



Implementing Biodiversity Offsets – Challenges and Opportunities

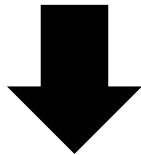
Lessons learned from the French experience

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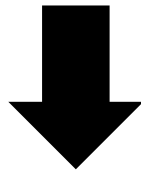
Fabien Quétier

Mitigating impacts on biodiversity

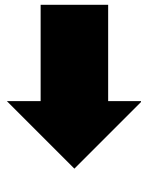
Avoid



Reduce



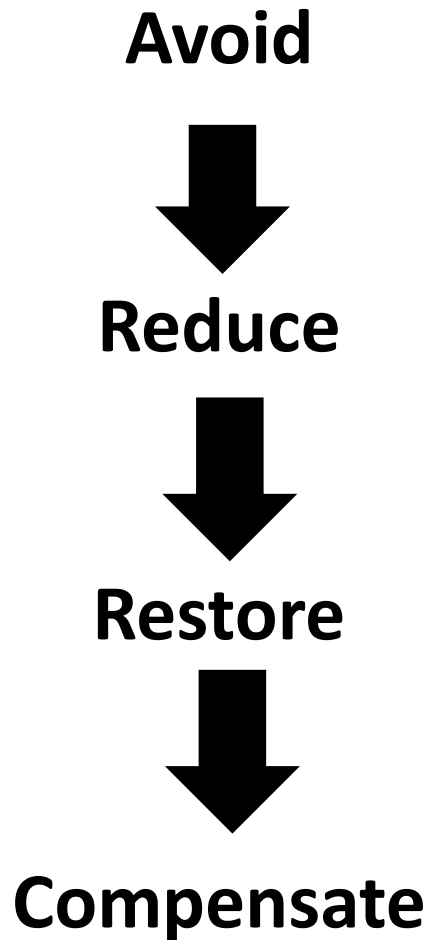
Restore



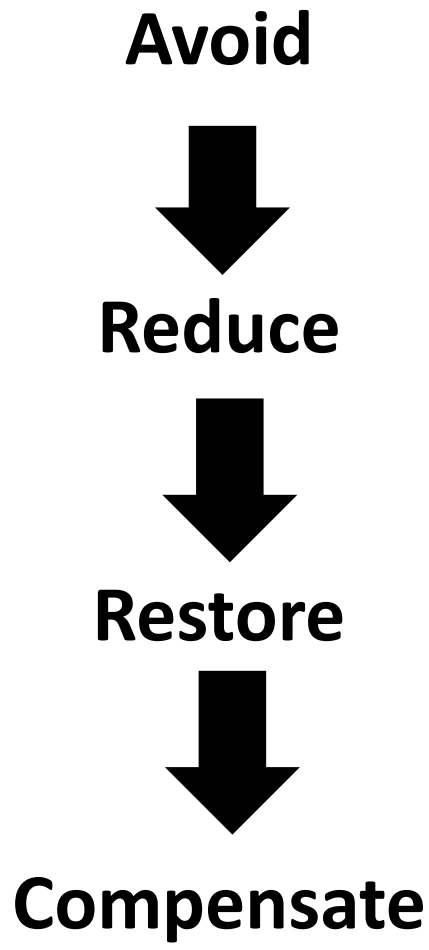
Residual Impacts



Mitigating impacts on biodiversity



Mitigating impacts on biodiversity



Prevent

Repair



Mitigating impacts on biodiversity

Avoid
↓
Reduce
↓
Restore
↓
Offset

Prevent

Repair



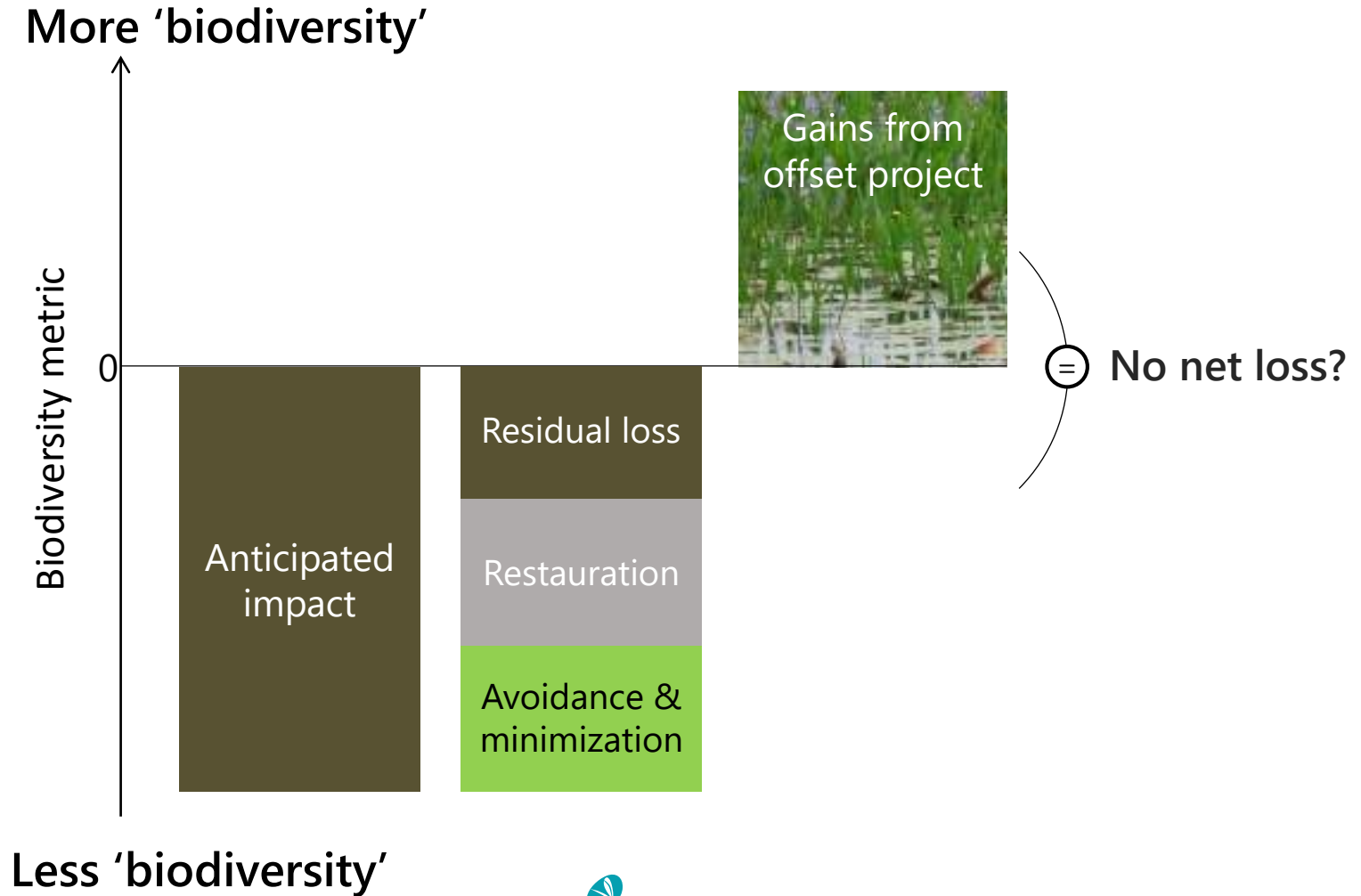
Achieving No Net Loss through offsets



*Biodiversity offsets are **measurable conservation outcomes** resulting from actions designed to compensate for **significant residual adverse biodiversity impacts** arising from project development **after appropriate prevention and mitigation measures have been taken.***

*Goal is to achieve **no net loss** and preferably a **net gain** of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity.*

No Net Loss



Drivers of No Net Loss goals



No Net Loss in France: it takes time!

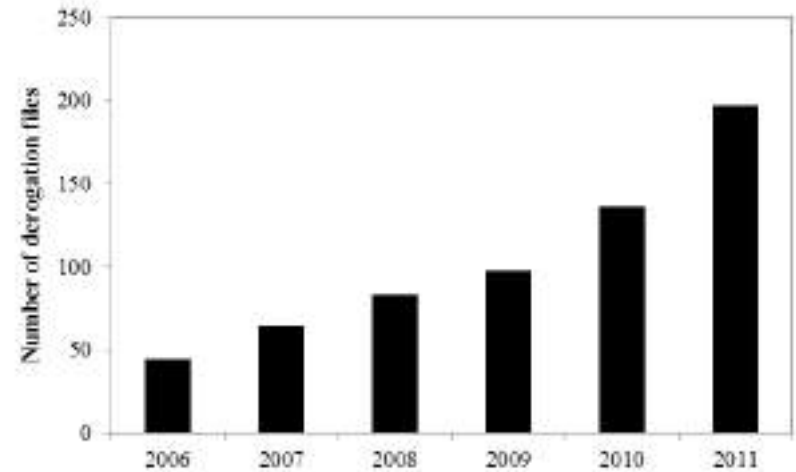
- **1976** : Nature protection law (introduces EIA and mitigation hierarchy)
- **1992** : Water law (reformed 2006)
- **2001** : Forest code
- **2004** : SEA and Water Directives
- **2006-2008**: Progressive transposition of Habitats directive of 1992
- **2008**: Transposition of Environmental Liability Directive
- **2010-2012**: EIA & SEA reforms
- **2012 & 2013**: Guidance on mitigation
- **2013**: “Green and blue veins” (ecological networks)
- **2014**: New forest code
- **2016**: New biodiversity law



2007 : protected species derogations “*the net result of a derogation should be neutral or positive for a Species*” (EC 2007 Guidance)

No Net Loss in France: it takes time!

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From Quétier, Regnery & Levrel (2014),
Environmental Science & Policy



Gagea lacaitae



Timon lepidus

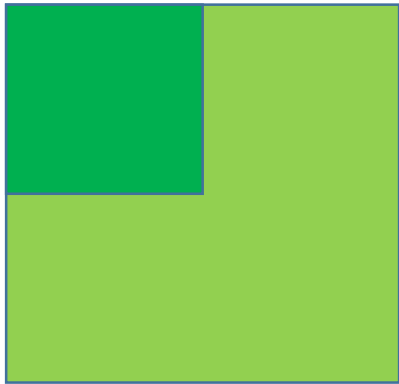
A typical offset in France...



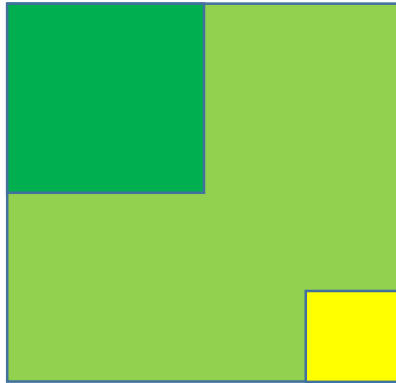
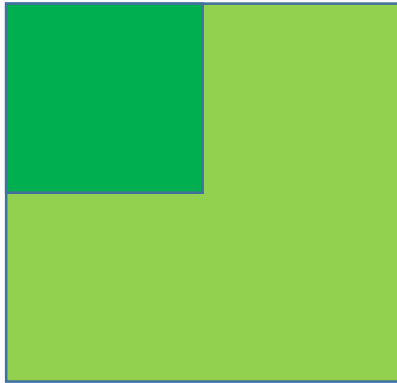
Crau sèche © A. Wolff - CEEP

- Pipeline crosses 6ha of “coussoul” steppe (= 0.06% of a Natura 2000 site)
- Offset through the purchase of 70ha of existing “coussoul” (~1.2% of project cost)
- Land handed over to a local NGO (with regional nature reserve status)
- No funding for the management of the offset site

How much compensation?



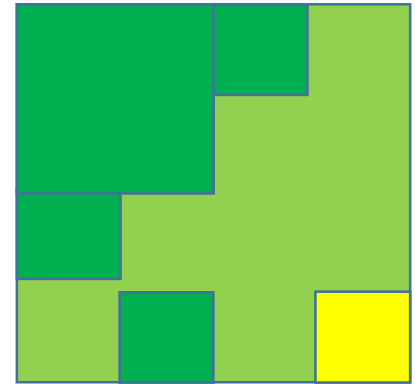
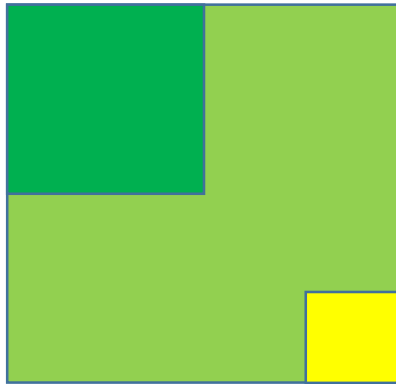
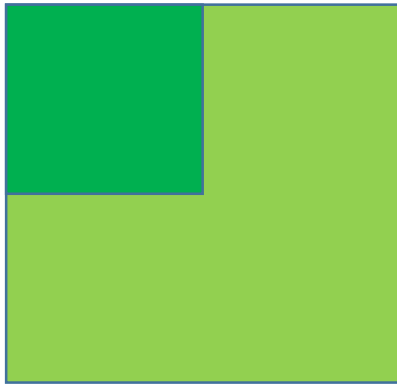
How much compensation?



Ratio of 3 to 1



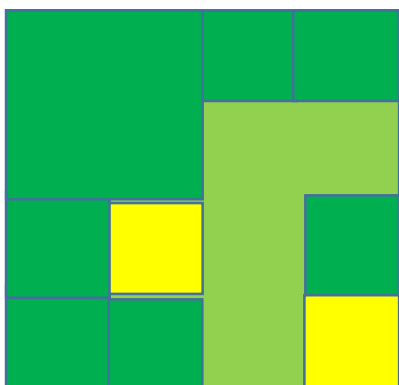
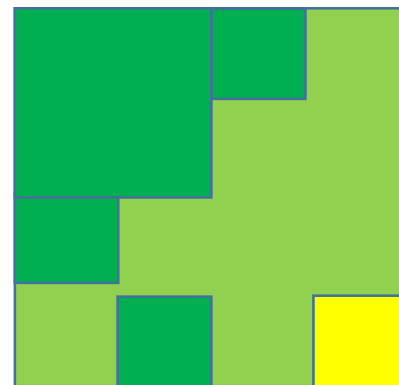
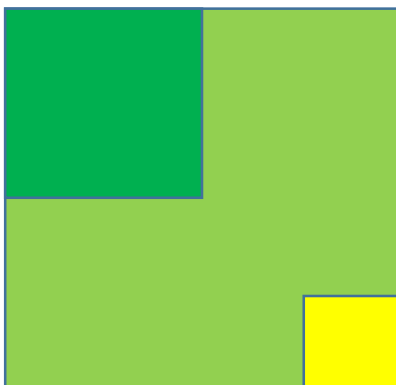
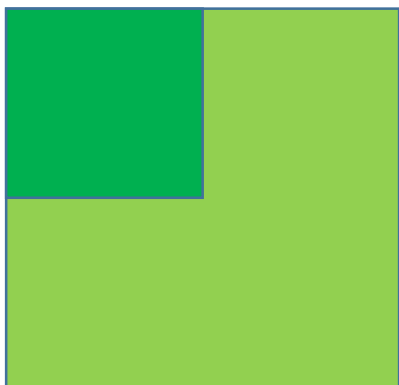
How much compensation?



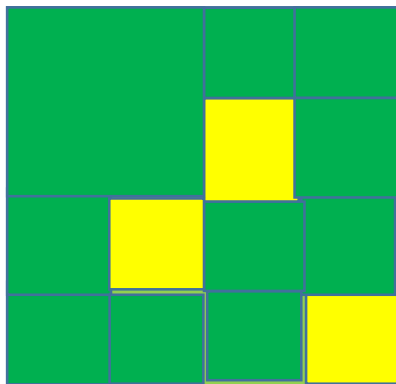
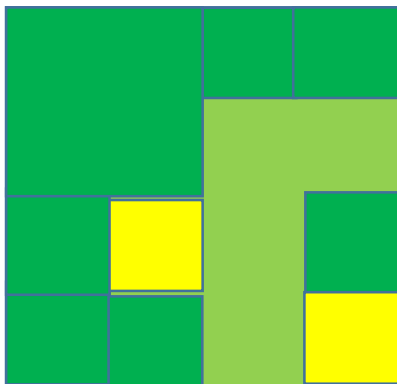
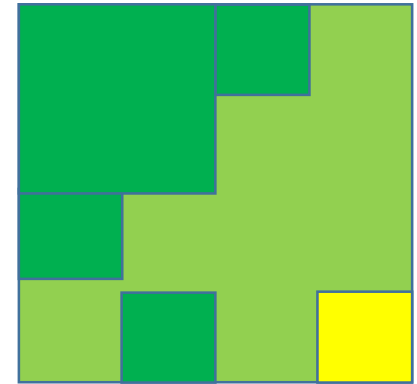
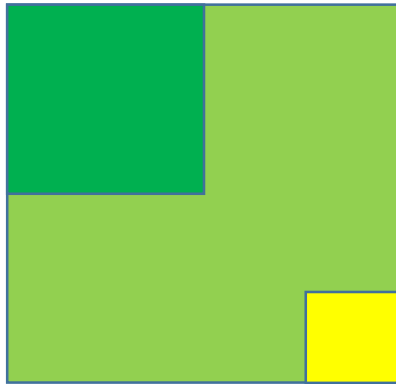
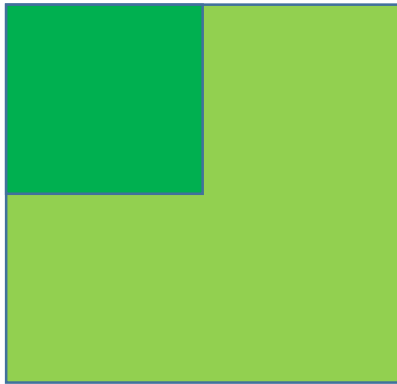
Ratio of 3 to 1



How much compensation?

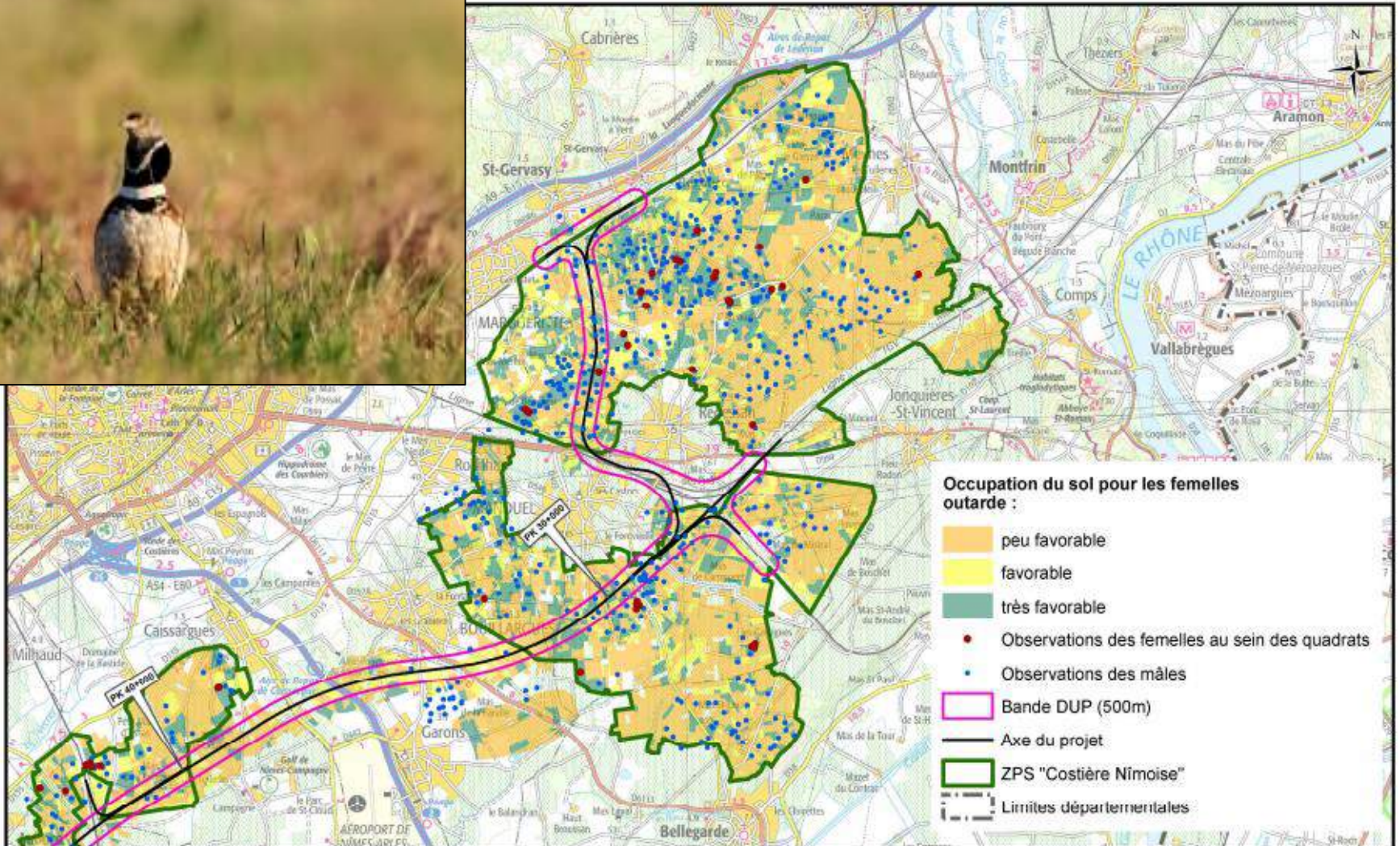


Net Loss!



*A ratio of 3 to 1
actually means we
accept to loose 25%
of the remaining
unprotected
biodiversity*

The Nîmes – Montpellier line



Loss – gain calculations



-3 units/ha



-2 units/ha



See Quétier et al. (2015),
Sciences, Eaux et Territoires

Loss – gain calculations



+2,5 units/ha

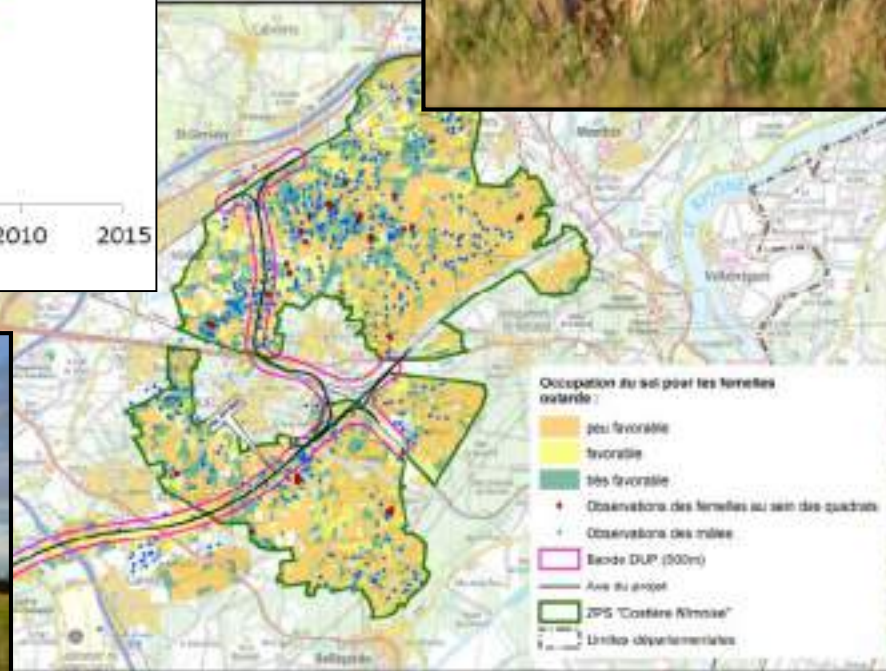
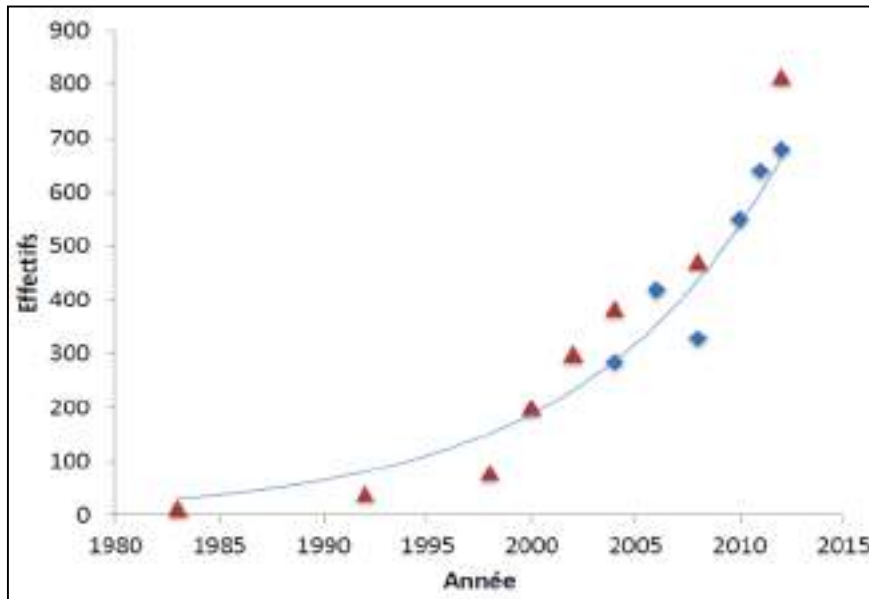


+1 unit/ha



See Quétier et al. (2015),
Sciences, Eaux et Territoires

Does it work?



Full analysis in PhD of Pierrick Devoucoux (2015) and Coralie Calvet (2016)

Governance challenges



Governance challenges



Images taken from www.geoportail.fr

The Cossure habitat bank



Purchase of 357ha at 12500 €/ha (~4.5 M€)

Restoration & management: 12 M€

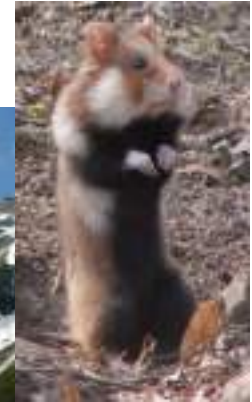
Purchase + restoration: 35000 €/ha

Credits sold at > 40 000 €/ha

Sources: CDC Biodiversité & Réserve Naturelle Nationale
des Coussouls de Crau : www.reserve-crau.org

Other pilot habitat banks

- **Cossure (Provence)**
 - Steppe birds
- **Farmland in Alsace**
 - European hamster
- **Subalpine valley (Alps)**
 - Black grouse
- **Hedgerow landscape (Britanny)**
- **Peri-urban green spaces (Paris)**
- **Open med. Habitats (Languedoc)**



Other habitat bank-like approaches

- **Wetlands around Chambéry**

Wetland restoration jointly funded by developers and the water basin agencies

- **Stone curlew conservation around Lyon**

LPO (Birdlife partner in France) manages a conservation program (based on signing contracts with farmers), funded by developers



Technical and scientific challenges

- Lack of standardized ecological equivalency assessment methodologies – but this can spur innovation
- Variation in definitions of significance of impacts – and the treatment of “common” biodiversity
- Few shared databases
- Little practice or guidance in setting baselines
- Uncertainties about ecological restoration



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Organizational & governance challenges

- Unstable institutional environment (laws, rules, etc.)
- Ineffective implementation (heterogeneous depending on location and sectors concerned, and local political support)
- Specific silo-based procedures (wetlands, endangered species)
- Limited cumulative impacts assessment, and offsets not integrated into broader conservation or restoration plans
- Limited staff capacity of regulators (numerous applications, permitting phase, control and monitoring)
- Costs of compensatory measures; which take time to be budgeted in project design
- Varying social acceptance of projects and biodiversity offsets

The promises of a new Biodiversity Law

A Law 2 years in the making (2014-2016)

Some interesting changes:

- NNL and net gain objectives spelt out
- Rights & duties of “offset operators”
- Option for habitat “banking”
- A type of conservation easement (not perpetual)
- National public georeferenced database on offsets
- Environmental liability regime in the Civil Code

Specific changes to EIA rules decided in parallel



Lessons learned

- Numerous voluntary initiatives... but you need regulation to:
 - get traction
 - level the playing field
 - ensure long-term commitments
 - build institutions
- Changing laws and regulations takes time and opportunism to build political will
- Pilots and experimental approaches are a useful first step (e.g. metrics, habitat banking) but can create precedents
- More research is needed on technical and organizational stumbling blocks
- Demand and supply of offsets must be addressed in parallel



Thank you !

