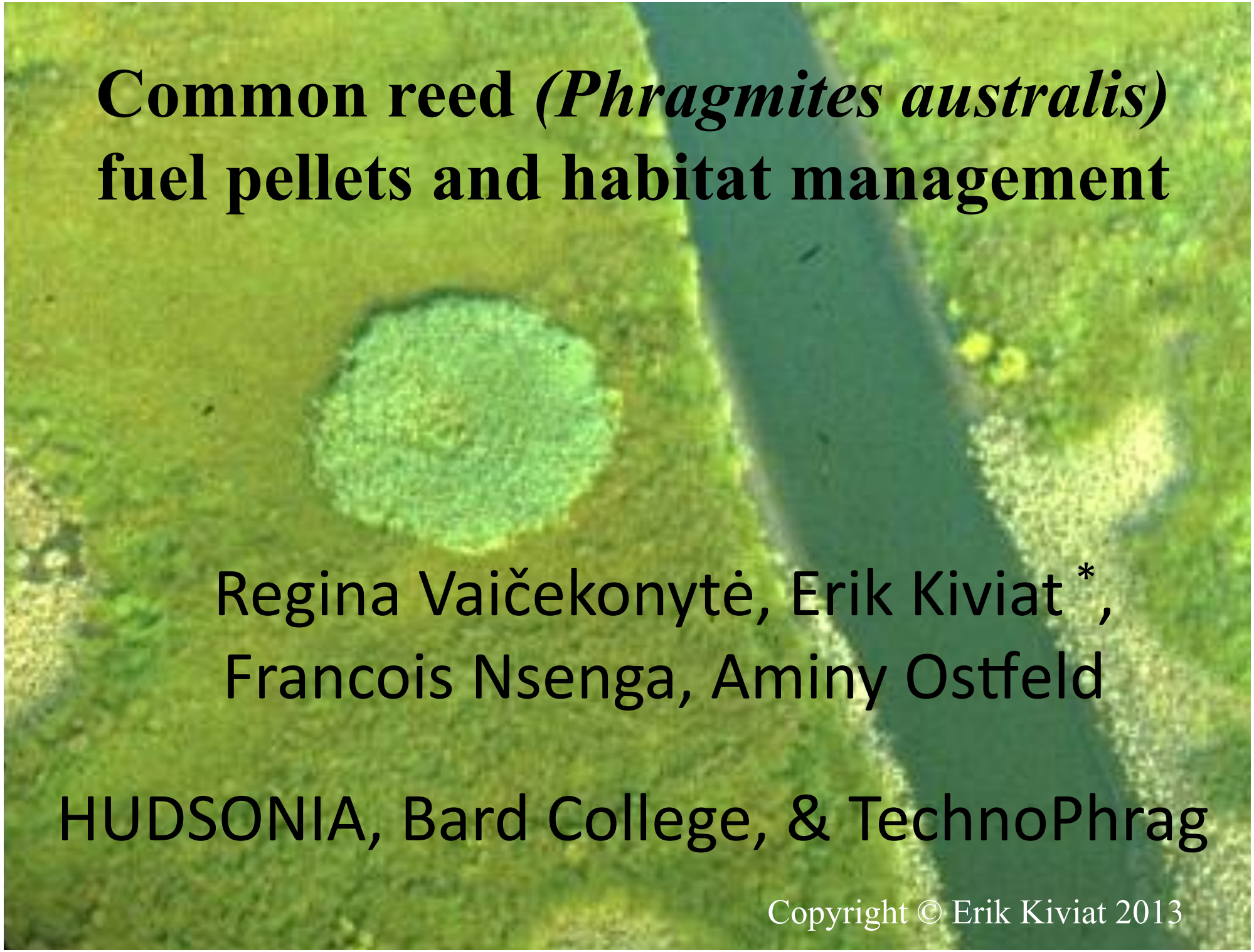

Common reed *(Phragmites australis)* fuel pellets and habitat management

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HUDSONIA, Bard College, & TechnoPhrag


Phragmites values
Non-habitat ecosystem services
Support of native biodiversity
Products

Current paradigm in the U.S. and Canada

-Invasive weed to be killed

Switchgrass (*Panicum virgatum*)

Planted on low quality farmland for pellet manufacture

Phragmites compared to switchgrass (*Panicum virgatum*)

	Energy, MJ/kg	Moisture, %	Ash, %	Na, mg/kg dry mass	Yield, Mg/ha/yr wet mass	Photosynthe-tic efficiency
Phragmites			7.4		11.7-29.4	2.14
Phragmites pellets*	14.3	6.4	3.44	1191**		
Switchgrass			4.5-5.8		5.2 -11.1	< 1.0

**Phragmites* data from TechnoPhrag pellets (Montréal, Canada) or from the literature. Switchgrass data from the literature.

** Chlorine estimated at 1800 mg/kg (assuming all sodium is in NaCl). Pellet standard is 300 mg/kg.

As, B, Cd, Pb all below detection limits; Be 0.04, Cr 4.1 mg/kg

Potential for mixed bioenergy feedstocks

Spontaneously occuring *Phragmites* could be combined with other weeds, agricultural byproducts, or organic wastes

Reedbeds with high biodiversity functions

-Small

-Sparse (e.g., young beds, or on high energy shores)

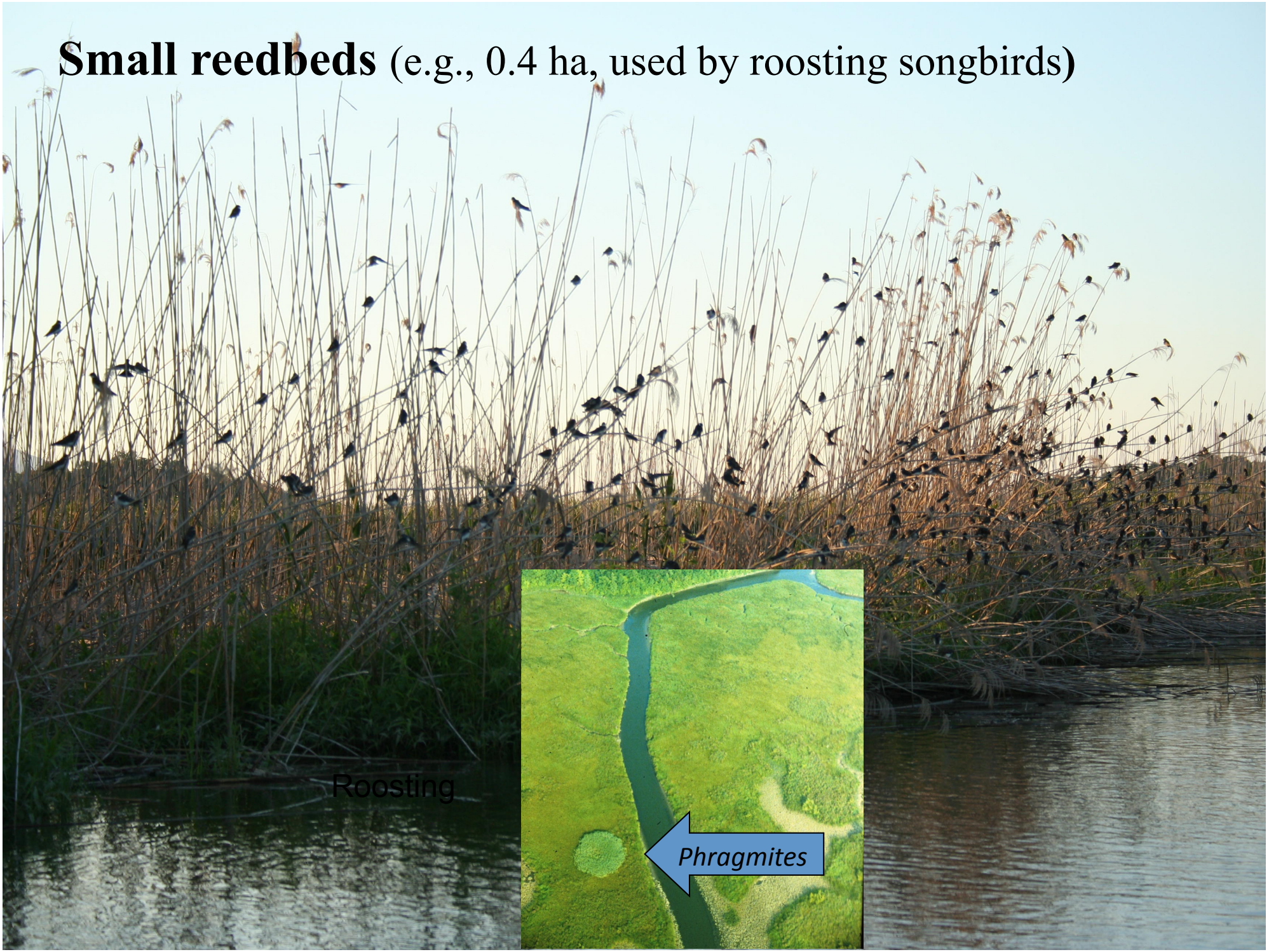
-Containing scattered woody plants

-Supporting vines

-Interspersed with, or surrounding, shallow pools

-Reedbed edges

Small reedbeds (e.g., 0.4 ha, used by roosting songbirds)

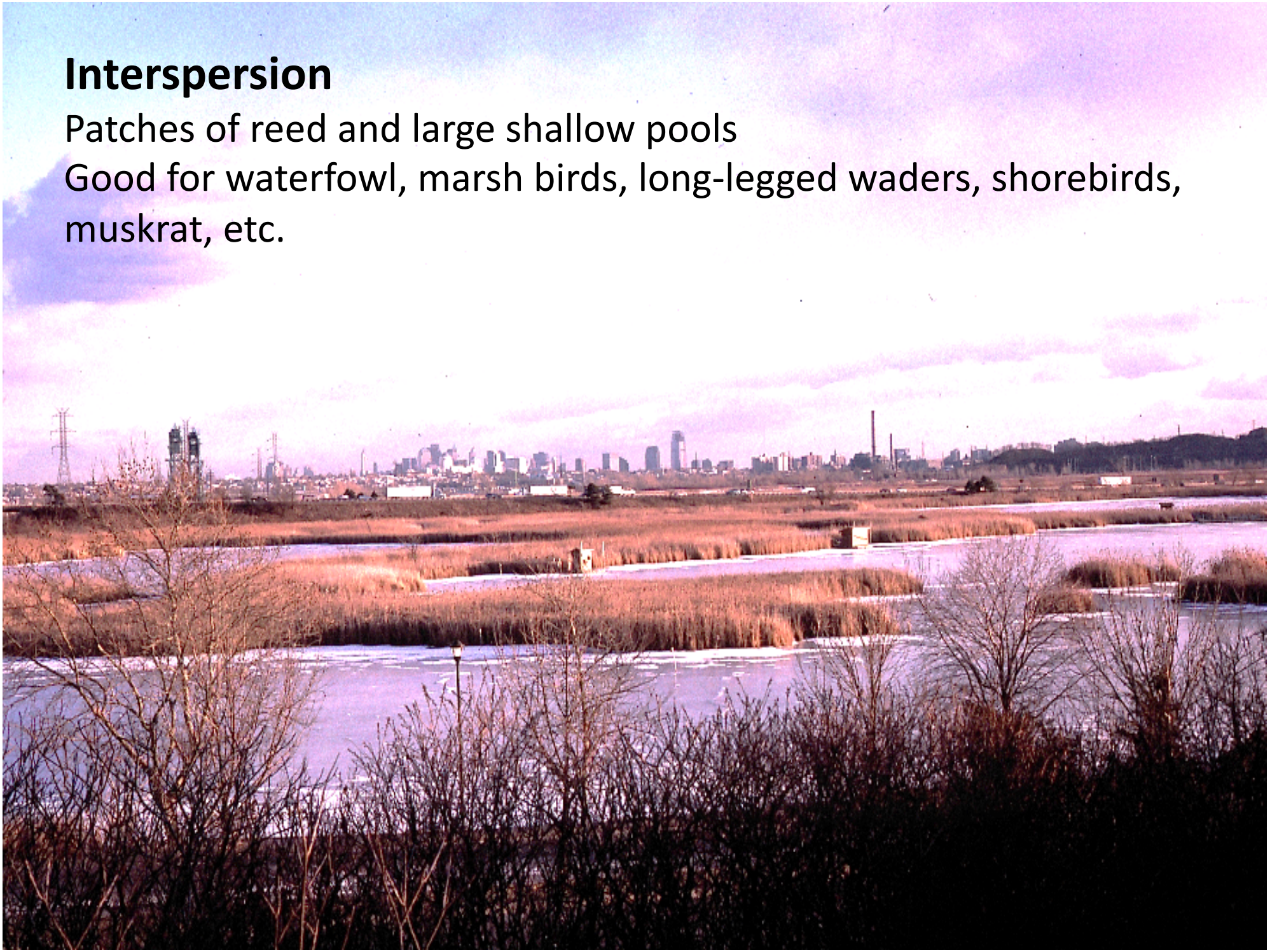



Vines
Diverse food and shelter for
small animals

Interspersion

Patches of reed and large shallow pools

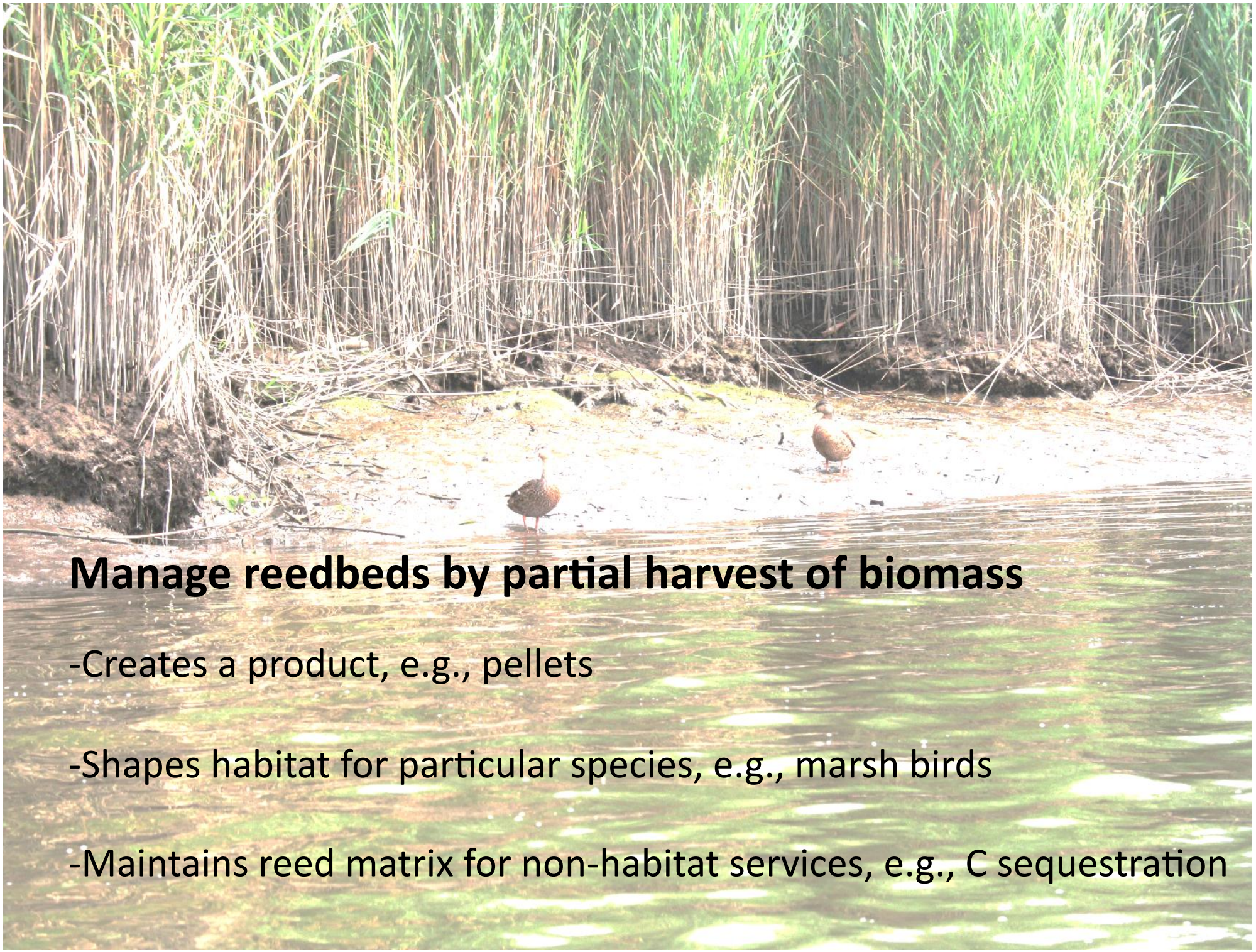
Good for waterfowl, marsh birds, long-legged waders, shorebirds, muskrat, etc.



Reedbed edges

Lilaeopsis chinensis, a rare native plant in tidal brackish marsh

A new paradigm for *Phragmites* management



Manage reedbeds by partial harvest of biomass

-Creates a product, e.g., pellets

-Shapes habitat for particular species, e.g., marsh birds

-Maintains reed matrix for non-habitat services, e.g., C sequestration

Management should be

-Goal-directed

-Site-specific

-Evidence-based

Acknowledgments

Millbrook Garden Club

Cary Institute of Ecosystem Studies

Bard College Field Station

For more information:

Kiviat, E. 2013. Ecosystem services of *Phragmites* in North America with emphasis on habitat functions**.** AoB Plants (online).