

TOPIC: HYBRID ZONES

Hybrid Zones

◆ **Hybrid zones:** areas where members of _____ species mate and produce _____.

- _____ is possible in hybrid zones.
- _____ reproductive isolation after _____ **contact**.

◆ Hybrid zones can lead to different outcomes:



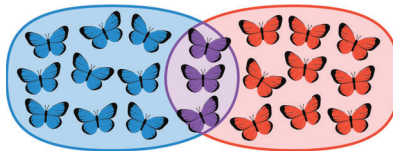
Fusion: High gene flow _____
species boundaries.

- ◆ Many hybrids w/ _____ fitness.
- ◆ _____ speciation.



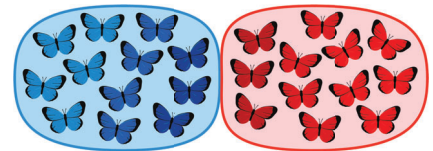
Stability: Limited gene flow
_____ hybrid zone.

- ◆ _____ - _____ hybrid area.
- ◆ Species remain _____ hybrids.



Reinforcement: Selection
_____ gene flow.

- ◆ Hybrids have _____ fitness
- ◆ Increases _____ barriers.



EXAMPLE

Below are three descriptions of hybrid zones. For each, read the description and decide if it is describing reinforcement, stability, or fusion in the hybrid zone. Write your answer on the line provided. Not all answers may be represented, and answers may be used more than once.

- Sea urchins are broadcast spawners, meaning they release sperm and eggs into the water to reproduce. Allopatric sea urchin species show no gametic reproductive isolation and can form hybrids in the lab. However, sympatric populations do show gametic isolation, and the sperm and egg from different species do not hybridize.
_____.
- Townsend and Hermit warblers are closely related species found in Western North America. In areas of sympatry, hybrids regularly form, though they have lower fitness. It is thought that new adults move into the hybrid zone regularly from the parent populations, though gene flow out of the hybrid zone is much less common.
_____.
- On the Galapagos islands, the small ground finch (*Geospiza fuliginosa*) and the large ground finch (*G. difficilis*) show strong mating preference for members of the same species in sympatry but not in allopatry.
_____.

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PRACTICE

Which of the following statements are true regarding recontact in hybrid zones?

- I. Stable hybrid zones result in the two species fusing into one.
 - II. Reinforcement strengthens prezygotic barriers, limiting the creation of hybrids.
 - III. Hybrid zones are created when species are found in sympatry and lack pre- or postzygotic reproductive barriers.
- a) I & II only. b) I & III only. c) II & III only. d) I, II, & III.

PRACTICE

Regular hybridization, resulting in hybrid organisms with low fitness, could lead to natural selection favoring what outcome?

- a) Reinforcement.
- b) Fusion of the two species.
- c) A stable hybrid zone.
- d) Extinction of one species.