Dinosaurs Unleashed
February 28 – September 7, 2015
Castle Memorial Building, First Floor
See a wide variety of animatronic prehistoric dinosaurs and reptiles that walked, swam, and flew over the Earth in the distant past in dynamic scenes displaying how these creatures lived during the Mesozoic period. Experience an adolescent 7, rex, at 12 feet tall with other popular dinosaurs such as a Stegosaurus, a most-tall Triceratops, the duck-billed Megalosaurus, and the bulb-headed Parasaurolophus. Kids can go on a dinosaur dig in the excavation station, create crayon art, and see animatronic technology used to bring the animals to life.

Duke Paoa Kahanamoku Exhibit
August 8 – November 2, 2015
J. M. Long Gallery
Duke Paoa Kahanamoku was Hawaii’s beloved ambassador of aloha and a public figure unrivaled in grace and humility. Bishop Museum has the finest and most extensive collection of personal Duke Kahanamoku items and keepsakes, some never before—numerosous trophies and medals, his sheriff’s badge, ‘ukiulele, and one of his famous surfboards. Experience what it may have been like to ride Duke’s own surfboard, or get a photo of yourself with Duke in a historic photograph using a green screen. Come learn from the life of this legend.

World of WearableArt™
Castle Memorial Building, First Floor
New Zealand’s largest international design competition, The World of WearableArt™ Awards Show, known as WOW™, is where fashion and art collide. The garments produced for the show are created from an extraordinary array of materials that are worn like clothing. The garments are part of the WOW™ permanent collection is an exhibition comprising 32 award-winning garments, interactive visual presentation, a dynamic mobile app “STORM”, and an interactive work-room with touch screen technology. The WOW™ exhibit is in cooperation with the World of WearableArt™ Awards Show, New Zealand’s extraordinary art-as-fashion exhibition, on its inaugural international tour. This exhibition will allow new explorations across lines of culture, inspiration, and expression through special projects, including a Fashion Show Collaboration. Owners have also underway with the deYoung Fine Arts Museum on NO Hula AFF® Royal Hawaiian Featherwork, an exhibit that highlights an unparalleled array of examples of native Hawaiian featherwork from across the globe.

Sky This Month
Evening Planetarium Show
J. Watumull Planetarium
 Saturdays, 8:00 p.m.:
June 6 & 20
July 11 & 18 (no show July 4)
August 1 & 15
September 5 & 19
October 3 & 17

Dear Friends of Bishop Museum:

As we embark on a summer filled with new stories, partnerships, and, of course, our signature event, the 17th Annual Bernice Pauahi Bishop Museum Dinner, I hope you are feeling the movement and energy of a Museum that is beginning to “make waves.”

Behind-the-scenes, we have been working diligently to develop a comprehensive business plan—a plan that will broaden our operating model through a sustainable mix of programs and activities while dramatically shifting our Museum focus to center around the visitor experience. Our Museum continues to advance this year with plans to improve landscape planning, parking, and walkways as well as continuing work on the installation of energy efficiency technology and equipment to better care for our priceless collections. Of special note, there will soon be a new and improved café experience! We look forward to unveiling this transformation in late 2015.

In a celebration of legacy and the core Hawaiian values that the Museum strives to embody in all of its work, we will unveil an original collections-based exhibition entitled Duke Paoa Kahanamoku in the J. M. Long Gallery at our annual dinner event on August 8. In October, Bishop Museum will become the premiere venue for World of WearableArt™, New Zealand’s extraordinary art-as-fashion exhibition, on its inaugural international tour. This exhibition will allow new explorations across lines of culture, inspiration, and expression through special projects, including a Fashion Show Collaboration. Owners have also underway with the deYoung Fine Arts Museum on NO Hula AFF® Royal Hawaiian Featherwork, an exhibit that highlights an unparalleled array of examples of native Hawaiian featherwork from across the globe. After its display in San Francisco this fall, the project will culminate in a stunning exhibition in the Castle Memorial Building in March 2016.

Waves need energy to gain momentum, and your support over the next few months will directly fuel these cultural and transformative projects as we shape the future of our Institution. Please purchase tickets for the gala, consider a generous contribution to the Museum’s 2015 Annual Fund and direct it to one of the projects above, or spread your enthusiasm for the Museum to family, friends, and colleagues. Your kākua, in any way that you are able, will help make waves to build a sustainable future for Bishop Museum.

Mahalo for your support,
Blair D. Collins
President & CEO

Below | Charlie Listijoijn
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President & CEO

Below | Charlie Listijoijn
FACE-TO-FACE with a “Real” Dinosaur

Would you like to come Face-to-Face with a walking, roaring, snuffing, snorting carnivorous dinosaur? This summer, you can! Dinosaurs Unleashed, Bishop Museum’s popular exhibit, will become even more thrilling this summer. Bishop Museum has adopted a curious young 15-foot Gorgosaurus (lit. dreadful lizard). Paleontologists tell us she will grow to be 26 to 30 feet in length, and weigh more than 6,000 pounds when fully grown! The Gorgosaurus is a genus of the tyrannosaurid dinosaur family that lived roughly 76 million years ago in what is today the Canadian province of Alberta. Like all predators, she uses her sharp senses of sight and smell to investigate her surroundings and uses even sharper claws and teeth to find a meal. Don’t worry though, she will be accompanied by a “trainer” who will make sure none of our visitors become lunch.

Our trainer will also answer questions about dinosaurs as the two walk through the Dinosaurs Unleashed exhibit in the Castle Memorial Building gallery. Just to be sure though—stand still and keep quiet if you do come Face-to-Face with the Gorgosaurus.

NOTE: This program depicts a realistic meat-eating dinosaur walking freely throughout our exhibit and may be frightening for small children. Our dinosaur is a 15-foot-long, full body costume that our trained staff will bring to life so visitors can learn about dinosaur biology, anatomy, movement, and behavior. With complex internal mechanics and audio effects, the costume is extremely realistic, giving visitors a very convincing experience of a close-up dinosaur encounter.

LEAVING A LEGACY: Joyce Jeffers

Ever wondered where the Science Adventure Center’s enormous Happy Face spider or darling treehouse costumes came from? Or the stuffed ‘ulu, breadfruit, and kī Kiai costumes in Pacific Hall’s Educational Resource Center? For twenty years, Bishop Museum has benefited from the creativity, artistry, and love of a very special and talented person. Joyce Jeffers was born in Cleveland, Ohio, and grew up in Southern California. In elementary school, her favorite field trips were to museums. Not surprisingly, she eventually studied art. On a vacation to Hawai‘i, Joyce and her husband Tom were delighted to be surrounded by “as much water as you are ever going to find,” and decided to move here permanently. For many years they enjoyed living aboard a boat at Kāne‘ohe Lagoon.

In 1993, Joyce joined the staff at Bishop Museum, first in the Education Department for seven years, and then in the Exhibits Department for seven more before retiring. She says it was thrilling to work behind the scenes crafting displays, sewing costumes, repairing Hawaiian feather cloaks, and even stitching a replica skirt for Queen Lili‘uokalani’s coronation ball gown, since the original skirt was too fragile to be displayed. “I am awed by Hawaiian Hall every time I see it,” Joyce says. “If I could have any historical figure to dinner, I would invite Princess Bernice Pauahi Bishop.” Joyce can’t let go of the museum “I’ve found a home there,” she says of the Exhibits Department. “It’s an emotional feeling. I am very happy to continue volunteering on special projects.”

As she and Tom did their estate planning, they made a provision in their revocable living trusts to leave a percentage of their estate to Bishop Museum. Joyce and Tom, married 57 years, have a son and a daughter, three grandchildren, and two great-grandsons. While making provisions for her family, Joyce realized that the Museum is also part of her ‘ohana. Her fondest wish is that other Museum supporters help this Hawai‘i treasure to thrive for years to come.

Several years ago, Joyce decided that she would like to see some of her contribution at work during her lifetime. She made a generous outright gift to establish a fund to help the Exhibits Department keep exhibits in top shape. She has faithfully replenished the fund every year and hopes that by naming this fund the Enduring Exhibits Fund instead of for herself and Tom, others will also contribute to it.

Joyce made. Photo by Ed Morita.

Making plans for the future? To learn more about creative ways to leave your legacy, or to request a Bequest Toolkit, contact the Museum’s Planned Giving Office, in confidence, at (808) 848-4187 or development@ bishopmuseum.org.
Bishop Museum is very proud to announce an upcoming exhibit honoring Duke Paoa Kahanamoku, which will showcase photographs, films, documents, and artifacts telling the story of Duke’s life from 1890 through 1968. This time period saw huge changes in Hawai‘i, and Duke not only lived through these, but contributed to them as well.

It is fitting that Bishop Museum should mount this exhibit. Duke was born on the grounds of what had been Bernice Pauahi Bishop’s home, Haleakalā, where King and Bishop streets now intersect. In later life, Duke stated that his possessions should someday go to Bishop Museum, and his widow Nadine followed her late husband’s wishes in the 1990s. This unparalleled collection, clearly the best representation of Duke possible, will be the foundation of what visitors will see.

Duke Kahanamoku was born in the Kingdom of Hawai‘i when it was ruled by King Kalākaua. His early years spanned the tumultuous times of the overthrow of Queen Lili‘uokalani in 1893, the unsuccessful Wilcox Rebellion in 1895, and Lili‘uokalani’s subsequent imprisonment, and the culmination of the Hawaiian Islands being named a territory of the United States. Duke later underwent the shock of the start of World War II on December 7, 1941, and saw Hawai‘i become the 50th state in 1959.

While events like these affected Duke’s life, he always retained the Hawaiian ways that he had been taught. Growing up in and around the ocean at Kālia in Waikīkī, he was completely at home in the water as a
Try meeting or leaving people with aloha. You’ll be surprised by their reaction. I believe it and it is my creed.

—Duke Kahanamoku

Inspired and delighted by original Bishop Museum exhibits? Your generous gift to the 2015 Annual Fund is tax-deductible and will fuel new exhibits, shared collections, and great stories in the year ahead. Donate online at www.bishopmuseum.org

Support for this exhibit has been provided by:

ABOVE, CLOCKWISE FROM LEFT | Duke searches for his baggage upon arriving for the 1932 Olympic Games in Los Angeles; at Bishop Museum’s Hawaiian Hall with Castle High School 8th grade students in 1964; and posing with a movie camera on the set of the 1926 film “Old Ironsides,” in which he played a pirate.

CENTER | One of scores of Duke’s swimming medals in the Bishop Museum collection.

ABOVE, CLOCKWISE FROM BOTTOM LEFT | The Kahanamoku brothers at Waikīkī in 1931 (Bill, Sam, Louis, David, Sargent, and Duke); Duke greeting movie star Shirley Temple on her first visit to Hawai‘i in 1935; with his surfboard at Waikīkī about 1930; and as a young champion swimmer in 1918.

CENTER | A 1920s photo of Duke’s Sheriff’s badge.

fisherman, swimmer, surfer, sailor, and canoe paddler and steersman. The Kālia of Duke’s youth is no longer recognizable today—it is now heavily urbanized and mostly occupied by the Hilton Hawaiian Village Hotel. But he is memorialized there still; a street bears his name, as does the beach fronting the Hilton complex.

Duke’s greatest fame came with his sports triumphs in four different Olympic Games. In Stockholm in 1912, his winning of both a gold and a silver medal in swimming attracted international attention. As with many Hawaiians of his generation, Duke not only accepted his status as an American, but was indeed proud of it, and relished representing the USA at three other Olympics (1920, 1924, and 1932). He is still revered today, one hundred years later, for his popularizing of longboard surfing in both Australia and New Zealand. Surfers all over the world still know him.

And like these events, the exhibit itself will be for all ages. Interactive elements will allow museum-goers to pose for photos as if they were with Duke, or to “surf” on a replica of Duke’s famous board. Fun was a big part of Duke’s life, and this exhibit will share that as well.

The Kahanamoku brothers at Waikīkī in 1931 (Bill, Sam, Louis, David, Sargent, and Duke); Duke greeting movie star Shirley Temple on her first visit to Hawai‘i in 1935; with his surfboard at Waikīkī about 1930; and as a young champion swimmer in 1918.

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Bishop Museum is fortunate to care for numerous treasures. Often, these relics are particularly precious because of who they once belonged to. Such are the many items owned by Duke Paoa Kahanamoku. After Duke’s death in 1968, his widow Nadine inherited his possessions. Very aware of her late husband’s position in Hawaiian history, she carefully preserved what he had owned. In the 1990s, she began the process of passing on the objects of her beloved late husband to Bishop Museum. Complementing what she gave during her lifetime, further donations came in a bequest after her own death in 1997.

Bishop Museum keeps the Duke Kahanamoku Collection in two different departments. Hundreds of objects like medals, trophies, and miscellaneous personal possessions are stored in the Cultural Collections, while photographs and other paper items are housed in the Archives. For Bishop Museum’s Duke Kahanamoku exhibit, the entire scope of this collection was surveyed and the finest and most significant pieces were selected.

Photographs are a big part of the exhibit, and along with accompanying written texts, make Duke’s accomplishments come alive. Bishop Museum has the largest collection of Duke photos in existence, thanks to the aforementioned generosity of Nadine Kahanamoku. Searching through this collection is fascinating and fun. Many of the pictures have never been published, and thus will be new to nearly everyone today. We have images of Duke in Hollywood in the 1920s, costumed as a pirate, a Native American, an Asian prince, or even a Polynesian. Also, from when he was the Sheriff of Honolulu interacting with visiting lawmen from other cities, and overseeing prisoners in Honolulu’s small rustic jail. Of course, the most famous images are of Duke as a Waikīkī sportsman and a world-champion Olympic swimmer…and Duke the ceremonial greeter for the Hawaiian Islands, meeting royalty, political dignitaries, movie stars, and just plain folks. Duke was a man of endless experiences, and of nearly endless photographs, too. As the most famous Hawaiian to have ever lived, it’s impossible to know how many photos were taken of him during his lifetime, from professional portraits to amateur snapshots.

Even a quick look at a selection of photos of Duke Kahanamoku gives insight into his character. He is, almost without exception, always well dressed and groomed. He’s dignified and imposing even in relaxation or recreation, but his smile shows his good nature as well. Clearly he was comfortable interacting with important people, as he was often called upon to do. You get a sense that he could be as stately as he needed to be, but could equally be a buddy to have a good time with.

The photo collection shows an evolution in Duke’s life, too, that came with his marriage to Nadine Alexander in 1940, when he was already 50 years old. Clearly his wife made sure that his photos were kept in better order, and labeled with names and dates. Nadine’s handwriting appears even on pictures that were taken many years before she had even come to Hawai‘i, showing her dedication to preserving her famous husband’s legacy. We can be grateful for her foresight in caring for the images themselves, and for ensuring that they came to Bishop Museum to educate and entertain all of us today.

DeSoto Brown is the Bishop Museum Historian. He has been employed in the Archives since 1987 and has written a number of books on Hawaiian history.
An elegant evening of vintage Waikīkī chic awaits. Kick off your shoes and grab a mai tai. Let’s make waves!

Adorned with torches and surfboards, the Great Lawn will take form on August 8th as a vintage Waikīkī beachscape enlivened by entertainment, mai tais, and a strolling surf ’n’ turf dinner from Honolulu’s great chefs. Following cocktails and dinner, guests can kick back and relax in the Lava Lava Lounge, our after-hours soiree. Our silent Auction Pacifica will tempt and delight with an array of surfboards, Hawaiiana, artwork, weekend getaways, and all things Pacific. In fact, members and donors will be able to register and bid on auction items during event week!

Of special note, an exhibition entitled Duke Paoa Kahanamoku will be unveiled in recognition of Duke’s 125th birthday. Tuck a flower behind your ear and grab a lei—the dress code is vintage Waikīkī chic for this fabulous fundraiser!

The Pauahi Dinner is truly a unique opportunity to experience Bishop Museum at its very finest, and we encourage you to join us. For a top-notch experience, guests at our premier tables ($10,000 and above) can enjoy excellent dinner service, champagne, fine wines, and surprises. Contributions are tax-deductible less the fair market value of goods and services received.

Your generosity and kōkua will directly fuel the Museum’s ongoing revitalization and forward momentum as a thriving educational center that will leverage its unrivaled collections to invite discovery, inspire learning, and celebrate Hawai‘i’s culture and science for 300,000 kama‘āina, visitors, and keiki this year. Hele mai – let’s make some waves!

ATTIRE: VINTAGE WAIKIKI CHIC
(Wāhine - elegant vintage aloha wear, Kāne - blazers and board shorts encouraged)
When Captain Cook set eyes upon the Hawaiian Islands, the upland forests resounded with the songs of native `upopone and `iwi birds. This precious resource of brightly colored birds was managed by kia manu, skilled bird catchers who knew how to acquire feathers without killing the source of their livelihood. Those feathers in turn were presented to the ali`i (chiefs), who had them fashioned into `ahu`ula (feathered capes), mahiole (crested helmets), and `aihili (feather standards). These are enduring and exquisite symbols of Native Hawaiian chiefly society. Hawai`i’s visibility to the world grew throughout the 1800s due in part to the royal feather objects that were taken out of Hawai`i as gifts or purchases to far-flung locations.

In collaboration with the Fine Arts Museums of San Francisco, Bishop Museum is currently developing an unprecedented exhibition of Hawaiian featherwork entitled Nā Hulu Ali`i: Royal Hawaiian Featherwork. As caretaker of over 12 cloaks, 24 capes, and numerous `aihili and lei, Bishop Museum conserves the largest collection of Native Hawaiian featherwork in the world. The exhibition will not only include items from Bishop Museum’s spectacular collection of `ahu`ula, mahiole, and `okū hulu manu (feathered god images), `aihili, and lei hulu (feather necklaces), but will also bring feather ancestors from other national and international institutions and private collections to Hawai`i for a brief time. These loaned items will be a singular opportunity for Hawai`i communities to see the grandeur of Hawaiian featherwork held elsewhere, including the United Kingdom, Austria, Denmark, New Zealand, and the continental United States. Many of the international pieces being presented in this exhibition will be returning to Hawai`i for the first time since they left our shores, making this an exhibit of momentous significance.

Following its display at the de Young Museum in San Francisco (August 29 – February 28, 2015), this stunning body of featherwork will travel to Honolulu for exhibition at Bishop Museum. Here it will take on new life as part of a unique and more comprehensive cultural, biological, and historical narrative on the cultural significance and practice of Hawaiian featherwork. Today, as new generations of cultural practitioners lend their hands to this fine art form, the Hawaiian art of featherwork is vibrant and alive.

The Fine Arts Museums of San Francisco will also publish an illustrated, full-color, 320-page catalogue that will complement the exhibition. It will include scholarly essays representing the diverse cultural and disciplinary perspectives of the contributors, who are museum curators, academics, and Native Hawaiian experts specializing in Hawaiian art and culture, history, politics, and royalty.

Perpetuate Hawaiian Featherwork

Your generous gift in support of Bishop Museum’s Hawaiian featherwork collection will:

• Help to preserve treasures like Lilikulani’s feather riding cape
• Fund construction of new feather `ohi`a for display in Hawaiian Hall
• Support the completion of Nā Hulu Ali`i, an unprecedented featherwork exhibition

Direct your gift to featherwork online at www.bishopmuseum.org or contact the Development Office at (808) 848-4187 or development@bishopmuseum.org. Mahalo for your tax-deductible support.

Nā Hulu Ali‘i
ROYAL HAWAIIAN FEATHERWORK
March 19 through May 23, 2016

He hulu ali’i.
Royal feathers.

Said of the adornment of a chief, or of an elderly chief himself who is one of a few survivors of his generation and therefore precious.

Bishop Museum’s Science Alive! Water of Life event on Sunday, March 15, welcomed more than 2,500 guests to the Great Lawn to learn about science and the environment. For the third year in a row, Science Alive showcased the vast collections and breakthrough research of Bishop Museum’s seven science departments: archaeology, botany, entomology, ichthyology, invertebrate zoology, malacology, and vertebrate zoology. In addition, Science Alive featured 40 community partner organizations, including representatives from national, state, and local government groups, and nonprofits. One of the most popular areas gave budding biologists the opportunity to interact with both Bishop Museum and partner scientists in the Talk Science Tent.

The Talk Science Tent was staffed with scientists from Hawai‘i spanning multiple disciplines, talking about some of the new and exciting research going on throughout the islands. This made for a fun and relaxed environment in which kids could ask questions about careers in science. Many of the researchers brought in live animals and had hands-on learning activities to get kids excited about science.

Some of the day’s highlights included Rich Pyle, Bishop Museum’s ichthyologist, and Josh Copus from Hawai‘i Institute of Marine Biology (HIMB) at the University of Hawai‘i at Mānoa, screening underwater rebreather technology, and showing underwater footage of rare and unusual fish they found on their recent deep diving expeditions.

Heather Spalding from the Botany department at UH Mānoa brought in some locally collected limu seaweed, and taught kids and their families how to make beautiful algae presses that they could take home. Melissa van Klieck, with Ecology Evolution and Conservation Biology (EECB) at UH Mānoa, studies invasive reptiles and brought live chameleons, turtles, and other non-native animals to increase awareness about these cute but potentially harmful animals that can threaten our local ecosystems.

Kaleonani Hurley from the Hawai‘i Institute of Marine Biology brought in live marine crabs and talked about her phylogenetic research on our local—but mostly hidden—crab communities collected from NOAA’s Autonomous Reef Monitoring Systems. A new addition to the Talk Science Tent this year was a live Skype chat with Bishop Museum researchers Shelley James and Ken Longnicker from a remote village in Papua New Guinea. Their research studies fish populations throughout the Pacific and they teach other scientists in remote locations how to conduct fish research without modern conveniences like electricity.

With the many different kinds of scientists showing off their new and interesting findings, the Talk Science Tent provided a broad view of the active research going on in Hawai‘i (and the Pacific) today. It was a great way to get kids talking one-on-one with real scientists in Hawai‘i and get them interested and excited about becoming the next generation of scientists.

Holly Bolick, Invertebrates Zoology Collections Manager, curates and cares for the Museum’s marine invertebrate section (with more than 35,000 specimens). She provides access to researchers and scientists and gives behind-the-scenes tours and public presentations.

The Amy B. H. Greenwell Ethnobotanical Garden has a new way to tell the story of plants and traditional Hawaiian culture. Now farmers, artists, and botanists are talking directly to visitors as they walk through the Garden via recorded audio clips that visitors access on their smartphones and tablets.

Visitors will hear nine different voices at 42 locations scattered throughout the coastal, dry forest, and Polynesian crops sections of the Garden. The speakers share one thing in common—all are intimately involved, in both their personal and professional lives, with the plants they are talking about. These audio clips are unscripted interviews and the information is from the personal experience of the speakers. Shirley Kauhailoa talks about how her grandmother prepared ‘uhi, or breadfruit, Artocarpus altilis. Jerry Konanu tells us what a dryland Aalo, or taro, Colocasia esculenta, farmer from Kona has to say about wetland taro from Waipio. Conservation field worker Kekaulike Tomich describes uliuli, Melosperum kawiiuensi, that are sprouting at his worksite and Kuhane Morton recounts stories from his childhood of aunties and uncles who would take sugarcane pieces with them for snacks as they worked out in the “coffeeland.”

The audio tour is available through a free app called iTRAVEL. Garden visitors can download the app on their Apple, Android, or Windows mobile device either at home before they visit or right at the Garden visitor center, where a free wireless connection is available. The Garden is the first Hawai‘i location to utilize the in TRAVEL site, which hosts museum and city audio tours all over the world. Visitors can simply access the clips through the app with their mobile service as they walk through the Garden or, for those who need to avoid roaming charges or keep their data minutes down, the entire audio tour can be downloaded and then listened to without using any data.

The audio tour is part of the Guided Hawaiian Plant Walks program and funded by a grant from the Hawai‘i Tourism Authority and the County of Hawai‘i Department of Research and Development. Thanks to the Guided Hawaiian Plant Walks program, visitors have enjoyed daily docent-guided tours since the opening of the Garden’s visitor center in 2012. Now, even those who can’t make the 1 p.m. start time for the guided tours can get the experience of hearing firsthand accounts from people who live and work with the plants. A Japanese-language version of the audio tours should be available by mid-summer 2015.

Peter Van Dyke is the Greenwell Garden Unit Manager.

To support the Amy B. H. Greenwell Garden you can make a gift contribution online. Visit www.bishopmuseum.org or call the Development office at (808) 847-8281.
One Fish, Two Fish, Small Fish, Big Fish
Exploring Changes in the Hawaiian Diet at Wai‘ahukini Rockshelter

by Kelley Esh

Many archaeologists study more than just artifacts. As a zooarchaeologist, my specialty is identifying animal bones in cultural deposits to learn more about what people were eating in the past. From this, we can learn about resource use and environmental change as well. Over the past two years, I have been working in the Anthropology Department at Bishop Museum analyzing archaeological collections from southern Hawaii Island, including the Wai‘ahukini Rockshelter Site. The Archaeology Lab at the Museum is the ideal setting for me to carry out my research because it is also the home of an extensive reference collection that includes the skeletons of over 720 fish. As I sort through archaeological collections, I am able to use this reference collection to identify individual fish bones in order to learn more about which types of fish people were eating in the past, and how that changed through time.

The Wai‘ahukini Rockshelter was excavated during the 1950s when Bishop Museum archaeologists Kenneth P. Emory and Yoshiko H. Sinito teamed up with William Bonk from the University of Hawaii at Hilo to initiate major archaeological research projects. Their goal was to identify the initial settlement of the Hawaiian archipelago and explore change through time in ancient Hawaii. The sites that they chose to investigate in the Ka‘u District were central to this effort because these sites appeared to be occupied for a very long time, and they provided archaeologists with the archipelago’s first timeline based on both radiocarbon dates and changes in artifact styles. Wai‘ahukini and other remarkable cultural sites in Ka‘u such as Pu‘u Ali‘i (the South Point Dune Site) formed the foundation of the scientific discipline of Hawaiian archaeology, and the archaeological collections from these sites are now considered to be some of the most important collections for learning about the past in Hawaii.

At Wai‘ahukini Rockshelter, Emory, Sinito, and Bonk uncovered over 11,500 artifacts, including wano (sea urchin) and coral files used to manufacture objects that archaeologists refer to as “ecofacts.” Ecofacts include things like fragments of wood charcoal, animal bones, and other materials that are not manufactured by people, but can tell us something about what people were doing in the past.

Since 2013, our research team has been re-analyzing the assemblage from Wai‘ahukini Rockshelter and other sites in southern Hawaii Island as part of the Ho‘omaka Hou Research Initiative. We began by selecting wood charcoal samples to re-date the Wai‘ahukini site using modern methods in radiocarbon dating. Our results showed that the site was intensively used for around 600 years (from ca. AD 1500 until 1868). Although these dates indicate a considerably shorter chronology than previously hypothesized, they also confirm that the layers of soil at the site were intact, which is critical for understanding cultural change through time.

In addition to wood charcoal, the collections at Bishop Museum include thousands of other ecofacts from Wai‘ahukini that were collected as large bags of midden. Archaeologists use the word “midden” to refer to ancient trash deposits, which can tell us a great deal about how people’s diets changed over time. My specific research focuses on how resources use changed at several key sites across East Polynesia, including Wai‘ahukini, which contained extensive, layered midden deposits.

As you can imagine, there is excellent fishing near Ka‘u (South Point), and there were tens of thousands of fish bones collected from Wai‘ahukini. Luckily, while these sites were being excavated in the 1950s, William Bonk had the foresight to collect a “quantitative” bulk sample of midden from one of the excavation units; in other words, he collected everything in that unit rather than just the artifacts to include all of the midden material (bones, shell, sea urchin, etc.). This means we have an excellent bulk sample that includes bones from even the very smallest fish people were eating. So far, we have identified about 1,500 fish bones from the Wai‘ahukini midden, including those from over twenty different families of fish.

Now that we know what types of fish people were eating and what layer at the site those fish came from, we can start to look at changes in resource use through time. At Wai‘ahukini, there seems to be a big shift from smaller to larger fish—for example, over time there are fewer ‘ōpelu (mackerel) but more also (trevally). My future research will continue to investigate these changes in fish procurement, as well as changes in other resources such as seabirds and domestic animals, and examine how this variation might relate to the dynamic cultural changes also reflected in artifacts such as fishhooks.

Kelley Esh is a Research Affiliate in the museum’s Anthropology Department. She has been conducting zooarchaeological analyses for 15 years and is a Ph.D. student in anthropology at the University of Hawaii at Manoa.

Online Fishhook Database

The Archaeological Collections housed at Bishop Museum include the largest collection of Hawaiian fishhooks in the world. With the generous support of the Hawaii Council for the Humanities, the Anthropology Department has just launched a new publicly-accessible online database that features over 4,000 fishhooks from three cultural sites in the Ka‘u District of Hawaii’s Island, including Wai‘ahukini Rockshelter. These collections are the current focus of collections-based research projects at the Museum, and the database is linked to more information about ongoing research. The Ho‘omaka Hou Research Initiative Online Fishhook Database can be accessed at http://data.bishopmuseum.org/archaeology.
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HAWAI‘I’S GOOD GUYS | BAD GUYS

Good Guys: The Native ‘Ōpae

Freshwater ‘ōpae, or shrimp, are one of the most important and conspicuous organisms found in Hawaiian streams. ‘Ōpae have a migratory life cycle similar to that of native freshwater ‘ō‘ōpū, or goby fish, and are amphidromous, which means they migrate to and from the ocean to complete their life-cycles. Two species of endemic freshwater ‘ōpae are found in Hawaiian streams. ‘Ōpae ‘oeha‘a, Macrobrachium grandimanus, is restricted to the lower reaches of streams, while ‘ōpae kala‘ole, Atyoida bisulcata, called ‘ōpae kuahiwi on Maui and Moloka‘i, is the highest ranging of all Hawaiian amphidromous stream animals, and has been found at elevations of nearly 4,000 feet in some Kaua‘i streams. ‘Ōpae kala‘ole tend to be more abundant in fast-water habitats (i.e., riffles and cascades) in Hawaiian streams, especially if fish are present. These versatile and hardy shrimp are great climbers and their habit of scurrying up the wet face of waterfalls allows them to inhabit the highest sections of Hawaiian streams.

Similar to our native stream fish, ‘ō‘ōpū, ‘ōpae must pass through a stream mouth two times to complete their life cycle, and access to and from the ocean is the most important factor required for the continued existence of endemic ‘ōpae in streams. In Hawai‘i, a combination of alien species, stream channelization, and stream diversions for agriculture can eliminate or significantly limit ‘ōpae populations within a stream. Also of great concern is the introduction of the grass shrimp, Neocaridina denticulata sinensis, from Southeast Asia into Hawaiian streams. This harmful introduced freshwater shrimp is believed to be responsible for the disappearance of native shrimp wherever it has been introduced outside of its natural range in China.

For more information on plants and animals in the Good Guys & Bad Guys series, visit the Hawai‘i Biological Survey list of Good Guys & Bad Guys at http://hbs.bishopmuseum.org/good-bad/list.html.

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