2011

Saving the Bay for Future Fishing in the Chesapeake

Victoria Carlson
Worcester Polytechnic Institute

Johnny Hernandez

Michael Josephs

Sarah Kapelner

Follow this and additional works at: http://digitalcommons.wpi.edu/gps-posters

Recommended Citation
http://digitalcommons.wpi.edu/gps-posters/79

This Text is brought to you for free and open access by the Great Problems Seminar at DigitalCommons@WPI. It has been accepted for inclusion in Great Problems Seminar Posters by an authorized administrator of DigitalCommons@WPI.
Background

"The Bay is still a system dangerously out of balance — the U.S. Environmental Protection Agency (EPA) lists the Chesapeake and its tidal tributaries as impaired. Health departments still caution people to stay out of the water for 48 hours after a heavy rain. Fish consumption warnings continue. Human health is at risk. And tens of thousands of jobs have been lost in fishing and related industries alone. A Bay Health Index of only 31 versus a score of 100 when Colonial settlers arrived is a sad testament to how we have treated a National Treasure. There is a great deal left to do."

- William Baker, President of the Chesapeake Bay Foundation, 2010

- The Chesapeake is the largest estuary and the third largest source of fish in the US.
- 18,000,000 lbs. of phosphorus enters the Bay every year (the allotment is only 12,000,000 lbs.)

Problem

Fish populations and consequently fishing industries have been significantly reduced by dead zones in the Chesapeake Bay. Our project focuses on the effects of phosphorus runoff from dairy farms as the source of dead zones.

Solution/Assessment

Solution:

- Educate Dairy Farmers/Offer Incentives
- Phosphorus Decreased in Cow Feed
- Dead Zones Reduced
- Fish Populations Rebound

Assessment:

- Review farmer surveys before and after our solution is put into effect to see if education was successful.
- Conduct before and after tests of cow manure to see if phosphorus is being reduced.
- Review water samples taken by the Chesapeake Bay Foundation over the next five years to see if water conditions are improving.

Cost/Benefit

Costs

Farmers lose phosphorus in feed as yield insurance.

Benefits

- If the government gives incentives to farmers using reduced phosphorus, they will lose tax dollars.
- New tax dollars will come from a thriving fishing industry.
- Organizations who wish to partner with us will be fulfilling their missions by restoring the Chesapeake Bay.

Consider This

The issue of dead zones in the Chesapeake Bay is just one example of a trend seen across the world and especially all down the East Coast.

If effective in the Chesapeake, our solution could play a large role in decreasing dead zones in other areas.

References

Michael Josephs, Christopher McConnell, Johnny Hernandez

Chesapeake Bay Foundation

Let’s save the “immense protein factory” that is the Chesapeake Bay.

Consider This

US East Coast – Dead Zones

Background

- The Chesapeake is the largest estuary and the third largest source of fish in the US.
- 18,000,000 lbs. of phosphorus enters the Bay every year (the allotment is only 12,000,000 lbs.)

Problem

Fish populations and consequently fishing industries have been significantly reduced by dead zones in the Chesapeake Bay. Our project focuses on the effects of phosphorus runoff from dairy farms as the source of dead zones.

Solution/Assessment

Solution:

- Educate Dairy Farmers/Offer Incentives
- Phosphorus Decreased in Cow Feed
- Dead Zones Reduced
- Fish Populations Rebound

Assessment:

- Review farmer surveys before and after our solution is put into effect to see if education was successful.
- Conduct before and after tests of cow manure to see if phosphorus is being reduced.
- Review water samples taken by the Chesapeake Bay Foundation over the next five years to see if water conditions are improving.

Cost/Benefit

Costs

Farmers lose phosphorus in feed as yield insurance.

Benefits

- If the government gives incentives to farmers using reduced phosphorus, they will lose tax dollars.
- New tax dollars will come from a thriving fishing industry.
- Organizations who wish to partner with us will be fulfilling their missions by restoring the Chesapeake Bay.

Consider This

The issue of dead zones in the Chesapeake Bay is just one example of a trend seen across the world and especially all down the East Coast.

If effective in the Chesapeake, our solution could play a large role in decreasing dead zones in other areas.

References

Michael Josephs, Christopher McConnell, Johnny Hernandez

Chesapeake Bay Foundation

Let’s save the “immense protein factory” that is the Chesapeake Bay.