



## The Effect of Drought on Landscape – Teacher Notes

**Aim:** To demonstrate the effect of drought on a landscape.

### Materials

- Three prepared plant pots of the same size.
  - One filled with moist potting mix and sprouted alfalfa (or grass seed).
  - One filled with moist potting mix only.
  - One filled with dry soil or potting mix.
- A drinking straw

### Method

1. Place each plant pot at the end of a sheet of A4 paper or newspaper.
2. Use the straw to blow strongly at the surface of the plant pot modelling the effect of a strong wind.
3. Compare the differing amounts of soil blown away by the “wind”.

### Results

What happened when the “wind” blew on the pots? **Wind had little effect on the pot with the plant and on the pot with moist soil. Most soil was lost from the dry pot.**

How could we produce scientifically measurable results? **We would have to measure the amount of soil blown away. This could be done by collecting the lost soil on each sheet of paper and weighing it or measuring its volume in a measuring jug or cylinder. That way we could estimate the percentage of soil loss. Conversely each pot could be weighed before and after the “wind” blew and percentage loss estimated.**

### Conclusion

Can drought with wind change the landscape of Australia? **Yes.**

**Loss of plants and loss of animals leads to salinity and loss of topsoil.**

- Some plants die from lack of water and produce fuel for fire.
- Most shallow rooted plants die, except drought tolerant ones
- Nutrient rich topsoil blows away. The water holding ability of the soil is reduced.
- Animals dependent on those plants die.
- Loss of trees and scrub with long roots means the water table rises bringing salt to the surface.
- Salt in soil affects shallow rooted plants.
- Loss of plant roots to hold the topsoil when wind blows or water flows over it.
- Further degradation of land and salinity increases.
- Those areas which still have plants can become overgrazed and water table can drop due to overuse of groundwater.
- The length and frequency of drought is important. Many drought tolerant plants require roughly two good years out of seven.
- Plant and animal biodiversity is reduced making its capacity to withstand another change difficult.

**Our landscape becomes desertified.**

***Something to think about: Every day the equivalent of five football pitches of topsoil blows away from our wheat belt and is “lost” at sea.***