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Analysis

Should We Be Wary of Mitigation Banking? Evidence Regarding the Risks Associated with this Wetland Offset Arrangement in Florida



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Wetlands losses in US (in hectares/year)



Source: Dahl, 2011 Fish and Wildlife service

Total wetland areas: 39 millions d'ha.

The wetland offsetting policy



Recent trends regarding this environmental policy: increase of market-based mechanism with MB



Mitigation banking



Source: Vaissière et Levrel, 2015

The theoretical advantages of MB compared to PRM

- Better control by regulators of fewer stakeholders responsible for the success of compensatory measures,
- Large-scale ecological restorations have a better chance of success than small, dispersed ones, and
- Ecological gains would occur prior to any impact, protecting wetlands from temporal ecological losses, and ensuring that some ecological performance standards or milestones are met even if the offset project is not necessarily completed.

Main concerns about this new system for governing wetland mitigation

- Privatization, commodification of nature and a move toward a utilitarian ethic (Dauguet, 2015; Ives and Bekessy, 2015; Robertson, 2004; Spash, 2015).
- Facilitation of development projects with impacts on wetlands (Walker et al., 2009)
- Homogenization of wetlands due to market forces (Dauguet, 2015; Walker et al., 2009)
- Temporal loss of wetlands (Robertson and Hayden, 2008; Teresa, 2008)
- Spatial disconnection of impact and compensation sites (BenDor et al., 2007; BenDor and Riggsbee, 2011; Ruhl and Salzman, 2006)

Our questions

- Reality of these risks for the implementation of this policy
- Solutions adopted by the administrations to face these risks
- Efficacy of these administrative responses

Method

Litterature review

Grey litterature (many reports on this topic)

Scientific litterature

Database analysis:

RIBITS (mitigation banking details)

ORM (permit for destroying wetlands)

NLCD (LULC for 2001, 2006 et 201)

□ Fieldwork in US in 2013

- Interviews (54)
- MB conference

Privatization, commodification of nature and a move toward a utilitarian ethic



Regulatory response



+ the sponsor of the mitigation bank must provide a « long-term management fund » to the E-NGO

Outputs regarding commodification

Various actors of the mitigation banking system



Each year 10 000 ha. of wetlands are:

de-privatized with
conservation easement
de-marketized with
the transfer of property
rights to Environmental
NGOs

The emergence of a hybrid organization

Source: Vaissière et Levrel, 2015

Facilitation of development projects with impacts on wetlands

- The use of MB facilitates the offsetting procedure for developers, since it may be easier to buy credits than to find land available for restoration close to an impact site in order to carry out a restoration project
- MB could additionally encourage developers to compensate for their impacts rather than avoiding and reducing these in the first place
- But the requirements regarding the MB are very high

Outputs regarding the facilitation of development projects



Number of wetland destruction permits accepted and refused from 2009–2015 (Scemama et al.. 2015)

Homogenization of wetlands due to market forces

- To make transactions easier, markets need to exchange the simplest and most homogeneous units possible. This is a basic rule so supply and demand can be matched.
- One strategy of stakeholders might be to broaden ecological equivalence in order to increase market size.
- For instance, the purchase of palustrine emergent credits might be permitted to compensate for impacts on estuaries.
- Such a dynamic could lead to a severe reduction in the complexity and diversity of aquatic ecosystems

Response of the regulator

- Credit = "ecological lift" and not "habitat" or "species"
- Various credits for different ecological lift in different habitats
- Standardized method for assessing equivalency for each credit type
- Priority for ecological restoration which have the higher rate of performance (in comparison with preservation, enhancement or creation)



Palustrine forested



Riverine intermitent



Palustrine ermergent



Estuarine intertidal emergent

- Ecological lift calculated with UMAM for different credit types

- Uniform Mitigation Assessment Method (UMAM): ecological community structure, hydrologic connection, ecosystem uniqueness, location, fish and wildlife, time lag



Palustrine shrub



Estuarine intertidal forested



Riverine perennial

Outputs regarding risk of homogeneisation

Compensation action	Number of banks
Unspecified	206
Specified	1180
Preservation	93
Preservation of buffer zone	22
Enhancement	164
Rehabilitation	160
Re-establishment	642
Creation	99

The average size of a mitigation bank is 195 ha – 41% have more than 100 ha. Accord to Moreno et al. (2012), the success of restoration project

is 100% over 100 ha.

According to a recent review, 98.7% of mitigation banks comply with the government's ecological performance criteria (Denisoff and Urban, 2012).



Source: Scemama et al.. 2015

Temporal gap ?

Some mitigation credits are released by the regulators prior to any ecological lift

	Administrative credits	Works and planting	Success credits
		credits	
% of the total	26%	37%	37%
potential credits	[min=13; max=60]	[min=10; max=67]	[min=10; max=70]
	SD = 20	SD = 27	SD = 25
Number of years	1.6 years	2.2 years	4.4 years
to reach the full	[min=0; max=6.1]	[min=0; max=4.1]	[min=1.3; max=9.3]
release of credits	SD = 2.5	SD = 1.7	SD = 3
for each stage of			
the credit release			
schedule			

Example for Florida

Outputs regarding the temporal gap



Examples of the temporal distribution of the cost for MB

Source: BenDor and Ringsbee, 2011; Levrel, Scemama et Vaissière. 2017

Number of released credits (black raw), sold credits (grey raw) and wetland mitigation banks (diamond) in US

Does mitigation banking promote disconnection between the impact site and the restoration site?

- MB system can lead to have ecological restoration in remote sites, far from the impacts they are meant to compensate
- MB would be encouraged to make investments where the cost of land is low, leading to a concentration of impacts in urban areas and a concentration of compensation in rural areas

Responses of the regulator

Service areas => Hydrological unit => Market size



Output regarding disconnection

- In the US, the mean size of a service area is around 1,500 km²
- In Florida, the mean size is around 3,800 km²
- □ For the 2008–2016 study
 - 54 banks and representing
 - 437 transactions
 - average distance: 37.3 km (SD = 26.6 km)

26.9 km in 2005 (Ruhl and Salzman, 2006)



Conclusion (1)

- Commodification trend is not supported by empirical evidence
- The risk of facilitating development projects is not confirmed by the facts
- There risk of "temporal gap" of offsettings is compensated by a "sale gap"
- This leads us to a first conclusion that the regulatory responses adopted to deal with the risks associated with MB seem to be more effective than is often claimed in the literature
- □ But...

Conclusion (1)

- The risk of the homogenization of wetlands is not easy to assess as this would require harmonized national monitoring, allowing a comparison of what has been destroyed by development projects and what has been restored by MB
- MB have not resulted in preventing a decrease in the surface area of wetlands in Florida
- The disconnection between the impact sites and compensation sites seems to increase,
- In addition there is a redistribution of ecosystem services for local populations
- □ And...

...the regulation could change very quickly



AUTHENTICATED UK CONTENNENT NEORMAITEN

To terminate the Environmental Protection Agency.

1

IN THE HOUSE OF REPRESENTATIVES

FEBRITARY 3, 2017 Mr. GAUTZ (for hinself, Mr. MASSIE, Mr. PLAIZZO, and Mr. LOUDERMIK) introduced the following high which was referred to the Committee on Energy and Commerce, and in addition to the Committees on Agriculture, Transportation and Infrastructure, and Science, Space, and Technology, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisfaction of the committee concerned

A BILL

To terminate the Environmental Protection Agency.

- Be it enacted by the Senate and House of Representa

 tives of the United States of America in Congress assembled,

 SECTION 1. TERMINATION OF THE ENVIRONMENTAL PRO

 TECTION AGENCY.

 The Environmental Protection Agency shall termi
- 6 nate on December 31, 2018.



Source: Scemama, 2017



Thank you for your attention