Chincoteague and Assateague

Located on the Indigenous homelands of the Pocomoke and Occohannock people, Chincoteague National Wildlife Refuge protects beach, dune, marsh, and maritime forest habitats. Established in 1943 to protect migratory birds, this refuge is now one of the most visited in the United States. This gem of Eastern Virginia is a birder's paradise, as well as the home of cultural treasures such as Assateague Lighthouse and the world famous Chincoteague ponies.

Chincoteague Ponies

The famous Chincoteague Ponies are a present-day reminder of Assateague Island's past. Although no one is certain when or how the ponies first arrived on the island, a popular legend tells of ponies that escaped from a shipwrecked Spanish galleon and swam ashore. However, most historians believe that settlers used the island for grazing livestock (including ponies and other farm animals) in the 17th Century to avoid fencing regulations and taxation. Regardless of their origin, the descendants of these ponies are still living here today.

Over the past 200-300 years, these modern-day descendants of domestic horses have adapted to the hardships of living near the ocean. Prior to the refuge's establishment in 1943, the Chincoteague Volunteer Fire Company purchased the ponies and continues ownership to this day. The firemen are allowed to graze up to 150 ponies on refuge land through a special use permit from the U.S. Fish and Wildlife Service.

Assateague Lighthouse

In 1833, the first Assateague Lighthouse was constructed to warn ocean travelers of the dangerous shoals offshore. Construction on a taller, more powerfully illuminated brick lighthouse began in 1860 but was delayed by the Civil War. After the war, work resumed and the lighthouse was completed in 1867. The light was also upgraded that year, to a first order Fresnel lens. In 1891, a separate oil storage building was built, and a new assistant keeper's house was constructed in 1910. In 1929, the keeper staff was reduced. In 1933, the lighthouse's oil lamps were replaced by an electric lamp, and the original keeper's house was removed.

Today the 1910 assistant keeper's house is used as seasonal staff residence. The oil storage building is used as an art gallery during summer months. In 2004, the U.S. Coast Guard transferred ownership of the lighthouse to the U.S. Fish and Wildlife Service. While the U.S. Coast Guard maintains the light as an active navigational aid, Chincoteague National Wildlife Refuge is responsible for preserving the lighthouse. The Assateague Island lighthouse is listed on the Virginia Historic Register. In 2008, restoration of the lighthouse began to preserve this historic treasure. Extensive work was done including repairs to the gallery deck and a new paint job.

Shipwrecks

Shipwrecks along the unpredictable offshore shoals were frequent as coastal trade developed, and "wrecking", or stripping stranded ships of their cargo, became a common practice of some island dwellers. Laws prohibiting this behavior were nearly impossible to enforce. Today, storms occasionally expose shipwreck sites.

Perhaps the most famous shipwreck was the Dispatch, President Benjamin Harrison's official yacht. On October 10th, 1891 the ship ran aground 2.5 miles east, north of what is now the Woodland Trail, and 75 yards from the shore. The 730 ton schooner-rigged steamship was bound for Washington D.C. from New York City when she ran ashore just after 3 a.m. No deaths occurred, but what had once been the official yacht of Presidents Hayes, Garfield, Arthur, Cleveland, and Harrison was a total loss.

Assateague Village

With construction of the lighthouse, development of oyster and other commercial fisheries, and the continuation of livestock grazing, Assateague Village was established during the 1800's to the northeast of the lighthouse. The population grew to 225 by the turn of the century and supported a school, dry goods store, and churches.

By 1915, there were 25 to 30 families in Assateague Village, not including the lighthouse keepers and their households. The village's decline began about 1922, after Dr. Samuel B. Fields of Baltimore acquired most of the land on the Virginia portion of Assateague Island. Fields had his land east of the village fenced and posted. His overseer, Oliphant, who lived in a bungalow across the road from the old Life-Saving Station, refused to permit the villagers to cross Field's property to get to Toms Cove. With their access to the cove cut off, the villagers began to move off the island. Their houses were jacked up, placed on skids, and taken to the waterfront. There they were placed on barges and floated across Assateague Channel to be relocated on Chincoteague Island. The last person to leave the village was Bill Scott, who had operated the village's one general store. Today the village site is marked only by some building foundations and a cemetery.

In 1943, the S.B. Fields family, the principal land owners on Assateague Island, sold their property to the U.S. Government for use as a national wildlife refuge .

Assateague Island National Seashore

In 1965, the National Park Service established Assateague Island National Seashore to provide recreation opportunities to the public on the Maryland side of Assateague Island. While our refuge continued to own and manage the land in the Virginia portion of the island, the seashore took over ownership of the waters surrounding all of Assateague Island from the high to low tide lines. At the same time beach recreation was increasing on both sides of the island. This presented a challenge, since our refuge was established is to prove a sanctuary for migratory and beach nesting birds. Although we also offer wildlife dependent recreation, swimming and other popular beach activities are not compatible with this mission.

Fortunately, our friends at Assateague Island National Seashore have a mission that focuses on preserving public lands for outdoor recreation. So, in 1979 we entered into an agreement with the seashore to designate an area of our refuge where they could provide our visitors with a high quality beach experience. Since both agencies share a conservation priority, we work together to ensure that all recreation activities are provided in a manner that minimizes impacts on wildlife resources.

To this day, beach goers benefit from the hard work of our National Park Service partners. They maintain all beach facilities and provide crucial safety services, such as lifeguards and law enforcement during the busy summer season. They also provide interpretive and educational programming to our visitors and school groups year round.
https://www.fws.gov/refuge/chincoteague/about-us

“DNA evidence may link Chincoteague pony origins to Spanish shipwreck”

By Dave Kindy
August 6, 2022

Before beginning his latest research project, Nicolas Delsol had never even heard of Misty of Chincoteague, one of the fabled feral ponies from the barrier island of Assateague, along the Maryland and Virginia coast. Local legend has it that the horses descended from survivors of a Spanish shipwreck 500 years ago, though that has never been proven.

But now Delsol, a French-born archaeologist, has evidence that the story may be more than just a myth. Delsol unearthed a genetic connection between the wild breed and horses from 16th-century Spain.

Along the way, the doctoral candidate at the University of Florida has become well versed in the children’s book that made the Virginia horse a household name to generations of schoolkids.

“Misty of Chincoteague,” written by Marguerite Henry and published in 1947, opens with the story of a Spanish galleon that runs aground, leaving the horses on the ship to swim to Assateague Island. Centuries later, two children on the island — based on a real family — save up to buy a pony and its foal, Misty.

“It’s a nice story,” Delsol said. “I learned quite a lot of things during my research, especially how the book had such a strong cultural significance on children’s literature in the United States.”

By accident, Delsol discovered DNA evidence linking the Chincoteague ponies to horses that once were ridden on the Iberian Peninsula in Europe. While reviewing the results of genetic tests done on colonial cattle remains found at Puerto Real — a Spanish settlement established in 1507 in what today is Haiti, on the island of Hispaniola — he realized that one of the samples was not from a cow. A single tooth found at the site came from a horse, which had most likely been shipped to the island from Spain.

When Delsol checked DNA from feral and domestic equine populations in North America, he found a very close link between the Puerto Real horse — probably used to herd cattle five centuries ago — and the ponies on Assateague.

"I compared it with modern sequences and found the closest relatives of this horse were the Chincoteague ponies," he said. "At first, I didn't know about this breed, so I didn't think much about it. But then it was like, 'Wait! What's their story?'"

So Delsol did a deep dive and learned that locals believed the ponies came from a sunken Spanish galleon. He read the section of "Misty of Chincoteague" about the horses' scramble ashore from the shipwreck.

"It was amusing to find it mentioned in a novel," he said. "Kind of surprising when you relate it to the high-tech research we are doing."

Delsol and his team of researchers published the results of their study in the scientific journal Plos One on July 27.

While technically a horse, the Chincoteague breed is referred to as a pony because of its small size, which scientists believe is the result of its diet of nutritionally poor marsh grass. The horse is usually multicolored, similar to the American paint horse, also known as a pinto.

Since 1835, residents of nearby Chincoteague Island have been "penning" ponies — removing some of the horses from Assateague for use on the mainland. That practice continues today under federal supervision to prevent populations from getting too large. Today on Assateague, there are about 150 horses on the Virginia side and 80 on the Maryland side of the federally owned barrier island.

Delsol said his research does not prove that the Chincoteague ponies descended from shipwrecked horses, but it certainly lends credence to the theory. Either way, the DNA evidence strongly suggests that the horses came from Spain.

"The horse at Puerto Real and the Chincoteague ponies likely came from southern Europe, probably Iberia, which is where Spain is," he said. "There are earlier studies that hint of an Iberian origin for these horses from Chincoteague, but our study confirms it more strongly."

He added, "However, we still don't know how the horses got to the island — whether they were shipwrecked or if the Spanish landed on this island at some point and left them there, possibly planning to come back for them later."
https://www.washingtonpost.com/history/2022/08/06/chincoteague-ponies-spanish-shipwreck-dna/

Why a Lighthouse?

Prior to 1830, there were no lighthouses along the Delmarva shoreline between Cape Henlopen, Delaware and Cape Charles, Virginia, a distance larger than 100 miles with a significant amount of barrier islands stretching the coast. Offshore of Assateague Island, mariners struggled with dangerous shoals and with navigating the Chincoteague Inlet. With increased vessel traffic along the eastern seaboard, concerns about this area grew. On March 3, 1831, Congress appropriated $7,500 to build a lighthouse on one of the islands between Cape Henlopen and Cape Charles. After a trip to find a suitable location for the lighthouse, the Superintendent of Lights from Norfolk, Conway Whittle, chose Assateague Island. A deed was signed, purchasing 50 acres of land for $440.

Building the 1833 Lighthouse

The first Assateague Lighthouse was constructed using plans of the generic lighthouse developed by Stephen Pleasonton and Winslow Lewis. At the time, Pleasonton, the fifth auditor of the U.S. Treasury Department, was in charge of lighthouses and navigation aids. Pleasonton awarded the contract to build the lighthouse and a keeper's quarters to the lowest bidder, Noah Porter of Boston, Massachusetts, costing $4,000.

Construction of the lighthouse began in 1832, and per the contract, was to be completed by January 1833 with an advertised first lighting of May 15th, 1833.

The first lighthouse keeper assigned to Assateague Light was David Watson. When he arrived to Assateague in April 1833, Watson informed Conway Whittle that he did not have any oil or other necessary supplies to light the tower. The exact date of the initial lighting is unknown but occurred sometime in the spring of 1833.

Assateague VA Lighthouse plan

After receiving numerous complaints about the ineffectiveness of many lighthouses, Congress established the Lighthouse Board in 1852. The Lighthouse Board was comprised of military personnel and engineers in the Department of the Treasury, and oversaw the design, placement, and operation of all lighthouses in the United States. They inspected a large number of coastal lighthouses, and revealed that 36 needed immediate replacement, including Assateague Island Lighthouse as a mid-level priority.

By 1859, Congress recommended the replacement of Assateague's lighthouse. The following text appeared in the Report of the Secretary of the Treasury, on the state of the Finances for the year ending June 30, 1859: "The light-house at Assateague, on the coast of Virginia, has been represented to the board as inefficient. The present state of the structure and illuminating apparatus will not admit of any greater efficiency. The dangerous Black Fish and Winter Quarter shoals extend fourteen miles seaward from Assateague, and the existing light does not show outside of them. It is respectfully recommended that this light be replaced by a first order light-house, 150 feet high, to be constructed of brick. The cost of such a structure will be $50,000."

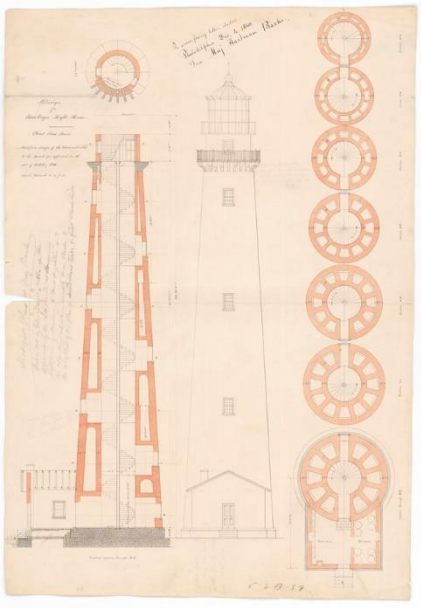
The lighthouse was deemed too dim and too short to be fully effective at warning mariners of the dangerous shoals. The light was further obscured by a stand of loblolly pines that were on adjacent private property.

On June 20, 1860, Congress allocated the $50,000 for the construction project, with preliminary work starting the following year. A wharf, a plank road, and workers housing were completed, but the onset of the Civil War diverted the funds and halted construction on the tower. The 1833 lighthouse remained lit for most of the war.

Civil War

Due to the seafood industry being the primary economy driver of the time, residents of Chincoteague and the surrounding islands chose to remain with the Union to maintain connections with the seafood markets to the north. Confederate successionists from the mainland pilfered the lamp from the lighthouse, rendering it useless. The light was quickly recovered and placed back into service, but not without Union troops stationed at the base of the tower guarding it, preventing any other attacks.

Once the Civil War concluded in May 1865, talk about the state of the first lighthouse at Assateague continued. The Report of the Secretary of the Treasury, on the state of the Finances for the year ending June 30, 1865 described the worsening condition of the lighthouse: "The increased dilapidation of the present tower of Assateague has obliged the board to take measures for building a new one, as authorized by act of Congress. The execution of this work has been postponed, however, on account of more pressing wants in other branches of the service. It is now believed that there should be no further delay, and measures are in progress to build a new first class tower for this important sea-coast station. It is found, however, that the sum available for this purpose is insufficient, on account of the rise in the price of materials and labor, and an estimate to cover the additional cost is submitted."



Congress allocated an additional $25,000 to compensate for the rise in labor and materials cost.

The 1867 Lighthouse

Construction resumed on the new lighthouse in 1866, using lime made on site out of oyster shells. The bricks for the tower and the stone for its foundation were shipped in by boat and hauled to the tower location by oxcart.

The Report of the Secretary of the Treasury, on the state of the Finances for the year ending June 30, 1866 described the continuation of work on the tower: "At Assateague the work is going on in a satisfactory manner. During the year the preliminary works erected in 1860 and 1861, such as the wharf, plank road, and workmen's quarters which had decayed, have been repaired, the masonry has been removed, new foundations established, and on the 1st of September the new tower of brick-work has reached the height of thirty-seven feet. The work will be continued as long as the weather will permit."

On December 13, 1866, work was suspended for the winter, and the brick tower stood 95 feet tall. Work resumed on March 1, 1867, with the tower being completed later that year. Reaching a completed 140 feet tall, the lighthouse became operational on October 1st, 1867. The tower was accentuated by its position on top of a large dune ridge, raising the tower another 22 feet above the mean low water mark.

The conical tower narrows from a diameter of 28 feet at its base to 18 feet at its lantern room. Iron braces were used throughout the tower's height to add strength and stability. A cast-iron six-landing spiral staircase leads to the lantern room, with windows at each landing lighting the interior.

Two years after operation began, waterfowl were so thick on the island that the keepers had to install wire screens around the lamp to keep them from flying into it.

In 1939, the U.S. Lighthouse Service was absorbed by the U.S. Coast Guard, transferring responsibility of the lighthouse.

In 2004, it was transferred from the jurisdiction of the U.S. Coast Guard to the U.S. Fish and Wildlife Service. The U.S. Coast Guard still maintains the light at the top of the tower and the Assateague Lighthouse remains an active navigation aid. In 2008 and 2013, an extensive restoration occurred to replace windows, rebuild the lower gallery deck, and repaint the tower.

Fresnel Lens at the Museum of Chincoteague Island

The original lighting for the 1833 lighthouse was a modified Argand-style lamp developed by Winslow Lewis. It was a chandelier-type arrangement, with 11 burners in fixed positions and 14-inch metallic reflectors, using whale oil and candle wicks. This design tended to draft poorly, causing the lamps to soot quickly, and required the lighthouse keepers to constantly clean the reflectors.

In 1856, a third-order Fresnel (pronounced Frey-nel) lens replaced the antiquated lamps and reflectors to increase visibility until a new lighthouse could be built.

The first lamp in the 1867 lighthouse was a fixed first-order Fresnel lens using a single fish oil lamp. Due to the rising cost of whale and fish oil, the Lighthouse Board switched to using kerosene, which was cheaper. Kerosene, however, was much more flammable, and could not be safely stored inside of the lighthouse. An oil shed was built in 1892 to the right of the tower to store the kerosene safely.

In 1907, a piece of ruby-red glass was placed in part of the lantern room to create a red sector in the light. Three 100-watt light bulbs were placed inside of the Fresnel lens in April 1933, replacing oil with electricity. An array of batteries replaced the oil in the oil house and were charged by a pair of 2,000-watt generators, running for about 15 hours each week. An astronomical clock was added as well, turning the light on and off each day, eliminating the need for a resident keeper. A lighthouse keeper still needed to visit the site to replace and charge the batteries once a week.

Power lines were run to Assateague in 1961, allowing the lighthouse to now operate on commercial power, and eliminating the need for batteries and generators. A new type of light replaced the first-order Fresnel lens atop the lighthouse: two DCB-36 Rotating Beacons. This system is made up of two 36-inch drums using Fresnel-type lenses to focus light from a 1000-watt lamp, greatly increasing the intensity of the light. A Daylight Control Monitoring System is used to turn the beacon on at sunset and extinguish it in the morning. Emitting 1.8 million candlepower, the lighthouse is now visible up to 22 miles offshore in good weather.

When the first-order Fresnel lens was first removed from the lighthouse, the U.S. Coast Guard gave the lens to the Eastern Shore of Virginia Historical Society, where it was packed and stored away. Locals wanted it back at the site, and after the Virginia Historical Society donated it to the Museum of Chincoteague Island in 1975, it returned to the island and displayed at the base of the lighthouse for all visitors to enjoy. The lens, sitting outside exposed to the elements and vandals, only protected by a chicken wire fence, endured large chips to the reflectors. The Museum of Chincoteague Island received numerous complaints from the U.S. Lighthouse Society, who was dismayed at the condition of the lens, and they promptly covered the lens and eventually relocated it inside of the museum where it remains today.

Daymark & Flash Pattern

The daymark and the flash pattern of the Assateague Lighthouse help it stand out from others. When it was built in 1867, the lighthouse was painted white and required constant repainting. The Lighthouse Board decided to assign each coastal light its own distinctive daymark, or color pattern, allowing mariners to determine their location during the day in the same way that light flash patterns did at night. In 1968, the U.S. Coast Guard painted the lighthouse with 4 red stripes and 3 white stripes, giving the Assateague Lighthouse its daymark.

Prior to 1961, the light atop the tower was a "fixed white" light shining towards the sea. When the Directional Coded Beacons (DCB) were installed, the drums were positioned one on top of the other at a 12-degree difference, creating a unique "flashing" pattern of a double flash every 5 seconds.

https://www.nps.gov/asis/learn/historyculture/assateague-lighthouse.htm

Rescuing Memories of Former Assateague Coast Guards

Encountering the Assateague Beach Coast Guard Station on Assateague Island often comes as a surprise to visitors. Many people are unaware of its presence, or of its 45-year history as an outpost of the U.S. Coast Guard. The Station is a complex of austere but impressive structures. Its appearance is striking against the surrounding changing landscape of beach grass, dunes and sand. Located in a roadless area on the southern tip of the island, Station Number 150 at Assateague Beach, includes a station house, boathouse, lookout tower, and other outlying structures. For 71 years these resolute buildings weathered the test of time. In April of 2003 four Coast Guard "old-timers" returned to the Station to unlock some of its history. Instead of bringing implements of research they brought with them something more valuable – memories.

Oral history is a term used to describe stories told by individuals about their past. Recording oral histories is the best means to preserve historical jokes, expressions, achievements, adventures, struggles and relationships of bygone days. The National Park Service is striving to do more to preserve oral histories associated with places like the Coast Guard Station. With this in mind, Kara and Richard Funk, a husband and wife team with extensive experience in Eastern Shore heritage preservation, were contracted by the National Park Service to locate individuals and conduct a series of oral history interviews. They enthusiastically went about talking to local Chincoteague residents and quickly located four individuals who had first hand knowledge of the Station: Edward "Popsicle" Lewis, a former officer in charge of the Station, Kenny Johnson, a former cook at the Station, as well as Frank Williams and Louis Bitner, who served there. A professional National Park Service videographer and a soundman were enlisted for the job. The Station itself was selected to be the backdrop for the interviews. What followed was a day that will long be remembered.

Using a National Park Service four-wheeldrive Suburban, the participants were shuttled to the place that had once been their home. The former "crew" walked about the grounds, bantered with one another, and began recalling what they remembered about each landmark. "That wasn't here in my day", said Popsicle Lewis pointing to a 1960's era cinderblock structure near the Station House. Staff scrambled to set up sound equipment, lights and a video recorder. One at a time the veteran guardsmen took their turns on camera. All were eager to share their stories.

These were the days before there was a bridge to the island, and Frank Williams remembered when he was first ferried there by surf boat. After a docking mishap at the boathouse, that caused a "fuss" between the pilot, Bill Daisy, and the officer in charge of the Station, Elmer Lunn, Mr. Williams said he was worried he'd made a big mistake in coming to
Assateague. The young boatswain threw his sea bag on the dock, scrambled up, and stood at attention. Mr. Lunn put his arm around his shoulder and said warmly, "We're tickled to death to have you here, Frank. You don't know how badly we need you. Come on up to the Station. Supper's ready." Mr. Williams said he would never forget how good those words sounded to him on that day, and he said he came to know Mr. Lunn as a very fair and kindhearted man.

Popsicle Lewis told how, as a young boy, he liked to visit the Station and how a former Chief, George Pruitt, took him under his wing and inspired him to want to join the Coast Guard. Certainly the presence of visitors must have made life at the Station more distracting. Kenny Johnson told of an old waterman who was a regular visitor who came by to take naps and get free meals. Mr. Lewis recalled how a couple landed a plane at the site to pay a visit. Mr. Williams recalled the USO coming to show movies at the station. The men invited an elderly couple from the old Assateague Village who hadn't seen many "talking picture shows" before.

As many as 12 to 15 men lived at the station and followed a routine of cleaning, maintenance, patrols, watchtower duty and drills. During World War II there were Army horses to ride on beach patrol. Frank Williams recalled that they had "some of the hardest riding saddles you ever saw in your life." One guardsman, he said, ended up with "two great big blisters on his back end." There was little free

time, but what free time they did have, was spent playing cards, horseshoes or baseball, clamming, fishing and occasionally using a shotgun for hunting on the refuge. In those days the refuge staff turned a blind eye to many of these hunting activities, perhaps because they wanted to give these young servicemen a break, or perhaps they wanted to be invited to dinner.

In the summers the mosquitoes could be a problem. “We didn’t have lotions back in those days,” recalled Mr. Lewis. They would cover up with an oilskin hat, netting, long sleeves, gloves and boots to keep from getting eaten up. In the winters there were some serious nor’easters that hit the island. During storm conditions many duties were curtailed, but not the watchtower duty. It sometimes became necessary to take to sea in the most inclement conditions when boats were spotted on the shoals. But listening to the former Coast Guardsmen it was obvious they took it in stride. There was nothing they liked better than helping those in need or distress. “I loved lifesaving,” said Mr. Lewis, “you felt like you were doing something good for everyone you dealt with.”

Watching these men talk, their eyes sparkling bright like lighthouse beams, you could see how important this moment was for them. Not just because it rekindled old memories, but because they seemed to realize they were talking to some future generation—people they would never meet—but who would come to know the Station through their eyes.
https://www.nps.gov/asis/learn/historyculture/rescuing-memories-of-former-assateague-coast-guardsmen.htm

Animals

Despite the often harsh conditions that occur in a coastal environment, a wide variety of animal species have managed to find a niche on Assateague Island. Each of the island’s different ecological zones provides habitat for a multitude of animals, including birds, mammals, reptiles, amphibians, and invertebrates. While Assateague’s wild horses are perhaps the island’s best-known inhabitants, other large mammals also roam the park, grazing and browsing on low-lying vegetation. These include the white-tailed deer (*Odocoileus virginianus*) and the non-native sika deer (*Cervus japonica*), a diminutive species of Asian elk introduced to Assateague during the 1920’s.

Other inhabitants are less conspicuous than the large mammals. Seven species of frogs and toads depend on fresh water ponds in the center of the island for breeding, and a variety of snakes, such as the black rat snake (*Elaphe obsoleta obsoleta*), can be found across the forests, dunes, and marshes preying on rodents, small birds, or toads. Numerous invertebrates such as fiddler crabs (Uca sp.) and mud snails (*Nassarius sp.*) play key roles in maintaining the health of the island’s salt marshes. Even the seemingly barren beaches provide habitat for nocturnal ghost crabs (*Ocypode quadrata*), red fox (*Vulpes vulpes*), and raccoons (*Procyon lotor*), who scavenge the crustaceans, fish, and other organic matter washed in by the tides.

Each fall, large flocks of waterfowl such as snow geese (*Chen caerulescens*) begin arriving at Assateague where they will spend the winter traveling between the sheltered bay and salt marshes and farm fields on the mainland. Many bird species make their home on Assateague on a seasonal basis. Shorebirds by the tens of thousands depend upon the island’s protected foraging and resting areas during their twice-yearly transcontinental migrations.

Each spring, summer flounder migrate into the waters around Assateague to feed. Finally, the coastal waters that surround Assateague Island teem with animal life. The sheltered, nutrient rich waters of the estuary formed by the island provide ideal breeding and spawning habitat for many aquatic species, some of which, like the blue crab (*Callinectes sapidus*), are commercially important to the local area. Each spring a variety of fish, including spot (*Leiostomus xanthrurus*), Atlantic menhaden (*Brevoortia tyrannus*) and summer flounder (*Paralichthys dentatus*) migrate into the estuary to breed. Later, the juvenile fish provide an abundant food source for birds, marine mammals, and larger fish.
https://www.nps.gov/asis/learn/nature/animals.htm

Plants

From sandy beaches along the island's seaward side to salt marshes on the western bay, Assateague hosts a wide variety of vegetative communities. A diverse array of environmental conditions - elevation, the availability of fresh water, distance from the ocean, the movement of sand, storm-driven winds and seas - all work to shape these communities, as each species has developed adaptations to the unique challenges of the zone in which it lives.

Plants living on the beach and dunes must withstand some of the harshest conditions. Continuous exposure to strong, salt-laden winds, constantly shifting sands, low substrate moisture, and intense summer heat all contribute to a landscape that is less than 1% vegetated. Plants like sea rocket *(Cakile edentula*) have fleshy, thick-skinned leaves to store water and withstand the salty environment of the

beach and lower dunes. Higher up the dunes, American beachgrass (*Ammophila breviligulata*) adapts to shifting sands by growing additional stems when buried, thus helping to bind the substrate and reduce erosion.

In the sheltered zone beyond the dunes where fresh water is more plentiful, vegetative cover jumps to 80% and is predominantly characterized by less salt-tolerant shrubs, thickets and wildflowers. Here, taller plants undergo a natural pruning process, as salt winds blowing over the dunes limit their height. Common species in these areas include wax myrtle (*Myrica cerifera*) and northern bayberry (*Myrica pensylvanica*), which provide food and cover for songbirds, small rodents, and rabbits. Other species commonly found among the shrub thickets include blackberry (*Rubus argutus*) and poison ivy (*Toxicodendron radicans*).

Where the island is wide enough to allow sufficient protection from the ocean's salt spray and overwash, trees are able to establish a foothold. The forests of Assateague are predominantly pine woodlands, with loblolly pine (*Pinus taeda*) being the most prevalent tree species. Scrub pine (*Pinus virginiana*), greenbrier (*Smilax rotundifolia*), and muscadine grape (*Vitis rotunifolia*) are also common in the forest understory.

On the mainland side of the island adjacent to the bay, one can find large areas of salt marsh dominated by salt marsh cordgrass (*Spartina alterniflora*), a plant that has adapted to periodic flooding by seawater by releasing salt through its leaves. Within the waters of the bay itself, beds of eel grass (*Zostera marina*) and other submerged aquatic vegetation provide shelter and spawning areas for aquatic animals, while microscopic phytoplankton produces vast amounts of oxygen.

The plant life of Assateague and its surrounding waters mirrors the rich diversity of its habitats, playing a variety of vital roles in the island ecosystem.
https://www.nps.gov/asis/learn/nature/plants.htm