Phragmites australis niches (= habitat functions) for other biota are similar on three continents

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Introduction

Common reed (*Phragmites australis*) is cosmopolitan and often extensive

Reedbeds provide important habitat functions as well as non-habitat ecosystem services

In many parts of the world, reed is considered too abundant or not abundant enough, thus its role in biodiversity support must be assessed

Similar habitats in different world regions often have similar organisms with similar ecological roles

Methods

-Review of literature and unpublished observations

-Sub-saharan Africa, Europe, North America

-Confined to *Phragmites australis* as feasible

-Hypothesis: A habitat function present on one continent would occur on the other continents

-No attempt to quantify species richness or the abundance of a use in different places or compared to alternate habitats

Shelter for large herbivores

Wild boar nest (Europe)

Elephants (Africa)

Photo: Mark Muller

Food for domestic livestock

Cattle, sheep, goats, horses, donkeys, water buffalo

Birds nesting

On ground,
mallard – N America

Suspended,
tawny-flanked prinia, Africa

Parallelism

N AMERICA	*EUROPE*	*AFRICA*
Nest inside internode		
Bees or wasps	**Bees & wasps**	**Carpenter bee**
Leaf mining insects		
Moths & flies	**Flies**	**Flies**
Support for vines		
> 20 spp.	**At least several spp.**	**At least several spp.**
On or between culm bases		
Bryophyte spp.	**Bryophyte spp.**	**Bryophyte spp.**

Birds roosting

N AMERICA	*EUROPE*	*AFRICA*
American bittern	**Eurasian bittern**	**Little bittern**
Heron spp.	**Heron spp.**	**Heron spp.**
Northern harrier	**Marsh harrier**	**Harrier sp.?**
Barn swallow, bank swallow, other swallow spp.	**Barn swallow, bank swallow**	**Barn swallow, other swallow spp.**
Various songbirds	**Various songbirds**	**Various songbirds**

Resting perch, frogs

Common treefrog, Europe

Painted reed frog, Africa

Birds foraging for arthropods inside culm


Mosses, Europe


Sphagnum, N America;


Mosses, N America

Vines

Mikania scandens,
N America (FL)

Mikania scandens,
N America (NJ)

Mikania sagittifolia, Africa

Traits	Shelter	Nest support	Nest material	Vine support	Food	Thermo-regulation
Tall, strong, flexuous culms		X		X		X
Hollow internodes	X	X				X
Large, abundant rhizomes					X	
Abundant seeds*					X	
High productivity, biomass			X	X	X	X
Abundant lodged culms and litter	X	X	X		X	X
Year-round persistence aboveground	X	X		X		X
Extensive dense stands*	X	X				X
Grows in water*	X	X				
Openings in stands*	X	?				
Modulates microclimate	X	X				X

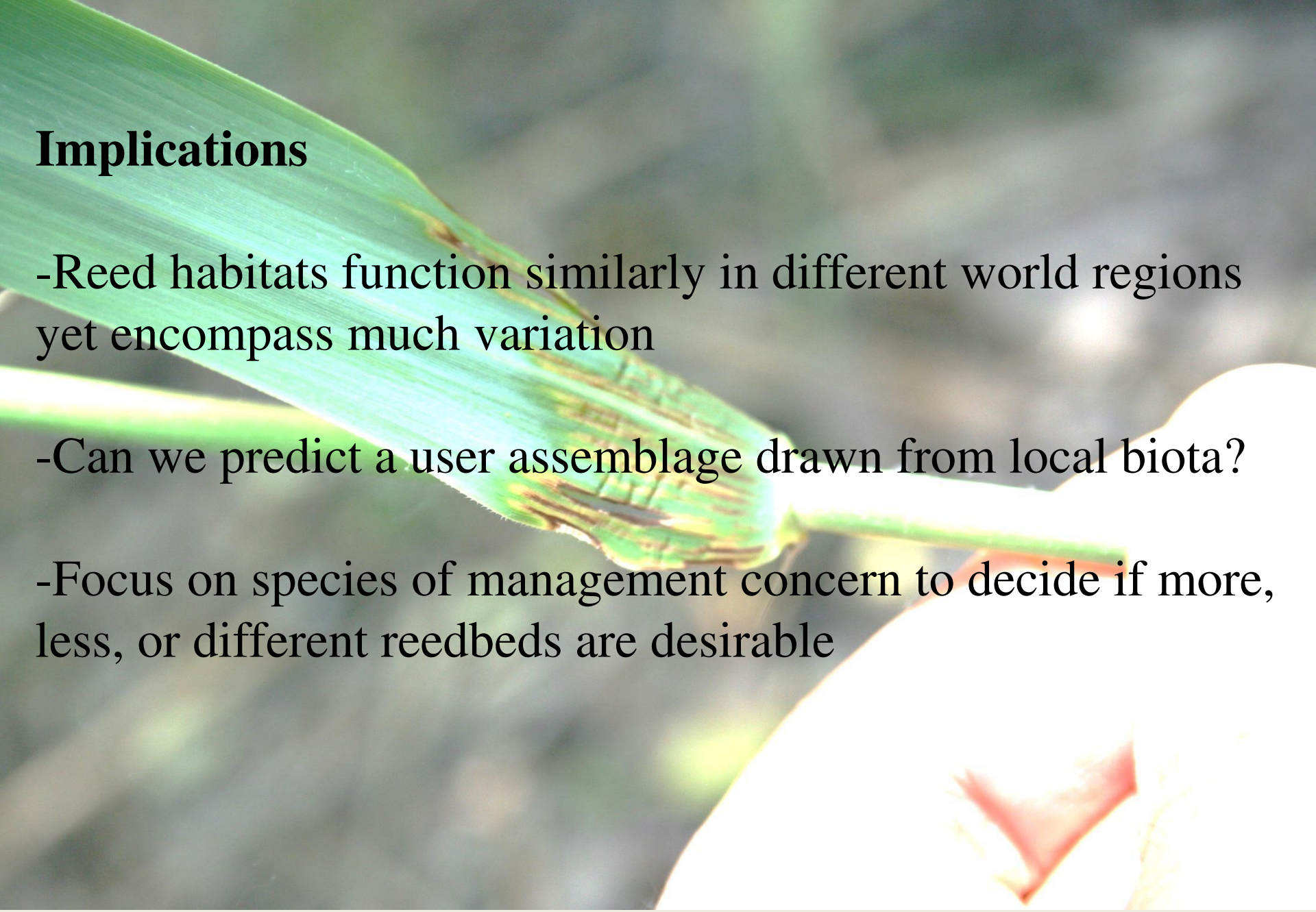
* Some stands only

Discussion

-Cosmopolitan; widespread, abundant, and often in extensive stands in the three world regions studied; architecturally distinctive; offering food, structural, microclimatic resources

-Fitness advantages vs. chance vs. observation bias vs. ?

Brown anole in hollow stubble, N America



Implications

-Reed habitats function similarly in different world regions yet encompass much variation

-Can we predict a user assemblage drawn from local biota?

-Focus on species of management concern to decide if more, less, or different reedbeds are desirable

I would love to receive your observations!

Acknowledgments

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