



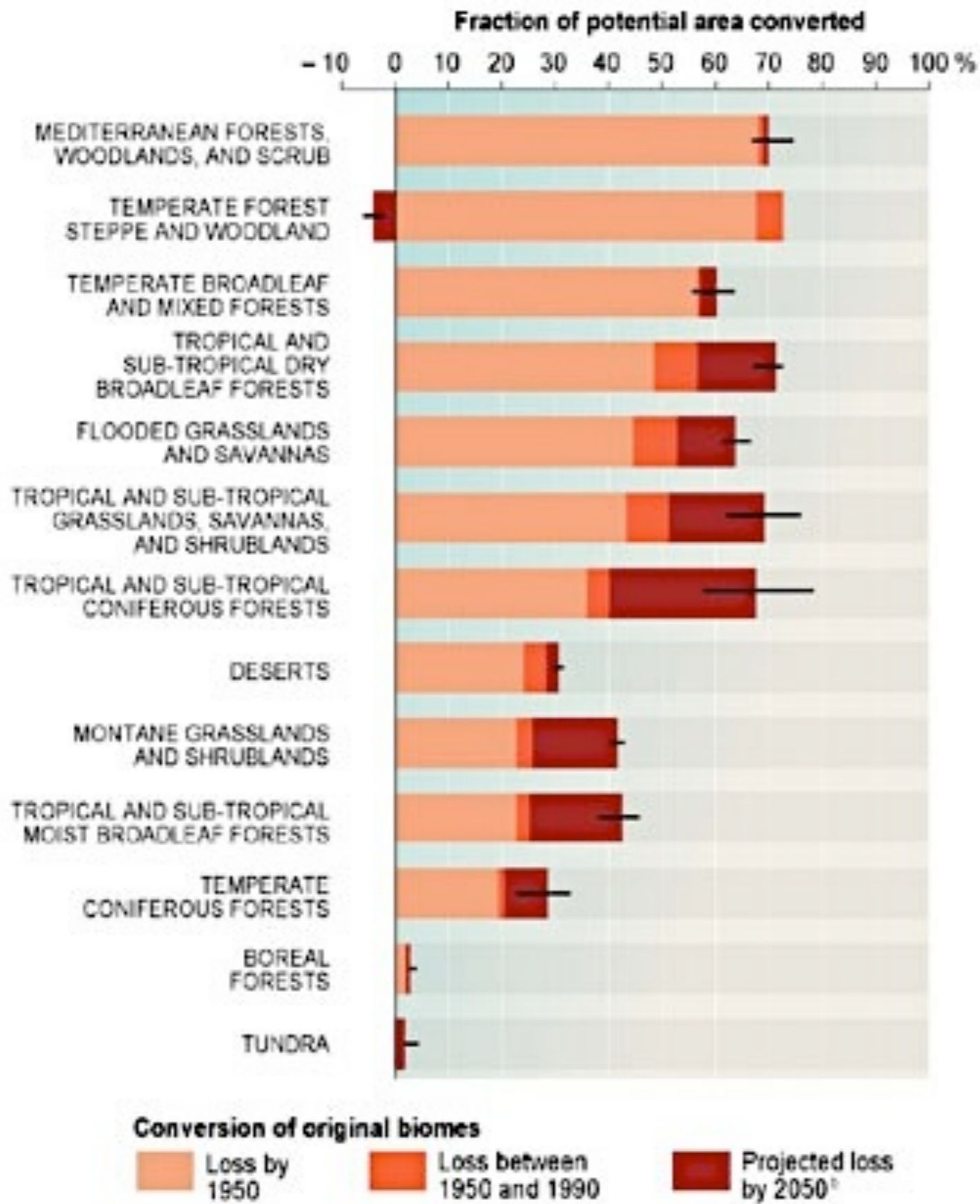
# The Woodpecker: An engineer of the forest

Nichanan Namwong 54401802

Conservation Ecology Program, School of Bioresources and Technology  
King Mongkut's University of Technology Thonburi

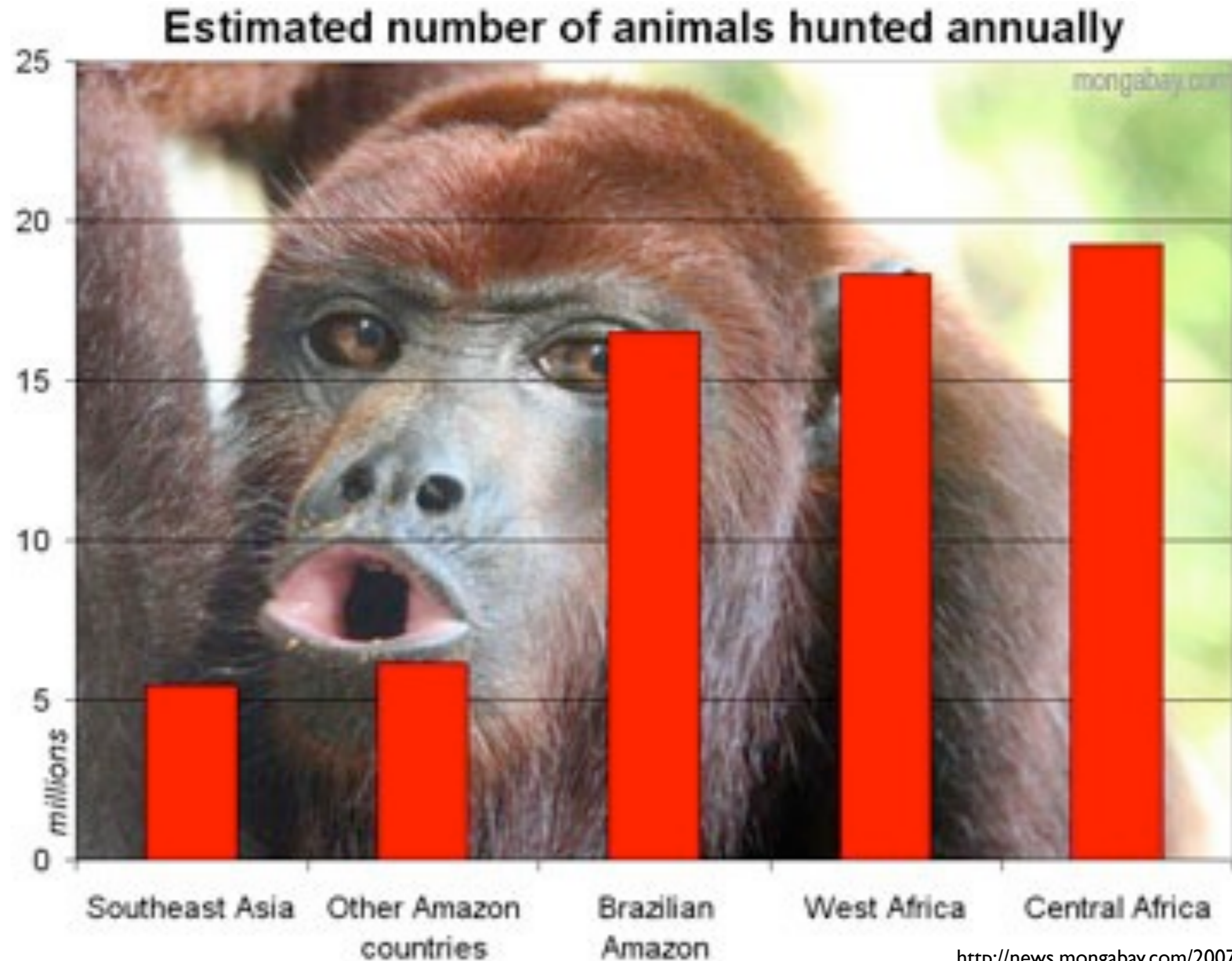






# Global forest problem

# hunting



<http://news.mongabay.com/2007/0430-hunting.html>



forest can't **survive** by themselves;  
they **need animals** to help them !!

27.03.2009

# Forest Community



<http://dendro.cnre.vt.edu/Forsite/forcomm.htm>

# Animal-plant interactions (ecosystem services)



Pollination

Pest control



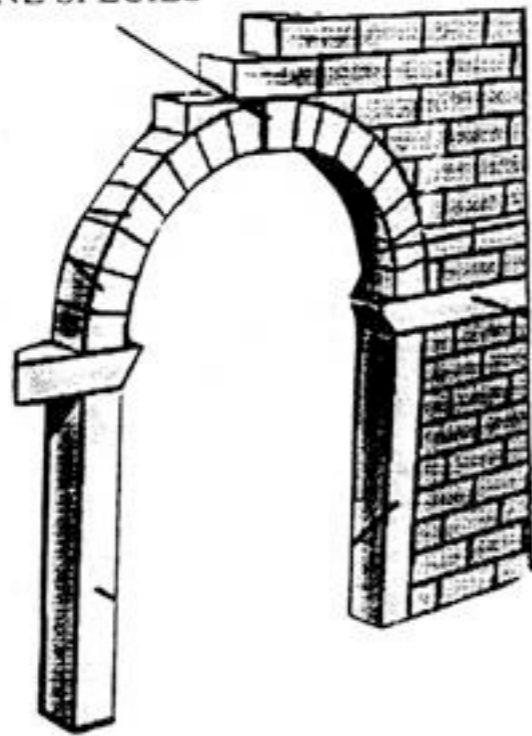
Seed dispersal

<http://lifeofplant.blogspot.com/2011/12/animal-plant-interactions.html>  
<http://onlinelibrary.wiley.com/doi/10.1196/annals.1439.003/pdf>

# Keystone species

“A species that plays a critical role in maintaining the structure of an ecological community”

KEYSTONE SPECIES



[http://en.wikipedia.org/wiki/Keystone\\_species](http://en.wikipedia.org/wiki/Keystone_species)

<http://animals.about.com/od/animalswildlife/01/f/keystonespecies.htm>



# Examples of Keystone species



Elephant

Tiger



Sea otter

[http://en.wikipedia.org/wiki/Keystone\\_species](http://en.wikipedia.org/wiki/Keystone_species)

<http://www.bbc.co.uk/news/science-environment-11607299>

<http://animals.about.com/od/animalswildlife/01/f/keystonespecies.htm>

# Ecosystem engineering

the "creation, modification and maintenance of habitats by organisms" (Gutiérrez *et al.* 2003).

## Ecosystem engineers

organisms that create, modify or maintain habitats in biotic and abiotic materials that, directly or indirectly, modulate the availability of resources to other species (Jones *et al.* 1994; 1997)



[http://www.terradaily.com/reports/Looking\\_At\\_Beavers\\_Role\\_In\\_River\\_Restoration\\_999.html](http://www.terradaily.com/reports/Looking_At_Beavers_Role_In_River_Restoration_999.html)



<http://www.youtube.com/watch?v=lpFyYDNIMY8>



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<http://www.ttlwithchrisgamel.com/2011/06/23/12-steps-to-better-nature-photos-step-9/>