



NATIONAL ENDOWMENT FOR THE

Humanities

DIVISION OF PRESERVATION AND ACCESS

Narrative Section of a Successful Application

The attached document contains the grant narrative of a previously funded grant application. It is not intended to serve as a model, but to give you a sense of how a successful application may be crafted. Every successful application is different, and each applicant is urged to prepare a proposal that reflects its unique project and aspirations. Prospective applicants should consult the NEH Division of Preservation and Access application guidelines at

<http://www.neh.gov/grants/preservation/sustaining-cultural-heritage-collections> for instructions. Applicants are also strongly encouraged to consult with the NEH Division of Preservation and Access staff well before a grant deadline.

Note: The attachment only contains the grant narrative, not the entire funded application. In addition, certain portions may have been redacted to protect the privacy interests of an individual and/or to protect confidential commercial and financial information and/or to protect copyrighted materials.

Project Title: Planning for a Sustainable Preservation Environment

Institution: Monhegan Historical and Cultural Museum Association

Project Director: Jennifer Pye

Grant Program: Sustaining Cultural Heritage Collections

Description of the project and its significance

The Monhegan Historical and Cultural Museum is an institution dedicated to the preservation of the historical and artistic legacy of Monhegan Island, Maine. Located ten miles out to sea, Monhegan has long been a magnet for adventurous and creative individuals. Archaeological studies have shown a presence on the island dating back over 4000 years to the first known Native American seafarers who pursued large swordfish present in the warm ocean currents nearby. Prior to the arrival of Captain John Smith on Monhegan in 1614, the island had been used as a fishing outpost by several different European enterprises for at least a hundred years, perhaps substantially more if some interpretations of Norse sagas are proven accurate. Fishing vessels from Monhegan helped supply the beleaguered Plymouth Colony with food during their first grueling winter of 1620-1621. Subsequently, the island served as a haven for settlers fleeing conflict on the mainland during the French and Indian Wars. Island residents stood beside British naval personnel on Monhegan's shore to witness the first maneuvers of the seminal naval battle between the Boxer and the Enterprise in the War of 1812. A British musket left behind as recompense for commandeered fishing vessels during this incident is prominently displayed in the Monhegan Museum, along with a wide variety of artifacts and documents that attest to this rich historic legacy.

Monhegan Island has also seen some of America's most prominent artists drawn to its shores. The stark rock outcroppings, crashing surf and dramatic light angles afforded by Monhegan's towering profile against the open Atlantic have inspired works of all style and media. Pastoral landscapist Aaron Draper Shattuck first painted the island in 1858 and was soon followed by more than 30 Boston-area artists before the turn of the century. Robert Henri, the renowned urban realist painter and teacher, began a long association with Monhegan in 1903 and inspired many of his students to follow suit. Through this connection, Edward Redfield, George Bellows, Edward Hopper, Rockwell Kent, Randall Davey and Homer Boss among others spent significant periods on the island, cementing Monhegan's reputation as a destination summer artist colony. The seasonal influx of these various styles and perspectives created a fertile environment for Philadelphia, New York, and Boston artists to experiment and hone their vision. American Impressionists, Ashcan painters and traditional marine painters mingled in the island's inspirational environment creating a unique aesthetic cross-pollination that continued into the mid- 20th century, when more Modernist and Abstract artists began to frequent the island. Artists such as Michael Loew, John Hultberg, Joseph DeMartini, Lynne Drexler and Hans Moller drew their modernist inspiration from the same island landscape that more representational artists, such as Andrew Wyeth, Jay Connaway, Andrew Winter, Constance Cochrane, Isabel Branson Cartwright, and Abraham Bogdanove used for their inspiration. Works from all of these unique perspectives, as well as over 150 additional artists with their own significance, are represented in the Monhegan Museum's collection.

Unfortunately, recent environmental studies of the Monhegan Museum's facilities have shown that this rich, enduring artistic and historic legacy is under threat from deficient preservation conditions in its principal display areas. High humidity and moisture levels not only present extremely favorable conditions for mold propagation, but contribute to the mechanical and chemical decay of the artwork and artifacts on display, as well as the documents and photographs housed in the Museum's archives. Three of the buildings in the Museum complex are on the National Register of Historic places and require special attention so that the buildings, as well as their contents, can be preserved for the future. A team of professionals assembled by the Museum will investigate options for mitigating this moisture issue. Strategically positioned environmental data-loggers will measure the effects on temperature and humidity levels under various ventilation, drainage and HVAC setpoint scenarios to culminate in a plan of action that will improve preservation conditions throughout the Museum complex while maximizing energy efficiency. As a result, the Museum will be able to display more of its collection for a longer period of time and will be in a position to better allocate space and resources for the care and expansion of its significant collections.

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Narrative

Introduction

The Monhegan Historical and Cultural Museum requests a \$25,500 grant from the National Endowment for the Humanities Sustaining Cultural Heritage Collections grant program in order to assemble a group of skilled professionals to work collaboratively to develop a plan that addresses several serious environmental issues that pose a threat to the long-term care and conservation of the Museum's varied and significant collection of artwork, documents, photographs, and artifacts chronicling the unique history and culture of Monhegan Island, Maine. This team's focus will be on two distinct areas of remediation. The first being the investigation and small scale implementation of effective non-mechanical climate-control options for the Museum's seasonal display facilities; the second being the pursuit of optimizing the existing climate-control systems in the Museum's off-season storage vaults with an eye towards increased energy-efficiency, and ultimately, reduced energy consumption.

Using funds provided by a previous NEH Preservation Assistance Grant awarded in 2011, the Monhegan Museum worked in conjunction with the Image Permanence Institute of Rochester, NY to optimally position 10 PEM2 environmental data loggers throughout the Museum's storage and display facilities to record temperature and relative humidity conditions over the course of 18 months. The information provided by these instruments shows periodic, potentially damaging moisture and mold conditions in the Museum's non climate-controlled facilities: the Lighthouse Keeper's House and the Gallery, where artwork and historical artifacts are displayed on a seasonal basis; and the Office, where documents and photographs are archived year-round. While the environmental conditions in the Museum's climate-controlled storage vaults, where preservation protocol dictates all artwork is stored when not on display, is substantially more favorable, the energy consumption of the HVAC systems represents an ever-increasing proportion of the Museum's operating budget. A reduction in these energy costs would provide budgetary room for facilities maintenance and increased curatorial work-hours for the care and preservation of the Museum's collections.

The Monhegan Museum was formed in 1960 as a committee of Monhegan Associates, Inc., an organization devoted to preserving the wild lands and traditional way of life on Monhegan Island. In 1962 the Monhegan Island Light Station was purchased by the Monhegan Associates for use as a museum. After several years of repairs, renovations, and collecting of historic materials, the museum opened to the public in 1968. By 1983 rapid growth of the museum necessitated the formation of a separate organization dedicated exclusively to the well-being of the museum; this organization, the Monhegan Historical and Cultural Museum Association was incorporated in 1984.

The Mission of the Monhegan Historical and Cultural Museum Association, Inc. is to preserve and display objects of historical and cultural significance to Monhegan Island, Maine, and in so doing to provide a source of information and fascination about Monhegan Island for the benefit of the residents of the island and all other interested persons. Doing this will involve: 1) collecting and making available to the public works of art by artists who have worked on Monhegan Island, materials related to the island's history and its various settlements, items concerning the domestic life, work and natural history of the island, information and objects related to the ocean, boats and navigational aids near the island, as well as photographs, documents, and printed matter concerning any significant aspects of the island and its inhabitants; and 2) to maintain as authentically as possible the historic Monhegan Light Station to be used as a museum within which to store and display materials related to the Association's mission. *-Mission statement adopted August 1967, revised 1984.*

The Monhegan Museum is comprised of several buildings including the Monhegan Island lighthouse and keeper's dwelling, a replica of the Assistant Light Keeper's house (torn down in 1922, rebuilt in 1998), two climate controlled storage areas and the Rockwell Kent/James Fitzgerald House and Studio. The

Monhegan Island Lighthouse and Quarters and the Rockwell Kent House and Studio are all listed on the National Register of Historic Places.

The Monhegan Museum's operating budget for the year ending August 10, 2012 was \$162,000. Currently the museum has no full time staff members. The four part time staff members are the Curator of Collections 25 hours/week year round, Curator of Annual Exhibitions 40 hours/week for 3 months, Buildings and Environmental Services Coordinator/Associate Curator 600 hours/year, and an archivist who works in the wintertime 350 hours/year. The President, Treasurer, and Secretary of the Museum Association, and the Director of the Museum, also volunteer countless hours each year.

Over 5000 individuals visit the exhibits at the museum annually. This is made possible by over 120 volunteers who donate a combined total of 650 hours a year to welcome and direct visitors. Additional volunteers help prepare the museum for opening in the spring and closing in the fall.

The museum exhibits are open to the public from June 24th to September 30th, June and September hours are 1:30-3:30 daily, July and August 11:30-3:30. The archives are available during these times and year-round by appointment with many inquiries answered via telephone, email, or written correspondence.

Significance of Collections

Monhegan had long been used as a navigational marker, when in 1822, in response to numerous requests from mariners, Congress voted to erect a lighthouse on the island. The second tallest light on the coast of Maine, the Monhegan Light has been in continuous service since its completion in 1824 and was home to twenty six different families before its automation in 1960. These families were an integral part of Monhegan's community and several of their descendants still have homes on the island. With the automation of the Monhegan light, the keepers' house was vacated. At this time the process of obtaining the Monhegan lighthouse complex for use as a museum of island history was begun. With tremendous community support via donations of time, objects, and money, the museum opened to the public in the summer of 1968. In 1980 the lighthouse and museum were placed on the National Register of Historic Places.

Twelve miles off the coast of Maine, the small island of Monhegan holds a unique place in North American history. Over 4000 years ago Native Americans began to use the island as a seasonal fishing post. They were followed by European fishermen and explorers; including Samuel Champlain in 1604, George Weymouth in 1605 and Captain John Smith in 1614. Smith established the first European settlement on the island. There were numerous changes in ownership and temporary settlements the decades that followed until the island was purchased by Henry Trefethren in the late 1700s. In the 1780s three of Henry's children and their families moved to Monhegan and it has been continuously inhabited ever since.

In the 1800s the residents of Monhegan were primarily members of the ever growing original families. Additions to the population came from the families of light keepers and marriages to people from the mainland. The number of residents reached its apex of 195 in the 1860 census.

Monhegan's role as a destination for tourism began in the 1880's with steamboat excursions from Boothbay Harbor and the opening of the first boarding house on the island. By 1910 there were two large hotels, three boarding houses and a steamboat that brought mail and passengers to the island on a daily basis in the summertime.

The first known artist to paint Monhegan was Aaron Draper Shattuck in 1858. Before 1900 more than 30 additional artists visited the island to paint, with most being from the Boston area; but it was Robert Henri's visit in 1903 that had the largest influence on Monhegan developing the art colony it has sustained to the present day. At Henri's suggestion many of his friends and students came to Monhegan

to paint. This group included Edward Redfield, George Bellows, Rockwell Kent, Edward Hopper, Randall Davey, Homer Boss, Leon Kroll, and numerous others. With American Impressionists, Ashcan painters, and traditional marine painters all working side by side, Monhegan secured an important place in the history of American art.

Monhegan continues to be home to a year-round fishing community, as well as a destination for tourists, birdwatchers, and artists. The Monhegan Museum's exhibitions and archives document the rich history of this small island.

The Museum's collections are comprised of the historic Monhegan Light Station itself, with its eight buildings; the house and studio built by Rockwell Kent; more than 1300 works of art; over 200 Native American stone artifacts; more than 200 examples of fishing equipment from the early 1800s to present; over 12,000 photographs predominantly from circa 1900; 18 lineal feet of documents, letters, genealogies, and other paper items pertaining to island families, dwellings, vessels, etc.; 12 lineal feet of photographs, correspondence, newspaper clippings, exhibition announcements, etc. related to artists and the history of the Monhegan art colony; 58 photograph albums and scrapbooks (mostly circa 1900); 7 turn of the 20th century autograph albums; more than 1500 photographic postcards from circa 1890 to 1950. Also included in the collection are 120 glass plate negatives, 102 oral histories, toys, household equipment, ice harvesting equipment, musical instruments from the early 20th century Monhegan Cornet Band, examples of period clothing, Lighthouse Keeper and military uniforms, 8 hotel registers documenting visitors to the island from 1902-1972, maps, navigational aids, deeds, and souvenirs.

Highlights of the collection include:

The Art Collection: Of primary importance is the exceptional art collection which spans over 150 years and represents a wide variety of styles; classic nineteenth century painters influenced by the Hudson River School were the first to capture Monhegan's extraordinary natural beauty beginning with Aaron Draper Shattuck's visit in 1858. Shattuck was followed by Luminists William Trost Richards and Alfred Thompson Bricher as well as by watercolorists S. P. Rolt Triscott and Otis Weber who worked in the classic English tradition. In 1903 Robert Henri discovered the island and was followed by many of his pupils; Rockwell Kent, Homer Boss, George Bellows, and Edward Hopper were among the students that Henri introduced to Monhegan. Also introduced to Monhegan by Henri was his friend and fellow artist the renowned American Impressionist Edward Redfield. Painters from the summer colony at Old Lyme, Connecticut also made their way to Monhegan. Charles Ebert, Wilson Irvine, and Chauncey Foster Ryder all spent time on Monhegan during the first decades of the 20th century. The Henri School and the Impressionists were joined by traditional marine painters including Frederick Judd Waugh. The vibrant artist colony of the beginning of the century faded during the war years and was supplanted by two new groups; Jay Connaway, Andrew Winter, Abraham Bogdanove, and James Fitzgerald created bold works frequently focused on the rugged landscape, the power of the ocean, and the island's working people; while a group of Philadelphia women artists including Mary Mason, Isabel Branson Cartwright, Constance Cochrane, and Alice Kent Stoddard also chose to make the island their summer home. Following the Second World War there was an influx of abstract artists from New York; Micheal Loew, John Hultberg, Lynne Drexler, Joseph DeMartini, and Zero Mostel were all a part of the artist group that dominated the second half of the 20th century on Monhegan. Works by all of the above mentioned artists, Andrew and Jamie Wyeth, and over 120 others make up the museum's collection creating a fascinating compilation of varied and distinct responses to the same small island.

Native American Artifacts: Archaeological studies of sites on Monhegan indicate Native American settlement on the island over 4000 years before the present era. The artifacts left behind, including arrowheads, gouges, hammerstones and celts; describe a dynamic culture that modified its tools and techniques to adjust to a changing climate and sea level. The Moorehead Phase culture, also known as the Red Paint People, occupied the island at a time when the Gulf Stream's course was much closer to the

coast of Maine (c. 2,000 B.C.E.) Artifacts from this period suggest a culture that built large, seaworthy dugout canoes that were used to hunt swordfish that were abundant in the warm waters a short ocean voyage away. In time, sea levels rose, diverting the Gulf Stream much further out into the Atlantic. Subsequent Susquehanna Tradition and Ceramic Period cultures on the island produced much smaller tools and artifacts, indicating a shift towards a more near- coastal existence. Archaeologist Dr. Arthur Spiess has catalogued many of the pieces in the Monhegan Museum's Native American collection. Based on the varied construction techniques used, and the mineral composition of the source stone, Dr. Spiess concluded that the Native American inhabitants of Monhegan participated in a vast trade network that spanned from present day Ohio to Labrador, Canada. Far from being geographically and culturally isolated, the prehistoric cultures that were present on Monhegan are shown to be dynamic, adaptive and open to the exchange of technology and culture

The Kent/Fitzgerald House and Studio: Rockwell Kent came to Monhegan in 1905 and spent most of the following 5 years on the island painting, working as a fisherman, well driller, builder, and even filling in as lighthouse keeper. He designed and built his house on island in 1906, and in 1910 built the adjacent studio where he taught art classes. Kent left Monhegan after the summer of 1910, and did not return for any length of time until 1947. He bought back his house in 1948 and spent time there in the spring and fall until 1953. Both the Kent house and studio were acquired by Kent's friend and fellow artist, James Fitzgerald and remained his primary residence until his death in 1971. The house remains much as it was during Kent's time, and retains many of the original furnishings. The studio houses and displays a collection of over 350 works by Fitzgerald. An important Monhegan artist, James Fitzgerald receives national recognition with works in many prominent collections including the permanent collections of the Smithsonian American Art Museum, The Phillips Collection, Boston Museum of Fine Art, and the Portland Museum of Art.

The collections of the Monhegan Museum are used to create exhibits that detail and describe the history, and nature of Monhegan Island. The collections are comprised entirely of objects donated to the museum, as our guidelines specify that the museum may not purchase anything for its collections. The light keepers dwelling houses a broad array of these exhibits, all of which are enhanced by original works of art that are dispersed throughout the museum's galleries.

Lobstering and fishing, primary island industries are illustrated via historical and contemporary equipment, model boats, photographs, and charts. Local history is depicted in exhibits relevant to Native American life, European explorers, early settlers, shipwrecks, and historical island events. Numerous domestic objects including furniture, dolls, toys, and clothing from Monhegan homes are on display as well as a complete turn-of-the- 20th century kitchen. The history of the Monhegan Island light station, the one room schoolhouse, tourism and numerous other topics are covered in the historical section of the museum.

The flora and fauna of Monhegan and the surrounding waters are explored in the natural history area of the museum. "The Sea Around Us" utilizes underwater photographs and specimens of marine life to present the undersea environment near the island. Interactive digital exhibitions illustrate the birds and wildflowers that are found on Monhegan. Located on what is referred to as the Atlantic flyway, Monhegan is a prime destination for bird watchers during the spring and fall migrations. A tremendous variety and number of birds arrive on Monhegan, including species rarely seen on the mainland. Wildflowers also are abundant on the island, including many rare species. Additional displays explain the geology, sole source aquifer, and fragile ecosystem of the island.

Two 19th century structures on the museum grounds house exhibits related to the ice harvesting and fishing traditions on the island. The Ice House displays ice harvesting equipment, hand tools, and photographs of the annual ice cutting on Monhegan that lasted until 1976. Fishing gear, including a

traditional skiff made on Monhegan, old-style wooden lobster traps and buoys, nets, handlines, and other 19th and early 20th century equipment is displayed in a replica fish house.

The Assistant Keeper's house contains an art gallery where a new exhibition of Monhegan art is mounted every year. Each exhibition focuses on a specific time period, artist, or movement that is significant to the history of the island; and how it relates to the larger world. Recent shows have included: "A Sense of Place: Representational Painting on Monhegan 1950-2000", "John Hultberg and Monhegan Island: The Man, the Place, and His Dreams", "A Painters Paradise: Monhegan's 19th Century Artists", "Life on a Remote Fishing Island 1920-1950", "Side by Side on Monhegan: the Henri Circle and the American Impressionists", and "Rockwell Kent on Monhegan". Most years a catalogue is produced in conjunction with the exhibition, and articles about Monhegan Museum art exhibitions have appeared in various national publications, including *American Art Review* (6 times), *Art News*, *The Magazine Antiques*, and *Art and Antiques*.

The Assistant Keeper's house also holds a well-used archive. Researchers both come in person to access this resource, and contact museum staff via telephone and email with their questions. In 2011, the Museum provided images and information regarding George Bellows to the National Gallery for their George Bellows exhibition currently on display in Washington D.C., with subsequent scheduled venues being The Metropolitan Museum of Art in New York City and The Royal Academy of Art in London in 2013. One work of art and one photograph from the Monhegan Museum's collection were reproduced in the 334 page full color exhibition catalogue. Early film footage and photographs of Monhegan, as well as consultation with Museum staff were used in creating the video that accompanied the exhibition.

Photographs and information from the Monhegan Museum archives were incorporated into the exhibition "Edward Hopper's Maine" at the Bowdoin College Museum of Art in the summer of 2011. Several works of art from the Museum collection were loaned to the same institution for their concurrent exhibition of Edward Hopper's contemporaries.

Photographs from the Museum collection are currently on display in the exhibition "Jamie Wyeth, Rockwell Kent, and Monhegan" at the Farnsworth Museum in Rockland Maine. This exhibition will travel to the Greenville Museum of Art in Greenville, SC, and the Brandywine River Museum in Chadds Ford, PA. Two exhibitions—*Rediscovering S. P. R. Triscott*, and *Lynne Drexler: A Life in Color*—that were curated at the Monhegan Museum traveled to the Portland Museum of Art after closing on the Island. Examples of other museums in the U.S. and abroad that have used our archives to research artists include the Arkell Museum, the Brigham Young University Museum; the Columbia GA Museum, and the Singer Laren Museum.

The Monhegan Museum works regularly with the Portland Museum of Art to provide information and artwork by Monhegan artists for various exhibitions. In 2012 three works of art were loaned to the Portland Museum of Art for their exhibition: *From Portland to Paris: Mildred Burrage's Years in France*.

Images and information for an upcoming film on the women artists of Monhegan were shared with the film production company Sonic Pictures. Photographs, historical information and geographic contextualization of several prominent Monhegan works of art were provided by Museum staff to author Sally Babylon for her 2012 book *The Golden Age of Plein Air Painting on Monhegan: A Walking Guide*. Images, oral history transcripts and memoir excerpts were shared with the Boothbay Region Historical Society for their exhibition on the history of the passenger ferry "Balmy Days", which serviced Monhegan Island for over 50 years. Information was provided to Rutgers University about Theodore "Ted" Edison relating to their collection of Thomas Edison Papers.

In addition to these examples of recent collaboration on artistic and historical projects, the Monhegan Museum staff fields numerous requests annually for information on genealogy, shipwrecks, lobster

fishing, community history, cemetery dates and listings, Monhegan Light Station and Manana Fog Signal Station history, works of art and photographs.

The archive is also used by the museum curators in developing new exhibits and updating long term displays. For several years the staff and volunteers of the museum have worked to create a comprehensive collections database, transcribe oral histories, and re-organize the collections to make them more accessible. A current project involves digitizing over 10 linear feet of documents relating to artists and their work on Monhegan. Though yet to be completed, these digitized files have already proven to be a valuable research tool and have broadened access to the Museum's collections.

In order to provide more extensive access to the archives, museum staff are currently working with the Maine Memory Network to create thematic online exhibitions of museum holdings. A new Monhegan Museum website is under construction which will allow curators to showcase current exhibitions and items from the permanent collection; and ultimately provide online access to the collections database and digital bird and wildflower exhibitions. A website devoted specifically to the Rockwell Kent/James Fitzgerald Legacy was launched in the fall allowing worldwide access to images of Fitzgerald's work, the history of the two artists and the buildings that tie them together. (www.jamesfitzgerald.org)

Current conditions and preservation challenges.

Located on the top of a hill overlooking Monhegan Harbor and Muscongus Bay beyond, The Monhegan Historical and Cultural Museum is vulnerable to the extremes of weather that occur on the coast of Maine throughout the seasons. The Museum's proximity to the ocean presents a very damp and tempestuous environment. In general, the island microclimate is warmer, wetter, and windier than the mainland. High humidity levels throughout the year are a continuing concern for both the collections and the facilities that house them. In the winter, typical atmospheric conditions can produce winds that can sustain at 40-50 mph for days on end. Periodic ocean storms can result in winds approaching hurricane force several times a season. These extreme conditions tax the existing climate control equipment and render the preservation conditions in the non-climate controlled areas insufficient. (Appendix A)

In order to better elucidate the current preservation issues facing the Museum, it would be helpful to divide up the museum complex into five distinct components, each with its own individual usage pattern and climate quality issues. The Monhegan Museum complex is comprised of four buildings that are utilized for the storage and display of the collections: (1) The Lighthouse Keeper's House, (2) the Assistant Keeper's House, (3) the Main Vault, and (4) a building referred to as the Ice House, the second floor of which contains the Ice House Vault. On a separate campus, the museum maintains (5) a house and studio known as the Kent/Fitzgerald property.

The Keeper's House was originally built in 1824, though the current remaining structures date to 1852. This structure, along with the attached stone lighthouse was placed on the National Register of Historic Places in 1980. This building contains exhibits about Monhegan's history, natural history, sea life, fishing, and domestic life. Included in the exhibits are photographs, art works, linens, documents, and clothing. Many of these objects are seasonally rotated out from the Vault. At the end of each season, the photographs, artworks, linens, documents, and clothing are removed from this building, although furniture, tools, kitchen equipment, fishing and maritime displays and Native American artifacts remain. This building has no HVAC systems in place and is functionally non-insulated. Climate data from the PEM2 data loggers indicate serious moisture issues in several areas in the building manifesting as mold spore germination conditions. (Appendix B) Evidence of mold growth can be seen on walls and ceilings and, occasionally on parts of the collection as well. The planning team will investigate methods of mitigating moisture infiltration to the building envelope. They will identify appropriate test sites and implement small scale soil grading, drainage, and moisture barrier options to determine their efficacy. If the moisture issues are remediated the preservation risks to the collections on display in the summer will be substantially reduced. In addition, the climate data suggests that the preservation conditions in the

building during the winter months will be extremely favorable. This would allow the Museum to safely house more of the collections in the Keeper's House on a permanent basis, freeing up room in the climate-controlled vaults for the most sensitive or significant pieces.

The Assistant Keeper's House is a structure built in 1998 as a replica of the original Assistant Keeper House built in 1856 and demolished in 1922. This building has two distinct areas with two different functions: an art gallery and an office/archive suite. The main structure houses a gallery that displays our annual art exhibition during the summer months. The artwork can come either from the Museum's own collections, or be on loan from other institutions or private owners, depending on the theme of the exhibition. All works are removed from the gallery at the end of the season and are either stored in the Vault or are returned to their owners. The building itself is insulated and has double-pane, UV filtered windows, as well as a security system and an integrated automatic fire suppression system. However, the gallery does not have any HVAC system in place. Climate information from the data loggers indicates a high probability of mold spore germination in the gallery area during the summer. (Appendix C) To date, several institutions and individuals have expressed reluctance to loan artwork relevant to exhibition themes due to the lack of an appropriate climate control system in the gallery. The planning team will develop a plan to mitigate the mold and moisture conditions in the gallery in order to provide a more universally acceptable display environment. This will allow the Monhegan Museum to have access to a wider range of significant and relevant artwork to enhance its annual exhibitions and provide a more fully realized vision of Monhegan's contribution to American art in the 19th, 20th and 21st centuries.

A second area of the Assistant Keeper's house contains the document and photographic archives and the curatorial offices for the Museum. Built in 1998 and enlarged in 2004 this area houses over 100 linear feet of documentation on Monhegan history relating to archaeological studies, genealogical data, early North American exploration, ancient and modern fishing equipment and techniques, boatbuilding, island residential construction, community events, plantation government and politics, land conservation history, artist and artwork histories and critique, folklore and oral histories, to name a few. This office area also contains original photographs stored in archival sleeves and boxes; eight large flat file cabinets for the storage of large or fragile pieces, as well as pieces currently undergoing conservation; a reference library comprised of volumes both by Monhegan authors and about Monhegan history and themes. All research activity is conducted through this office using the documents, photographs, and reference materials contained within. This area also houses the database for the collection (which is backed up off site). Accessioning of materials is performed on a continuing basis, with each item in the collection marked with an individual accession number. This Archive/Office area is insulated and utilizes vented propane heaters throughout the winter, providing a minimum ambient temperature of 55 degrees. This temperature regulation has kept mold conditions in check, according to the PEM2 data. (Appendix D) However fluctuating moisture levels indicate increased risk of mechanical and chemical damage to the documents, photographs and artifacts stored in this area. The team will develop a plan to mitigate moisture and optimize the efficiency of the energy used for heating. As the Archive/Office and Gallery are connected, the goal will be to find an efficient method to remediate the environmental conditions in both areas at the same time. Currently the annual propane expense is over \$2300 per year to keep the archives at a consistent temperature and maintain a comfortable working environment. Like many things on an island, propane is significantly more expensive than on the mainland. One gallon of the fuel costs \$5.41 as opposed to the national average of \$2.40. This expense underscores the importance of finding the most energy efficient manner of controlling environmental conditions in the archive.

The Main Vault of the Monhegan Museum is a concrete-walled structure built in 1998. It houses the majority of the Museum's art collection, particularly the pieces that have the most historical or artistic significance. Designed to provide a safe, secure and climate-controlled environment for valuable works, the Main Vault includes a fully functioning HVAC system programmed to regulate both temperature and humidity levels within the facility. Access to the Main Vault only can be achieved through a secure fire-proof metal door. Information gathered from the 18 month climate data study indicates that the climate-

control system is maintaining favorable preservation conditions (Appendix E). However, those conditions do come at a very high operating cost. In the past two years, the average electrical usage for the Museum complex as a whole was 14,000 Kilowatt-Hours per year, resulting in electrical expenses of over \$10,000 per year. The majority of this use is attributed to the humidistat controls for the vaults.

The Monhegan Municipal Power Company generates 100% of its electricity on island via diesel generator. Due to the limited subscriber base and high fuel costs, electric rates are currently \$0.70 per kilowatt/hour, or 500% higher than the standard mainland rate, without factoring in any usage discounts or time-of-day rate adjustments. The planning team will launch an interdisciplinary study of methods of increasing the energy efficiency of the existing HVAC system, either by adjusting the operating parameters of the system without effecting preservation conditions, or by examining alternative energy solutions that would reduce or eliminate grid dependency. The long term cost savings from this project would allow the Museum to expand its curatorial work-hours to both increase the scope of the collections and better preserve and care for existing collections.

The Ice House Vault represents an attempt to renovate an existing structure in the Museum complex to provide a secure climate-controlled area for works of art. Originally built as a garage, the Ice House is comprised of a display of machinery, tools, and photographs related to Monhegan's tradition of harvesting ice from a local pond for storage and use in the summertime. A second-floor loft area was sealed and insulated in 2004 to provide appropriate storage room for the Museum's expanding collection of artwork. At that time a state-of-the art HVAC system was installed to regulate temperature and humidity levels for the housed collection. Climate data gathered from the PEM2 data loggers (Appendix F) indicate reasonable preservation conditions in the Ice House Vault, but, as with the Main Vault, energy consumption and costs are extremely high to maintain those conditions. The project team will formulate a plan to reduce energy consumption by the HVAC system while simultaneously maintaining or improving preservation conditions. This could be accomplished by experimentation with existing system set-points and operation timing. This may also be accomplished by the introduction of alternative energy technologies to offset exceptionally high energy costs. In both the Ice House Vault and the Main Vault, the Museum's goal is to reduce overall energy consumption by optimizing HVAC system efficiency and to reduce energy costs by the use of renewable energy alternatives.

In 2004 a house and a studio designed, built, and used by the artist Rockwell Kent and later used by the artist James Fitzgerald was bequeathed to the Monhegan Museum with a substantial collection of Fitzgerald's paintings, watercolors, and drawings. The studio houses and displays a collection of over 350 works by James Fitzgerald, while the house retains many of Kent's original early 19th century furnishings. The studio is open to the public two afternoons per week in the summer months, or by appointment, and tours of the house are conducted on request. These two structures are located near the museum complex with environmental conditions that are very similar to the Lighthouse Keeper's House (Appendix G). As both buildings are listed on the National Historic Register and there is no electricity in the studio building, and only minimal electricity in the house the project team will focus on non-mechanical methods of controlling moisture infiltration to these buildings.

The Monhegan Historical and Cultural Museum endeavors to make continual advancements in the preservation and protection of the items in its collections. All items gifted to the museum are assigned and labeled with an individual accession number. Using Filemaker Pro as a database platform, each item in the collection can be searched by accession number, location, subject matter, keyword, donor name, year of gift, or artist name. This provides a comprehensive overview of the entire collection and allows instantaneous information on the disposition of any one particular item at all times. Environmental conditions in the climate-controlled vaults are checked regularly. Sensitive items are removed from non-climate controlled areas when not on display so that they are exposed to less-than-optimal environmental conditions for the absolute minimum amount of time while still providing a meaningful display narrative. Less than 20% of the artwork is placed on display in a given season. This artwork is rotated yearly to

ensure public exposure to the breadth of the collection while maintaining favorable preservation conditions for the remaining items in the collections. In this manner, any particular piece of art is faced with increased environmental vulnerability for a maximum of three months every three to six years, or perhaps 5% of the time. Photographs used in permanent exhibitions have been scanned and replaced with archival copies for display purposes. The document and photograph archives are stored in a dry, heated environment with both security and fire suppression systems in place. The main vault is constructed in a fire resistant manner with cinder block walls and a single secure steel door as an egress. Additionally, the Monhegan Museum has established a comprehensive Disaster Plan that is reviewed and updated semiannually. Access to the storage vaults and document archives is strictly supervised by the director, a small curatorial staff of three, and officers of the Museum organization. These procedural policies ensure a safe environment that still allows public access to the collections for both display and research. The plan of action produced by the project team will provide even greater levels of environmental control to ensure the safety and long-term preservation of materials on the entire footprint of the Museum complex.

History of the Project

The Monhegan Museum has taken several steps to identify and address environmental quality issues with the goal of optimizing preservation conditions in its facilities. In 2006 the museum received a Conservation Assessment Program grant. John Leeke, Preservation Consultant conducted a survey of the buildings; and Ronald S. Harvey, Conservator examined the collections. John Leeke's executive summary is included as Appendix H. The portion of Ronald Harvey's report that is pertinent to this project is included as Appendix I. In 2007, Gary E. Albright, Conservator of Photographs and Paper conducted an assessment of the Monhegan Museum's photographic collections; His executive summary is included as Appendix J. In 2010 Jamie Grey, Energy Auditor conducted a survey of the Museum. His findings are included as Appendix K.

Several of the goals of the previously mentioned Conservation Assessments have been achieved since receiving the reports in 2007. The light tower has undergone a complete restoration which included removing all lead based paint, repointing the stone structure, and refurbishing the leaking lantern. Electrical concerns within the exhibit areas have been addressed and a dory that resides next to the museum has been conserved. Original photographs have been removed from exhibition and replaced with duplicates, and the most important and heavily used parts of the photograph collection continue to be digitized and duplicated to reduce handling of the originals. As recommended in the energy audit, spray foam insulation was installed under the floor of the Main Vault in 2012.

Each of the three individual preservation consultants recommended that the Monhegan Museum purchase and install data loggers and begin monitoring the environment in storage and exhibition spaces. Environmental monitoring is an essential step for the long term preservation of the museum buildings and collections. Based on these recommendations, the Museum successfully applied for a NEH Preservation Assistance Grant awarded in 2011. The Monhegan Museum worked in conjunction with the Image Permanence Institute (IPI) of Rochester, NY to optimally position 10 PEM2 environmental data loggers throughout the Museum's storage and display facilities to record temperature and relative humidity conditions over the course of 18 months. IPI worked with the Monhegan Museum staff with on-site consultation and training covering environmental monitoring and the development of a long-term preservation strategy. Through this monitoring staff has been able to identify threats resulting from high humidity, temperature fluctuation, and unacceptable light levels.

Methods and Standards

The Monhegan Museum, in conjunction with the project team will have two goals: exploring non-mechanical methods to alleviate high moisture conditions in the Keeper's House and the Kent/Fitzgerald

buildings; and experimenting with existing climate control equipment in the vaults and Assistant Keeper's house to minimize energy consumption while maintaining favorable preservation conditions.

As the Keeper's House and the Kent/ Fitzgerald buildings are on the National Register of Historic Places, all efforts will be made to minimize any structural changes to the buildings. Experimental moisture control measures will consist of soil grading and drainage improvements to divert surface water away from the footprint of the structure. Also, various types of vapor barriers will be implemented to prevent moisture infiltration to the building envelope. Thirdly, various passive ventilation strategies will be tested to see what methods most effectively remove any moisture that does penetrate the building envelope. Throughout this process, calibrated climate data loggers will monitor temperature and relative humidity levels to gauge the efficacy of each procedure. Once a successful strategy has been determined, it can be implemented on a wider scale throughout the structure. This process will result in a permanent solution to the high moisture conditions in the building without increasing energy consumption. This will not only improve the preservation conditions for collections housed within the building, it will help preserve the structural integrity of the building itself and reduce long-term maintenance costs.

The second goal of the project team is to optimize the operating parameters of the existing climate-control systems to reduce energy consumption and at least maintain, or perhaps improve the preservation conditions in the collections storage areas. The project team will experiment with the temperature and humidity set points for activation of the heating, cooling, and dehumidification equipment to minimize run time and reduce conflict between HVAC devices. Similarly, the team will experiment with the timing of the equipment operation so it is only mitigating the environmental conditions when it is necessary. In the instances where it is determined that climate control equipment absolutely must be in operation to maintain preservation conditions, alternative energy sources will be explored to minimize energy needed from the island's electrical grid. Climate data loggers will be used in various locations to monitor temperature and relative humidity levels for each experimental operating scenario. Also electrical usage meters will be implemented to record the electrical load for each HVAC component for comparison with previous usage experiments. Through these methods, the project team will attempt to reduce the overall energy consumption of the museum complex by assuring maximum efficiency of the climate-control systems.

Work Plan

October 2013:	Museum staff will gather building plans, past collections assessments, electric and propane use figures, equipment specifications, and environmental data. Information packets consisting of these items will be provided to all members of the team.
October 2013:	2 day onsite project team assessment, meet to review background information, and goals, collections assessments, environmental data, energy costs, storage and display spaces, and equipment. Non-mechanical methods of moisture mitigation will be explored and test area selected. A plan will be created for trial implementation methods. At this time mechanical system monitors will be placed on HVAC equipment.
October 2013- October 2014	Ongoing monitoring of conditions with periodic changes of operating parameters of equipment to study energy savings and preservation conditions. Implement trial drainage and vapor barrier scenarios as recommended by the project team to determine effect on collections areas. Museum staff will continue to collect data, make it available to all members of the project team, and facilitate an ongoing discussion about the collections environment, the results of implementation measures, electric and propane usage, and the implications of the collected information.
October 2014	1 day onsite project team meeting to review the effects of changes in mechanical system operation parameters, and results of non-mechanical means of mitigating

	moisture in non- climate controlled areas. Discuss additional changes required and make recommendations.
October 2014- December 2014	Preparation of consultants' final reports including recommendations for improving preservation environment, moisture mitigation methods, energy consumption, mechanical operations, and energy alternatives.
January 2015	Consultants' reports submitted to Monhegan Museum. Museum staff will review recommendations and prepare a final preservation plan.

Project Team

In order to form a successful plan of experimentation, the Monhegan Museum will rely on several distinct skill sets. **Jennifer Pye** will serve as project director. Ms. **Pye** has been Curator of Collections for the Monhegan Museum since 2003. In this capacity, she understands the breadth of the Museum's collections and the preservation challenges they face (Appendix L). **Jeremy Linden**, a Preservation Environment Specialist at the Image Permanence Institute of Rochester, NY will fill this role. He is primarily involved in the environmental management activities of IPI and works closely with colleagues in libraries, archives, and museums on issues of material preservation, mechanical system performance, energy-saving, and sustainability. Also, the team will need to consist of an architectural preservation consultant, to ensure that any changes made to buildings in the Museum complex will not adversely affect their structural or historical integrity (Appendix M). **John Leeke**, who worked with the Monhegan Museum in 2006 as part of the Conservation Assessment Survey, will participate in this capacity. He has studied early American architecture and decorative arts at Historic Deerfield, Massachusetts. Since the mid-1980's John has been consulting on preservation projects nationally and sharing his knowledge by writing for national publications (Appendix N). Preservation professional, **Ron Harvey** of Tuckerbrook Conservation, who also worked with the museum for the 2006 CAP report, brings over 30 years' experience in conservation to the team. Mr. Harvey is familiar with conservation treatment of various materials, and is an expert in preventative conservation and collection preservation (Appendix O). **Rich Shea** is the Buildings and Environmental Services Coordinator and an Associate Curator for the Museum. He has worked with Jeremy Linden/IPI on the placement of the PEM2 Data loggers and has collected data from them for the 18 month climate data review. He also works on site and will implement most of the experiments planned by the project team. **Victor Lord** is the local contractor who built the Assistant Keeper's House and the two storage vaults. He has been the caretaker and maintenance technician for several years and has the institutional knowledge of the buildings and systems in the Museum complex. **Kole Lord** worked with Victor to build the storage vaults and Assistant Keeper's house. He holds a degree in HVAC technology

Project Results and Dissemination

The end result of this planning activity will be an executable plan to effectively mitigate the high moisture conditions in the Museum complex and to increase the operating efficiency of the existing HVAC equipment. Implementation of this plan will allow a greater percentage of the Museum's collection to be on display for a longer period of time, thus increasing public exposure to Monhegan's unique cultural heritage. With improved environmental conditions, other institutions and private individuals will be much more likely to lend relevant works of art for display in the Museum's annual exhibitions, providing a more well-rounded representation of Monhegan's contribution to American art. Addressing the moisture issue in the Keeper's House will allow the storage of more artifacts in this building. This will free up room in the storage vaults for the acquisition of more Monhegan-related works of art. It will also extend the expected life of the objects and artifacts on display in the Keeper's House during the summer season, thus increasing the likelihood that they will be around for future generations. Implementation of this plan will result in a much longer lifespan for the documents, photographs and artifacts in the Archive/Office of the Assistant Keeper's House, thus ensuring that the Monhegan Museum can remain a resource for future

historical, cultural, and artistic research. The improvement of environmental conditions in the Kent/Fitzgerald and Keeper's House portions of the Museum complex will prolong the lifespan of these historically significant buildings and preserve a significant part of the island's cultural heritage. Additionally, any energy savings resulting from this plan can be used for more curatorial work-hours. This will not only allow for better care of existing collections, but will allow the collections to be displayed in a manner that best represents their historical and cultural significance.

The Monhegan Museum has repeatedly demonstrated our commitment to caring for our facilities and collections in a conscientious manner. Beginning with the construction of the first vault and gallery in 1998 we have striven to improve collections storage and display areas, solicited professional consultation regarding the storage and organization of the collections, and raised funds to implement recommendations. As the letter of commitment from director Ed Deci, (Appendix P) attests, the museum is dedicated to realizing the goals set forth in the final preservation plan.

This report will be posted on the Monhegan Museum's website (www.monheganmuseum.org) and will be discussed in a public forum during the Museum's open season. It will also be the basis for seeking future funding to carry out the changes highlighted in the plan. Team members will be encouraged to reference the procedures used and conclusions drawn from this project in their subsequent dealings with other cultural heritage institutions, in hopes that the Monhegan Museum's experience in implementing these sustainable preservation strategies can serve as an example to other small, geographically isolated institutions.