

#NicheLife



Learning Goals

- **Define niche in relation to evolving characteristics.**
 - List multiple biotic and abiotic factors that determine a niche
 - Interpret niche distribution graphs
 - Compare and contrast the niches of different organisms

“NICHE”

Ecologists use many different pronunciations

The Book Definition



“The unique set of habitat resources that species require, as well as its influence on the environment and other species”

Generalists vs. Specialists

- Generalist
 - Species with a broad niche
 - Virginia opossum (feeds on anything)
- Specialist
 - Species with narrow niches
 - Koala bear (eats only leaves of eucalyptus tree)



Generalist vs Specialist

- **Generalist**

- Large/wide niche
- Wide range of diet – usually omnivores
- Tolerates a wide range of environmental variations
- Tolerates environmental changes
- Commonly invasive species
- Examples: Cockroaches, rats, raccoon

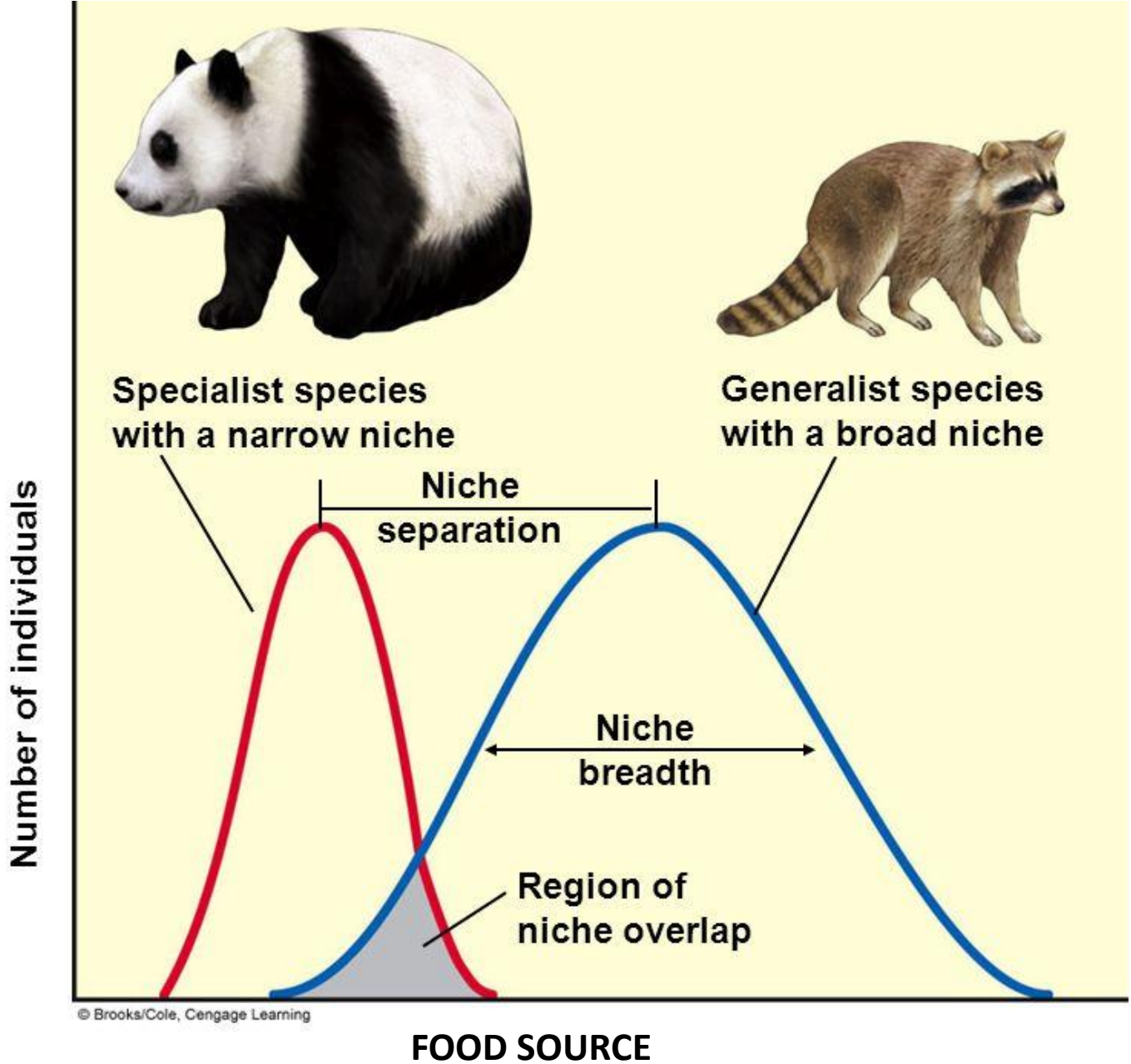


- **Specialist**

- Small/narrow niche
- Limited/unique diet requirements
- More likely to suffer from habitat loss and become endangered
- Does NOT tolerate environmental changes
- Commonly found in stable climax communities
- Examples: Koala, giant panda, walrus



Broad vs Narrow Niche



Ursus maritimus



Carnegiea gigantea



Cocos nucifera

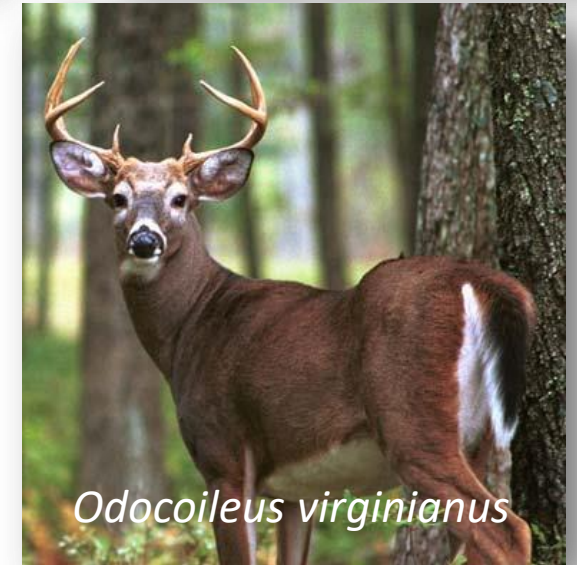


Periplaneta americana

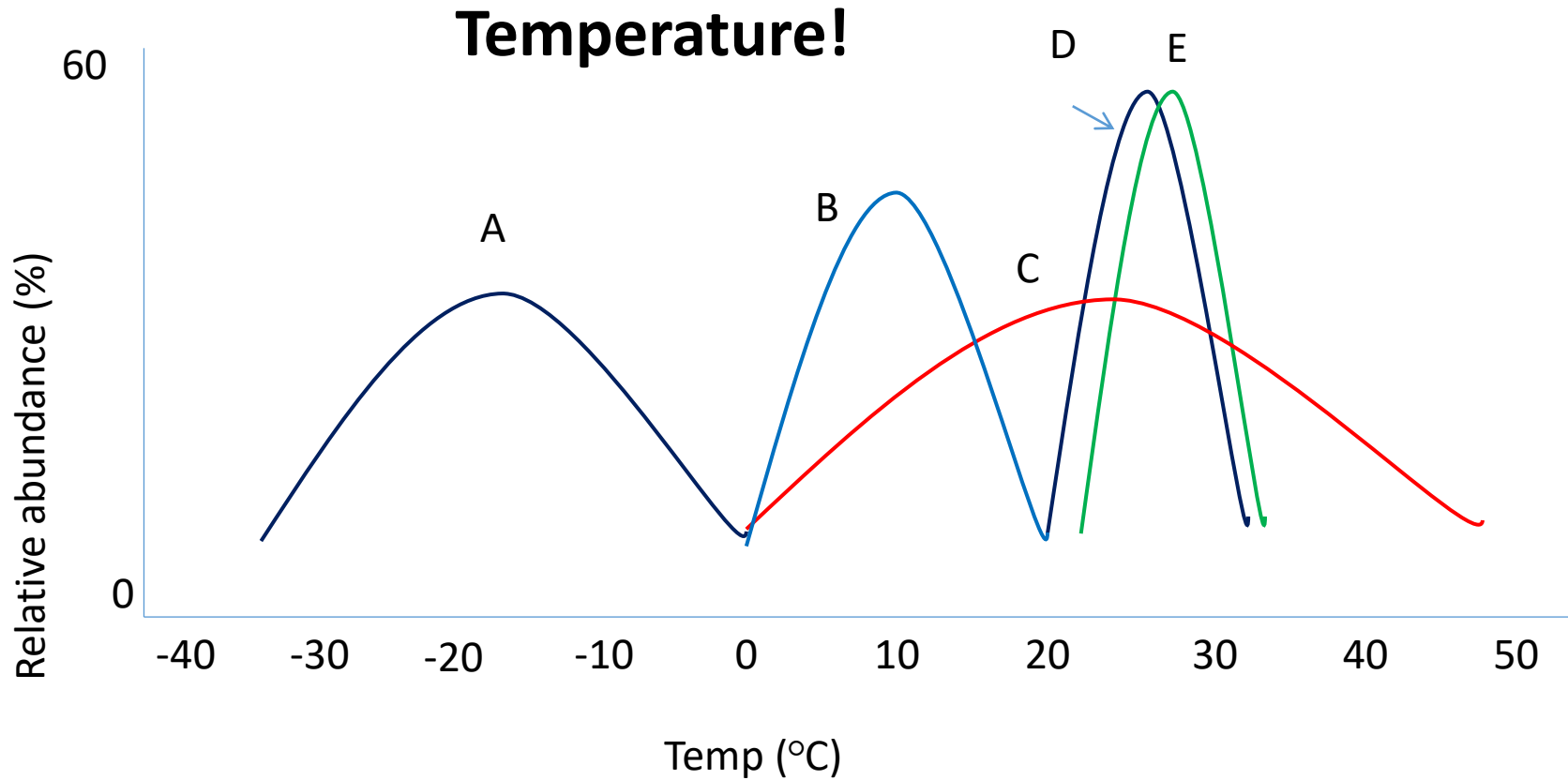


How might these species' niches overlap?

Odocoileus virginianus

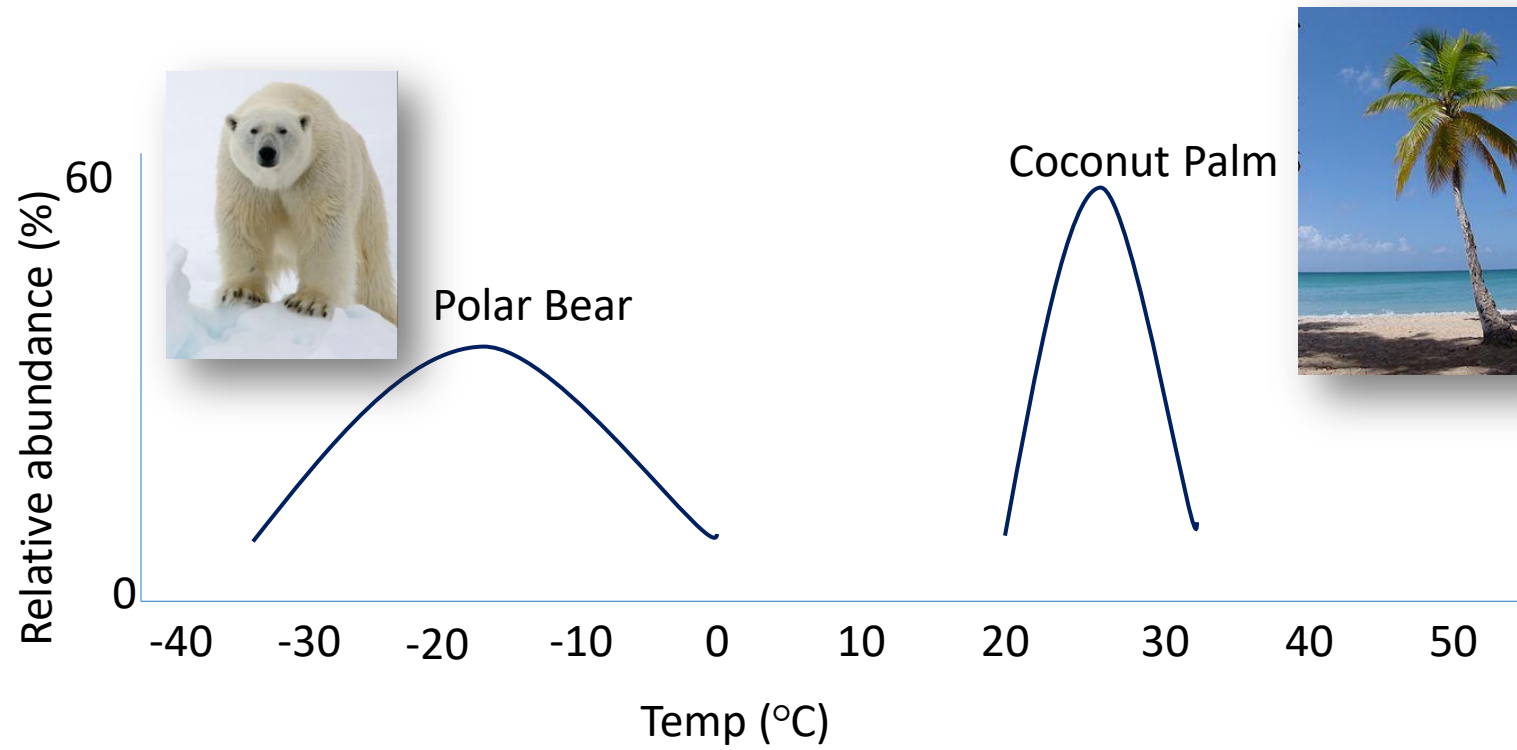


P.S. Every species has a scientific name which is in the language of Latin!



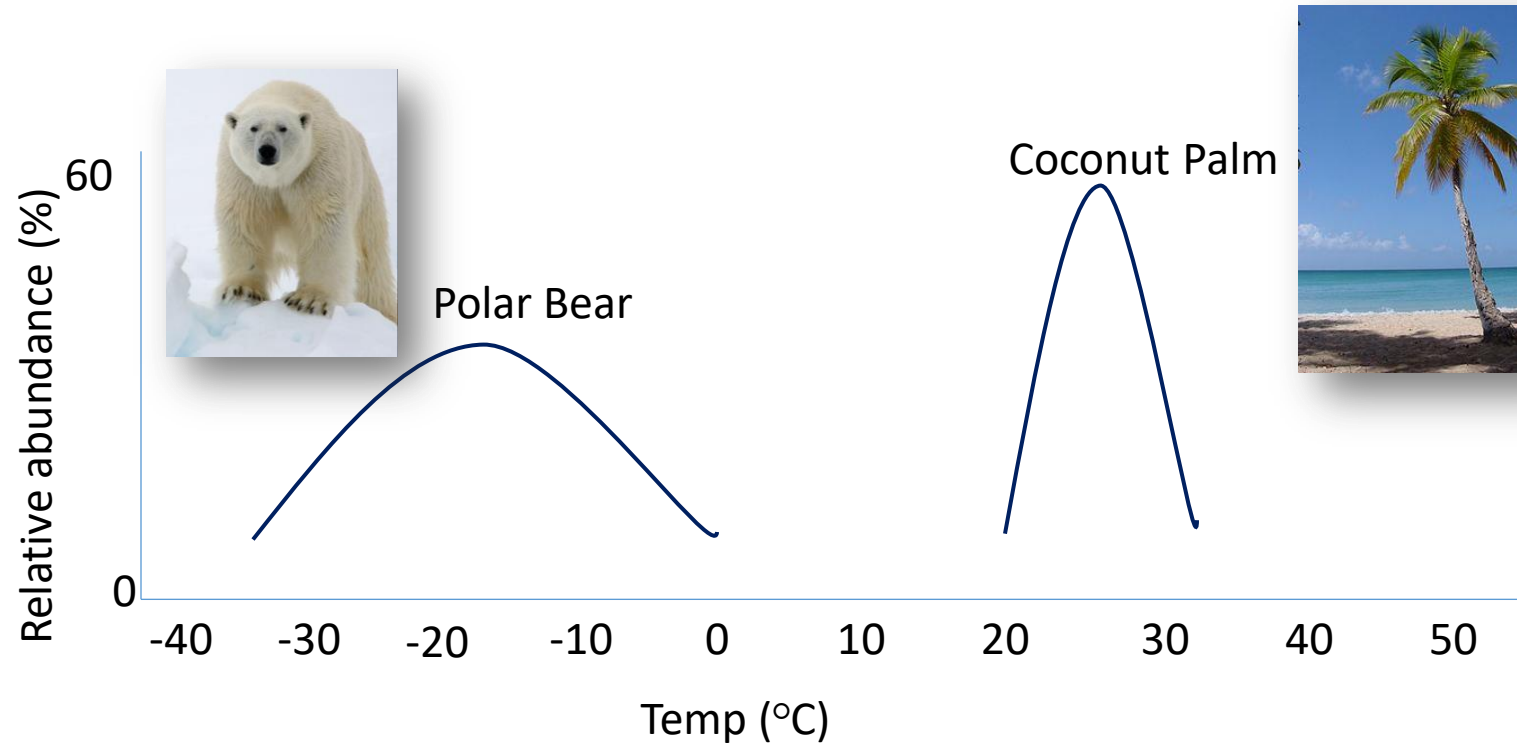
- Saguaro cactus
- Polar bear
- Coconut Tree
- Cockroach
- White-tailed deer

They don't all overlap, but most do. See if you can figure out which curve belongs to each of the species listed to the left!



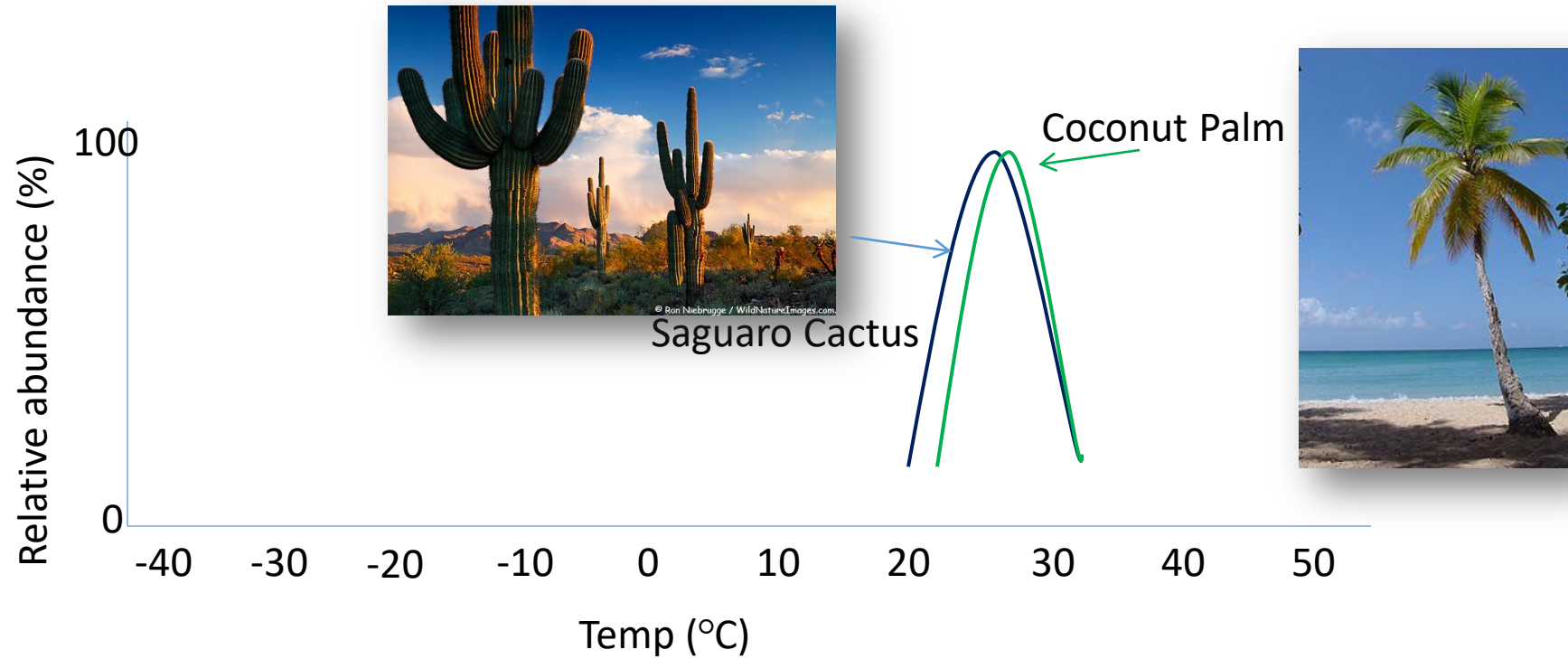
Do these two organisms have the same niche?

- A. Yes**
- B. No**



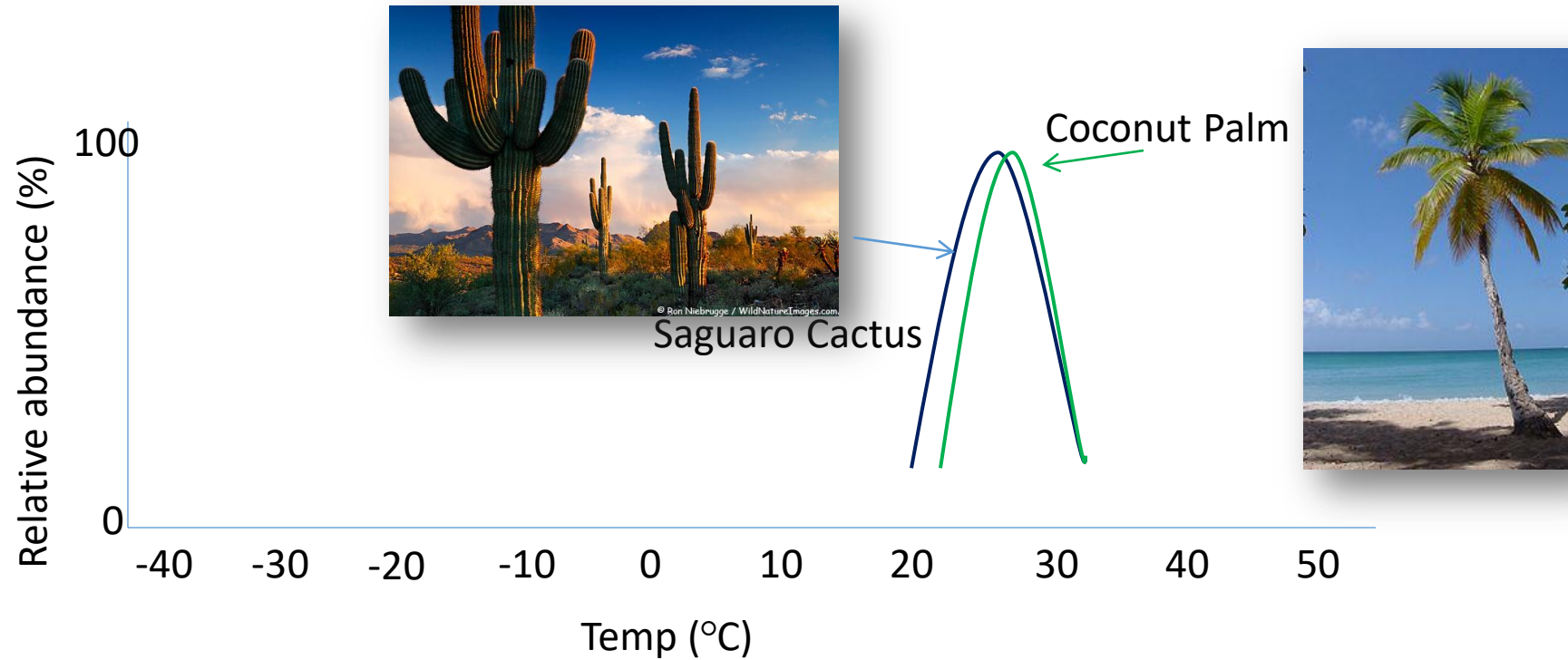
Do these two organisms have the same niche?

- A. Yes**
- B. No**



Do these two organisms have the same niche?

- A. Yes**
- B. No**



Do these two organisms have the same niche?

A. Yes, they live in the same temperature, but

B. No, because one environmental factor does not equal a niche for an organism.