

Community Profile

Eastern Shore, VA

By Bryan Oles

I. Community Description¹

The Eastern Shore of Virginia is the location of numerous fishing villages. The peninsula, which is roughly 70 miles long and 10 miles wide, provides access to both Chesapeake Bay and Atlantic Ocean fisheries. Due to the ease of travel between the various bay and seaside ports, the commercial fishermen of the Eastern Shore exhibit a great degree of mobility, moving from seaside to bayside, and from north to south along the bay shore and sea coast. Despite the relatively small population of the entire Eastern Shore, there are 111 distinct communities in the two counties, and 19 incorporated towns (Mariner 2002:11). Each of these villages has a separate identity and unique character. Many are isolated hamlets with but a few households. While many of the fishing villages could be treated as separate communities (see the reports on Chincoteague and Wachapreague), the Eastern Shore itself constitutes a fishing community of mobile commercial fishermen who range between interdependent wharfs, or port towns. Many of these smaller towns are being affected by similar economic and social trends, the ramifications of which affect fishermen across the Eastern Shore in patterned ways. These forces and their influences will be discussed in this section of the report.

The Eastern Shore of Virginia is the southernmost portion of the Delmarva Peninsula, the name of which is derived from the three states that claim territory on the land to the East of the Chesapeake Bay: Delaware, Maryland, and Virginia. Virginia's Eastern Shore is composed of two counties, Accomack to the north, and Northampton to the south. These counties have a combined population of 51,398. The region is deeply rooted in agriculture as evidenced by employment data from the 2000 US Census, which show 1050 individuals (6.3%) in Accomack County employed in agriculture, forestry, and fisheries, and 411 (7.4%) in Northampton County. Compared to other counties in Virginia, Accomack and Northampton counties have lower per capita incomes, with Accomack averaging \$16,309, and Northampton averaging \$16,591. While the median income is low relative to the rest of the state, unemployment rates have been improving, dropping to as low as 1.9 percent in 2000 (Gallagher 2001).

With the exception of the northern border with Maryland, Virginia's Eastern Shore is surrounded by water. On the bayside the shore is scored by tidal, estuarine creeks that range in depth and width. Many small communities are established on the banks of these creeks, some of which have landings that accommodate commercial and recreational

¹ This profile primarily addresses the place of commercial fishing activities on the Eastern Shore of Virginia. Recreational activity is mentioned in certain sections but for more information on recreational fishing on the Eastern Shore, refer to the Wachapreague and Chincoteague profiles.

fishing boats. Among these communities are places such as Saxis, Chesconessex, Onancock, Harborton, Davis Wharf, and Cape Charles. Tangier Island in the Chesapeake is a well-known fishing community that is also considered part of the Eastern Shore of Virginia.

The seaside villages of the Eastern Shore are separated from the Atlantic by a labyrinth of channels, marshes, and barrier islands. The most important seaside towns and landings for both recreational and commercial fishing include (from North to South) Greenbackville, Chincoteague, Wachapreague, Quinby, Willis Wharf, and Oyster. On both bayside and seaside, there are myriad small wharves along creeks and channels.

Each of the various small villages and landings has its unique history. Some towns originated in colonial times while others were not established until the late 1800s, following the coming of the railroad in 1884. The port town of Onancock, for example, has a 300 year history dating to its establishment in 1680. It played a role during both the American Revolution and the Civil War. It became an important port for passenger ferries and freight ships in the late 1800s. Among the more recently established towns, Cape Charles was built in 1883 for the express purpose of taking advantage of the future railroad. The town's artificial harbor was the terminus of the railroad and allowed ferries and steam ships to move passengers and goods between the Eastern Shore and mainland Virginia. "By the middle of the 1940s as many as 2 million people were passing through the town each year" (Mariner 2002:81). When the ferry moved to Kiptopeake Beach in 1950, the prosperity of Cape Charles dwindled. The railroad had a similar impact on other towns along the Eastern Shore. In 1876 the Worcester Railroad was extended from Snow Hill Maryland to a location just east of Greenbackville in 1876. Greenbackville had only recently been created in the 1860s by watermen who, anxious to get into the oyster trade, purchased marsh land on which to build for a \$100/acre.² John Franklin, who owned the property where the railroad station was established, planned and initiated the creation of a town that became known as Franklin City. The city thrived on commerce generated from the shipment of oysters from Chincoteague and Greenbackville. Daily trains would ship seafood north, and boats would come from Chincoteague to Franklin City to unload their catch. They could ship 1600 bushels of oysters in a single day. In 1888 33,000 barrels of oysters were shipped through Franklin City (Mariner 1986). The establishment of a causeway to Chincoteague in 1922, coupled with declines in oysters due to disease and the diminished importance of the railroad, brought an end to the prosperity.

Much of the Eastern Shore has resisted the economic growth associated with residential and commercial sprawl, opting instead for development that is compatible with the area's natural resources and sociocultural heritage (Gallagher 2001). Many of the towns are still farm communities, and agriculture accounts for approximately 65% of the economy on the Eastern Shore. The Eastern Shore is the state's leading grower of produce and also

² It is reported that a man named Henry Pope who lived alone on the marsh exclaimed, "One hundred dollars an acre! That shouldn't be called land-that should be called greenback." Hence the naming of the town (Mariner 2002:138). Other locals report that the name derives from the abundance of oysters that were like greenbacks to the harvesters.

the host of significant poultry processing operations including Perdue Farms and Tyson Foods which, together, employ approximately 3000 people.

The seafood industry is a vital component of the Eastern Shore economy. There are a handful of fish packing facilities across the peninsula in Chincoteague, Wachapreague, Painter, and Cape Charles.³ Commercial fishermen operate out of the numerous bayside and seaside ports from Greenbackville and Saxis in the north to Oyster and Cape Charles in the south. Chincoteague is the primary landing site for boats engaged in Atlantic Ocean fisheries, but other significant seaside ports include Wachapreague, Quinby, and Oyster. Dozens of bayside wharves and landings accommodate commercial fishermen on the Eastern Shore. A clam processing plant in Mappsville is the sixth largest employer on the Eastern Shore, with a workforce of 300 employees. In addition, clam aquaculture operations have expanded dramatically in the past few decades. "Sales of cultured clams soared from less than \$1 million per year in 1991 to more than \$15 million in 2000, with a local economic impact of more than \$40 million" (Gallagher 2001). The aquaculture industry in Northampton and Accomack Counties generates approximately 350-400 jobs, many of which are said to provide watermen with the means of staying on the water despite declining harvests of native shellfish and finfish. Besides aquaculture, shedding blue crabs in the spring has provided watermen across the shore with a much needed economic boost.

Tourism is a growing industry on the Eastern Shore, bringing in roughly \$95 million. The coastal waters, rich natural resources, wildlife, and provincial charm of the Eastern Shore are important draws. Much of the tourist activity is centered in Chincoteague and the Assateague National Seashore in Accomack County and the Virginia Eastern Shore Wildlife Refuge and Kiptopeake State Park in Northampton County (Gallagher 2001). Sport fishing is a significant dimension of the tourist trade on the Eastern Shore. Of the \$23 million in expenditures among Eastern Shore recreational fishermen in 1994, 66.6% was attributed to travel expenses (Kirkley and Kerstetter 1999). This highlights the significance of transient, visiting anglers on the Eastern Shore. Centers of recreational angling include Wachapreague, Chincoteague, Cape Charles, Oyster, and Quinby but there are many bayside sites and boat launches on bay and seaside as well as Tangier Island.

The Eastern Shore is accessed via Route 13, which slices through the center of the peninsula. To the north, this route continues through Maryland and Delaware up to Route 1 near Interstate 95. To the south, Route 13 crosses the mouth of the Chesapeake and runs into Virginia Beach via the 17 mile long Chesapeake Bay Bridge Tunnel. The opening of the Bay Bridge Tunnel in 1964 physically linked the Eastern Shore to Virginia's mainland for the first time. Prior to this, ferries transported vehicles between Norfolk on the mainland and Kiptopeake Beach on the Eastern Shore. Public transportation is offered by the STAR Transit System of buses that operates four fixed routes and "demand response" service in Northampton and Accomack counties.

³ The current operational status of the packing facility in Cape Charles is unclear. Some informants suggest that this business is no longer in existence.

II. Dependency and Engagement in the Fisheries

History and Current Description

Commercial fishing activities on the Eastern Shore have always been extremely diverse. Many inhabitants of the area were both farmers and fishermen, taking advantage of the seasonal availability of various seafood products for both subsistence and sale. Oysters were of great importance throughout the 1800s and grew in significance as the railroad opened markets to the north in the last part of the 19th century. Other historically important fisheries include crabbing, menhaden processing, haul seines, pound netting in the bay and on the ocean, clam tonging, handlining, and gillnetting.

Many fisheries that were once important have declined as a result of over-fishing, management measures, and other forces that influence fish populations and markets. The bay shad fishery was once a very important spring fishery that can no longer be practiced. Gillnetting for shad in the ocean will remain an option only until 2004 when it is slated to be closed. The spiny dogfish fishery was promoted in the 1980s and 1990s until declines in large females of the species resulted in emergency management measures that effectively exclude Eastern Shore gillnetters from participation (see Chincoteague and Wachapreague profile).

As is often the case, declines in one fishery have pushed commercial fishermen into others, increasing pressures on certain stocks. Conch potting in the Atlantic is one fishery that has burgeoned over the past decade, playing a vital role especially among those who previously relied on the spiny dogfish fishery. Oystering was once vital to towns such as Chincoteague, Greenbackville, and Oyster. In the mid 1950s, oysters began to decline as a result of numerous parasitic infections and diseases including screw bores, MSX and Dermo. The entire town of Franklin City disappeared along with the oysters in the mid 1900s. The town of Oyster once employed hundreds of people in the oyster industry. One local described how the oyster business declined rapidly over the past decade. His family business was just recently torn down because they could not compete with the low cost of southern oysters. This decline prompted him to look for another fishery, which he found in shark. As soon as he found a profitable market for shark, the word got out among other fishermen who were quick to follow. Another businessman in Oyster described how declines in oysters drove watermen to the harvest of clams, increasing the pressure on native stocks and preventing sustainable harvests. Meantime, Oyster became the site of a major processing plant and dock for surfclams, but that ended in the 1990s, due to the increased cost of water quality protection. Today in Oyster, there are a handful of crab potters, a few scallopers, and two aquaculture operations.

Many turned to clams in the town of Greenbackville after the collapse of oysters. According to one informant, they had 15 to 20 boats clamming out of Greenbackville in

1996. Half of the bay was closed to clam dredging due to concerns over the loss of eel grass. Fishermen disputed the notion that eel grass beds were destroyed by clambers, demonstrating how grass beds had actually flourished in areas where they were dredging. Today there are only two clambers operating out of Greenbackville. According to this informant, the total number of clambers on the Eastern Shore has dropped from 42 to 10 and ironically, there is less eel grass now than there has been in years.

A similar story can be told for other ports along the Eastern Shore, where watermen once thrived on oysters, clams, crabs, and finfish. The small town of Boxtree on the seaside, which used to host numerous watermen, is almost entirely owned by the Nature Conservancy. There is one crabber who operates there. Webb's Island, once the site of oyster houses and clamming operations is now devoid of commercial activity. Development pressures are also taking a toll on commercial operations. The entire fleet of commercial boats was recently displaced from King's Creek, near Cape Charles as a result of the development of a condominium/marina complex. These forces, among others, will be discussed below.

Today, there remains a diversity of commercial gear types and multiple fishing strategies pursued on the Eastern Shore. While some commercial fishermen stick to one primary fishery, it is common for others to move from one fishery to another, or juggle them simultaneously, depending on seasons, availability, and regulations. Access to both bay fisheries and ocean fisheries allows many to shift attention between the Atlantic and the Chesapeake Bay. Many travel between north and south and between bayside and seaside, following the movements of fish, or taking advantage of the seasonal availability of shellfish and crabs.

A total of 31 different gear types are represented in the 2001 weighout data for the Eastern Shore. Blue crab pots/traps accounted for 29% of the total value landed in Accomack and Northampton Counties in 2001, followed closely by "Crab Other" pots/traps which accounted for 19%. This latter category does not show up in the landings prior to 1999, but accounts for a relatively high percentage of the landings value in 1999 (8%), 2000 (12%), and 2001 (19%). In each year since 1994, blue crab pots have accounted for between 26% and 63% of the total value landed on the Eastern Shore, demonstrating the importance of blue crabs to the commercial industry on the Eastern Shore. Gillnets of various types account for the next highest percentage of total value landed. Sinking gillnets accounted for 10% in 2001. Between 1994 and 2001, this gear type accounted for no less than 9% (1997) and as much as 14% (2000) of the total value of landings. Drift gillnets brought in 5% of the total value landed in 2001. From 1994 to the present, they have produced 5% to 9% of the total value landed. According to one informant, there are at least 50 boats that engage in gillnetting, but many more own the license and only go out occasionally. "It is a side hustle for some." Other gear types that yielded a substantial proportion of the total value landed in 2001 include the scrape (9%), otter trawl (fish) (6%), sea scallop dredge (4%), pound net (4%), conch pot (3%), crab dredge (3%), pick (2%), clam dredge (1%), clam tong/grab (1%). Most of these gear types have accounted for a steady percentage of the total value since 1994. The only anomalies involve the crab dredge, which accounted for a higher percentage of the value

in the past - up to 17% in 1996; and, the sea scallop dredge which did not account for any landings prior to 1999. According to informants in Chincoteague, scallops have become more important in recent years. Larger scallop dredge boats are landing in Chincoteague, and some are operating out of Cape Charles and Oyster.

Landings included in the 2001 National Marine Fisheries Service (NMFS) weighout data for Accomack and Northampton counties combined were valued at \$13,841,593. Of this total value, 67% falls in the shellfish category, which includes blue crabs.⁴ Since 1994, this category has accounted for between 62% (2000) and 76% (1995) of the total value. This category is followed by finfish at 13%. The finfish category has accounted for at least 13% of the total value since 1994, but never more than 20% (2000).⁵ The remaining categories of considerable value in 2001 include scallop (6%), fluke (5%), other (5%), and monkfish (4%). Scallop landings only recently rose above 1% of the total value landed but the other categories have remained relatively stable since 1994. Dogfish was important for a time in the late 1990s, accounting for as much as 4% of the total value in 1999. This fishery has since been removed as an option due to regulatory mandates that have severely restricted quota.

One tale that the NMFS weighout data do not tell relates to the rising importance of clam aquaculture. According to informants across the Eastern Shore, cultured clams (*Mercenaria mercenaria*) have provided a needed stimulus to the local economy and to watermen who wish to stay on the water. Many watermen culture clams on bottom leased from the state of Virginia independently. Still others join cooperatives to work bottom that is held by the major aquaculture companies on the Eastern Shore, or work their own bottom using seed and/or equipment provided by the companies. Major aquaculture companies are located in Oyster, Chincoteague, Cheriton, and Willis Wharf. Numerous small-scale operations are conducted across the region. The sale of cultured clams has risen from under \$1 million in 1991 to over \$15 million in 2000. This generates an estimated \$40 million impact on the area economy (Gallagher 2001). The clam aquaculture industry directly employs an estimated 350-400 people on the Eastern Shore

Blue crab shedding is another essential component of the commercial industry on the Eastern Shore. Many watermen have turned to the capture, shedding, and sale of blue crabs. In small villages across the shore, crab shanties can be found along shorelines and landings. Inside and sometimes outside of these shanties, crabs are kept in floats (tanks) where they are allowed to grow, and molt for the soft-shell market. The task is laborious because the status of the crabs must be checked every 4 hours. For many it is a family operation in which wives and children participate. Crabs are typically shed during the end of April and through the month of May, but may be shed in the summer. Shedders are usually caught in pots, brought to the floats and allowed to shed. They are kept in the

⁴ The shellfish category in the NMFS weighout data also includes horseshoe crab, penaid shrimp, quahogs, conches, channeled whelk, and oysters. Blue crab is the primary species along the Eastern Shore, as demonstrated by the weighout data on gear type.

⁵ The finfish category includes Atlantic croaker, scup, black sea bass, weakfish, striped bass, and spot.

water in order to firm up a bit. According to one waterman, the firmness is necessary for transportation to places like New York where the consumer is willing to purchase a more firm crab.

Recreational fishing is also an important economic and social activity on the Eastern Shore. In addition to the hordes of transient anglers who come to the area, many residents of the region are said to enjoy saltwater sport fishing. Total expenditures among Eastern Shore anglers amounted to over \$23 million in 1994 (Kirkley and Kerstetter 1997:57). The \$23 million in total expenditures yielded \$39.5 million in sales, \$22.2 million in income, and 889 person years of employment for the state of Virginia. Many of Eastern Shore anglers bring their boats to the region on trailers and launch from ramps in the various communities in Accomack and Northampton counties. A 1997 Virginia Institute of Marine Science (VIMS) report illustrates the economic importance of transient recreational fishermen on the Eastern Shore (ibid). According to this report, trip expenses accounted for 66.6% of the total recreational expenditures in 1994.⁶ These expenses included \$1.6 million in marina services, \$1.3 million in groceries, \$1.1 million in charter fees, \$.7 million in lodging costs. A whopping \$4.4 million was attributed to private auto use expenses and an equally impressive \$3.9 million was spent on ice. With the exception of the "Other Virginia" area category, the Eastern Shore had the highest percentage of total expenditures in trip expenses among all Virginia areas. This exemplifies the importance of visiting or transient recreational fishermen on the Eastern Shore. A representative from Northampton County described how, during the main recreational season, motel parking lots and yards along Route 13 are crammed with recreational boats on trailers.

Recreational activity is centered in both bayside and seaside towns. On the seaside, Chincoteague and Wachapreague are the main centers of activity. These towns feature sizable charter boat fleets, and sport fishing businesses and infrastructure including marinas, bait and tackle shops, motels, restaurants, convenience stores, and many other related services. Other centers of recreational fishing on the seaside include Greenbackville, Quinby, and Oyster. Charter boats operate out of Greenbackville and Quinby, and Oyster has a heavily used county ramp, dock, and parking facility. On the bayside, Cape Charles and Onancock are the primary ports of recreational fishing activity. Each town has a small charter fleet and related fishing infrastructure. Cape Charles is poised to attract an even larger number of charters as a result of the development of the Bay Creek resort community which includes a large marine basin on King's Creek.⁷

Seasonal Round

It is difficult to characterize the seasonal round of the working watermen on the Eastern Shore in all of its complexity and idiosyncrasy. The seasonal movements depend on a

⁶ Other expenditure categories included 'Boat' and 'Equipment' expenses.

⁷ For a more detailed discussion of recreational fishing on the Eastern Shore, refer to this report's sections on Wachapreague and Chincoteague.

host of factors including gear types, fish behavior, weather, and infrastructure. For example, monk fishermen with multispecies permits explained that they travel from Hatteras to the Gulf of Maine. They spend most summers in the Gulf of Maine but their movements depend on the water temperatures and the movement of fish. They “live out of a bag” for much of the year when they are on the go. They wait for reports on fish locations and then go to find them.

Among gillnetters, there is a good deal of movement north and south, as well as migrations between bayside and seaside. Despite the intricacies, some generalizations can be made. Gillnetters will typically fish on the seaside in the spring and fall, and move to the Chesapeake Bay during the summer. In January, gillnetting can be done in the ocean for mackerel. Prior to the passing of the dogfish Fishery Management Plan, fishermen used to gillnet dogfish in January. In February ocean gillnetters will be fishing for shad, rockfish (local name for striped bass), and mackerel. In March, gillnetters fish for gray sea trout in the ocean, rockfish in the bay, and may take some summer flounder. Some gillnetters go down south to fish around the mouth of the Chesapeake at this time of year. March is the month when draggers and pound net fishermen will catch flounder as well. In April, all of these species can be caught in addition to croaker and bunker. The rockfish are gone by May, but croaker and trout are still being caught by gillnetters. The trout are limited to a by-catch of 250 pounds during this time. Some black drum will be caught in the bay and ocean during the spring. Of late, fishermen are seeing more red drum. In June, gillnetters will be catching spot, croaker, and a few trout, but trout do not typically "gill" at this time. In July, gillnetters are still catching spot and croaker, and pound nets are still catching a few flounder. August is also marked by the catches of spot and croaker, and trout begin to gill. They may also be catching sand mullet and Spanish mackerel as by-catch. In September, trout fishing gets heavy, and while spot and croaker are abundant, they are usually fetching a mere \$.15 per pound. In October, the croaker move down the bay, spot are leaving the bay, and trout fishing is good. In November rockfish become more abundant and trout are still being caught, along with puppy drum. Drum used to be a more favored fish although it is still sold in all the local restaurants and fish markets. According to one informant, African Americans still like it but the younger generation only want what is "round or square". In December rockfish can still be caught along with a few trout.

Today, it is hard to employ only one method of fishing or to target only one product. In the past crabbers could make a living crabbing all year. They could pot for crabs in the spring and summer, and dredge between November and March. Many have had to diversify. According to informants, there are a few exclusive crabbers today who peeler pot all year between April and November. Crabbing season dictates the movement between ports. Certain ports on the Eastern Shore are flooded with crab potters in April and then deserted at other times of the year. Other ports, like Cape Charles, are visited by crab dredgers from Tangier Island and other ports in the winter. Activity in each port waxes and wanes in accordance with the regulations and availability of product.

Most find some alternatives to pursue. For example, some crabbers will dredge oysters in the winter. Between April and the summer months, certain fishermen will scrape for

peeler crabs and run a shedding operation. Some fishermen will even pot for toadfish. This product can bring as much as \$5/pound when skinned. Some diversify by using a variety of gear types at different times of the year. One waterman from Greenbackville explained that he works out of numerous ports including Newport News and areas on the James River. He raises soft crabs, grows clams, dredges crabs in winter, pots for eels, runs fish pots, and also oysters. He would like to conch pot but it is closed in Virginia. Some crabbers also dredge in the winter at other sites in Chesapeake Bay than the Eastern Shore.

Another fisherman works a pound net, pots peelers, sheds crabs, and gillnets.⁸ He described the season among pound netters. Pound netting is done entirely on the bayside. Most begin fishing their traps in April when they can catch flounder, rock, and bunker. In May, they get the same species along with trout, red drum, and a few croaker. In June, croaker, flounder, pompano, and bunker are the primary species. July is much the same but they are also catching butterfish and black drum. In the summer they will check their nets every other day. August is a slow month, but they catch a few croaker and trout in deeper water. In September the trout and croaker can be caught in pound nets along with the few spot. Rockfish show up in greater number in October. Rock, puppy drum, and flounder are all caught in November. The best months for flounder range between September and November but they can be caught in every month of the year. The pound net stakes, made from local hardwood trees, stay in the water and can last roughly two years.

Many fishermen get land jobs in the winter. It is said that between one third and one half of watermen need a loan in the winter or else take up a land job in order to get by. They may drive a taxi, pump gas, or find work in carpentry and construction. According to informants, there used to be a lot of part-time fishermen who would spend a few months crabbing and work at a land job for most of the year. There are far fewer part-time fishermen now. Even among those who are considered to be full-time fishermen are those who work land jobs. Support from a working wife is considered by many to be essential to success on the water. As one waterman put it, "It is hard to find a good waterman who does not also have a hard-working wife." He said that he can only think of one fisherman who does not have a working wife. This was not always the case. Today, wives have to work to supplement the fishermen's income and provide health insurance. Many fishermen work the water until they are no longer physically able: "A waterman does not retire, they just die." Despite the difficulty that many experience, watermen on the Eastern Shore are said to love the independence that fishing affords and for this reason could not think of going to work on a time clock.

Crew Description

⁸ There are between 10 and 15 pound netters in Northampton County, and some operate up to 10 nets. In order to maintain a pound net permit, holders have to fish them once a year. Permits can be sold and traded.

Most of the commercial watermen in the area are said to be owner-operators but some have financial backers. The number of crew on Eastern Shore boats depends on a host of factors including gear type, season, availability of product, and availability of crew. Some gillnetters work alone, but many have at least one mate. Monkfish gillnetters typically run with a captain and two crew members. Crabbers typically have one or more mates, and may take on more during busy seasons. It takes at least two men to work a pound net.

Crewing the fleet is said to be extremely difficult. Good, stable mates are hard to find and difficult to keep because many want to establish their own businesses. Captains may end up with an unreliable mate: "You could give them \$1000 a week and they still won't show up the following week." Certain boats are finding crew in the immigrant labor pool. Some conch potters, for example, are going with Mexican crew members but they can not provide enough work to satisfy the immigrants' demand for income. The Mexicans are said to work hard, but they cannot make as much as they want to in commercial fishing.

Method of payment for crew depends on their status and relationship with the captain. Some pay a flat amount for a day's work. Those with a longer, more stable relationship may receive a share. A crewman on a conch potting boat described why he favors a day rate method of payment over the share system. No matter what the boat makes, he is assured that he will make between \$125-150.00/day even if the boat breaks down. He told the story of a mate on the share system who made nothing on a recent gillnet trip that landed a mere 75 pounds of shad. It is reported that some crew can earn between \$20,000 and \$50,000 a year.

Recruitment, which is done primarily through word-of-mouth, has been limited by the difficulty of making a steady living on the water. Strict regulations associated with many different fisheries are discouraging the young from getting into commercial fishing. One crabber explained how fewer and fewer youth are being attracted to the industry. Other watermen across the Eastern Shore described a similar lack of recruitment to the fisheries.

According to representatives from the Eastern Shore Working Waterman's Association, there has been a 20-30% decline in watermen in the Accomack and Northampton counties over the past five years. This is attributed to a host of factors including the 200 fish/year quota on striped bass; the 8 month closure on weakfish; the total closure of spiny dogfish; and the 16-17 new blue crab regulations handed down over the past five years. In the town of Oyster, one company was buying oysters, clams, crabs, and fish from over 100 watermen 10 to 20 years ago. Today they buy from perhaps as many as five. The owner described how fewer people are making a living from fishing and the lack of recruitment that characterizes the industry. Many have been lost to attrition and not replaced. Currently, aquaculture is cornering the labor force. "The area would not survive without aquaculture."

Aquaculture is one dimension of the seafood economy that is not having a recruitment problem. In fact, some say that aquaculture is drawing from the pool of working watermen. Those who lease their own bottom from the state may cultivate their ground independently, or they may have an arrangement with one of the many aquaculture companies on the Eastern Shore. In some circumstances, aquaculture companies will provide seed and supplies to clambers up-front. The clammer will tend and harvest the clams and then return them to the aquaculture company where they are sold. The cost of the seed and supplies goes off the top to the company and any additional profits are thereafter split 50/50 between the grower and the company. "Crewing" for aquaculture companies on the Eastern Shore may also involve similar arrangements between companies and the numerous "cooperatives" in which clam growers participate. It involves a form of tenant farming or out-sourcing. One of the largest aquaculture companies on the Eastern Shore is supplied by 15 different cooperatives that, together, employ some 100 people. The company supplies the necessary seed and materials to the co-op members who plant the seed on either their own bottom, or bottom leased by the company. They raise the clams and get paid upon delivery of the product to the company. Other companies do not pay their co-ops until the clams are sold. Upon the sale of the clams, costs of seed and supplies are deducted and then profits shared 50/50. The cooperatives hire their own members many of whom are watermen and farmers.

One of the aquaculture operations in Northampton County employs 52 full-time workers and 10 to 15 seasonal employees in addition to the 100 or so cooperative members. These employees include hatchery workers, clam diggers, seed crew and packing crew. According to the manager, employees are laid off between mid-November and April. Employment goes up and down. Some of their employees have been with them for years but some positions turnover quickly. The clam house has the highest turnover because employees there work odd hours and the most number of hours. The company does hire some Mexicans from year to year and most employees are from Northampton and Accomack counties.

Another major aquaculture company in Northampton County employs nine direct employees, and another 75 people involved in approximately 10 clam cooperatives (see above). They also purchase directly from 100 or so independent growers. Most of the employees and suppliers are locals from the Eastern Shore.

Infrastructure

The infrastructure that supports the commercial fishing industry on the Eastern Shore is scattered across Accomack and Northampton counties in seaside, bayside, and inland communities. With the possible exception of Chincoteague and Tangier Island, few places provide all of the necessities of a commercial fleet. Even boats from Chincoteague and Tangier rely on dockage, packing services, supplies, and other necessities from other Eastern Shore, mainland, and out-of-state ports and towns. There are private docks and landings in virtually every village on the water. The significant

public docks are located in Chincoteague (Curtis Merritt Harbor), Greenbackville (county harbor), Cape Charles (town dock), Quinby (county boat harbor), and Willis Wharf (county dock). Most of these facilities charge for slip space, and some, like the town dock in Cape Charles, levy an additional "wharfage" fee for product that comes across the dock.⁹ Northampton County has plans for a commercial fishing pier with dockage in the Oyster harbor. They have already spent approximately \$90,000 to add parking and repair the ramp used by recreational fishermen. Presently, commercial fishermen must anchor in the harbor and row out to their boats in a skiff.

Some fishermen have their own private landings, or make arrangements with private dock owners. There is a cooperative of six boat owners who lease space in Onancock, as well as individuals who lease the spaces that are available in places such as Davis Wharf (10-15 spaces) and Wachapreague (a dozen or so in the winter).

Having a stable home port with guaranteed dock space provides peace of mind. Fishermen in Greenbackville, for example, speak fondly of their harbor. The county operates the 600 feet of dockage available to commercial fishermen on a yearly basis. The harbor is well-maintained and roomy. Local commercial fishermen feel fortunate to have space in Greenbackville, an isolated community across the bay from Chincoteague. They feel somewhat protected from the press of development experienced in other communities, and enjoy the freedom of storing their gear at the dock. Sacrifices are made in order to have this sense of security. Those who participate in Atlantic fisheries have an extra 12 miles to travel each way, to and from the Chincoteague Inlet. When operating out of this port, fishermen can put 120 miles on their boats in a day. Recreational fishing activity here is growing each year, according to a local charter captain who indicated that the county harbor is filled with recreational boats during the summer. There are approximately seven charters that run out of Greenbackville, all but one of which are part-time operations.

Many commercial and recreational fishermen on the Eastern Shore keep their boats on trailers and haul them in and out of the water on a daily basis. There are numerous county docks and ramps located across the Eastern Shore that provide access to the water (Table Eastern Shore 1). Accomack Public Works Administration maintains 22 docks and ramps intended strictly for the loading and off loading of watercraft. They are intended primarily for use by local and transient recreational fishermen. According to a Public Works representative, some of the facilities are in better shape than others. It is difficult to maintain them given the budget allowances of the department. The department's budget usually only allows for the renovation of one of the 22 facilities each year. Most of the facilities are small, featuring a 15 foot wide ramp, one or two finger piers, and parking for approximately five vehicles and trailers. The county's newest and biggest facility (with the exception of the docks in Greenbackville and Quinby) is located in Harborton and includes a double ramp, restrooms, and parking for over 20 vehicles and trailers. Most of the other docks are located in remote areas at the terminus of dead-end

⁹ One informant estimated the cost of wharfage at Cape Charles to be three cents per pound of product.

country roads. The remote locations are said to be used primarily by local folk engaged in recreational fishing, but they likely receive traffic from commercial fishermen as well.

Table Eastern Shore Public Boat Launching Facilities (VMRC 2001:12)

Eastern Shore Bayside (Accomack County)

Bloxom

- Guard Shore Ramp
- Guilford Creek Landing
- Hunting Creek Ramp
- Muddy Creek Ramp
- Young Creek Landing

New Church

- Pitts Creek Ramp

Onancock

- Onancock Town Landing
- Poplar Cove Wharf
- Schooner Bay Landing (Deep Creek)
- South Chesconessex Landing

Pungoteague

- Harborton Landing
- Hack's Neck Landing

Saxis

- Cattail Creek Ramp
- The Hummocks
- Messongo Creek Landing
- Saxis Landing
- Shad Landing

Eastern Shore Seaside (Accomack County)

Accomack

- Folly Creek Landing
- Parker's Creek Landing

Atlantic

- Wishart Point Landing

Bloxom

- Dix's Gargatha Landing

- Kegotank Landing

Chincoteague

- Chincoteague Memorial Park

- Chincoteague Town Dock

- Deep Hole Ramp

- Queen Sound Landing

Greenbackville

- Greenbackville Harbor

Mappsville

- Old NASA Dock (Assawoman Creek)

Quinby

- Quinby Harbor Landing

Eastern Shore Bayside (Northampton County)

Bayford

- Nassawadox Creek Ramp (South)

Cape Charles

- Cape Charles Harbor Ramp

Exmore

- Morley's Wharf Boat Ramp

- Nassawadox Creek Ramp (North)

Kiptopeake

- Kiptopeake State Park Ramp

Eastern Shore Seaside (Northampton County)

Nassawadox

- Red Bank Boat Ramp

Oyster

- Oyster Public Harbor

Willis Wharf

- Willis Wharf Boat Ramp

Other needed supplies and services are found throughout the region. Fueling facilities are limited to what is available in Chincoteague, Cape Charles, Davis Wharf, Onancock, Willis Wharf, Quinby, and Wachapreague. Even so, many smaller boats are filled up at gas stations along Route 13. Many boats are hauled out and repaired at Melson Marine in Davis Wharf as well as other small marine repair facilities located throughout the Eastern Shore (not located on the water). Others are hauled out at the railway in Wachapreague or in Crisfield, MD. Most watermen truck their own landings to one of the packing houses, or meet buyers at the various docks. During the crab dredging season, crab buyers will drive their trucks to ports like Cape Charles and await the arrival of the boats.

Few of the ports on the Eastern Shore have packing houses at the docks. There are two packing houses in Chincoteague, one in Wachapreague, and one in Painter, VA in the

middle of the peninsula on Route 13. One of the packing houses in Chincoteague is on land that is up for sale. It has been slowly declining over the years. The packing house in Wachapreague is also said to be on the verge of collapse. Fishermen will drive miles with their catch in barrels and baskets to one of the fish packing facilities.

Many more operations have disappeared over the years. A seafood packing house in Cape Charles went out of business after the town refused to renew the business's lease of dock front space in the town harbor. A packing house in Greenbackville went out of business in the mid-1990s, and another in Chincoteague went out of business due to declines in product coming across the dock. Numerous oyster houses and crab picking facilities have disappeared from Eastern Shore towns over the years.

Shellfish aquaculture and processing sectors dominate the infrastructure in many towns and villages on the Eastern Shore. A surfclam processing plant in Mappsville that employs over 300 people is the sixth largest employer on the Eastern Shore. There are major clam aquaculture operations in Chincoteague, Oyster, Willis Wharf, and Cheriton. Cheriton is also the home of a major conch processing operation.

Infrastructure in the town of Oyster illustrates some of the trends that have occurred elsewhere along the Eastern Shore. There are two operations in town, both of which concentrate on cultured hard clams and oysters. The owner of one of these businesses discussed the changes that have occurred over the years. There used to be a number of surfclam docks in the harbor, but they moved north some years ago. Oyster houses have also disappeared from the town. Today, the operation plants clams on leased land and produces between 60 and 80 million clams in a two-year period. They also buy wild clams and oysters from waterman, import oysters for repackaging and distribution, and pack a very small amount of fish. Little neck clams account for 80% of the business, followed by wild clams (10%), shucked clams (5%), imported shucked oysters (5%). Fish and crabs account for an insignificant percentage of the operation's business.

The company originally concentrated on oysters, but in the mid-1980s they had two crop failures in two years that prompted a shift in focus to clams. They also used to pack fish and crabs, but this depended on supply. Ten to twenty years ago they were buying oysters, clams, crabs, and fish from over 100 watermen. Now they are supplied by only a handful because of the lack of recruitment. Fewer people are making a living from fishing. Aquaculture is gaining what the commercial fishing industry has lost. Places like Willis Wharf, once a fishing village where watermen concentrated on native clams and oysters, are now the host of significant aquaculture activities. There are at least three large scale clam operations in Willis Wharf.

Markets for fish and shellfish on the Eastern Shore range across the country. Among the aquaculture business, the Northeast corridor was cited as the most important market outlet. Much of the cultured clams is sold to markets in Baltimore, Philadelphia, Boston, New York. Other operations sell product to wholesalers across the country and to upscale, retail grocery chains. One grower attested that they do not sell anything inside

Northampton County because this would put other locals out of business, although they do sell to walk-in customers. A fish packing house in Painter does sell some product to local retail markets, but this aspect of the business has declined. The manager estimates that 60% of the product is shipped to New York, 20% to Philadelphia, and 20% to a market in Jessup, MD. There are also approximately 15 buyers in California who rely on this operation for a supply of croaker. The major fish packing operation in Chincoteague sells iced, fresh seafood to a variety of local, regional, and national markets. Some of the scallops and finfish are marketed to local restaurants and retailers. Monkfish and many other products go to New York, scallops to New Bedford and Philadelphia, and a variety of product is shipped to markets in North Carolina and Hampton, Virginia. Product is shipped via local trucking firms that are paid a per carton shipping fee or by the pound, and North Carolina markets send their own trucks (see Chincoteague report for more details).

Much of the infrastructure that supports the commercial industry also supports the recreational industry, especially the town harbors in Chincoteague and Cape Charles, the town dock in Wachapreague, the county operated harbors in Greenbackville, Quinby, and Oyster, and the numerous public docks and launches. In addition, there are a few private marinas centered in Chincoteague and Wachapreague. Outside of these two primary sport fishing centers, the Eastern Shore has a few bait and tackle shops scattered about in places such as Cape Charles, Townsend, Saxis, Accomack, and Onancock. Much of the recreational fishing activity on the Eastern Shore is boat-based, offering little in the way of shore access. Northampton County recently received a grant from the Virginia Marine Resource Commission to extend the fishing pier at Morely's Wharf, and another public fishing pier is located on South Island, which is part of the Chesapeake Bay Bridge Tunnel complex located 3.3 miles from Virginia Beach.

Virginia's Artificial Reef Program, which is managed by the Marine Resources Commission, offers another form of infrastructure for the recreational fishing industry on the Eastern Shore. This program was initiated by recreational fishing interests in the 1950s. The VMRC became the official manager of the program in the 1970s when it received six World War II Liberty ships for reef sites. These vessels were sunk in offshore waters and form what are called the Triangle Reef off Virginia Beach and the Parramore Reef off Wachapreague. Today the program uses both "materials of opportunity" in combination with manufactured concrete structures to build artificial reef habitats for fish in the Chesapeake and the Atlantic. (VMRC 2001:18-27)

Economic Networks

Commercial fishermen on the Eastern Shore are embedded in economic networks connecting the various fishing villages and towns in Accomack and Northampton counties to one another and to other places outside of Virginia. The mobility that characterizes the fishing activities of watermen results in the creation and maintenance of extensive economic ties between ports. Fishermen usually land their catch at whatever port they happen to be keeping their boats. This is due to the limited number of packing

houses on the Eastern Shore. After landing their product, fishermen transport it in their own vehicles to one of the packing houses or fish buyers. The primary facilities are located in Chincoteague, Painter, and Wachapreague. The packing house in Painter, for example, will buy product or else ship it to a buyer for a freight fee. Some still peddle fish in local neighborhoods. While fish peddling has declined over the years, some fishermen still provide a valued service to local communities by bringing fresh fish at an affordable price. Others ship their own product to northern markets in Philadelphia and New York via trucking services. Not all of the watermen transport their own product. Crab buyers from Maryland will meet watermen at the dock where they purchase the crabs and transport it in refrigerated trucks. According to one waterman, Eastern Shore crabbers would be in dire straits were it not for the basket market for female crabs (sooks) in Maryland. A crabber in Greenbackville hauls his product to Crisfield because the Maryland markets are stronger. In the past, buyers from Maryland would send eight or nine trucks to buy crabs from boats in Greenbackville.

The acquisition of supplies and other necessities creates economic ties across the Eastern Shore and the mid-Atlantic. The Greenbackville crabber, for example, purchases bait from a dealer in Crisfield, Kool Ice in Cambridge, MD, and a packing house in Chincoteague. He also gets engines from Crisfield, MD. Others obtain their fuel at gasoline stations or at the docks, which tend to be supplied by Bagwell Oil, based in Onancock or Drummond Oil in Exmore. Ice is typically supplied by packing houses but some fishermen make their own. Welding and repair services are sought primarily at Melson Marine in Davis Wharf, Crisfield, Willis Wharf, or Wachapreague. Many perform their own repairs. Electronic and navigational equipment is purchased from and serviced by Shore Electronics in Onancock, VA, and two businesses in Ocean City - L and L, and Martek. Fishing supplies are obtained at Melson Marine in Davis Wharf, or Buddy Carson in Crisfield, MD on the bayside, but gear is also ordered from suppliers up and down the coast including Memphis Net and Twine in Memphis, TN; Mike Keller in Manteo, NC; Ocean Products in Hampton, VA; IMP in New Bedford, MA; and Heath in Crisfield, MD. Safety at sea equipment is obtained from the Vain Brothers in Norfolk, VA, Melson Marine in Davis Wharf, VA, or Boater's World in Paxton, VA. Melson Marine is also a popular place to haul out, as is Parker's Railway in Wachapreague, Crisfield (some have lifts come over from Crisfield to Chincoteague) or Ocean City, MD. There are a few choices for insurance including Hall-Richardson on the Eastern Shore, Flagship in Norfolk, VA, and Tawes Marine Insurance in Crisfield, MD. The most fishermen-friendly bank for obtaining loans according to informants is Farmers and Merchants Bank-Eastern Shore, which has six locations on the Eastern Shore. The Eastern Shore Working Waterman's Association offers group insurance through U.S. Marine Company. Some are said to keep their own books, while others rely on local firms.

Among the aquaculture companies, economic networks are more diffuse. Most supplies necessary for aquaculture operations come from outside of the local area. Netting comes from a company in Minneapolis, MN; sandbags from New York and Texas; pumps from Richmond, VA; shipping bags from Massachusetts and New Jersey; and packing

materials from Baltimore. These operations do purchase goods from local hardware stores and also rely on the services of local welders and contractors.

Social Networks and Community Relations

Commercial fishing is a deeply entrenched aspect of Eastern Shore identity. Many of the watermen in small towns across the region trace their ancestry to farmer-fishermen who cultivated the land and worked the waters for fish and shellfish. Some still hold bottom lands that were acquired by family members generations ago. Watermen have always been considered a fundamental component of social life and culture on the Eastern Shore.

In the past, watermen were a visible, valued component of communities, as they brought their product to neighborhoods and communities. There used to be over a dozen fish peddlers in the past who would sell their fish directly to consumers. This practice was a benefit to both communities, who received fresh fish for a fair price, and fishermen who received a better price per pound than they get from a dealer. Today, peddling fish is a dying aspect of the social and cultural life of communities on the Eastern Shore. One fisherman attributes the decline to the changing tastes and preferences of the younger generations who prefer processed foods. He is aware of one old waterman who still peddles fish from the same old truck that is so recognizable to his customers.

The provincial, isolated character of many villages and towns in Accomack and Northampton counties belies the truly extensive social ties that commercial fishermen have developed across the Eastern Shore. Whereas one local police officer in a bayside community could not provide directions to a town no more than 10 miles away on the seaside, one commercial fisherman took the researcher on a tour covering dozens of miles and dozens of towns. He expressed an intimate knowledge of the history of the region, its land, and its inhabitants. In each port he could tell who was out on the water on the basis of his familiarity with the vehicles owned by the watermen.

This community of fishermen on the Eastern Shore is bound together by the seasonal movements north and south and from bayside to seaside, and solidified by the many shared interests and concerns that unite them. One waterman explained that the entire Eastern Shore is a fishing community based on its heritage, the help and support that fishermen provide to one another, and the motivation among fishermen to band together in the face of external pressures. Another fisherman described the sense of community among watermen that results from reciprocal sharing. He explained that commercial fishermen have always had a good relationship with one another and the wider community. In the past, most watermen rarely sold anything, allowing others to use their property and goods. "In the past there was more sharing and reciprocity, your word was your bond." Like commercial fishermen elsewhere, watermen on the Eastern Shore tend to be independent. Even so, they do gather and socialize from time to time, mostly at the docks where they are working, or at Melson Marine in Davis Wharf. Some also gather at the Captain's Deck in Onancock for dinner, drinks, or for Association meetings.

According to one fisherman, most of the taverns that were frequented by fishermen in the past are now gone.

Despite the sense of solidarity that is shared among commercial fishermen on the Eastern Shore, there are fractures within this community. Watermen from different areas tend to share different concerns. "Fishermen share information among their own and this has always been the case. Some fishermen are selfish and cannot care about the problems of those who use different gear." It is said that fishermen will avoid attending those meetings of the watermen's associations that do not cover issues with which they are concerned. There are occasional gear conflicts within and between gear types. Some crabbers compete with one another for space on the water, as do pound net fishermen. Pound nets can be moved but they cannot be within 300 yards of either side of one another. Therefore, some will acquire stake net licenses in order to protect their pound net territories.

The Eastern Shore Working Waterman's Association represents the entire region, but there are numerous additional watermen's associations that claim members from the Eastern Shore as a whole, and specific geographical places within it. Some of the various groups include the Coastal Virginia Waterman's Association, Virginia Watermen's Association, Independent Watermen's Association, Eastern Shore Waterman's Association, Accomack Hand Harvester's Association, and Saxis Watermen's Association, to name a few. This diversity of associations has developed as a result of regional differences and concerns that compel interest groups to splinter in an attempt to have their voices heard. According to the president of one of the major associations, this typically has the opposite effect by diluting the numbers and hence the power of commercial fishermen.

The relationship between commercial fishermen and the wider community varies from place to place depending on many different factors, but overall, commercial fishing is a respected and valued part of community life on the Eastern Shore. One fisherman asserted that fishing is a vital dimension of the community on the Eastern Shore, citing how the Eastern Shore Working Watermen's Association raises funds for school scholarships and donations, and participates in community events. The Association also provides education to the general public through publications and displays at community events such as the Blue Crab Festival in Cape Charles. According to a number of watermen, ignorance among the general public is one of their greatest obstacles. Certain fishing methods, such as gillnetting, have a bad reputation among the uneducated public.

The relationship between watermen on the Eastern Shore and the wider community has transformed as a result of the increasing number of new residents who have bought property in the many small, traditionally tight-knit, towns and villages. Watermen feel a sense of disenfranchisement, or invisibility in the eyes of "come-heres."¹⁰ For example,

¹⁰ The term "come-here" is employed by long-time residents of Virginia's Eastern Shore to denote outsiders who have settled or purchased property in the area. It connotes a person who does not share the

watermen in one bayside town say they have had a good relationship with the rest of the local community, but conditions have changed. The town used to host a much larger population, a crab house, and dozens of watermen. "Everyone was like a family, it was a real community." Presently the town has twenty or so original residences and a majority of "come-heres" who do not share the same sense of community. No one comes to the dock to watch the watermen any longer. Elsewhere, fishermen expressed a similar sense of loss. One waterman told how he used to enjoy the privilege of walking and hunting on vast tracts of land that are now owned by strangers who will not permit neighbors to trespass.

Commercial fishermen described the relationship between commercial and recreational fishing sectors on the Eastern Shore in terms of both cooperation and conflict. According to one waterman, commercial fishermen are not anti-recreational and the average recreational fisherman does not cause problems for watermen. In his opinion, the environmental lobbies and associations such as the Coastal Conservation Association are the true enemies of commercial fishing because they have destroyed the positive image of the honest, hard working waterman and replaced it with the despicable image of a "rapist."

Some of the tensions between commercial fishermen and recreational fishermen on the Eastern Shore are related to the influx of "come-heres" and the forces of development. One waterman voiced the opinion that "play should never come before livelihood or heritage." He feels that commercial fishermen are fighting a losing battle with a sport fishing industry that is pushing them to the margins. He described the loss of infrastructure including dockage for commercial boats and the rising tide of recreational marinas that are displacing commercial boats. Gear conflicts between recreational and commercial fishermen erupt from time to time, including the theft of crab pots, vandalization of nets, and competition for crowded fishing grounds. Others note the bitterness and resentment between the two groups, and how some sport fishermen will not even wave to commercial boats on the water. These experiences, however, are isolated and do not characterize the relationship between sport fishermen and commercial fishermen in every community along the Eastern Shore. For example, the two groups on Chincoteague have worked hard to minimize gear conflict and resolve differences that lead to confrontations (see Chincoteague report).

Discussion: Community/fisheries dependency and engagement

Those who are involved in commercial fishing on the Eastern Shore feel that the industry as a whole is extremely important to the region. Some point to the revenue that the commercial fishing industry generates. In 2001, the dockside value of landings in

values of the local people and who seeks to colonize the area with the culture and society of his or her original home.

Accomack and Northampton counties was \$13,841,593 according to NMFS weighout data. This figure does not account for any multiplier effects, nor does it account for the millions of dollars generated by aquaculture and shellfish processing businesses. Others emphasize the contributions that fishermen make to the community in the form of tax dollars, and the time and effort devoted to community causes.

For many, the region is dependent upon a maritime heritage and identity that is maintained through current fishing practice. Many families on the Eastern Shore have deep genealogical roots in a fishing way of life. The maritime identity of the region is important not only to those who work on the water, but also to the tourists who come to the Eastern Shore and the businesses they patronize. In Chincoteague, for example, the town's identity as a fishing village is said to be a major draw for the tourist industry.

Few towns on the Eastern Shore host formal celebrations of the maritime heritage of the region. Chincoteague is an exception, holding a number of community events including a Seafood Festival in May, a Blessing of the Fleet during Memorial Day weekend, and an Oyster Festival on Columbus Day weekend. The town also features the Oyster and Maritime Museum. Chincoteague also dedicated a cross at Veteran's Memorial Park to those lost at sea. Onancock holds a "Harbor fest" in September and Cape Charles hosts a Blue Crab Music Festival. A controversial 'Virginia Watermen's Memorial' is planned for the town of Oyster. A plot of land at the harbor in Oyster has been donated by Northampton County to the "Friends of Virginia Watermen's Memorial" for the establishment of the memorial. The controversy surrounds the purpose that the memorial is intended to serve. The memorial was originally proposed by a resident of Oyster who lost her son on a surfclam boat operating out of Cape May in 1991. She asserts that the memorial is intended to honor working watermen lost at sea and provide comfort and closure for their families. While some watermen's associations, like one based on Tangier Island, support the memorial, others such as the Eastern Shore Working Watermen's Association have pulled their support. They feel that the memorial should focus on local, Eastern Shore commercial harvesters lost at sea, rather than including tug boat crew, life saving station crew, Coast Guard personnel, and others whose surviving families live elsewhere. The intention of the idea's originator is to have all working watermen included, even if their family members live outside of the Eastern Shore. She emphasized that some watermen had the mistaken notion that the memorial would also include recreational fishermen lost at sea, but this is not the case.

While fishermen express a strong belief in the value of commercial fishing to the Eastern Shore community, many feel that they are a "dying breed" that is fading fast. In Greenbackville, for example, watermen still consider themselves to be an integral component of the community. There are at least three or four fishing families in this town of fewer than 100 residents. The community is said to support commercial fishing and, according to one local, even "pity" watermen for the difficulties they have had. One crabber in town estimated that they have lost at least a third of the fishermen who used to work here over the past 10 years. A local business owner concurred, pointing out that while the community was once built on commercial fishing, the youth are no longer

going into the business. In his opinion, recreational fishing and clamming has become more important economically to the region, even though commercial fishing is still important during the winter.

The owner of a popular marine repair business in a bayside town also provided evidence of the shift from an emphasis on commercial to recreational fishing. Today, sport fishing accounts for a larger percentage of his overall business and he has had to transform the business in order to cater to recreational interests. He added, "of course, 25% of commercial fishermen spend more than 75% of sports."

Representatives from both Accomack and Northampton County governments recognize the social and cultural value of commercial fishing on the Eastern Shore. A representative of Accomack County noted that commercial fishing is extremely important to the county as a whole. She expressed concern for the sustainability of fishing practices and the well-being of fishing families that are threatened by onerous state and federal fisheries regulations. The county leadership is aware that burdensome regulations are limiting harvests and making it difficult for families to make a living from the water. According to a representative from Northampton County, the seafood industry plays a vital role in the society and economy of the county, especially with the growth in shellfish aquaculture. The county wishes to protect and promote commercial fishing, which is still considered to be an integral aspect of the area's cultural identity.

A separate representative of Accomack County pointed out that agriculture is the most important industry, followed by poultry processing. Economically, commercial fishing has declined over the years with the loss of support infrastructure such as packing and processing operations. While the economic role of commercial fishing has decreased in Accomack County, it remains essential to the cultural heritage of the region. Many residents have a family history in the harvesting and processing of seafood on the Eastern Shore. The county representative noted that the county's comprehensive plan discusses the importance of supporting traditional industries like commercial fishing by ensuring waterfront access for commercial uses.

Some watermen expressed the opinion that Accomack County does not provide enough support to the commercial industry. The county government is said to favor the aquaculture industry, providing political support for the interests of the Virginia Shellfish Growers Association. According to a representative from the Accomack County Administrator's Office, however, the county firmly supports the working watermen and has made motions in the past to allow fishermen the same tax credits made available by the state of Virginia to farmers. The county has also promoted state funding for the establishment of seafood vendors at the farmer's market, but to date this effort has been unsuccessful.

Recreational fishing is considered by some to play an even larger role in the social and economic life of the Eastern Shore than commercial fishing. A Northampton County representative asserts that recreational fishing "has always been a vibrant aspect of the

community on the Eastern Shore." In Accomack County, the government funded a survey of all public access points for recreational fishermen in order to set priorities for what is considered to be a fundamental dimension of the area's identity and character. More and more people are coming to the area to fish, according to a county representative, and the county is taking efforts to encourage the growth of the recreational sector.

III. Vulnerability and Cumulative Impacts

Gentrification and Economic Development

The decline of the farm and seafood industries on the Eastern Shore resulted in high unemployment, low median incomes, high poverty rates, and substandard housing in the early 1990s. Despite the dire economic outlook, residents rejected proposals that could have brought more jobs to the region, including a plan for a state prison and a remediation plant for contaminated soil. "They also voiced strong opposition to sprawling residential development as an economic option" (Gallagher 2001). Community meetings focusing on economic development that were held in the 1990s resulted in an emphasis on "compatible development" - economic activities that are congruent with the rural character of the area and compatible with the natural environment.

Eastern Shore economic strategies today seek to enhance natural assets, add value to Shore commodities, rebuild flagging sectors, encourage export rather than import, provide for living-wage career opportunities for the underemployed and preserve the resources that support tourism and a high quality of life [Gallagher 2001].

One of the big winners of compatible development is the aquaculture industry, which has expanded markedly in the past 10 years. This is due, in part, to support that it receives from groups that some consider anathema to commercial fishing, such as The Nature Conservancy. In Willis Wharf, for example, The Nature Conservancy has become a major landowner that has expressed a concern for the future of the local watershed, which includes Parting Creek. The Nature Conservancy "understands that the ultimate protection of these resources will depend on a local economy that is at once healthy but also harmonious with those pristine natural systems" (<http://www.uap.vt.edu/cdrom/cases/willis.htm>). As a result, the organization has worked with local leaders to foster the development of compatible businesses such as clam aquaculture.

Despite some progress resulting from the "compatible development" philosophy, representatives from both counties on the Eastern Shore describe the local economy of

the region as struggling.¹¹ Unemployment rates are at 4.5% for Accomack and 3.7% for Northampton County (2000 US Census). The economy in Accomack County has experienced very little growth and, with the exception of some "micro-enterprise," is said to be stagnant. Agriculture and poultry processing are the major industries in Accomack. Northampton County is also experiencing very little economic development. According to one representative, the county lacks a job structure that is conducive to maintaining and attracting a youthful labor force. The county's economy is not very diverse, and has a small tax base. The increased mechanization of agriculture has further diminished the labor force in the county. The largest employers in the county are the hospital and school board administration.

Commercial fishermen on the Eastern Shore are experiencing ills associated with gentrification despite the lack of economic development. Much of what little development there is on the Eastern Shore comes in the form of second home and retirement housing construction, according to one county planner. "Come-heres" from metropolitan areas are building waterfront homes, buying local properties, and bringing with them foreign values that conflict with long time residents. As one waterman sadly remarked, "We've been found."

This clash of cultures has resulted in conflicts over the use of natural resources, loss of waterfront access, and a transforming sense of place among local watermen. For example, there have been confrontations between waterfront property owners and watermen. The owner of a major aquaculture business explained that many of the new home owners do not like to see crab pots in the creeks or bed markers along the shore. His company has taken measures to minimize conflicts by policing shorelines for netting and other debris from the beds and by keeping the operation as clean as possible. Another waterman described the process by which come-heres attempt to transplant their entire culture and way of life from their place of origin to the Eastern Shore, disrupting local practice. Newspaper opinion pieces are filled with complaints from come-heres over the lack of shopping opportunities and lax trash pick-up services. He noted one come-here who was "complaining how he can't find a good necktie in the area." He also described how come-heres attempt to thwart the acquisition of bottom land for aquaculture. Following the application and survey process, plans to lease bottom are announced to the public. It is said that come-heres have protested acquisition following public announcements. Sense of place is disrupted by come-heres who buy property in small towns and villages, post 'No Trespassing' signs, and prevent locals from traditional uses such as hunting. Some are also said to have the mistaken notion that they own the water in front of their properties, making complaints about and disrupting the activities of watermen using crab pots, stake nets and other gear close to the beach.

While most complaints do not involve formal actions, residents of Cedar View Beach have attempted, through legal motions and lawsuits, to prevent clambers from working

¹¹ According to a 2001 report, \$30 million in new public and private funds have been invested in the Eastern Shore as a result of compatible development (Gallagher 2001).

the beds in front of their property. These beds are leased from the state and include bottom extending from the low water mark. Clammers mark their beds with PVC pipe which, according to some of the waterfront property owners, spoils their view and the aesthetics of the area. A Cedar View Beach property owner is quoted as saying, "We don't want 50 guys back there singing a-cappella and digging clams. When I am used to looking at the sunset I don't want to see people clamming." (Lusk 2002:4).

The gentrification of the Eastern Shore is taking place at an extremely slow pace, but its effects are readily noticeable in places such as Cape Charles where the Bay Creek planned community is rapidly taking shape. This 1,700 acre "community" of luxury home sites covers over five miles of shoreline along the Chesapeake Bay, Old Plantation Creek and King's Creek. It sports two "signature" 18-hole golf courses designed by Arnold Palmer and Jack Nicklaus, and will soon feature a 224-slip, deepwater marina replete with Marine store and tackle shop, boutique shopping, café, guest suites, and shower and restroom facilities.

Many locals, as well as come-heres, are deeply opposed to this development and even the new marina because of the expected effects on the bay, on the limited amount of freshwater on the Eastern Shore, and on fishing in the area for both commercial and recreational fishermen. While some feel that this development is a boon to recreational sport fishing interests, it comes at the expense of commercial fishermen. In the past King's Creek used to harbor commercial boats, many of which focused on clam dredging. There used to be docks with up to 50 boats, including box sterns and crabbers. Crabbers from Tangier would visit the area in the spring, as would a number of gillnetters. The commercial dock is now gone, and all of the commercial operations have been displaced over the past four years. It was reported that an aquaculture company operating a clam hatchery on the far side of Kings Creek tried to prevent the dredging of the creek that was proposed for the deep water marina, but was unsuccessful.

Besides the isolated residential and resort developments such as Bay Creek, one form of economic development in the seafood industry is blamed for the hard times experienced by local crabbers. Imported crab meat is having a profoundly negative impact on Eastern Shore crabbers. According to one informant, the number of crab picking houses on the Eastern Shore has dropped from 10 to two over the past five years. Imports run as low as \$3.00-5.00/pound, a price with which local pickers simply cannot compete. One waterman explained that Asian crab meat texture is similar, but has much inferior taste. Of greatest consternation is the fact that restaurants are allowed to mix foreign and domestic crab meat, and call it "domestic" regardless of the percentage of local meat used in the mix. The Virginia Marine Products Board, in cooperation with local watermen developed a seal to designate Virginia crab meat products, and it is hoped that this will better educate the public.

While economic development may endanger commercial fishing, it is assisting the growth of recreational fishing on the Eastern Shore. The development of motels, restaurants, and other support infrastructure draws tourists and transient fishermen to the

area. In places like Chincoteague, recreational fishing is dependent on family vacationers, while Wachapreague and other port towns depend on dedicated fishermen who bring their own boats or come specifically to charter or rent boats. Support infrastructure including food, lodging, and related services is vitally important to the sustainability of the recreational fishing industry.

Environment

Water quality is of great concern to commercial fishermen, aquaculture operations, recreational fishermen, and Eastern Shore residents in general. Watermen note that agricultural runoff is one of the most dangerous environmental perils affecting local watersheds. One waterman vividly described the effects of chemicals that are routinely sprayed on tomato plants, pointing out the small creeks bordering the fields that drain into the bay, or the seaside marshes. "Everything that goes on the land gets into creeks that lead to the water." According to The Nature Conservancy, the water quality of Parting Creek and the watershed surrounding Willis Wharf has been threatened by nearby residential development and the prospect of a regional wastewater treatment plant that would discharge treated effluent into the creek. Residents in Accomack County also voiced opposition to the establishment of a fertilizer plant that is currently being built, fearing the discharge of pollutants into area waters.

Accomack and Northampton Counties have both adopted the Chesapeake Bay Preservation Act, passed by the Virginia General Assembly in 1988. Provisions of the act afford protections for water quality in sensitive areas, "Chesapeake Bay Preservation Areas", including the review of land development projects. Accomack adopted the provisions for the bayside, while Northampton County elected to enforce the regulations county-wide, on both bayside and seaside.

Watermen are also interested in maintaining access to bayside and seaside fishing grounds through the dredging of inlets and channels. In one case involving Nassawadox Creek, it has taken commercial fishermen four years of paperwork and assessments to get the Army Corps of Engineers to dredge the creek so that fishermen who keep their boats in the creek will continue to have access to the bay. According to one informant, local property owners are contributing taxes to fund the project.

One of the most significant environmental issues relates to research and development being conducted on the controversial 'Asian oyster' (*Crassostrea ariakensis*). Many watermen on the Eastern Shore support the establishment of the Asian oyster due to declines in the population of the native oyster, *Crassostrea virginica*, that have resulted from oyster pathogens such as MSX and Dermo. Certain questions relating to the environmental and economic viability of the oyster still remain (see National Research Council 2003). Presently, *C. ariakensis* is said to have a lower shelf life than native oysters. They have not been planted on natural bottom and so there are uncertainties concerning growth. Watermen feel confident that *C. ariakensis* would be marketable due to the fine taste and large yield - up to 14 pints per bushel. However, some scientists and

conservation organizations fear a reversion of sterile oysters to the fertile, diploid state, which may lead to the establishment of a reproducing colony of non-native oysters. This is not undesirable according to some watermen, who feel that a self-sustaining population of non-indigenous oysters would be an economic boon to the area, allowing those who do not have access to oyster bottom to benefit. There is a concern that the oyster may only benefit those involved in aquaculture.

Fisheries Management

Commercial fishermen on the Eastern Shore expressed bitterness and dismay over the burdensome regulations that govern their activities. While each gear type and fishery has its own set of concerns, some feel that licensing has been mishandled. In 1992, the state instituted a mandatory reporting program and established a watermen's registration card. This card is necessary in order to buy any other gear license. In the early to mid-1990s, hardship licenses were distributed to Virginia watermen, which was a mistake according to some because it resulted in overfishing in certain fisheries. With more fishermen on the water, the state was obliged to reduce takes, allowing each person in the larger pool of fishermen a smaller portion of the catch.

Each fishery is dealing with its own set of strict regulations, but because so many watermen engage in a variety of fisheries, the cumulative impact of the many regulations acting in concert deals a heavy blow to the watermen. One fisherman provided a litany of restrictions off the top of his head including the 200 fish/year quota on striped bass; the eight month closure on weakfish; the total loss of spiny dogfish; and the 16-17 new blue crab regulations handed down over the past five years. Others noted the smaller quotas on drum and flounder; larger minimum sizes on flounder, trout, and sea bass; restricted areas for drum fishing in the lower Chesapeake; the opening and closing of clamming grounds that forces clammers to rush, derby style, from one area to the next; the closure of creek mouths between June and November; and the upcoming closure of the ocean shad fishery that will hurt the gillnetters.

According to one informant, the total number of clammers on the Eastern Shore has dropped from 42 to 10. This decline is related to closures imposed by the state designed to protect eel grass beds from clam dredges. Fishermen disputed the notion that eel grass beds were destroyed by clammers, demonstrating how grass beds had actually flourished in areas where they were dredging. In Greenbackville, the fleet of clam boats went from roughly twenty to two since 1996. Locals wryly note that there is less eel grass now than there has been in years.

The host of crab regulations has been particularly burdensome to watermen, especially the requirement to operate between two hours prior to dawn and 2:00 pm. Some do not mind taking Sunday off, which does limit watermen to a six day work week, but many take issue with the time clock aspect of the daily schedule. The 2:00 p.m. closure prevents some fishermen from going out on the seaside because they can not reach their traps when the tide drops. In addition, the simultaneity of the crabbing season in

Maryland and Virginia is also considered to be problematic. In the past, Virginia seaside crabbers could start two weeks sooner than crabbers in Maryland and still have a marketable product. Another restriction prevents two license holders from combining their number of pots and working together from one boat. Only one license is allowed for each boat. One waterman explained that combining licenses would save costs and ameliorate the problem of crewing boats.

Some expressed concerns over the politics of regulatory bodies such as the Atlantic States Marine Fisheries Commission (ASMFC). The ASMFC is said to be the area's greatest adversary because they are not beholden to the National Standards of the Magnuson Act that govern the work of the NMFS. Further, the New England states are thought to vote as a block, garnering more power than the divided mid-Atlantic states. As one fisherman put it, "They are using the mid-Atlantic as a nursery for fish." The weakfish (sea trout) fishery is an example: New England fishermen are favored by seasons that prevent mid-Atlantic fishermen from capturing fish when they are most abundant. "It's north against the south again."

In the realm of aquaculture, there is less concern over management because these operations are governed by agricultural regulations. The greatest concern relates to Hazard Analysis and Critical Control Points (HACCP) requirements. One aquaculture business owner claims to spend approximately 40 to 50 man hours a week on paper work. A manager at another operation pointed out that HACCP requirements establish standards that are appropriate for products from the fishing industry but detrimental to products from the aquaculture industry. "The fishing industry ships dead animals but we're shipping live animals. The low temperatures that they demand can kill our product." This affects the marketability of shellfish because it takes up to two days to cool the animal down to the proper temperature without killing them, and customers are apt to send back a two-day old clam because they do not understand that it has a longer shelf life. They reported that they were successful in raising the required storage temperature of their product.

Recreational fishermen are also feeling the weight of increasingly stringent regulations. (see profiles for Wachapreague and Chincoteague for more detail).

Resilience and Representation

Fishermen expressed the concern that they are no longer able to adapt to the changes in the natural environment due to the ever-tightening regulatory environment. Diversification is no longer an option for many: "If you were unlucky enough to have only a hard crab pot license or a peeler crab license, you can not get into the other fishery." While striped bass tags are transferable, most are not willing to relinquish them except at exorbitant prices. Limited entry is the untenable solution to a problem created, in part, by limited entry. Too many fishermen creates the need to limit entry, which drives fishermen to other available options en masse, which creates the need for limited entry. Some fisheries have accommodated increased numbers of fishermen such as

conch potting, but many are concerned about the herding mentality that has characterized the movements of fishermen. As more fishermen are chased into the same fisheries, the markets receive a glut of product and the value declines. Eastern Shore fishermen continue to explore all sorts of potential fisheries and markets including blowfish, live oyster toads, and blood clams. The need to "make a hustle" is one reason why so many have diversified their operations to include multiple gear types and strategies including clam aquaculture and crab shedding. One waterman, who pulled mostly water and jelly fish during that day's haul of gillnets, jokingly remarked that what they really need is to develop a market for sea nettles.

Diversification is needed even among the successful aquaculture businesses. One operation maintains a seaside hatchery and a bayside hatchery. The higher salinity on the seaside is best for hatching seed but they maintain one on the bayside in order to weather unexpected environmental problems or water quality issues. Aquaculture is one dimension of the seafood industry on the Eastern Shore that provides watermen with an option of staying employed by working the water, either by supplementing traditional harvest strategies, or by employing them directly for the large operations.

The lack of recruitment to the industry is one of the most worrisome signs that commercial fishing on the Eastern Shore is fading. According to local watermen, younger people do not want to get involved because the costs are too high, and the risks are too great due to all of the unknowns and uncertainty associated with regulations. The licensing requirements are also a hindrance to recruitment. There is a two-year waiting list for a commercial waterman's registration card. Many of the fisheries are closed. Gillnetting is still an option, but not a very realistic one. As one gillnetter put it, "It takes years to accumulate all of the gear and the knowledge that is needed to use it." There are only a few family fishing teams that are passing this knowledge from father to son. In addition, few banks are willing to loan money for a boat. According to representatives from the Eastern Shore Working Waterman's Association, there has been a 20-30% decline in watermen on the Eastern Shore over the past five years. For the old timers, there are few alternative work opportunities. Even so, many of the watermen work land jobs for part of the year.

A number of fishermen expressed a negative attitude towards the state government. "The government tries to pit fishermen against each other." Another opined, that "the industry used to have clout but now, no attention is given to the fishermen. Management can control us, but not nature, which is why we get it from them." Others characterized the relationship with management as adversarial: "It's almost like a war; you have to fight to go to work." Overall, there is a sense that the state of Virginia does not fight for commercial fishermen, allowing other states to dictate regulations that ultimately undermine the local industry.

Participation in management is limited by the amount of time it takes to travel to meetings, a narrow concern for one's own interests, and a sense of powerlessness in the political process. According to one waterman, getting people to participate "is like

pulling teeth." He attributes this to the independent character of local watermen and the unwillingness to make concessions. To begin with, participation is partially determined by the issues at stake. As one fisherman put it, "They are the silent majority until something hurts them." Furthermore, it is difficult for fishermen to attend meetings when they have to work on the water to make a living. The schedules of fishermen and bureaucrats do not coincide. Underlying these factors, however, is the sense of frustration and powerlessness among fishermen who feel that the decisions are made regardless of their input and concerns. They tend to believe that the process is based on politics and that the outcomes are predetermined.

Many rely on the leadership of the local watermen's associations for representation. The Eastern Shore Working Waterman's Association, which has roughly 80 members from Crisfield to seaside and from Snow Hill Maryland to the Bay Bridge Tunnel, has been one of the most important sources of support and representation for local fishing interests. There are, however, numerous other associations that represent Eastern Shore fishermen including the Virginia Watermen's Association, Saxis Watermen's Association, Tangier Watermen's Association, Lower Chesapeake Bay Watermen's Association, Lower Eastern Shore Waterman's Association, and the Accomack Hand Harvester's Association. This diversity of associations is part of the problem that fishermen have in presenting a unified voice to management bodies, according to the president of one of these associations. He explained that the 13-14 different watermen's associations across the state have developed as a result of regional differences. Interest groups have splintered from larger watermen's associations on the basis of very particular concerns that are relevant to their geographical regions. Management then has the dilemma of addressing the myriad concerns of the various and sundry factions. Despite the fractiousness, some believe that the fishermen on the Eastern Shore are recognizing the need for unity in pressing their needs and have been exhibiting more solidarity and defending each other as a result.

While this discussion paints a gloomy picture for the future of the fishing industry on the Eastern Shore, there remains a pervasive attitude of hope and dedication among the watermen. In the words of one local, "it's a dying business, but those who love it will get by." Others expressed a similar, indefatigable spirit, predicting that commercial fishing will always be a part of the social, economic, and cultural life of the Eastern Shore.

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