Ridge Push Theory

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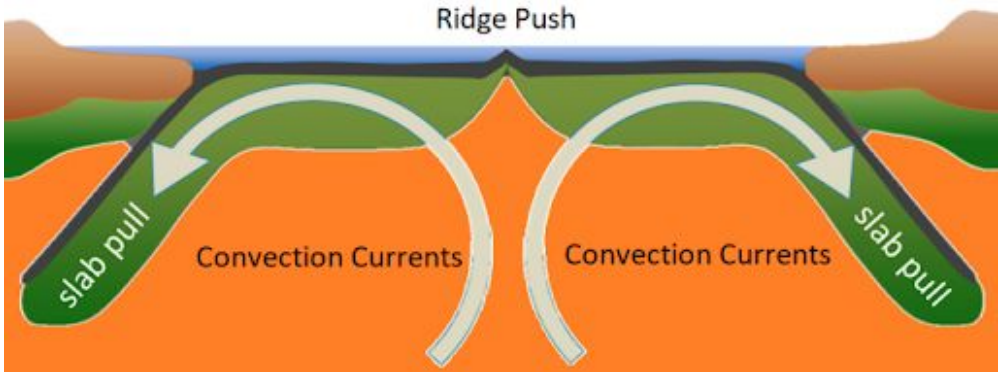
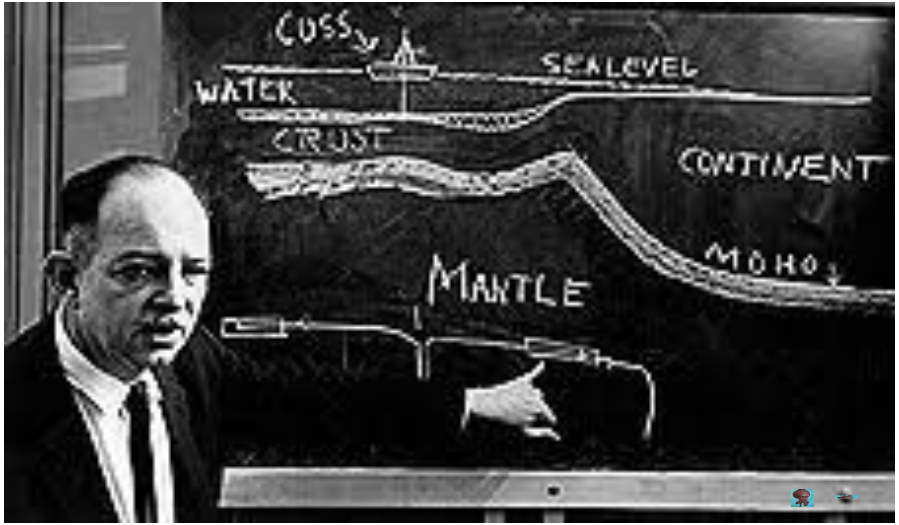
What is ridge push

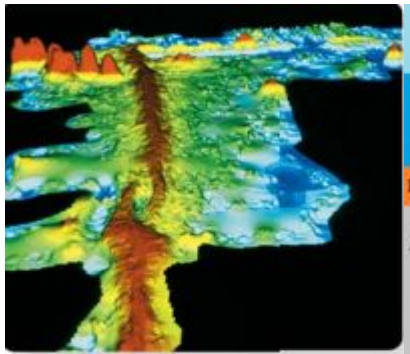
- Proposed driving force for moving tectonic plates
- Ridge push is also known as gravitational sliding.
- Occurs at mid-ocean ridges as the result of the rigid lithosphere sliding down the hot, raised asthenosphere below mid-ocean ridges.
- Although it is called ridge push, the term is somewhat misleading.
- It is actually a body force that acts throughout an ocean plate, not just at the ridge, as a result of gravitational pull.
- The name comes from earlier models of plate tectonics in which ridge push was primarily ascribed to upwelling magma at mid-ocean ridges pushing or wedging the plates apart.
- It was originally proposed in 1960 by Harry Hess

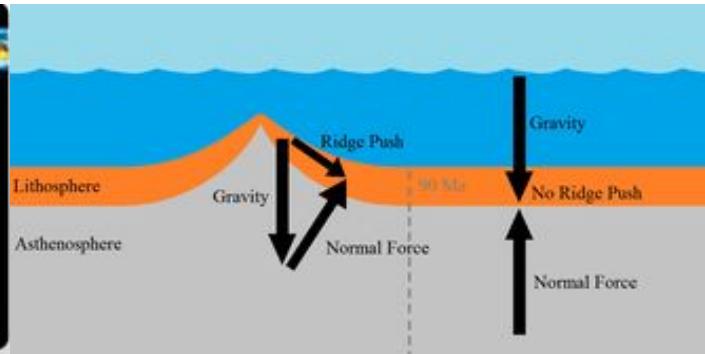




Mechanics behind Ridge-push

- Ridges at divergent boundaries have higher elevation than surrounding lithosphere.
- Slope shape at the ridge
- Rocks that form from magma are less dense and more buoyant
- As new rock cools it becomes denser and therefore gravity pulls it and causes sliding.
- The cycle than continues when more magma rises to the surface.





History of Ridge Push

- Originally ridge push was not in alfred wegener's proposals for continental drift
- Later on the mid ocean ridges were discovered
- Seafloor spreading proposal by Harry Hess.

Thanks for listening