

## **Theme 10: Impact of climate change on wetlands**

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### **Impact of Climate change on Bio-diversity**

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For sustainable development of any nation conservation of biodiversity is very important issue. India, with an area of 325 Million Hectare, is the seventh largest country in the world with varied climate and topographic conditions. These have ensued in a wide range of ecosystems and habitats contributing an immense biological diversity-micro and macro. The links between biodiversity and climate change run both ways: biodiversity is threatened by climate change, on account of build-up of greenhouse gases in the atmosphere leading to global warming, but proper management of biodiversity can reduce the impacts of climate change.

According to the Millennium Ecosystem Assessment, climate change is likely to become the dominant direct driver of biodiversity loss by the end of the century. Climate change is already forcing biodiversity to adapt either through shifting habitat, changing the life cycles, or the development of new physical traits. At the same time, biodiversity has a major role to play in climate change adaption and mitigation. For example, the conservation of habitats can reduce the amount of carbon dioxide released into the atmosphere.

The effects of climate change on biodiversity are far-reaching and operate at many different levels – from individuals to ecosystems. At the species level, climate change affects particular species in different ways. It may alter their distribution, abundance, behaviour, phenology (the timing of events such as migration or breeding), morphology (size and shape) and genetic composition. The recent phenomenon of global warming is also considered to be a major threat to global biodiversity. For example, coral reefs -which are biodiversity hotspots- will be lost in 20 to 40 years if global warming continues at the current trend.

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