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Each different ecosystem has its own unique biophysical interactions, which make it function. This may be links with either the biosphere, hydrosphere, or atmosphere. ~~lithosphere or atmosphere or~~ it may be energy flows, nutrient cycles or food chains or it could be both.

~~Firstly~~ The biosphere is those interactions which take place here on Earth surface with other flora and fauna. ~~For example~~ One such example of an interaction with the biosphere would be shown in the Coastal Dune ecosystem with the spinifex grass. This is needed to ~~keep~~ stabilise the incipient or foredune and keep it from becoming migratory. The Spinifex grass, ~~which is also~~ also has linkages itself, with fungi. The fungi as shown in the diagram below attach themselves (Fig 1.)

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to the roots of the spinifex grass and take in nutrients from the sand which are then fed through into the spinifex.

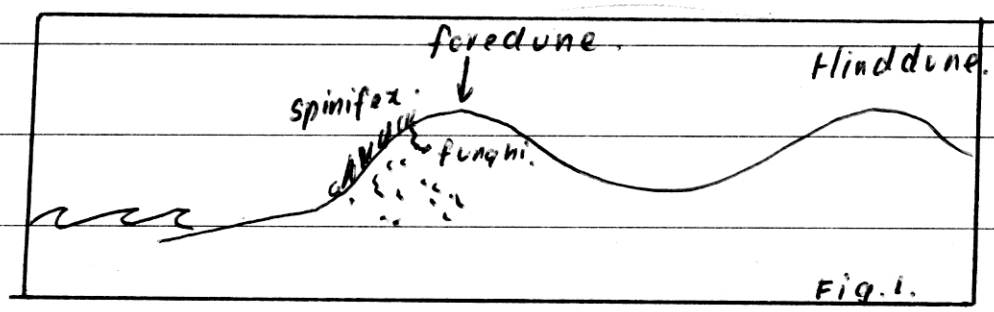

Fig.1.

This diagram shows clearly how biophysical interactions such as this one occurring in the coastal dune ecosystem are unique to that ecosystem and why our ecosystems are so diverse.

~~Another example of a linkage with the biosphere~~. The hydrosphere is where anything involving water fits into, so therefore rain, floodingorwaves. A very clear example of an interaction with this area would be with the Freshwater Wetlands Ecosystem in which the River Red Gum is the dominant species, this

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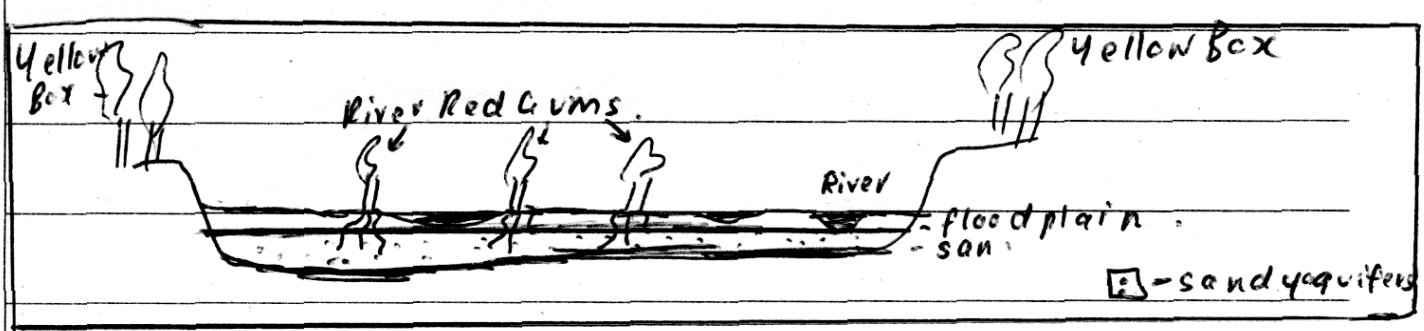
making it a monoculture, as its ~~relies~~ resilience relies on the resilience of the River Red Gums. These trees need 700mm of rain per year to survive, The Barmah Millewa forest, an example of a river red gum only receives 3-400mm of rain per year, so therefore the rest of it must come from flooding. However due to droughts and human impacts, these floods aren't always there, which is why the redgums have adapted to this and developed long root systems which can tap into the sand aquifers below the floodplain as shown in the diagram below. (Fig. 2).



As can be seen from this diagram of a river Redgum ecosystem, linkages with hydrosphere

and adaptations due to natural stress is another example of how biophysical interactions lead to diverse ecosystems and their functioning.

The Atmosphere is another area, which involves biophysical interactions. It is the area of weather conditions such as wind. Wind is a very important interaction especially in coastal dune ecosystems, where it is relied upon in the process of formation of the dunes. The wind is what carries the sand onto the dunes from the water. It is also what sorts the particles into lightest to heaviest and blows them to the back or leaves them at the front respectively. This is otherwise known as aeolian transport and helps the erosion-accretion cycle shown in the

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diagram below (Fig 3.)

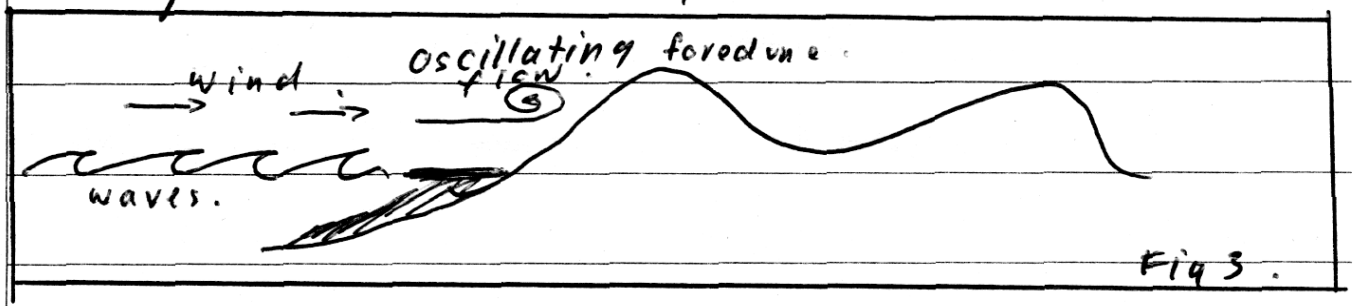

Fig 3.

Energy flows and nutrient cycles and food chains are all also biophysical interactions, which help in the function of ecosystems.

Energy flows involves the flows of energy from one thing to another. The process of photo synthesis is one such example which takes the sun's energy to help the plants grow, which in turn give out carbon dioxide. This flow of energy occurs in most ecosystems such as rainforests, wetlands, and even coastal dunes.

Nutrient Cycles ~~and Food Chains~~ are the processes in

which nutrients are brought in or taken out of the ecosystem. One such example of nutrient flows occurs in the River Red Gum or Freshwater Wetland Ecosyst. where the tree provides a habitat for animals such as the sugarglider and ringtailed possums and they in return provide nitrogen and phosphate for the tree. Nutrients are also brought in with the floodwaters, carried in by the alluvial soil, which forms the floodplain.

Food Chains are also examples of biophysical ~~functioning~~ interactions. They are an order of when everything gets eaten and shows how each species of either flora or fauna interact with each other. An example of one occuring in the ecosystem of a lake is shown below. (fig 4.)

leaves fall down (detritus) eaten by → ~~little~~ ~~fish~~ → tadpoles → fish → birds
→ Men.

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Therefore, the Biophysical interactions which lead to diverse ecosystems and their functioning includes linkages with the hicsphere, hydrosphere and technosphere and also nutrient cycles, energy flows and food chain.
In each ecosystems, these interaction are unique which is what gives us so many diverse ecosystems to enjoy.