

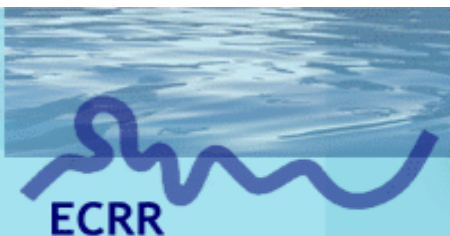


RIVER RESTORATION AND WFD

**Bruna
Gumiero:**
ECRR, CIRF, Univ.
of Bologna

Europe-INBO 2007:
Rome 8 and 9 November





European Centre for River Restoration



EUROPEAN CENTRE FOR RIVER RESTORATION: no-profit organisation.

Website: www.ecrr.org

MISSION

- Enhance **Ecological** river restoration throughout Europe.

VISION

- RR is an integral part of sustainable water management
- ECRR is connecting people and organizations working on river restoration (network / platform)
- ECRR supports development of good practices of river restoration





ECRR DEVELOPMENT

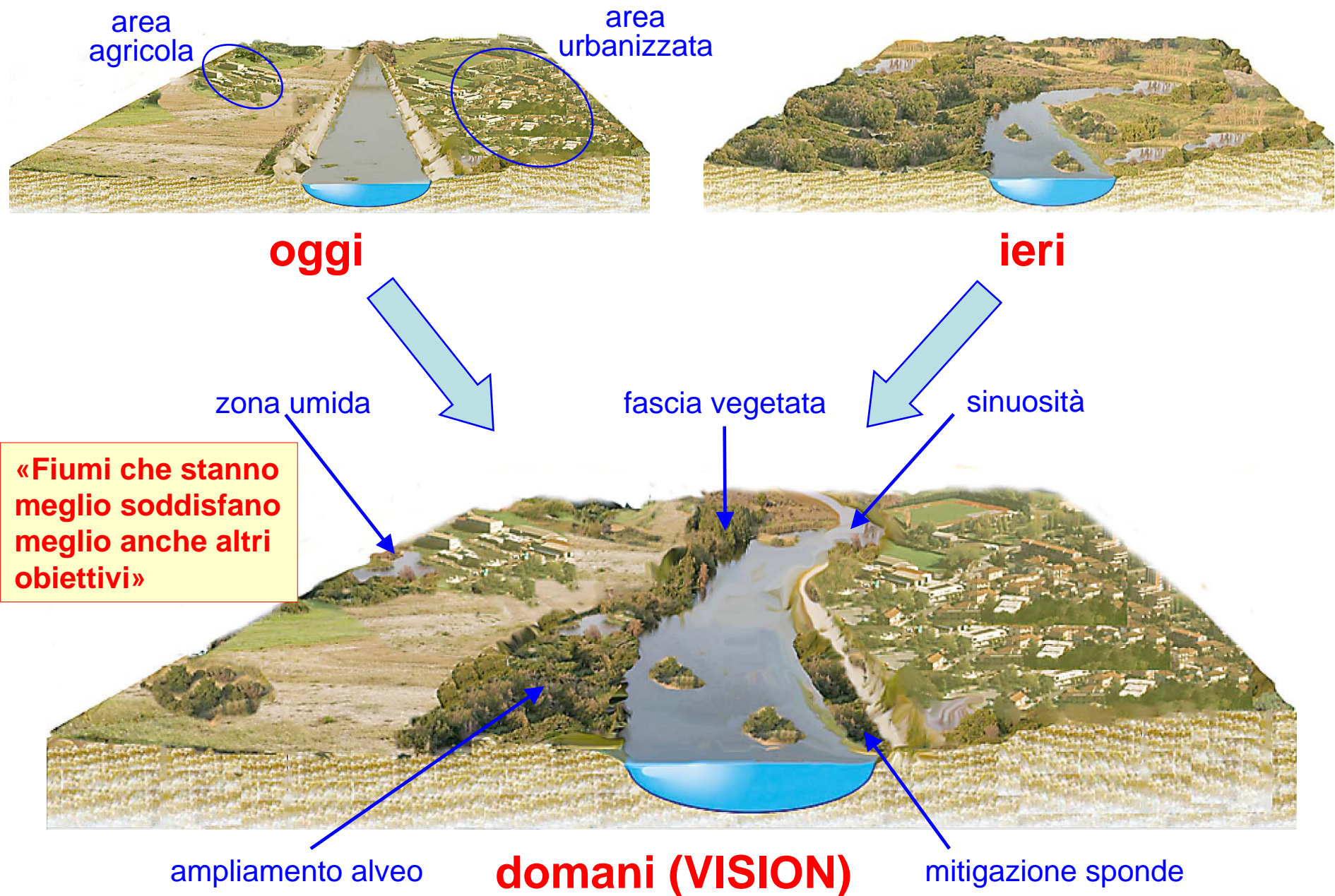
- 1999 – 2002: LIFE Project ECRR
- 1999 – 2002: Secretariat NERI/DK.
- 2002 – 2006: Secretariat RIZA/NL
- **2007 – present: secretariat CIRF/I;
Centro Italiano per la Riqualifizione
Fluviale**
- 1999 – 2004: Chairman Torben Moth Iverson
NERI/DK
- 2004 – present: Chairman Bart Fokkens
RIZA/NL

RIVER RESTORATION AND THE EUROPEAN WATER FRAMEWORK DIRECTIVE

- River restoration should be based on an integrated, towards all functions, ecosystem approach.
- The European Water Framework Directive is based on an integrated, towards management, river basin approach.



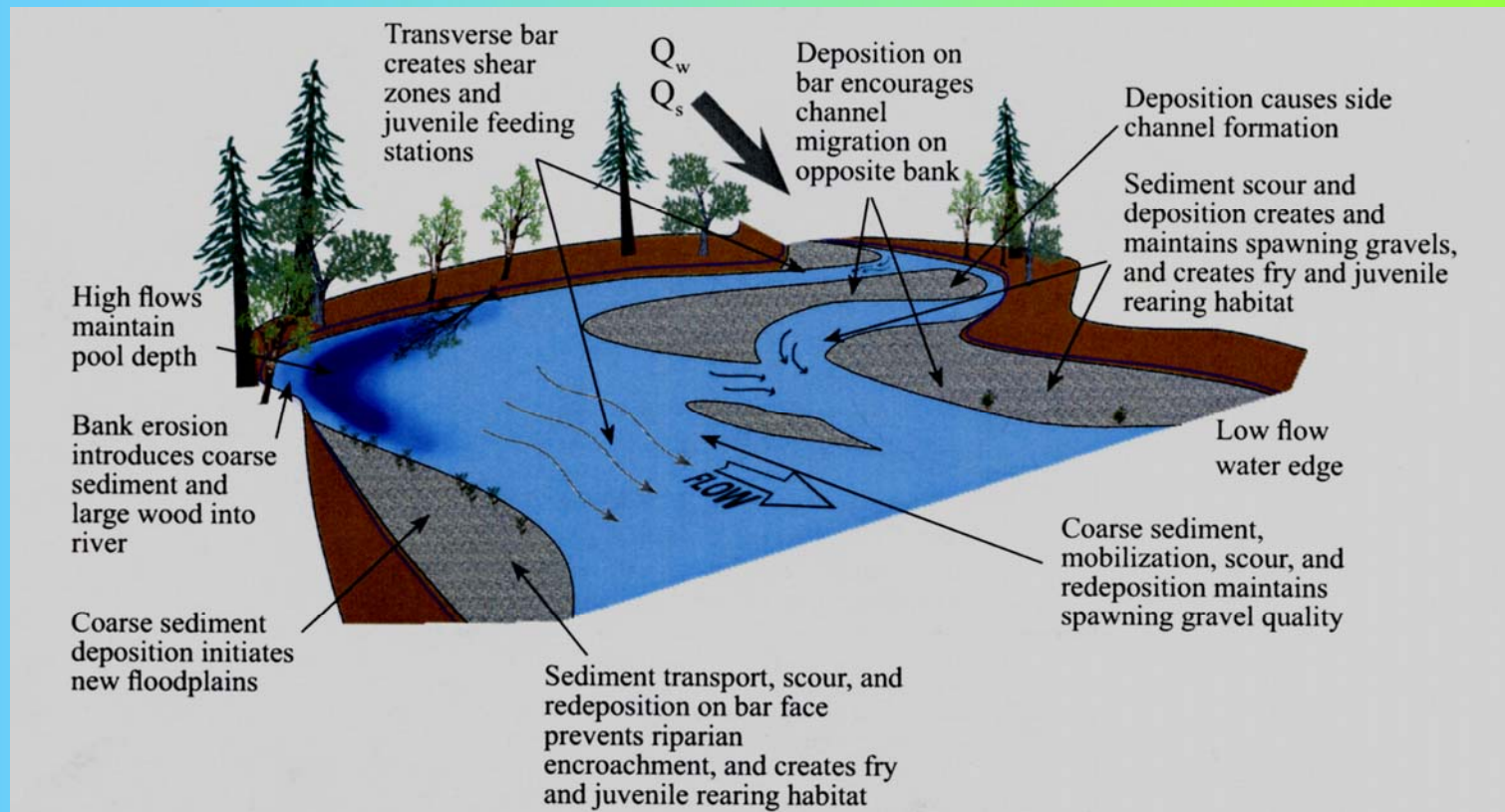
La Vision della riqualificazione





REFERENCE STATE

‘Guiding image’: **ecologically dynamic state** (Palmer et al., 2005): corresponding to **dynamic equilibrium** in geomorphology



Important habitats depend on active channel migration
(source: McBain and Trush)



CLIMATE CHANGE NEEDS PROCESS-BASED APPROACHES

- Restoration of physical processes rather than forms to enhance ecosystem resilience.

New philosophy in river engineering

- Flood protection and ecological needs are equal
- The river corridor needs more room



SPATIAL AND TEMPORAL SCALES

Problems are typically formulated by managers:

- On short time scales
- At local/reach scales

Solutions require understanding of:

- Catchment/system wide context
- Longer time scales



MORPHOLOGICAL RECONSTRUCTION



Limit morphological reconstruction to cases with **low natural recovery potential** (low-energy, low sediment load channels) or **constrained** (urban channels)



NATURAL RECOVERY

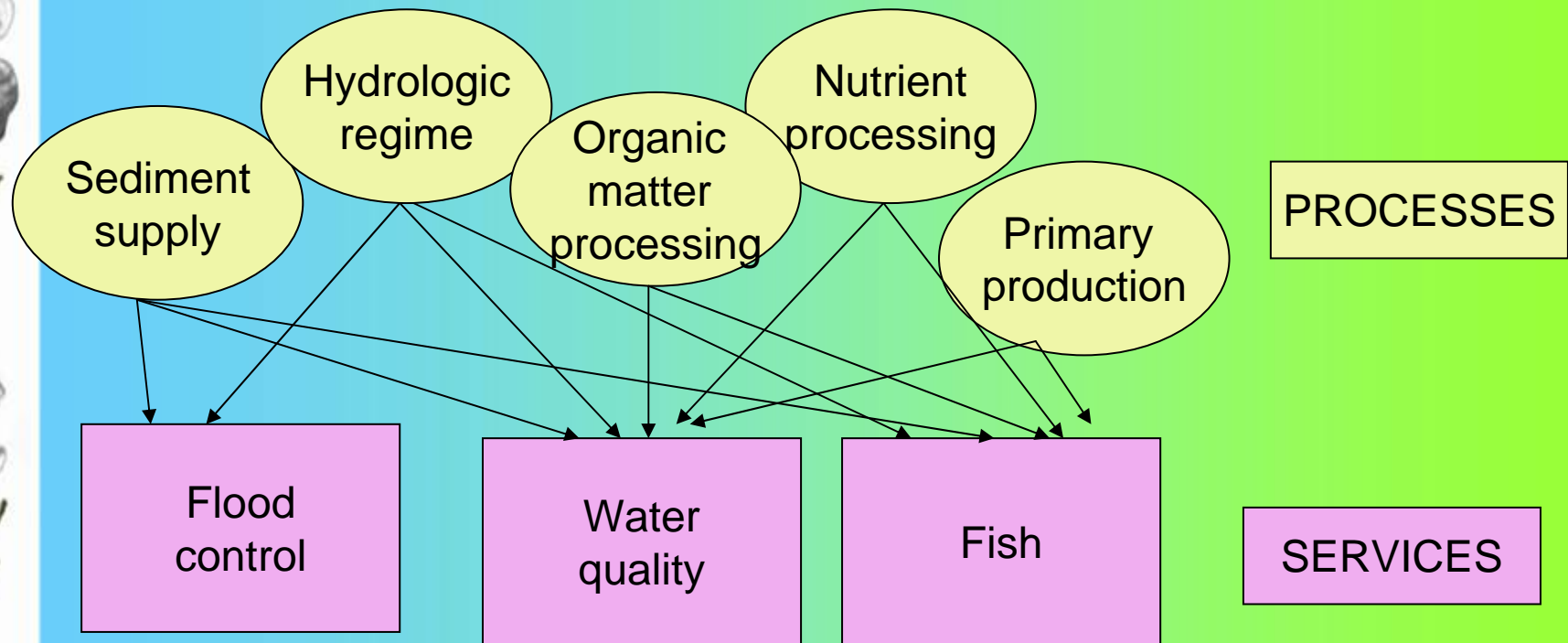


Where sediment load and stream power are sufficiently high, **promoting natural recovery** is a better strategy



So...now an alternative approach is emerging

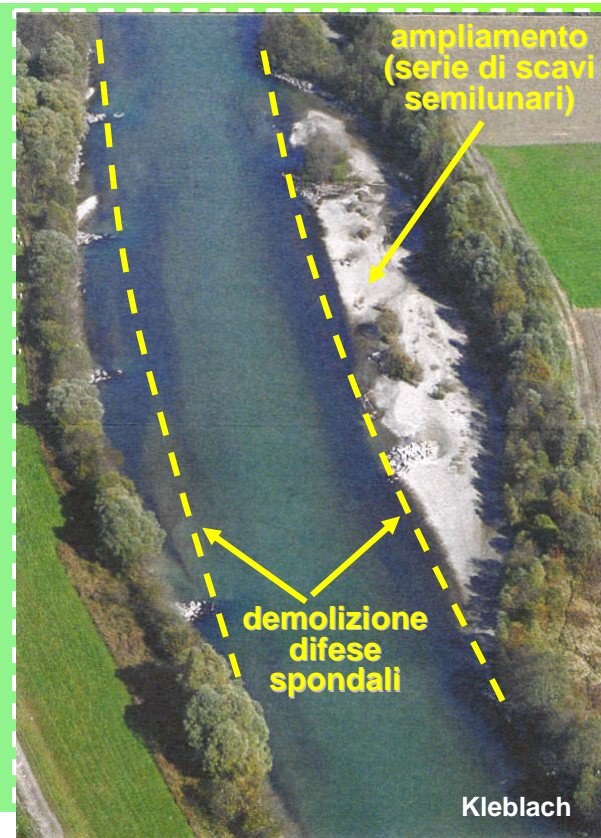
- Restore processes (ecosystem function)



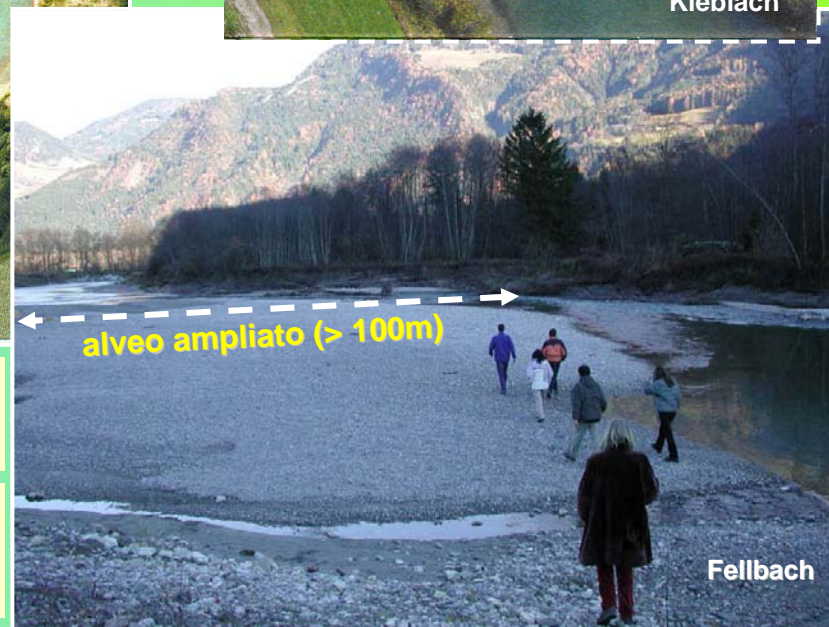


RR CAN BE CONVENIENT

**more
nature!**



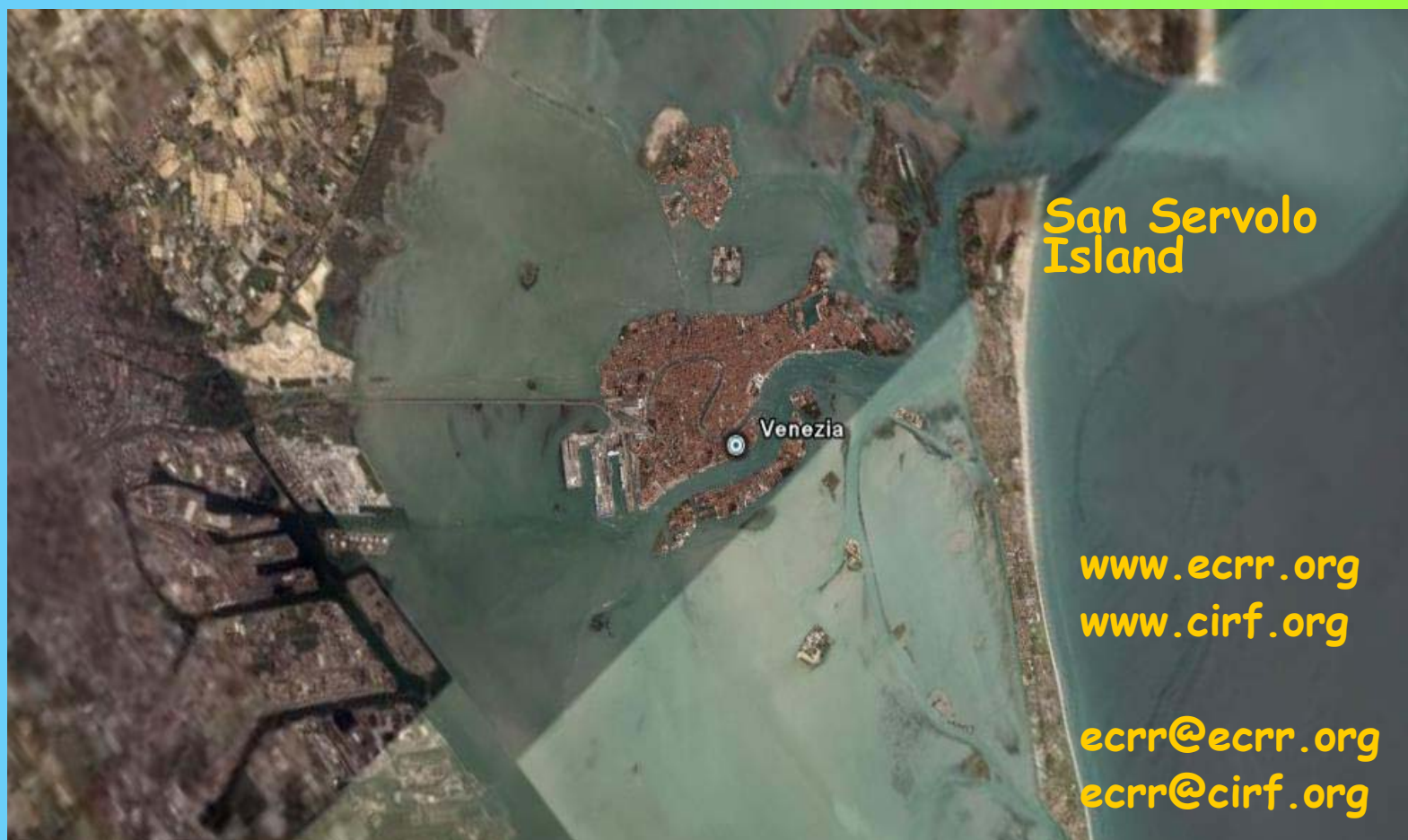
**less
maintenance
charges**





4th ECRR RIVER RESTORATION INTERNATIONAL CONFERENCE

16-21 June 2008



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