



Restoring Europe's Rivers

The RESTORE project is made possible with the contribution of the LIFE+ financial instrument of the European Community



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River Restoration: setting project objectives

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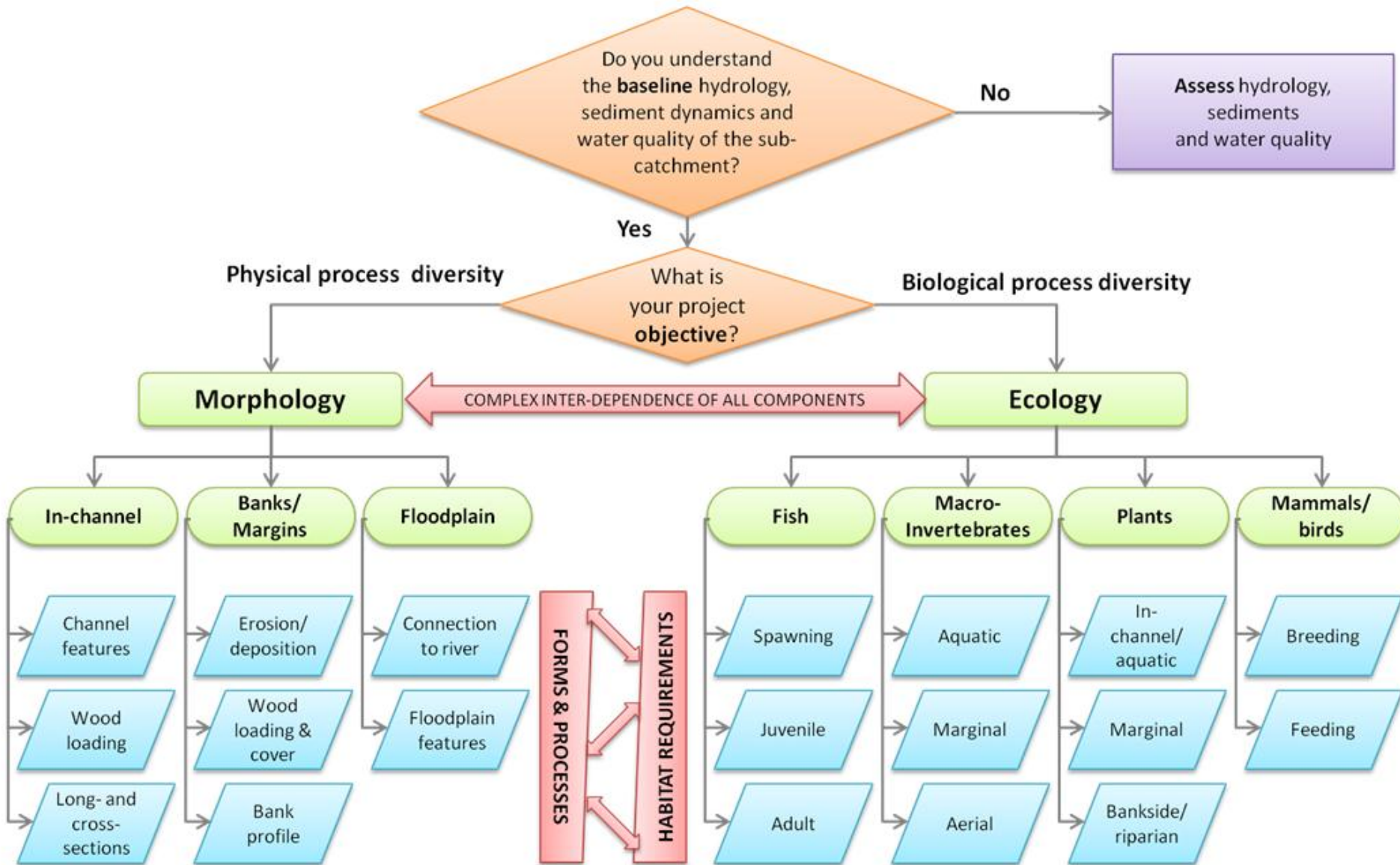
RESTORE West Region Lead

Questions to consider

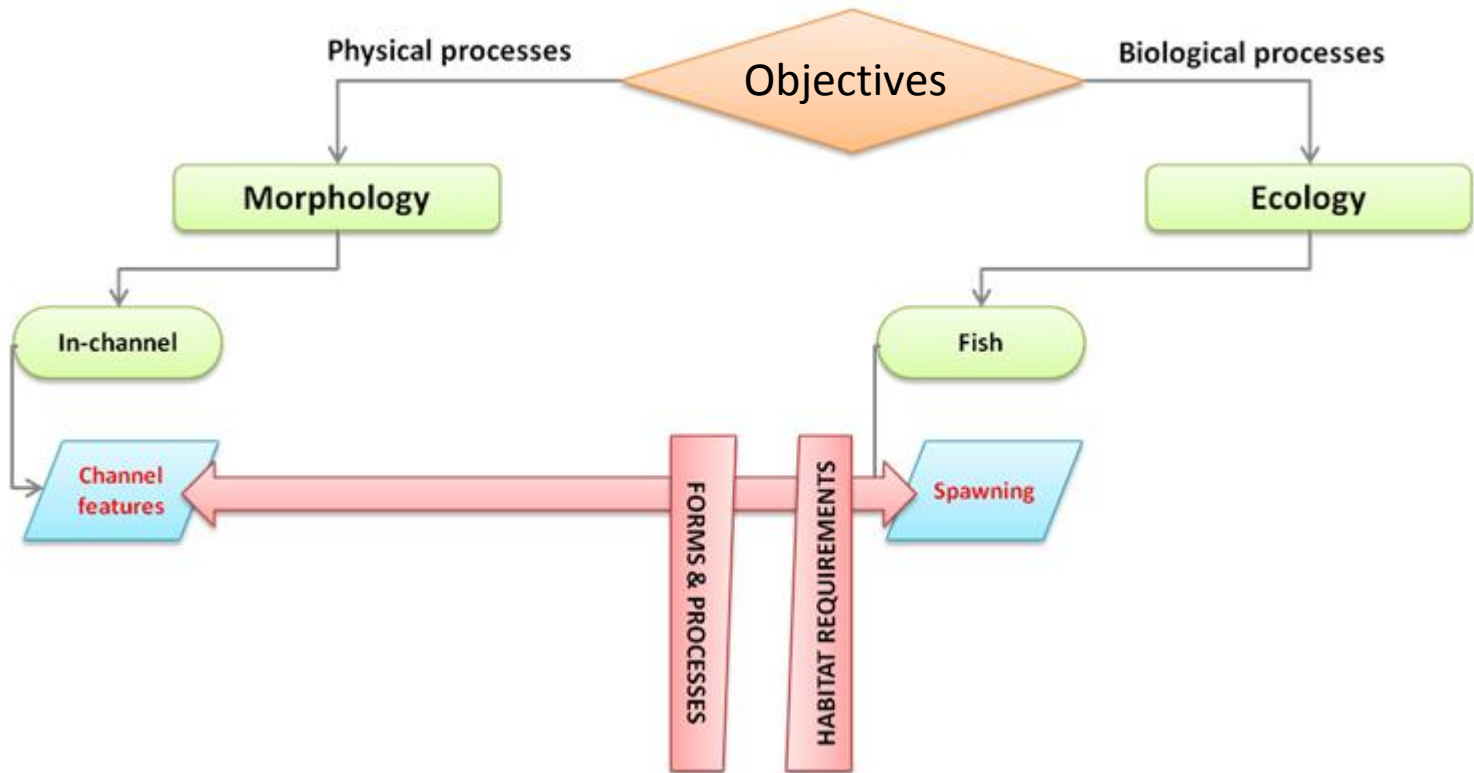
- Is the main aim of your project to improve the physical processes of the river or increase the biological diversity of your section(s)?
- If your focus is to increase river forms and processes, what will be the benefit for the ecology (specific fauna and flora and, where appropriate, part(s) of life cycle(s))?
- If your focus is to increase ecological (habitat) diversity for a range of fauna and/or flora, which parts of the life cycle are you aiming to restore for and what physical river features are you expecting to develop to support this?
- Are your objectives:
 - Clear (Specific)?
 - Quantifiable (Measurable)?
 - Achievable, Realistic and Time-bound?

Interrelated objectives

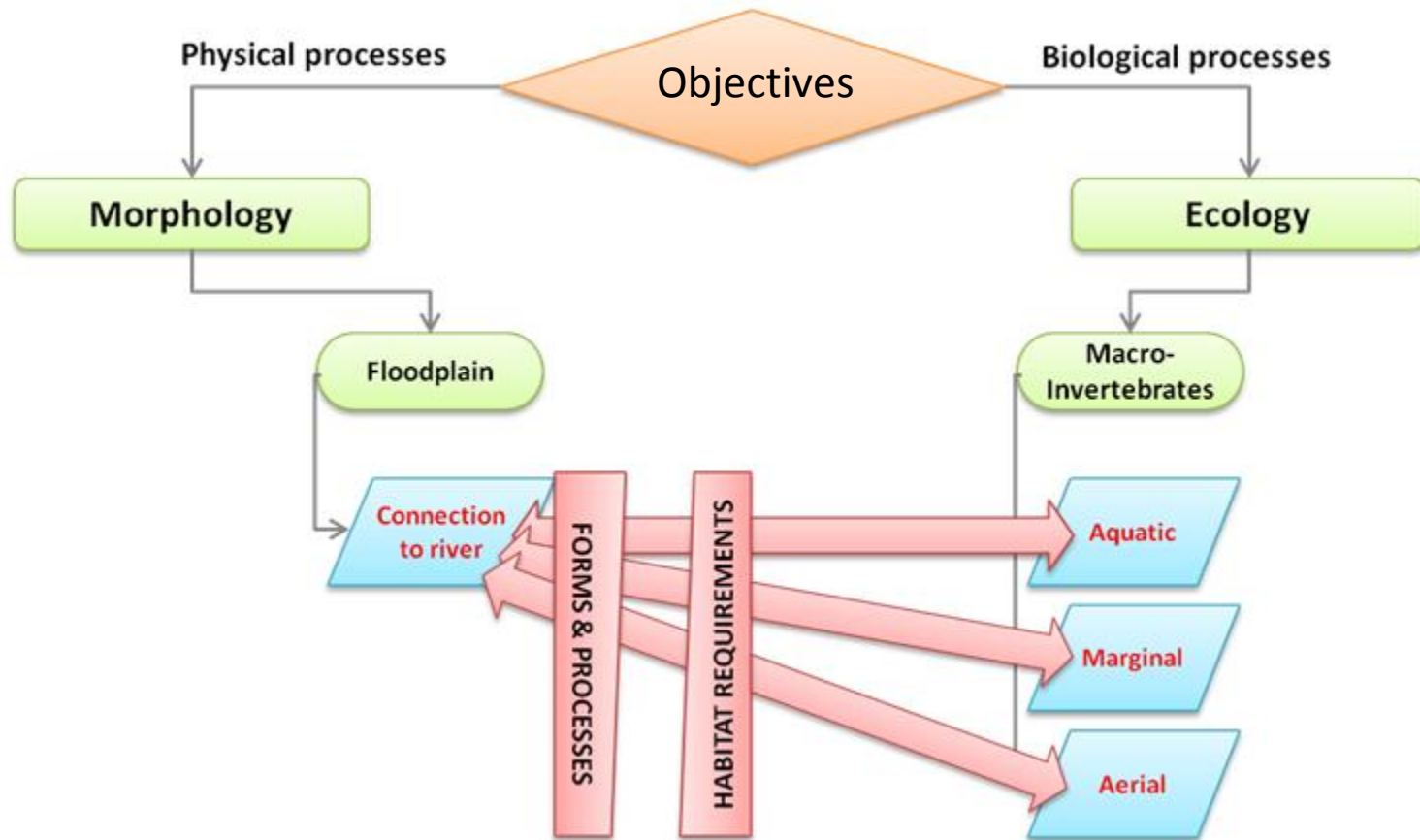
- interrelationships between ecological and hydro-morphological processes
 - improving biodiversity
 - restoration of natural forms and processes
- Usually river restoration starts with the premise that natural process change is necessary to achieve a specific habitat function



Aim: Increase salmon spawning and egg survival by introducing gravels and narrowing the river to increase flow velocity variability.



Aim: Restore floodplain connectivity to increase habitat for all invertebrate life stages.



Setting objectives – stage 1

Define the Aim

Firstly determine the overall aim of the project.

For example:

- Restore floodplain dynamics by reconnecting to the river;
- Increase in-channel habitat heterogeneity (range and diversity);
- Increase salmon spawning opportunities upstream of a weir.

*You now know what you wish to achieve,
but this does not define how you are going to do this
or how to measure success.*

Setting objectives – stage 2

Specific Project Targets

This requires the overall aim to be defined as specific targets.

Aim : Restore floodplain dynamics by reconnecting the river

Targets:

- Cut a new sinuous course at a new bed level to encourage a more natural floodplain connectivity flow regime.
- Establish floodplain vegetation by planting.
- Lessen flood risk to properties.

You can now identify your key aim(s) and specific targets in terms of river restoration techniques



Setting objectives – stage 3

- Having identified aims and targets, SMART objectives can be set as shown in the examples below. How achievable is it to:
 - a) Measure the outcomes of the project
 - b) Define what is realistic both in terms of project size and available time/resources.

**Specific and *Measurable*,
with A, R & T applying more generically**

Achievable, Realistic and over what Timeframe

- **A** - What can be achieved should be determined from a review of evidence of success on other, preferably similar, sites to the one in question.
- **R** - Consider carefully your available resources (money, people, and time) and factor in longer-term post-project management which may be necessary .
- **T** - Not only do you have to consider the duration of the project works in order to allocate your resources, but the timing may be critical.

Restoring a floodplain

Case: Opportunity to recreate meanders on a 2 km reach through open farmland in a lowland clay catchment, to increase connectivity with the floodplain. Floodplain can then be planted with new trees which, in time, should contribute woody debris to the channel and improve biodiversity. Properties nearby must first be flood proofed.

Main targets:

- Cut a new meandering river at a new bed level to encourage a more natural floodplain connectivity flow regime.
- Plant up the floodplain.
- Ensure flood risk to any properties are not negatively affected.
- Increase habitat diversity.

SMART objectives:

- Cut new meandering channel for target reach, to increase channel length by an appropriate % of the original, increasing sinuosity.
- Design new bed level to increase frequency of out-of-bank flows.
- Plant up riparian zone to increase area of native woody vegetation cover, established after five years.
- Create wet woodland in the floodplain by planting with native species found naturally in the catchment, increasing area of woody vegetation coverage, whilst maintaining open areas, after five years.
- Create flood bunds around at-risk properties, set-back as far as possible from the river, to maintain at least current protection standards.
- Increase macro-invertebrate diversity by increasing channel and floodplain morphological variability within three years (e.g., riffles, pools, glides, permanently and seasonally wet floodplain areas).
- Increase abundance and number of species of over-wintering wildfowl over two seasons.

Specific

Measurable

Time-Bound

