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Virginia Marine Resource Bulletin

Virginia Sea Grant

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Summer 7-1-2001

## **Marine Resource Bulletin Vol. 33, No. 2**

Virginia Sea Grant

Virginia Institute of Marine Science

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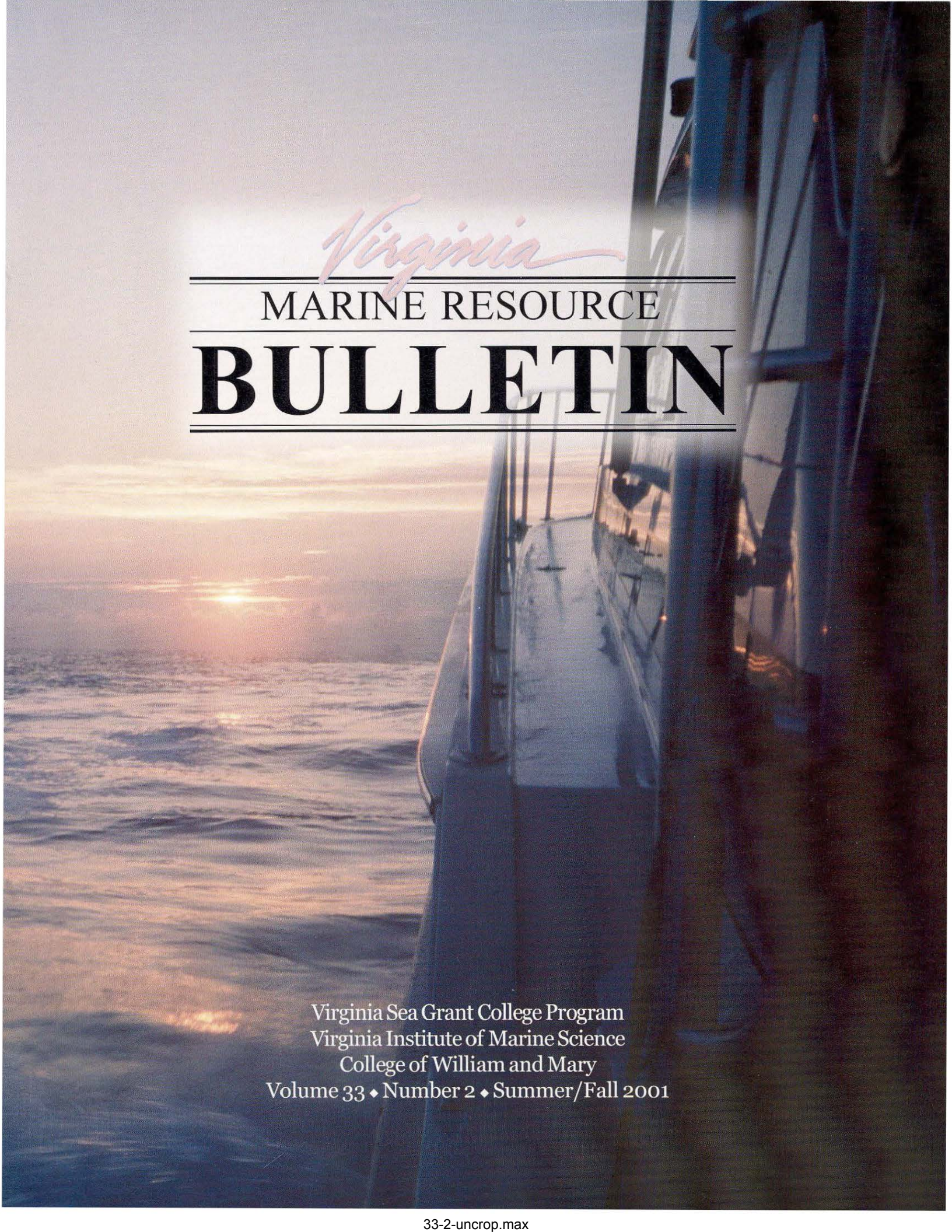
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*Virginia*

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MARINE RESOURCE

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**BULLETIN**

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Virginia Sea Grant College Program  
Virginia Institute of Marine Science  
College of William and Mary  
Volume 33 ♦ Number 2 ♦ Summer/Fall 2001



You've seen the claim in distinctive magazines. "Virginia is for Lovers" ads beckon you to explore the back woods and scenic vistas richly bestowed upon the Commonwealth. The ads invariably include a water scene much like this one, complete with a glistening boat moving rapidly through the chop.

The ads appear to be working. Virginians love to flock to the water and increasingly choose to do so by boat. Today, recreational boating is just as common a flirtation with the good coastal life as baiting a crab pot or digging for seashells. Increasingly, we find it a worthwhile reason to empty our wallets.

Indeed, recreational boating represents a significant portion of the disposable income circulating throughout Virginia's coastal towns. This issue provides an overview of what the trends are revealing while casting an eye upon the response from small and large communities. Some would view the business of recreational boating as central – at any cost – to their town's economic future; others are struggling now to satisfy the demands of recreational boaters while preserving the integrity of the near-shore environment. There is much to be learned ahead, but the numbers speak to the importance of planning for this growing slice of Virginia's coastal pie.





Virginia

MARINE RESOURCE

BULLETIN

Volume 33 ▲ Number 2 ▲ Summer/Fall 2001

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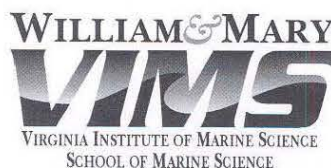
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# Like Ducks Take to Water

By  
Sally Mills  
and  
Tom Murray



There's little doubt that recreational boating has reached an all-time high in the United States. We're at the top of the curve on a trend line that began in the mid-1960s, when continued affluence and leisure time led consumers to apply disposable income to the purchase of big-ticket items – boats among them. The trend has continued upward, with only a slight leveling in the early 1980s during a period of economic recession and high gas prices. Recreational boating, it appears, is an excellent indicator of economic times. Like the proverbial canary in the mineshaft, in this case it's the first

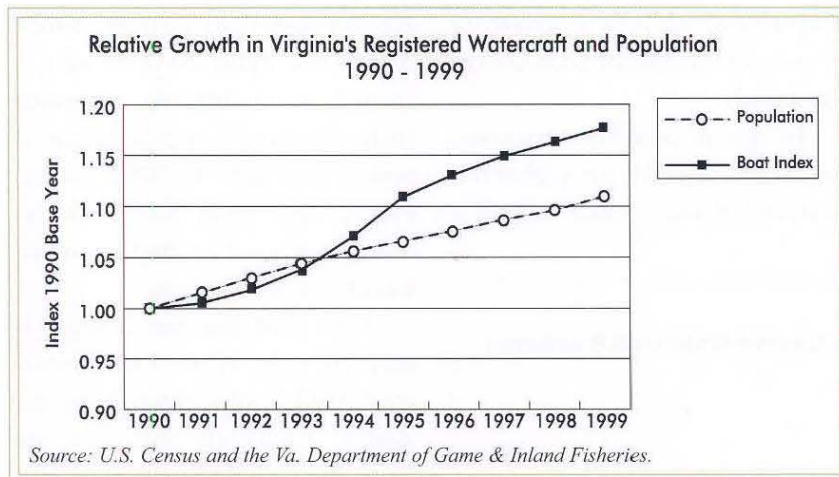
bundle of cash to fly out of the vault when Alan Greenspan speaks.

Across the country, purchases of all classes of boats and related marine equipment remain high, and estimates on the number of adults actively engaged in boating range from 22 to 24 million nationwide. One method to arrive at trends is to examine per capita ownership. Prior research indicates that between 1973 and 1980, boat ownership grew faster than the population – rising from 1 boat for every 43 citizens in 1973, to 1 boat for every 38 citizens in 1980. The most recently available 2000 U.S. population estimates and

registration numbers put that ratio at 1 boat for every 29 citizens.

Virginia mirrors the national trend: boat registrations reflect robust boating activity and consumer confidence in the future. A look at the numbers reveals close to a seven-fold increase in active boat registrations with Virginia's Department of Game and Inland Fisheries – from 35,600 in 1960 to over 240,300 in the year 2000. These numbers do not include small power boats or sailboats under 18 feet, and do not necessarily include large boats “documented” with the U.S. Coast Guard. While they do not tell the





whole story, registration numbers are useful in gauging trends.

A look at the numbers in marine equipment sales is equally difficult to wrap one's hands around. Marine-related sales are lumped together with many other things – sales by automotive dealers among them. But boat dealers and marine suppliers will confirm that business is stronger than ever. With the exception of a slow start to the 2001 season due to prices at the gas pump, boating activity at area marinas remains strong.

It's no surprise to those on the water. With over 10,000 miles of tidal shoreline and twice that number of navigable, inland waterways, Virginia has much to offer the recreational user. Add to this a handful of expansive lakes dotted by vacation homes – places like Smith Mountain and Lake Anna – and the choices seem boundless.

As the original highways for commerce and travel in the new country, Virginia rivers and bays are steeped in historical and cultural treasures. Likewise, the City of Portsmouth's position at the head of the Intracoastal Water-

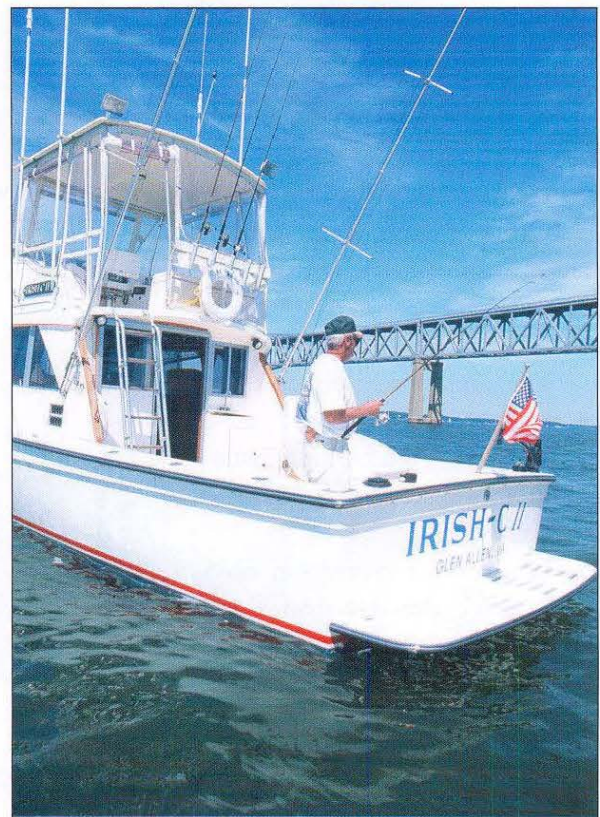
way serves to draw in visitors from Canada, Florida, and even Australia to the Chesapeake Bay and its tributaries.

#### Who are the boaters?

National surveys have profiled the primary recreational boater today as a white male with above average income between the ages of 35 and 44. Least represented in the boating community are women and minorities – Blacks, Hispanics, and Asians. According to a literature review performed by Human Dimensions Consulting of Gainseville, Florida, personal safety is an underlying concern to these ethnographic groups, who express a lack of knowledge and confidence in outdoor skills and

subsequent feelings of vulnerability.

A mail survey conducted in Virginia in 1997 by Virginia Commonwealth University (VCU) also concluded that most boaters are white males. Of 1,939 survey responses received from boaters, the majority is between the ages of 40 and 60, with a high school degree or some college courses. In this group, 31% reported household incomes of \$70,000 or more. The numbers do not include personal watercraft, whose users exhibit a slightly different profile. Interestingly, a higher percentage is female, a higher percentage report earning a college degree, and close to half report household incomes of \$70,000 or more.



*Saltwater fishing and cruising (left) are the most popular pastimes reported by recreational boaters.*



### What draws them to boating?

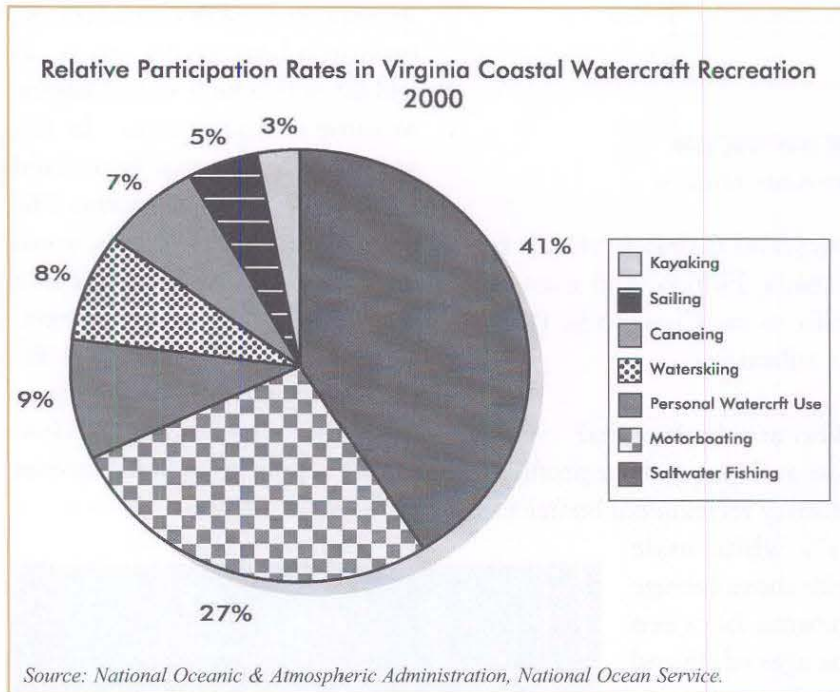
The VCU survey found that the majority of recreational boaters spend their time fishing. When asked about principal use while on board, they responded as follows:

propulsion reflect a growing diversity in the uses of recreational watercraft.

In the powerboat category, the large majority of registered boats in Virginia – close to 97% –

are still less than 26 feet, which echoes the trend 20 years ago. A second trend that has remained fairly constant is the purchase of power over sail. In 1999, for example, less than 5,000 of the boats registered in the Commonwealth were sailboats.

One thing that has changed is an explosion of personal watercraft (PWC) sales throughout the nation. Reflecting that trend are more than 21,000 such craft currently registered in the state (versus a mere 7,000 in 1994). A recent national survey conducted by the National Ocean Service (of NOAA) estimates that over 200,000 individuals in Virginia participate in the sport, or about the same number of coastal participants as canoeing and kayaking combined, and nearly twice the amount that participate in sailing.



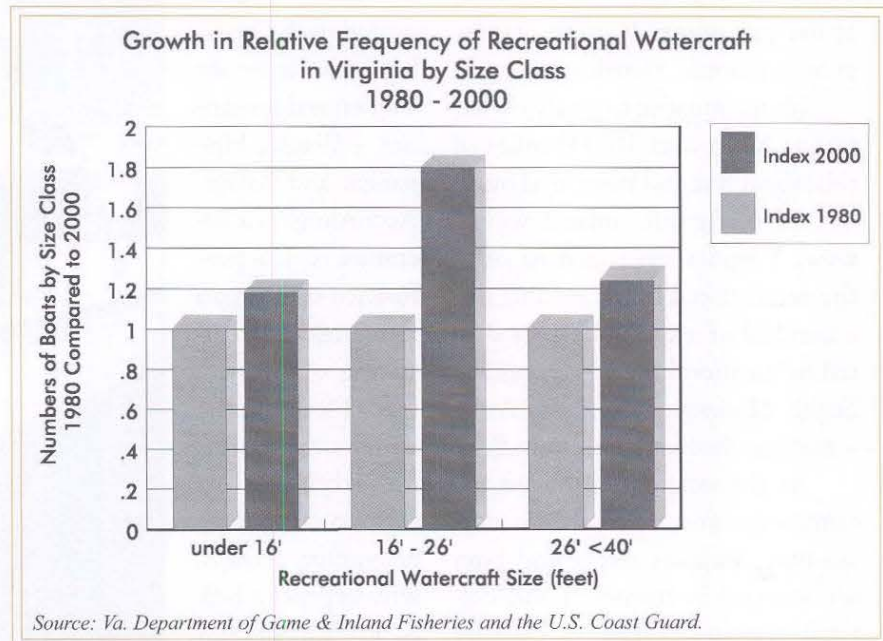
- ◆ 57% reported fishing (when including a secondary activity while onboard, the percentage jumps to 81%);

- ◆ 23% reported cruising;

- ◆ 8% reported skiing, tubing, or kneeboarding; and

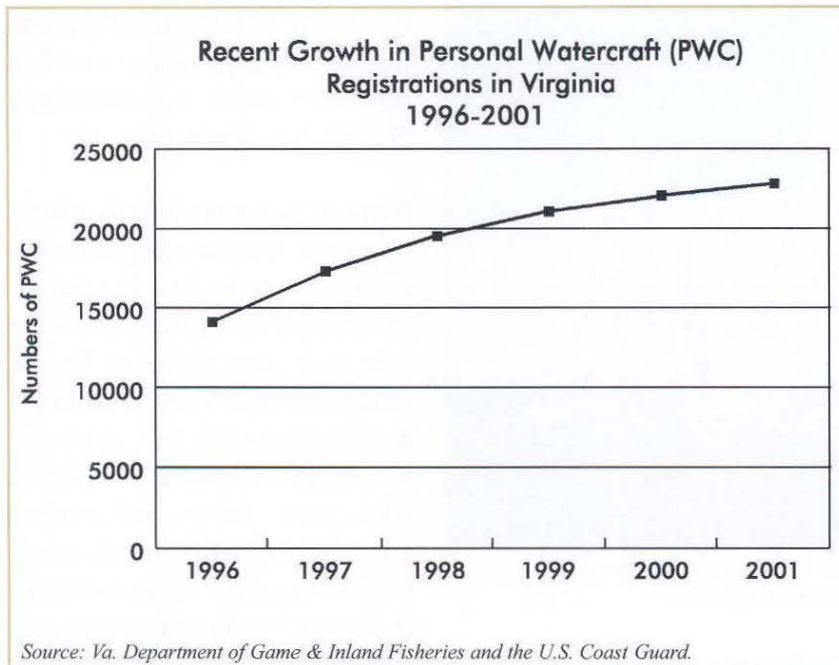
- ◆ 4% reported hunting, nature watching, or another wildlife-related activity.

Motives for recreation obviously drive the decision about what kind of boat to purchase. The chart above reveals that qualitative differences have accompanied the upward trend in Virginia's pleasure fleet. Indeed, changes in boat type, size, and method of



The use of indices vs. real numbers allows you to look at growth in each category, relative to itself. Absolute numbers cannot be obtained from state registration statistics, which are a conservative measure of total recreational watercraft documented with ports in Virginia.





Over the past three years, however, this sector has experienced a decline in sales across the country. Speculation by consumers over safety and environmental problems, and fear that personal watercraft may be banned in many places, is thought to play a part. At the same time, PWC owners are upgrading to larger craft. The three-person PWC is now the top seller, reflecting an interest in broadening the activity to include water-skiing and tubing as well as other people.

Noteworthy is the fact that personal watercraft have attracted many new boaters. The industry remains positive that increased sales of jet boats and PWC will eventually lead to future sales of all boat products – despite the fact that relatively low retail prices of these craft have lowered the annual sales volume at many dealerships.

#### Where's the action?

The lion's share of boating occurs in the more densely populated regions of Virginia, according to boat registration data. In 2001, the top coastal locations for boat dockage are reported as the City of Virginia Beach, and Chesterfield, Prince William, Fairfax, Henrico, Chesapeake, and Middlesex counties. Boating activity mimics that order, with the exception of Henrico County which drops lower on the list. Moving from north to south, hotspots of action include the upper Potomac River, Deltaville on the lower Rappahannock at the bay, and the Hampton Roads-Virginia Beach corridor along the lower James River and Chesapeake Bay. It is interesting to consider how local property tax rates influence the decision about where to dock (and hence, use) one's boat. A study

conducted by Virginia Sea Grant found, for instance, that boat owners have recently flocked to marinas in the City of Portsmouth, where the tax rate on pleasure boats was dropped by the city.

#### Accident data

Boating accidents and fatalities are down across the board in Virginia, including the PWC category. From a recent high of 227 accidents in 1997, last year's accident count was 174. Fatalities also dropped – to 17 in the year 2000, down from 27 in 1997. PWC accidents once accounted for roughly 40% of the boating accidents (1997), but dropped to 22% of total accidents in 2000.

The decline is in large measure due to the hard work and creative outreach efforts of many individuals – safety program managers, game wardens, U.S. Coast Guard Auxiliary instructors, and industry leaders among them. Education programs are augmented by on-the-water check points and enforcement of a series of safety laws, including new ones targeted at PWC users. According to Colonel Jeffrey Uerz at the Department of Game & Inland Fisheries, Virginia is very proud of its accomplishments, given the high level of boating activity along her coast and inland waterways. The department has recently shifted more of its enforcement officers to coastal locations, in response to current boating trends.





*Sailing accounts for only five percent of boating activity in Virginia, but regattas remain popular fundraising events.*

### **What's this mean to Virginia?**

No comprehensive study has been completed on the economic impacts of recreational boating to Virginia, but key indicators can be helpful in drawing a picture. Registration fees collected in the year 2000, for example, totaled \$2,032,700 of revenue to the state. Likewise, sales tax paid on boats that year amounted to \$5,879,421 on gross sales of more than 261 million dollars in new purchases. Livery fees on rentals have been holding fairly steady, amounting to \$15,176 in 2000 on 560 boats.

Add to this an array of supporting goods and services in the form of gasoline, food, fishing gear, waterskis and boogie boards, and the economic ripple widens considerably. The VCU survey found that mean expenditures for recreational boating trips per year amounted to \$1,483 – adding up to \$2.6 million annually for the 1,800 people who responded to the survey.

We can extrapolate more from information gathered by neighboring states. For example, a survey conducted in 2000 by Maryland Sea Grant estimates that recreational boaters registered or documented 220,800 boats in Maryland and spent over \$2.3 billion for new equipment and for boat- and trip-related expenses that year. It's reasonable to expect that the same level of economic activity is generated by Virginia's recreational fleet, given the similarity of registration numbers in the two states and the predominance of boating activity throughout the entire Chesapeake Bay.

Also part of the picture, yet very difficult to measure, is the economic impacts of transient boat traffic along Virginia's coastline. Out-of-state boaters spend money on fuel, food, supplies, slip and mooring fees, and often need maintenance or repairs while visiting. The "snowbird" traffic is thought to be significant, due in

part to the state's rich cultural and historic heritage played out first upon her rivers and shorelines. (See related article, page 19.)

### **Natural resource implications**

Unfortunately, no comprehensive picture exists on how boating affects Virginia's natural resources – in economic terms or by any other measure. What is known is mostly anecdotal, but nevertheless, worth factoring. Pollution takes many forms, and boating contributes readily to the challenges faced by water resource managers. Sea Grant studies performed in other areas of the Atlantic Coast – Delaware, for example – speak to these realities. A growing number of coastal residents claim their waterways are deteriorating and boating experiences have become less pleasurable, especially during the high summer season.



This is not to suggest that recreational boating is bad for Virginia. In terms of jobs created and revenues brought in, the benefits to the Commonwealth are manyfold. Anecdotal evidence related by property owners and by town managers throughout Tidewater indicate, nonetheless, that boating takes a toll on natural systems and all living resources supported by the aquatic zone. Perhaps the time is ripe to quantify both the benefits and the costs of recreational boating, as waterways continue to swell with boaters and others attempting to share limited space.



# Satisfying Our Boating Appetite: How Local Communities Respond

By Sally Mills

Virginia's appetite for recreating in coastal waters is felt first and foremost throughout the many small towns and communities lining her shores. It is here that the boating public interacts directly with residents and merchants, with other boaters, and with shoreline property owners. While recreational boating affects each waterfront haven uniquely, two discernible patterns appear directly tied to local demographics. And those demographics, in turn, generally dictate the response.

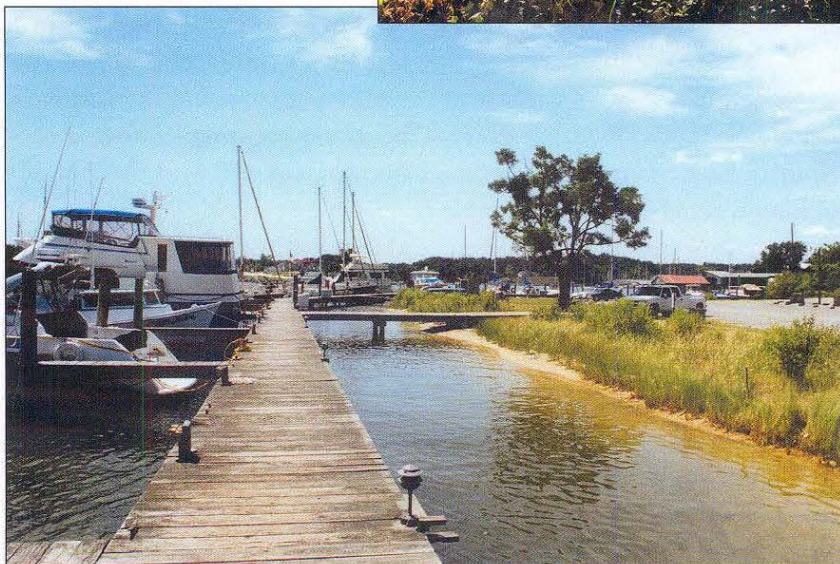
Densely populated regions of the coastal plain – urban centers like Alexandria and beachfront vacation hubs like Virginia Beach – experience tremendous boat traffic, but the activity occurs within the realm of very heavy tourist trade in those destinations. It is one dimension of many others and difficult to isolate. Large metropolitan areas focus on pleasing many distinct user groups and resolving conflicts that sometimes arise.

Rural regions of Tidewater, which by far outstrip metropolitan areas in terms of raw shoreline miles, experience similar boom and bust cycles which are easier to identify and describe. Business owners and town man-

agers, for the most part, view boating as positive in every respect. When asked about problems created by the boating public on small towns, Andy Harris, who manages the Norview Marina in Deltaville, couldn't think of any. He summed it up nicely with, "Deltaville is growing at a pace that's comfortable with everyone down here." While data are scant on the economic impacts locally, those who have lived in coastal pockets where marinas are prevalent and where boat traffic is fierce can attest to the seasonal transformation

that occurs up and down Virginia's shoreline during the months of May through September.

The Town of Urbanna, located just off the Rappahannock River is a case in point. Known throughout Virginia for its annual three-day "Oyster Festival," this



*Urbanna's new municipal marina will soon offer 35 slips for resident and transient boats, and will be connected by walking tour to the old tobacco warehouse (top).*



otherwise sleepy enclave of 560 residents has big plans on the horizon.

"It's dead here in the winter," affirms Jim Sapione, who manages the town. Sapione is currently engaged in a community project that will strengthen the traditional boating ties to the historic and economic fabric of the town. With the help of several state and federal grants, he hopes to garner the funds needed to purchase a waterfront parcel – about 800' of shoreline – and turn it into a municipal marina. About 35 slips are planned for renovation, of which half will be dedicated to seasonal customers and the other half, to transient use. It is Sapione's hope that with vigilant advertising, he will attract an increasing number of large boats traversing the Atlantic Coast from Canada to Florida.

"We'll be part of the Chesapeake Bay Gateways Network. Someone stopping in Reedville will see us listed on the map and think about stopping here next."

"Urbanna is ideal for transient boaters," he adds, "because everything needed in town is within walking distance: a marine supply store, restaurants, a laundromat, groceries, and gift shops." He acknowledges the challenge of Urbanna's location – a two-hour haul upriver for a sailboat once it leaves the bay – but feels confident that with the right accommodations and attractions, he'll be able to pull boaters in from the mainstream route.

Satisfying those who come by

water is key to the future of small coastal communities like Urbanna, it is clear. Local shops must "make it on the two festivals and summer business, or they don't make it here," Sapione emphasizes. It's a classic case of cyclical economics.

Sapione dreams of embellishing the marina site. He's working with others to establish an educational element – perhaps onsite ecology exhibits or visiting lecturers. And new to the town calendar, Urbanna now hosts a spring-time arts festival on Urbanna Creek called "Art on the Half Shell." Plans to incorporate that event into the new marina site are already in the works.

The town's larger vision includes renovating the old tobacco warehouse into an interpretive museum, installing historic streetscape elements, and continued advertising of the walking-biking tour that takes boaters from the town dock to the many historic and eclectic points beyond. All of this will build upon Urbanna's quaint charm and scenic harbor, drawing in visitors by boat and securing its strong economic base well into the future.

#### **Other end of the spectrum**

Now, change gears to the City of Virginia Beach. As one of the most popular hubs in the lower bay for recreation of all kinds, the city consistently ranks as the top location for boating activity. The proximity of this urban complex to the lower Chesapeake and the James River makes it a magnet for boaters wishing to cruise or fish,

and they've been coming from Norfolk, Newport News, and Hampton in droves for the past two decades.

Here, boating experiences are shaped more by the physical constraints of traffic on local waterways. Conflicts arise during high season, when boat ramps are full and trailerable boats can't find a spot to slip into the water. Shore Drive in Virginia Beach has traditionally been a corridor of heavy use, as well as First Landing State Park just north of the city. Clay Bernick with the City of Virginia Beach has been working with the city's parks department to enhance public access in an environmentally sensitive manner.

A recent example is the city's outdoors plan, designating area waterways into specific public uses – for powered and non-powered watercraft. Waters appropriate to powerboats are targeted for an expanded network of access sites. A new boat ramp southwest of the Lynhaven Inlet is slated to open this fall, and the site will include beach parking and a walkway, a pier facility, restrooms, and a snack bar. Like this site, other public boat ramps will be expanded for motorized access through funding from the city and the Virginia Marine Resources Commission.

Rivers deemed most appropriate for non-powered boats like canoes and kayaks have also been identified in the outdoors plan. These waterways will not be open to personal watercraft or any other power-driven craft. Responding





*Waters in the lower peninsula often become congested during peak summer season.*

to concerns raised over the noise pollution, erosion, and other environmental impacts occurring in smaller, sensitive tributaries, Bernick says that area residents support the user designations. He is pleased that the city plans to develop several more passive-use sites in the coming years.

The idea of directing recreational use where it is most appropriate is happening across the country in parks and public spaces. It's not surprising, then, that designated use areas would evolve on the water, as voices rise about the impacts of boating to property values and the near-shore environment.

Hugo Valverde with the Hampton Roads Planning District Commission warns that attempting to quantify recreational boaters' impacts on an area is difficult, at best. An increase in conflicts between people or between people and natural resources in the lower peninsula has led to several attempts to define a waterway's "carrying capacity."

Aerial and physical surveys, boater satisfaction surveys, and accident rates each provide part of the picture, but other parameters are more difficult to isolate. Here and elsewhere along the Atlantic Coast, attempts to arrive at carrying capacity have been measured primarily from a social perspective. While they might incorporate some form of environmental impact – such as wake-induced shoreline erosion – they do not tell the whole story.

In coastal ports to the north and south, information of this type has been streamlined into comprehensive water use plans, based on regional motivations to manage harbors or to protect marine reserves, for example. Using existing models, the Commonwealth is dabbling in the concept through the leadership of the Virginia Coastal Program in its Southern Watershed Area Management Plan. In a promising attempt at multi-jurisdictional management, the cities of Chesapeake and Virginia Beach have

joined with several state and federal agencies to reduce water use conflicts through a public education campaign, first on the North Landing River.

The North Landing River is a place that has experienced higher than average boating accidents due to its narrow, meandering nature and popularity for PWC and other boats. It is also designated a Virginia Scenic River and home to jewels of wetlands as well as a rich array of wildlife species supported by them. A memorandum of agreement signed last spring fosters two important goals on the North Landing: to promote safe boating and to protect rare and unique ecosystems through greater public awareness.

The concept – and the resulting agreement – have been received enthusiastically by area residents, according to Clay Bernick. There's room for application to other rivers, perhaps those in the Back Bay watershed or the Northwest River in Chesapeake. For now, however, Virginia Beach is focused on reaching those who boat on the North Landing. Instructors with the U.S. Coast Guard Auxiliary plan to incorporate many tenets of the management agreement into their boater safety courses beginning this fall, and a series of public workshops is planned.

For those living in the southern watershed, this is a necessary step reached by public consensus. Hopefully, it will offer testimony to the ability of all boaters to play well together.



# “Terminal” Access

Getting on the water may seem second nature to those of us living along the coast or near public piers and landings. But for many Virginians who live further inland or visit Tidewater by car, access to coastal tributaries and bays can often feel elusive and simply out of reach.

The feeling is borne out by the numbers. The Middle Peninsula, for example, boasts over 1,000 linear miles of shoreline but is publicly accessed by a mere 15 entry

points. And public access to the water continues to shrink when shorefront properties abutting state roads change hands. Dead-end roads that were once considered informal ports of entry by neighbors toting fishing poles or small boats may suddenly become off-limits when new owners post “no trespassing” signs or fence off these asphalt or gravel highways to the sea.

A study recently conducted by the Middle Peninsula Planning

District Commission concluded that the region is home to more than 325 sites where primary and secondary roads end and where ownership of the remaining rights-of-way are fuzzy, at best. Part of the reason occurred in the 1930s with passage of the Byrd Act. By relieving localities from the associated financial burden and turning over responsibility for

all roads to the state, Virginia legislators created a mechanism to more effectively handle infrastructure development. During the transition, however, much information about ownership at road endings – in this case, at the shoreline – was misplaced.

With help and funding from the Virginia Coastal Program, planning district staff hope to identify ownership of a handful of sites from the list that are deemed most suitable for public water access. If a title search concludes that ownership resides with the Commonwealth, these “terminus points” at road endings could be turned over to a regional entity and become places for fishing, boating, picnicking, and wildlife watching. In order to make that happen, director of regional planning Lewie Lawrence envisions the creation of a public access authority to accept transfer of the shoreline properties and determine the best use for each site.

“That’s a better framework than asking local governments to take on the responsibility. A regional authority could look at the opportunities across the six counties and more nimbly cross local boundaries,” says Lawrence. “We need to do something radically different in how we manage rec-





reational water resources, rather than the fragmented approach that currently exists.”

That sentiment is echoed by Delegate Harvey Morgan of Virginia’s 98th District. Delegate Morgan has been working with regional planners and transportation officials to increase water and park facilities for Virginians. As a longtime representative familiar with the character of rural communities, he understands the phenomenon occurring as Virginia’s coast becomes gentrified, as shorefront properties are divided, and as new, often younger, landowners move into waterfront homes.

“Many of our Virginia coastal communities are experiencing rapid population growth. As we become less rural and more suburban, land development directly and indirectly results in the loss of traditional access sites,” notes Morgan, adding, “It is paramount that we preserve recreational access points for current and future generations.”



*Road endings at creeks, rivers, and embayments could potentially serve as public access sites that allow people to launch a small boat, cast for a fish, or simply sit and watch wildlife.*



## ACCESS TIPS

The Chesapeake Bay Program has published a “Public Access” map for the entire bay watershed. The map is loaded with information about boat launch sites, swimming beach areas, and other public amenities. According to the latest edition, Virginia offers 100 boat ramps on tidal waters – 75 on the western shore and 25 on the eastern side of the bay. Call 1-800-YOUR-BAY to request a copy of the map.

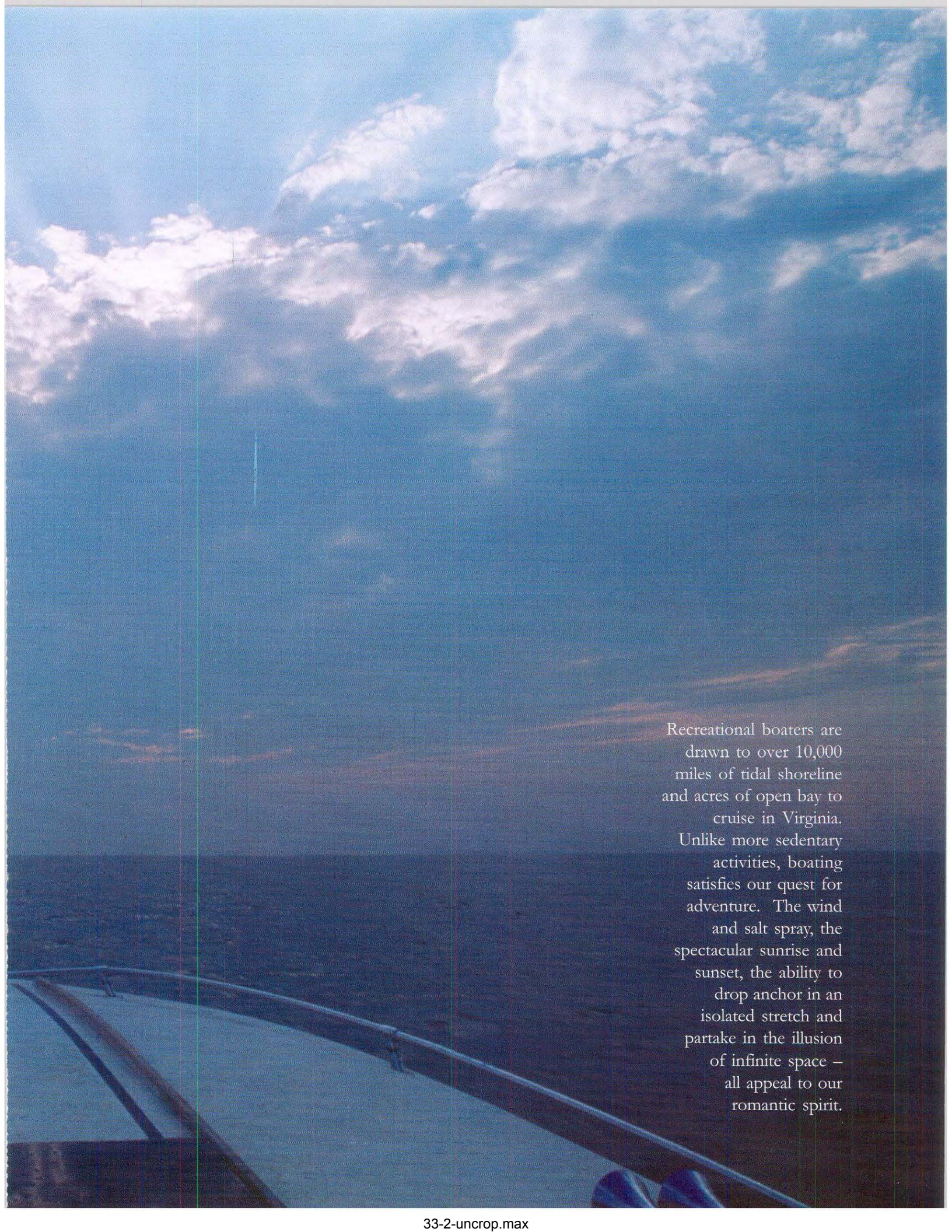
Tidewater, Virginia also is home to approximately 250 marinas, many of which offer boat launch areas for trailerable or car-top boats for a small fee.

The state also claims a healthy charterboat industry as well as livery services for small boat rentals and guided trips. Check with your local chamber of commerce or county recreation office for more information about these enterprises.









Recreational boaters are drawn to over 10,000 miles of tidal shoreline and acres of open bay to cruise in Virginia. Unlike more sedentary activities, boating satisfies our quest for adventure. The wind and salt spray, the spectacular sunrise and sunset, the ability to drop anchor in an isolated stretch and partake in the illusion of infinite space – all appeal to our romantic spirit.



# Exploring the Eastern Shore by Paddle

By Charlie Petrocci

The long trail of multi-colored boats slid through the marsh quietly and without hesitation. There was little conversation among the group, as each paddler locked in on the thoughts of his own personal experience. As the boats rounded a bend in the creek, passing a half-sunken derelict scow, a lone clapper rail flushed noisily from the lush *Spartina* grass. A handful of faded crab floats lined the shoreline and seemed to mark their passage. The remains of an ancient shell midden of long ago gatherers spilled out from an eroding bank, providing evidence of earlier explorers. As the group emerged from the creek into a small cove, they passed near a waterman busy pulling up his peeler pots. Each exchanged a glance of mutual admiration.

It's close and personal nature encounters such as these that have helped drive a recent form of ecotourism over the past decade across the U. S. Travelers today seek a more fulfilling vacation experience, one that involves more than just laying on the beach or driving and shopping. They are look-

ing for a regional visit to include cultural and natural history, and first-hand contact. And many of them are taking to the water to fulfill that desire.

This new genre of tourist seeks to inundate itself in the natural and traditional attributes of a region. One way to do this is by using watercraft like canoes or kayaks to sojourn to areas otherwise inaccessible to the casual visitor. And the Eastern Shore has become a diamond in the rough

for those seeking this type of learning vacation. Its myriad coastal bays and tidal creeks are a paddler's dream. Throw in abundant wildlife, magnificent scenery, deep cultural history, and plenty of drop-in access points and you have skinny water Mecca in the making.

The Eastern Shore, whose wealth of natural history and traditional industry lies at the feet of her waterfronts, is an ideal region to embrace the demands of water-



*Paddlers on the Eastern Shore experience first-hand the region's economic ties to the water.*



borne ecotourists. And they are showing up in large numbers. Evidence of rising ecotourism can be found just by watching the parade of pastel canoes and kayaks as they drift up and down Route 13, occasionally straying toward places like Cape Charles, Chincoteague, or Wachapreague.

### Ecotourism roots

Ecotourism may be a term that has been massaged to death, but it is still applicable in its simplest form. Not easy to define, ecotourism has evolved into a concept that means different things for various user groups. Its roots lie in outdoor recreation, environmental education, and nature-based tourism, with a twist of entrepreneurial business mixed in.

Ecotourism is certainly not new. It's been around for at least a hundred years or more.

In Africa, for example, the first types of tourists were primarily British and American hunters who were after the big game encounter. That initial wildlife experience has now evolved into African wildlife viewing and photographic safaris.

Today in the U.S. we consider eco-tourism to be individuals, families, or organized groups traveling to an area to enjoy its natural and cultural features. The attraction could be scenic waterways, coastal towns, food festivals, unique swamps, birding areas, or larger entities such as wildlife management areas or national parks. It's a low-key visitor encounter, with emphasis on gaining an iden-



*Guide and livery operations like this one in Cape Charles are a sign of the growing popularity of water-based ecotours.*

tifiable education about that region or place. But this type of tourism is not without its concerns. There are some regions that are literally being "loved to death," with too many people gravitating to the same user space. This has become more evident in several national parks, for example.

### Traditions lie at water's edge

So what does the Eastern Shore have to offer the water-oriented ecotourist? Actually, the possibilities are as numerous as its creeks and waterfront towns. Ecotourism on the Shore could mean interacting with a waterman mending gill nets along the shoreline, seeing a decoy carver test his stools for proper balance in a tidal creek, watching as loggerhead turtles surface for air, looking at the mechanics of a rusted crab pot on the shoreline, or envisioning a struggling maritime empire while gliding past historic homes lining

a deepwater creek. Each scene has a story to tell and it's only through backwater exploration that a visitor will come away with a personal interpretation.

The positive economic impacts of this form of aquatourism to the Eastern Shore are substantial as well. Ask any Eastern Shore B&B, restaurant, motel, or local tackle shop, and the owner will tell you that it has brought an influx of business and cash. Revenue is generated through lodging, fuel, and food, and sales of personal interest items such as binoculars, bird books, maps, and boat gear. More importantly, though, while paddling near working watermen, upland farms, and seaside aquaculture operations, aqua-tourists experience a first-hand encounter with usually hidden traditional occupations such as commercial fishing and agriculture. Thus, they will take home not only great recreational memories, but also a



better understanding of the socio-economic traditions of a particular area.

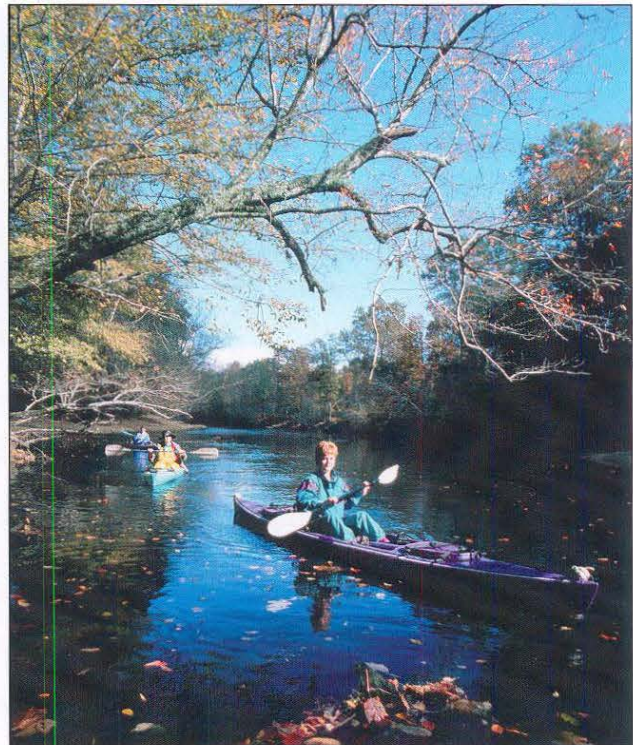
The Eastern Shore's natural wealth may lie in her not-so-advertised areas. These include countless creeks and bays along both the seaside and bayside, all serviced by numerous boat ramps. Places like Guilford, Occohonock, Onancock, Oyster, Saxis, Messongo, Pungoteague, Assateague, and over a dozen other areas are waiting to be explored by the intrepid adventure seeker.

Many paddlers arrive with their own boats, but for those who don't, a growing number of excellent Eastern Shore outfitters will supply all the necessary equipment. These outdoor recreation businesses can be found in towns like Cape Charles, Onancock, Willis Wharf, and Chincoteague to name a few. Most offer educational, guided tours or will deliver your boats to a local put-in site. Instruction is given in safety and watercraft handling. Most Eastern Shore outfitters service several types of users, including individuals, families, schools, and special interest groups.

Kayaking or canoeing is a user-friendly adventure suitable for all ages and a great way to get the family on the water without spending a lot of money. Getting out on back bays and tidal creeks is one of the most fulfilling and educational ways to learn about Virginia's history and

natural beauty. Those who've done it know of its potential; those who have yet to try it are in for a great surprise.

*Whether traveling the coastline or her inland waterways, canoeists and kayakers will find treasures to cherish throughout Virginia.*



The Virginia Institute of Marine Science has developed a certification course for ecotourism enterprises and the guides they employ. The course is the outgrowth of partnerships between VIMS, the Virginia EcoTourism Association, and the Virginia Coastal Program – who provided grant funding for its development.

In recognition of the tremendous potential of ecotourism enterprises, the Virginia EcoTourism Association took the lead to ensure the industry conducted itself in a responsible manner. According to Dr. Jim Perry of VIMS, "There was widespread recognition within the industry that ecotourism has much potential for good, but that it also has the potential to be self-destructive. Those involved wanted to set a framework for conducting business responsibly."

A combination of lecture and field study over a three-day period cover the fundamentals of ecotourism, the principles of guiding tours, a primer on Virginia geology, and the tenets of sustainability. The second half of the course tailors information to particular regions of the state. Instruction includes material specific to a region's cultural history and endangered species, for example. Lectures are supplemented with field study in which participants learn about the plants and animals endemic to their geographic region of interest.

Certification for a business involves a checklist of best management practices, good for several years with an annual audit renewal. The checklist is structured into three tiers to encourage continued refinement in management practices. Qualifications involve such things as ethical marketing and respect for the local culture, as well as an approved educational component. Customer feedback and random site visits help to ensure compliance.

For more information about the course, visit [www.veta.net](http://www.veta.net).





## Stewarding Virginia's Waters

By Harrison Bresee

In the not-so-distant past, most boaters in Virginia did not concern themselves with water quality issues. They just knew to avoid certain places – the areas immediately below sewage outfalls, for example. Businesses on the water did not worry about little things like rotting boats and abandoned buildings. Nature would take care of itself.

Those views have changed. Now it is not uncommon to find boaters picking up trash in the water with their fishing nets, or marina operators installing recycling bins next to trash cans. Simply put, environmental stewardship is rapidly becoming accepted and expected by a growing majority of the boating public.

Industry and government leaders and recreational boaters are all participants in this effort to keep our waterways clean. Every spring and fall, the Commonwealth and groups like the Ocean Conservancy sponsor shoreline cleanups, local businesses sponsor river cleanups, and oyster gardeners raise oysters at their docks for reef restoration work. Under federal mandate, boat engine manufacturers are designing cleaner burning and more efficient marine engines. Businesses are working hard to provide environmentally friendly products and work environments.

For their part, recreational boaters are using safer cleaners and less toxic bottom paints on their boats and even turning to much quieter electric boats, fueled by rechargeable batteries. In short, the boating public is littering less, recycling more, and participating in a variety of voluntary initiatives to take better care of its home waters.

### Protecting Public Safety

As the head of the Virginia Department of Health's marina program, Bob Clark has been "minding the store" along Virginia's coast for a good part of his career. What began in the early 1970s as an awkward marriage between marina operators and the state's health department to protect area shellfish beds from pollution by recreational boaters has evolved into a much more comfortable working relationship.

Over the years, the marina program has launched a number of initiatives aimed at cleaning up potential sources of contaminants from marina facilities, and three deserve mention here:

◆ **Boat Pump-out Program:** Provides technical assistance and funding for the installation of pump-out stations and holding tanks (of which, Type III tanks are recommended by the state). Significant cost-share monies (75 percent) are available through a grants program for equipment and installation expenses, that can typically run as high as \$12,000 to \$14,000.

◆ **Onsite Inspection Program:** Involves facilities inspections and technical assistance in resolving problems related to onshore facilities; and

◆ **Boater Education Program:** Involves one-on-one boater education through handouts and informal meetings between trained college students and recreational boaters, at marinas and public docks in metropolitan markets.

These efforts serve to augment state regulations that require the closure of waters surrounding a marina to the harvesting of shellfish during prime growing periods (April through October). The number of marina slips and physical attributes of facility location – things like tidal currents and water depth and width – help determine just how far out the waters are posted and closed to shellfish harvesting activity. A rigorous monitoring program conducted year-round verifies water quality standards surrounding shellfish beds. But according to the head of the shellfish sanitation program, Bob Croonenberghs, there is always room for additional research. The discharge of even small amounts of oil from boats into smaller tributaries, for example, may hurt the larval stages of shellfish. He adds that most waterways have not experienced impacts due to a marina's presence. The radial closures are a proactive measure designed to protect waters from the *potential* for trouble.

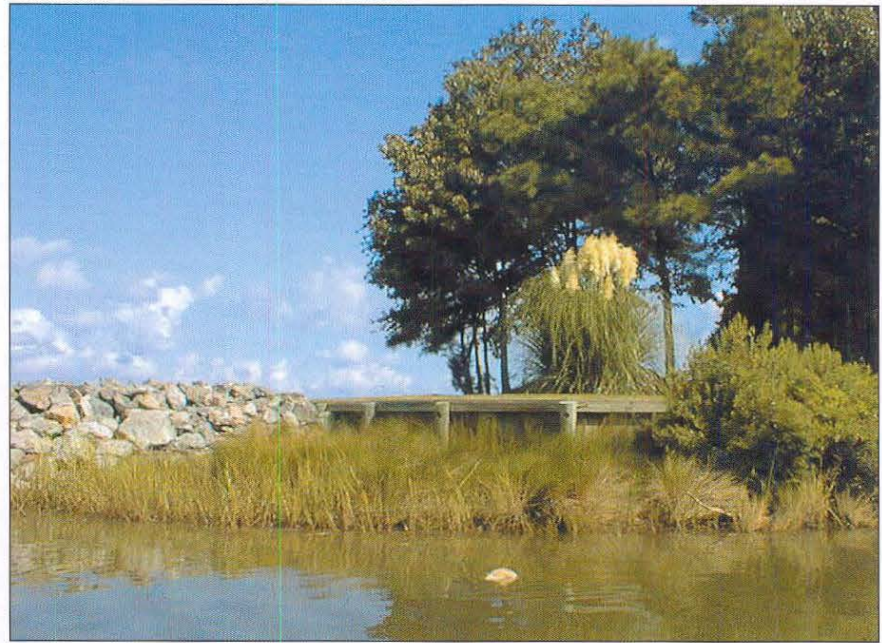
For more information about any of these programs, go to: [www.vdh.marinas/](http://www.vdh.marinas/).



This attitude toward protecting personal property is certainly nothing new. For years people have been cleaning litter from their waterfront land, planting trees and brush to ward off erosion, and doing countless other acts to enhance property values. What is unique is the fact that a public-private partnership is now in place, working together for a common goal: to keep Virginia's waterways – areas held in the public trust – healthy. One example of this partnership is the Virginia Marina Technical Advisory Program's *Clean Marina Program*.

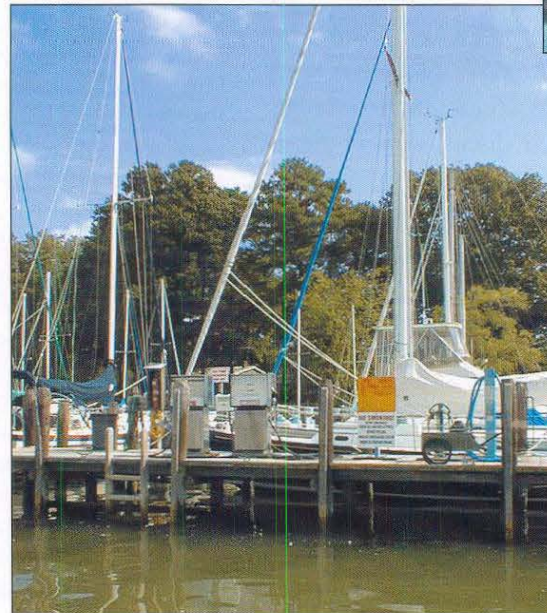
The Virginia Marina Technical Advisory Program is a non-regulatory program established to offer free technical assistance to marinas, local governments, and recreational boaters. The Clean Marina Program – a logical outreach arm – was funded by a Virginia Coastal Program grant from NOAA, in response to strong interest for specific guidance on environmental and regulatory issues impacting marinas.

The Clean Marina Program is designed to give marina operators an opportunity to voluntarily implement best management practices that minimize the potential for negative impacts on water quality and coastal resources. For example, a marina operator might choose to plant native vegetation between the parking lot and the shoreline. Native vegetation is drought-resistant and thus requires less watering (which saves the marina money), and it helps filter potential pollutants from en-



tering adjacent waters in the form of runoff during storms.

A list of these practices, laws affecting marinas, and directions on how to become a Virginia Clean Marina, as well as contact information and funding opportunities are available in the *Virginia Clean Marina Guidebook*. More information is available online at [www.vims.edu/adv/vamarina/](http://www.vims.edu/adv/vamarina/) or may be requested by calling 804-684-7768.



*Marina operators and boaters are more environmentally conscious today. Vegetated shoreline buffers, signs urging recreational boaters to keep waterways clean, and boat pump-out stations are positive reminders of our collective stewardship responsibilities.*



# "Luxury" is a Relative Term

By Tom Murray

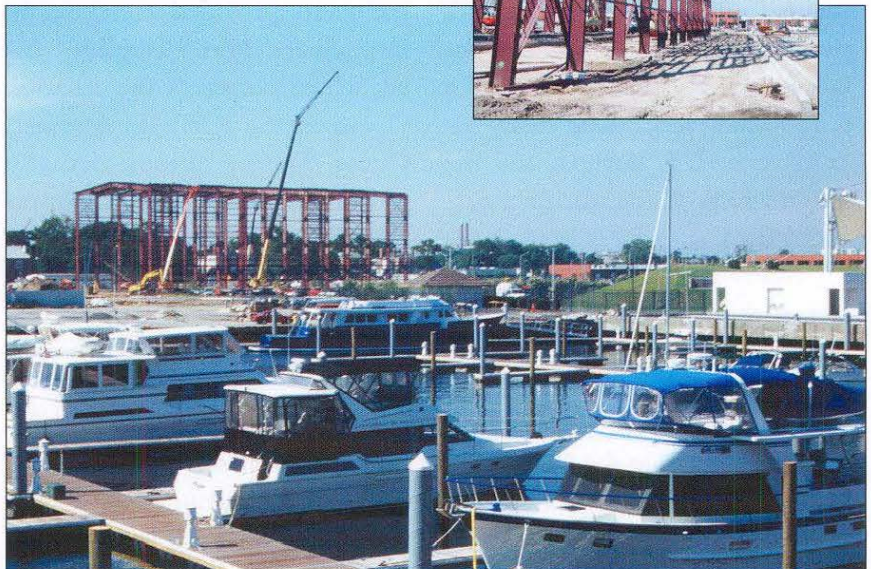
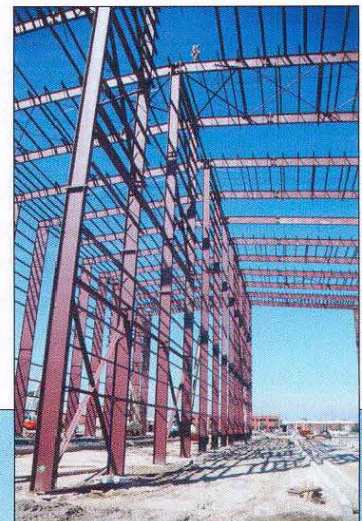
The yacht industry has experienced cyclical expansions and contractions throughout the 20th century. Numerous indicators suggest that the current expansion both worldwide and in the U.S. has been the greatest of all time in terms of the number, size, and cost of luxury yachts under construction and use. Nowhere has such growth in the activity of luxury yachts measuring 80 feet or longer ("mega-yachts") been experienced more dramatically than in the southeastern U.S. Between 1991 and 2000, the United States nearly doubled the number of new mega-yachts under construction – placing it second worldwide in the number of yachts under construction at the end of 2000.

Another indicator of surging production is the backlog for new vessels at leading shipyards worldwide. Delivery of new yachts has slowed to an average of two to three years from start to completion. The trade press reports that such vessels are expected to maintain their market value, and investors are betting that such acquisitions may be used and then sold to recoup significant cash outlay. Additionally, industry leaders suggest that the bottlenecks in new construction have added to active demand for existing mega-yachts.

Seeing this situation, the Virginia boating industry has invested significant financial resources to position itself as a player in the world of luxury mega-yacht service, repair, and maintenance. Currently under construction is a new multi-million-dollar facility, Ocean Marine, LLC Yacht Center, in Portsmouth. Located on the site of the historic Coast Guard Station, Ocean Marine is on the verge of completing its world class, mega-yacht service and repair complex.

Specifically important to Ocean Marine and to the future of the Portsmouth facility is the burgeoning size of mega-yachts

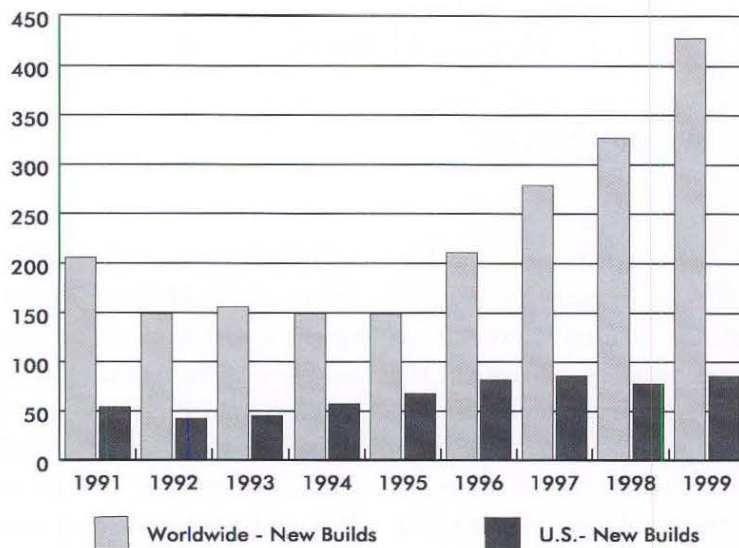
under construction in the United States, Italy, Holland, and Germany – which together account for 74% of the world's total yacht production. Today's average "new build" measures 150 feet in Holland and Germany, 114 feet in the U.S., and 109 feet in Italy. Visitors cannot miss sight of the impres-



*One look at the rising superstructure of the impressive Ocean Marine "paint shed" confirms that its thousand-ton synchrolift capability will fill a unique niche in the steadily rising mega-yacht market.*



**Mega Yachts Under Construction Worldwide & U.S.  
1991-1999**



Source: ShowBoats International.

sive Dutch-built luxury yachts, “Feadships,” currently frequenting the Hampton Roads waterfront for service and repair.

To Ocean Marine management, the region currently provides a premier base for an expanding, worldwide mega-yacht hub. Portsmouth’s prime East Coast position is considered a major location advantage. With two-thirds of the nation’s population and industrial activity within a 750-mile radius, it is easily accessible to U.S. boaters, and the vast majority of the world’s mega-yacht fleet.

Many charter luxury yachts transit the Atlantic for the summer season in the Mediterranean and return to the southeastern U.S. in the late fall for a winter season centered in the Caribbean. Portsmouth provides a new and strategically located “gateway” to vessels of this caliber and service.

Logistical issues facing other

mega-yacht centers also serve to enhance Portsmouth’s competitive position. For example, the current depth at the acknowledged world yacht center at Fort Lauderdale, Florida, restricts vessel access to the area. The Atlantic Intercoastal Waterway (ICW) provides access from the north and south, but the larger mega-yachts are provided access solely through the Port Everglades Inlet, which connects the Atlantic Ocean to the ICW. In contrast, Ocean Marine enjoys virtually unlimited access to the open ocean’s deep water, offers a sheltered location, and, particularly relevant to Europe and the northeast, a year-round ice-free facility.

#### **Serving sophisticated needs**

Ocean Marine’s employees have extensive backgrounds in the servicing of complex vessels through a proven track record in military procurement. This experience

will be a considerable strength in serving the larger, more complicated vessels that contain high-tech guidance, communication, and hydraulics systems that are beyond the capabilities of many existing luxury yacht yards.

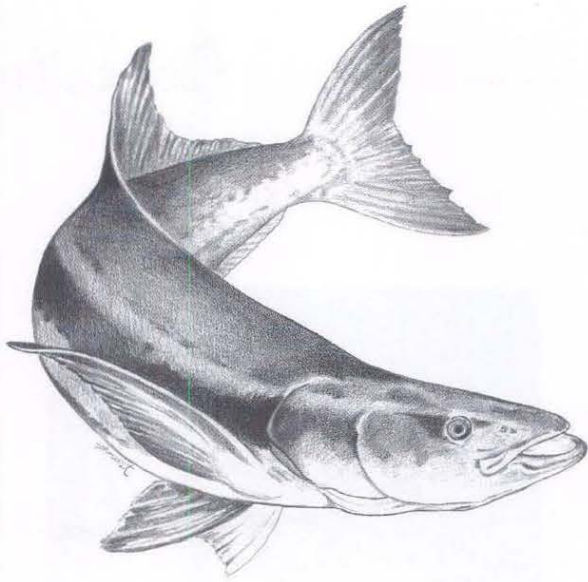
Typically for the luxury yachts, boat yard expenditures are of two types: annual haul-out and routine maintenance; and periodic haul-out (every 3 to 4 years) to accommodate complete painting and overhaul. While the cost of hauling vessels understandably varies with size, a 150-foot vessel hauled and painted could run \$200,000. At the same time, the vessel’s engines would likely be overhauled, at a cost of approximately \$150,000.

While undergoing this work at the boat yard, additional central air-conditioning, electrical generating, hydraulic pump and miscellaneous refurbishing typically would be conducted. Such related work may add another \$200,000 to the bill. Interior refurbishment on these vessels can run from \$200,000 to in excess of \$1,000,000, and a typical 12-week job at a boat yard could cost \$2-3 million for a vessel requiring major work.



Perhaps the one “constant” of ownership and operation of a mega-yacht (indeed, any boat) is continuous expense, including repair and retrofitting costs. When those needs inevitably arise, Portsmouth’s Ocean Marine, LLC aims to service the Atlantic’s growing luxury yacht fleet while bringing new economic activity to Virginia’s marine industry.





## A Charter Boat Can Get You There

By Charlie Petrocci

*For the many Virginians who do not own a boat, getting on the water is not out of reach. The state's charter boat industry still claims a healthy fleet of boats and captains willing to take small groups out for deepwater fishing (perhaps for cobia, shown here) or simply to enjoy the sights. Many of these captains, you will discover, come from a long line of seafaring families and have colorful tales to share about regional history.*

Pushing hard against almost 100 years, the charter boat fishing industry of Virginia plays an important role in regional tourism and the economic well-being of many small coastal communities. From small towns like Chincoteague and Wachapreague to larger marina clusters such as those found around Virginia Beach and

Deltaville, the charter boats found in these ports are a visual reminder of our deep cultural roots in sportfishing. Though faced with ever-changing regulations, legal issues, and fluctuating resources, charter boats continue to survive.

Charter boat operators have been guiding, entertaining, and educating generations of anglers who in the past had to go with a hired boat to get in on the action – to participate in an otherwise rich man's game. But that has changed in the last 20 years, as increased personal wealth has enabled more people to buy their own boats. This has cut deep into the charter boat business, yet the industry remains resilient.

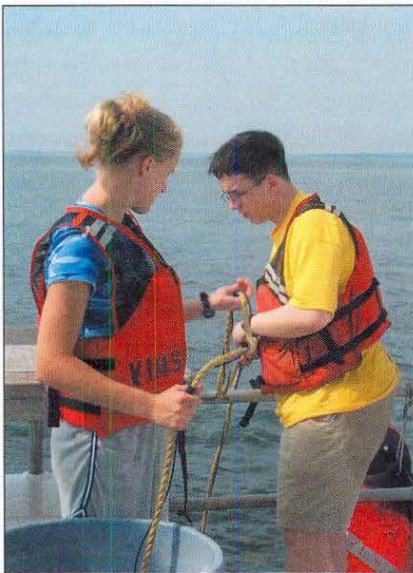
Wachapreague, home of the oldest charter boat fleet in Virginia, is a testimony to that. Here, 20 or more boats for hire still take anglers out to offshore haunts as they have done for decades. It is

here that one can find three generations of captains searching the blue water for offshore giants. Like commercial fishermen, some boats are semi-nomadic, with captains migrating seasonally to various locations following fishing patterns. Several western shore captains come over to the Eastern Shore for the annual black drum, red drum, and cobia fishing of late spring. And the charter patrons are nomadic as well, with many regular customers coming as far away as Pennsylvania, West Virginia, or New Jersey.

In the last few years, many boats have richly rewarded their customers, primarily because of rebounding fish stocks and agreeable harvest regulations. That's a good omen for host communities like Wachapreague, where a small town still clings to the shadows of the Zane Grey and Earnest Hemingway era.



## Marine Educators Make Waves!

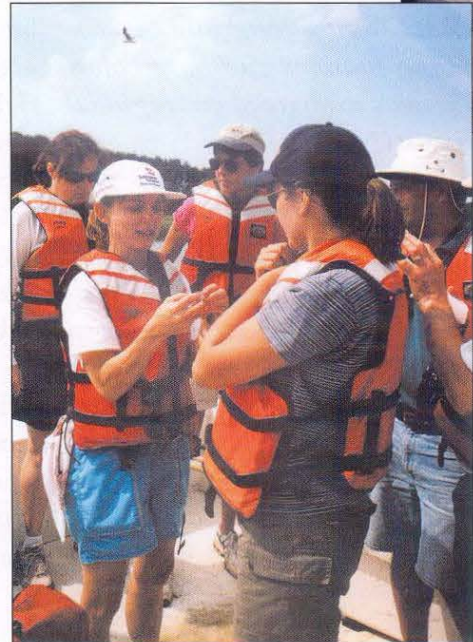


Marine educators covered lots of ground this summer! The sea turtle workshop (3 photos above) was packed with information about turtle life history and general biology. Teachers also used scan tag equipment and participated in a turtle release.

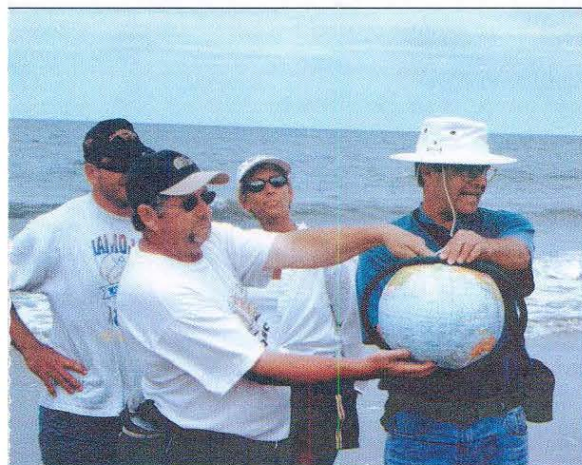
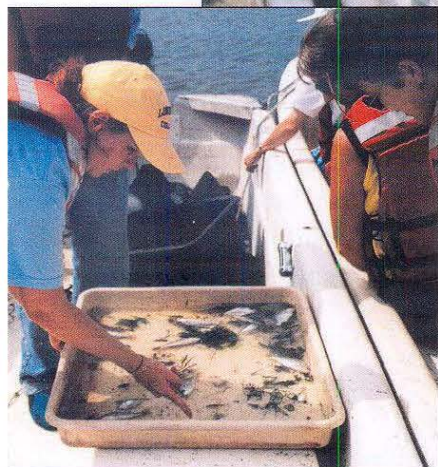
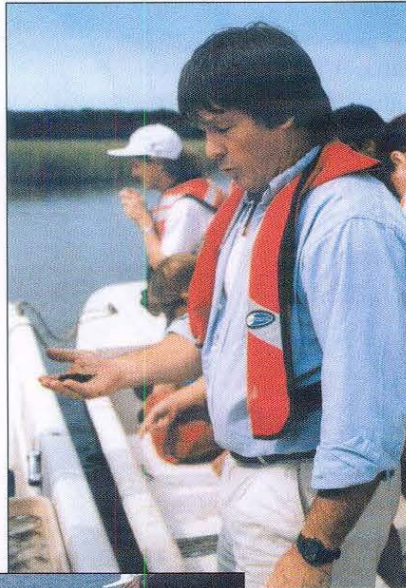
The Governor's School program brought another 6 exemplary high school students to the campus, for five weeks of research guided by faculty, graduate students, and staff. The photo to the left shows students lowering a CTD in order to measure water conductivity, depth, and temperature.

A graduate course for secondary school science teachers (4 photos to the right) was held for the first time at the Wachapreague lab on the Eastern Shore. This week-long course offered plenty of field study and the opportunity for teachers to interact directly with VIMS scientists.

Information about courses and workshops is posted at the VIMS Marine Education website: [www.vims.edu/k-12](http://www.vims.edu/k-12).







## Cultured Cobia Satisfy Tastebuds

By Mike Oesterling

After one full year of growth, the first U.S.-spawned-and-raised cobia (*Rachycentron canadum*) weighed over 8 pounds. This tremendous growth rate has piqued domestic interest in its commercial culture.

Prior to such a venture, numerous questions need to be answered before investors might be willing to commit to cobia aquaculture. Besides the obvious ones about production technology, an important consideration is just how the cultured product will compare to wild-harvested cobia in the marketplace. To begin answering this question, graduate student Patrick Kilduff conducted two evaluation tests using VIMS-cultured cobia and wild-harvested Chesapeake Bay cobia. The first, a triangle test, had taste-testers attempt to identify the odd sample out of three pieces of prepared cobia. Not designed to identify preference, the test identified whether a noticeable taste difference existed. Approximately two-thirds of the panelists could identify the “different” sample.

The second test conducted by Kilduff was a head-to-head preference test where panelists were asked to choose the piece of cobia they liked best. Each panelist was given two pieces of prepared cobia – one cultured and one wild. They were then asked to indicate which one they preferred, respond to other product questions, and provide comments. The panelists split almost equally in their choices, indicating little difference in the two products and a readily marketable cultured product.

The success of the cobia project served as a catalyst to bring together other scientists interested in cobia culture and resulted in a collaborative, 2-year research effort funded by the federal government. Scientists and private entrepreneurs from Texas, Mississippi, South Carolina, and Massachusetts have now teamed up with VIMS scientists to develop the basic information necessary to fast-track commercial cobia culture.

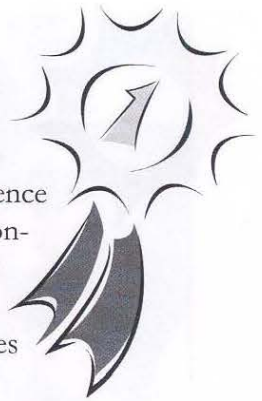


# Announcements

## SOUTHEASTERN MARINE INDUSTRY EXPO & CONFERENCE PLANNED

Dates have been set for the 2001 Marine Trades Expo and Conference. It will be held December 11-13, 2001 at the Lightsey Conference Center in Charleston, South Carolina. Now in its third year, the joint venture between North and South Carolina industry groups was held in New Bern, North Carolina, in 2000. The event has expanded to include industry and government participants from Virginia to Georgia.

Kudos to marine educator Vicki Clark, who was recently sworn in as the president of the National Marine Educators Association during their annual conference in Victoria, British Columbia. The conference attracted more than 500 marine educators and researchers from the U.S. and Canada, as well as distant countries such as Portugal and Korea.



The VIMS Marine Advisory Program welcomes Dan Sennett, who recently joined the staff as an aquaculture technician. Dan will be working with the marine finfish culture program as the live-foods and larval culturist. He also will contribute his talents to the construction and operation of recirculating water grow-out systems. Previously, Dan served as assistant hatchery manager for the VIMS Aquaculture Genetics & Breeding Technology Center, and he brings valuable experience in water system design and maintenance to his new position.

### – VIRGINIA SEA GRANT LANDS NATIONAL AWARDS –

Virginia Sea Grant researchers and outreach staff have been extremely successful in landing national awards for projects occurring from now until 2003. A total of \$2,144,846 will be awarded to the program. Awards for *National Strategic Investment* projects have been granted for coastal community development, aquaculture, technology program projects, oyster disease research, and the study of aquatic nuisance species. In addition, the Chesapeake Bay Toxics Research Program has received a third-year renewal.

Graduate students from VIMS also have received a large share of national awards. Selected by Virginia Sea Grant for Dean John A. Knauss Marine Policy Fellowships in Washington, D.C., are master's degree candidates Arminda Gensler, Sara Mirabilio, and Catherine Ware, and Ph.D. candidate Shelby Walker. A fifth fellowship has been jointly awarded by Sea Grant and the National Marine Fisheries Service to VIMS graduate student John Walter for his work in population dynamics. "All of these people are to be congratulated for their successes and the increased recognition that their efforts will bring to themselves, to the institution, and to the Virginia Sea Grant College Program," said program director William L. Rickards.







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