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## How forest edges contribute to landscape connectivity?

Marc Deconchat, Luc Barbaro, Antoine Brin, François Calatayud

► **To cite this version:**

Marc Deconchat, Luc Barbaro, Antoine Brin, François Calatayud. How forest edges contribute to landscape connectivity?. IALE World Congress 2019, Jul 2019, Milano, Italy. 993 p. hal-02734805

**HAL Id: hal-02734805**

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Submitted on 2 Jun 2020

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# How forest edges contribute to landscape connectivity?

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Marc Deconchat; Antoine Brin; Luc Barbaro, François Calatayud



**DYNAFOR**  
UMR 1201 | INRA - INP | TOULOUSE

# Roles of hedgerows and their network in structural connectivity

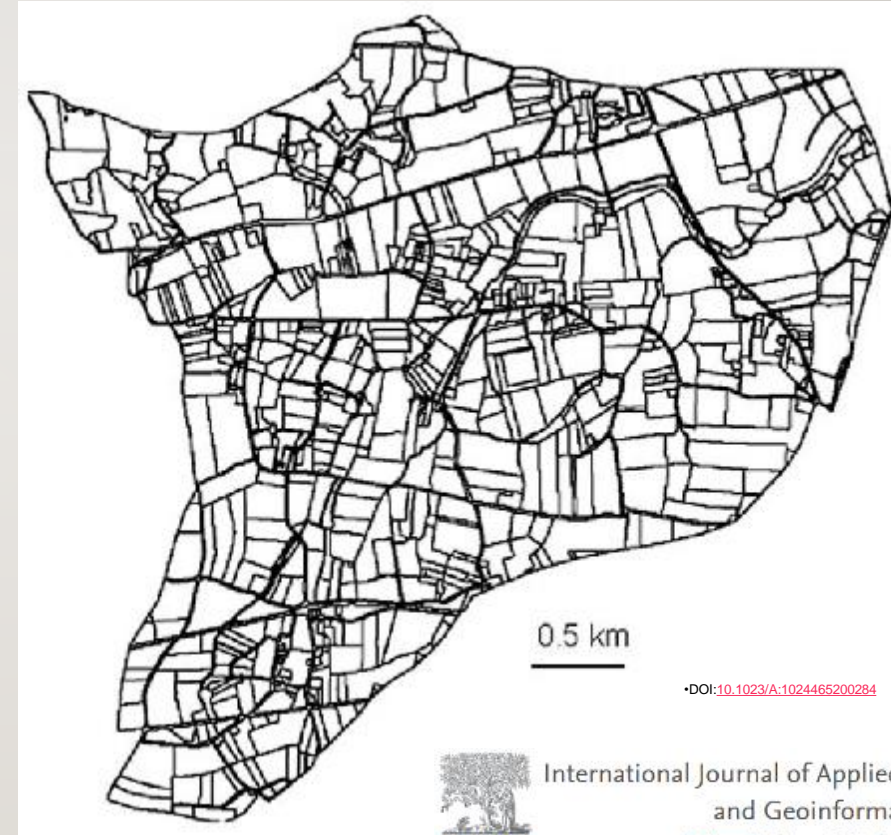


Journal of Biogeography (J. Biogeogr.) (2004) 31, 79–92

ORIGINAL  
ARTICLE

## Animal species diversity driven by habitat heterogeneity/diversity: the importance of keystone structures

J. Tews<sup>1\*</sup>, U. Brose<sup>2</sup>, V. Grimm<sup>3</sup>, K. Tielbörger<sup>1</sup>, M. C. Wichmann<sup>1</sup>, M. Schwager<sup>1</sup> and F. Jeltsch<sup>1</sup>



DOI: [10.1023/A:1024465200284](https://doi.org/10.1023/A:1024465200284)



International Journal of Applied Earth Observation  
and Geoinformation

Volume 44, February 2016, Pages 113–123

Measuring and monitoring linear woody features in agricultural landscapes through earth observation data as an indicator of habitat availability

J. Pasher<sup>1</sup>, M. McGovern<sup>2</sup>, V. Putinski<sup>3</sup>

# Species movements along woody linear features (WLF)

➤ Many species move along linear landscape features

- Foraging
- Hiding
- Dispersal



Landscape Ecol (2007) 22:333–351  
DOI 10.1007/s10980-006-9064-4

REVIEW

**Are hedgerows effective corridors between fragments of woodland habitat? An evidence-based approach**

Importance of hedgerows as habitat corridors for forest plants in agricultural landscapes

Stephan Wehling\*, Martin Diekmann

➤ Consequences for population dynamics



## The Utility of Movement Corridors in Forested Landscapes

Jari Niemela

Pages 70-78 | Published online: 05 Nov 2010

Download citation <https://doi.org/10.1080/028275801300090645>

# Ecosystem services

*Ecology Letters*, (2007) 10: 299–314

doi: 10.1111/j.1461-0248.2007.01018.x

## REVIEW AND SYNTHESIS

**Pollination and other ecosystem services produced by mobile organisms: a conceptual framework for the effects of land-use change**



Ph Cugnot

*Ecosystems* (2013) 16: 894–908  
DOI: 10.1007/s10021-013-9647-2

**ECOSYSTEMS**

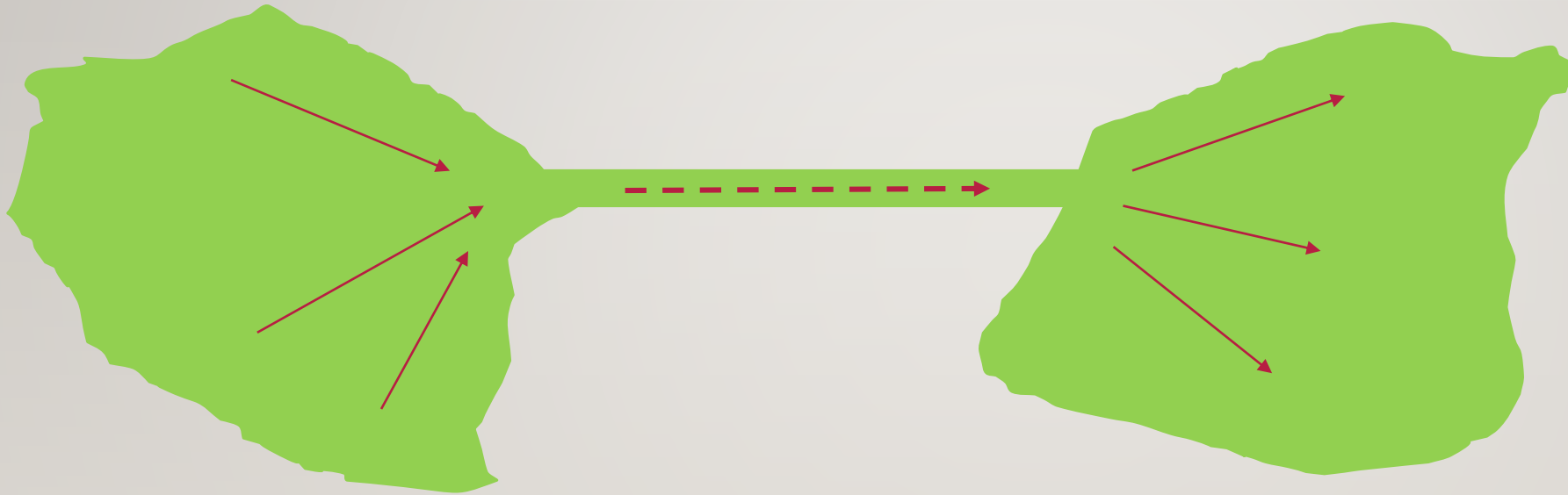
© 2013 Springer Science+Business Media New York

## **Linking Landscape Connectivity and Ecosystem Service Provision: Current Knowledge and Research Gaps**

Matthew G. E. Mitchell,<sup>1\*</sup> Elena M. Bennett,<sup>2</sup> and Andrew Gonzalez<sup>3</sup>

# Several ways to use the connections: Corridor

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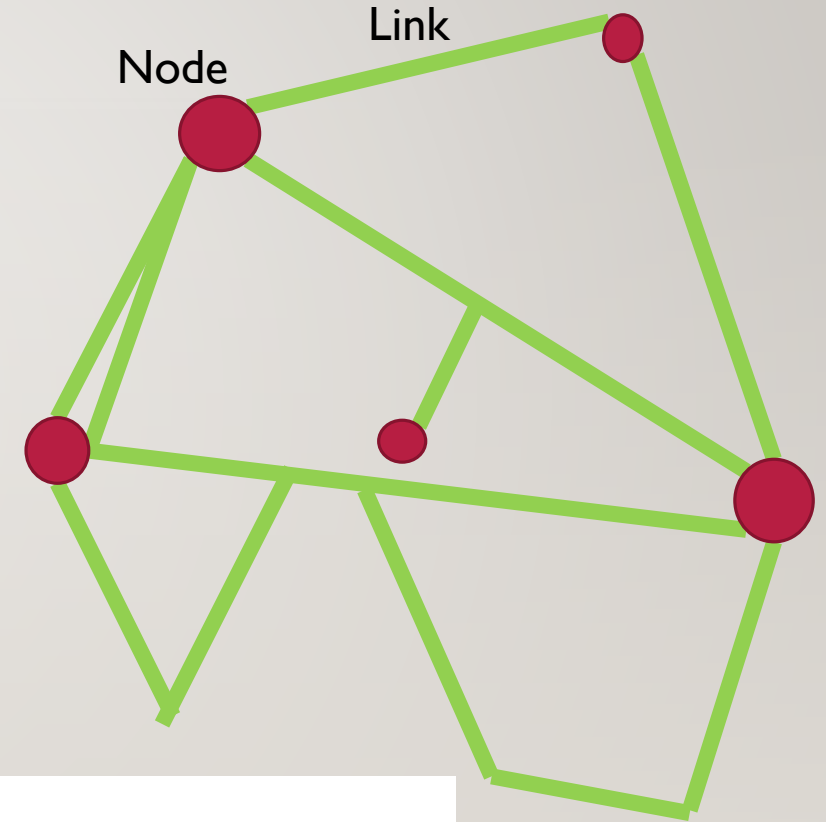
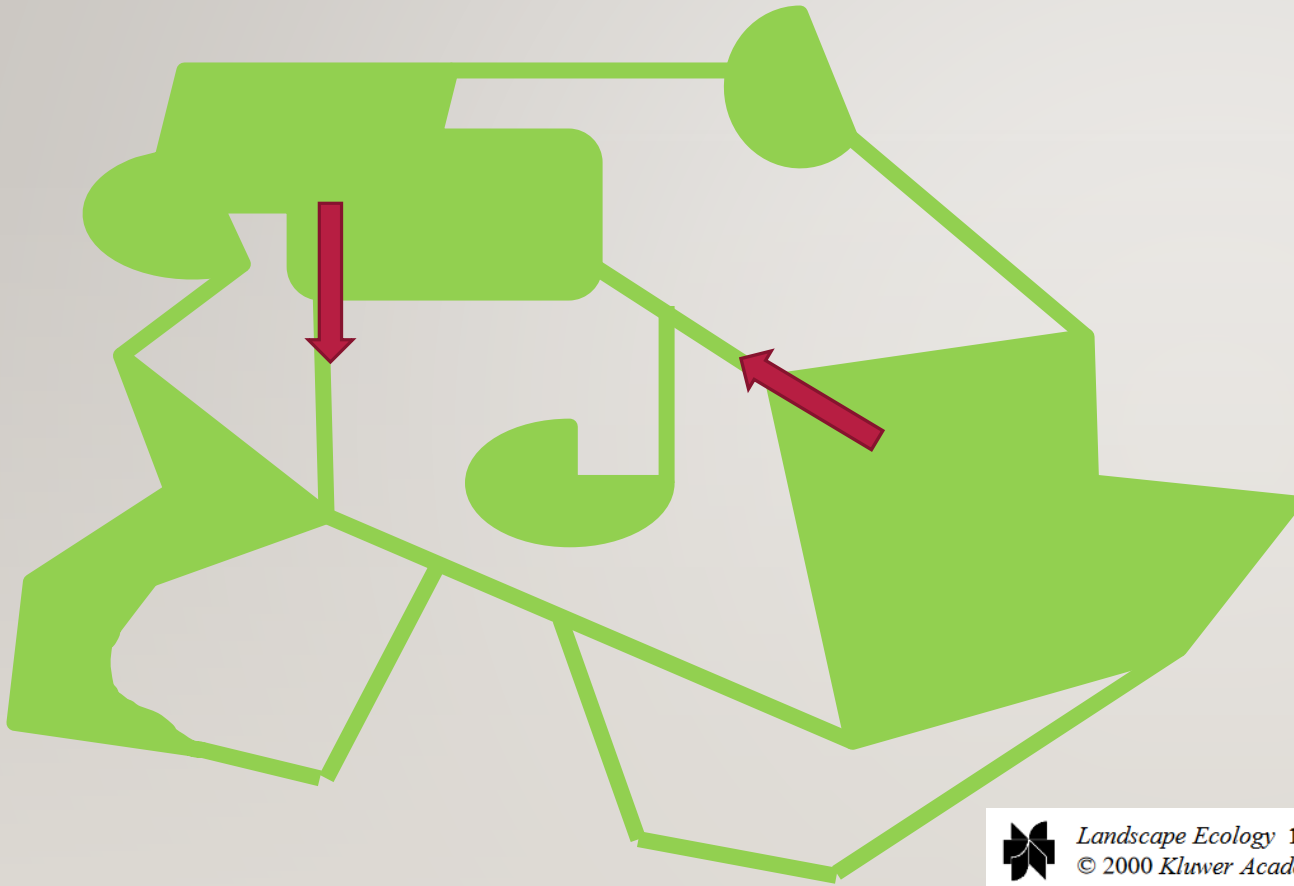
*Ecology*, 84(3), 2003, pp. 609–615  
© 2003 by the Ecological Society of America

## CORRIDOR USE BY DIVERSE TAXA

NICK M. HADDAD,<sup>1,7</sup> DAVID R. BOWNE,<sup>2</sup> ALAN CUNNINGHAM,<sup>3</sup> BRENT J. DANIELSON,<sup>4</sup> DOUGLAS J. LEVEY,<sup>5</sup>  
SARAH SARGENT,<sup>6</sup> AND TIM SPIRA<sup>3</sup>

# Connectivity

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*Landscape Ecology* 15: 633–641, 2000.  
© 2000 Kluwer Academic Publishers. Printed in the Netherlands.

**How should we measure landscape connectivity?**

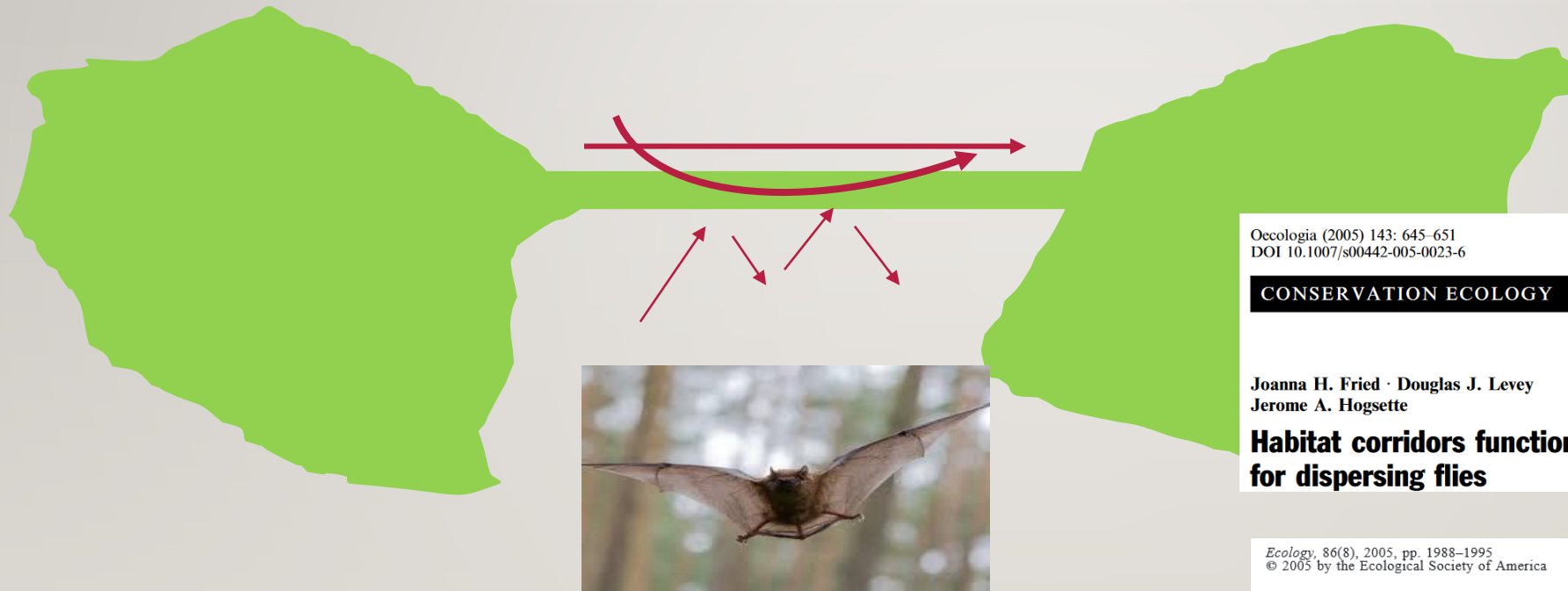
Lutz Tischendorf\* & Lenore Fahrig





# Several ways to use the connections

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Oecologia (2005) 143: 645–651  
DOI 10.1007/s00442-005-0023-6

## CONSERVATION ECOLOGY

Joanna H. Fried · Douglas J. Levey  
Jerome A. Hogsette

**Habitat corridors function as both drift fences and movement conduits for dispersing flies**

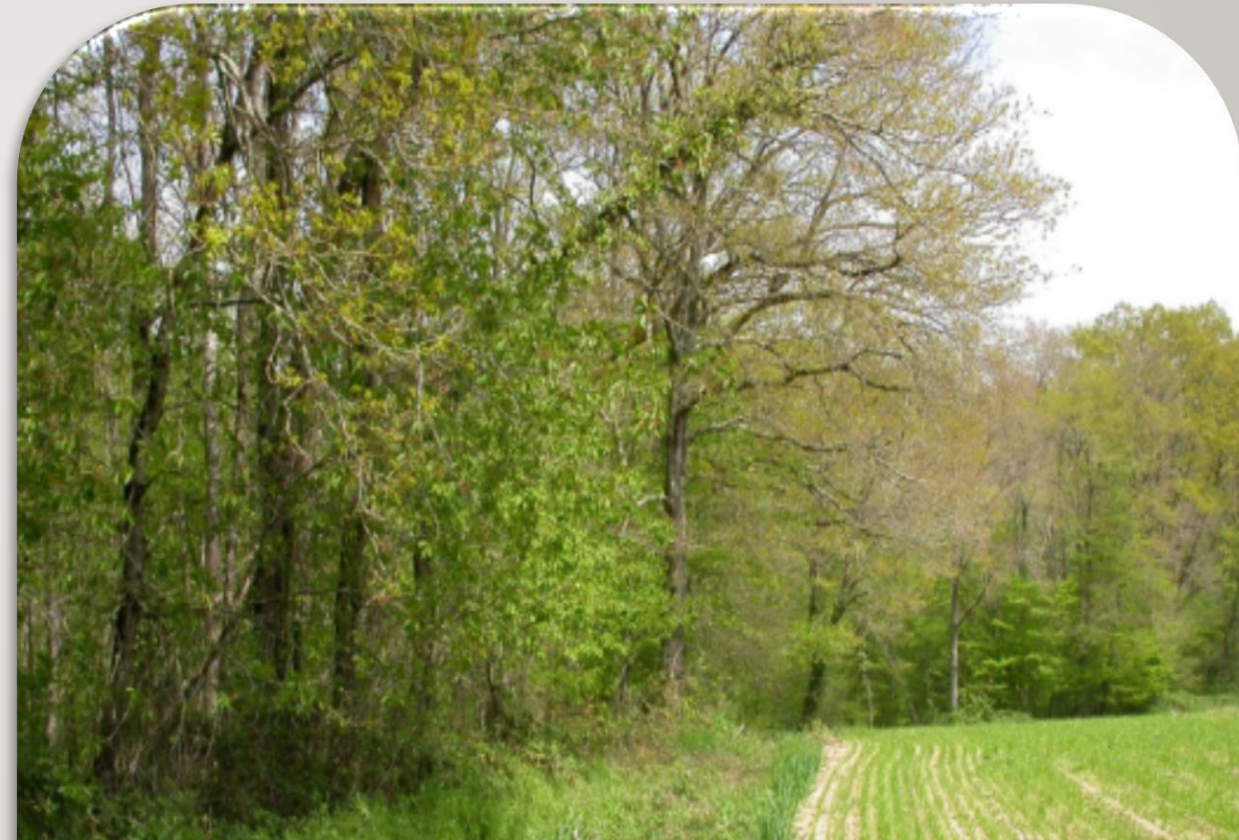
*Ecology*, 86(8), 2005, pp. 1988–1995  
© 2005 by the Ecological Society of America

MEASURING LANDSCAPE CONNECTIVITY: THE CHALLENGE OF  
BEHAVIORAL LANDSCAPE ECOLOGY

MARC BÉLISLE<sup>1</sup>

# Forest edges: another woody linear feature (WLF)

- Discontinuity between a forest land cover and an open habitat land cover (crops, pastures, roads...)
- Hedgerow length (France): **566 000 km** (Pointereau, 2006)
- Forest edge length (France): **688 000 km** (IGN)



*Landscape Ecology* **15**: 229–242, 2000.  
© 2000 Kluwer Academic Publishers. Printed in the Netherlands.

**Dispersal of woody plants in forest edges and hedgerows in a Southern Swedish agricultural area: the role of site and landscape structure**

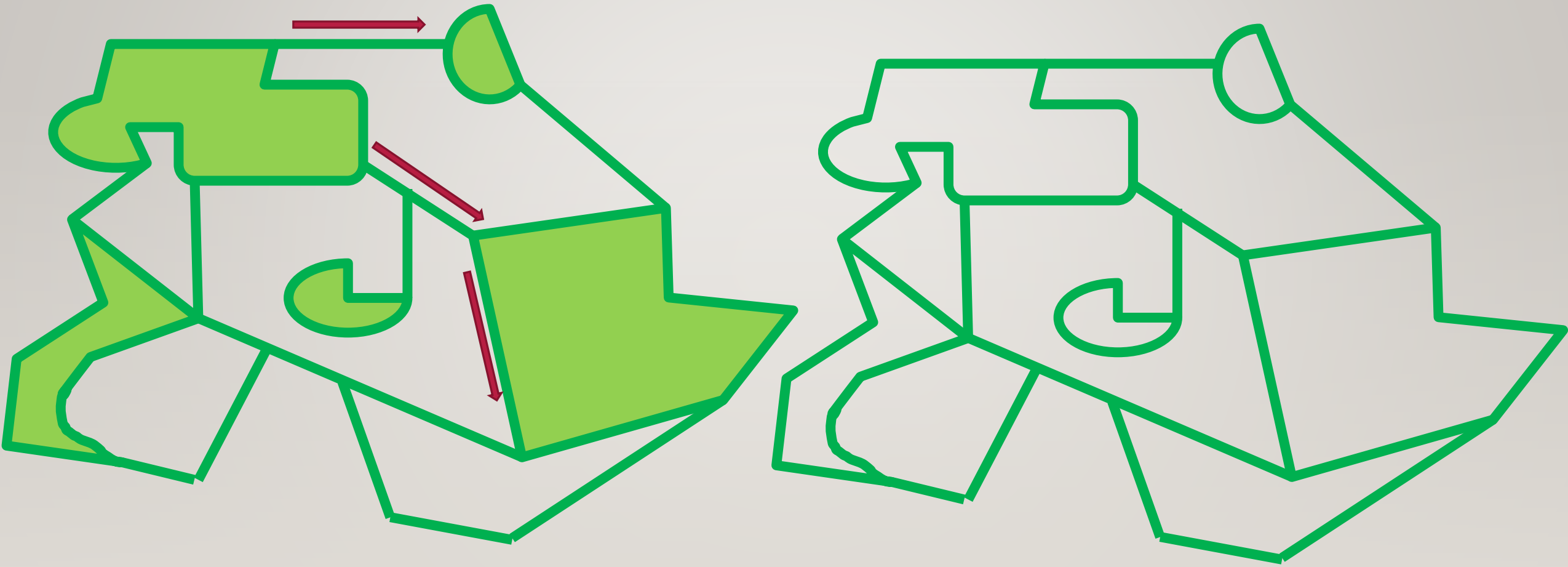
Ingrid L. Sarlöv Herlin<sup>1\*</sup> & Gareth L. A. Fry<sup>2</sup>

Forest-edge utilization by carnivores in relation to local and landscape habitat characteristics in central European farmland

Martin Šálek<sup>a,b</sup>, Jaroslav Červinka<sup>b,c,\*</sup>, Petr Pavlůvčík<sup>b,d</sup>,  
Simona Poláková<sup>e</sup>, Emil Tkadlec<sup>a,d</sup>

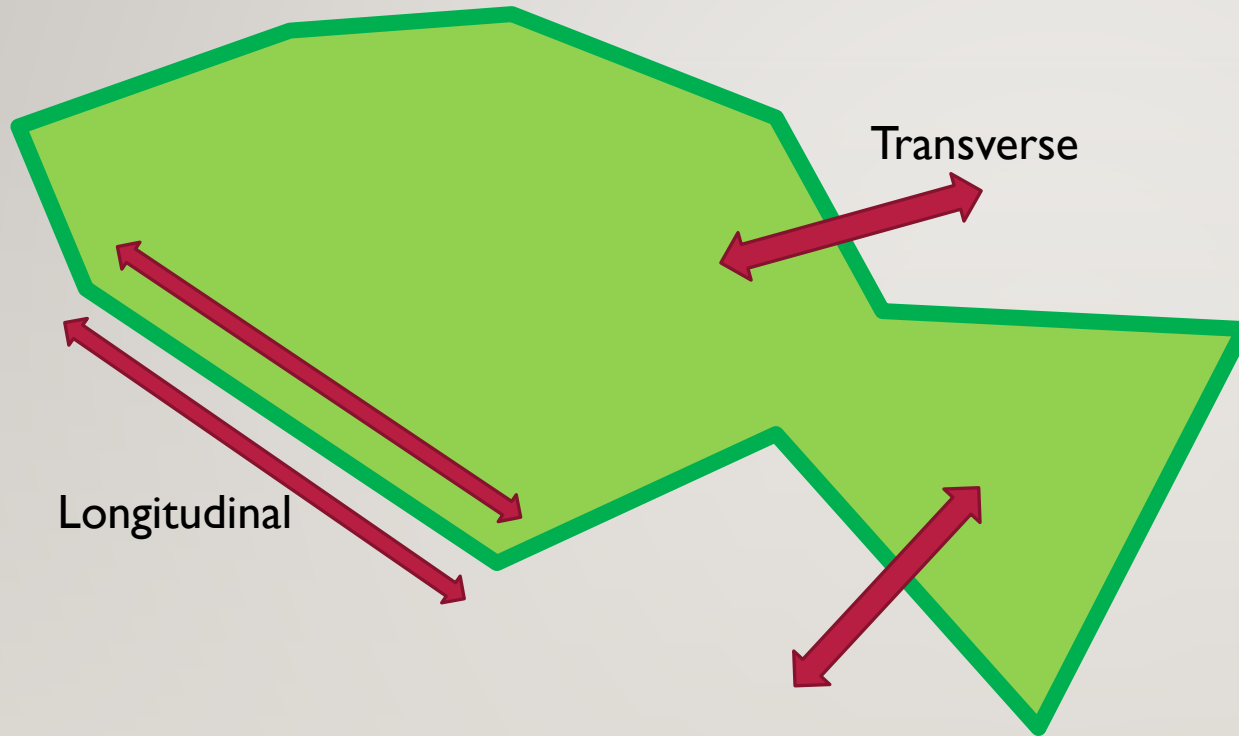
# Another point of view: connectivity for edge/hedge associated species

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# 2 types of species movement in forest edges

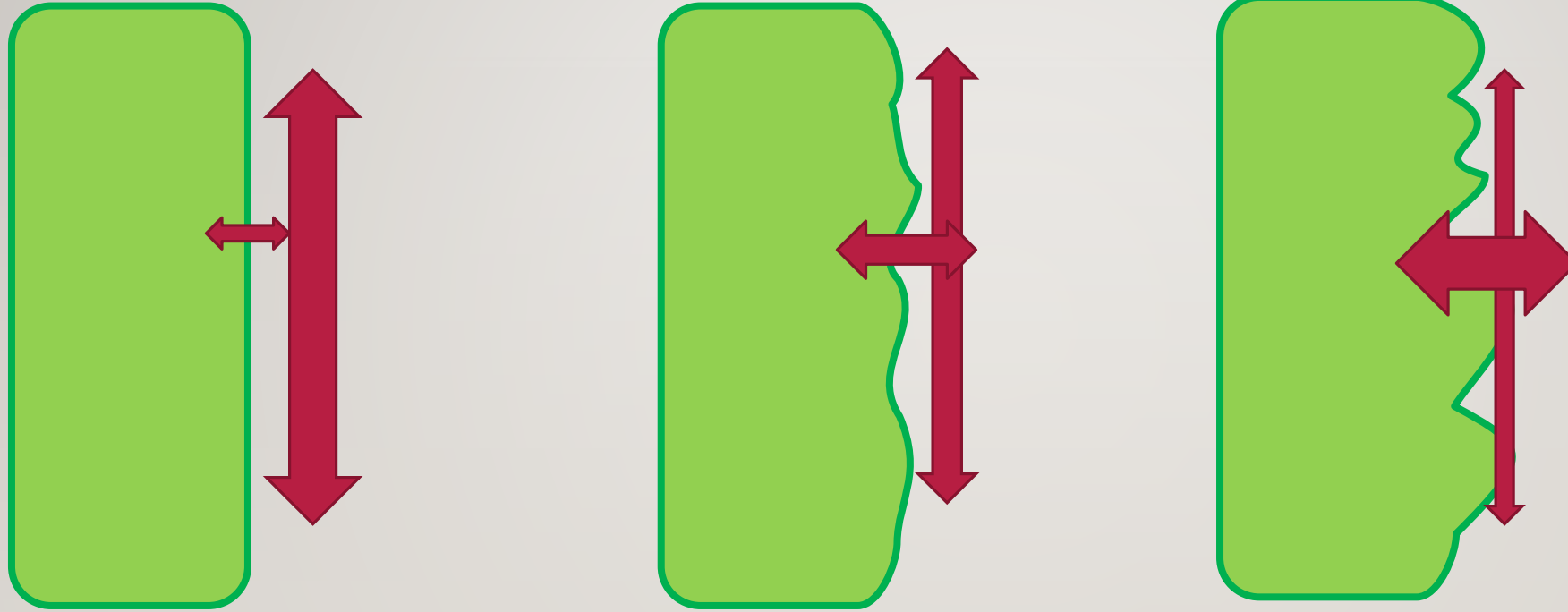
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- No paper identified dealing with both dimensions
- Longitudinal movements understudied
- How to characterize edges regarding both types

# Shape of forest edge

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Landscape Ecol (2014) 29:655–663  
DOI 10.1007/s10980-014-0008-0

RESEARCH ARTICLE

**Tortuosity of habitat edges affects animal movement**

Vilis O. Nams

# Conclusions

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- The roles of forest edges in landscape connectivity should not be underestimated anymore
- They may influence the diversity of species movements