

WOLF'S EYE



Isle Royale Natural History Association

Winter 1995

ISLE ROYALE ALBUM PREPUBLICATION SALE

The Isle Royale Natural History Association will publish **Isle Royale Album, A Photographic History** in July, 1995. Produced by Tom Gale, the 160 page book is a collection of more than 120 photographs from the 1860s to the 1940s. Included are historic photos of families, shipwrecks, buildings, as well as scenes from the Park's collection, and many other archives.

Isle Royale Album captures the varied activities on Isle Royale before it became a park. Chapters include: Explorations, Mining, Commercial Fishing, The Resort Era, Navigation, and the national park movement (1936 fire, CCC camps, and park dedication).

Each chapter provides a brief overview of the era, full-page black and white photographs with captions, and excerpts from diaries and writings of others who lived and worked on the Island to illustrate life on Isle Royale. The book also contains several historically significant maps and illustrations of Isle Royale and Lake Superior from the late 1600s.

The Isle Royale Natural History Association will be offering to its members and patrons a limited hardcover edition of **Isle Royale Album**. The book will be signed and numbered. The hardcover edition will only be printed to cover the prepublication orders. The price will be \$29.95 plus shipping and sales tax where applicable. Orders will be taken up to May 15, 1995. The book should be ready by mid-July. All other copies will be softcover and will be available in the Visitor Centers and through our mail order. The price on the softcover edition is approximately \$21.95. Use the order form provided to reserve your copy.

MEMBERS NEEDED FOR THE BOARD

The by-laws of the Isle Royale Natural History Association limit the term office of Board members to six years. With all the talk about term limits I guess I don't have to explain further. Our reasoning has always been that the organization should represent the views of the membership and there is no better way to assure that than having the leadership change regularly in an orderly fashion. While it's nice to have continuity, it's important that there be a mechanism for injection of new ideas and points of view. Change is always a bit disconcerting, but in the long run it is best for any organization.

Enough background. This is a call for those of you interested in serving the IRNHA, the park, and promoting long term growth and success. There will be openings for four new Board members this coming year. Chris Gale, Bob Linn, Pat Martin, and Jan Dalquist have completed their six year maximum tenure. If you have an interest in serving as a member of the Board, please write, call, or fax.

Our Executive Director manages the organization from the Houghton office where most of the meetings are held. The Board meets four times per year, three times in Houghton, and once a year at Rock Harbor for the Annual Meeting of the Association. Minimal mileage is paid for Board members living outside the Houghton area. There are no financial obligations connected with service on the Board and your expenses connected with meetings are tax deductible as contributions to the IRNHA. Only qualified voting members may become directors of the Association.

If you wish to run for the Board sub-

mit a paragraph describing your qualifications and reasons to the Houghton office. You may, fax, or write me. I will be happy to speak with you on the phone and will be delighted to give you all the information you might wish. My home phone number is (715) 356-2684, E-Mail is Ganast@aol.com, Fax number is (715) 356-7458. My home address is 9554 Country Club Rd., Minocqua, WI 54548. You can also call the Houghton office at (800) 678-6925 or contact any other Board member to obtain information. Let us hear from you soon.

George T. Anast, MD
Chairman of the Board

GENERAL MANAGEMENT PLAN

Isle Royale National Park is in the process of writing a General Management Plan.

The last Master Plan was the formulated, approved, and published in 1963.

In 1995, we will begin the process of writing a new General Management Plan. This will include lots of public participation, because Isle Royale National Park is everyone's park. Be assured that you will have an opportunity for input.

We will begin with the writing of a *Task Directive* and then follow with a statement of *Purpose and Significance*. From there we will be surveying park users about their concerns for the future. Following visitor surveys and listening sessions, we will write a plan which will be open for review and comment. We will then write the final plan.

I am excited about this project. It will require a lot of work, but will give us a guiding document for the foreseeable future.

Doug Barnard, Superintendent
Isle Royale National Park

ISLE ROYALE BEAVER STUDY 1994

Introduction

Beaver population counts began in 1962 at the end of an intensive study conducted by Philip Shelton (Shelton 1966). Since that time eleven surveys have been conducted, following the beaver population through two cycles of high and low population levels. Population fluctuations were likely related to habitat exhaustion, followed by declines in predation by wolves (*Canis lupus*). This allowed an increase in beaver numbers due to colonization of marginal habitat (Peterson and Page 1988, Smith and Shelton 1991, Smith 1992). Beaver densities fluctuated between 0.15 and 0.54 active colonies per kilometer.

**ISLE ROYALE NATURAL HISTORY
ASSOCIATION 800 E. Lakeshore Dr.,
Houghton, MI 49931
Telephone: (906) 482-7860**

A nonprofit membership organization that assists Isle Royale National Park by publishing and selling educational materials to park visitors. Gifts, bequests, memorials, and memberships are U.S. tax deductible.

Membership Categories

Individual Membership.....	\$10.00
Family Membership.....	\$15.00
*Supporting Membership.....	\$35.00
*Life Membership.....	\$250.00
**Corporate Sponsor.....	\$1,000.00
**Corporate Patron.....	\$5,000.00

Life Memberships may be paid in two annual installments of \$125.00 each.

*Includes a gift copy of *The Elfin World of Mosses and Liverworts*, or a royal blue canvas rolled bag.

**Includes a gift of a beautifully framed photo of Isle Royale (16"X20").

Board of Directors:

George Anast, Chair, Jan Dalquist, Treasurer, Patrick Martin, Chris Gale, William Rose, Robert Linn, John Dunn.

Staff:

Gayle Pekkala, Executive Director & Wolf's Eye Editor
Ellen Croll Membership & Mail Order Manager

Methods

I spotted active beaver colonies from a small fixed wing aircraft (Husky) from an altitude of approximately 800 feet and an air speed of 85 - 100 m.p.h. The Island was surveyed in overlapping parallel strips. In areas of high beaver density, repeated overflights with much circling were often necessary. The primary indicator of beaver activity was a fresh food cache, but this alone was not used to identify active sites. A colony was not called active until other signs of beaver use were identified: freshly peeled sticks, newly cut trees, fresh mud on beaver lodge, or a recently repaired dam (Hay 1958, Shelton 1966, Payne 1981, Brown and Parsons 1982, Swenson et al. 1983). Active colonies were marked directly onto a 1:62500 scale topographic map.

The survey was conducted from October 9 - 11, 1994, and observation conditions were excellent. This is the earliest the survey has been conducted and most of the trees had 80% of their leaves. This did not affect visibility. Time of day was more of a hindrance as the shadow cast by the trees often made it too dark for optimal viewing. I began the survey at the west end of the Island because our approach was from Minnesota. Other than that, the survey was conducted by counting sections established by Shelton during previous counts (Smith and Shelton 1991).

Results

The total number of active colonies with food cache and fresh sign was 137, and six additional sites of beaver activity were observed that did not have caches. Using Shelton's (1966) figure for average number of beavers per colony (6.4 for colonies with a cache, 2 for sites with sign) the total number of beavers on Isle Royale is approximately 889 (877 + 12). This is the same number of active colonies and beavers estimated in 1992 (Smith 1992). Considering all sites (colonies with cache and either cutting or mud on lodge present) this represents a decline of 11% (there were more sites recorded in 1992 that had mud on lodge or fresh cutting).

Sixty-one percent of all active beaver colonies were north of the Greenstone Ridge. Only 5% were recorded on the southwestern quarter of the island (the area in and around the Feldtmann loop), an identical proportion to the 1992 census. Beaver densities were again highest on the northeastern section of the Island; northeast from lakes Chickenbone, Livermore, Lesage, and Richie and north of Moskey Basin and Rock Harbor. Other densely populated areas included the drainages around Hatchet Lake and the upper reaches of Washington Creek.

I recorded one Lake Superior harbor colony in Duncan Bay, an increase since no harbor colonies were observed in 1992. The Passage Island colony was also active again. Traditional sites of known beaver activity (Beaver Island, Baker Point, Little Boat Harbor) were all inactive.

Beaver colonies residing on the large lakes are the most stable population segment and among the most accurately marked. Hence these are good locations to examine beaver site fidelity, or how often colonies relocate. Assuming that colonies at the same location in 1992 and 1994 are the same group of beavers, 11 lakes had 15 colonies in 1992 (there were a total of 21 lake colonies in 1992 but these occurred on other lakes), nine (60%) of these 15 colonies moved to a new location in 1994. Eight (62%) of 13 colonies moved from 1990-92. Only two colonies, both on the east end of Chickenbone and Sargent lakes, were at the same location in 1990, 1992, and 1994. Beaver colonies located in the 1936 burn have been slowly declining since 1988. Active colonies here declined again, dropping from 55 in 1992 to 48 in 1994, a decline of 13%. Habitat reconnaissance on the ground, performed by Philip Shelton and me from Clinch Valley College, surveyed 25% of the active colonies (34 of 137) from Windigo to Tobin Harbor and found virtually no aspen (*Populus tremuloides*) available to beavers within 30 meters of the water (beavers at Forbes Lake had one aspen cut at 10 meters, but this can be considered uncommon). The aspen that beavers were cutting was 35 - 50 meters from water, with the furthest cut aspen at 79 meters.

Eleven of 31 (35%) colonies were cutting aspen, and beavers typically had only one or two cut (range of cut aspen = 0 - 9). Several cut aspen logs were completely peeled of bark, and most food caches had alder branches in them.

In 1992 a new habitat category, flooded woods, was noted. Five areas were presumed flooded by beavers, but viewing conditions did not allow verification of beaver presence. In 1994 only two sites with flooded woods were noted, possibly indicating a colony did become established. A ground check is necessary to verify this observation.

Discussion

As predicted, beavers continued to decline on Isle Royale in 1994 (Smith 1992), but the rate of the decline has slowed. Active colonies were stable, but less fresh sign was recorded. Fresh sign, defined as recent cutting, new mud on a beaver dam or lodge, or peeled sticks floating in the water, likely represents an active colony not visible from aircraft. Considering this sign, beavers are still declining at a rate of about 11%; slower than the 22% decline from 1990 to 1992. This decline should continue as no new beaver habitat has been created on Isle Royale. Fire is the usual natural agent to reset the beaver cycle (Jenkins and Busher 1979, Novak 1987).

Beavers are able to alter their diet. Despite strongly preferring aspen (Hall 1960, Slough and Sadleir 1977), they are generalist herbivores that can subsist on a variety of deciduous browse (Jenkins and Busher 1979). Aspen is much reduced around beaver sites on Isle Royale, and available only at a distance from water (the further beavers must travel from water the more vulnerable they are to wolf predation), but birch (*Betula papyrifera*) is still available. Heavy beaver cutting has removed much of the tree overstory in places (Tobin Creek is a prime example) and sun-loving shrubs (primarily beaked hazel (*Corylus cornuta*) have become established. Beavers are able to subsist on these shrubs but at lower reproductive rates (Smith and Peterson 1991). This flexible beaver diet should keep future population declines between

surveys in the 5 - 10% range.

The predicted rate of beaver decline for the future could be altered due to the effect of wolf predation. Currently few data are available on wolf effects on beaver other than scat collections made by wolf researchers (R. Peterson personal communication). In Minnesota's Voyageurs National Park, 12% of the radio marked beavers were killed by wolves, and one other was killed by a bear (Smith unpublished data). In general, Voyageurs beavers are cutting trees closer to water than beavers on Isle Royale which would expose them to less predation pressure (Smith and Peterson 1988). Another study at the Apostle Islands found that bear predation reduced beaver foraging distance from water and caused the beaver population to drastically decline (Smith et al., in press). Most beaver foraging in the Apostles was within 10 meters of water (Smith et al, in press). Since beaver foraging is closer to the safe refuge of water in both the Apostles and Voyageurs, the effects of wolf predation on beavers in Isle Royale could be much greater. Beavers living on the inland lakes of Isle Royale are the most stable population segment, fluctuating between 17 and 30 colonies over the past 32 years with 23 being the long term average. The count this year (22 colonies) is near the long term mean for all surveys indicating the lake beavers may not be declining and population levels are fairly stable. Smith (1992) discussed possible reasons for this stability including larger territories and relatively lower population densities compared to stream colonies which probably acts to reduce the browsing intensity in any given area prolonging food availability. Smith and Peterson (1988) report similar effects in Voyageurs National Park, Minnesota. This conclusion is supported by the movements of individual beaver colonies. Between two of the surveys (1990-1992; 1992-1994) beaver colonies moved from known locations at a rate of 60%, and only two colonies in 1990 were at the same location in 1994. This pattern of movement probably spreads the impact of browsing over a larger area, rather than keeping it in a small area as is seen in many stream situations. This

movement pattern by beavers and the relative population stability of beavers living on lakes and in unburned stream sections of the Island (Washington Creek, north of Hatchet Lake, NE end) suggests that mature forests may offer a longer term forage base to beavers than early to mid-aged forest. Since 1990 the highest beaver densities have occurred in older forest while burn colonies (younger forest) have been slowly declining since 1988. It is well known that beaver populations reach their highest density and productivity in young (successional) forests (Jenkins and Busher 1979, Hill 1984, Novak 1987). After population density and productivity declines due to the exhaustion of young growth, beaver may find more forage available in an older, uneven aged forest. These forests often have dense stands of shrubs because of increased sunlight reaching the forest floor (especially around the water where light penetration is near maximum). Beavers will be at a lower density and produce fewer kits, but they may persist for longer periods of time. These observations offer testable predictions for future beaver population surveys on Isle Royale.

Summary

The number of active beaver (*Castor canadensis*) colonizing Isle Royale National Park was determined by aerial census from October 9-11, 1994. This is the eleventh population count in a series of surveys begun by Philip Shelton in 1962. Approximate flying time of the census was 11.2 hours, plus five hours ferry time from Minnesota for a total flying time of 16.2 hours. Total number of beaver colonies with food caches was 137, and six other sites had beaver sign (fresh cutting or mud on lodge) for a total of 143 active sites. This was a decline in total active sites (- 11%), but a stabilization in colonies with food caches compared to the 1992 census. Analyzed by habitat, all habitats (stream, lake, harbor, and 1936 burn) were stable except for a slight decline in colonies located in the 1936 burn area. Beaver colonies located on the inland lakes moved at a rate of 62% from 1990-92 and 60% from 1992-94. Only

two colonies on the inland lakes were in the same location for all three surveys (1990, 1992, & 1994). There was one harbor colony in Duncan Bay

Acknowledgments

Scott Evans from Voyageurs National Park ably handled all pilot duties. Philip Shelton hiked many island beaver drainages providing important habitat data. Richard Duncan and Sheryl Bate-man made many helpful suggestions on the manuscript. Jack Oelfke, Dave Soleim, and Susan Bertolino were Isle Royale personnel who made the study possible. The National Park Service and the Isle Royale Natural History Association provided funding for the project.

*Douglas W. Smith, Biology Department
University of Nevada, Reno*

MEMBERSHIP NEWS

Membership Renewal:

Recently members were sent "bills" for renewing their memberships. We are pleased that all our billing correspondence is printed on unbleached recycled paper and our membership fees are affordable and competitive with the fees of other cooperating associations. Memberships and donations are tax deductible. We encourage all members to sponsor a new member and have enclosed a membership application in this mailing for your use. Your financial support will help us with our ambitious publishing program!

You can present your Isle Royale Natural History Association membership card when making purchases at other bookstores of the Conference of National Park Cooperating Associations. In 1994, I used my card at bookstores in Colorado National Monument, Rocky Mountain National Park, North Cascades National Park, Olympic National Park, Cabrillo National Monument, Wrangell-St. Elias National Park, and Yukon-Charley Rivers National Preserve in Eagle, Alaska. With each purchase I received a 10 or 15 percent discount! As a Seattle member told me, he renews because of his feel-

ings for Isle Royale, but he is delighted to know that he can use his card at other parks! If you can't get to Isle Royale as often as you would like, present your card at a Cooperating Association store in your area or on your travels and proudly tell them that our tiny Island park has more than 1100 Association members. (Yosemite Natural History Association has just 6000 members!)

Change of Premium Gift:

We were not pleased with the quality of the nylon roll bag offered as a premium for LIFE or SUPPORTING memberships, so we have substituted a smaller better quality royal blue canvas bag. We like it much better and hope you will too.

"Lost Members":

Please help us locate:

LIFE member Todd Moore. Last known address: 4795 Katie Dr., Novi, MI 48050.

LIFE member Bob Fering. Last known address: 1180 Cannon Valley Dr. #25, Northfield, MN 55057.

Thanks to the following:

In the Fall Newsletter we asked for new members to round out our list of 50 states. They are:

New members from HAWAII:

Eric Beckert, a ranger at Puuhonua O Honaunau National Historic Park on the island of Hawaii. Eric's membership is a gift from his parents, Bruce and Nancy of Saginaw. Years ago, when Eric was Isle Royale Malone Bay Ranger, he was a member of the Association.

Mr. & Mrs. Mark Pobocik, Keaau, Hawaii- a gift from Life member Marilyn Mitchell who met them at the bottom of the Grand Canyon. A conversation about Isle Royale was inspired by the Isle Royale logo on Marilyn's shorts and she discovered our magic Island was their next destination. Both Eric and the Pobociks live on the island of Hawaii.

David Gausmanber responded to our 1995 membership drive and rejoined us. His home state: NORTH DAKOTA!!! Now, if everyone renews and someone sends gift memberships to folks in Mississippi and Idaho, our 50 state representation will be complete.

For sponsoring a brand new gift membership:

Dale Doepker-Perry Root-Sedona, AZ

Mike & Connie Ducey-Mark J. Ducey-Madison, CT

Janet Parker-Martina Friedeberg-Bay City, MI

James Sargent-John R. Baxter-Pequot Lakes, MN

For becoming Life Members:

Stuart & Ellen Croll-Hancock, MI

Mike & Connie Ducey-Lawrence, KS

John & Heidi Harlander-St. Cloud, MN

Fred Greenwood-Little Rock, AR

Patrick Ness-Escanaba, MI

Greg & Mary Pilbeam-Kentwood, MI

Eugene & Janice Schmidt-Wyoming, MI

Jeannette & Donald Stafford-Hinsdale, IL

Samuel Libero Angeli, age 5, and Lyda

Elizabeth Angeli, age 7 are our youngest

life members thanks to their parents,

Alfred & Beth Angeli of Iron River, MI

For donations of time:

Becky Brown, Barbara Griffin, Cindy Harrison, Lynda Boose, Sue Stefancik, Janice Glime, and Nadine and Bob Janke for assembling the membership forms for our December membership drive. Their participation helped us to get our membership forms to prospective members three weeks earlier than last year.

Life member and Board member Bob Linn, who for many years has prepared "camera ready" letters, envelopes and forms for the printer. His thorough care has ensured that we have a professional product.

The Print Shop in Houghton for laminating without charge the Life member cards.

For donations of cash to help with our publishing projects:

Janet Barth-Novato, CA

John & Phyllis Titmus-Hendersonville, NC

Annette & David Duchamp-Kalamazoo, MI

Mr. & Mrs. Warren A. Perkins, Jr.-Wilmette, IL

Dr. & Mrs. Brian Fox-Riverton, WY

John & Jean Harvey-Madison, WI

Gerrie Kupper-Madison, NJ

Eileen Kreiner-Plymouth, MI

Mr. & Mrs. Dave Stawicki-Lexington, KY

Keith & Mary Bader-Troy, OH

Jana R. Jirak-Woodruff, WI

The Isle Royale Natural History Association By-Laws

Article I—Name

The name of this organization is "The Isle Royale Natural History Association."

Article II—Authority and Purpose

Section 1. The Isle Royale Natural History Association shall operate under the authority of Public Law 633, approved by the Congress of the United States, August 7, 1946 (60 Stat. 885, Sec. 67) which permits use of the ".....services of field employees in co-operation with such non-profit scientific and historical societies engaged in educational work in the various parks and monuments as the Secretary of the Interior may designate."

Section 2. The operations, business, property, and assets of The Isle Royale Natural History Association, Inc., shall be devoted to historical, archaeological, scientific, interpretive, and other educational purposes.

Article III—Membership

Section 1. Classes of Membership. There shall be six classes of membership: annual single, annual family [husband and wife], annual supporting, corporate sponsor, corporate patron, and life. The Board of Directors may grant honorary life memberships. The Board of Directors shall also set appropriate dues amounts for each of these classes of membership from time-to-time as required. Membership categories and voting privileges shall be according to the following chart:

Membership Category	Voting Privilege
Annual Memberships	
Single.....	one vote
Family [husband and wife].....	two votes
Supporting.....	1 or 2 votes as registered
Life Memberships	
Corporate Sponsor.....	1 vote
Corporate Patron.....	1 vote
Life.....	1 or 2 votes as registered

Dues payments will be due on January 1st of each year. To be eligible to vote in the biennial summer elections, dues for the current year must be paid by at least May 1st of the year in which such elections are to be held.

Section 2. Member Resignation and Removal. Any member may withdraw from the Association upon giving notice in writing to the Board of Directors. Any member may be expelled from membership upon good cause and by unanimous vote of the Board of Directors.

Section 3. Member Discounts. A member shall be entitled to a discount, the amount of which shall be determined by the Board, on all publications and other materials sold by the Association, providing that the items purchased are for that member's own personal use, and not for resale.

Article IV—Organization and Administration

Section 1. General. The Association shall have the following:

A. A Board of Directors consisting of five to eleven members elected by the membership. The elected Board shall elect a Chairman and a Treasurer from among those elected to the Board by the Membership (see Sections 5 and 6 of this Article).

B. An Association Coordinator who shall be appointed by the Superintendent of Isle Royale National Park with the concurrence of the Board of Directors.

C. An Executive Director who shall be hired by the Board of Directors.

D. Other employees, as determined necessary by the Executive Director, with the concurrence of the Board of Directors.

Section 2. Composition of the Board of Directors.

Only a qualified voting member may become a director of the Association. The Board of Directors shall consist of five to eleven (5 to 11) members.

Section 3. Method for the Election of Board Members. The members of the Board of Directors shall be elected by the membership of the Association in the following manner:

A. **Biennial Elections.** Beginning in 1989, a biennial election of Board members shall occur in the early summer of each odd-numbered year.

B. **Determination of Elected Board Vacancies.** The Board will determine, at its first meeting in each odd-numbered year, the number of upcoming Board vacancies. The Board will then solicit nominations from the membership by newsletter or special notice mailed to all members. Names of all those who are nominated, who are willing to serve as a director, and who submit for publication a short paragraph describing their qualifications and reasons for their interest in becoming a Board member, will appear on the biennial ballot, which shall be sent to all paid-up members of the Association (see Article III, Section 1) at least one month prior to the Annual Membership Meeting in odd-numbered years. To be valid, ballots must be mail-received or hand-delivered to the Executive Director of the Isle Royale Natural History Association at least seven (7) days prior to the Annual Membership Meeting in that odd-numbered year. [The Annual Membership meeting shall be held on the last Sunday in July—see Article V.] Ballots shall be tabulated by the Executive Director and one other person who shall be appointed for this special purpose by the Association Coordinator. Nominees receiving the greatest number of votes for the existing vacancies shall be considered as having been elected to the Board.

C. **Term of Office for Elected Directors.** A freshman elected to the Board shall serve a term of two (2) years. A person elected to a second term—contiguous with the first term or not—shall serve a second term of four (4) years. No person shall serve more than a total of six years as a director on the Board, except as noted elsewhere in these By-Laws.

Section 4. Filling Interim Vacant Board Positions. Should a member of the Board of Directors resign, die, or for any other reason be unable to fulfill the duties of a director on the Board, the Board of Directors by a majority vote may appoint a person to fulfill such position on the Board for the remainder of the unexpired term of the previous director being replaced. Should such appointed Board member wish, subsequently, to run for election to the Board, and if such election should be successful, the appointed portion of his/her term as Board member shall not be counted against the six-year term limit for elected Board members.

Section 5. Selection of the Chairman of the Board. The Chairman of the Board shall be selected from among the elected Board members, by a majority vote of the Board members directly following the Annual Membership Meeting in odd-numbered years, and the person so selected as Chairman shall then serve as Chairman for the next two years. If, for any reason, the person chosen to be Chairman cannot complete his/her term as Chairman, the Board shall elect another person from among its members to complete said term-of-office.

Section 6. Selection of the Treasurer of the Association. The Chairman may serve as Treasurer, or the Treasurer may be elected from among the other elected Board members, by a majority of the Board members directly following the Annual Membership Meeting in odd-numbered years. The Treasurer so selected shall then serve for the next two years. If, for any reason, the person chosen to be Treasurer cannot complete his/her term as Treasurer, the Board

shall elect another person from among its members to complete said term-of-office.

Section 7. Meetings of the Board of Directors. There shall be at least two meetings of the Board of Directors each year—one during the winter and one during the summer at places and times to be determined by a majority of the Board. A majority of the elected members of the Board shall constitute a quorum for the transaction of business. Special meetings of the Board may be called by the Chairman or upon request of four elected Board members. At any meeting held in the absence of the Chairman, an acting Chairman shall be selected, by a majority vote of the elected Board persons then present, to preside. The Board shall formulate all of the operational policies of the Association and shall direct its activities through the Association Coordinator and a hired Executive Director. The Board of Directors shall be responsible for the hiring and firing of Association employees (in the manner noted in Article IV, Section 1, C and D). The powers of the Board shall be limited only by law, the articles of incorporation, by-laws of the Association, and the policies of the National Park Service as articulated through the Guidelines and the Memorandum of Agreement between the National Park Service and the Association. The Membership and the public-at-large are welcome to attend meetings of the Board, but for smooth and efficient Board proceedings, discussion and participation is limited to Board Members and Staff. Any person who wishes to address an item of business to the Board is requested to: (1) submit a request to do so by written notice 15 days prior to such meeting; or, (2) request at such Board meeting to be placed in the appropriate section of the agenda for comment. An agenda for each Board meeting shall be made final as a first item of business and shall not be deviated from except as determined by a majority vote of the Board. The agenda shall always provide for a period when comments may be made by non-Board members who are in attendance at the meeting.

Section 8. The Chairman of the Board. The Chairman of the Board of Directors shall be responsible for the calling and conduct of all Board meetings, the conduct of the Annual Membership Meeting, and the general overseeing of the conduct of Association activities throughout each year of his/her tenure as Chairman.

Section 9. The Treasurer of the Association. The Treasurer of the Isle Royale Natural History Association shall be responsible for monitoring the finances of the Association on a monthly basis, by working closely with the Executive Director to review operational expenses, proposed purchases, and overall financial condition of the organization. The Treasurer shall report to the Board:

1. In a timely fashion, any serious financial situation that he/she believes might exist.

2. In a timely fashion, the general financial condition of the Association.

3. Cosign with the Executive Director a semiannual Financial Report, which shall be given to each Board Member at least one day prior to a regularly scheduled Board meeting.

Section 10. The Executive Director. The Board of Directors shall be responsible for the employment of an Executive Director. The Executive Director will represent the Association in all business and legal activities. The Executive Director shall authorize the expenditure of Association funds for: sale publications, printing, design and editing, stationery, travel, educational services, employment of clerks and other personnel, and incidental expenses incurred in the conduct of the affairs of the Association, provided that no individual expenditure exceed the sum of \$5,000 without prior approval of the Board or through the authorized budget. The Executive Director shall be the immediate supervisor of all persons employed by the Association, except when a person is hired for specific educational or interpretive duties, in which instance said employee shall be supervised by the interpretive office of Isle Royale National Park. The Executive Director shall arrange for the recording, maintenance and distribution of the minutes of all meetings of the Board of Directors. All minutes shall be recorded and ready for review and approval at the

next meeting of the Board. The Executive Director shall work closely with the Chairman of the Board and the Treasurer of the Association as described above in Sections 8 and 9 of this Article IV.

Article V—Membership Meetings

The Association shall hold an Annual Membership Meeting on the last Sunday in July at an appropriate place [traditionally, but not limited to, the Snug Harbor area in Rock Harbor at Isle Royale National Park] and time as determined by the Board of Directors. Notice of such meeting and the agenda for that meeting shall be given by mail to all members of the Association at least one month prior to the meeting date by newsletter or by special mailed notice. The Chairman shall conduct the meeting, and shall arrange for the presentation of the annual report of the Association's activities and its plans for the future. The Executive Director and/or Treasurer of the Association shall present a financial report, cosigned by each. In odd-numbered years an announcement of the results of the biennial elections, prescribed in Article IV, Section 3, shall be made by the Board Chairman. Quorum of the membership is not required to hold and conduct business at the Annual Membership Meeting. Unless otherwise stated in these by-laws, meetings will be conducted according to "Rules of Order" by Henry M. Robert.

Article VI—Miscellaneous

Section 1. Principal Place of Business. The principal place of business of the Association shall be at the Houghton, Michigan, headquarters of Isle Royale National Park.

Section 2. Maintenance of Association Funds. The Association shall maintain all funds in financial institutions approved by the Board of Directors. All checks drawn from checking accounts and withdrawals from savings accounts shall require the signature of the Executive Director. The Treasurer of the Association shall oversee such transactions as stated in Article IV, Section 9.

Section 3. Auditing. An audited financial statement of the Association's financial records shall be required if requested by a majority of the Board of Directors, or by a majority of Association members.

Article VII—Changes to By-Laws

Power to change these By-Laws and/or to adopt additional articles and sections to the By-Laws is hereby delegated to the Board of Directors, and may be executed at any meeting of the Board of Directors, provided that: (1) sufficient notification of such impending action has been given to the membership so that members of the Association might have the opportunity to comment to the Board prior to adoption of such change(s)/amendment(s); and thence, (2) sufficient notification of such impending action has been sent to each Board member by mail, indicating any suggestions that might have been made by the membership as a result of (1) above. The Chairman shall be responsible for arranging these procedures.

Article VIII—Dissolution

In the event of the dissolution of The Isle Royale Natural History Association, Inc., net assets of the Association shall be transferred to the National Park Service for interpretation projects at Isle Royale National Park; unless, in the event the Isle Royale Natural History Association, Inc. should merge with another National Park Service cooperating association, or form another National Park Service cooperating association by merger or formation, then net assets of the Association shall be transferred to such newly formed National Park Service cooperating association.

Article IX—Non-Discrimination

The Isle Royale Natural History Association, Inc. does not discriminate with regard to terms or conditions of membership because of race, color, religion, sex, national origin, age or physical or mental handicap. The Isle Royale Natural History Association is an equal opportunity employer.

Please Allow 2 to 3 Weeks for Delivery
(Listing and Prices Subject to Change)

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100% cotton sheeting long sleeve shirt featuring ten full-color representations of the Island's most popular wildflowers Colors-White or Yellow. Sizes S-M

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WOLF'S EYE

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