# Update: Policy Tools for Combating Ocean Acidification

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Washington State Blue Ribbon Panel on Ocean Acidification
May 23, 2012

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# Road Map

- Organization of the Developing Law & Policy Report
- Illustration: One Existing Policy Tool
- New Ideas: Carrots and Sticks

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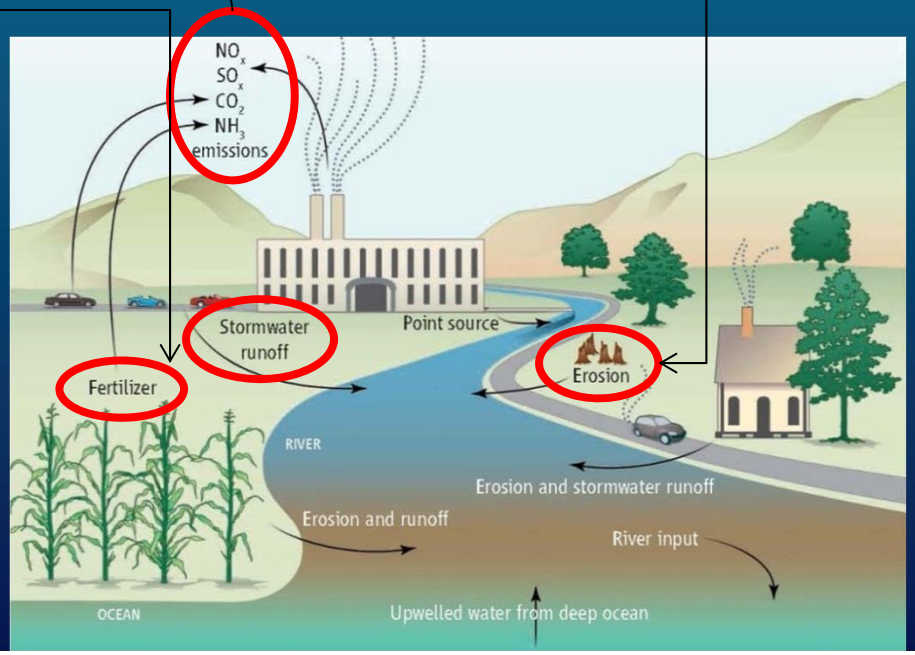
# Review: Many Applicable Laws & Programs

- State and Federal Clean Water Laws
- Coastal Zone Management Act
- Local land use laws & policies
- Clean Air Act

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# Coastal and Estuarine Inputs

Terrestrial
- N, P, C

Atmospheric
- $CO_2$
- $SO_x$, $NO_x$

Marine/Aquatic
- $CO_2$-enriched upwelling
- Increased freshwater inputs

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# Coastal and Estuarine Inputs

Terrestrial

- N, P, C
  - Dairy (manure)
  - Ranching
  - Irrigated Agriculture
  - Septic Systems
  - Residential Fertilizer
  - Wastewater Treatment
  - Stormwater
  - Increased Erosion

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# Coastal and Estuarine Inputs

Terrestrial

N, P, C

Dairy (manure)

Water pollution
- Dairy Nutrient Management Act
- State Water Pollution Control Act

Land Use ← Growth Management Act

Voluntary Planning
- Watershed planning
- Shellfish Protection Districts

Infrastructure, e.g. ← Grants Programs

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**Nitrogen, Phosphate, and Carbon**
**Dairy + Manure**

| Law/Reg/Incentive/Policy | Color Code | Mechanism |
|---|---|---|
| | Voluntary/Incentive-based | |
| | Regulatory | |
| | Common law / Reactive | |
| Shellfish protection districts | | Encourage/fund measures to limit eutrophying nutrient runoff |
| State Water Pollution Control / Waste Disposal Permits | | Could limit eutrophying nutrient runoff via permitting restrictions |
| Dairy Nutrient Management Act | | Nutrient Management Plans |
| Salmon Recovery Act | | Grants for riparian restoration, buffers, etc. |
| Watershed planning | | Could limit eutrophying nutrient runoff |
| CWA s 319 grants | | Nonpoint source abatement |
| CZMA s 309 grants | | Grants for NPS pollution control in coastal zone |
| GMA | | Comprehensive plans could require BMPs or similar measures |
| CWA WQS (incl WQC and nondegradation) | | Could ensure sustainable ambient level of nutrient input |
| CWA TMDL (if impaired) | | 303(d) listing bars new point sources, creates load allocations (State could make enforceable) |
| SEPA | | Project proponents would have to account for impacts (incl. cumulative impacts) |
| Conservation Districts | | Expertise and consulting on nutrient management |
| EQIP Program | | Grants for improving nutrient management |
| Farmland Preservation Program | | Could attach conditions to grant money, implementing BMPs |
| Estuary and Salmon Restoration Program | | Grant money (hypothetical, from feds) for nutrient management |
| Nuisance laws | | Dissuade and punish polluters, clean up existing pollution |
| Voluntary stewardship program | | Similar to watershed planning, but aimed at Critical Areas |
| Nonpoint source rules | | Participatory planning measures, BMPs, grants |

| | | Implementation Feasibility | | |
|---|---|---|---|---|
| | | Short term (< 5 yrs) | Intermediate term (6-10 yrs) | Long term (> 10 yrs) |
| Realized Benefit (Time scale) | Short term (< 5 yrs) | Dairy Nutrient Management Act, Conservation Districts, EQIP Program, Farmland Preservation Program, Estuary/Salmon Restoration Program, Salmon Recovery Act, Nuisance Laws | | |
| | Intermediate term (6-10 yrs) | Shellfish Protection Districts, Waste Disposal Permits, Manure limits | Watershed Planning, CWA s 319 grants, Voluntary Stewardship Program, CZMA s 309 grants | |
| | Long term (> 10 yrs) | SEPA | | Growth Management Act, various CWA provisions, Nonpoint Source Rules |

# Time to realized benefit
# -by-
# Time to implementation

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| | | Implementation Feasibility | | |
|---|---|---|---|---|
| | | Short term (< 5 yrs) | Intermediate term (6-10 yrs) | Long term (> 10 yrs) |
| Realized Benefit (Magnitude) | Low (<5% of pH change) | SEPA, Conservation Districts, EQIP Program, Farmland Preservation Program, Estuary and Salmon Restoration Program, Nuisance laws, Manure limits | CWA s 319 grants, CZMA s 309 grants, Voluntary Stewardship Program | GMA, CWA various provisions, Nonpoint source rules |
| | Intermediate (5-20% pH change) | Shellfish Protection Districts, Waste Disposal Permits, Dairy Nutrient Management Act, Salmon Recovery Act | Watershed Planning | |
| | High (>20% pH change) | | | |

Ideally, we would have a sense of the *magnitude* of realized benefits.

(hypothetical realized benefit on y-axis)

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## One existing example: Shellfish Protection Districts

- County-level, voluntary
- (Compulsory if triggered by water degradation)
- No new regulatory authority
- Power to assess fees
- Can be temporary

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## New Carrots:

- Incentives for manure power generation & waste management
- Crop insurance for limited fertilizer/manure use?
- Agency budgets guaranteed to retain energy efficiency savings?

(Much of our waste/pollution has value)

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## New Sticks:

- Nutrient management for non-dairies, non-CAFOs
  e.g., ranching and cropland management plans

- SEPA
  $CO_2$ + other GHG impacts
  Improved cumulative impacts analysis

- Growth Management Act
  Emissions element for comprehensive plans?

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## Conclusion: Policy Tools Report Update

- Mix of effectiveness among existing policies and programs
  Identifying holes, suggesting possible fixes
- Science-dependent; “no regrets” policies probably identifiable
- Aiming at user-friendly report, requires feedback

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# Questions?

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