

# Wetlands: A Habitat's Recipe

Wetland ecosystems can be identified by the presence of water at some point during the year, which creates an environment with *hydric soils* that supports *specially adapted plants and animals*. In order for a natural area to truly be a wetland, all of these elements must be present. This recipe creates the perfect location for a hotbed of biodiversity. In fact, approximately 80% of Utah's wildlife depend upon wetlands during some stage of their lives.

## WATER

As the main ingredient of a wetland, water must be present for at least part of the year.

## HYDRIC SOIL

Water saturated ground creates a soil deprived of oxygen.

## HYDROPHYTIC PLANTS

Wetland plants are adapted to survive in soil without oxygen and to cope with flooding cycles.

## ANIMALS AND BACTERIA

Wetland life is adapted to cope with mud and water to acquire food, shelter, nesting space or spawning success.

## plants

Wetland plants survive in saturated, oxygen deprived soil by using air spaces on their stems and roots, called *aerenchyma*. These diffuse oxygen from the above-water stems down to plants' under water roots.

## mammals

Animals that call wetlands home have a variety of unique adaptations that allow them to cope with a wet environment. These include thick, oily fur to keep the water away from their skin and webbed hind feet for swimming.

## birds

Wetland birds have many adaptations to them thrive in water saturated habitats. Some of these adaptations include webbed feet, long thin legs, the ability to dive under water and well waterproofed feathers.

## migration station

About 200 species of migrating birds travel thousands of miles every year to spend summer in North America and winter in South America. In order to complete these long-distance journeys, birds need refueling stations called staging areas to rest, eat and regroup safely. Wetlands serve as one of the primary staging areas for hundreds of thousands of tired avian travelers, who depend on the same wetlands being in their migratory path year after year for food and shelter.



# A Wetland Resume

Wetlands are key parts of the Earth's ecosystems, carrying the heavy load of serving multiple needs simultaneously. These habitats are bedroom, nursery, kitchen and recycling bin to living and non-living members of environmental communities alike.

## manager

### WATER STORAGE

Wetlands store rain and surface water like giant sponges, slowly releasing them to downstream habitats and aquifers. Research has identified ground water recharge levels equal to 20% of a wetland's seasonal volume.

### FLOOD CONTROL

By causing fast-moving stream water to slow down and spread out, wetlands act as buffers to protect inland life and land.

### CLIMATE CONTROL

Many wetlands return over two-thirds of their annual water to the atmosphere through evapotranspiration, which acts to regulate temperatures and humidity in adjacent uplands.

### GLOBAL CYCLING

Wetlands cycle carbon, phosphorus, nitrogen and sulfur and transform and release them into the air.

### NUTRIENT RECYCLING

An abundance of decomposers break down materials into nutrients for plants, fish and invertebrates.

## recycler

### EROSION CONTROL

Water flowing into wetlands is spread out and slowed, making it less destructive. Plant roots also bind soil to help it stay in place.

### SOIL CONSERVATION

Water loses speed as it flows into the flat terrain and dense vegetation of wetlands, causing material eroded upstream to accumulate for local plants and animals to use.

### RAIN GENERATION

Dimethyl sulfide released from wetlands may act as a seed for cloud formation.

### OXYGEN PRODUCTION

Wetland plants contribute significantly to our planet's oxygen production.

### CO<sub>2</sub> COLLECTION

Wetlands decrease the amount of carbon dioxide released into the atmosphere by storing the greenhouse gas in peat and soil.

## engineer

### WILDLIFE PROTECTION

Wetlands are important spawning and nursery areas for commercial and recreational fish and shellfish industries, as well as feeding, nesting and shelter zones for fish and migrant birds

### WILDLIFE HABITAT

Wetlands are among the most productive ecosystems in the world. Nationwide over 5,000 species of plants, 190 species of amphibians and 270 species of birds depend on wetlands for food, shelter and space.

## caretaker

## custodian

### DECONTAMINATION

Wetlands clays and soils remove harmful phosphates, metals and agricultural runoff from surface and ground water. Wetland plants take up and use the nutrients and chemicals carried in collected sediments, which would otherwise contaminate rivers, lakes and groundwater supplies.

### SILT REMOVAL

Wetlands capture sediments and debris that could otherwise threaten downstream life by filling in deep areas, covering eggs or clogging animals' gills. Studies show that some wetlands remove up to 90% of sediments passing through them.

And don't forget about. . .

### HUMAN ENRICHMENT

Wetlands provide beauty, recreation and solitude to many.

# Precious Little Left

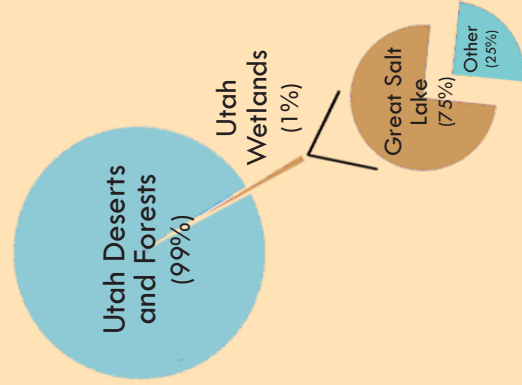
Wetlands are rapidly disappearing. What's the big deal?

## what we have

Water is a rare commodity in Utah. With most of the state covered in arid habitats only one percent—approximately 544,000 square acres—of land is wetlands. Though Utah's wildlife has adapted to survive under these dry conditions, 80% of them require wetlands habitat for at least part of their lives. Utah's precious wetlands are sources of food and shelter for this 80% and provide migratory rest stops and prime locations for raising young.

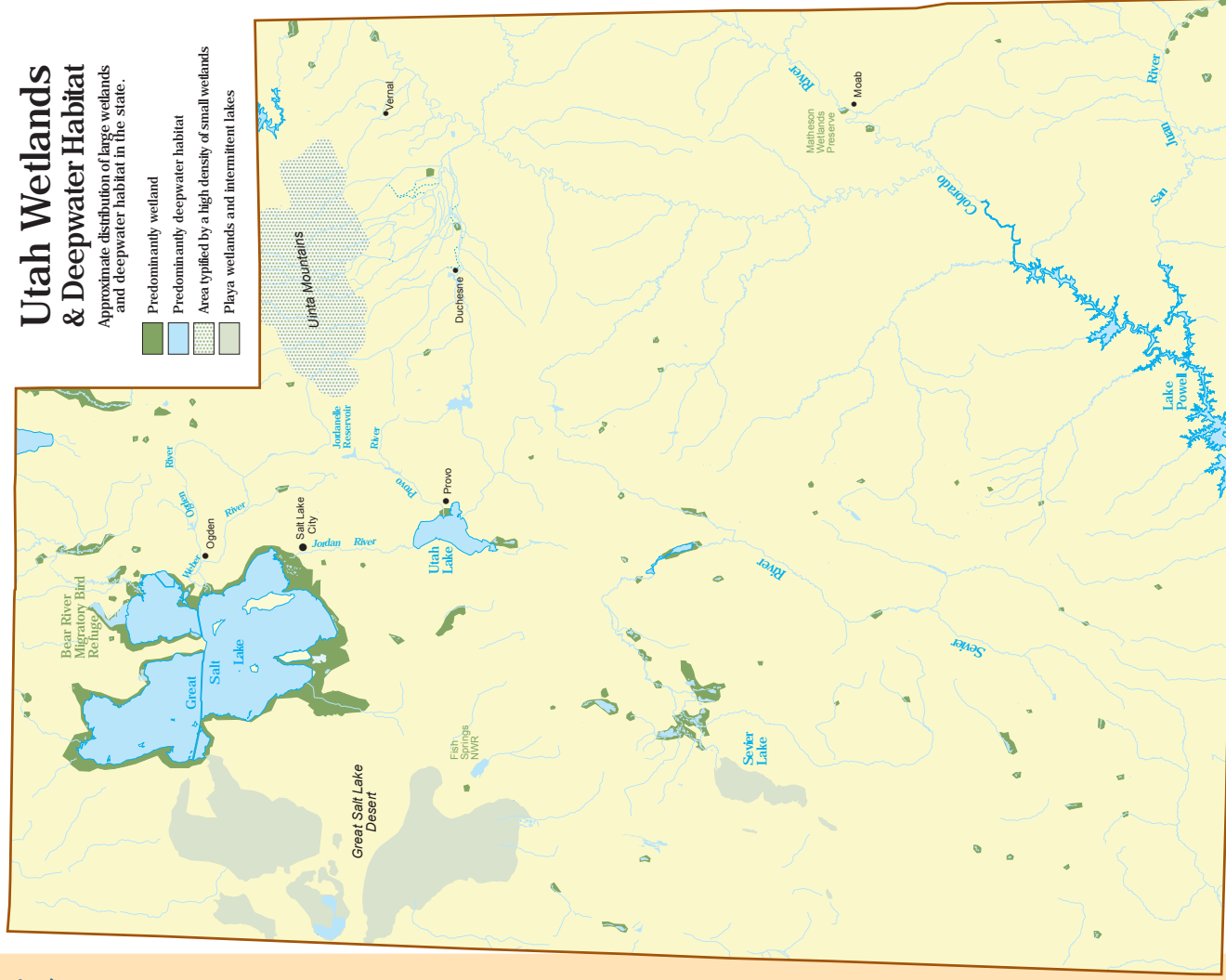
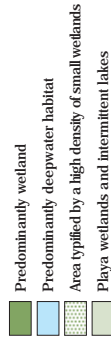
## why we need it

Wetlands are home to hundreds of species of animals that, without them, would be unable to survive. Wetlands regulate atmospheric CO<sub>2</sub> levels and, through filtering organic and synthetic pollutants, allow clean water back into the water cycle. They provide invaluable services to the Earth's ecosystems and without them we could not survive. As development continues in your area, consider how it might affect wetlands, and how you may be able to help them, be it contacting your city council, your state legislator or even writing a letter to the editor of your local newspaper.

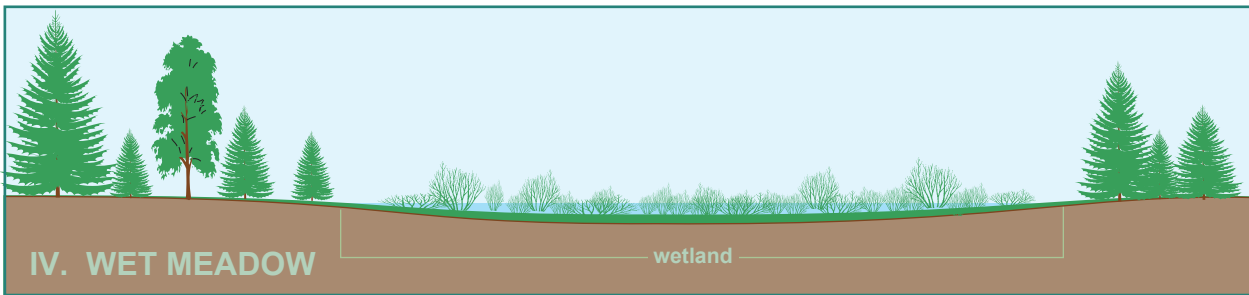
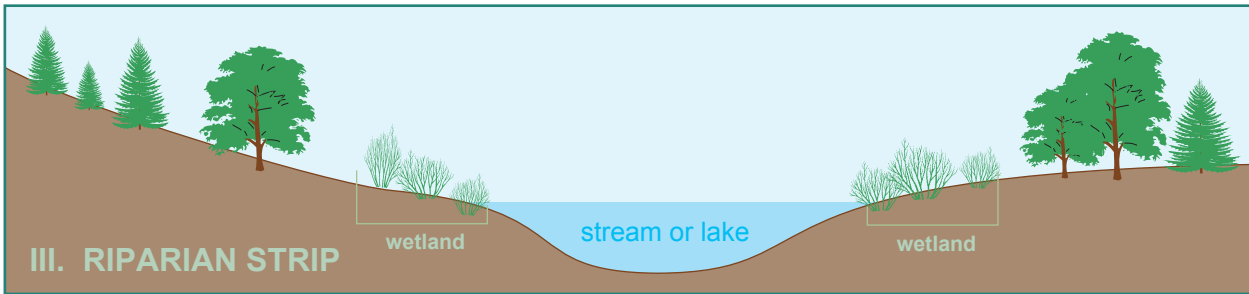
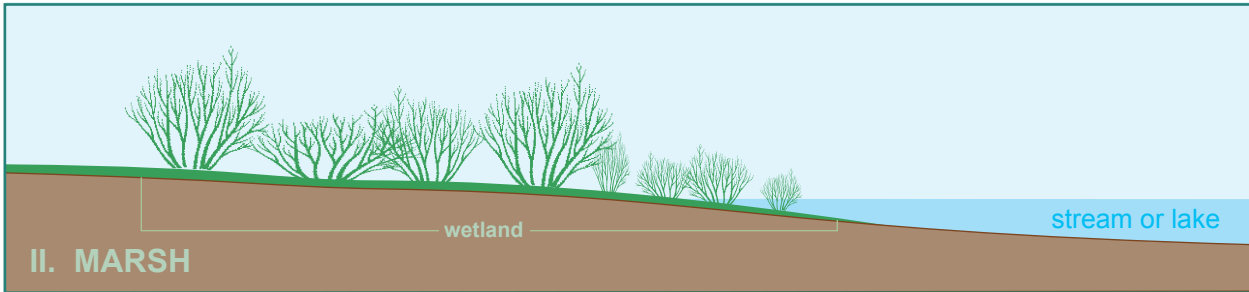
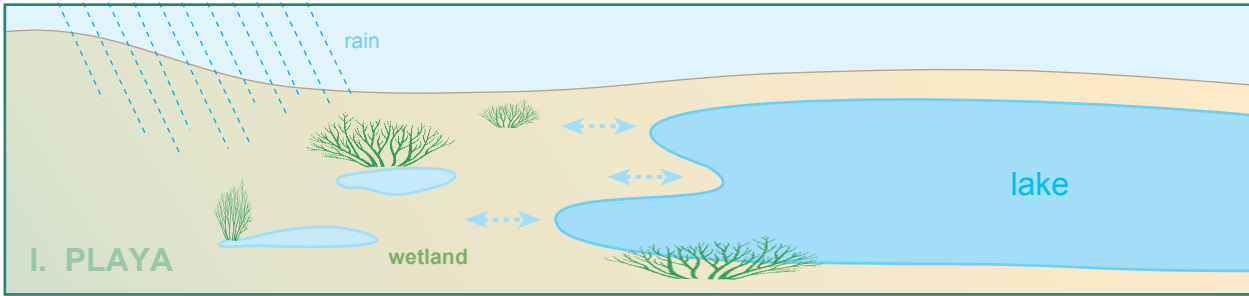


# Utah Wetlands & Deepwater Habitat

Approximate distribution of large, wetlands and deepwater habitat in the state.



# Main Forms of Utah Wetlands



## PLAYAS

...contain shallow lakes and wide flats that are dry on the surface and often wet beneath; with non-woody plants, shrubs.

Precipitation provides most of their water.

## MARSHES

...exist in shallow water at the edge of lakes or streams, with non-woody and aquatic plants, shrubs; can be fresh, alkaline or saline.

They depend mostly on Surface Water.

## RIPARIAN ZONES

...follow the edges of streams or lakes and usually dry in summer and fall, with a mix of non-woody plants, shrubs and trees.

They depend mostly on Surface Water.

## WET MEADOWS

...support grasses and other non-woody plants, with some shrubs; ground is waterlogged in spring and after rains, drier by summer.

Precipitation provides most of their water.