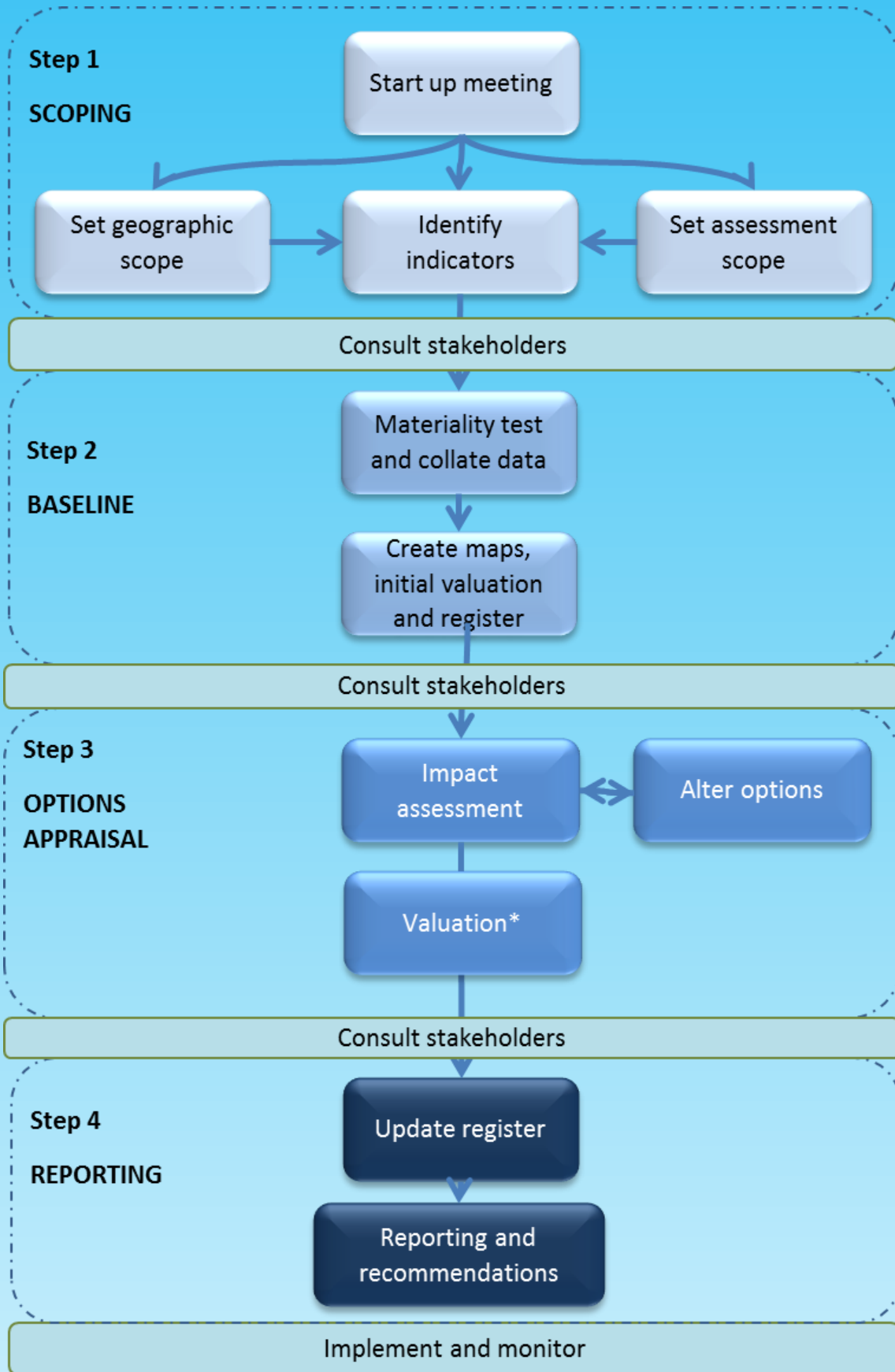
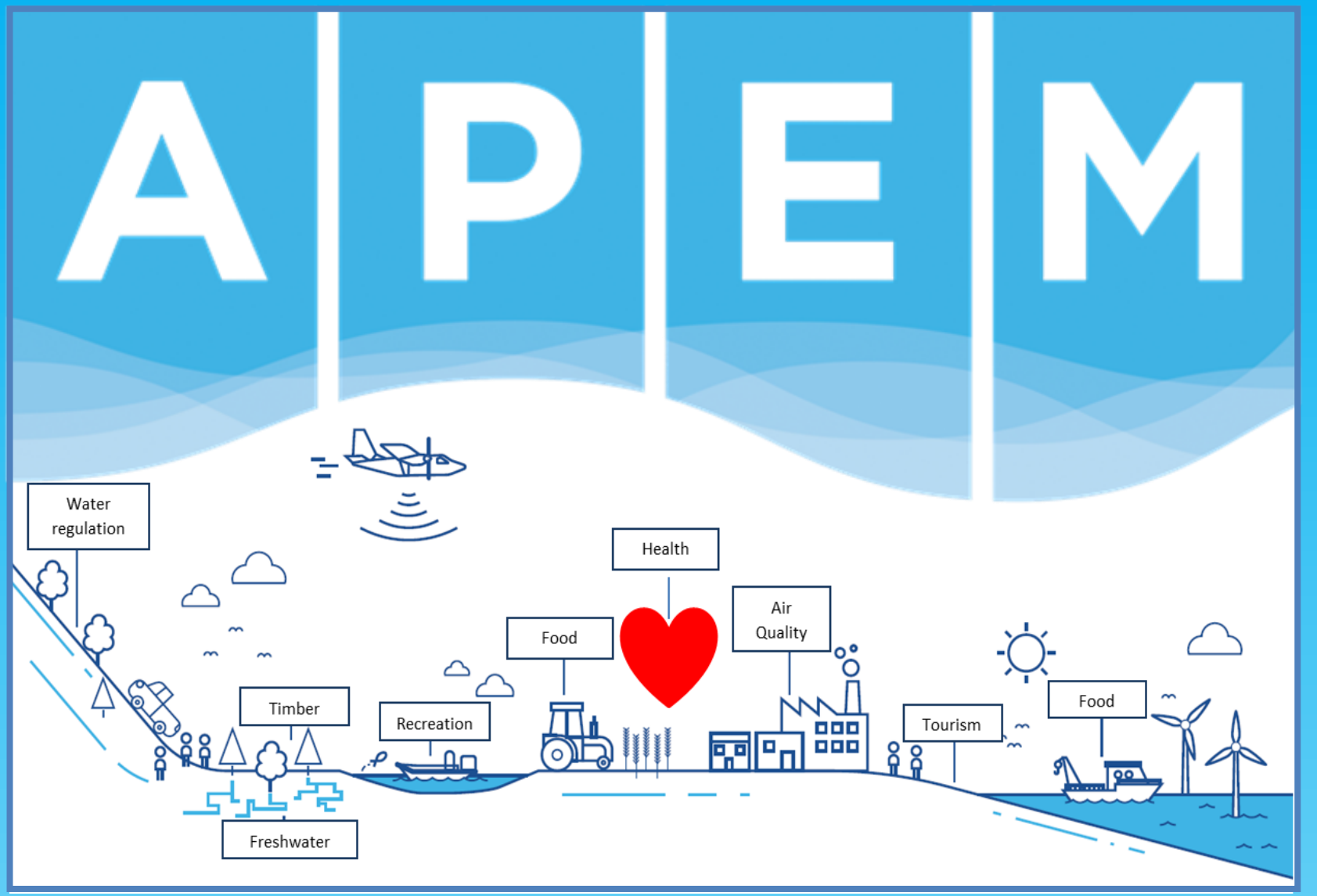


Natural Capital and river restoration: A possible approach



OVERVIEW

The natural capital approach is at the heart of the government's 25 Year Environment Plan and will drive better decision making and improved outcomes across a range of projects from flood risk management to water security and for a range of industries from water to development and infrastructure. APEM's easy and replicable 4 step approach can be used to:

- Identify the most significant benefits and positive natural capital impacts for land owners, businesses, partners and customers.
- Identify risks as well as opportunities to optimise activities, for example in water resource schemes and habitat restoration projects.
- Monitor, measure and collate evidence for natural capital and ecosystem services.
- Support impact assessments such as EIA, HRA or impacts on the natural environment from pollution incidents etc.
- Carry out options appraisal to mitigate impacts and ensure no deterioration of the environment.



APEM have based their approach on the Natural Capital Protocol framework, the work undertaken by the Environment Agency on River Basin Management Plans and Water Resource Management Plans and the developing methodology being created by Natural England to ensure that any assessments are robust, replicable and comparable to other assessments in the UK.

Stakeholder involvement

Natural capital assessments can be very strongly reliant on stakeholder involvement due to factors such as: evidence gathering, options appraisal and evaluation of services. As such it is important to ensure the right stakeholders are involved and embedded in the process from an early stage.

| FRAME WORK | SCOPE | MEASURE AND VALUE | APPLY |
|---|---|---|---|
| 1. Get started | 2. Define the objective | 3. Determine the metrics and/or indicators | 4. Measure impact |
| 5. Why invest in natural capital assessment? | 6. What is the objective of your assessment? | 7. What resources are available to support your assessment? | 8. How do you plan to measure and value natural capital? |
| 9. How do you plan to measure and value natural capital? | 10. What are the objectives of your assessment? | 11. What are the metrics and/or indicators you will use to measure natural capital? | 12. How do you plan to measure and value natural capital? |
| 13. How do you plan to measure and value natural capital? | 14. How do you plan to measure and value natural capital? | 15. How do you plan to measure and value natural capital? | 16. How do you plan to measure and value natural capital? |

PRINCIPLES: Relevance, Rigor, Replicability, Consistency

STEP 1: SCOPING

The assessment needs to have clear boundaries based on the scale of the restoration and wider benefits. As such at this stage we, in partnership with local stakeholders:

- Set the geographic scope;
- Set the assessment scope; and
- Identify the scope of indicators to be used for natural capital and ecosystem services.

These three factors would be agreed with the project lead and the project steering group at a start-up meeting for any given project.



STEP 1

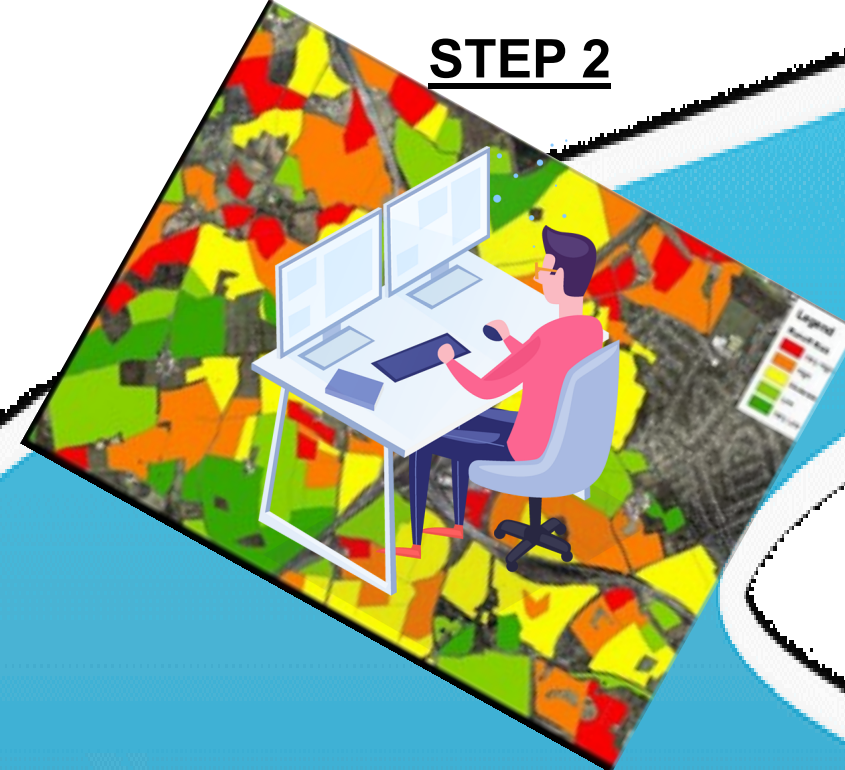
STEP 2: BASELINE

Materiality test and collate data

- Based on the habitats being restored the relevant indicators and ecosystem services are identified;
- This would be expected to include a range of quantity (i.e. the extent of natural capital), quality (i.e. the condition of habitats) and ecosystem service flows (i.e. how the environment is used) indicators;
- Freely available data are collated in line with the indicators and habitats being restored. This could include WFD data, water quality, satellite images etc.

Create maps, initial valuation and register

- Maps are produced for each indicator (or set of) to show the natural capital related to the study area;
- Maps are designed to facilitate stakeholder involvement and show ecosystem services as well as natural capital;
- Where data isn't available for mapping the groupings would be used to provide a narrative to describe the natural environment and the benefits they provide to South west water and society in the study area;
- Maps are designed to either show the baseline for impact assessments or to highlight opportunity areas where restoration schemes could lead to the greatest benefits



STEP 2

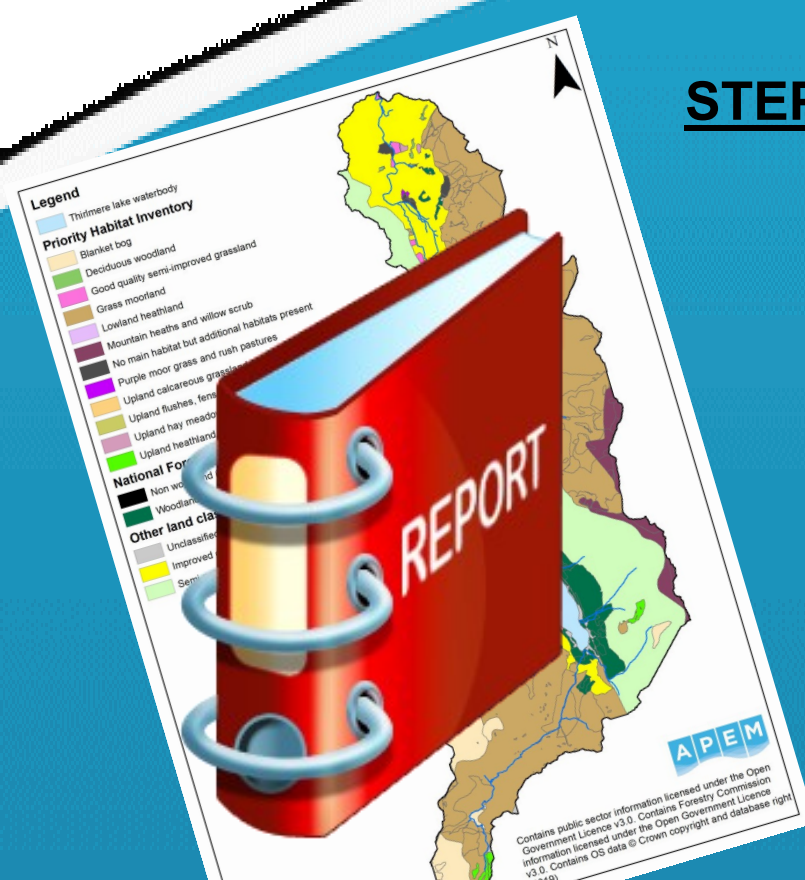
STEP 4: REPORTING AND RECOMMENDATIONS

Updating registers

- Updated to show future baseline(s)
- Set out so can be valued

Reporting and recommendations

- Succinct map based reports
- Natural Capital action plans



STEP 4



STEP 3



STEP 3: OPTIONS APPRAISAL

- Opportunity mapping used to identify best likely areas or options for natural capital and ecosystem services;
- NC impact assessments recorded for each option, aimed primarily at the areas directly impacted but accounting for wider benefits;
- Impacts would be identified based on the potential for increases or decreases in the indicators post project completion (e.g. after any habitat had established, construction phases been completed etc.).
- Significance of impacts would be based on factors such as:
 - The size of the area affected;
 - Effects on the quality of habitat in the area; and
 - Effects on ecosystem services provided by the area.

Example of potential scoring scheme

| Impact Score | Scale of change in NC indicator |
|--------------|---------------------------------|
| 4 | Significant increase predicted |
| 2 | Minor increase predicted |
| 0 | No change predicted |
| -2 | Minor decrease predicted |
| -4 | Major decrease predicted |

Valuation (optional)

- Any valuation would be part of the options appraisal and impact assessment steps as they would provide indications on the values and therefore costs to implement any of the most beneficial options.

MONITORING AND IMPLEMENTATION

Important to provide evidence on effectiveness and value of actions

- Monitor natural capital indicators
- Track progress against objectives
- Integrated programmes based on standard monitoring for efficiencies



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