

Thaigley  
1945

## BIRD AND PLANT COMMUNITIES OF THE INDIAN RIVER MARSH

The Indian River marsh region represents several stages of plant succession from the hydrosere or submerged vegetation stage to the climax forest. In the open water we found plant genera typical to water which is from five to 10 feet in depth. Among these were some of the Potamogetans, *Elodea*, *Ceratophyllum*, *Chara*, and *Ranunculus*. The remains of this submerged vegetation, together with the soil eroded from the shores of the river, have built up the bottom deposits with a rich layer of mucky soil. This has rendered the habitat unsuitable for submerged vegetation and has allowed a floating type to come in. Some of the Potamogetans which reproduce by rhizomes and the water lilies were found here. Superseding this floating vegetation were the bulrushes, then the cattails, then the sedges. The sedge meadow type was not at all extensive as *Myrica gale* came rapidly as a dominant, mixed with a sprinkling of *Salix longifolia* and *Salix lucida*. *Populus grandidentata* and *Betula papyrifera* follow these to be succeeded, in turn, by *Picea mariana* and *Thuja occidentalis*. Farther back, on the higher ground, was found the climax forest of *Quercus borealis*, *Acer rubrum*, and *Acer saccharum*. Throughout these successional stages, it was quite evident that plants are very specific in their choice of habitat. As we studied the bird communities of this region we found that this was also true of them.

### --The Bulrush Community--

We found one nest of the Pied-billed Grebe in the bulrush community and heard the birds calling several times. The nest was constructed of rotted vegetation which had been scooped up from the bottom and

anchored to several bulrushes. The inside diameter of the nest was ~~two~~ was three inches, the outside 14 inches. The , originally, white eggs were stained by the rotted vegetation with which they were covered. This covering is placed over the eggs when the adult bird leaves the nest and is removed when it returns to brood them. The eggs measured 41 mm. by 30 mm.

--The Cattail Community--

The Long-billed Marsh Wren was restricted entirely to the cattail community. Here we found them in abundance and we discovered from eight to 10 unoccupied nests and one which contained one egg and one young. This wren builds an almost spherical nest of dead cattails which are woven while they are wet and pliable. They are placed about 18 to 22 inches from the surface of the water and are securely lashed to a small circle of cattails. A representative nest measured six inches from top to bottom, five inches across, and  $4\frac{1}{2}$  inches deep. The side entrance was about one inch in diameter. The male bird builds dummy nests which are unlined. The nests used for rearing of young ~~is~~ lined with cattail down. The single egg found was dark brown in color, without mottling, and measured 16 mm. by 12 mm. We found no bird of this species outside the cattail area. All materials used in the construction of the nest came from the cattail community.

--Sedge-Cattail Ecotone--

The rails haunt the sedge-cattail ecotone. Both the Sora and Virginia were heard calling. The rails are ideally fitted for life in this community. They are chicken-like birds with long legs and bodies which appear to be depressed laterally. They are difficult to see because

they do not flush easily, but escape by running. We flushed one Sora from her nest. She ran a short distance before taking off. The nest was built of cattails and grasses woven to a ring of cattails and was located  $7\frac{1}{2}$  inches from the surface of the water. The inside of the very shallow cup measured seven inches across. The nest contained 12 eggs which were ochraceous buff spotted with chocolate brown. We also found a deserted nest of the Virginia Rail which was similar in construction to that of the Sora, but was nearer to the surface of the water. A brood of Virginia Rails were scattered in the vicinity of the nest. They resembled black balls of down.

Most of the Red-winged Blackbirds' nests discovered in the marsh were found in the sedge-cattail ecotone. The birds made use of the sedges to weave the cup-like nests which were lashed to the cattails. The nests were beautifully made, and were well lined with fine rootlets and grasses. The location was from 11 inches to 13 inches from the surface of the water and the nests measured had an outside diameter of about  $4\frac{1}{2}$  inches, an inside diameter of  $2\frac{3}{4}$  inches, and a depth of  $2\frac{1}{2}$  inches. In addition to the unoccupied nests found in this ecotone we found one nest with two eggs in it in the bulrush-cattail ecotone. The background color was bluish-grey and the spots were purplish-brown. There were numerous thread-like lines on the eggs, looking almost as though the splotches had run. It was interesting to note that the Red Wings were much in evidence all over the marsh. We saw a number of them at the edge of the forest and flying over open water. They kept up a constant chorus of sharp cheees as we invaded their territory. The males, with their bright red and yellow epaulets, sang from conspicuous perches at the tips of cattails and rushes.

### Cattail-Bulrush Ecotone

Two Black Terns' nests were found in the cattail-bulrush ecotone. These were located on masses of floating debris. They were very simply made of dead rushes and sedges. The cup was not more than a half inch in depth and three inches in diameter. The eggs were greenish brown in color and were heavily spotted with chocolate splotches which were more numerous at the large end. They measured 35 mm. by 25 mm. The adult birds were very aggressive and protested against our presence with loud cries which I can describe only as a nasal ack ack. They swooped down quite close to our heads and at times hung over us on rapidly beating wings. The terns were not limited to this community, but were widely distributed over all of the marsh.

The Least Bittern was also found nesting in the cattail-bulrush ecotone. The nest was of the platform variety made of bulrushes and sedges, supported on rushes at a distance of six inches from the surface of the water. The outside diameter of the nest was eight inches, the inside diameter five inches, and the depth one inch. It contained five eggs which were bluish white in color and measured 30mm. by 24 mm.

### Sedge-Meadow with Myrica gale

In this community where Myrica gale was the dominant shrub, we found several Swamp Sparrows and heard the Northern Yellow-throat calling. The Song Sparrow was also seen here. Cedar Waxwings and Starlings were in evidence here as well as in the forested region far removed from the water's edge.

### --Spruce-Balsam-Paper Birch--

In this area we heard the Myrtle Warbler, the Black-throated Green Warbler, and the Black and white Warbler.

—Oak-Maple Forest—

At the edge of this area of oaks and maples we saw or heard the following birds: the Red-eyed Vireo, Indigo Bunting, Starling, Cedar Waxwing, Catbird, Veery, Flicker, Blue Jay, Crow, Mourning Dove, Tree Swallow, American Redstart, Oven-bird, Baltimore Oriole, Gold Finch, Purple Finch, Rose-breasted Grosbeak, and Song-sparrow.

Summary

Birds, like plants, show varying degrees of tolerance in their choice of a habitat. The habitat must supply them with food, shelter, nesting materials, and protection from predators. Some birds show a much greater range of tolerance than others. The Long-billed Marsh Wren is limited strictly to the cattail community; the Cedar Waxwings and Starlings are found in a wide variety of habitats. Birds like the Red-winged Black Bird and the Black Tern, although rather specific in their choice of a nesting site, forage over a wider area for food. Bird life is much more abundant at the edge of a community.

DISTRIBUTION OF BIRDS IN SUCCESSIONAL COMMUNITIES

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Location of area:  <i>Indian River Marsh and Shore</i>	Date (or dates): <i>June 25, 1945</i>
	Number persons making study: <i>Eight</i>
	Weather rating: <i>Overcast to Clear</i>
	<i>Wind - zero to five</i> Temperature <i>65°-75°</i>

General description of area:  
*Open water, bulrushes, cattails, sedges, shrub, Cedar-spruce-birch, Oak-maple forest*

Communities and Ecotones

Species	Open water	Bulrush	Bulrush-Cattail	Cattail	Sedge-Cattail	Sedge	Sedge-Myrica gale	Cedar-spruce- Birch	Oak-maple
<i>Pied-billed Grebe</i>		<i>heard nest</i>							
<i>American Bittern</i>	<i>Flying over marsh</i>								
<i>Least Bittern</i>			<i>nest</i>						
<i>Virginia Rail-Sora Rail</i>					<i>nest young</i>				
<i>Coot</i>	-	<i>heard</i>							
<i>Black Tern</i>	✓	-	<i>2 nests</i>	✓	-	✓	✓		
<i>Mourning Dove</i>									<i>heard</i>
<i>Flicker</i>									<i>seen</i>
<i>Tree Swallow</i>									<i>heard</i>
<i>Blue Jay</i>									<i>heard</i>
<i>Crow</i>									
<i>Long-billed Marsh Wren</i>					<i>4-12 nests adults estimated</i>				
<i>Veery</i>								<i>heard</i>	<i>heard</i>
<i>Red-eyed Vireo</i>									<i>heard</i>
<i>Black-throated Green</i> <i>Black and White, Myrtle Warbler</i>								<i>heard</i>	
<i>Green-bird</i>									<i>heard</i>
<i>Northern Yellowthroat-Swamp Sparrow</i>							<i>seen</i>		
<i>American Redstart</i>									<i>heard</i>
<i>Red-wing</i> <i>Rose-breasted Grosbeak, Indigo Bunting, Goldfinch, B. Oriole</i>	<i>seen</i>	<i>seen</i>	<i>nest</i>	<i>seen</i>	<i>nests</i>	<i>seen</i>	<i>seen</i>		
<i>Song Sparrow</i>							<i>seen</i>		<i>seen</i>