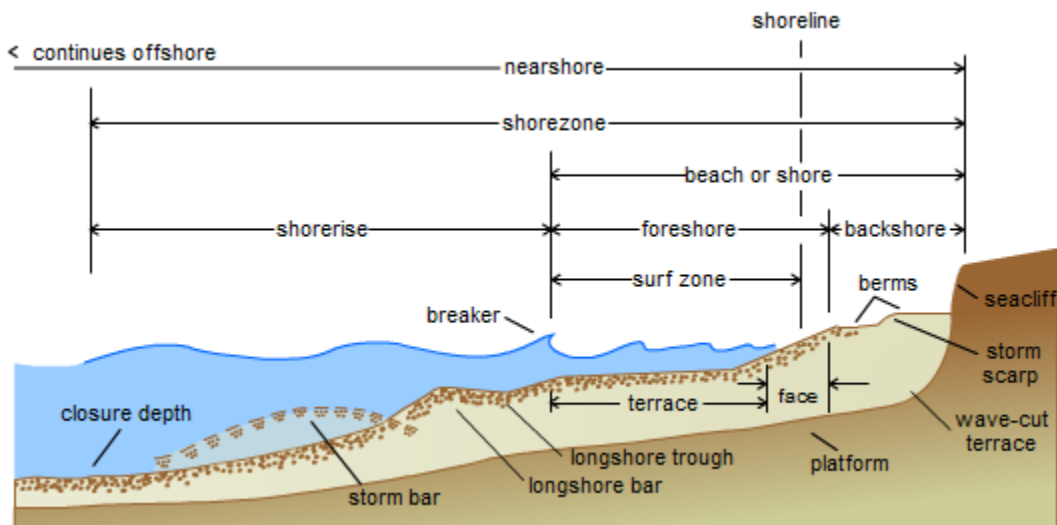


BACKSHORE



Anjavy Dry Forest meets Indian Ocean, Madagascar. @ C.Michael Hogan

The **backshore** is that part or zone of a beach profile that extends landward from the sloping foreshore to a point of either vegetation development or a change of physiography, e.g. a sea cliff or a dune field.



Source:

University of California San Diego

There may be a distinct seasonality to the spatial definition of the backshore, due to summer to winter changes in high tide levels as well as storm patterns. In these cases the floral and faunal composition of the backshore may vary among seasons.

Ecology and microclimate



Low lying salsola embryo dunes backshore, Namib

Desert

@ C.Michael Hogan

Typically most of the organisms inhabiting the backshore are terrestrial in nature, most of whom have made incursions from the proximate upland habitat.

Although the biodiversity of the backshore is much higher than that of the very demanding environment of the foreshore, there are a much smaller number of species that inhabit backshores compared to more upland habitats. This outcome flows from the trickiness of life in the windswept habitat where the dry sands are ever-shifting, and saline soils are prevalent.

Backshore microclimate is a significant determinant of organism diversity on the backshore. Except for mangrove covered backshores in the tropics, the lack of shade cover and exposure to intense sunlight is also a constraint to life. (While most mangrove species thrive on foreshores, there are a number of mangrove species and palms such as the Nipa palm that covet backshore tropical habitats)

However, for the very reason that few species are found on the backshore, the populations of those well adapted to backshores can be very large, being devoid of serious competitors.

Abiotic factors induce habitation of the backshore for specific taxa. For example, in sandy backshores the shape of sand grains have a significant impact on which species are encouraged to populate. Sands having a round shape are hospitable to a broader assortment of species than sharp edged younger sand grains, due to the damage that can be inflicted upon small fauna by the sharp edges.

Hue of the backshore soils are also determinative in the habitat suitability for various species; in particular dark hues absorb more sunlight, creating a hotter microclimate, which may filter out

occupancy by organisms incapable of tolerating the warmer temperatures. Thus, for example, the Hawaiian Islands have some of the most depauperate backshore areas on Earth, since sands created from fracturing lava are young, sharp and dark in hue.

Examples

There are a wide variety of backshore geometries, soil types and ecological communities. The following sets forth a diversity of these occurrences worldwide:

- **California central coast:** There are many sandy beach backshores as well as rocky bluffs. The sandy backshores are noted for the presence of seasonal breeding colonies of Northern elephant seals, Harbor seals and other marine mammals. These California backshores are typically the location of harems of females and also the battleground of males fighting for breeding dominance. The pageants played out by the elephant seals in January through March are dramatic displays of various animal behaviors. Species composition of shorebirds, other smaller mammals and backshore grasses provide a complete ecosystem setting and backdrop for the megafauna.
- **Malaysian Borneo:** Backshores at places like Bako National Park provide examples of maximum backshore shade and corresponding biodiversity. The spatial extent of these Malaysian backshores is also significant due to the presence of extremely low gradient sandy muds deposited along these Sunda Shelf mangrove perimeters. In particular salt tolerant palms and mangroves not requiring frequent inundation yield a rich canopy, that in turn fosters habitat for a relatively diverse understory as well as an intriguing diversity of birdlife and mammals. Notable primates such as the Long-tailed macaque, Pig-tailed macaque, Silverleaf monkey and Proboscis monkey are present. Several narrow distribution flying squirrels are also seen arboreally in these backshores.



Gentoo penguin colony on shingle backshore

Ardley Island, Antarctica. @ C.Michael Hogan

- **Antarctica shingle beaches.** These backshores are notable for the extreme differences in snow cover from austral summer to winter in Antarctica. The winter presents total and continuous snow cover inhibiting almost all animals and vascular plants from survival, while the summer months of January through March have exposed rounded shingle pebbles that present a sparse assembly of grasses, mosses and lichens. The most prominent birdlife are colonies of Gentoo and Chinstrap penguins, who establish their nests along the backshore and upland. Other notable birdlife includes Skua gulls and several tern species. Fur seals are often observed hauling out and sunning on the backshore and adjoining low lying upland.
- **British Isles storm beaches:** The backshores here are notable for their dramatic seasonal changes and picturesque strewn rock assemblies. Violent winter storms not only change the location of the backshore to higher ground, but the rock-throw of the pounding surf causes redistribution of rocks as massive as tens of kilograms. Such rearrangement of physical habitat creates new niches for animal and plant habitat when summer comes, but the violence discourages most seasonal habitation during the winter. A variety of shorebirds, pinnipeds and smaller organisms are found here. Good examples of notable storm beaches are found on the rocky windward shores of Mull, Shapinsay and Mainland Orkney, three of Scotland's inhabited and touristed islands.
- **Namib Desert:** This enormous desert collides with the Benguela Current of the Atlantic in a landform of mostly embryo dunes. Extremely high prevailing wind velocities off of the ocean provide pervasive sandstorms inhospitable to most life. However, the low lying Salsola shrubs plants are able to colonise the backshore providing partial stabilisation the the low lying dunes.

The resulting micro-humpy topography provides useful refuge for a variety of small creatures and secondary plants. The most notable large animals found here are the African fur seals who breed here on the backshore and an assortment of birds such as flamingos, gulls and terns. Infrequent visits by lions and jackals are also observed.

Source : <http://www.eoearth.org/view/article/51cbcd077896bb431f68f231/?topic=51cbfc78f702fc2ba8129e62>