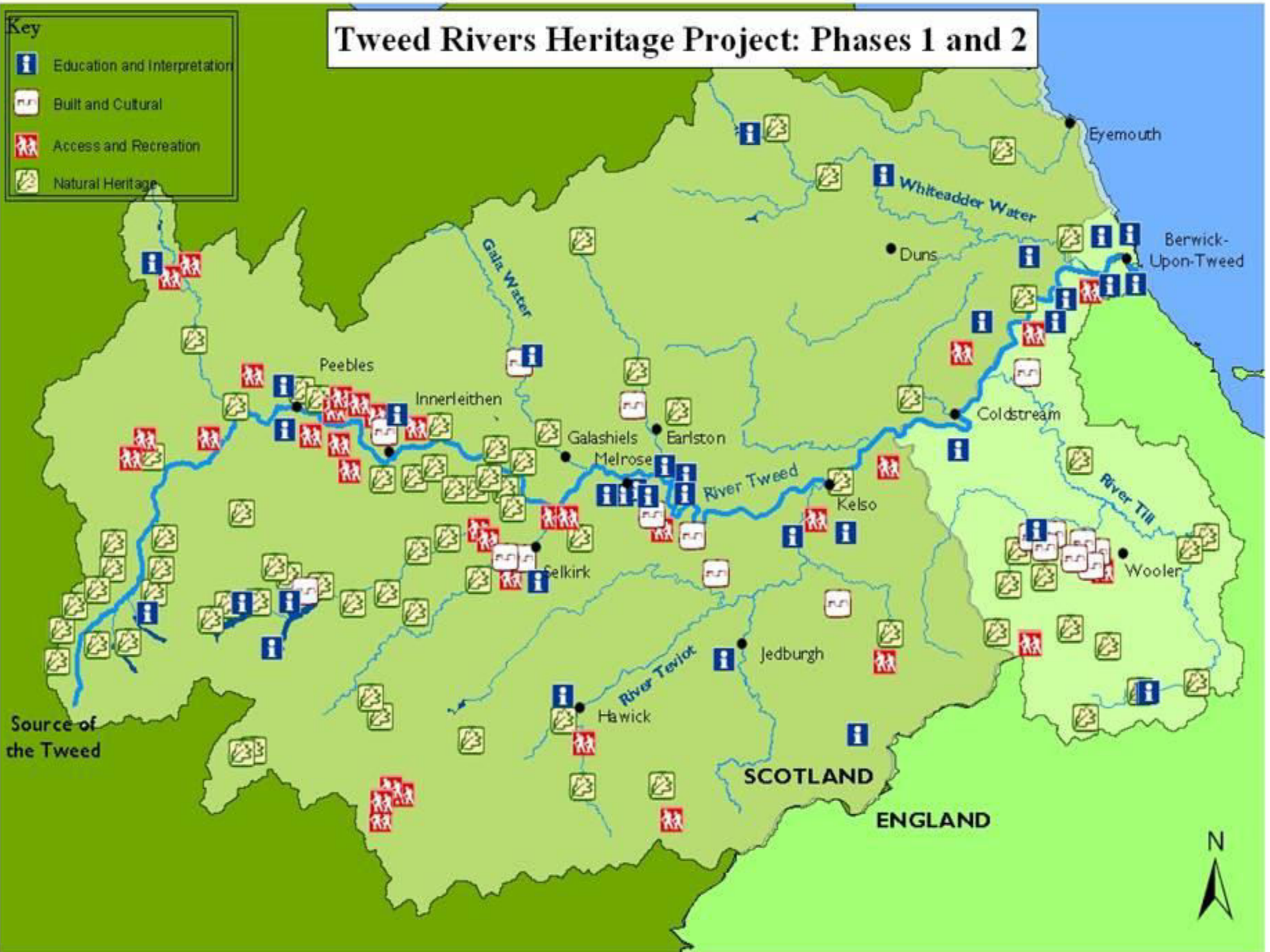
New role as a facilitator to bring together the wishes of a wide range of groups across the catchment;

- **Focus on 4 topic groups (built & cultural; education & interpretation; access & recreation; natural heritage)**
- **Identified some 63 potential projects with community – eventually over 50 projects delivered through Heritage Lottery Funding**
- **unequal partners – leaders *individual believers* in major organisations, match funding challenges**

Tweed Rivers Heritage Project: Phases 1 and 2

Key

-  Education and Interpretation
-  Built and Cultural
-  Access and Recreation
-  Natural Heritage



Phase 2 – Moving towards Forum's own strategy

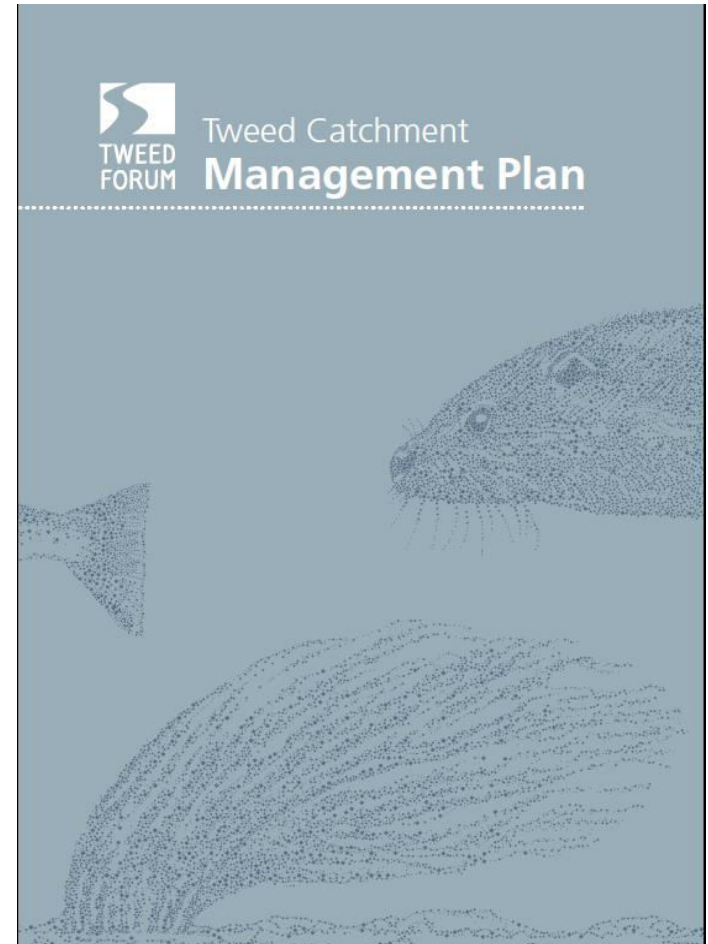
Changing governance:

The Big Challenge was to become a more strategic catchment player

New role as strategic leader for catchment management:

• 2002 - appointed a Project Officer to develop the:

Tweed Catchment Management Plan (CMP)



Phase 3 – the ‘Stakeholder Institution’

Increasingly recognised by others as a powerful “institution” – a local stakeholder led non-governmental organisation (NGO), devoted to catchment management

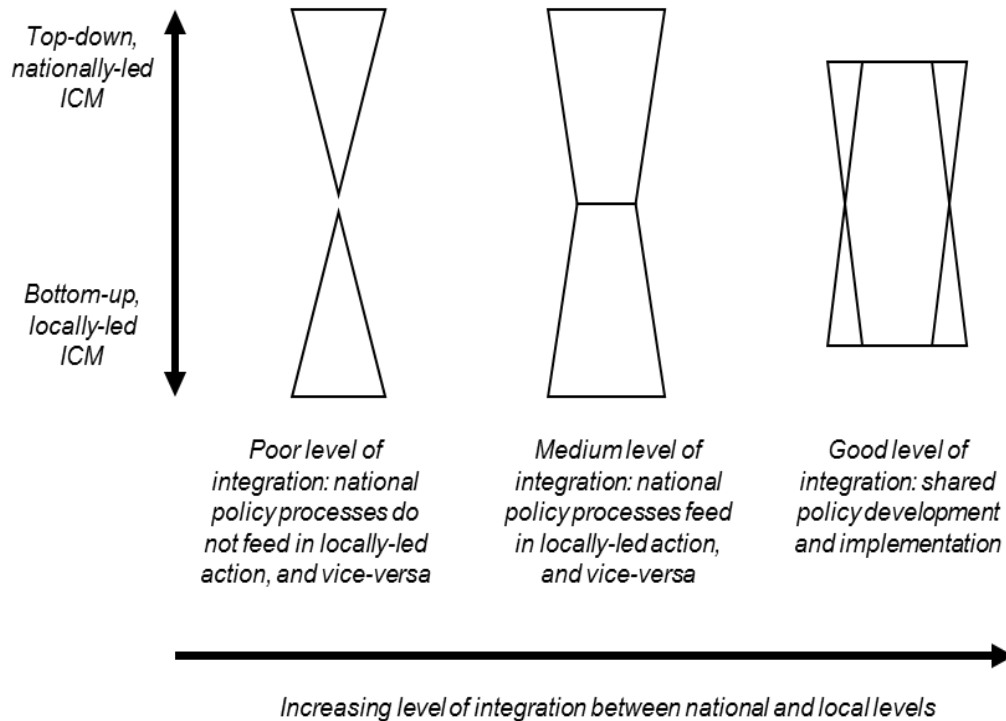
Forum’s Enhanced role: sitting between and alongside the statutory bodies and local communities on Tweed:

- Delivering ‘their’ Tweed Catchment Management Plan
- Delivering the statutory EU Water Framework Directive Area River Basin Management Plan
- Facilitating and enabling the work of others as a trusted independent voice
- Promoting and delivering science to underpin policy

4. Key features of Catchment management strategy and delivery – Trusted Intermediary linking state and society

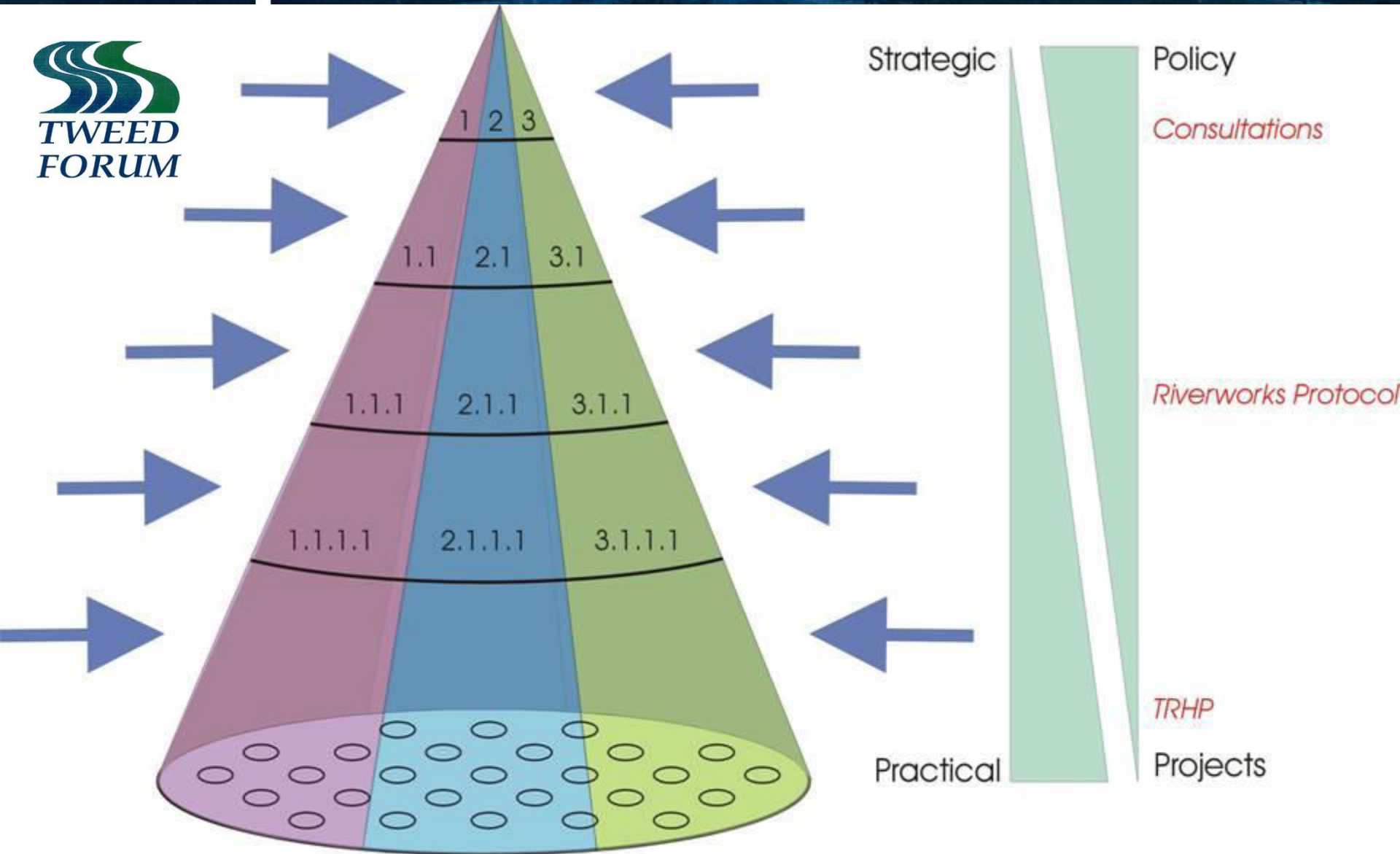


Participative Catchment-based NGO - Operating in the centre ground between academia and land managers; and between 'state' and 'society'



- Achieving multiple benefits for catchment management
- Bringing in new knowledge
- Bringing in new resources
- Bringing in new partners
- Taking an Ecosystems Approach to sustainable land / water management

Acting at Science, Policy and local delivery levels



Tweed Forum's CMP and the Government's statutory River Basin Management Plans for the EU Water Framework Directive (WFD)

Aligning Governance:

- In Scotland, stakeholder participation in WFD river basin management planning is done through 8 Area Advisory Groups
- **Uniquely, Tweed Forum is used as the Area Advisory Group for the Tweed River basin, as Government recognise that Effective stakeholder engagement already exists**
- Helps integrate RBMP with Tweed CMP, and ensures regulatory regimes meet in the middle
- Use Tweed Forum networks and working groups to resolve specific issues and promote best practice



5. Integrated Catchment management and future directions

- True integration will require dealing with many complexities, many uncertainties, multiple stakeholders, multiple scales and the delivery of multiple benefits.
- Policy changes will require science-evidence base, including stakeholder acceptance
- Progress requires mature partnership working and a trusted intermediary
- Governance alignment to deliver ‘top down’ and ‘bottom up’ aims and objectives – statutory (WFD) and non-statutory (community aspirations)

A classic ‘Wicked Problem’

- **Ecosystem Approach to Land Use - pilot**

Working with national & local government, and communities

Piloting an Ecosystem Approach to Land Use Strategy at Catchment scale

Tweed Forum role to further the science in to policy process:

Test the delivery of **Scottish Land Use Strategy using an Ecosystem Approach** and *ecosystem service mapping at a regional scale*.

Work through '**democratic process**' and via **Stakeholder partnerships** to explore delivery of multiple benefits under different current and future *policy scenarios* round climate change

- Produced maps of 16 main Ecosystem services across all the catchment of Tweed in the Scottish Borders
- Major Stakeholder validation and engagement process (c 1,000) led by Tweed Forum

Next phase piloting delivery

