

The Trouble with Exotic Mangroves

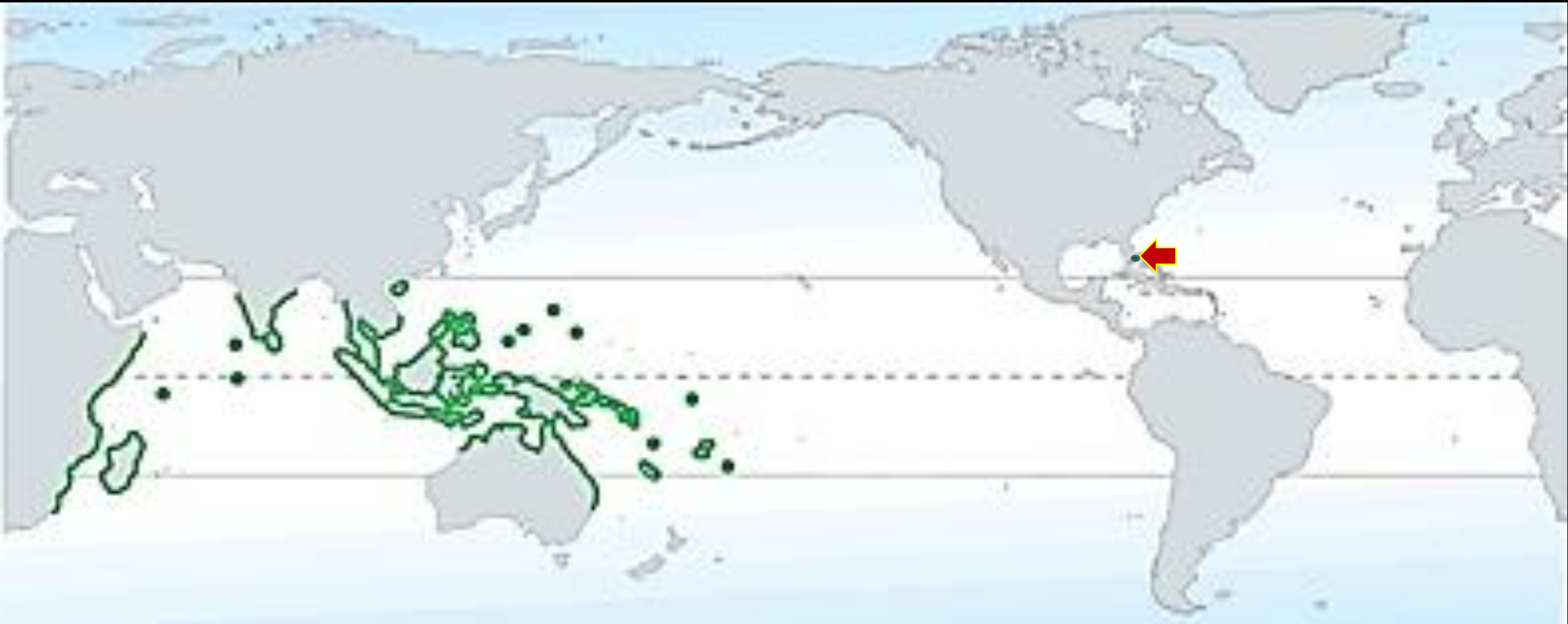


Bruguiera gymnorrhiza



Lumnitzera racemosa

Range of *Lumnitzera racemosa*



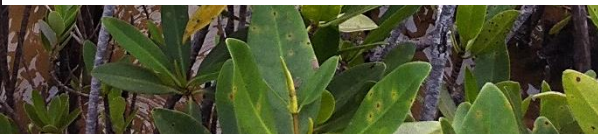
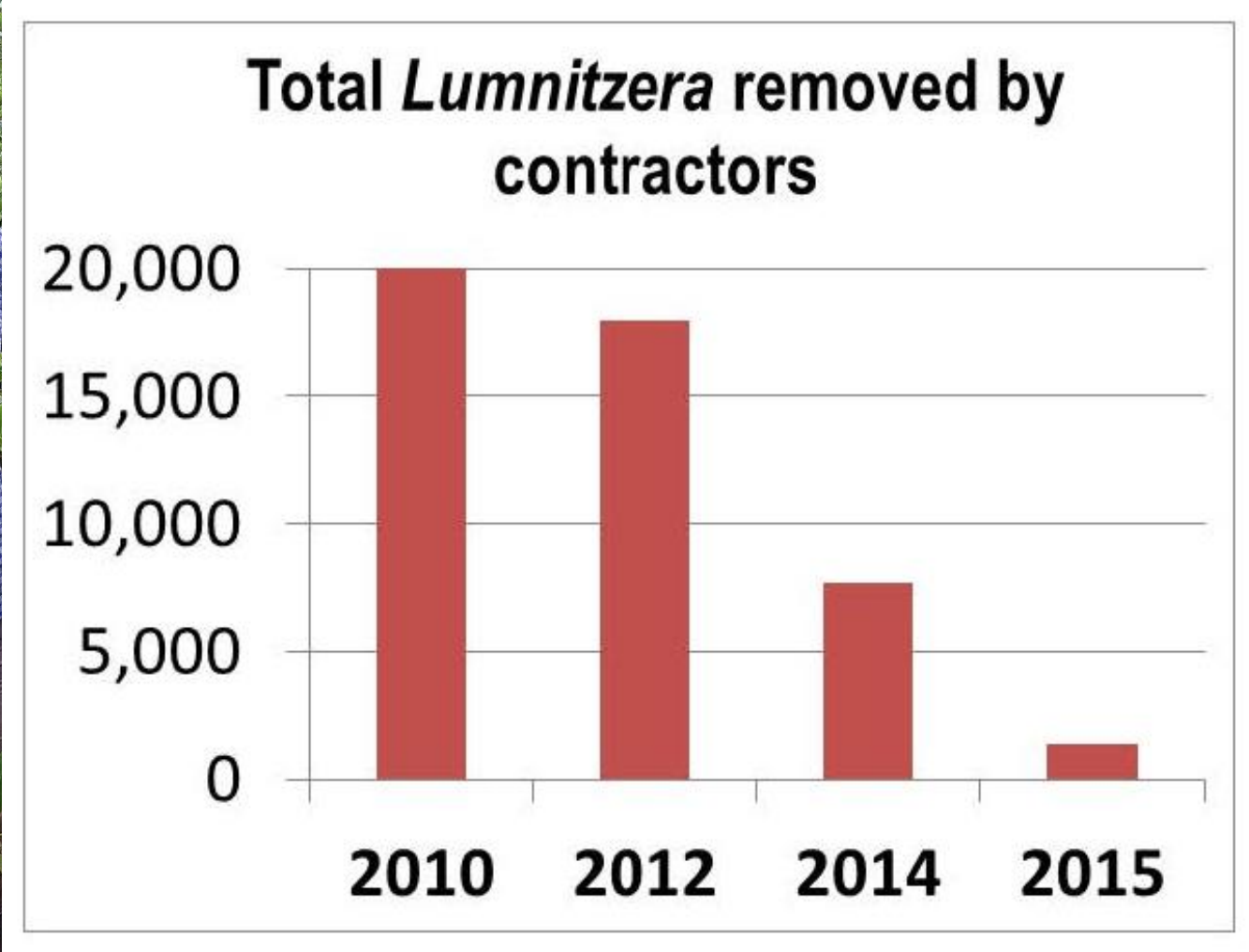
Lumnitzera racemosa in Native Habitat

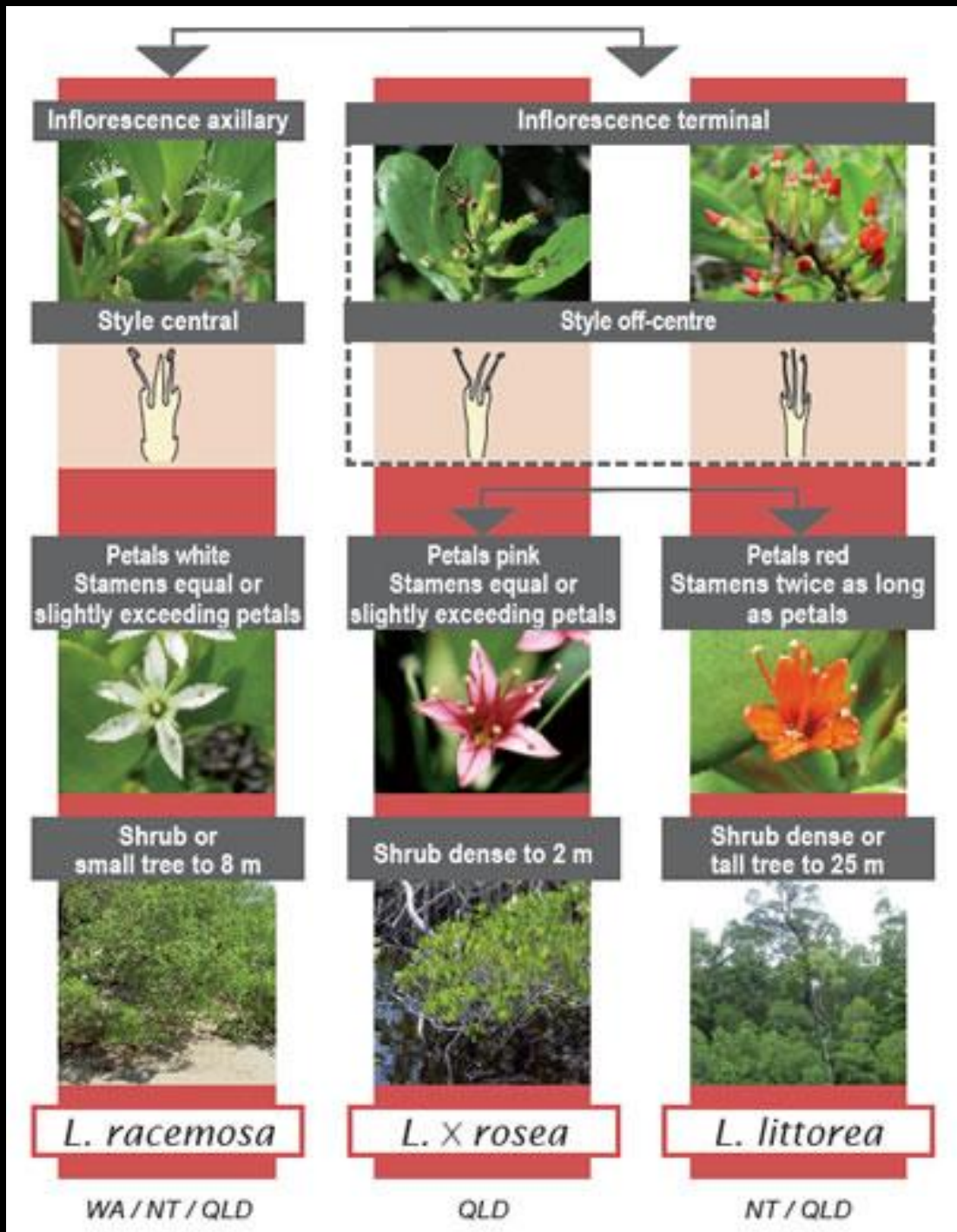














Lumnitzera littorea









Lumnitzera x rosea

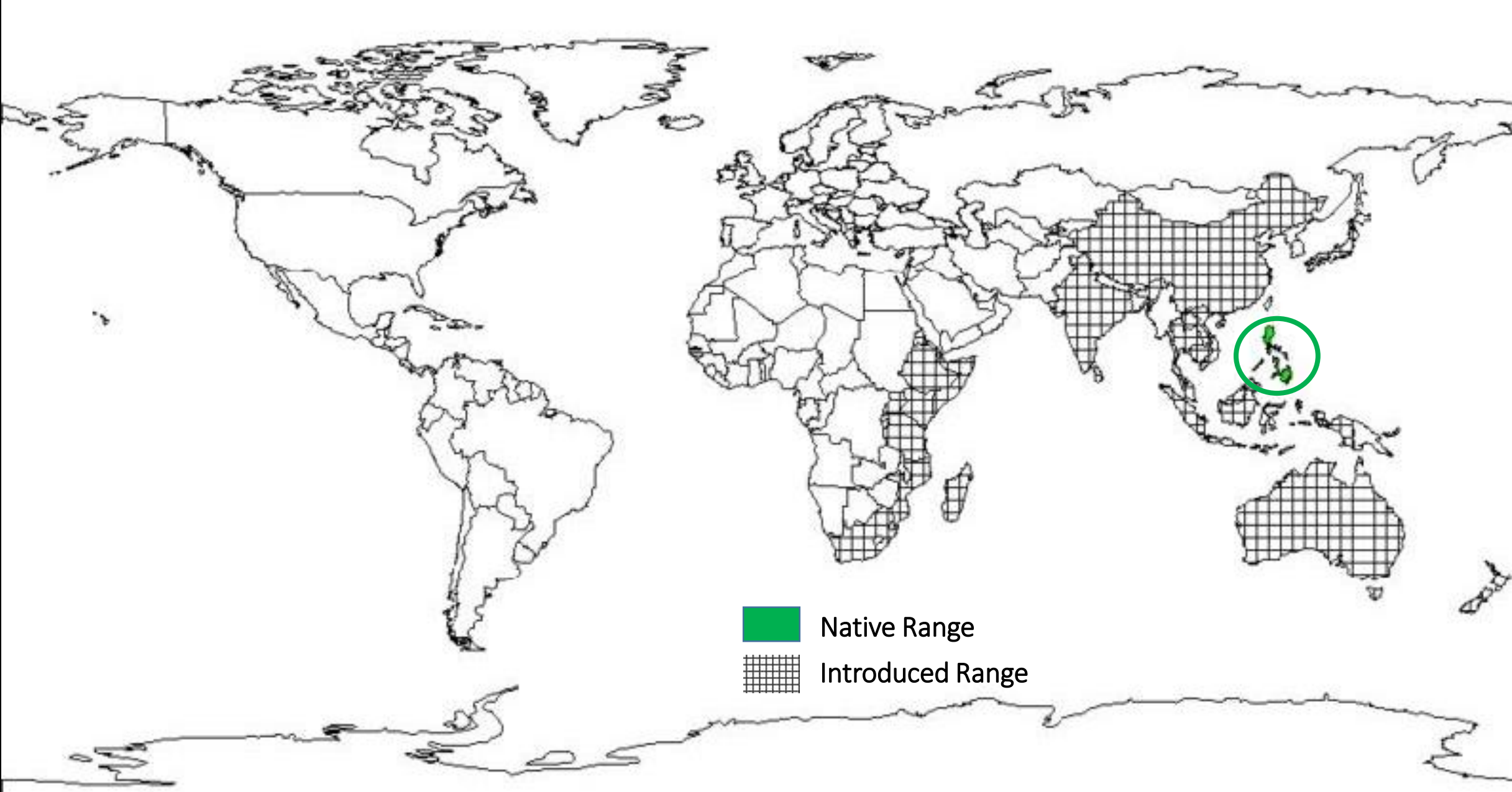




Barringtonia racemosa



Native and Introduced Range of *Barringtonia racemosa*



Introduced:

Australia, Brunei, Cambodia, China, Djibouti,
Eritrea, Ethiopia, Fiji, India, Indonesia, Japan,
Kenya, Laos, Madagascar, Malaysia,
Mozambique, Myanmar, New Zealand, Papua
New Guinea, Samoa, Solomon Islands,
Somalia, South Africa, Sri Lanka, Taiwan,
Tanzania, Thailand, Tonga, Uganda, Vanuatu,
Vietnam, Zanzibar.

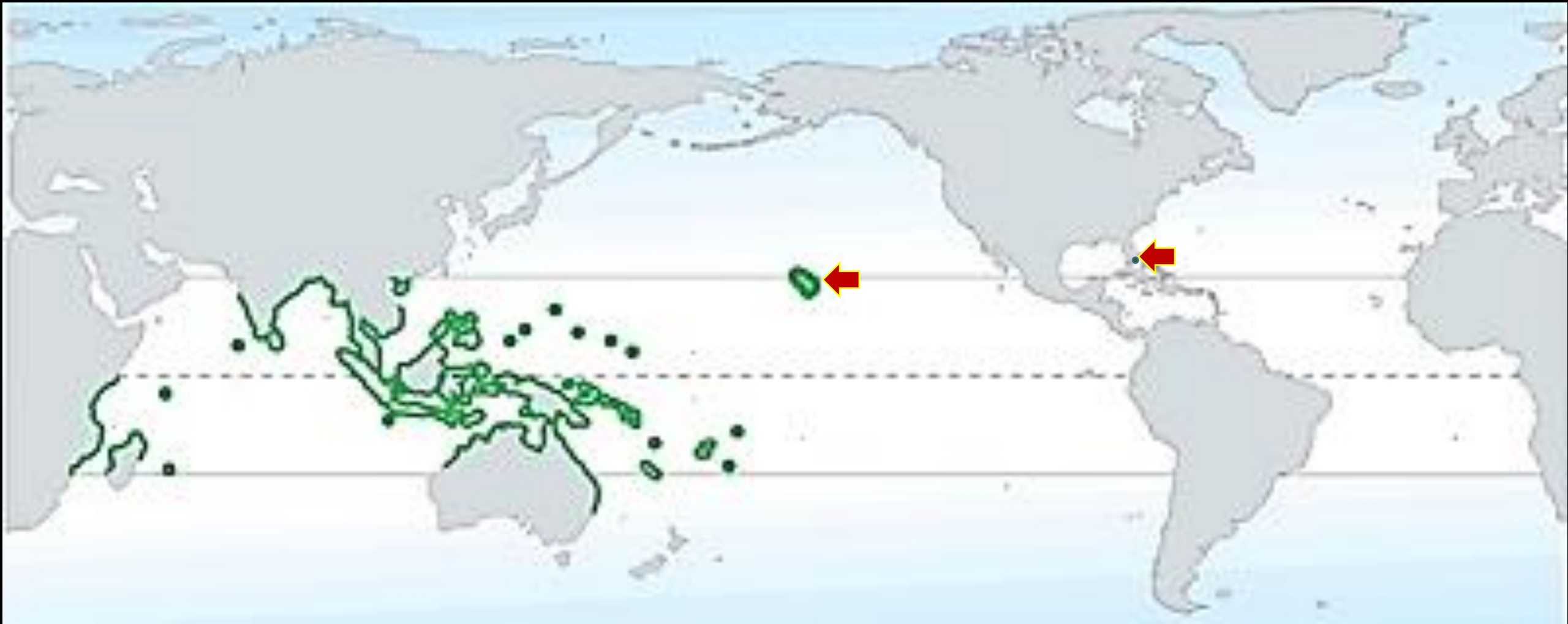
Barringtonia racemosa at Fairchild Tropical Botanic Garden







Range of *Bruguiera gymnorhiza*

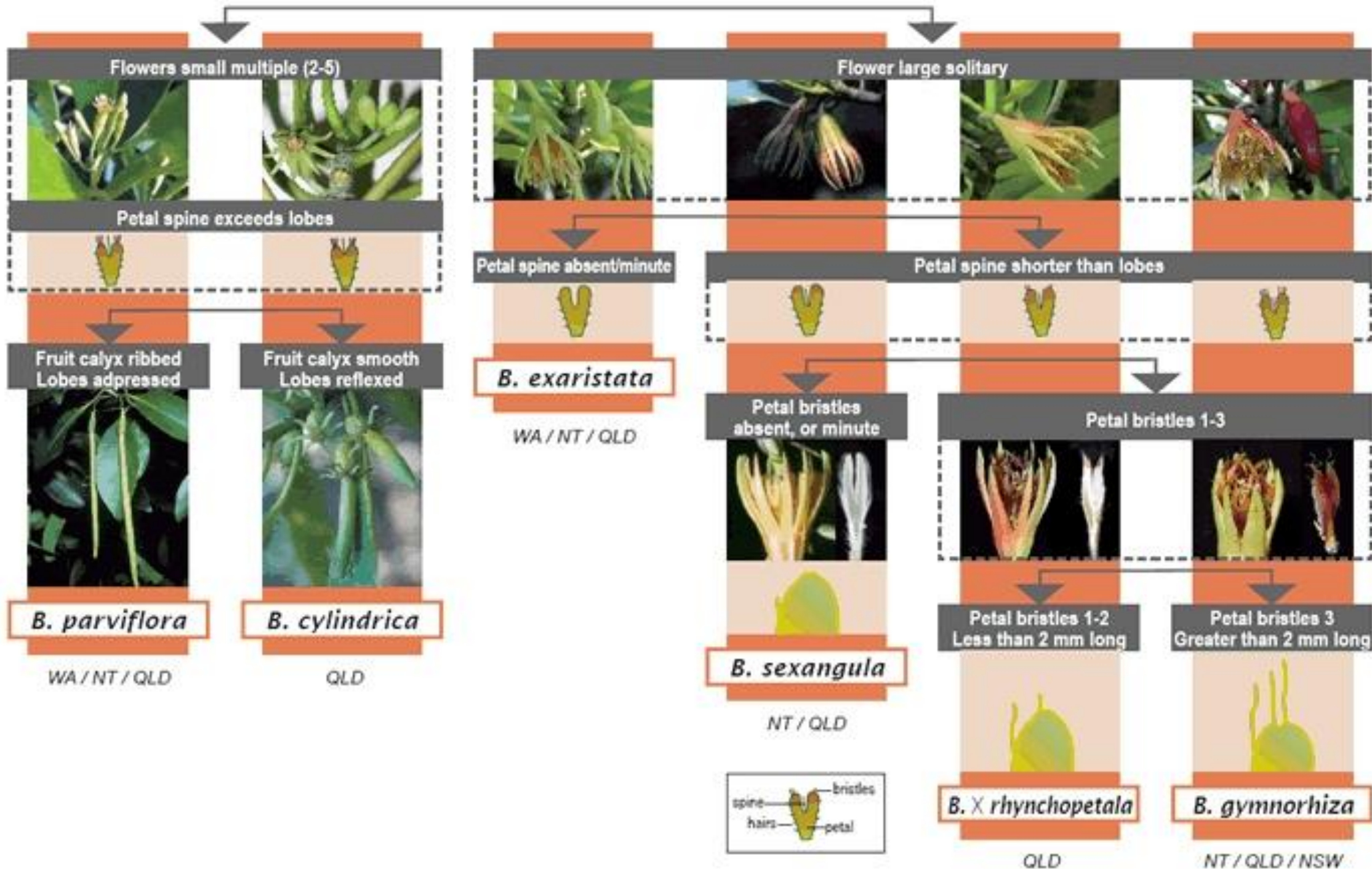




Bruguiera gymnorhiza







An aerial satellite photograph of a coastal city, likely in Vietnam, showing a dense urban area with a grid-like street pattern and numerous buildings. The city is situated along a large body of water, possibly a bay or a large river. Three yellow pushpin markers are placed on the map, each with a corresponding label in white text. The labels are 'New Bruguiera' at the top, 'Kampong Bruguiera' in the middle, and 'Lumnitzera' at the bottom. The water is a dark teal color, and there are some industrial or port structures visible along the coast.

New Bruguiera

Kampong Bruguiera

Lumnitzera





New Bruguiera







John Ricisak, Miami-Dade County



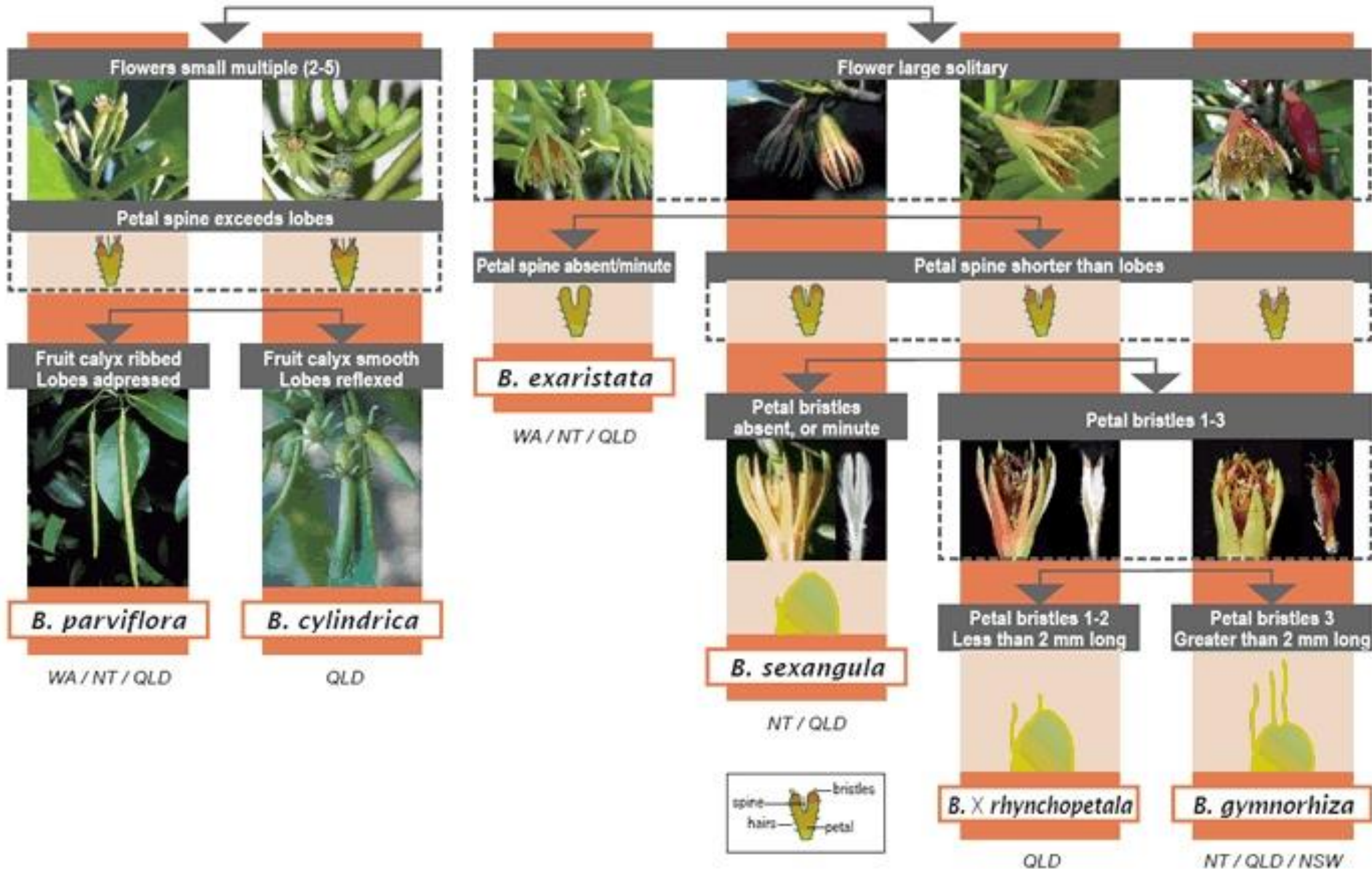
Bruguiera gymnorhiza















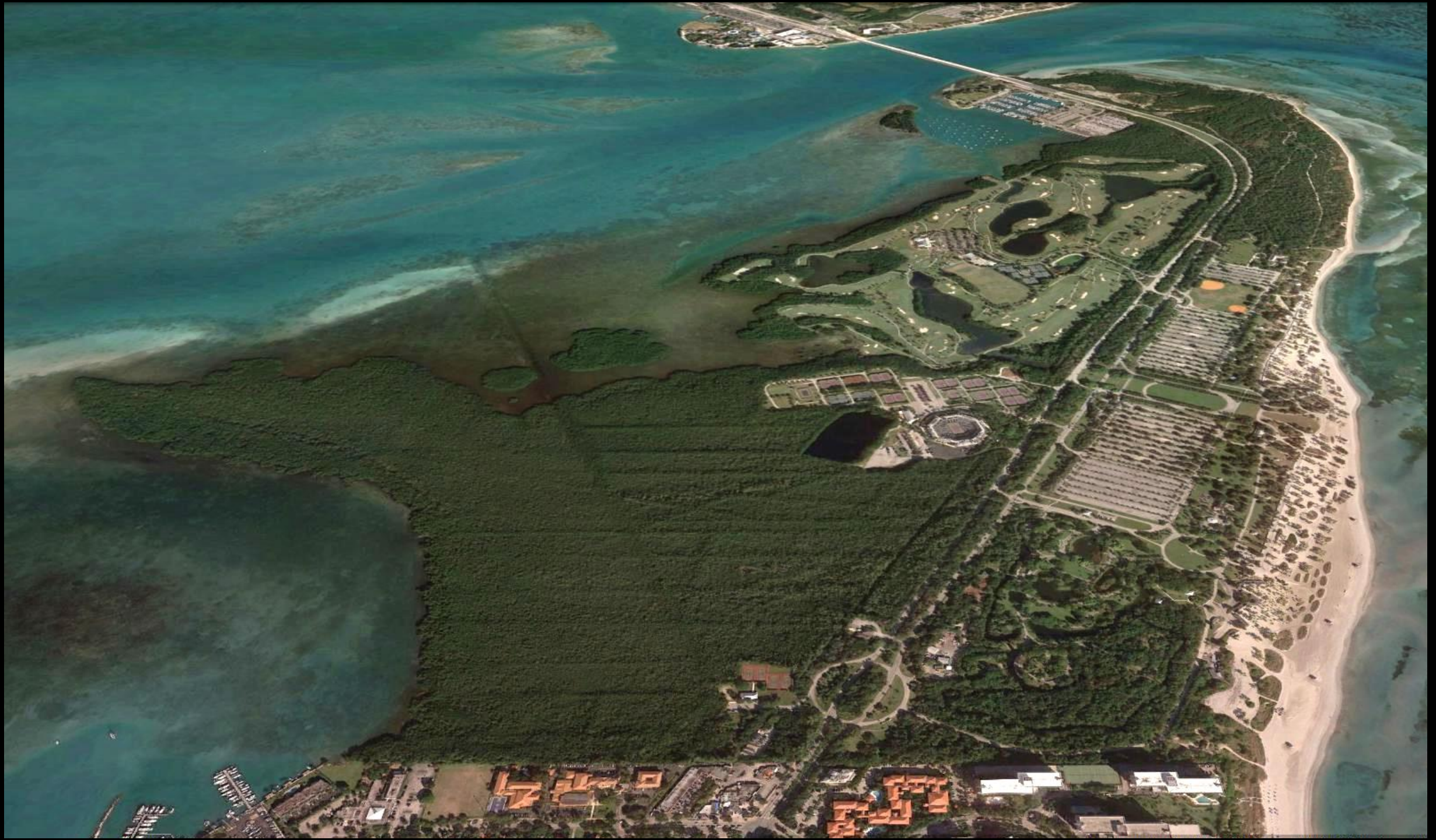








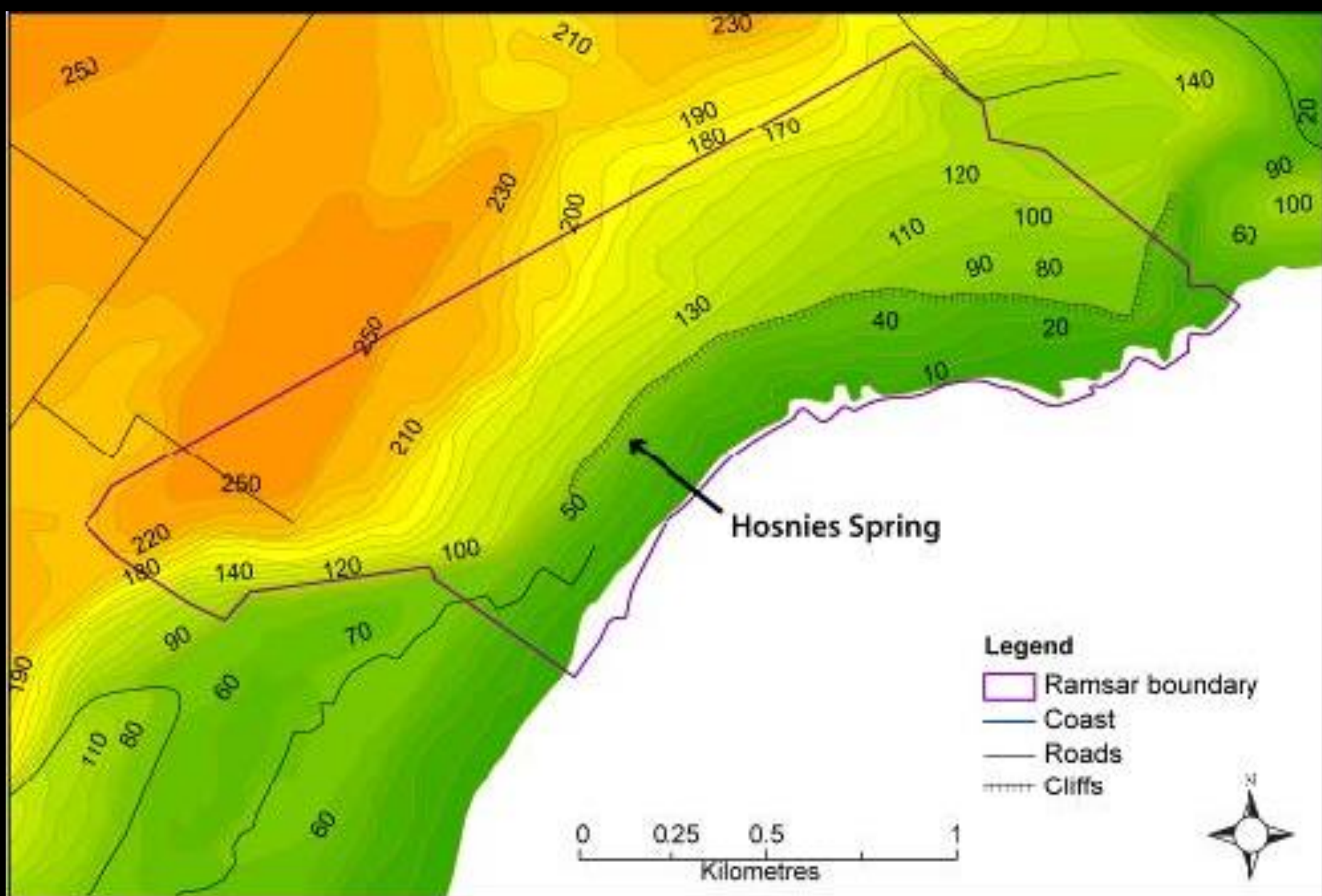








Hosnies Spring, Christmas Island

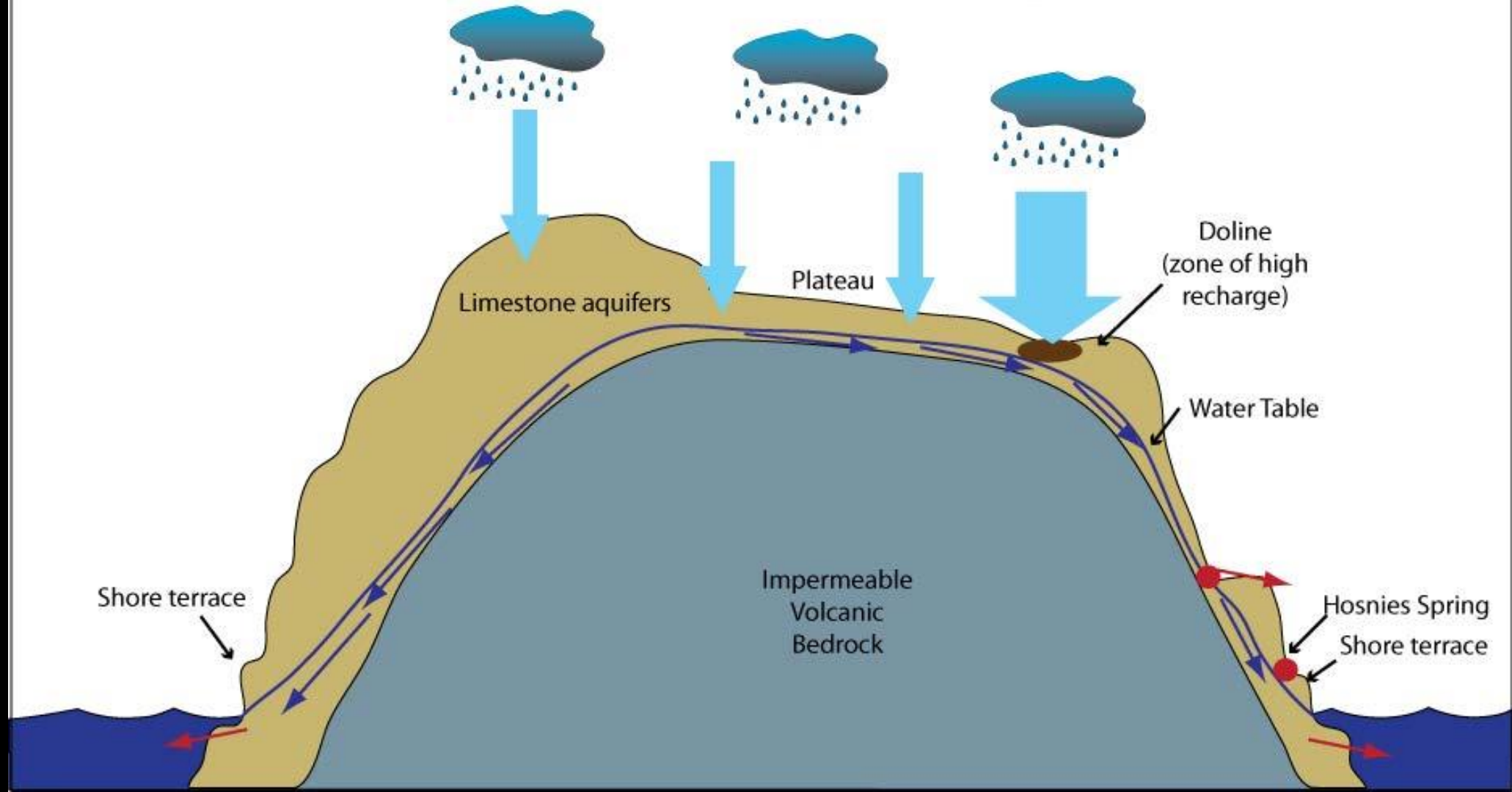


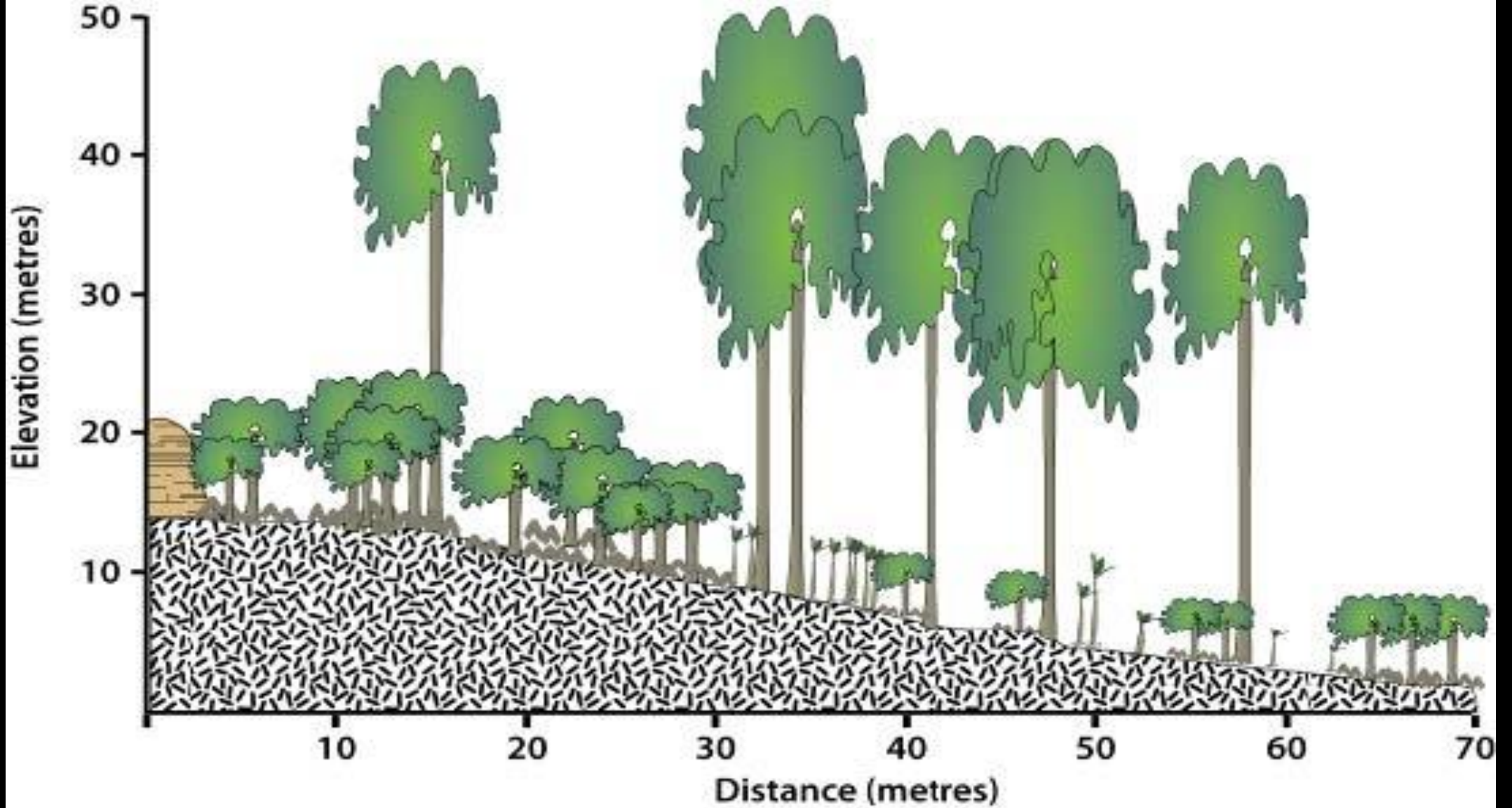




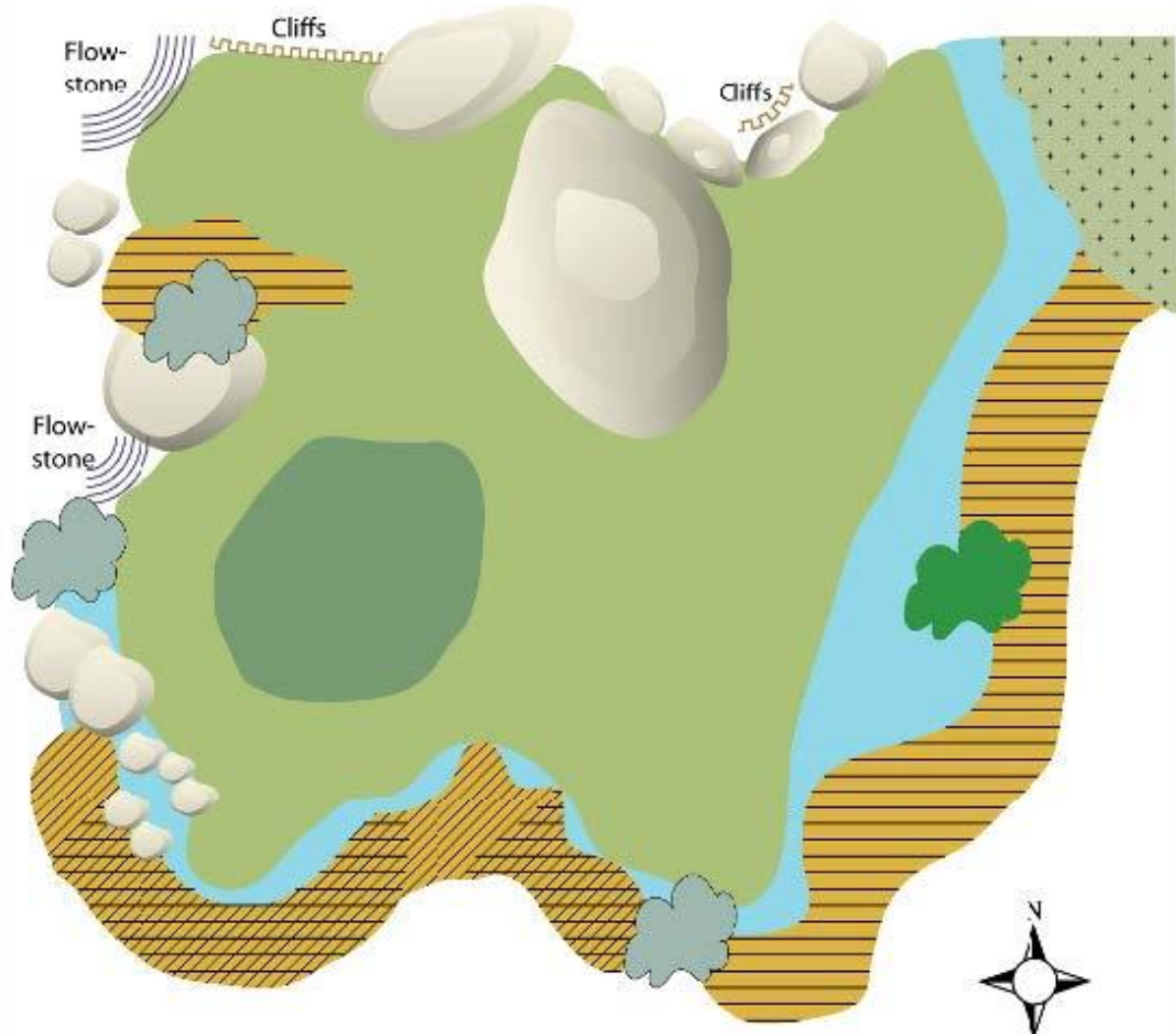


-  Rainfall recharge
-  Groundwater discharge
-  Groundwater flow
-  Springs

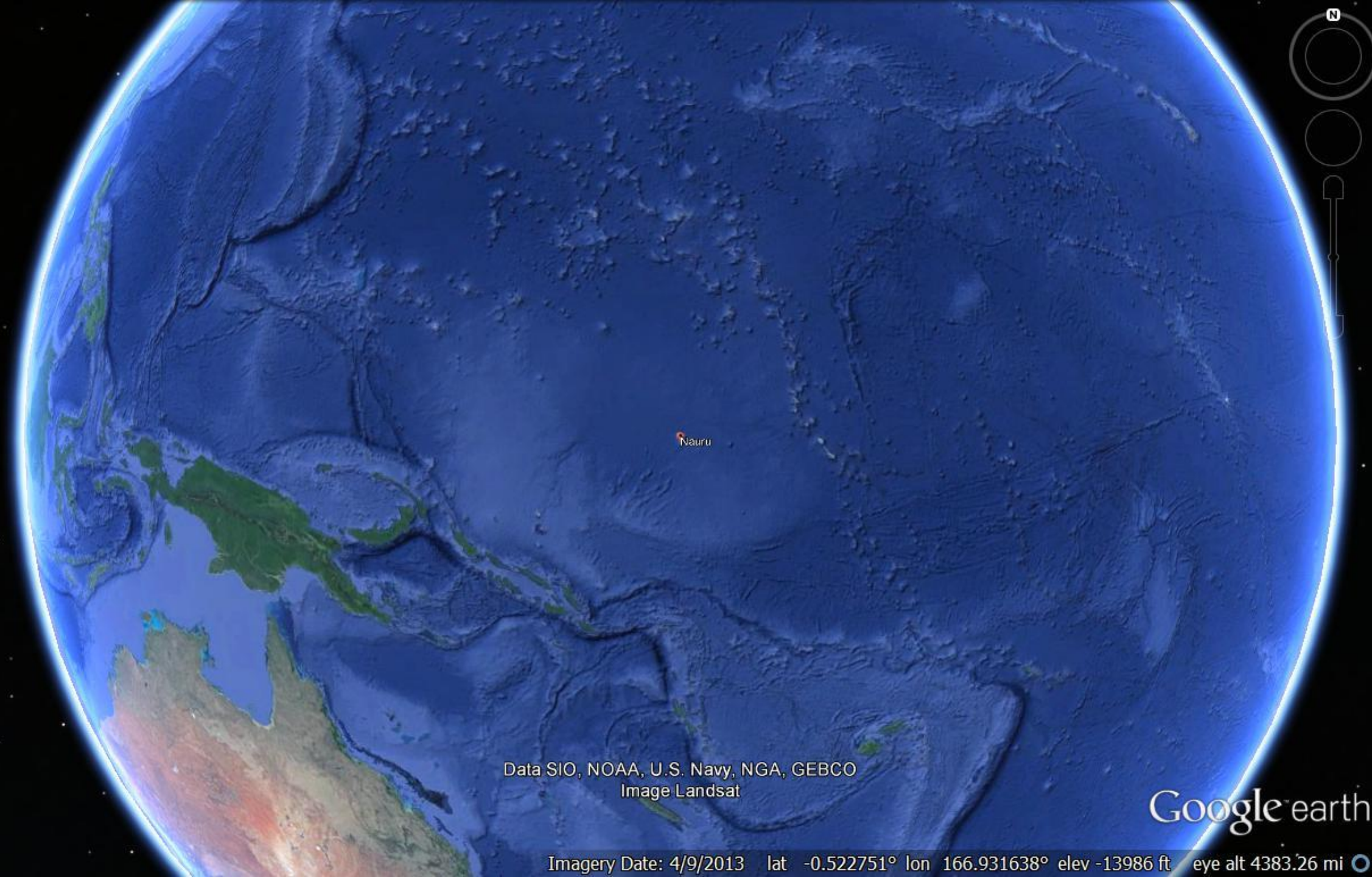




- | | | | |
|---|---------------------|---|-----------|
|  | Bruguiera seedlings |  | Gravel |
|  | Bruguiera |  | Limestone |







Nauru

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat

Google earth

Imagery Date: 4/9/2013 lat -0.522751° lon 166.931638° elev -13986 ft eye alt 4383.26 mi



Nauru

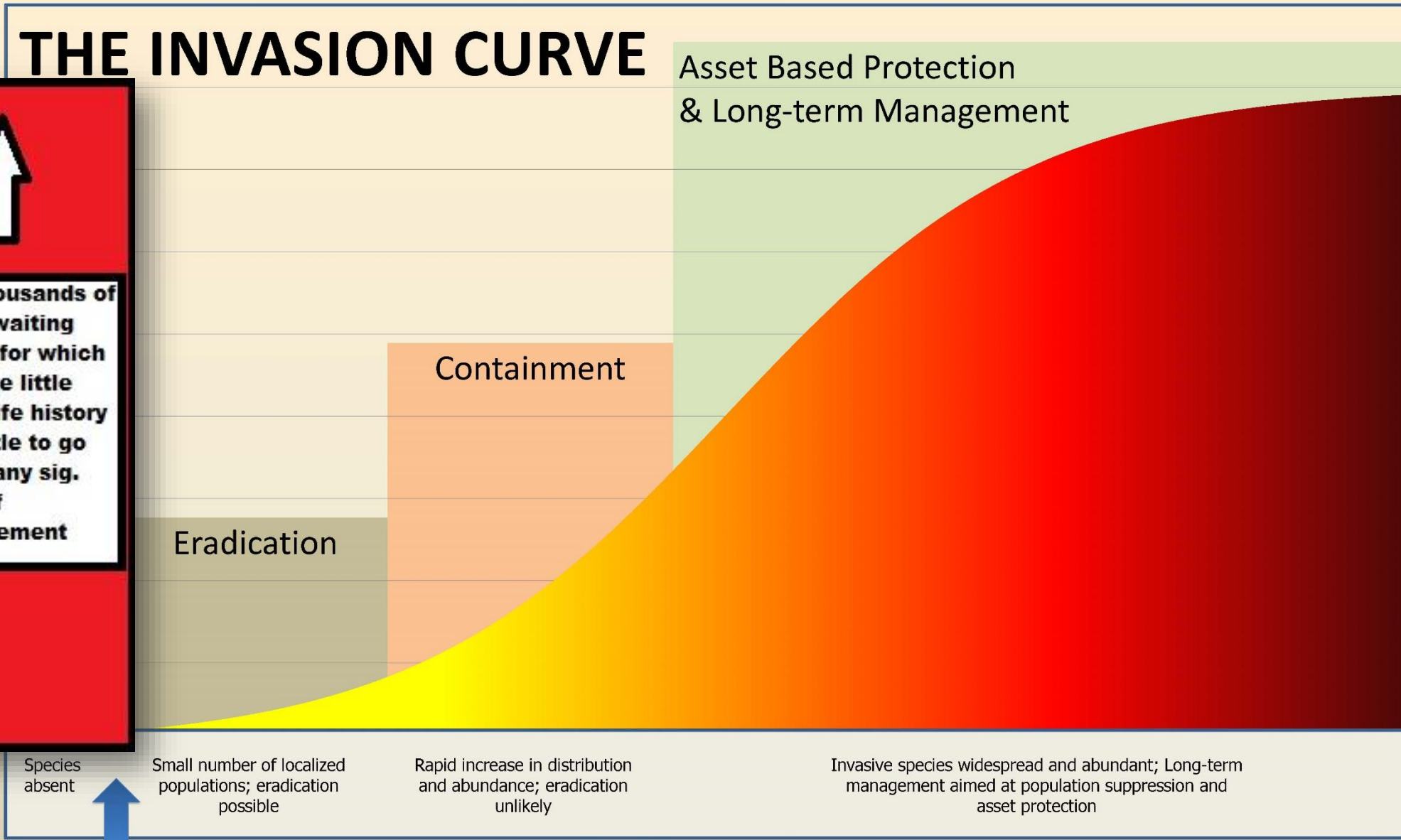
THE INVASION CURVE

Asset Based Protection
& Long-term Management



The thousands of taxa awaiting import for which we have little basic life history info little to go on for any sig. level of management

CONTROL COSTS →



Species absent

Small number of localized populations; eradication possible

Rapid increase in distribution and abundance; eradication unlikely

Invasive species widespread and abundant; Long-term management aimed at population suppression and asset protection

Introduction

TIME →

Mangroves

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[species](#) |

[keeping](#) |

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∴ [Bruguiera gymnorhiza](#)

∴ [Pelliciera rhizophorae](#)

∴ [Rhizophora mangle](#)

∴ [Rhizophora stylosa](#)



[Bruguiera gymnorhiza](#) (Large-Leafed Orange Mangrove)



[Pelliciera rhizophorae](#) (Tea Mangrove)



[Rhizophora mangle](#) (Red Mangrove)



[Rhizophora stylosa](#) (Stilted Mangrove)

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cultivation



Abstract

Bruguiera gymnorrhiza can be cultivated easily under simple growing conditions.

Soil & Fertilizer

One of the most important criterium for a successfull long term cultivation of Bruguiera gymnorrhiza with magnificent growth is to offer the right kind of soil substrate with a numerous amount of the right nutrients. We recommend Mangrove Mud Special with which we have excellent results in growing Bruguiera gymnorrhiza. Mangrove Mud Special is a long term fertilizer that can be used pure or stretched with sand. The less stretched Mangrove Mud Special is the more effective it is and the easier it is to cultivate Bruguiera gymnorrhiza.

Air temperature

Air temperature should be around 22 to 30°C. Not at any time the temperature should fall below 10°C. Short temperature drops for a few days down to 15°C are normally no problem and can be handled pretty well.

Water temperature

Water temperature should be around 20 to 28°C. Not at any time the temperature should fall below 10°C. Short temperature drops for a few days down to 15°C are normally no problem for Bruguiera gymnorrhiza and can be handled very well.

Humidity

Humidity should be around a minimum of 50 percent. The higher humidity is the better it is for Bruguiera gymnorrhiza and its growth. Too low humidity can be a reason for Bruguiera gymnorrhiza to have shriveling shoots which then can not develop properly. In most cases a sprayer helps to increase the local humidity.

Light

Light plays an important role in keeping Bruguiera gymnorrhiza successfully and is directly related to the growth. Bruguiera gymnorrhiza can be grown successfully by daylight during the whole year but shows its full glory at a daily light period of 10 to 12 hours. An additional or total illumination by an artificial lighting system is recommended, especially in places outside of the thirtieth latitude.

Artificial lights should have a light spectra of about 5000 to 13000 kelvins. Experience has shown that HQI (Metal Halide) or HPS (High Pressure Sodium) lights in the just-called range achieved best results.

T5 fluorescent lamps also achieved good results in growth of Bruguiera



- introduction
- distribution
- cultivation
- roots
- leaves
- flowers
- fruits
- seeds
- trunk
- soil
- growth
- usage



Growth field

Aquarium

Bruguiera gymnorrhiza perfectly can be grown in any kind of aquarium whether seawater aquarium, brackish water aquarium or freshwater aquarium. The implementation of Bruguiera gymnorrhiza into your tank is generally absolutely easy. Bruguiera gymnorrhiza has rapid growth and filters nitrite, nitrate and phosphate pretty good.

Mangrove Basin

Cultivation of Bruguiera gymnorrhiza in a mangrove basin is very easy. Socialization with other mangrove species is no problem.

Vivarium

Due to the increased humidity in a vivarium Bruguiera gymnorrhiza can be grown perfectly in a vivarium. Keep in mind cutting shoots right on time before the plants get too big.

Terrarium

Generally a tropical terrarium offers very good growing conditions for the Oriental Mangrove. Bruguiera gymnorrhiza is a great appearance in such a tropical terrarium, especially near or in the water part of the terrarium. The animals of the terrarium will love the variety. Keep in mind cutting shoots right on time before the plants get too big.

Indoor plant / Conservatory

Due the robustness of the Oriental Mangrove, Bruguiera gymnorrhiza is one of the few mangrove species that can be grown as an indoor plant on the window sill or in a conservatory. It is important that the Bruguiera gymnorrhiza is grown from a propagule to make sure that the Oriental Mangrove can adapt to the individual conditions like fluctuating temperatures or daylight hours from first day on. To support the growth during the whole year the temperature can be supported by a heating system and the daylight hours by artificial lights to make sure that the Bruguiera gymnorrhiza receives 10 to 12 hours light daily.

Further details about keeping mangroves are shown detailed and clearly [here](#)

Salt

We recommend brackish water with a salinity of 10 to 25 grams not iodized sea salt per liter.

Plants

[Bruguiera gymnorrhiza plants](#) are available on our webshop.

Propagules

[Bruguiera gymnorrhiza seeds](#) are available on our webshop.



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