

[From Spring 1995]

Chincoteague Refuge Waterfowl Populations and Water Management

Waterfowl

Waterfowl numbers throughout 1994 eclipsed monthly totals for 1993 for all months except July. The highest monthly waterfowl population peak was recorded in November with 44,700 birds observed on the refuge. This represents an increase of 63% over last year's highest monthly population peak of 27,400 in November.

Snow geese comprised 67% (29,800) of the total waterfowl recorded in November, which is the highest ever recorded total for the refuge! This figure exceeds the highest number of snow geese recorded on the refuge observed in 1982 when they peaked at 24,000.

On the downside of the overall waterfowl increase in 1994, duck populations decreased on the refuge compared to 1993. Some duck species showed significant decreases compared to 1993 population figures for the month of November. Those of note were mallard (-52%), gadwall (-84%), green-winged teal (-77%), pintail (-49%), and wigeon (-71%). Black duck (+51%) and shoveler (+41%) were the only two species that recorded a significant increase in comparison to last year.

A decrease in duck numbers is attributable to below normal water levels existing in all of the impoundments during 1994. However, overall 1994 monthly duck population peaks exceeded last year in nine months out of twelve. The months of November and December experienced the most significant declines in duck numbers, which is the peak fall migration period for the refuge.

Unfavorable impoundment conditions forced the ducks to use areas other than the refuge for feeding and resting, which lowered the total population figures for the refuge. This factor stresses the importance of the need for optimal feeding and resting areas for migrating waterfowl.

Water Management

During 1994 the refuge experienced another dry year in which the impoundments never attained prescribed water management levels. In an attempt to provide critical feeding areas for fall migrating shorebirds and waterfowl, the water management program was modified to allow saltwater from Assateague channel to flood three impoundments during November. The water was used to increase water levels in F Pool, North Wash Flats, and Old Fields during the hurricane and high lunar tide in November. By utilizing the high tides generated by the storm, saltwater was allowed to backflow into the impoundments. Increased water levels as the result of the hurricane improved feeding conditions, but significant portions of the pools remained unflooded. In general, water and vegetation conditions within the impoundments remained less than optimal during 1994.

The fourteen freshwater impoundments found on the refuge are managed for optimal feeding, reproduction, and resting habitat for a variety of wildlife. The primary technique used is the manipulation of water levels within the impoundments. This technique is termed "moist soil management." Moist soil management is the practice of manipulating water levels to provide optimal growing conditions for specific plant species to create "enhanced" habitat for wildlife. By altering water levels, management can create specific environmental conditions that can result in desired habitats being generated in the impoundments.

Varying environmental conditions, such as soil moisture and soil temperature, can have great impacts on the vegetative response that will occur during the growing season. Most valuable food species such as wild millet and chufa require cool wet soil conditions to germinate. By providing specific soil conditions, target species can be selected to provide optimal growing conditions. However, these soil conditions can be difficult to reproduce because multiple variables exist in this complex system. Water depth and duration of flooding are also determining factors.

Vegetation not only feeds waterfowl, but also the invertebrates living in the water. During submergence, the vegetation is decomposed by invertebrates. This creates a rich organic soup which feeds a variety of wildlife species. Invertebrates are a valuable food resource for waterfowl, shorebirds, and wading birds to name a few. Moist soil management is a valuable tool in management of the complex web existing in the wetland food chain. In a nut shell, moist soil management is an art more so than a science.

This year the refuge is implementing a modified water management program to better provide optimal habitat for all wildlife dependent on the refuge impoundments. Specific impoundments will begin an early drawdown during March to expose the moist soil earlier. This will stimulate desired plant species to germinate in the warm spring sun. Earlier germination will allow desired species to establish a root system prior to dry summer conditions. Modifications in the moist soil program are supported by biological studies performed on the refuge impoundments. The new water management program will give the impoundments a new look and benefit wildlife use on the refuge. While visiting the refuge this year, take a closer look into the impoundments and don't be alarmed. I think You'll see a pleasant new face greeting you!

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