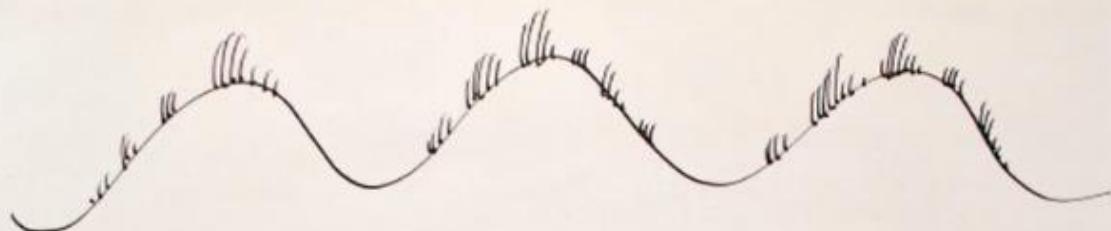


Sand

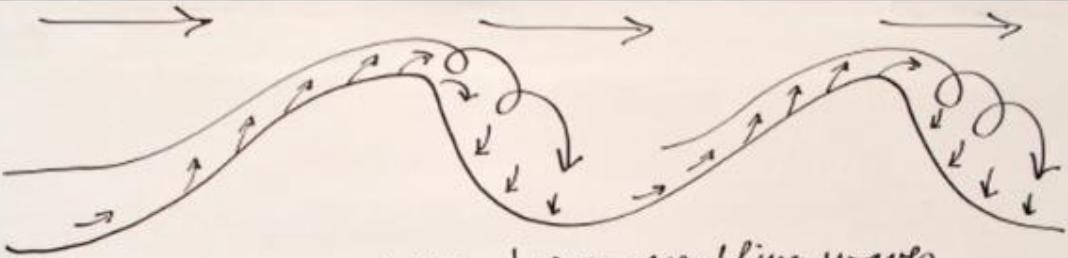
Michael Snitter

Sand



Sand is one of nature's basic elements,
on land an important factor
in the composition of soil,
at sea the bed and home of many
marine life forms,
an ever renewable source of sand.

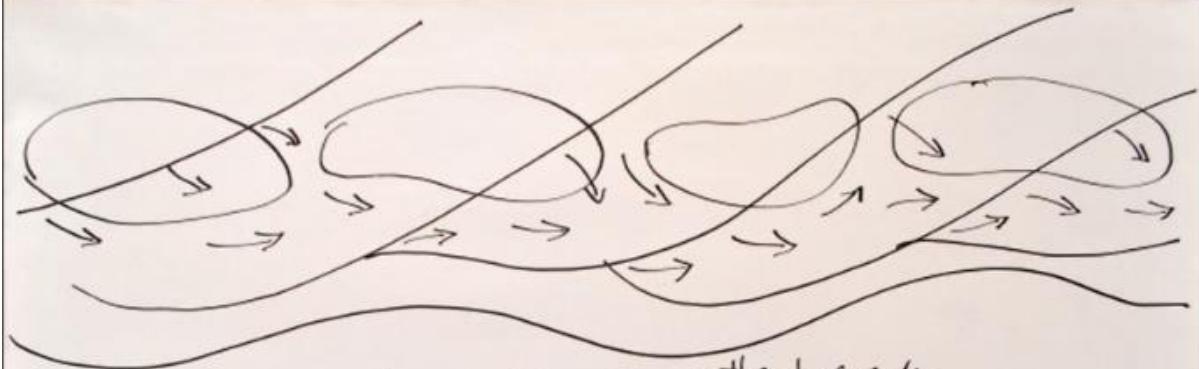
The function of a beach
is one of collection and recycling
of debris from land and sea.
It forms a flexible and adaptable edge
between the land and sea.



Dunes are shaped by wind in forms resembling waves. Wind speeds up on their backs and sand from the face of the dunes is sucked up into the low pressure space and carried over the dunes.



Along a beach, the low pressure made by the aerodynamic features of the dunes often cause the winds to swerve inland and deposit sand on dunes behind the foreshore.



Between the sand bars and the beach are channels dug by the breaking of the waves. These channels carry alongshore currents stimulated by the angle of wave fronts to the shore. They transfer sand along the shore line. This system ensures that beaches all along the coast receive supplies of new sand to build with.

→ Prevailing wind

Beach bar

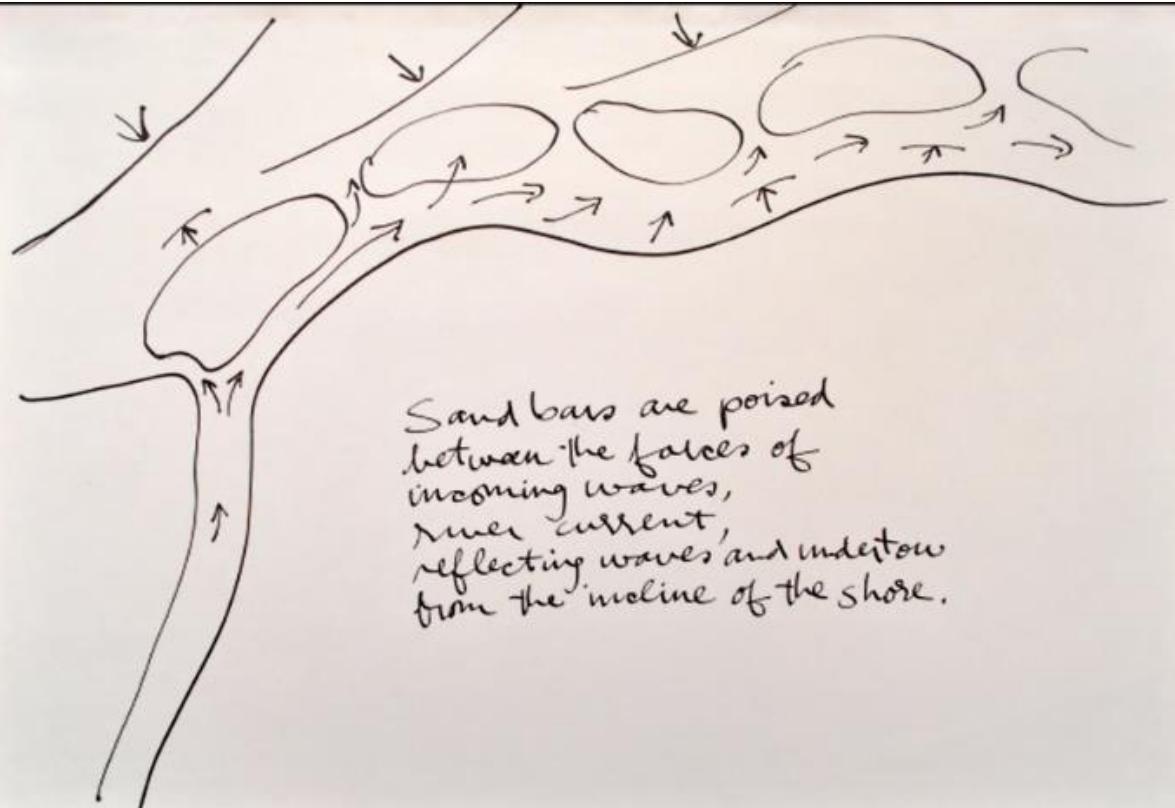
River bar

Rivers and creeks bring sand washed from the land. This assembles on the river bar and on the beach bar.

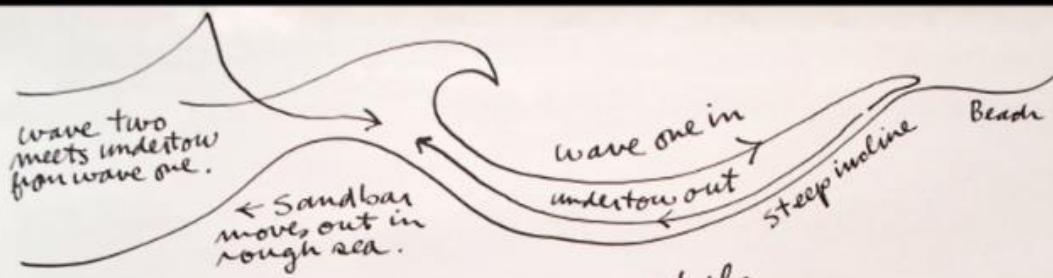
Both bars diffuse wave impact on the beach.

The form of a river bar responds to the prevailing winds and currents.

By bending, it diverts sand from the river alongshore onto the beach bar.

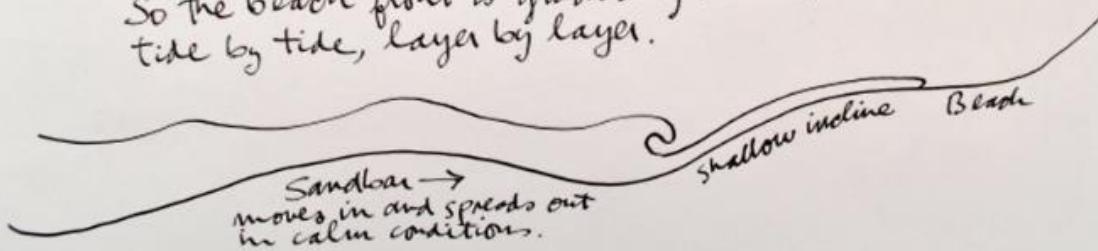


Sand bars are poised between the forces of incoming waves, river current, reflecting waves and undertow from the incline of the shore.



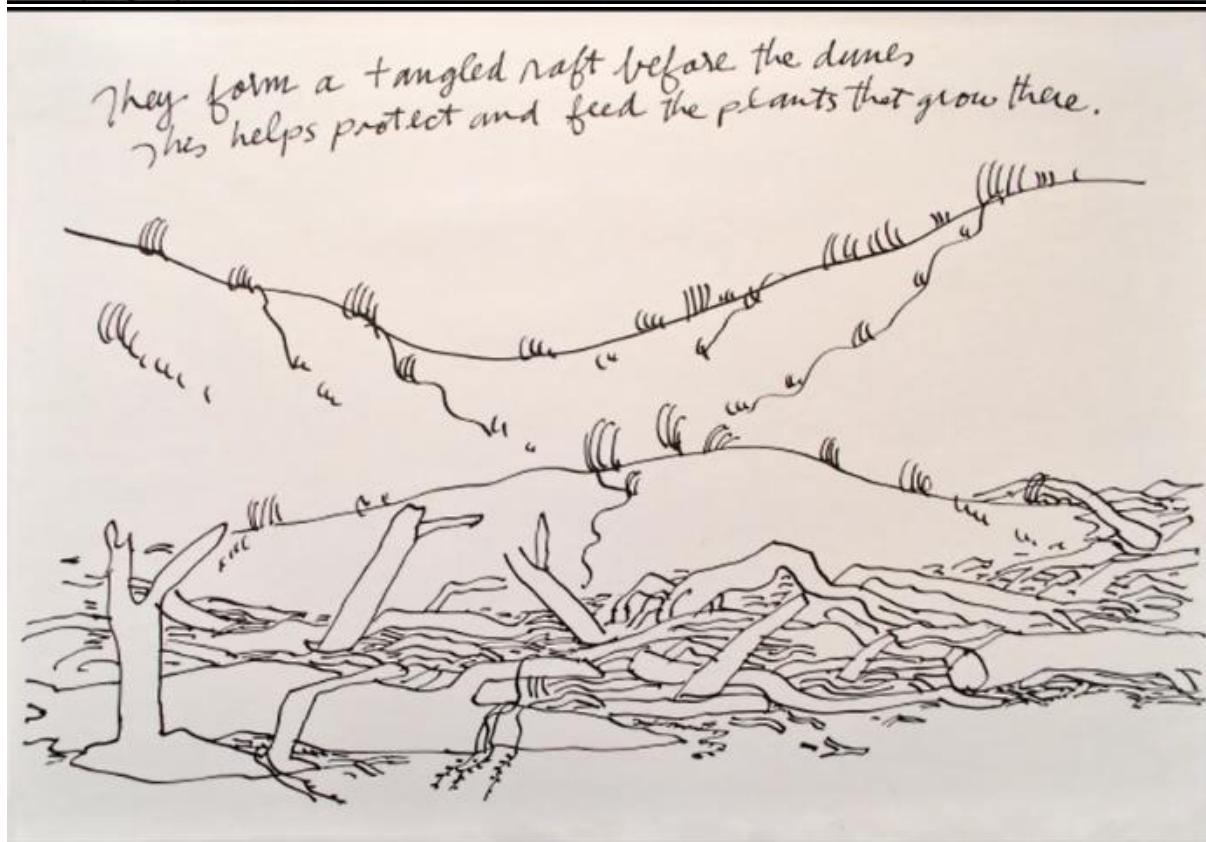
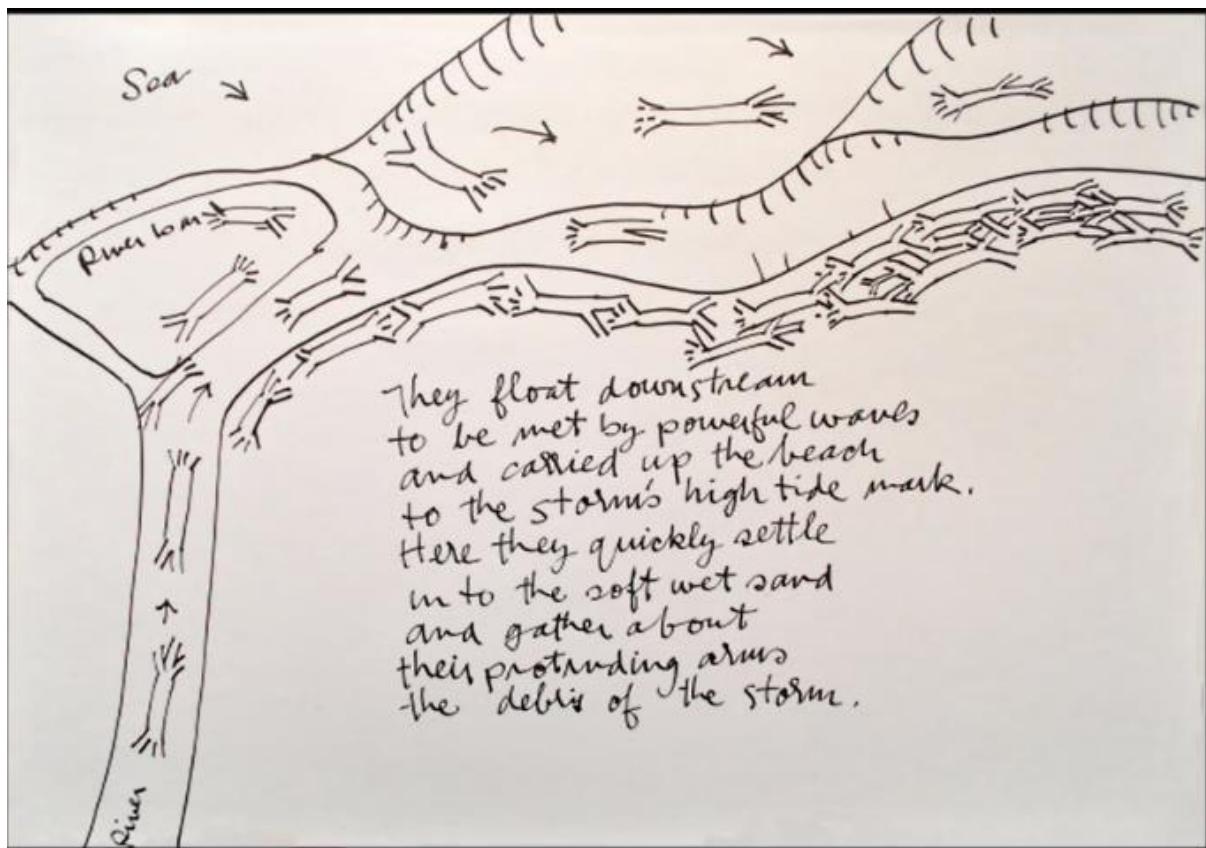
Sand when wet is very mobile.

In calm weather waves break closer to the shore.
they stir up sand from the bottom
and move it up onto the beach in watery veils.
So the beach front is gradually raised,
tide by tide, layer by layer.

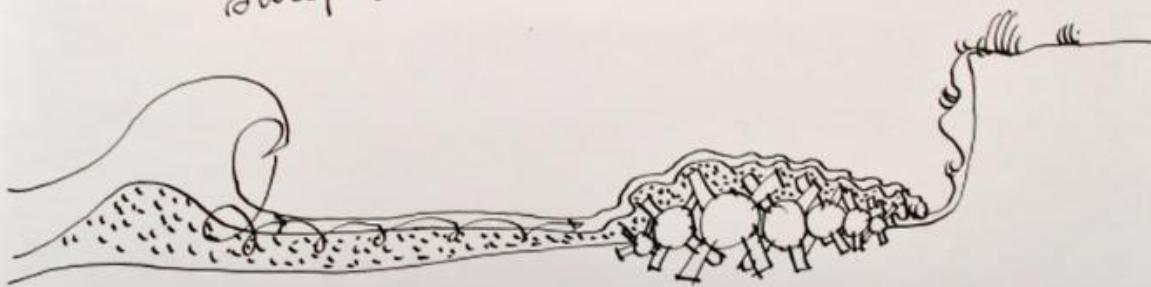


One essential factor in the building and maintenance of a beach is the tree.
As the forest grows it expands.

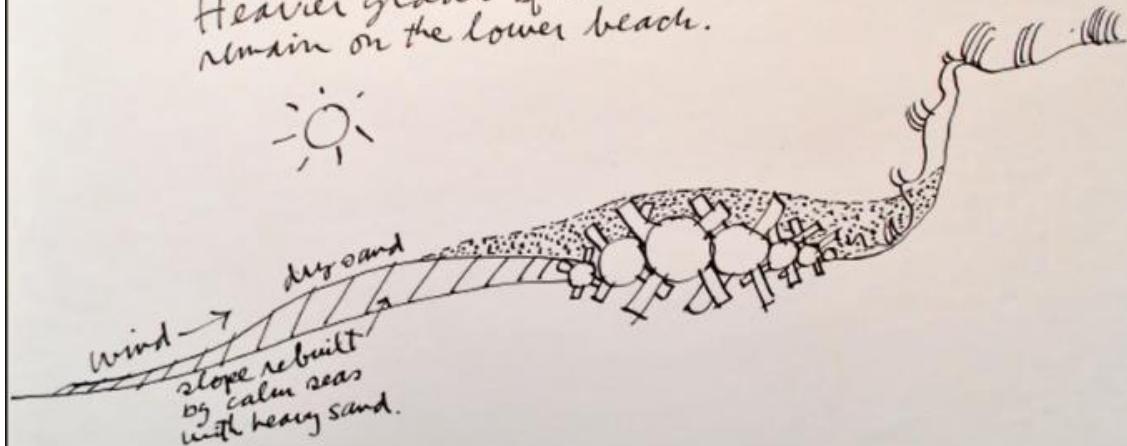
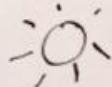
On banks of streams and rivers
branches are shed and often
whole trees are edged into the water.

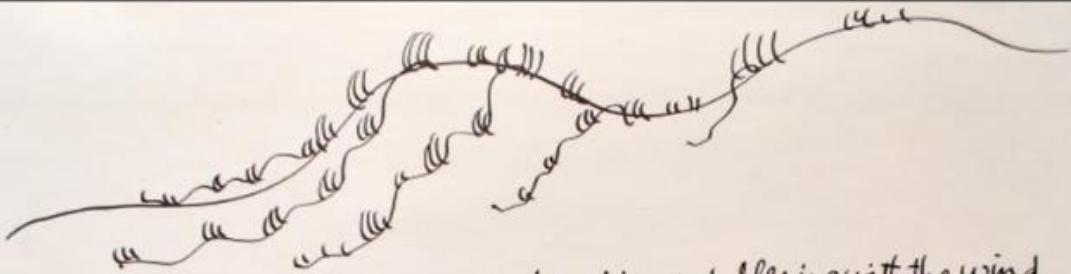


During the storm
sand taken from the beach
by the fierce undertow
was assembled on the beach bar.
Now large swells generated by the storm
break on the bar, stir up its sand
and with long powerful strokes
sweep it on to the driftwood raft.

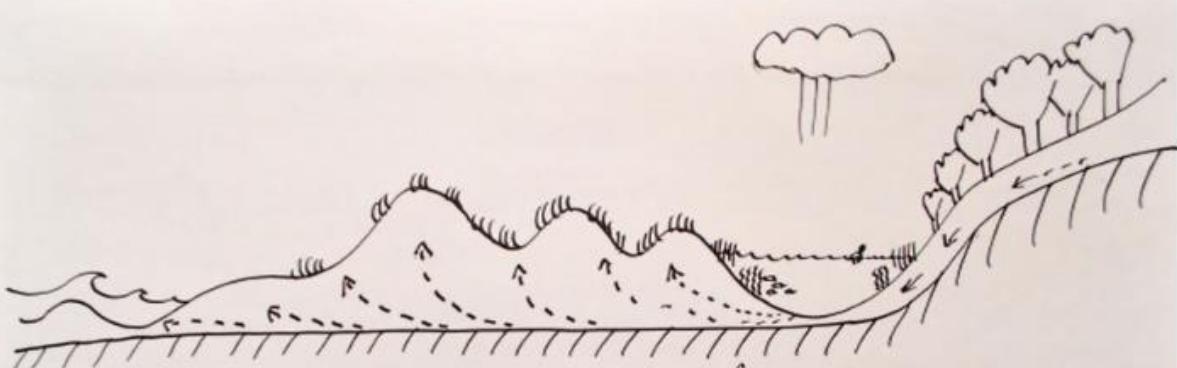
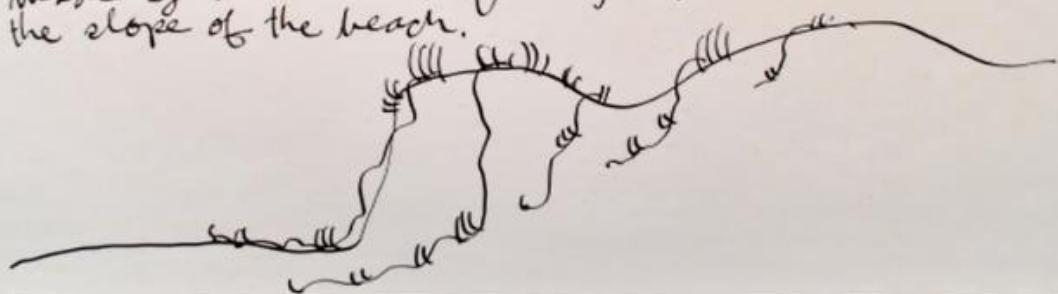


The sun shines, the fine upper layer of sand dries,
the wind blows it along the beach.
This sand makes ramps against the driftwood
rafts up the ramps
and covers the driftwood rafts.
Heavier grades of sand
remain on the lower beach.





Plants stabilize dunes by bending and flexing with the wind.
They trap flying sand and bind the dune with roots.
Dune plants are nourished by flotsam and sea spray,
which induces them to grow towards the sea.
After storms these leaders fall into the cuts
made by waves and quickly repair
the slope of the beach.



Behind the dunes, marshes and lagoons
filter drainage from the land,
provide moisture for the dune plants,
stabilize the land's water table
and provide shelter for many forms of life.
This system has served the planet
since the first trees fell into rivers
formed by rain that scoured the land for sand.