

OUR ENVIRONMENT OUR HERITAGE

MANGROVES ARE UNIQUE !!!

Mangroves are amazing trees that live halfway between land and sea. They are “specialized coastal trees” which means that they can live under unique conditions. For most plants, salt water is deadly. Mangroves are among the few trees that can grow in sea water as well as in places where the sea water mixes with the fresh water from the land.

In Samoa, most of the mangroves grow in areas protected by a coral reef. The mangroves and the coral reefs have very special relationship: the coral breaks and reduces the force of the waves providing the mangroves with calm waters, while the mangrove roots act like a sieve filtering soil and dirt that can harm the coral reefs.

Mangroves form a very productive ecosystem with other types of plants and trees. Other plants are usually found closer inland while mangroves trees are normally nearer to the sea.

Key Concepts:

- Mangroves trees are found in coastal areas, especially in river estuaries. They are able to grow well in areas with a mixture of fresh and seawater.
- The two common types of mangroves trees found in Samoa are Rhizophora and Bruguiera.
- Mangrove areas are under constant threat, and are often used as places for dumping rubbish.
- Mangroves are also being cleared and filled to construct roads, houses and hotels, leading to coastal erosion and causing damage to the ecosystem.
- An example of a well managed mangrove site is the Saanapu-Sataoa Conservation Area.



Mangrove areas are important because:

- Mangrove areas have murky muddy water that give young fish a place to hide, making it difficult for predators, like birds and big fish, to catch young animals.
- Mangrove root systems anchor the soil and prevent erosion in the coastal zones.
- Mangrove trees act as wave breakers and thus protect the coasts and the communities from strong wind and high waves, even tsunamis.
- Mangrove tree root systems trap and reduce the amount of sediment entering the lagoon and smothering the coral (silt sedimentation)
- Mangrove areas are good breeding, feeding and nursery grounds for many fish and other animals like crabs, shrimps and shellfish
- Mangrove areas provide a good sources of food and income for the community
- Mangrove tree parts have many traditional uses

MANGROVE ROOTS:

You can easily recognize the two most common mangroves growing in Samoa by their roots. The rhizophora has “prop roots” and bruguiera mangrove has “knee roots”. Prop roots can sprout from very high in the tree. The older the tree the higher the roots are located. Knee roots come in and out of the soil.

Mangrove roots have different functions – the roots anchor the plant, absorb minerals, exchange gases (O₂ and CO₂). Roots can only absorb water from the surroundings and excludes most of the salt. The extensive root systems slow down waves and water flowing through them. This reduces erosion by holding the earth together so it does not wash away from the land into the lagoon and reef, killing the coral. As a result, mangrove shores continue to grow towards the sea.

MANGROVE LEAVES:

Mangroves have a medium-sized, thick waxy leaf that helps prevent excessive water loss. Like other plants, the green leaves of the mangrove use the light of the sun to make food; this process is called photosynthesis. When dead leaves fall into the water, the decay providing nutrients for soil and food for animals like crabs, prawns and some fish. The two most common mangroves growing in Samoa have different leaves. The rhizophora leaves have blunt tips while bruguiera have a pointed tips.

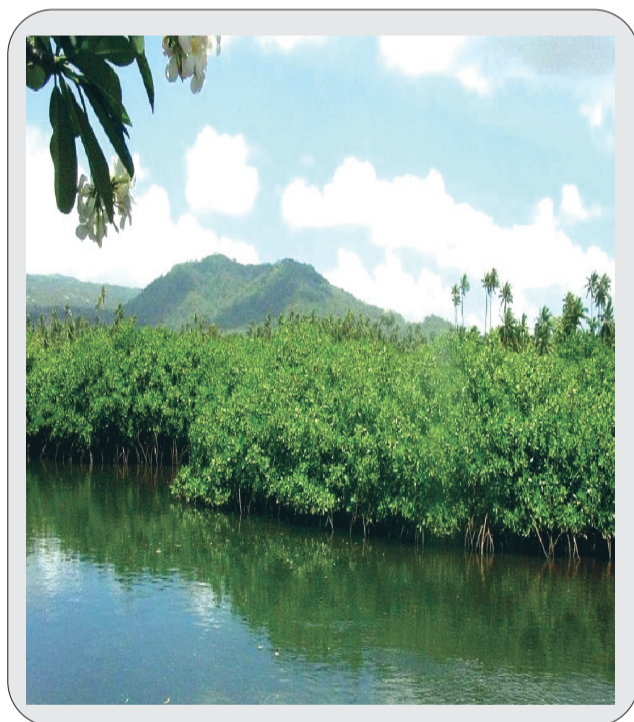
MANGROVE SEEDS:

Mangroves usually grow in flat, soft muddy ground. When the long, thin and pointed mangrove seeds fall vertically to the ground, they are able to stick upright in the soft mud. Some mangroves trees have seeds that start to grow while they are still on the tree. When the young plant is big enough to survive it falls into the water or mud. These young plants float around until they find a muddy area to grow.

The seeds can float which helps them disperse and grow in new areas. Mangrove trees are constantly exposed to strong wind and waves. The new plants, when established in the soil, are able to withstand wave action. It is easy to distinguish between the seeds of rhizophora seed curves on the top, while the bruguiera seed is straight.

MANGROVE FLOWERS:

The two most common mangroves found in Samoa have different flower is bigger and pink. Many people confuse the flowers and the seeds of bruguiera seedlings, thinking the tops of the seeds are flowers.



TWO COMMON TYPES OF MANGROVES FOUND IN SAMOA

FEATURES	RHIZOPHORA	BRUGUIERA
Tree trunk size and height	Not as big as bruguiera	Tall and big
Shape of the whole tree	Oval	Not oval
Leaves	Tips of the leaves are blunt	Tips of the leaf are pointed
Flowers	Whitish yellow	Pink
Seeds	Usually longer and thinner	Short and fat
Stems	Thin and short	Tall, thick and strong
Roots	Prop roots / mostly above the ground (arched roots growing from the stem)	Knee roots / mostly underground (knee-like roots in the mud)
Where it's found	Towards the water/sea	In the mud or towards the land

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Children's Corner



Children aged 9-15 are invited to answer the following corner. The name of 3 students with top scores at the end of every month will be posted under the "Children's Corner" for special prizes. "Children's Environment Awareness 2007 Awards will be given to 10 students with top total scores at the end of the year.

Find these words:

mangroves
roots
leaves
seeds
flowers
unique
ecosystem
coastal
trees

waters
seeds
unique
flowers
mangroves
salt
leaves
ecosystem
coastal
trees



Rhizophora samoensis



Bruguiera gymnorrhiza

FILL IN THE TABLE

FEATURES	RHIZOPHORA	BRUGUIERA
Seeds		
Stems		
Where it's found		
Roots		
Leaves		

Fill in the gaps...

Mangroves areas are under constant _____ and are often used as _____ for dumping _____. They are also found in _____ areas, especially in river _____. They are able to _____ well in _____ areas with a mixture of _____ and _____ water. An example of a well managed mangrove site is the _____ conservation area.

ACKNOWLEDGEMENTS

We wish to acknowledge the following companies for providing the prizes for our "Children's Corner" Page.

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