Background

The economically and ecologically important, tropical palm *Mauritia flexuosa* is found in wetlands called *Aguajales* throughout northern South America.

The palm is an important food source, nesting site & habitat for many animal & plant species. The nutritious fruits are also used as food by humans. Wild populations are, however, threatened by unsustainable harvesting.

Increased knowledge of seed predators, survival and germination success of *Mauritia f.* will aid in understanding its distribution, population dynamics and management.

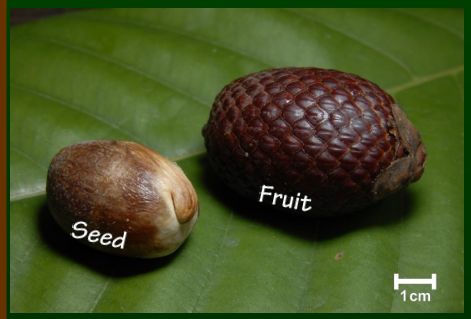
Aims

To study:

1. Seed survival in the Aguajal
2. Seed predators on dry land
3. Insect visitors and consumers
4. Germination in greenhouse experiments

The Palm - *Mauritia flexuosa*

Common name: *Aguaje* (Peru)
Distribution: Amazon basin, South America
Habitat: Wetlands (*Aguajales*)
Description: Dioecious, up to 35m in height.



Methods

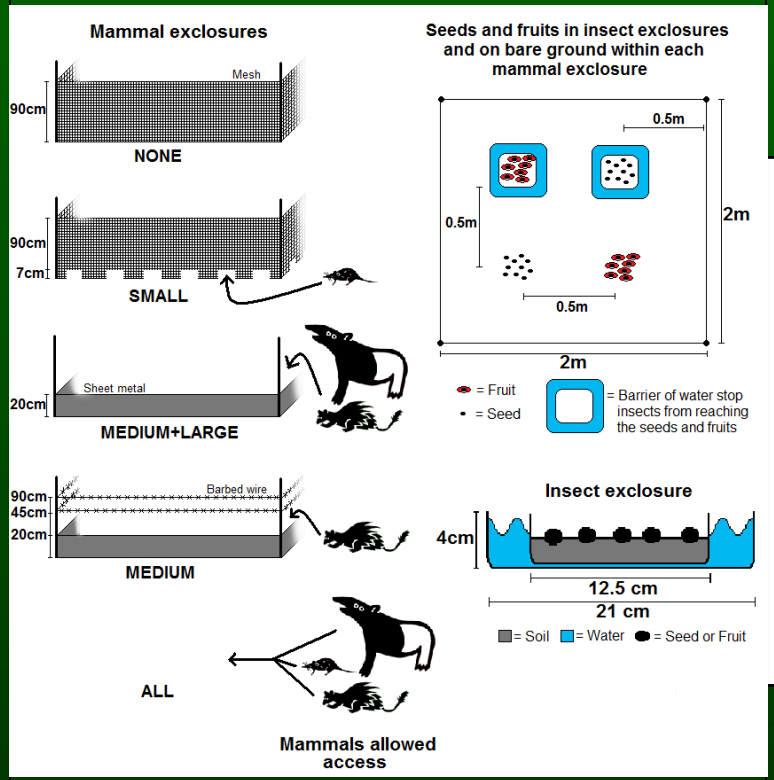
Four experiments in Manu National Park, Peru.

1. Seed survival in the Aguajal

Fruits on dry land and below water within the palm swamp, and on dry land just outside the wetland. Survival estimated after 75 days.

2. Seed predators on dry land

Different size classes of mammals and terrestrial insects excluded from fruits and seeds. Risk of being consumed compared between exclosures.



3. Insect visitors and consumers

100 fruits and 100 seeds inspected daily for insects on and directly underneath. Mammals excluded.

4. Germination in greenhouse experiments

Seeds in different conditions, e.g. on top of soil, under water etc. Survival estimated after 75 days.

Results

1. Seed survival in the Aguajal

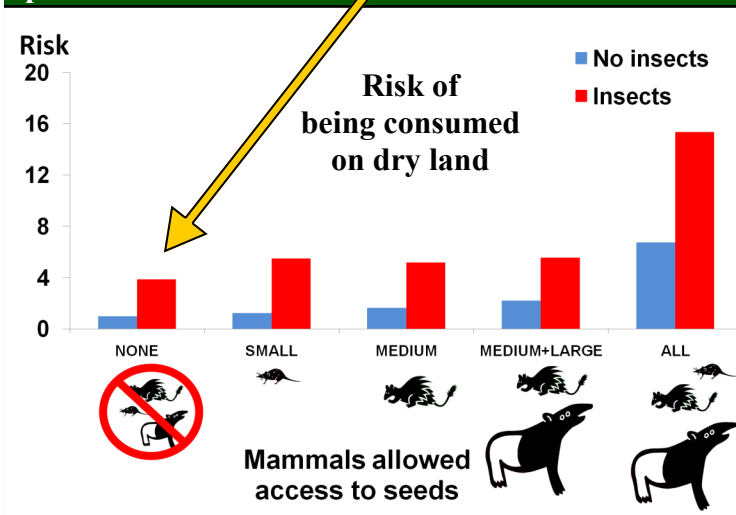
Seed survival significantly higher below water compared to on dry land.

2. Seed predators on dry land

Significantly larger risk of being consumed for a seed without protection from insects (red bars in figure).

The effect of mammals was largest when all sizes were allowed access and only small differences between size classes.

When all mammals were excluded, the risk of being consumed was 4 times higher for seeds not protected from insects.



3. Insect visitors and consumers

9 families of insects and 1 family of millipedes found on the fruits and seeds. Bark beetles, earwigs and ants seemed to do most damage to seeds. Fruit pulp seemed to attract dungbeetles and sap beetles.

Ants eating on seed.

Results

4. Germination in greenhouse experiments

Also in this experiment seeds covered by water and/or soil had a higher estimated survival.

No seeds germinated in any of the experiments

The research station.

A palm swamp (*Aguajal*) from above.

Conclusions

Insects are important seed predators on dry land

Water protect seeds from insect seed predators

A strategy to avoid seed predators may be to :

Stay below water!

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Photo: Björn J.

Stay below water!

- A Strategy to avoid Seed Predators

- Seed Survival and Germination of Mauritia flexuosa in Southeastern Peru

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