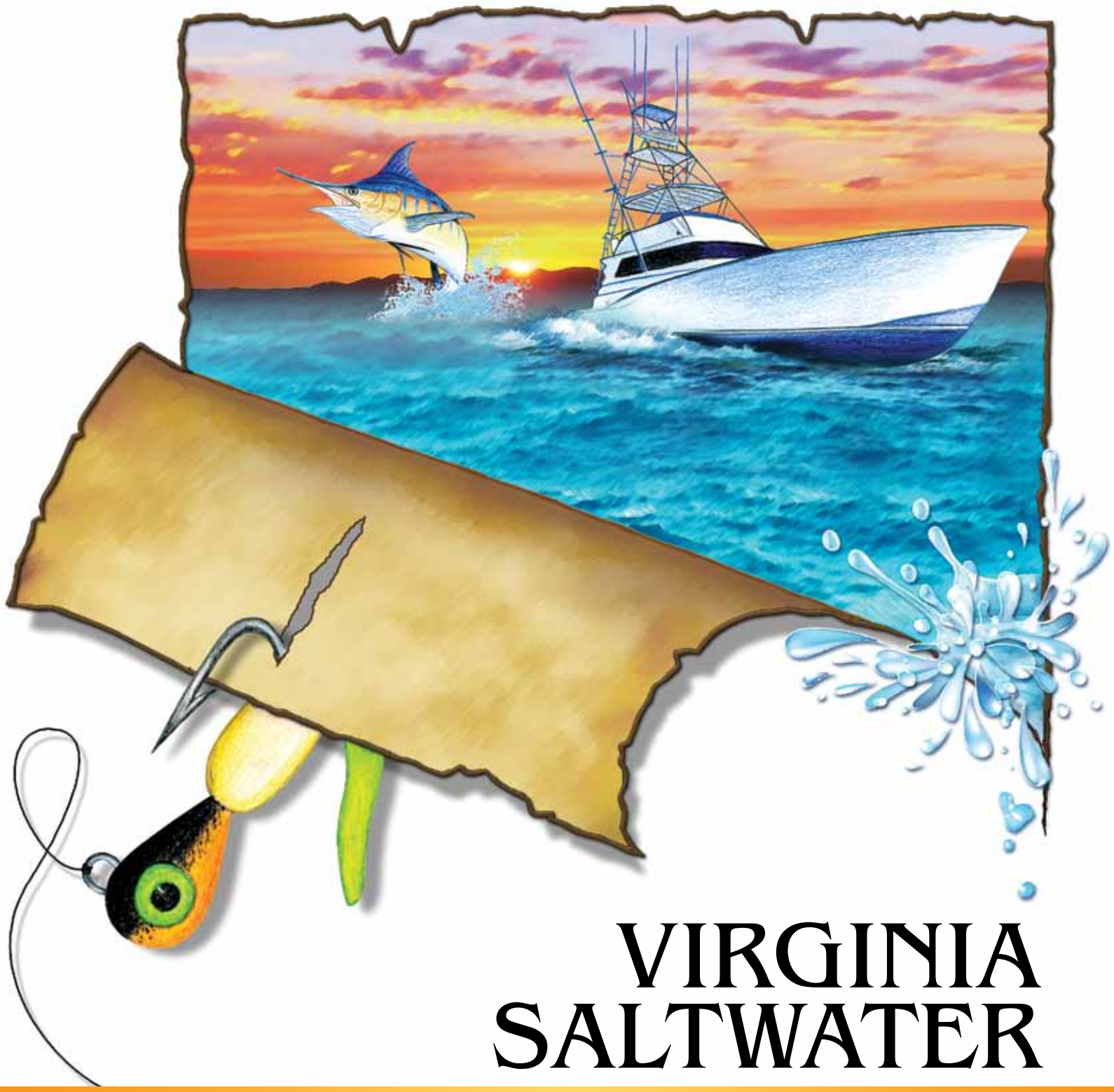

VIRGINIA SALTWATER

ANGLER'S GUIDE

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Cover artwork by Alicia Slouffman. Back Cover artwork by Terre Ittner. Fish illustrations by Duane Raver.
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ANGLER'S GUIDE GREETINGS

Welcome to the Virginia Angler's Guide, a free publication of the Virginia Marine Resources Commission to help recreational saltwater anglers become better fishermen and to encourage responsible stewardship of our natural resources.

Here you will learn what you can catch, as well as where and when to catch it. Here you will find useful angling tips and help identifying that mysterious fish you pulled in.

We'll also show you where to find public boat launches, and give the locations of our man-made reefs. They're fish magnets!

If you land an exceptional fish of a particular species, you may be eligible for a plaque through our Saltwater Fishing Tournament. We'll tell you who to contact about that.

Virginia has some of the world's best fishing in the mighty Chesapeake Bay and its tributaries as well as in the ocean off our beautiful shores. Some record-setting fish have been caught in Virginia waters in recent years, including bluefin tuna, striped bass, king mackerel and croaker.

The biggest fish are yet to be caught. They're out there.

As an avid angler and outdoorsman, I am proud of the conservation efforts we take at the Virginia Marine Resources Commission to ensure our fish populations not only survive but thrive.

So please fish responsibly. Be respectful to others and to nature. Be safe on the water. Abide by the fishing regulations. They're there for good reasons.

Above all, please be stewards of our natural resources so our children and grandchildren can experience the same joy of fishing that we do.

Steven G. Bowman
Commissioner
Virginia Marine Resources Commission

P.S. Thanks for all you do to conserve our marine resources

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VIRGINIA'S MARINE WATERS AND FISHERIES

A series of natural phenomena have combined off the Virginia coast to create some of the richest marine waters in the world. The bounty of these waters is readily apparent to recreational fishermen who pursue a seemingly endless variety of finfish species.

The Chesapeake Bay and its major tributaries join to form the largest and most productive estuarine complex in North America. They supply a vast amount of nutrients into coastal waters and provide a huge spawning and nursery area for many species of fish.

The warm waters of the Gulf Stream flow north along the East Coast until they collide with the cool, plankton-rich waters of the Labrador Current flowing south. The intermixing of these currents occurs near Cape Hatteras, North Carolina, and in adjacent waters. This puts the southern coast of Virginia in the dynamic area where the Mid-Atlantic Bight and South Atlantic Bight are joined, which brings a huge mix of finfish species into local waters. In fact, Virginia is the southernmost range of real abundance for many temperate species of fish and the northern range of abundance for many subtropical species.

The large peninsula that forms the Eastern Shore of Virginia is flanked by a chain of uninhabited and unspoiled barrier islands. These islands protect a rich complex of marshes, bays and sounds that provide a haven for a variety of marine life.

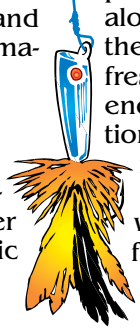
THE CHESAPEAKE BAY

The main portion of the Chesapeake Bay follows the ancient bed of the Susquehanna River and extends for more than 185 miles. Dramatic forces during the Ice Age, which helped shape the Susquehanna Valley, and the rising waters caused by the melting ice cap as the Ice Age ended, transformed the southern portion of this river valley into the vast estuarine complex that today is the Chesapeake Bay.

The Chesapeake Bay continues as the place where several of the great rivers in the eastern United States meet the ocean. The Susquehanna River has the greatest impact on the Bay, contributing, on average, almost 50% of the freshwater flowing into the Bay. The Potomac and the James Rivers provide more than 15% each, leaving less than 20% for the combined contribution from more than a dozen other rivers. The rivers and adjacent lands comprising the Chesapeake Bay watershed cover more than 64,000 square miles, and the shoreline extends for more than 11,000 miles (approximately 4500 miles on the main portion of the Bay).

Water also flows into the Chesapeake Bay from the Atlantic Ocean. A relatively constant inward flow of ocean water occurs along the bottom. These ocean waters, rich with salts and minerals, are heavier and denser than the freshwater flowing down the rivers into the Bay and out its mouth in the upper portions of the water column.

The mixing of ocean and river waters in the Chesapeake Bay produces waters that are variably salty and fresh, often changing based upon short term weather phenomena, long term weather or climatic patterns, tides, depth and location. Certain patterns, however, remain constant. Bay waters along its eastern side are saltier than waters along the western shore. This is due to large inflows of freshwater from the western rivers and a phenomenon called the Coriolis force – a result of the rotation of the earth that "pulls" the denser saltwater north along the eastern side of the Bay.



Tides, which are the rise and fall of ocean waters caused primarily by the gravitational forces of the sun and moon, create variations in

Many anglers believe the Gulfstream waters harbor the most magnificent game fish found anywhere in the world. For a combination of power, speed and "greyhounding" jumps, no fish in the ocean can match the magnificent blue marlin.

salinity. Tidal movements originate at the mouth of the Bay and, during periods of high or incoming tides, move up the Bay in a "wave" to the upper portions and into the tributary rivers. As the ocean water rises toward high tide the salinity increases, while the opposite occurs as the tide falls or ebbs. The "wave" of tidal water takes time to physically move up and down the Bay, causing differences in the times of high and low tide among places near the mouth of the Bay and those farther up the Bay or in the tidal portions of the tributary rivers. The variation in time can be as much as 5 to 6 hours.

Events with seemingly little connection to the Bay can have major impacts upon salinity levels and water flows. Heavy rains in the western Virginia, Maryland and Pennsylvania mountains may create flash floods which can send pulses of nutrient-laden freshwater down major rivers, dramatically affecting salinity levels. These pulses are called "freshets" as they reach the brackish waters of the rivers near the Chesapeake Bay, and these sudden changes in salinity can have pronounced impacts upon marine life. In fact, the torrential rains in Pennsylvania associated with Hurricane Agnes in 1972, which created epic flooding from the Susquehanna River, had catastrophic effects upon the Bay. This may have been the "triggering mechanism" for the disappearance of vast areas of underwater sea grasses in the Bay. Unfortunately, the sea grasses have never recovered, probably due to a combination of pollution, turbidity and excess nutrients associated with the Bay's water quality problems.

Changing salinity levels and water flows are not the only dynamic forces impacting the Bay environment. Water temperatures vary dramatically on an annual basis, probably having the highest average annual variance of any location on the East Coast. Winter often produces skim ice and even harder freezes on the lower Bay tributary rivers, and several times in the last century portions of the main stem of the Chesapeake Bay have been covered with ice. Summertime surface water temperatures in shallow bays may approach, or exceed, 90 degrees. Sudden changes in temperature, which may occur during extended cold snaps in the fall or early winter, can cause water temperatures to drop dramatically. This is particularly true when the cold weather is accompanied by heavy snows or cold rains, which directly enter the Bay. Heavy snows as far away as adjacent mountains, which lower the water temperatures in the tributary rivers, can affect the Bay. Surges in water flow and sudden water temperature changes can result in severe stress to fish and other marine life.

Climatic forces with seemingly no connection to the Chesapeake Bay can have major impacts on long-term salinity levels, water flows and temperatures. Scientists now know that the El Nino cycle, the warming of the water moving north in the Pacific Ocean, produces greater precipitation in parts of the eastern United States, including part of the Bay's watershed.

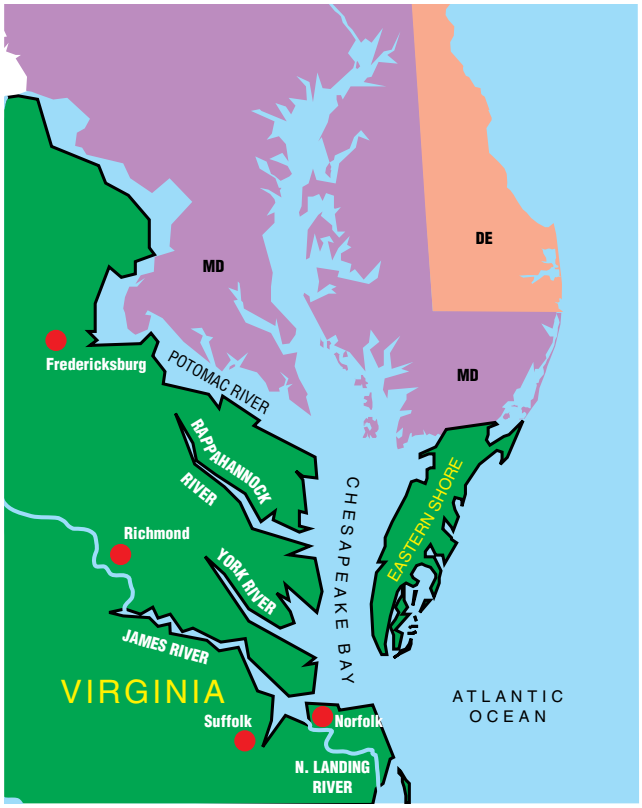
La Nina, the opposite situation involving cooling Pacific waters, creates drier conditions in these same eastern U. S. areas. These cycles may last for periods spanning several years.

The North Atlantic Oscillation, a cycle involving the location of the predominant high and low pressure systems over the Atlantic Ocean that may last for a decade or longer, can affect the Bay. When the pressure over Iceland is low and is high over the Azores, wetter weather results in the eastern United States. Drier weather occurs when the pressure is high over Iceland and low over the Azores.

Long-term increases in freshwater flowing into the Bay system during "wet" climatic periods not only affect salinity, but also the delivery of nutrients and pollutants. The more freshwater runoff into the Bay watershed, the greater the amount of nutrients delivered to the system, and this can have an adverse impact on water quality.

Because this environment can change so quickly, exhibits such extremes on an annual basis, and can vary dramatically over extended periods of time, the marine life found in the Chesapeake Bay is among the hardiest and most adaptable found anywhere in the world. And, while life in these dynamic surroundings is not easy, estuarine environments are extraordinary in their richness and diversity of life. Most of the commercially and recreationally important finfish species of Virginia spend a portion of their lives in an estuarine environment.

Estuarine communities begin with intertidal salt marshes. These low areas, characterized



by muddy tidal flats, spartina grasses, and small creeks, are nature's "buffer" zones. They provide filtering areas that trap nutrients and, in recent years, pollutants, preventing them from overburdening the tidal rivers and bays. The tidal marshes are teeming with life from the ever-present snails, fiddler crabs and worms to shrimps, "fundulus" minnows, blue crabs and juvenile fish.

Unfortunately, intertidal salt marshes and wetlands have been disappearing in modern times due to the increasing pressure to develop waterfront properties caused by the desire of more people to live near the coast. While this trend continues, the rate at which marshes and wetlands have been declining is slowing, as regulations have focused efforts on environmentally "friendly" development which provides some protection for these critical and sensitive areas. Continued protection of tidal marshes and wetlands is a key component in maintaining the water quality of the Chesapeake Bay and preserving much of the marine life in the Bay.

Forests are another key element in the Bay watershed. Much of the surrounding land was forested in years past, providing another mechanism to help control soil erosion, flooding, and runoff. As forests were cut down to make way for farms, towns and housing, soil erosion and runoff increased, resulting in the increased delivery of nutrients and pollutants into the Bay. Preserving and creating vegetated and forested "buffer" zones around the shoreline are another key component in restoring the water quality of the Chesapeake Bay.

Seagrasses, mainly eelgrass, thrive in shallow waters, often growing best in waters that are somewhat protected from excessive wave and current movements. Seagrass provides protection for many small fish and molting blue crabs, making this habitat attractive for numerous game fish.

In addition, seagrass beds serve a filtering role, helping sediments to trickle to the bottom, which produces better water clarity. Seagrass beds dissipate wave energy, which helps to reduce shoreline erosion and improve water clarity. Ironically, many scientists believe excessive runoffs, a form of non-point source pollution which causes increased water turbidity, were responsible for killing many seagrass beds in the Chesapeake Bay during the 1970's. This may have been exacerbated by the huge impact of the torrential rains and massive floods associated with Hurricane Agnes in 1972. So, while seagrasses are important in preserving and improving water quality, it may have been poor water quality that killed massive seagrass beds 30 years ago.

During the last twenty years, however, the Chesapeake Bay clean-up initiatives have focused on controlling agricultural and urban runoff, and seagrass beds began making comebacks. Unfortunately, the recovery seemed to level off in recent years, and the warmer than normal Bay water temperatures during the summer of 2005 caused a significant defoliation that may have impacted recovery efforts and natural seagrass processes. In many ways the health of seagrass beds may be a good measure of the health of the Bay, since thriving seagrass beds require good water quality—specifically low levels of suspended sedimentary runoff, nutrients, pollutants and phytoplankton, to thrive. Healthy seagrass beds are crucial to a healthy Bay.

Another issue affecting the Bay is the level of dissolved oxygen (DO) in the water column. In recent years there has been an apparent increase in size and time span of Bay "dead zones" – areas with low oxygen levels (hypoxic) or no dissolved oxygen (anoxic). This is an acute problem, occurring most often in summer months in upper portions of the Bay, since fish and shellfish need water rich in oxygen to breathe. The cause is increased blooms of algae in Bay waters – a result of too many nutrients, mainly nitrogen, appearing in the runoff entering the water. As the algae die and fall to the bottom, the decomposition process uses oxygen creating hypoxic areas near the bottom. Since the 1960's the area in the Bay affected by hypoxic water has more than tripled, affecting as much as 40% of the mainstem of the Bay. The time span of the dead zones also has increased, appearing earlier in the spring and remaining later into the fall.

Oyster rocks and bars are the major type of natural "reef communities" in the Chesapeake Bay and were once a trademark landmark in the Bay ecosystem. A myriad of small inverte-

brates are attracted to the oyster rocks and contribute to the food chain. In turn, these "live bottom" areas attract a host of small finfish, which are sought out by even larger game fish.

Oysters are filter feeders and acquire their food by straining plankton and nutrients from the water column. This has proven to be an important component of maintaining the Chesapeake Bay's water quality. At the start of the 20th century oyster rocks rising ten feet off the bottom were not uncommon. Oysters were so numerous they possessed the capacity to filter an amount of water equivalent in volume to the entire Chesapeake Bay in less than a week. Disease, pollution and overharvesting have reduced oyster populations to a fraction of that level, and today's population of oysters would take nearly a year to filter the water volume of the Chesapeake Bay. Rebuilding the oyster population is a major priority of fishery managers and a key component to water quality improvement in the Bay.

Another concern in recent years has been the key ecological role played by some of the Bay's prime forage fish, especially menhaden and bay anchovies. Menhaden are the other major filter feeder associated with the Bay, thus serving both as forage for many important recreational fish and a component in the Bay's water quality equation. Since menhaden also support an industrial reduction plant in Reedville, the status of the menhaden population has become a major management and political issue in recent years. Efforts are being mobilized for more detailed study of menhaden in an effort to determine how to best manage this ecologically important fish.

The Chesapeake Bay offers a tremendous variety of recreational fishing opportunities, and no fish is more symbolic of the Bay than the striped bass. The Chesapeake Bay is the largest spawning and nursery area for striped bass on the East Coast. As much as 80% of the coastwide migratory population is thought to have been spawned within the tributaries of the Chesapeake Bay.

Striped bass, like shad and herring, are anadromous; this means they spend the majority of their lives in saltwater but return to freshwater rivers to spawn. They can be caught in virtually every portion of the Chesapeake Bay and its tributary rivers. In addition, stripers can be found at some place in the Bay every day of the year. The resurgence of striped bass populations in recent years from the population collapse in the 1970's, which nearly culminated in their listing as a threatened species, is one of the spectacular success stories of modern fisheries management.

But even this success story carries some warning signs. In recent years, mycobacteriosis has been recognized as a concern for the Bay's stripers. This is a disease caused by bacteria in the same family as tuberculosis and "chronic wasting disease". Scientists believe as much as 70% of the Bay's striped bass population may be infected. Most fish evidence the disease in internal organs, such as the liver, but at its more acute level red sores develop on the flesh and skin of the fish. There is no evidence that eating properly cooked fish infected with the disease is harmful to humans, however handling acutely diseased fish with sores can cause a serious infection. Typically, the bacteria enter the human body through cuts in the skin and cause a painful and persistent infection that must be treated with a comprehensive antibiotic regimen. Left undiagnosed and untreated the infection can progress to the point of causing large-scale death of tissue, resulting in the possibility of gangrene. Fish with red sores should be treated carefully, with minimal handling. Use of rubber gloves and an antibacterial, antiseptic wash are prudent precautions. If an infection is suspected, professional medical assistance should be sought immediately.

Striped bass provide just one of several opportunities for small boat fishermen to do battle with adversaries who may weigh 50 pounds or more. In addition, the Bay offers seasonal runs of cobia, red drum and black drum. Red drum and black drum appear in Bay waters in mid-April, while cobia usually appear near the Memorial Day weekend.

The recurrence of seagrass beds in several locations in the Bay may be the reason speckled trout populations have grown in recent years. Speckled trout populations surged in the late 1980's, peaking in the middle 1990's. A fall in the population in the latter part of the decade probably coincided with several cold winters, but large numbers of small fish from 2002-2006 hold the promise of another population surge. Fishing in the fall and winter of 2008 was the best for trophy-sized speckled trout in more than 20 years. The favorite haunts of this popular game fish are shallow water flats with sea grass beds, including those located on the Eastern Shore seaside, and the warm water discharges on the Elizabeth and York rivers.

The Chesapeake Bay is a summertime home for many species of "panfish". Summer flounder, croaker, spot, and small gray trout are the favorite targets for many anglers bouncing baits along the bottom. Small bluefish and Spanish mackerel can be taken by a variety of methods using artificial lures and bait, and in recent

years anglers have learned the methods that are productive for catching the visiting populations of spadefish and sheepshead.

Tautog can be found over wrecks and obstructions in the lower Chesapeake Bay all year but are most active when the water is cool. They remain active throughout the winter, as long as water temperatures remain in the low 40's, or higher.

One of the focal points of fishing in the Bay is the Chesapeake Bay Bridge-Tunnel. Spanning more than 17 miles, this structure is often referred to as the world's largest artificial reef. More than 1.1 million tons of rock was used to build the four manmade islands that anchor the tunnels and more than 5150 concrete pilings support the bridge sections.

COASTAL WATERS

The coastal waters off Virginia are a part of the Mid-Atlantic Bight, which begins at Cape Hatteras, NC and extends well into New England. Coastal waters fall within the area often known as the littoral zone of the ocean. Generally, this refers to the part of the ocean and the ocean floor extending from the shoreline out to depths of approximately 600 feet — the area just beyond the 100-Fathom Line on ocean charts. Off the Virginia coast the littoral zone corresponds closely to the area known as the Continental Shelf. Beyond the littoral zone is the deep-sea zone of the ocean. Off the Virginia coast this starts along the bottom area known as the Continental Slope, where ocean depths rapidly plummet to over 1000 fathoms (6000 feet) and encompasses the remainder of the deep ocean basin.

Ocean waters are classified into two "vertical" zones – the benthic zone and the pelagic zone. The benthic zone refers to waters that are immediately adjacent to the ocean bottom, and animals and plants that live in or on the bottom or are attached to the bottom are known as benthos. All waters above the benthic zone comprise the pelagic zone. The benthic zone found in coastal waters supports both plant and animal life. The benthic zone beyond the Continental Shelf does not support any plant life, since plants need sunlight to exist and sunlight cannot penetrate to depths much beyond 100 fathoms. The benthic animals that live in deep ocean waters depend upon organic matter, mainly comprised of decaying plant and animal life that falls into the deep ocean waters from above for their food.

Pelagic waters harbor both animal and plant life. The plants are free-floating specimens, mainly consisting of phytoplankton, algae, and more developed, non-attached seaweeds. The animal life ranges from microscopic plankton to apex predators, such as various species of sharks, tunas and billfish.

The coastal waters off Virginia are classified as temperate, which means they enjoy a moderate temperature regimen, neither hot nor cold. This does not mean the waters are always hospitable for marine fish, however, since temperate waters are marked with a wide variance of water temperatures during the course of a year.

The surface water temperature off the Virginia coast, as measured at the Chesapeake Light Tower during the forty-five year period of 1961-2005 showed an annual temperature range of approximately 45 degrees. In the winter, the water temperature often fell to 36 degrees and often reached 81 degrees in the middle of the summer. During that 45-year period the temperature extremes recorded were 33 degrees for a low and nearly 85 degrees for the high – a range of over 50 degrees.

The impacts of such a wide temperature range on fish are profound. Temperatures at the warm and cold extremes of the range are not suitable for many species. The result is a transient population of marine fish in the coastal zone, with most species of fish migrating into and out of the area seasonally, depending upon their preference for warm or cool water. Those species that remain in waters of the Mid-Atlantic Bight year round may move to deeper waters to winter, where they often exhibit sluggish behavior characterized by reduced feeding activity.

Other forms of marine life also are impacted by the wide annual variance in water temperature. Plankton thrives in the late spring, summer and early fall, but is conspicuously absent in the winter months. The result is a breakdown in the food chain, resulting in fewer available food supplies for fish that do not migrate.

The relatively flat, featureless sand bottom that lies under the surface of most coastal waters off Virginia is not the type of environment

preferred by most fish. Natural "live bottom" areas, such as the coral reefs often found in southern waters and rock outcroppings of northern waters, are few in this region.

The natural structures in coastal waters that are attractive to fish are underwater hills and lumps, such as the Southeast Lumps, the 26 Mile Hill and the Cigar. However, the most preferred bottom structures in local waters may have been produced by man. The coastal bottom is littered with the sunken hulks of vessels torpedoed by the German Navy's U-boats during World War II, and an active artificial reef program continues to sink habitat for fish. These artificial reefs harbor fish year round, including the best fishing for tautog and sea bass on the East Coast.

The coastal zone might best be described as a giant migratory corridor, which is a function it performs for a tremendously diverse mix of finfish species. For the most part, fishermen are attempting to intercept these interlopers as they head toward their ultimate destinations.

The coastal waters from Cape Hatteras to the mouth of the Chesapeake Bay are where the Mid-Atlantic Bight joins the South Atlantic Bight, and fish indigenous to both areas mingle seasonally. The warm Gulf Stream current mixes with the cold Labrador Current over the edge of the Continental Shelf, and many species ride these waters into this "mixing bowl". This provides anglers with a myriad of fishing opportunities.

Some of the warm water species migrating to coastal waters during the summer months include amberjack, cobia, king mackerel, Spanish mackerel, crevalle jack, spadefish, and even a few tarpon and barracuda. Species that move to northern waters during the heat of the summer, but are present in the spring and the fall include striped bass, bluefish, bluefin tuna, Atlantic bonita, and little tunny.

Coastal wrecks and "hard-bottom" areas harbor good populations of tautog, black sea bass, spadefish, gray triggerfish, and sheepshead. In the past, when northern groundfish populations were larger, pollock and cod could be found over deeper structures. In recent years, anglers have discovered a good population of blueline tilefish over deeper "hard bottom" areas, along with a smattering of southern bottom dwellers, such as snowy grouper and wreckfish.

The surf zone and near shore waters host a variety of feisty, and tasty, game fish, including flounder, bluefish, speckled trout, gray trout, red drum, Spanish mackerel, striped bass, kingfish (roundheads), croaker, spot, and pompano. Many of these species are most abundant in the late spring or the early fall as they are migrating to their summer and winter haunts. A particularly good time to find large numbers of fish moving through near shore waters is after cold fronts and storms in the early fall, which sparks the urge for many species to school and begin their migrations south.

OFFSHORE WATERS

The western edge of the Gulf Stream current brings warm, tropical waters into the mid-Atlantic region. The Gulf Stream comes closest to the coast of the United States off southern Florida, but the eastward protrusion of Cape Hatteras into the Atlantic causes the Gulf Stream to pass within 25 - 30 miles of the coast at this point. The warm current then begins to veer to the northeast as it mixes with the Labrador Current. The western edge passes off the Virginia coast along the edge of the 100 Fathom Curve, which is 60 - 70 miles offshore.

These indigo blue waters are incredibly rich with life, from the blooms of small plankton and invertebrates often associated with lines of drifting Sargassum weed to magnificent blue marlin.

Ocean currents result from the action of the earth's rotation and the ensuing pattern of prevailing winds blowing across the surface of the water. The friction of the wind on the water surface causes waves and sets up the ocean currents. The Gulf Stream is really a huge eddy, swirling in a clockwise fashion in the Atlantic Ocean. Starting in the southern Atlantic, it flows northward along the coast of the United States, veers northeastward crossing the Atlantic toward the southern portion of Great Britain, continues to curve toward the southeast and south, finally returning in a westward flow just north of the equator bolstered by equatorial trade winds.

Ocean currents and flows also can be caused by the mixing of warm and cold waters. Cold water is denser than warm water, so it sinks toward the bottom. Warmer water flows in to replace the sinking cold water, setting up a pattern of circulation. This mixing and flow can be enhanced when currents flow over areas with changing bottoms, which can cause these warm or cold waters to veer upward, enhancing the movement caused by differences in temperature.

The ocean bottom in the area of the 100-Fathom Line provides the best natural structure in ocean waters off the Virginia coast. Here, the

Continental Shelf ends and water depths plummet. Sheer rock walls, rock outcroppings and mounds abound on the bottom. In the space of a few miles, water depths tumble from 100 fathoms to over 2000 fathoms. The Norfolk and Washington Canyons are two areas where deep waters intrude well westward into the Continental Shelf.

The sharply changing terrain of the bottom causes subsurface currents to veer toward the surface, creating "upwellings" of cooler, denser water which push nutrients to the surface. Swirling eddies of warm water break off the Gulf Stream and often head west onto the Continental Shelf. Cool water eddies also invade shelf waters from the southern moving Labrador Current. These types of actions cause sharp water temperature changes to occur at the surface, bring nutrients into areas attracting a myriad of marine life including game fish, and establish a pattern of dynamic water movement.

Many anglers believe Gulfstream waters harbor the most magnificent game fish found anywhere in the world. For a combination of power, speed and "greyhounding" jumps, no fish in the ocean can match the magnificent blue marlin. Reaching sizes in excess of 1000 pounds, the blue marlin is considered the ultimate test of angling skill and sheer endurance. Its smaller cousin, the white marlin, is the most acrobatic of the billfish and can be particularly tough for anglers to hook. Both species are readily available off the Virginia coast, and in the late summer and early fall some of the best fishing for white marlin in the world occurs off Virginia.

Three additional members of the billfish family are occasionally encountered off the Virginia coast, although none can be considered abundant. Sailfish and spearfish regularly surprise anglers trolling for their larger and more abundant cousins, and anglers fishing in the offshore canyons at night during the latter part of the summer have the chance to hook a swordfish.

The wahoo has the reputation as the fastest game fish in the ocean, and the dolphin, with its dazzling blue, green and yellow coloration, is among the most beautiful. Dolphin are plentiful off the Virginia coast, particularly around floating structure such as boards, pallets and other "flotsam", and around concentrations or "lines" of Sargassum weed. Wahoo are most abundant in September and early October.

The tunas are well represented in Gulfstream waters, with yellowfin tuna, bluefin tuna and bigeye tuna the most abundant and most sought after by local charterboat fleets. Schools of albacore, blackfin tuna and skipjack tuna also are occasionally encountered.

The area on the fringes of the Gulf Stream, which is teeming with life, is a prime location to find the ocean's top predator – the shark. Great hammerhead sharks often can be seen swimming near the surface in the ocean canyons, but seldom attack a trolled bait. Blue sharks are most numerous in offshore waters, but the mako shark is the predator most prized by recreational fishermen. The mako is noted for its blistering speed, twisting jumps, and quality on the dinner table. The spring and early summer are the times to find mako sharks off the Virginia coast, since they prefer cooler waters and often follow schools of bluefish and tuna on their northern migrations.

EASTERN SHORE BARRIER ISLANDS

Virginia's Eastern Shore, a peninsula which begins at the border between Virginia and Maryland and extends to the mouth of the Chesapeake Bay, is flanked on the east by a stretch of uninhabited barrier islands. Between the barrier islands and the mainland is a network of shallow bays, channels, and saltwater marshlands that are among the richest and most productive remaining on the Atlantic coast. This barrier island complex, which includes more than 70 miles of coastline, is the longest stretch of natural beach remaining on the East Coast.

The barrier islands are narrow strips of sand that are frequently overwashed by high tides and storms. The winds and surging waters associated with coastal storms are constantly reshaping the islands. New inlets form as old ones close, marshes are covered as portions of the islands move to the west, and the shape of the beach changes as new points, sloughs and sandbars are formed. The dynamic nature of these islands is the primary reason permanent settlement by man is impractical, and why these islands remain in a natural state.

The islands provide the mainland with protection from the devastating impacts of coastal storms, particularly northeasters and hurricanes. The primary energy of the tides and waves is absorbed by the islands, buffering the mainland from the severest forces of erosion.

The islands are a nesting sanctuary for at least 23 species of colonial nesting birds, including the extremely rare piping plover. They also provide resting and feeding areas for more than 250 species of migratory shorebirds, songbirds, raptors, and waterfowl.

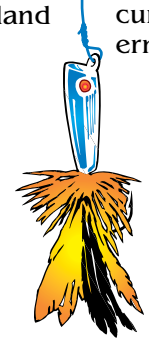
The marshlands behind the barrier islands function in the same manner as the marshes of the Chesapeake Bay. They provide a "buffer" zone for run-offs coming from the mainland. Sediments, nutrients and pollutants are trapped in the marshes, and organic material is slowly released into the water. This provides an indispensable source of nutrients to this estuarine system, while maintaining water quality by preventing too many nutrients, sediments or pollutants from entering the system at one time.

The nutrients provide a source of food for a variety of marine life, including juvenile fish and shellfish and make this area a major nursery ground for several species of fish. The richness of the waters also attracts a variety of game fish.

However, even the seaside bays and marshes, in their relatively undisturbed condition with some of the best water quality remaining on the Atlantic coast, have not escaped the infirmities affecting most coastal areas. Run-off from the mainland occasionally enters the seaside marshes in quantities that overburden the system with sediment and contaminants. Submerged seagrass beds, which were abundant in many seaside waters at the start of the twentieth century, disappeared in the 1930's and have shown little sign of recovery through the 1990's. Since 2000, efforts to re-seed historically productive areas are showing promise. Oysters and oyster rocks provided natural "reef communities" in many places along the seaside in years past, but only a fraction of the oyster population remains today.

Even so, seaside waters offer a variety of fishing opportunities. The summer flounder is the undisputed king of the Eastern Shore's Seaside for recreational fishermen. They are abundant from April through September in virtually every inlet, bay and channel behind the barrier islands.

Seaside waters also harbor good populations of gray trout (weakfish), black drum, red drum, bluefish, croaker, spot, kingfish (roundheads), and Spanish mackerel. Local anglers have discovered a dependable fishery for speckled trout along the seaside marshes in recent years, and the only viable recreational fishery for tarpon in Virginia occurs in the "back country" marshes of the southern portion of the seaside.



The relatively protected waters behind the barrier islands make this an ideal place for anglers with small boats to fish. Access is easy with most seaside communities providing excellent launching facilities.

Surf fishing can be superb on the barrier island beaches, highlighted by the spring and fall fisheries for big red drum. Bluefish, striped bass, black drum, gray trout, flounder, kingfish, croaker, and spot roam the beaches seasonally.

Assateague Island, the northernmost barrier island, is a part of the National Seashore system operated by the National Park Service. A causeway provides access for surf fishermen, who can park at numerous areas along a road that runs behind the oceanfront dunes. Four-wheel-drive vehicles are allowed to drive on designated portions of the beach at certain times of the year. Information about usage of the beach may be obtained from Assateague Island National Seashore, P.O. Box 38, Chincoteague, VA 23336, (757) 336-6577.

Most of the remainder of the barrier islands and some of the marshland is owned by the Nature Conservancy, which ensures these areas will be protected in their natural state. The only access available to these islands is by boat from the mainland, then a walk down the beach to a favorable spot for surf fishing.

The Virginia Coast Reserve, the program of the Nature Conservancy that administers the barrier islands preserve, has specific policies regarding the public use of these lands. Most of the barrier islands are open to the public for day use, including such activities as surf fishing, hiking, swimming, birdwatching, picnicing, and photography. Parramore, Ship Shoal, Little Cobb, and Revel's Islands are not open for public use. Visitors are requested not to disturb nesting birds and bird colonies, research sites and the natural qualities of the islands. Certain activities are not permitted, such as fires, overnight camping, pets, and motorized vehicles. Information about the Virginia Coast Reserve, including membership options for this premier conservation group and usage policies of the barrier islands, can be obtained from the Virginia Coast Reserve, 11332 Brownsville Rd., Nassawadox, VA 23413, (757) 442-3049.