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A Graphic Identity Program for The Thousand Acre Swamp Sanctuary

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Table of Contents

Introduction	1
The Thousand Acre Swamp Sanctuary	2
Selection of Topic	4
Research	6
Identity Development	9
Food Web Development	14
Brochure Development	18
Conclusion	20
Footnotes	21
Bibliography	22
Appendix	
Appendix A: Marketing Analysis Form	
Appendix B: Visual Matrix	
Appendix C: Organisms in Way Pond	
Appendix D: Theory Grid	
Appendix E: Mark Development	
Appendix F: Mark and Logotype	
Appendix G: Stationary	
Appendix H: Food Web Development	
Appendix I: Brochure	

Introduction

People have often failed to appreciate the significance of wetlands. Lack of awareness has caused wetlands to be drained, filled, and polluted, to meet short-term human needs. One half of the original 215 million acres of wetlands in the United States no longer exist. Best estimates indicate that we are continuing to lose 458,000 acres of our remaining wetlands each year. Wetlands have an enormous ability to produce and support plant and animal life. They rank among the most productive ecosystems in the world, and produce as much plant growth as tropical jungles, and 20 times as much plant material as the ocean. In addition, wetlands provide many valuable functions. Wetlands filter out pollutants, moderate flood waters, produce valuable crops, and are places of scenic beauty.¹

It is my hope that my graphic design thesis project for The Thousand Acre Swamp Sanctuary will help people understand the interdependencies of nature, and increase public awareness about the importance of wetland areas and preserving the environment.

The Thousand Acre Swamp Sanctuary

I feel that designers, because they deal with mass media, have an obligation to the public. I am disturbed by the lack of respect and ignorance that has caused the current state of the environment. For my thesis I wanted to design a project that would reduce this ignorance by educating people about nature and its interdependencies.

While reading "Upstate," in the "Sunday Democrat and Chronicle," I came across an article on The Thousand Acre Swamp Sanctuary. It seemed to be the perfect subject matter for my thesis project. Consequently, I visited the Swamp and participated in one of their volunteer led hikes. Upon doing so, I fell in love with the Swamp and the philosophy of the Thousand Acre Swamp Preservation Committee.

The Thousand Acre Swamp Sanctuary is located in Penfield, New York, just seven miles east of Rochester. It is considered to be one of the finest undisturbed natural areas remaining in New York State. The Swamp was formed by the last glacier, believed to have covered this area 10,000 to 25,000 years ago. It created a variety of habitats from moist lowlands to dry upland forests, that support many kinds of plant and animal life. Almost 500 different kinds of plants have been identified, 145 varieties of birds live or migrate through the Swamp, and 50 species of animals live in the Swamp.²

In 1917, Fletcher Steel, a Rochester native and a local landscape architect, gave a 52 acre parcel of land in the Swamp to the Nature Conservancy, an international non-profit organization dedicated to the preservation of ecologically significant land. About the same time, the Swamp began to receive attention from the town and local naturalists. In 1975, a group of area people organized by Katharine Zarik, a retired Penfield High School biology teacher, went to work to save the Swamp. In 1976, that group allied itself with the Nature Conservancy, which already owned the 52 acres in the Swamp, forming the Thousand Acre Swamp Preservation Committee.³

The Committee is composed of about 75 members and is governed by a 20 member board of trustees. Since it formed 14 years ago, the group has continued to work toward its goal of owning all of the Swamp. At the same time the Committee is working to protect the Swamp through gifts and purchases of land, it is fostering appreciation of this unique area by guided nature walks and educational and scientific programs.

Selection of Topic

Roger Remington had served on the Penfield Conservation Board with Kathy Zarik and suggested that I contact her. I called Mrs. Zarik and told her that I was a graphic design student of Professor Remington and wanted to do a project involving the Swamp for my Master's thesis. She was extremely enthusiastic and we made plans to meet at the Swamp.

Mrs. Zarik arrived at the Swamp shortly after I did, dressed in her hiking attire. I had not expected that we would be going for a hike and was unprepared. I grabbed my boots that were in the car and quickly changed my shoes. It had rained a lot that week, and the paths were extremely muddy. She was very excited that I had chosen the Swamp for my thesis project, but we were both having a difficult time coming up with a project that would benefit the Swamp. I had originally intended to design a large map of the Swamp to place on the bulletin board at its entrance, along with new trail signs, but the existing signs were sufficient and a map had already been designed.

We started our hike out on the Entrance Trail. Soon after we started, two baby snapping turtles the size of quarters came across the trail. Mrs. Zarik, having been a biology teacher, is very knowledgeable and began to tell me all about snapping turtles and why they had strayed from their nest. We continued our hike, crossing over the board walk, on up to Way Pond. Mrs. Zarik continued to point out various plants and birds along the way. While observing Way Pond we came up with the idea of designing an informational food web of Way Pond that would educate people about the interrelationships of a community.

A food web is a network of interconnected food chains that represent the flow of energy in the form of food from one organism to another. Having taken several biology and ecology courses in both high school and college, ecology was a subject that I was both knowledgeable about and enjoyed. Constructing a food web would be a challenging design problem, along with an educational tool for the Swamp.

In addition to a food web, I decided to design a new identity program for the Swamp. Their current identity was weak, and I felt that a new identity program would improve their public relations.

Research

With any design problem, it is imperative that the designer understand the subject. My goal was to have all the research for the mark and the food web completed by the end of the fall quarter so that I could spend two full quarters on the design. I was able to do this, and I feel that the extra time I spent on the research allowed me to carry my designs further than I would have been able to otherwise.

The Swamp's mark was a pen and ink illustration of a blue heron, printed in brown. The logotype was Helvetica bold, all capital letters, set flush left, ragged right and printed in green. The mark was placed to the left of the type and the mark and logotype were connected by a line running underneath them. The line became a circle which enclosed the bird and continued to flow around to the type.

Identification marks should ideally be developed relative to a number of criteria which can be listed as follows: legibility, impact, appropriateness, adaptability, simplicity, distinction, and timelessness. Although the Swamp's mark was appropriate, when it was reduced it became illegible thus lessening its impact. The Thousand Acre Swamp is an organization that relies on public support, and I felt it needed a stronger mark with which people could easily identify.

I began my research by reading as much material as I could about wetlands and The Thousand Acre Swamp Sanctuary. In addition, I gave a marketing analysis form to Mrs. Zarik to fill out. The form consisted of nine questions designed to help me understand how The Thousand Acre Swamp Committee perceived their organization. From the form, I extracted seven key words and phrases that best described the Swamp, in order of their importance. They included: wetland, conservancy, diversity of plant and animal life, education and identification, recreation, non-profit/volunteer managed, and nature. With this information I constructed a visual matrix to serve as a tool for both generating and evaluating marks for the Swamp. The seven descriptive phrases were placed in a horizontal row in order of their significance. The three terms that were used to identify the descriptors were iconic, a direct association of the descriptor; index, an

indirect association of the descriptor; and symbolic, a symbol of the descriptor. The three identifiers were placed in the vertical row of the matrix. With the knowledge that I had gained from my research, I filled in the matrix with pictures and symbols that were appropriate for each category.

This process was beneficial in that it helped me to clarify, categorize, and prioritize the information that I had collected.

Kathy Zarik and I decided that the food web should be site specific to Way Pond. Before I could do anything, I had to refamiliarize myself with the way that food chains and food webs work. Kathy Zarik has a whole library of biology books, and she lent me several ecology books as reference tools. Next I had to find out what organisms lived in Way Pond. I began by doing research on ponds to discover what types of organisms generally existed in North American ponds. Two of the most helpful books were, The Life of the Pond Our Living World of Nature, by William H. Amos, and The Pond, By Gerald Thompson and Jennifer Coldrey. Mrs. Zarik had also given me a few compiled lists of plants and birds that had been sighted in the Swamp: a wildflower check list compiled by the Burroughs Audubon Nature Club, "The Trees of the Thousand Acre Swamp" and "The Ferns of the Thousand Acre Swamp" both compiled by Bruce Gilman, and a list of birds that had been sighted in the Swamp. With these sources I made a list of organisms that were found in both North American ponds and the Swamp. I then met with Mrs. Zarik and Alberta Way to go over the list to make additions and subtractions.

Alberta Way lives on a horse farm that borders the Swamp. In 1976 she donated 17 acres to the Swamp and gave the Committee an option to buy an additional eight acres, which included what was later named Way Pond. Alberta Way is in her late eighties and has spent hours observing the Pond. With Alberta Way's and Kathy Zarik's help, I was able to compile a final list that included 74 of the organisms found in Way Pond. My next task was to find out what each organism ate. I used The Field Book of Natural History as a reference tool and

compiled a list that included an illustration of each organism as well as what they ate.

Mrs. Zarik and I decided that the most effective medium for presenting the food web would be a brochure. An educational brochure on food webs could be handed out on their hikes and could be inexpensively produced.

To make certain that the brochure was targeted at the right audience in the most efficient way possible, I filled out a Communication Theory Grid and went over it with Mrs. Zarik. The grid was designed by Harold Lasswell and is a way of taking communication problems and providing a structure for analytical viewing. With the help of the grid I came up with a number of criteria for the brochure. The brochure was to be designed for both adults and children with little or no background in ecology. Its purpose was to educate people about the complexity of the environment and to familiarize them with the plant and animal life in Way Pond.

The research that I had done gave me a clear understanding of what I had to accomplish and allowed me to focus on the design in a clear methodical way.

Identity Development

Identity marks can be divided into as many as six different types. Upon starting the design of the mark for The Thousand Acre Swamp, I considered each type to better understand the design process and the possibilities available to me. The six different types of identification marks are: logotype, a typographical symbol; product or service, a symbol based on an image that may be indirectly related to the company; illustrative, a symbol derived from the name of the company; abstract, a symbol in which an abstract design is used; and initial, a typographic symbol derived from the initials of the company name.⁴

After constructing a visual matrix, I felt that an allegorical or illustrative mark would best represent the Swamp. I drew several sketches, but none of them were as appropriate for the Swamp as the blue heron. I chose to keep the blue heron as a symbol for the Swamp, but upgrade it.

I felt that the heron was a well chosen symbol for the Swamp for several reasons. The blue heron is a wetland bird that is endangered by the decrease of wetlands. Without support for The Thousand Acre Swamp Sanctuary and other similar movements that preserve wetland areas, the blue heron will become extinct, along with other wetland birds. It has political implications as well as being a beautiful bird aesthetically. Using the blue heron would also allow those people who already identified the heron with the Swamp to continue to do so and allow the mark to be gradually incorporated into their current identity system, eventually replacing it.

When I presented my proposal to use the blue heron to my thesis committee, a problem arose that graphic designers often need to confront. Another organization in the town of Penfield was using the blue heron for their mark. It is called The Blue Heron, and is a new community built around a golf course. I had to find out what their logo was before I could develop the Swamp's mark. I felt that I had no time to waste so the next day I drove there. The Blue Heron is located twenty minutes outside the town of Penfield, and is still in the process of being built. All that I could find in the way of a mark was two birds

in flight carved in a wooden sign. There was no sign of an office, so I went home and contacted them by phone. I had them send me their literature and found that their logo was the two birds that I had seen on the sign. The birds were not recognizable as blue herons although they were printed in blue on most applications.

The experience turned out to be a beneficial one. The Blue Heron's brochure had beautiful pictures that I was able to use as research material, and their logo brought up the importance of recognition. I wanted the Swamp's logo to be recognizable as a blue heron. I did not feel that the Blue Heron's was, and it posed no problems. I decided to continue with my original proposal and use the blue heron for the Swamp's mark. After all, The Thousand Acre Swamp had used the blue heron for their mark before The Blue Heron.

I began my logo development by generating as many sketches as I could of the blue heron in different positions. I showed the sketches to Joe Watson a graphic design professor at the Rochester Institute of Technology and an avid bird watcher. With his help I narrowed my sketches down to six different poses. Before I could chose a sketch, I felt that I should observe blue herons in nature. Unfortunately the blue herons that nest in The Thousand Acre Swamp had already migrated South for the winter.

While I was home in Connecticut over Christmas break, however, I had the opportunity to observe blue herons in the wild. My father is a bird watcher, and he and I went on a search for blue herons. We did some research and found the best locations in the area for wintering blue herons. The first place we visited was Greenwich Point. We were told there were blue herons nesting in the fresh water ponds there. My father and I scanned the shore line with our binoculars but did not see any blue herons. Our second stop was Rye Play Land. It is an amusement park that is right along the shore. I had been there when I was little and it seemed to be the last place where I would see a blue heron. Inside the park there is a nature preserve called Reed Sanctuary. There were several

islands in the middle of a fresh water pond. I ran up to the fence that surrounds the pond, with the hope that the gray forms that I saw were blue herons and not rocks. It was four o'clock and the sun was starting to set. It was behind us and lit up the islands. I looked through my binoculars, and the two gray forms that I saw were not rocks but blue herons. We were some distance away from the islands, but the birds still looked huge. My father and I counted 13 blue herons clustered on the center island. They all stood on one foot with their beaks tucked into their chests. I decided then that the Thousand Acre Swamp's blue heron would be perched on one leg with its circular neck emphasized.

I began with the sketch I had done of the blue heron standing on one leg. The first thing that I did was to redraw the sketch to a grid, unifying its contour. In the beginning, I was afraid to alter the shape of the bird. It was difficult for me to make a translation of a living form that I felt needed to be anatomically correct. My first few sketches did not stray from the original sketch that I had done. I played around with the tufts on top of the bird's head and the shape of its tail feathers.

To create an effective logo, I was going to have to carry the bird to a point where it was an abstraction but still recognizable. I began by alternating straight and curved lines, to emphasize the curves and straight edges of the birds contour.

I then worked with the birds neck and head. I redrew the contour of the birds neck with a circle. Using the same circle I drew the birds chest and arched back. I used smaller circles to separate the neck of the bird from its back. I then worked with lines of continuity, lining up as many points as I could. I lined up the bird's chest feathers, its tail feathers, and the bird's feet.

By accident, while I was scribbling the feathers on the bird's head I drew three stepped lines close together. I had been struggling with how to deal with these feathers from the start, and here was the answer. I decided to depict the tuft feathers as four stepped lines that mirrored the chest feathers. I made both the head and chest feathers progressive, from large to small. I made the weight of

the tuft feathers the same size as the distance between the birds neck and chest, neck and back, and legs.

Drawing the feet of the bird was the most difficult. In the original sketch the bird's feet were very complicated; I needed to simplify them. To simplify the bird's knee, while still giving it the appearance of being knobby, I drew the inner edge of the leg with a curve and made the outer edge into a triangular shape. After doing this, the bird looked as though it would topple over. To make the bird look like it was standing up, I created a vertical axis with its legs. This solved the balance problem, but the feet still needed work. I eliminated the nails and made the bird's feet pointed, making them the same shape as the beak, and giving them the feeling of having nails. When I moved the bird's legs up, the back toe on its upper leg created an awkward negative space. I decided to remove it, and combine the two front toes. On the lower foot I made the joints curved, to echo the curves in the rest of the bird.

When I thought that I had gone as far as I could with the bird, I presented it to my committee members and to Joe Watson. They made a few minor suggestions. The bird had become too squatty and its neck was too short. I elongated the legs, and made the opening between the neck and back larger to give the appearance of a longer neck. The mark was now completed and ready to be combined with the logotype.

The Swamp has a very long title. In order for it to relate to the long and narrow shape of the bird, I stacked the type and made it flush left and ragged right. I experimented with both serif and sans serif type faces. I had originally planned to use a serif type face, but I did not feel that they were bold enough for the mark. I eventually chose Optima Bold. Optima is a strong type face, but its thick and thin strokes give it an elegant appearance. I now had my mark and logotype but was not sure how to position them together. I tried positioning the bird to the right of the type, to the left of the type and on top of the type. I liked all three versions, but

when the bird was placed to the left of the type it created a pleasing shape, and I felt that it would be the easiest of the three to adapt to a variety of applications.

On the letterhead I had to include the Swamp's identity and address, The Nature Conservancy's identity and address, and a list of the Swamp's trustees. This was a lot of information and finding a balance between the three was difficult. The Thousand Acre Swamp is a conservative organization. I chose to keep the applications straight forward and position the list of trustees on the left hand side of the letter. I decided to line up the the logotype with the names of the trustees. To do this the blue heron could no longer be positioned to the left of the type because, there was not enough room. The strongest solution was to place the bird to the right of the type. To separate the mark from the names of the trustees, I drew a thin horizontal line underneath them that extended to the other side of the page. To deemphasize the list of trustees and The Nature Conservancy signature, I reduced them in size, keeping them large enough to be readable. I followed the same format on both the envelope and business card as I did on the letterhead.

I chose PMS #549 for the color of the bird. It is a light blue grey, similar to the bird's color in nature. I kept all the type in black to create a contrast between it and the mark. To complement the blue of the bird I chose a cream colored paper, with a laid finish to give it an organic appearance.

Food Web Development

I began the food web with a list of 74 organisms and what they ate. It was difficult knowing how to begin. I had intended to design a circular food web starting with the plants in the upper left hand corner, circling around to the decomposes in the lower left hand corner. I positioned all the plants in the upper left hand corner and placed the rest of the organisms wherever they fit. Soon after starting, it became apparent to me that I had embarked on a very challenging problem in graphic communications. When I finished there were arrows and organisms scattered all over the page. Because the majority of the organisms ate plants, where to place the plants became a problem. Putting them in the upper left hand corner of the page was not feasible, because the arrows were unable to reach all the plant eaters. I tried placing them in a column on the left side of the food web, with the other organisms forming layers outward. I tried placing them in a row on the top of the diagram, with the other organisms forming layers downward. And I tried placing them in the center of the diagram with the organisms radiating outwards. Each of these attempts failed. I had to simplify the diagram, but was determined to demonstrate the complexity of the environment by including all of the organisms.

I began by grouping all similar organisms together. This helped, but the web was still far too complex. It was clear that I was going to have to eliminate some of the organisms. I took each group and narrowed it down to one organism. The food web was much more manageable, but I still had the problem of where to place the plants. The solution seemed to be to position them on either side of the web, with the organisms working inwards to those animals that were strictly carnivorous. I worked at the arrangement until each organism was located next to what it ate. To accomplish this I had to continue to eliminate organisms. I then unified the arrows, simplifying the diagram even more. I made all the arrows the same weight and limited them to three different directions, horizontal, vertical, and a 45° angle. I then added the sun to the top and the decomposers to the bottom

of the diagram, creating an elliptical shape.

I experimented with different line weights and screens of the arrows, but felt that I had gone as far as I could with the structure of the food web as it stood. I was satisfied with it visually, but it was still too complicated.

According to Arthur Lockwood in, A Visual Survey of Graphs, Maps, Charts, and Diagrams, for the Graphic Designer, effective diagrams have three things in common. They have an accurate representation of the facts, they are clear, easily read and understood, and they are designed in a way to attract and hold attention. The educational level and interest of the audience for whom the web was intended needed to be given primary consideration. This is where I had failed to communicate. The food web was to be used by the general public with little or no understanding of ecology. My design required a person with a basic knowledge of food webs follow through each relationship in order to gain information. I had to carry the diagram that I had created further. But how? ⁵

Charles Smith suggested that I record every path in the food web, in the hopes of finding a pattern. Upon doing this, it immediately became clear that when the organisms were placed in a linear fashion, the relationships between organisms were much easier to see and follow. When I had finished constructing a food chain for each path, I laid them all out. It took me awhile to discover it, but there was a pattern. Certain organisms were always in the same position in the food chains. I took each of the longest chains, and positioned them one on top of the other, forming both horizontal and vertical rows. Horizontally the organisms formed food chains, and vertically the organisms were related through their order, starting with the producers all the way up to six order consumers. I connected the organisms that were dependent on other food chains for nutrients with arrows, creating a web. My goal was to have none of the arrows cross paths. It took several attempts at positioning the chains, along with the elimination of organisms before this was accomplished. Every organism eventually dies and decays with the help of decomposers. To demonstrate this, I drew horizontal

lines that connected the organisms in each order. These lines merged with a larger line that lead to the decomposers. Decomposers have the ability to break down substances and release their components into the air and water, where they are later used by plants to start the whole process over again. I showed this with an arrow that lead from the decomposers to the producers. I placed the sun in the upper left hand corner of the diagram with an arrow drawn to the producers. I decided to label each order and list the organisms to make the diagram clearer.

I now had the structure that I had been looking for. I showed the web to Mrs. Zarik to make sure that it was biologically correct. She was thrilled with the design, and said that she had never seen a food web shown in such a simple straight forward manner before. The only suggestion that she made was to group the forth, fifth, and six order consumers into one group. Organisms are generally not categorized beyond fourth order consumers.

I had the structure, but it needed refinements. I had used straight lines in my previous sketches and started by connecting all the organisms with straight lines. The straight lines were very ridged and the web no longer looked like a cycle. Straight lines had helped clarify my first web, but in this web they needed to be curved. I wanted the lines to flow in circles to mirror the energy of nature. To create movement I formed continuous circles with the lines. I made the spacing between the horizontal lines progressively larger, to symbolize the dispersion of energy as it flows from one tropic level to the next. I used different weights for each of the three types of lines, to clarify them. All the arrows that represented the flow of energy were one weight. The horizontal lines were drawn in a thinner weight. And the lines that represented more than one transaction were drawn in a thicker line weight. The arrows that represented the flow of energy were drawn in black. The flow of energy from decomposed organisms to the plants represented a secondary system and was designed to be printed in a 40% screen.

Rendering the curved lines while keeping an even line weight was a

challenge. I attempted to render them on the Macintosh Computer using Aldus FreeHand software. I scanned a sketch of my food web into the computer using ThunderScan and then used this as a template to trace the food web. Tracing the horizontal and vertical lines was easy, but the curved lines were more difficult. I was unable to get the continuous curves that I wanted. To obtain the desired curves, I drew each line with an oval hoping that I could erase what I did not need. Because of the nature of the software this was not possible. I did, however, end up with flowing curves. Using the curves that I had drawn on the computer as a guide, I drew the lines by hand with a flexible curve. The computer allowed me to create the mechanical shapes that I had wanted, but I was able to achieve a more visually pleasing line quality by hand.

Brochure Development

When I was done with the design of the Food Web, I presented it to The Thousand Acre Swamp Preservation Committee with the proposal for designing an educational brochure on ecology for the Swamp. Up until this point I had been working exclusively with Mrs. Zarik.

The Committee was very enthusiastic about my project but time was an issue. I wanted to have the brochure completed by the opening of the thesis show which was five weeks away. They were not used to working that quickly and were skeptical that I could get the brochure finished on time. I convinced them that I would be able to do it and they allotted me up to \$500 for the cost of printing the 1000 brochures. They also assigned a committee of three people to go over the text and layout of the final brochure before it was printed.

I decided to have the brochure printed in all black with the exception of the lines in the food web that were screened, to keep down the cost of printing. The Swamps trail guides are printed on recycled paper. I felt this was a nice touch and decided to use Passport recycled paper for my brochure. Because the brochure was meant to be taken on hikes, I chose a dark tan paper that would not easily show dirt. The cost of printing was less than I had anticipated and I was able to have 2000 copies printed for less than half the amount allotted me.

The brochures horizontal format caused a problem in the placement of the identity mark. Because of its rectangular shape, I felt that the best solution for the identity mark was to place the bird on top of the logotype. I stacked the title of the brochure, and placed the bird on top of the logotype separating the two elements. This created a pleasing horizontal line. I anchored the bird with a line that separated the bird from the logotype, which helped to unify the brochure with the stationary.

In both the brochure and stationary, I dealt with the position of the mark and logotype differently. I feel that this variety adds excitement to the applications and helps to strengthen the identity program as a whole. In Seven Designers Look at Trademark Design, Paul Rand states, "When fully exploited the trademark can

actively stimulate interest in the product or brand. It is possible to repeat without being repetitious. This is important; monotonous repetition eventually loses its impact, and the trademark which becomes a visual cliché will fail to evoke a response from the spectator."⁶ "Two of the most important ways to transform the trademark into a stimulating illustrative device are: (1) to vary the treatment of the device itself, (2) and to alter the context in which the device is presented."⁷ By altering the position of the mark and logotype while keeping their form, the applications become exciting but remain familiar.

Conclusion

My thesis project presented a number of challenging design problems in graphic communication. Through persistence, I was able to solve these problems, and it has been a very rewarding experience.

Because of budget reasons The Thousand Acre Swamp Committee was unable to print new stationary. The identity mark that I designed, however, will be used on all new applications, eventually replacing their old mark.

The brochure has been passed out to all the hike leaders, and will be used on their hikes to educate people about energy and food relationships.

Notes

¹ James Bare, Symbols and Logos.

² "History of The Thousand Acre Swamp Preservation Project," April 1981.

³ Chuck Lyons, "Choosing Nature," Upstate Magazine, 22 May 1988. p. 4-7.

⁴ Arthur Lockwood, Diagrams, A visual Survey of Graphs, Maps, Charts and Diagrams for the Graphic Designer. (London: Studio Vista Limited, 1969), pg. 6.

⁵ Egbert Jacobson, Seven Designers Look at Trademark Design (Chicago: Paul Theobald, 1952), pg. 61.

⁶ Jacobson, pg. 62.

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Appendix A

Marketing Analysis Form

Thousand Acre Swamp Preservation Committee

Marketing/Communications Analysis

1. List below 10 words that to you best describe the nature or function of your organization.

<u>educational</u>	<u>volunteer managed</u>
<u>conservation of plant & animal life</u>	<u>public-supported</u>
<u>recreational (passive)</u>	<u>diversity of life</u>
<u>non-profit</u>	<u>identification of plant & animal life</u>

2. From the words listed above, extract the five most important terms and place below in priority.

1. conservation of diversity of living things
2. education of people in conservation & ecological relationships
3. identification of trees, shrubs, flowering & non-flowering plants
4. " " animals
5. recreational - passive - observation

3. What difference does it make that your organization exists?

The swamp sanctuary would not exist, and there would not be any educational programs.

4. As you understand it, what is the mission of your organization?

To acquire ^{and preserve} the swamp land and a buffer around it, and to preserve the diversity of life in the Swamp
To educate people about the values of wetlands

5. On a day to day basis, what specific ways do you see this mission becoming operationalized?

There is a Board of Trustees that oversees land acquisition, stewardship, and an educational program; and a fund raising committee to raise the money for the entire project. There are scheduled hikes and slide shows for educational purposes.

6. Looking into your personal crystal ball, list five words that might characterize the personality of your organization in 10 years.

volunteer - operated
public - supported
Committed to preservation of the diversity of life

7. From your own perspective, please list the key audiences for your organization's public messages.

a) adults and children interested in, out-of-door life
b) " " " " " " preservation of unique natural areas

8. From the list above, please extract the most important and place below in a priority listing.





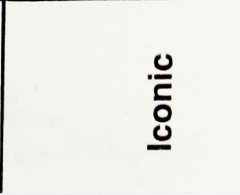

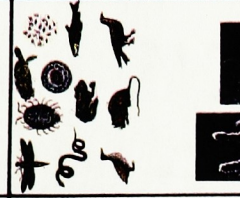
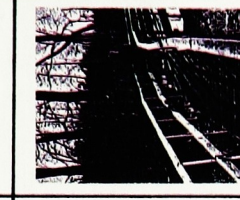

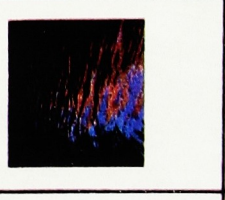
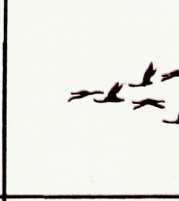
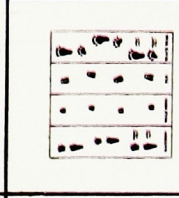

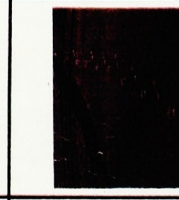
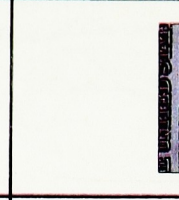








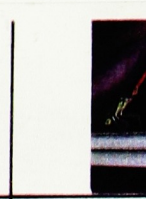
1. b ^{see} above
2. a
3. _____
4. _____
5. _____

9. In terms of your personal point-of-view, how do you feel that your audience should perceive your organization. Simplify your answers to one or two words if possible.

a) enthusiastic about preservation of unique ecological areas
b) dedicated to doing a good job of preservation and education of people in the areas of ecology, botany, ornithology

Appendix B

Visual Matrix

<p>Iconic</p>		<p>Wetland</p>	 	<p>Conservation</p>		<p>Diversity of Plant and Animal Life</p>	<p>Education/ Identification</p>			<p>Recreation</p>		<p>Nonprofit/ Volunteer Managed</p>		<p>Nature</p>	
<p>Indexic</p>	 							<p>Symbolic</p>	 						

Appendix C

Organisms in Way Pond

Mammals

Common Mole

white grubs, earthworms
adults insects
plant materials

Shrew

insects, worms, salamanders
small animals

Snow-shoe Rabbit

aspen, dandelions
herbs, tree bark
vegetables

Cottontail Rabbit

aspen, dandelions, herbs, tree
bark, vegetables

Red Squirrel

plant and animal matter
birds
seeds from cones

Gray Squirrel

plant matter

Raccoon

insects, aquatic animals
corn, vegetables, frogs

Deer

twig buds, leaves of trees,
grasses, weeds, nuts

Coyote

rabbits, carrion, rodents
squirrels, ground hogs

Red Fox

mice, carrion, fruit
vegetables, game, poultry

Gray Fox

almost anything, rabbits
mice, vegetable, pheasants

Woodchuck

plants, insects
mice, birds- occasionally

Mouse

variety of plant and
animal substances

Muskrat

plant material, shell fish
fresh water mussels
other small aquatic animals
enemies- hawks

Birds

Broad-winged Hawk

mammals, reptiles, birds
mice, frogs, toads
small birds

Blue-winged Teal

water weeds, grasshoppers
flies, beetles, snails

King Fisher

mostly fish, mice, frogs
lizards, insects, berries
water insects

Flicker

insects, ants
grasshopper, crickets
beetles

Downy Woodpecker

insects
sap and cambium from trees

Hairy Woodpecker

insects from bark or dung
dead wood, ants
grasshoppers, spiders

Little Green Heron

insects, and other forms of
small animal life,
grasshoppers, crickets, worms
fish, snakes, small mammals

Great Blue Heron

fish, snakes, grasshoppers
mice, frogs, shrew
other small animals

Cedar Waxwing

fruit
insects

Black Duck

mosquito larva
grain
vegetation

Mallard Duck

mosquito larva
grain
vegetation

Pied-billed Grebe

fish
aquatic animals

Canadian Goose

roots, grain
grasshoppers, eelgrass

Great Horned Owl

rabbit, rats, fish
mice, mammals

Screech Owl

insects, mice, frogs
salamanders, birds

Tree Swallow

all animal matter
mosquitoes, flies, bees
moths, cut worms

Pheasant

variety of plant and animal
matter, twice as much
vegetable as animal matter
insects

Wood Duck

90% vegetable matter
duckweed, grasses, seeds
pondweed, nuts, insects

Insects

Mosquito

larva- minute animals and plants in water
adults- blood of animals
male adult- plant juices

Black Swallowtail

larva- carrots parsnip
caraway

Water Scavenger Beetle

small animals that maybe captured alive or decaying vegetation

Water Spider

Water insects
small animals

Pond Snails

plant and animal matter
scavenger

Damsel fly

nymph- any aquatic animal that can over come
adults- any insect that can be captured in flight

Dragon fly

nymph- larva of other water insects, tadpoles, small fish,
adults- insects caught in wings

Grasshopper

grasses

Cricket

plant or animal matter
mostly plant

May fly

nymph- important food for fresh water fish
Herbivore- feeding on plant detritus, algae

Water Strider

insects or other small animals dying or trapped on the surface of water
snails near waters edge

Back Swimmer

tadpoles,
small fish, moths
small aquatic animals

Water Boatman

plant oozes growing on submerged objects
distasteful to some fish

Monarch Butterfly

larva- milkweed
distasteful to birds

Cabbage Butterfly

Cabbage
closely related mustards

Tiger Swallow

leaves of birch
poplar
ash

Deer fly

larva- minute aquatic animals
adults- blood of man, horses, and some other mammals

Diving Beetle

animal matter may be captured alive, decaying vegetation, insects, tadpoles. fish, small frogs

Amphibians Reptiles

Green Frog

insects, snails, worms
slugs, small animals
tadpole- vegetable eaters
diatoms, ooze, algae

Bullfrog

insects, snails, worms
slugs, small animals

Toad

cut worms, potato beetles
insects, ants, slugs
any small animal that moves-
mice, snakes

Snapping Turtle

animal matter
water plants

Painted Turtle

aquatic plants
scavenger

Salamander

aquatic animals
insects, worms, spiders

Garter Snake

Frogs, toads, salamanders
earthworms, crayfish
minnows, insects
cold blooded animals

Fish

Sunfish

small fish
insects
worms

Common Shiner

insects

Trout

Small fish
insects

Small-mouthed Bass

small fish
insects

Plants

Butter Cup

Swamp Butter Cup

Pondweed

Duckweed

Euglena

Cattail

Wild Heather Aster

Daisy

Horseweed

Sugar Maple

Red Maple

Paramecium

Amoeba

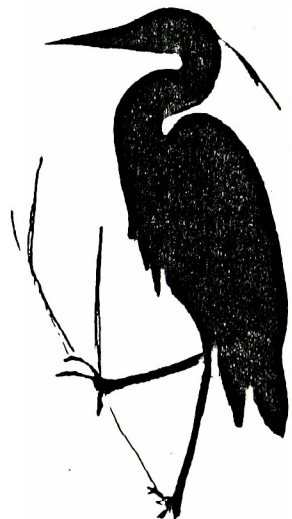
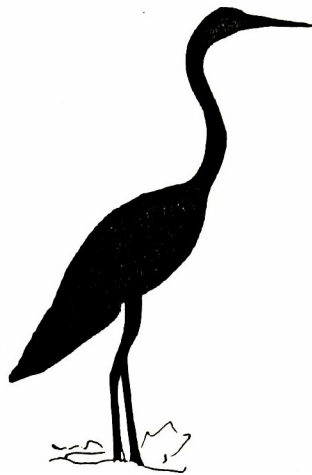
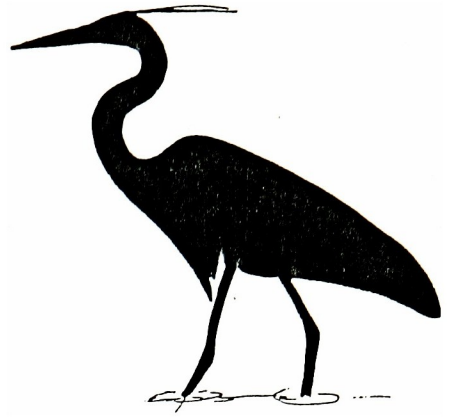
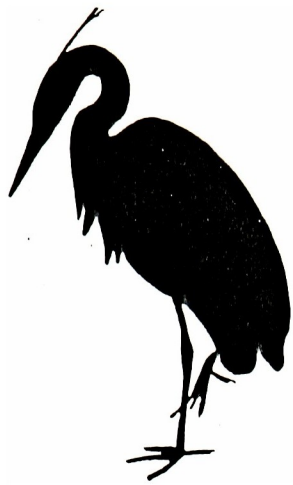
Appendix D

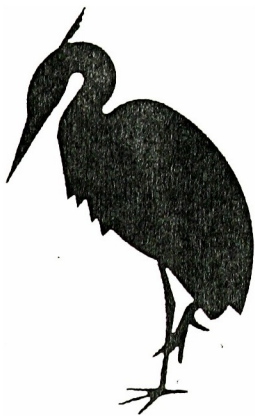
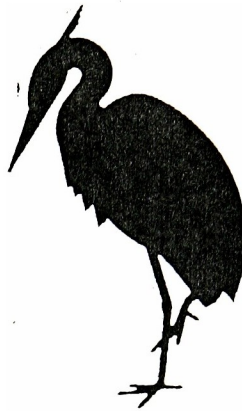
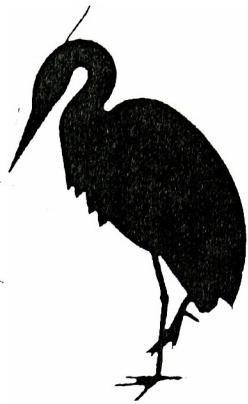
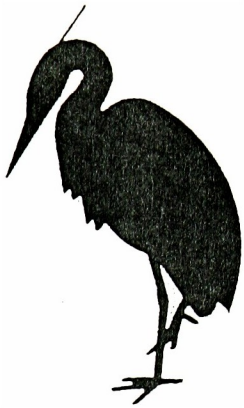
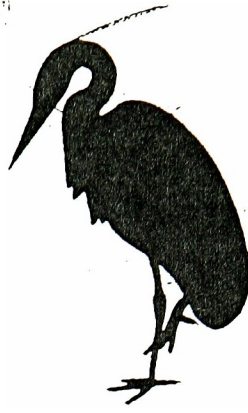
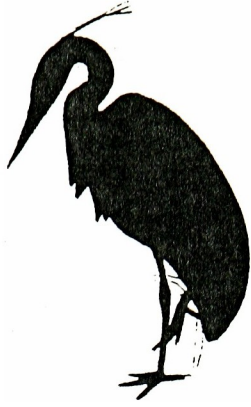
Communication Theory Grid

The Thousand Acre Swamp Sanctuary

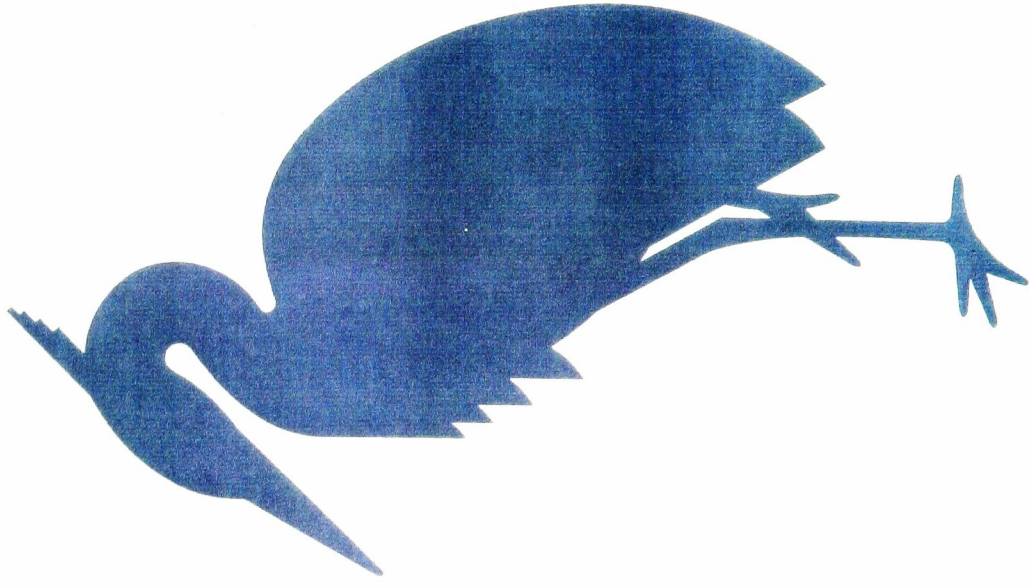
Who	Why	Says What	To Whom	Through What		To What Effect
				Medium	Channel	
The Thousand Acre Swamp Sanctuary	<ol style="list-style-type: none"> To educate people about the complexity of the environment To familiarize people with the plant and animal life in the pond 	<p>The complexity of the environment.</p> <p>If an organism is disturbed, it will effect the other organisms in the food web</p>	General public with little or no background in ecology - both adults and children	<p>Informational Brochure</p> <ul style="list-style-type: none"> •Food Web •Information about the Way Pond 	<p>hand out brochure on hikes</p> <p>Brochure posted at the board at the entrance of the swamp</p>	Education on the importance of conservation

Appendix E
Mark Development





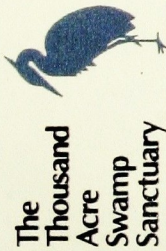
Appendix F
Mark and Logotype



The Thousand Acre Swamp Sanctuary

Appendix G

Stationary



**The
Thousand
Acre
Swamp
Sanctuary**

P.O. Box 115
Penfield, NY 14526

Honorary Trustees

Mrs. Margaret Andronico
Mrs. Harry C. Banden
Mrs. Kay Ballard
Mrs. Robert C. Berman
Mrs. William A. Cember
William P. Cowell
E. Kent Damon
Mrs. Natascha Dykman
Julia M. Finch
Mrs. Robert G. Gifford
James B. Little
Mitchell Pierson, Jr.
Mrs. Elizabeth Y. Poley
Russell A. Sibley
Joseph W. Taylor
John C. Thompson
Robert G. Wentland
Morn Will
Mrs. John K. Woodard

Officers

John L. Buchah
Chairman
David Strong
First Vice-Chairman
Lawrence H. Reynolds
Second Vice-Chairman
Mrs. Alexander Zarril
Recording Secretary
Margo E. Thier
Corresponding Secretary
Richard R. Adams
Treasurer

Trustees

Jack Bacon
Nancy J. Beach
Dorothy Beach
Norma A. Broida
Mrs. George H. Greer
William A. Higgins
Mary Parke E. Manning
Thomas W. McCulloch
Irene D. Mullie
Susan B. Poley
Gertrude R. Ruten
Richard R. Adams
Samuel O. Tibbo



The Nature Conservancy
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Arlington, Virginia 22209



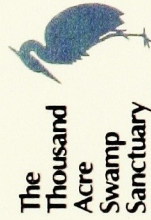
**The
Thousand
Acre
Swamp
Sanctuary**

P.O. Box 115
Penfield, NY 14526

Mrs. Alexander Zarril
Recording Secretary



The Nature Conservancy



**The
Thousand
Acre
Swamp
Sanctuary**

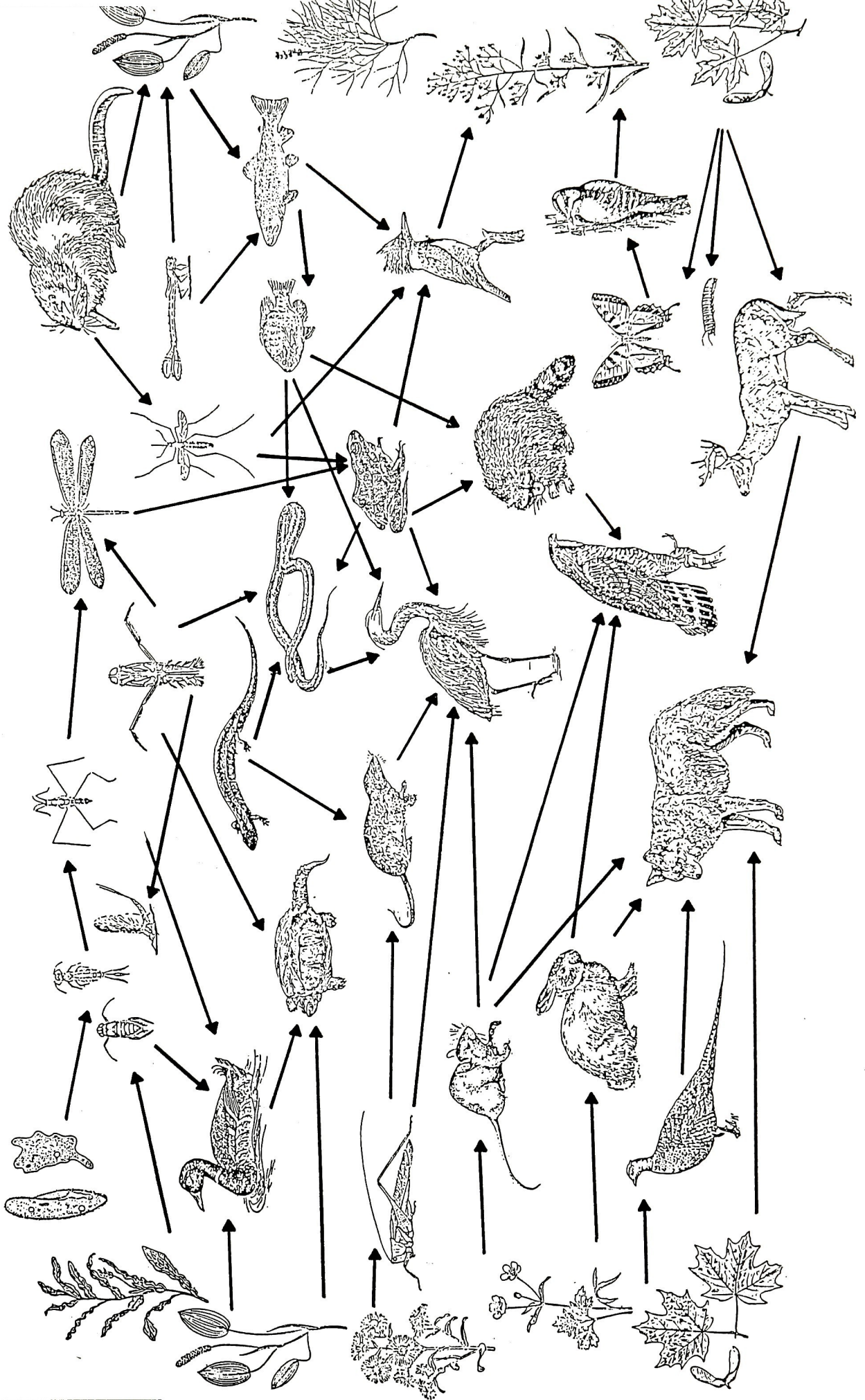
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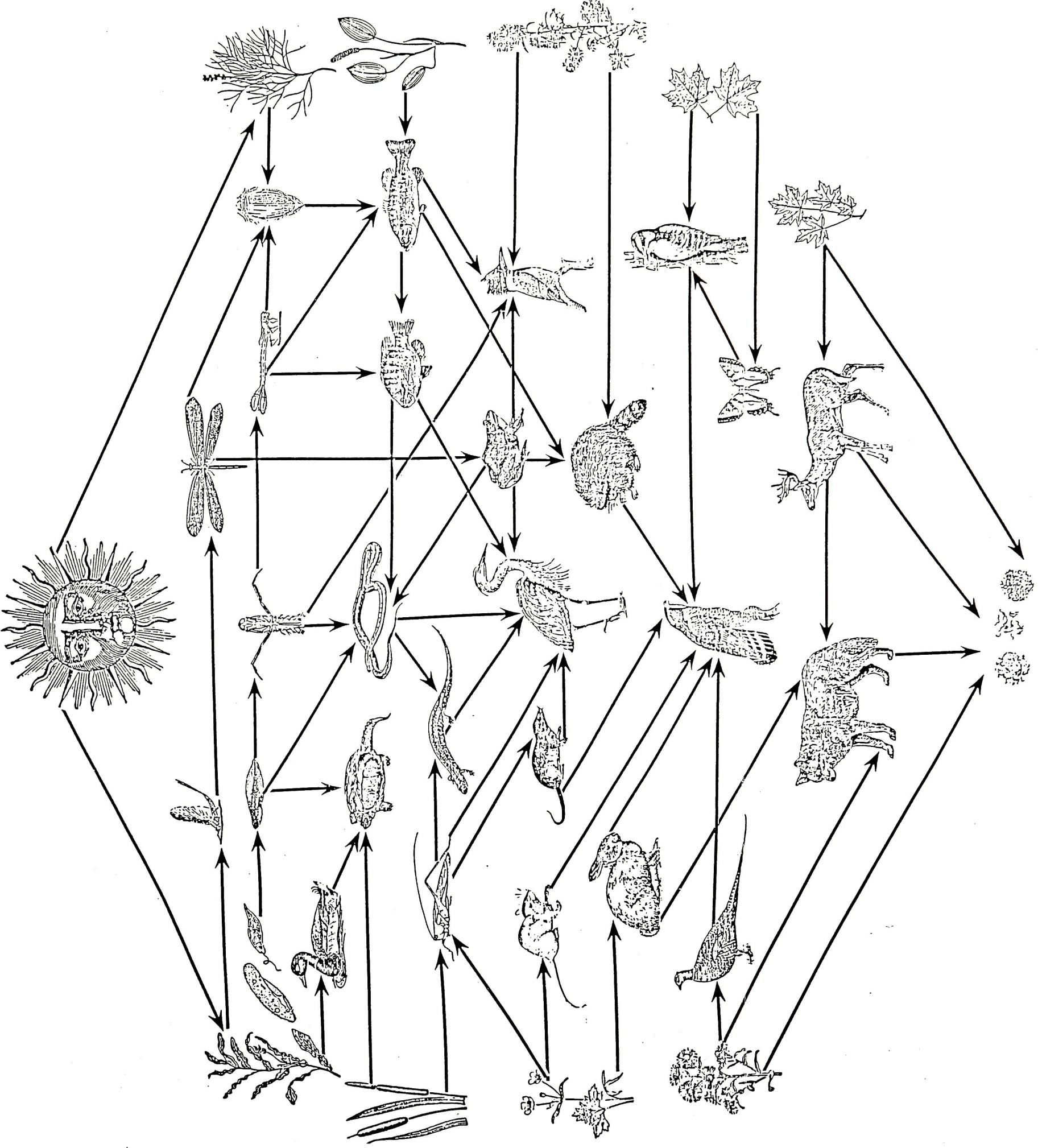


The Nature Conservancy

Appendix H

Food Web Development





Plant #1

plant → may fly → dragon fly → beetle → fish → fish → snake
plant → may fly → dragon fly → beetle → fish → fish → blue heron
plant → may fly → dragon fly → beetle → fish → raccoon → hawk
plant → may fly → dragon fly → beetle → fish → kingfisher
plant → may fly → dragon fly → frog → raccoon → hawk
plant → may fly → dragon fly → frog → blue heron
plant → may fly → dragon fly → frog → kingfisher
plant → duck → snapping turtle

Protozoa

protozoa → tadpole → back swimmer → nymph → beetle → fish → fish → snake
protozoa → tadpole → back swimmer → nymph → beetle → fish → raccoon → hawk
protozoa → tadpole → back swimmer → nymph → beetle → fish → kingfisher
protozoa → tadpole → back swimmer → nymph → beetle → fish → fish → blue heron
protozoa → tadpole → back swimmer → nymph → fish → snake
protozoa → tadpole → back swimmer → nymph → fish → blue heron
protozoa → tadpole → back swimmer → nymph → fish → fish → snake
protozoa → tadpole → back swimmer → nymph → fish → fish → blue heron
protozoa → tadpole → back swimmer → nymph → fish → raccoon → hawk
protozoa → tadpole → back swimmer → nymph → fish → kingfisher
protozoa → tadpole → back swimmer → snake → blue heron
protozoa → tadpole → back swimmer → kingfisher
protozoa → tadpole → snake → blue heron
protozoa → tadpole → snapping turtle

Plant #2

Plant → snapping turtle
plant → grasshopper → salamander → blue heron
plant → grasshopper → salamander → snake → blue heron
plant → grasshopper → blue heron
plant → grasshopper → shrew → blue heron
plant → grasshopper → shrew → hawk

Plant #3

plant → mouse → hawk

plant → rabbit → hawk

plant → rabbit → coyote

Plant #4

plant → pheasant → hawk

plant → coyote

Plant #5

plant → beetle → fish → fish → snake

plant → beetle → fish → fish → blue heron

plant → beetle → fish → kingfisher

plant → beetle → raccoon

Plant #6

plant → fish → fish → snake

plant → fish → fish → blue heron

plant → fish → raccoon → hawk

plant → fish → kingfisher

Plant #7

plant → raccoon → hawk

plant → kingfisher → hawk

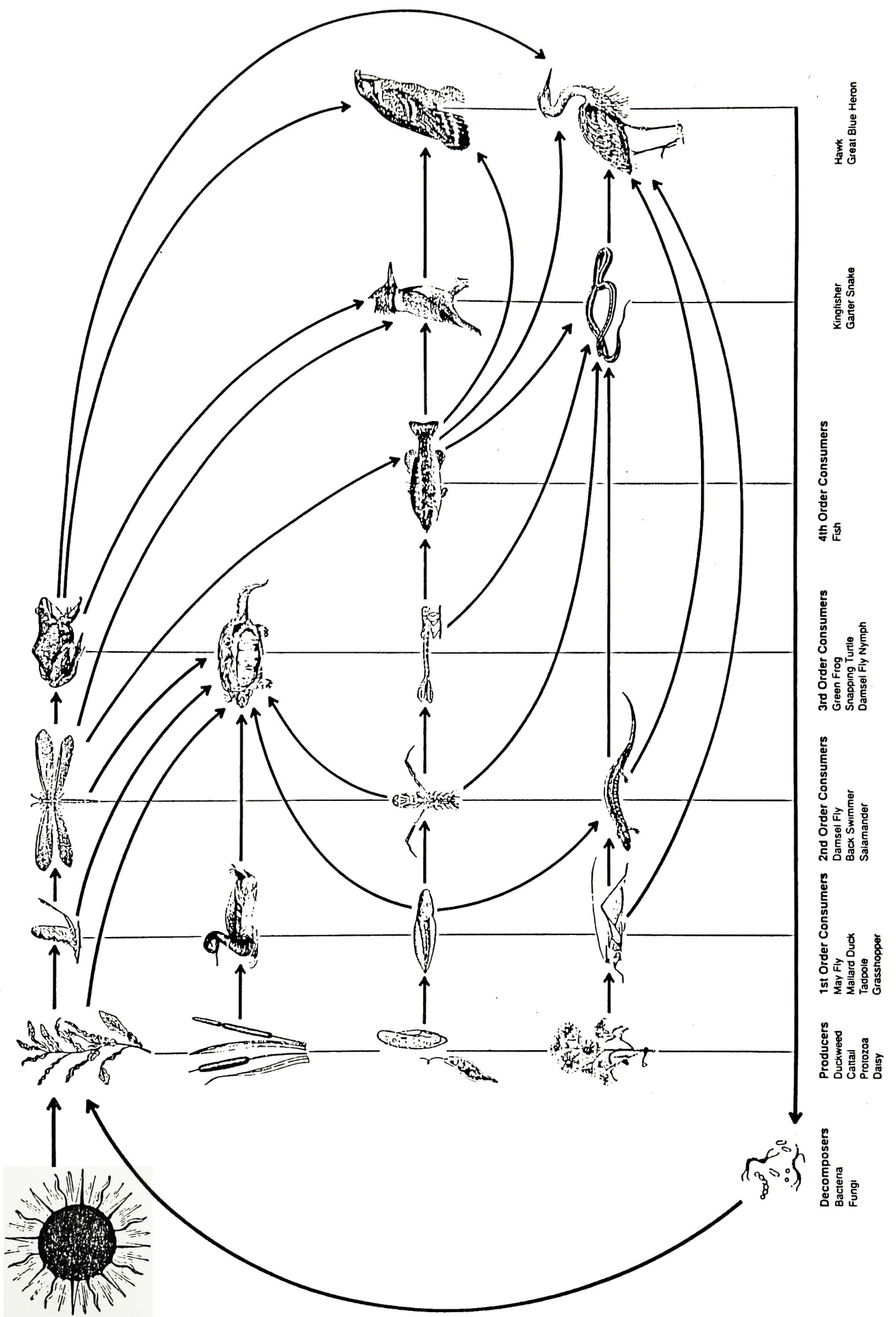
Plant #8

tree → woodpecker → hawk

tree → butterfly → woodpecker → hawk

Plant #9

tree → deer → coyote



Decomposers
 Bacteria
 Fungi

Producers
 Duckweed
 Cattail
 Protozoa
 Daisy

1st Order Consumers
 May Fly
 Mallard Duck
 Tadpole
 Grasshopper

2nd Order Consumers
 Damselfly
 Back Swimmer
 Salamander

3rd Order Consumers
 Green Frog
 Snapping Turtle
 Damselfly Nymph

4th Order Consumers
 Fish

Kingfisher
 Garter Snake

Hawk
 Great Blue Heron

Appendix I

Brochure

The Flow of Energy

All life depends on a continuous flow of energy. The ultimate source of energy is the sun. During a process called photosynthesis, green plants are able to combine the light energy of the sun with carbon dioxide and water to produce energy which is stored as carbohydrates. Because plants are able to produce their own food, they are called producers. Animals that feed directly on plants are called first-order consumers. Those that eat other animals are called second, third or fourth-order consumers depending upon how many steps removed they are from the plant producers. Those organisms that are not preyed upon by other animals, will die and become decomposed. Decomposers are microscopic organisms, bacteria and fungi. They have the ability to break down substances and release their components into the air and water, where they are later used by plants to start the whole process over again.

Facts About Way Pond

A pond is a small, shallow body of fresh water in which there is little difference in temperature between the surface and the bottom. Way pond is a cold water, spring fed pond. It is approximately five feet deep and just under two square acres in surface area.

A Need for Conservation

The diagram points out the intricate nature of any community, and shows why human interference, with any single link in its food web, can have far reaching and often unpredictable effects throughout that community.

This brochure is dedicated to V. Alberta Way in appreciation of her gifts of land and support for the Thousand Acre Swamp Preservation Project.

Designed By:
Cynthia Hummel
Masters Thesis
Rochester Institute of Technology
May 1989

The Thousand Acre Swamp Committee
P.O. Box 115, Penfield, New York 14526



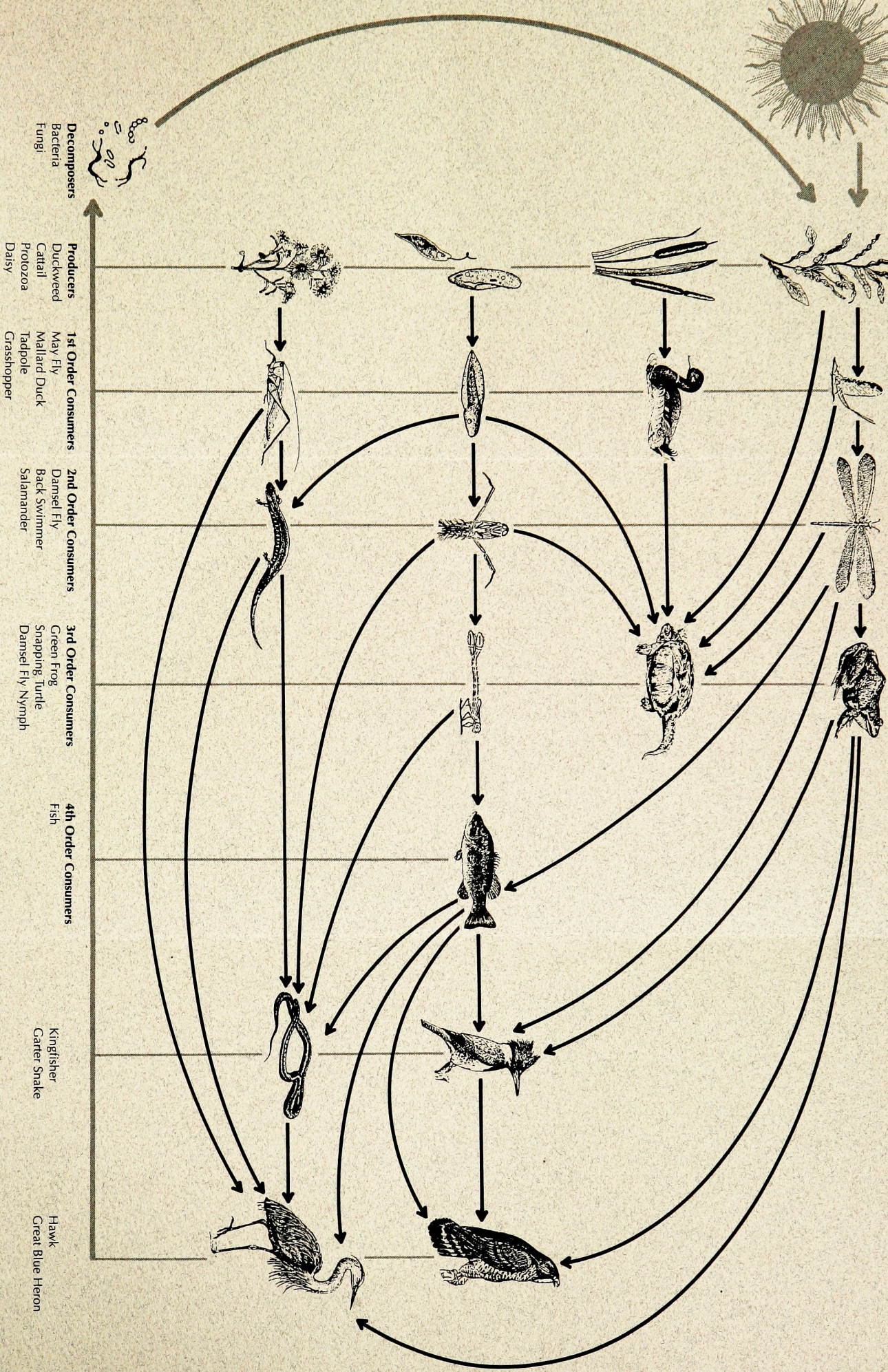
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The Energy Web of Way Pond



The Thousand Acre Swamp Sanctuary



Energy and Food Cycle

The organisms in Way Pond are ecologically related through their dependence on one another for food. These relationships make up a network of interconnected food chains called a food web.

Food chains and food webs are essentially energy webs, because the relationships represented involve the flow of energy in the form of food from one organism to another.

In the above diagram the arrows represent the flow of energy, and point from the consumed to the consumer.