

## Point of View Sheet: Ordinary Citizens

Your group will represent the point of view of an ordinary citizen living in the Chesapeake Bay watershed area. People going about the normal business of their daily lives all have an effect on the area in which they live.

After you have read the selection, discuss these questions with the rest of your group as if you were a citizen of the bay area:

- In your own words, how do you think you, as an ordinary citizen, contribute to the problems in the Chesapeake Bay?
- How could the different members of your family help solve the bay's problems?
- What solutions would be difficult to live with?
- What benefits would you get from a healthier bay?



Hundreds of thousands of people live, work, play, and go to school in the Chesapeake Bay watershed area. Some live in apartment buildings or private homes in cities like Baltimore, Maryland; Wilmington, Delaware; and Washington, D.C. Others live in suburbs or small towns. Still others make their homes in the country.

And they do many different things to make a living. Some spend a lot of time working outside on farms, boats, construction sites, shipyards, or parks. Others work inside in factories, hospitals, schools, offices, shops, restaurants, museums, or theaters.

Wherever they make their homes, many people in the area enjoy the excitement of city life. Others like to get away from it all and spend time on or near the waters of the Chesapeake Bay.

### From an Ordinary Citizen's Point of View

Here are two quotes from ordinary citizens of the bay area:

*My big sister washes her hair two times a day! I tell her she's using up too much hot water. That's wasting energy.*

*This year when I voted for my Maryland state representative, I looked closely at all the candidates' stands on environment. I voted for the one who had some really good ideas about saving the Chesapeake Bay.*

### How People Contribute to the Bay's Problems

All people living in the Chesapeake watershed area create pollutants. In some way or another, these pollutants eventually reach the bay. As a citizen of the bay, here are some problems you might create:

- You produce garbage and sewage.
- You drive cars, trucks, buses, lawnmowers, and boats. All of these produce exhaust that adds to air pollution.
- You use energy in the form of gas and electricity to run appliances, operate televisions and radios, open garage doors, and heat, cool, and light your homes. This energy from fossil fuels creates air pollution and contributes to acid rain.

### How People Can Help the Bay

Everyone can do his or her part to help the Chesapeake Bay. If you were a citizen of the Chesapeake Bay area, here is just a sampling of things you could do to save energy. You will probably think of many more.

- Use less energy. Lower the thermostat in winter and turn it up in the summer. Walk, ride a bike, carpool, or use public transportation. Turn off lights when you leave a room.
- Save water. Take shorter showers. Don't let the water run when you brush your teeth. Fix leaky faucets. Run the dishwasher only when it is full. Install water-saving toilets and shower heads. Plant trees and grasses that don't need watering.
- Produce less trash. Recycle glass, metal, aluminum, paper, and motor oil. Reuse old materials or donate them to someone

who will. Avoid buying disposable items. Compost leaves and food scraps and turn them into valuable soil.

- Stop using toxic products like chemical weed killers or insecticides. Pull weeds by hand and select plants that resist insects.
- Stop using chemical fertilizers on lawns and gardens. Investigate organic gardening.
- Dispose of toxic materials properly at designated community disposal sites (such as a local car service center or paint store). Never pour poisons like paint, oil, or antifreeze down the sink drain, onto the ground, or down a storm drain.
- Support elected officials who are in favor of laws to protect the bay. Then let these officials know what you think by calling them or writing letters to express your concerns.
- Learn more about how to save the bay and share what you learn with others.
- Join a group to take action on any one of the bay's problems. There are many responsible organizations working hard to improve the Chesapeake Bay.

### Trade-offs: Advantages for the Bay and Disadvantages for the Group

Sometimes what is good for the environment is hard on people. Reread each suggestion about how ordinary people could help the bay, and then ask yourself these questions:

- How would this solution help improve the bay?
- What are the trade-offs involved in this solution?

## Point of View Sheet: Land Developers

Your group will represent the point of view of land developers in the Chesapeake Bay area. Developers make their living by planning and building homes, roads, shopping centers, and office buildings. Besides supplying us with the structures we need, developers also provide many jobs.

After you have read the selection, discuss these questions with the rest of your group as if you were a land developer in the bay area:

- In your own words, how do you think you, as land developers, contribute to the problems in the Chesapeake Bay?
- How could you help solve the bay's problems?
- Which solutions would be hard on you?
- What benefits would you get from a healthier bay?



### From the Land Developers' Point of View

Here are two quotes from land developers in the bay area:

*Sure the Chesapeake Bay is a beautiful area. That's why people want to live there. By building homes on the waterfront, we're simply giving folks what they want. Filling a need.*

*We want another highway built outside of Washington, D.C. And maybe in the long run it's bad news for the bay. But have you ever gotten stuck in rush hour traffic on your way out of D.C.? I've never seen so many cars! Commuters are begging for another highway.*

Land development in the entire Chesapeake watershed area is a big business. It involves thousands of people in many different kinds of jobs: buying and selling land, planning what to build, designing the buildings, constructing them, decorating, landscaping, loaning money, and writing legal contracts, to name just a few. As they see it, the developer's job is simply to provide what people moving into the Chesapeake area want: affordable housing, good roads, convenient shopping, offices, and schools.

Of course, land developers have to follow rules about what they can build, where they can build it, and how many buildings they can put there. Other rules tell how a neighborhood should look, such as how wide the streets can be and where the houses can go. Plus they have to follow rules that help prevent pollution (like the soil that can wash off construction sites after rain storms).

Many developers claim that these rules are too strict and that they cost too much to follow. But other people say that even stricter codes are needed to protect the bay.

The Chesapeake Bay area is a very desirable place to live. Some think that too many people already live there and that development should be strictly limited. But right now, more people continue to move in every day.

So, every day more farmland is turned into housing tracts. More forests are cleared and paved over. And more wetlands are filled in. Wherever people move in, much of the wildlife moves out. So, many different species of both plants and animals are rapidly losing their homes.

### **How Developers Contribute to the Bay's Problems**

If you were a developer in the Chesapeake Bay area, here are some problems you might create:

- Trees help keep sediment out of the bay by holding the soil in place with their roots and by absorbing and slowing down rainfall. As a developer, you need to cut down these trees to clear the land for building.
- When you build, you replace natural surfaces (such as trees, bushes, grasses, and leaf litter) with hard surfaces (such as pavement and rooftops). Whenever it rains, these hard surfaces send runoff gushing toward the bay.
- The runoff from your construction sites is loaded with sediment. Sediment clouds the bay's waters and cuts off light from underwater grasses, clogs fish gills, and smothers bottom-dwelling animals.
- The more homes, highways, offices, and shopping centers you build, the more people move into the Chesapeake watershed area. They all produce garbage and sewage, drive trucks and cars, and use electricity. One way or another, these activities produce pollution, which travels down to the bay.

### **How Developers Can Help the Bay**

As a developer in the bay area, here are some things you can do to help the bay:

- Try to cut down fewer trees. To help replace the forests lost to construction, plant new trees.
- While construction is going on, build barriers, such as silt fences, to hold back runoff. These barriers hold back soil but allow water to go through. This keeps more sediment from washing into the bay and keeps soil from being stripped from the land.
- Try to put up more energy-efficient, less polluting buildings, even though these may be more expensive to build.
- Plan new developments so that buildings are close together, not spread out over a big area. That way people can use carpools or public transportation.
- Build developments that protect wildlife by leaving as many natural forest and stream areas as possible.
- Try to use less pavement or pavements that let water seep through.

### **Trade-offs: Advantages for the Bay and Disadvantages for the Group**

Sometimes what is good for the environment is hard on people. Reread each suggestion about how land developers could help the bay, and then ask yourself these questions:

- How would this solution help improve the bay?
- What are the trade-offs involved in this solution?

## Point of View Sheet: Recreational Boaters

Your group will represent the point of view of the recreational boaters. These people enjoy spending their free time motoring or sailing on the waters of the Chesapeake Bay.

After you have read the selection, discuss these questions with the rest of your group as if you were a recreational boater:

- In your own words, how do you think you, as a recreational boater, contribute to the problems in the Chesapeake Bay?
- How could you help solve the bay's problems?
- Which solutions would you find difficult to live with?
- What benefits would you get from a healthier bay?



### What Some Boaters Have to Say

Here are three quotes from recreational boaters in the bay area:

*People always think boaters are the bad guys. When industries and cities clean up their mess, then I will be more than willing to do my share.*

*The problems are complex and everyone's responsibility. I'm willing to use a holding tank [for sewage] provided I can have it pumped when I need to. And that it doesn't cost too much.*

*In marinas, it's not so hot, with styrofoam, paper cups, and fish heads and guts floating around.*

### From the Recreational Boaters' Point of View

Recreational boaters have found the Chesapeake Bay to be a delightful "playground." Tens of thousands of them spend their free time sailing, motoring, sunning, swimming, fishing, and crabbing there. Because they love being on the water, boaters have become concerned about the state of the bay.

Over the past several years, boaters have complained that the water is getting dirtier. Because of algae blooms and sedimentation, the water is not as clear as it used to be. And it is also littered with floating trash: paper, styrofoam containers, bottles, food scraps, fishing lines, oil, and even sewage. The water is not nearly as much fun to be on—or in—as it used to be.

Boaters have chosen to spend their recreational dollars in this area. And they contribute a great deal of money to the local economy. They spend money to buy and outfit their boats. Then they spend still more money on fuel, upkeep and repairs, storage, docking in a marina, and high sewage pump-out fees.

Plus, boaters are having a harder time finding space to keep their boats when they're not on the water. More and more, marinas are being crowded out by other kinds of commercial development.

Many recreational boaters also feel that they are only a small part of the pollution problem. But they want to continue to enjoy the bay. So they also want to use it in a responsible way. Many support taking strong action to improve the water quality in the Chesapeake Bay.

### **How Recreational Boaters Contribute to the Bay's Problems**

If you were a recreational boater in the bay area, here are some problems you might create:

- Although the federal government has laws against it, some of you still use the bay as a dump. You toss trash, garbage, and sewage overboard.
- Boats can spill toxic materials such as motor oil, gasoline, and antifreeze into the water. And over a long period of time, bottom paint from your boats can also be toxic to marine organisms.
- Boat marinas destroy shoreline habitats and draw additional people to the area.
- Boats traveling at high speeds make wakes (waves close to the shore) that cause shoreline erosion.

### **How Recreational Boaters Can Help the Bay**

As a recreational boater in the bay area, here are some things you can do to help the bay:

- Dispose of trash and toxic products properly: on land.
- Install and use a Coast Guard-approved toilet on board your boat. Have the toilet tank emptied at an approved pump-out station.
- If boaters must use toxic paint, make sure to use and dispose of it in a way that does not harm the environment.
- Strictly obey a "no-wake" speed limit near shoreline areas.

### **Trade-offs: Advantages for the Bay and Disadvantages for the Group**

Sometimes what is good for the environment is hard on people. Reread each suggestion about how the recreational boaters could help the bay, and then ask yourself these questions:

- How would this solution help improve the bay?
- What are the trade-offs involved in this solution?

## Point of View Sheet: Watermen

Your group will represent the point of view of the watermen. These people make their living by harvesting seafood directly from the Chesapeake Bay. We depend on the watermen to provide us with a wide variety of seafood to eat.

Watermen set traps for crabs, dig for clams and oysters, and put out nets for fish. Most watermen use a lot of different kinds of equipment. Their work is seasonal (different kinds of seafood are caught at different times of year). So they switch from one catch to another to keep working all year long.

After you have read the selection, discuss these questions with the rest of your group as if you were a waterman in the bay area:

- In your own words, how do you think you, as a waterman, contribute to the problems in the Chesapeake Bay?
- How could you help solve the bay's problems?
- Which solutions would you find difficult to live with?
- What benefits would you get from a healthier bay?

### From the Watermen's Point of View

Here are two quotes from watermen in the bay area:

*The major problem for the bay is population, too many people. They built dams, which kept the fish from breeding. They dump billions of gallons from city sewage treatment plants into the bay and cause algae blooms. Runoff*



*from blacktop and rooftops washes impurities into the bay every time it rains. And the watermen have to pay the price for the “people problem.” We are the ones who get regulated.*

—A representative of the Maryland Watermen's Association

*Needless to say, the money's not in this that's in other jobs. But there's a certain peace of mind to it. You've got to resign yourself you're never going to be rich, just about make a living, that's all. But there are no deadlines. Nobody telling you what to do.*

—A longtime waterman

The life of a Chesapeake Bay waterman is not easy—up before dawn, out on the water in all weather, muscles straining. And there is not much reward for the hours of back-breaking labor. Catches are low because of both pollution and the laws restricting how much watermen can catch. Because of disease and pollution, oysters are very scarce. Only

the blue crab is still plentiful. But no one can predict how long this will be true.

Most watermen would agree that it is getting harder and harder to make a decent living from the Chesapeake. The bay itself is yielding less. And the watermen find themselves competing with sports fishermen and recreational shellfishers for the limited catch.

The total number of watermen working the bay stays about the same from year to year. But the number of sports fishermen is growing rapidly. The two competing groups have very different points of view.

Watermen go out on the bay to earn a living. So they are vitally concerned with the health, size, and number of creatures in the bay. They must pay a license fee and all the expenses (such as fuel, boat maintenance, salaries for the crew, marina tie-up costs). What's left over from the sale of their catch is their profit, what they live on.

Watermen also must obey laws about how much they can harvest from the bay each day. Before they can sell their rockfish catch, they must first stop at a checking station. There, marine police approve the amount of fish pulled in that day.

Sports fishermen, on the other hand, go out on the bay for fun. And although many care about the environment, they do not depend on the Chesapeake to make their living. Sports fishermen don't share the same expenses that the watermen bear. And they don't have to check in their catch at a marine police station.

Some watermen also feel that they are being crowded out by new development. New houses dot the area, new condominiums rise up, and new marinas appear on the shoreline. All of this can only mean more people, more boats, and more competition.

### **How Watermen Contribute to the Bay's Problems**

If you were a waterman in the bay area, here are some problems you might create:

- Some experts think that in spite of regulations, you still take too much out of

the bay each year. The fish and shellfish are not able to reproduce and replace themselves as fast as you pull them out.

- Like anyone else who lives in the Chesapeake Bay area, you and your family produce garbage and sewage, drive cars, trucks, and boats, and use electricity. One way or another, these activities produce pollution, which travels into the bay.

### **How Watermen Can Help the Bay**

As a waterman in the bay area, here are some things you can do to help the bay:

- Some experts suggest that the best way to bring back the oysters, clams, crabs, and fish is just to "let them rest," or stop catching them for a while until their populations can rebuild. This strategy has already worked with the rockfish. But it is very hard on you, since your living depends on your catches.
- Others suggest that whenever a species becomes scarce in the bay, you should have to limit your catch on that species.
- Work cooperatively with marine biologists to set limits on the harvest. Biologists could study life in the bay and recommend how much of each species would be safe to harvest. You could provide the commonsense observations and understanding of the bay passed down through the generations.
- Support elected officials who will work for the bay's protection.
- States could enforce a two-year waiting period on licenses for people who want to become watermen. This would help limit the number of new watermen like you working the bay.
- Be sure to obey federal regulations against dumping sewage and garbage from boats.

**Trade-offs: Advantages for the Bay and Disadvantages for the Group**

Sometimes what is good for the environment is hard on people. Reread each suggestion about how the watermen could help the bay, and then ask yourself these questions:

- How would this solution help improve the bay?
- What are the trade-offs involved in this solution?

## Point of View Sheet: Dairy Farmers

Your group will represent the point of view of the dairy farmers who live in the Chesapeake Bay's watershed.

We depend on dairy farms to raise cows for the milk and milk products (such as cheese and ice cream) that we enjoy. Often, dairy farmers raise other animals and crops on their farms as well. But cows are their main source of income.

After you have read this selection, discuss these questions with your group as if you were a dairy farmer:

- In your own words, how do you think that you, as a dairy farmer, contribute to the problems in the Chesapeake Bay?
- How could you help solve the bay's problem?
- Which solutions would you find it difficult to live with?
- What benefits would you get from a healthier bay?

### From the Dairy Farmer's Point of View

Here are two quotes from dairy farmers in the bay area:

*I never gave much thought to how my cows might be affecting the Chesapeake Bay. Then last weekend I went to visit some friends who had a cottage back on a stream there. I saw the water, and holy smoke! It looked pretty stale. I wouldn't want to swim in it. Or eat anything that came out of it.*



*Sure, I know about the Chesapeake Bay's cleanup program. A lot of the things they recommend I should have been doing for years. I'd see my cows in the hot summer when I was out baling hay, down there in Sinking Creek, and I'd know they were using that water as their own personal toilet. . . . You just put things off, and never get around to them.*

Being a dairy farmer is a tougher job than you might think: getting up while it's still dark to feed the cows, milking them (usually two times a day), and raising hundreds of acres of corn and alfalfa to feed them. Plus farmers need to tend to sick cows, fix complicated machinery, manage workers, and find customers for the milk.

Not only that, but milk prices are down, and the costs for operating a dairy farm are up. One automatic milking machine costs about \$3,000. And a good-sized dairy farm may need a dozen of these machines.

So for the dairy farmers in the bay's watershed—some of whom live so far from the bay they've never even seen it—the fact that their cows pollute may not be their first concern. Making a living is.

Still, the dairy farmers must do something with all the manure their cows produce (each cow produces about 100 pounds of manure a day). Most farmers use this manure as fertilizer, but there's so much of it (and more coming every day) that they sometimes need expensive equipment to help solve the problem.

For instance, one farmer said he uses a bulldozer to push the manure from the cow stalls onto a conveyor belt, which deposits it temporarily behind the barn in a huge storage tank that holds 1.5 million gallons of waste. The tank has to be emptied several times a year. And there are pumps to get the manure into the trucks, which then spread it on the field as fertilizer. This equipment costs the farmer \$75,000.

Even if farmers use the manure as fertilizer, sometimes there's still too much of it. Some farmers have so many cows that there is far more manure than there is cropland on which to spread it.

### **How Dairy Farmers Contribute to the Bay's Problems**

If you were a dairy farmer in the bay area, here are some problems you might create:

- Cow manure runs off into streams, creeks, and rivers, all of which eventually drain into the Chesapeake Bay. The manure, a rich fertilizer, causes algae blooms. Algae block off sunlight, and underwater grasses die.
- Like many dairy farmers, you grow crops to produce feed for your cows. You might use chemical fertilizers that also wind up in the bay.
- You allow your cows to wander in and around streams. When cows walk on the banks of streams, they loosen and break down the soil. It washes more easily into the streams (and eventually into the bay) as sediment.
- Like anyone else who lives in the Chesapeake Bay's watershed, you and your family produce garbage and sewage, drive cars and trucks, and use electricity. One way or another, these activities produce pollution, which travels down to the bay.

### **How the Dairy Farmers Can Help the Bay**

As a dairy farmer, here are some things you can do to help the bay:

- Instead of using chemical fertilizers, use natural fertilizer (cow manure) to fertilize your land.
- Build fences to keep your cows from wandering near the water.
- Build concrete or steel pits for holding the manure. Instead of having to spread manure every day, you can do it when you choose (not during rainy times, for example, when runoff increases).
- Before you decide to buy more cows to produce more milk, first make sure you have enough land on which to spread the extra manure.
- In winter, when the fields normally would be bare, you can plant cover crops such as winter wheat or rye. Cover crops absorb extra nutrients that would otherwise run off. And they help prevent erosion by holding soil in place over winter.
- Sometimes when cows stay on one pasture too long, it can become bare and muddy. You can move cows from one pasture to another so that the pasture stays healthy and the soil does not erode.
- When you harvest your crops, leave some of the plant stems and leaves on top of the ground. These help cushion rainfall as it hits the ground and prevent runoff.

**Trade-offs: Advantages for the Bay and Disadvantages for the Group**

Sometimes what is good for the environment is hard on people. Reread each suggestion about how the dairy farmers could help the bay, and then ask yourself two questions:

- How would this solution help improve the bay?
- What are the trade-offs involved in this solution?

**Record Sheet 15-A**

**Team Members**

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Problem-Solving Sheet**

1. Our group represents the \_\_\_\_\_ point of view.

2. Here are some ways that \_\_\_\_\_ contribute to the problems in the Chesapeake Bay.  
(name of group)

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3. Here are at least three ways that \_\_\_\_\_ can help solve the bay's problems.  
(name of group)

A. \_\_\_\_\_

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B. \_\_\_\_\_

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**Record Sheet 15-A**      Name of Group: \_\_\_\_\_

**Problem-Solving Sheet** *(continued)*

C. \_\_\_\_\_  
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4. Solutions that have advantages for the bay but may also have disadvantages for our group include the following:

**Solution A:** \_\_\_\_\_

Advantages for the bay

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Disadvantages for the group

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Trade-offs

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\_\_\_\_\_  
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**Record Sheet 15-A**      Name of Group: \_\_\_\_\_

**Problem-Solving Sheet** *(continued)*

**Solution B:** \_\_\_\_\_

Advantages for the bay

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Disadvantages for the group

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Trade-offs

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**Solution C:** \_\_\_\_\_

Advantages for the bay

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Disadvantages for the group

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Trade-offs

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