## Snail Fish that can survive Sub-zero temperature

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<u>In news</u>— A study has revealed that Snailfish found in an iceberg habitat in Greenland can survive in icy Arctic waters due to the presence of 'antifreeze' proteins in its bloodstream.

## Key findings-

- Museum researchers diving in the icy waters surrounding Greenland in 2019 discovered the small fish glowing in green and red.
- They were initially attracted to its biofluorescence, which allows it to glow green and red in the dark Arctic waters.
- Biofluorescence is the ability of an organism to convert blue light into green, red, or yellow light. It is rarely found in Arctic fish due to prolonged periods of darkness in the region.
- Snailfish is the only polar fish reported to have biofluorescence.
- Upon further investigation of the biofluorescent properties of snailfish, the researchers discovered the presence of antifreeze proteins.
- This extraordinary feature, which is rare among sea organisms, allows snailfish to prevent ice crystals from accumulating in their cells and body fluid.
- Antifreeze proteins (AFPs) are specific proteins, glycopeptides, and peptides made by different organisms to allow cells to survive in sub-zero conditions.
- AFPs function by reducing the water's freezing point and avoiding ice crystals' growth in the frozen stage.
- Fish cannot survive being partially frozen, unlike certain other reptile and insect species.

 The findings demonstrate how marine life can sustain in sub-zero temperatures using their unique adaptation mechanisms.

## About Snailfish-

- The Liparidae, commonly known as snailfish or sea snails, are a family of marine scorpaeniformes fishes.
- It is widely distributed from the Arctic to Antarctic Oceans, including the oceans in between.
- The snailfish family contains more than 30 genera and about 410 described species, but there are also many undescribed species.
- They are closely related to the sculpins (family Cottidae) and lumpfish (family Cyclopteridae).