



Potential use of BioHaven Floating Islands to meet MD 2011 Nutrient Reduction Goals in the Chesapeake Bay

Goal : Nitrogen Reductions

3.75 million lbs by 2011

3,750,144	lbs/yr
152	lbs/year removed by 250 sf island with diffuser
24,672	250 sf islands to accomplish goal
6,168,000	total sf of islands necessary
\$246,720,000	Cost of islands necessary

By meeting this goal, other goals will be met too

Phosphorus reductions

21	lbs/year removed by 250 sf island with diffuser
24,672	250 sf islands provided by meeting nitrogen goal
6,168,000	total sf of islands necessary
518,112	total lbs reduced by islands

Public Wetland Restoration

1.14	acre equivalents per 250 sf island
24,672	250 sf islands to accomplish goal
6,168,000	total sf of islands necessary
28,036	total wetland equivalent surface area provided (acres)

Estimated costs for complete installations of islands

12,336,000	plants needed for islands
\$18,504,000	cost of plants for islands
49,344	number of anchor systems for islands
\$9,868,800	cost of anchor systems
148,032	installation hours for islands
\$29,606,400	cost of installations
\$304,699,200	Total estimated cost of islands to meet nitrogen reduction goals
\$774,000,000	Total funding during 2 yr period
39.37%	percent of total funding requested to meet this goal

NOTE: These benefits keep going long after 2011. When aggregating costs per pound, please look at 1 yr, 5 yr, 10 yr and 30 yr as follows:

1 Yr	\$81.25
5 Yr	\$16.25
10 Yr	\$8.13
30 Yr	\$2.71



Goal: Phosphorus Reductions

193,000 lbs by 2011	
96,500	lbs per yr
21	lbs per yr removed by 250 sf island with diffuser
4,595	250 sf islands to accomplish goal
1,148,810	total sf of islands necessary
\$45,952,381	Cost of islands necessary

By meeting this goal, other goals will be met too

Nitrogen

152	lbs/year removed by 250 sf island with diffuser
4,595	250 sf islands to accomplish goal
1,148,810	total sf of islands necessary
698,440	total lbs removed by islands

Public Wetland Restoration

1.14	acre equivalents per 250 sf island
4,595	250 sf islands to accomplish goal
1,148,810	total sf of islands necessary
5,222	total wetland equivalent surface area provided (acres)

Estimated costs for complete installations of islands

2,297,619	plants needed for islands
\$13,785,714	cost of plants for islands
18,380	number of anchor systems for islands
\$3,676,000	cost of anchor systems
27,570	installation hours for islands
\$5,514,000	cost of installations
\$68,928,095	Total estimated cost of islands to meet nitrogen reduction goals
\$774,000,000	Total funding during 2 yr period
8.91%	percent of total funding requested to meet this goal

NOTE: These benefits keep going long after 2011

Goal: Public Wetland Restoration

1,000	acres
1.14	wetland acre equivalents in 250 sf island
877	250 sf islands to accomplish goal
219,298	total sf of islands necessary
\$8,771,930	Cost of islands necessary

By meeting this goal, other goals will be met too

Nitrogen

152	lbs/year removed by 250 sf island with diffuser
877	250 sf islands to accomplish goal
219,298	total sf of islands necessary
133,304	total lbs removed by islands

Phosphorus

21	lbs per yr removed by 250 sf island with diffuser
877	250 sf islands to accomplish goal
219,298	total sf of islands necessary
18,417	total lbs removed by islands

Estimated costs for complete installations of islands

438,596	plants needed for islands
\$3,508,772	cost of plants for islands
3,508	number of anchor systems for islands
\$701,600	cost of anchor systems
5,262	installation hours for islands
\$1,052,400	cost of installations

\$14,034,702	Total estimated cost of islands to meet nitrogen reduction goals
\$774,000,000	Total funding during 2 yr period
1.81%	percent of total funding requested to meet this goal

NOTE: These benefits keep going long after 2011