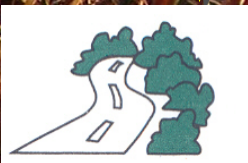


Wetlands

Values, Threats and Management




Roadside Conservation Committee



What is a wetland?

Water and Rivers Commission

- ☛ “Wetlands are areas that are permanently, seasonally or intermittently waterlogged or inundated with water that may be fresh, saline, flowing or static”
- 



In WA “wetlands” are often referred to as water bodies that are in basin or flat form of water bodies.



While “waterways” are used to describe water bodies in channel form such as rivers and streams

There are many types of wetlands

- ☛ Swamps
- ☛ Lakes
- ☛ Damplands
- ☛ Sumplands
- ☛ Estuaries
- ☛ Billabongs
- ☛ Marshes
- ☛ Mudflats
- ☛ Mangroves



The loss of wetlands in WA

- Urban and agricultural development has significantly reduced the extent of wetlands in WA
- Less than 20% of wetlands present prior the European settlement remain on the Swan Coastal Plain
- Of these only 15% are considered of high conservation value



The value of wetlands: why are they so important?

- Wetlands are highly productive ecosystems which support a diverse collection of plants and animals.
- Wetlands are important because they carry out a number of ecological, hydrological and social functions.

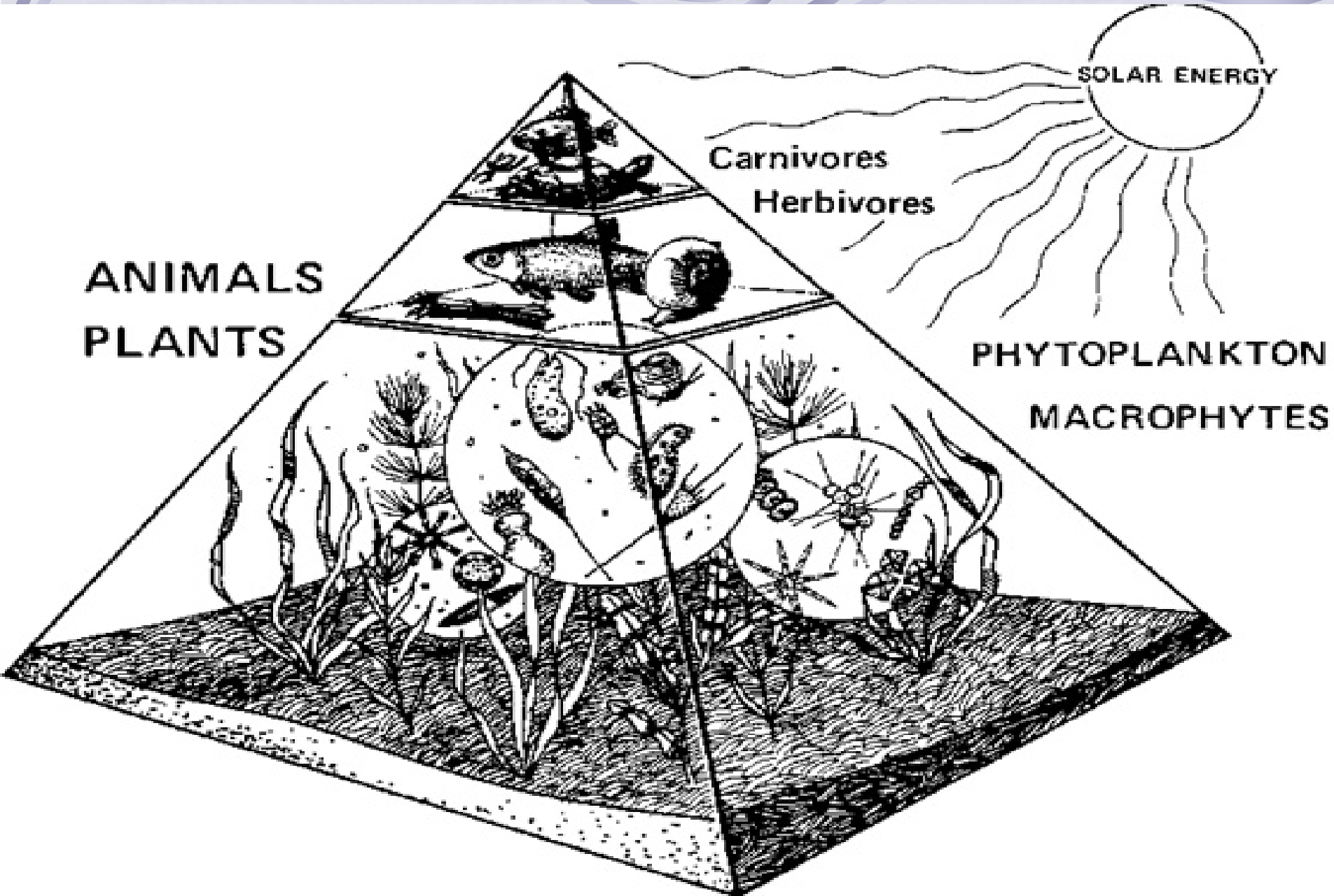


Ecological Values

- ☛ Biodiversity
- ☛ Food webs
- ☛ Habitat
- ☛ Breeding ground
- ☛ Nutrient cycling



Foodwebs in Action



Wildlife Refuge

Wetlands are of critical importance as drought refuge and breeding grounds for many animals including:

- Birds
- Frogs
- Fish
- Tortoises
- Invertebrates



Natural Filters

- Wetlands play a significant role in water purification by filtering out excessive nutrients and other impurities
- Wetlands have a high capacity to remove pollutants which come from pesticides, industrial waste and agricultural activities
- Artificial wetlands can be used in urban drainage schemes to reduce the eutrophication of our waterways

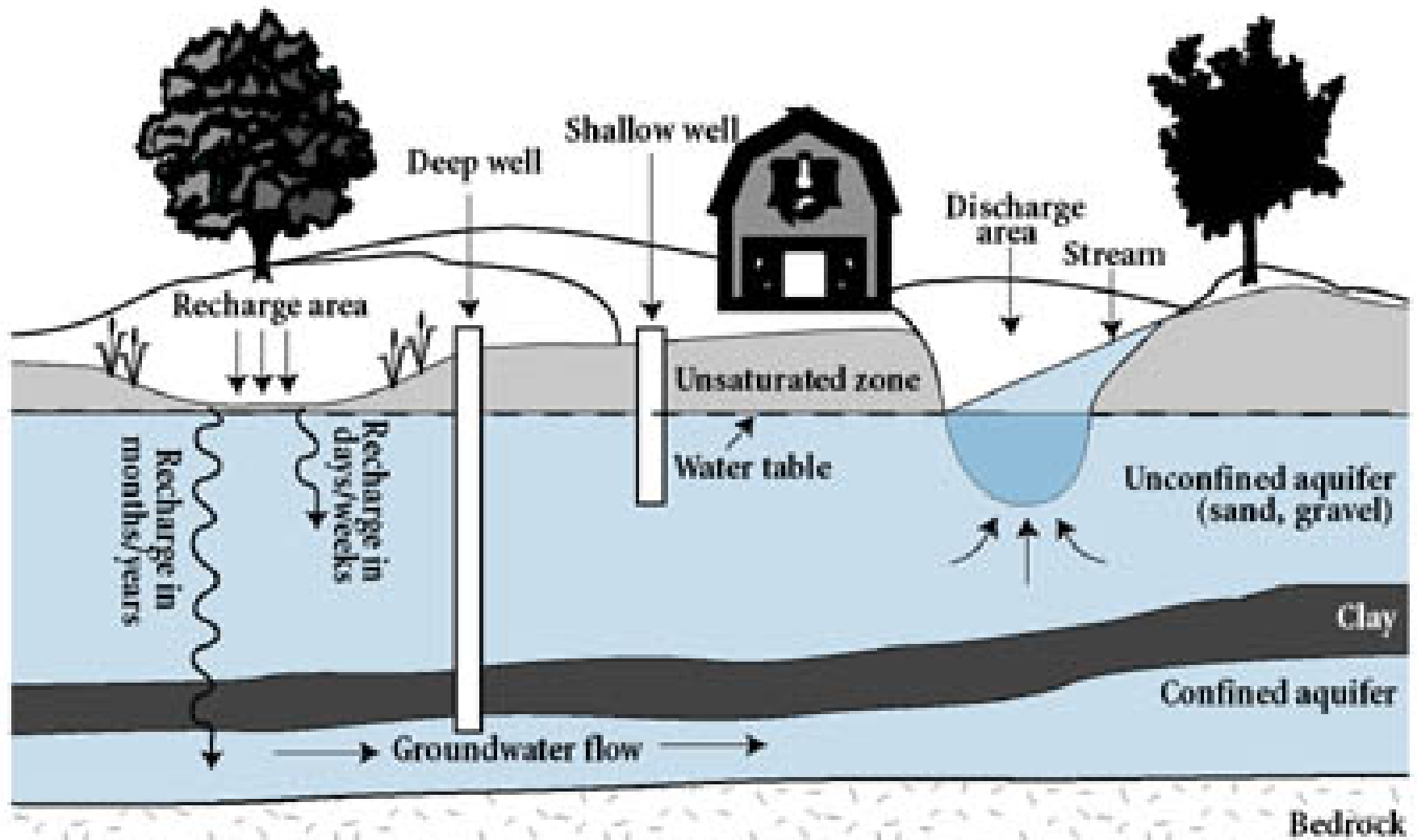


Hydrological Function

- Wetlands provide the hydrological balance in the landscape and assist in the prevention of flood damage
- Wetlands reduce the risk of damage to surrounding property and the need to construct expensive engineering structures



Groundwater Recharge



Social Values

- Wetlands possess intrinsic natural beauty and provide recreational opportunities such as boating, bushwalking, bird watching and swimming.
- They also provide opportunities for biological research and a focal point for community education



How's the serenity?



Aboriginal Significance

- Wetlands provided Aboriginal people with drinking water and food which included fish, waterfowl, tortoise, frog and vegetable food
- Wetlands were the most productive hunting grounds throughout the year



Wetlands are under threat from..

- Alteration of natural water regime
- Loss of vegetation from urban development
- Water pollution
- Salinisation
- Invasive species
- Eutrophication
- Fire



Water Balance

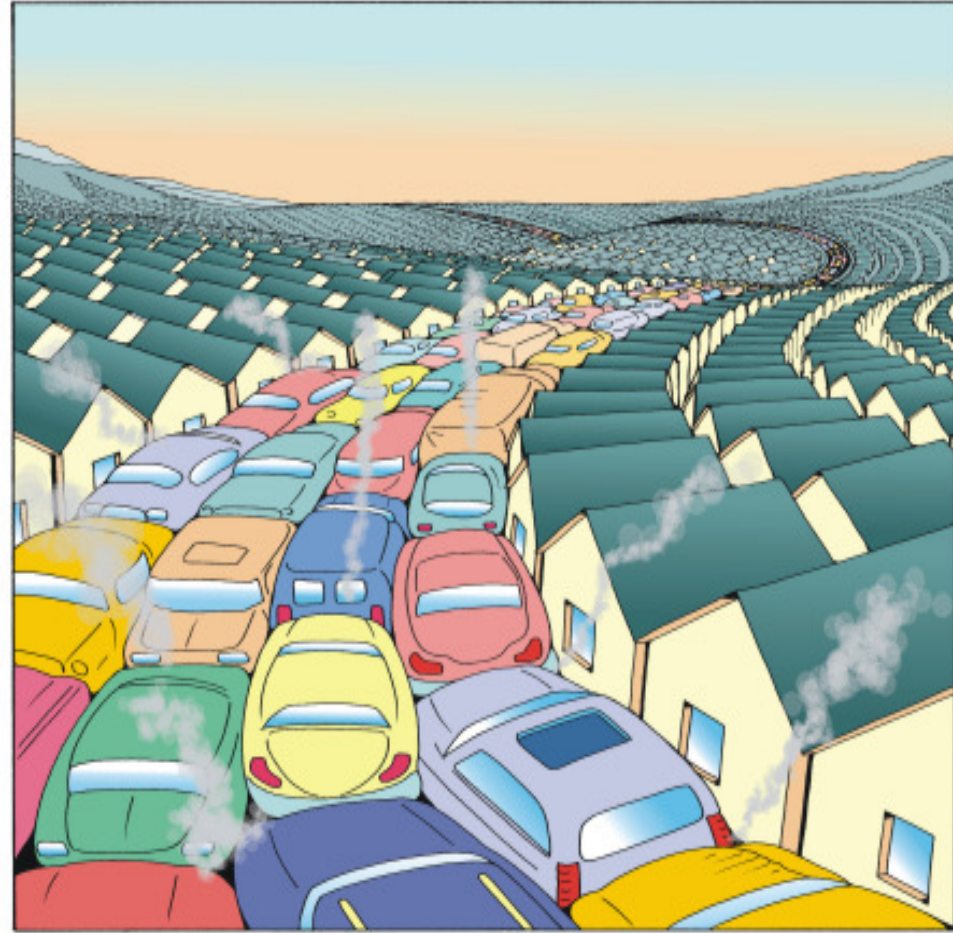
- Wetland dependent plants and animals rely on a natural water regime
- Urban drainage, groundwater extraction and loss of vegetation drastically alter a wetlands natural state





Urban Sprawl

The unrelentless demand for housing, roads and services has resulted in a drastic loss of wetlands in WA

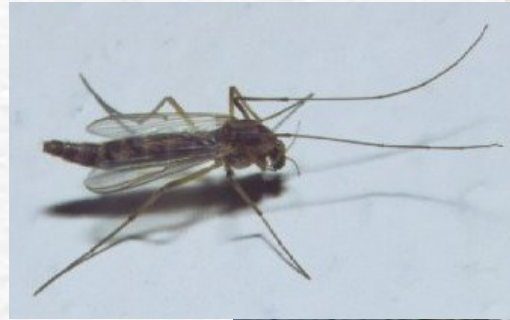


Pests

Wetland pests disrupt the natural food chain, out compete with native species, reduce water quality and are a nuisance to the public

Culprits include:

- Midge(*Chironomids*)
- Mosquitoes
- Carp
- Mosquito fish(*Gambusia*)
- Feral pigs
- Feral cats
- Foxes
- Rabbits



Weeds

Weeds can drastically reduce the biodiversity of wetland by smothering native plants, reducing water quality and enhancing bank erosion

Problem weeds include:

- ☞ Alligator weed - *Alternanthera philoxeroides*
- ☞ Fanwort - *Cabomba caroliniana*
- ☞ Salvinia - *Salvinia molesta*
- ☞ Willows - *Salix spp*
- ☞ Water hyacinth - *Eichhornia crassipes*



Toxic Cocktail

- Wetlands have historically been the dumping grounds for societies waste
- Pollution can enter a wetland from either “point”-drainpipes, or “diffuse”-groundwater sources



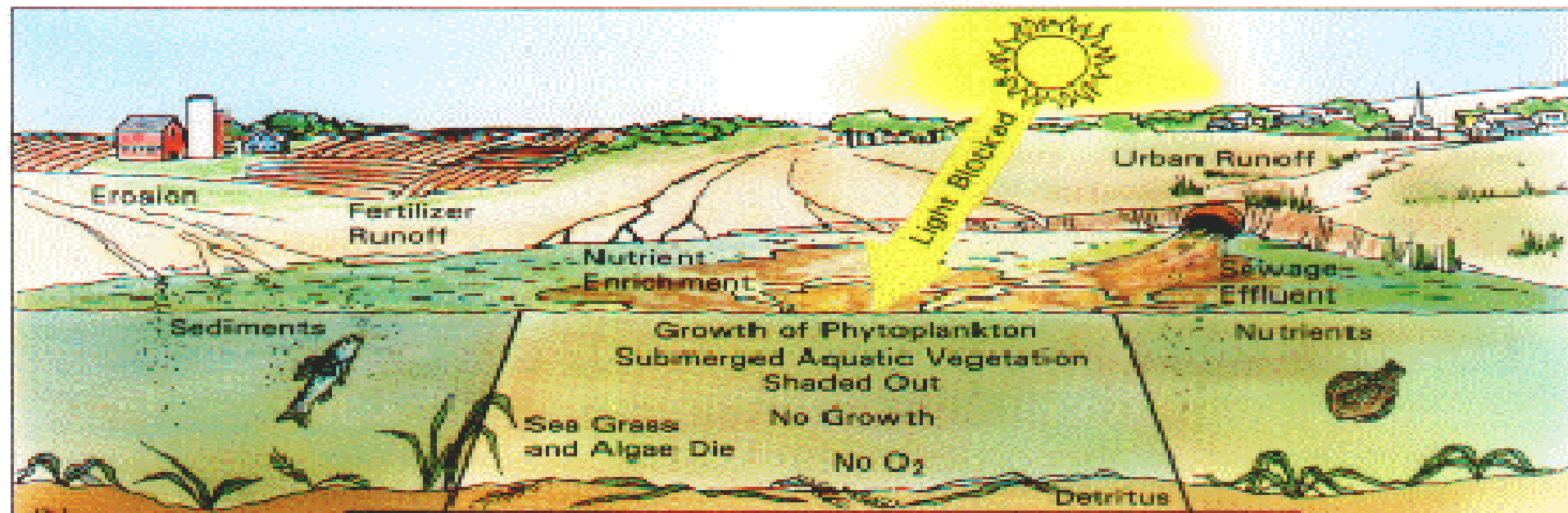
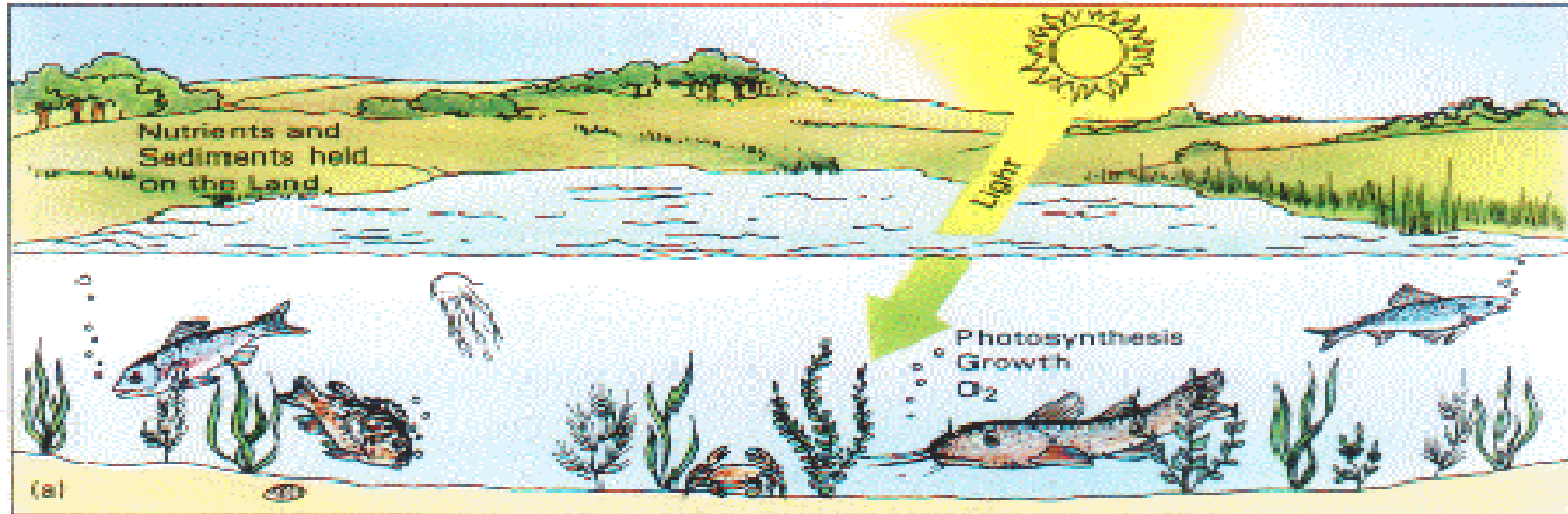
The Silent Creep

Salinisation of wetlands
can:

- ☞ reduce water quality,
- ☞ alter aquatic invertebrate communities,
- ☞ kill off non salt tolerant plants
- ☞ Increase erosion and destabilization of sediments



Eutrophication



Altered Fire Regime

- Fire is a natural process in wetlands. Unfortunately the alteration of the fire regime can lead to the following:
 - Species loss
 - Habitat destruction
 - Encourages weed invasion
 - Depletes native seed bank

However, as a management tool, fire can be used to encourage regeneration of native vegetation and fauna habitat



Wetland Management : the role of Local Government

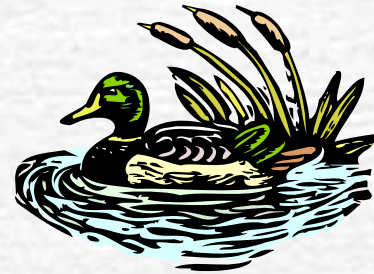
Local Government can be involved in wetland conservation in many ways , these include:

- Assessing and approving development
- Planning for future use
- Local planning scheme
- Managing public land and reserves
- Monitoring wetlands



Wetland Management cont.

- Develop wetland management plans for priority wetlands
- Provide resources for volunteers and community groups to undertake rehabilitation
- Develop awareness of wetland values and threats



Strategic Rehabilitation

- The reestablishment of fringing vegetation cover can greatly enhance the aesthetic value of wetlands and reduce the amount of nutrients reaching wetlands.
- This can improve water quality and habitat availability



Wetland Management Plans

Management Plans:

- aid in the identification of threatening processes
- Provide management guidelines
- Implement priority actions
- Promote community involvement
- Enhance the local and catchment based management





Useful Contacts

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