



The Decay of Particulate Organic Matter in the Ocean ...and of Bills in the U.S. Senate

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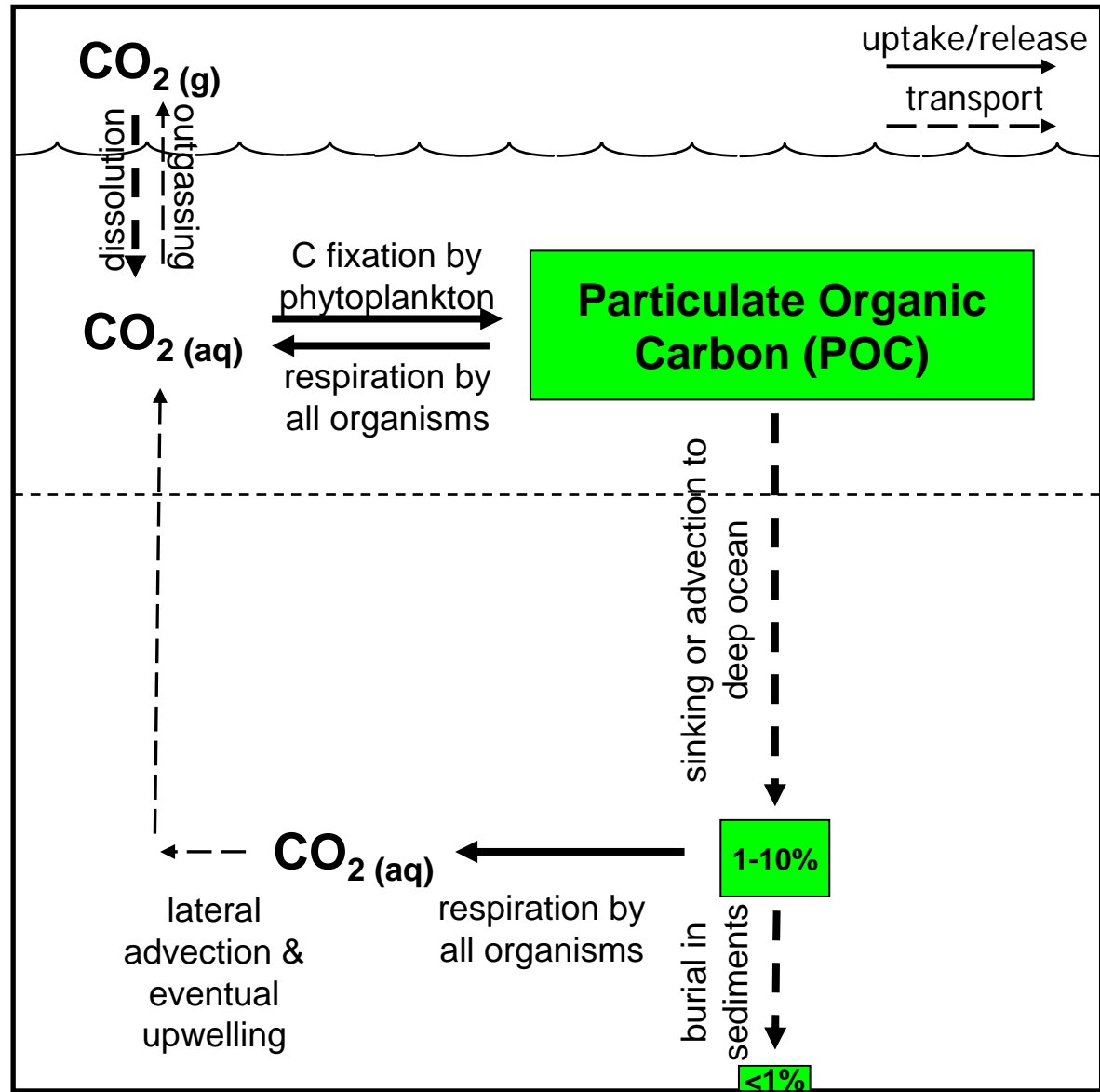


Selected Dissertation Work

Deploying a Net Trap to collect sinking particles in the NW Mediterranean Sea

Movement of Particulate Organic Carbon through the Water Column

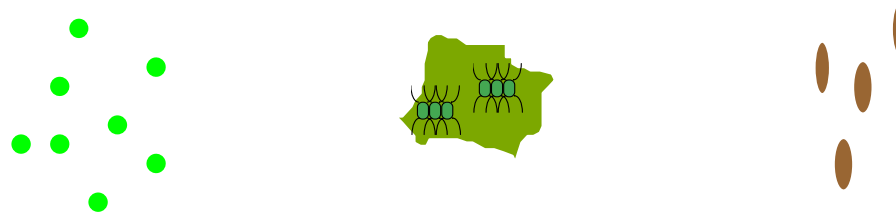
What controls the success of organic matter making it through the water column?



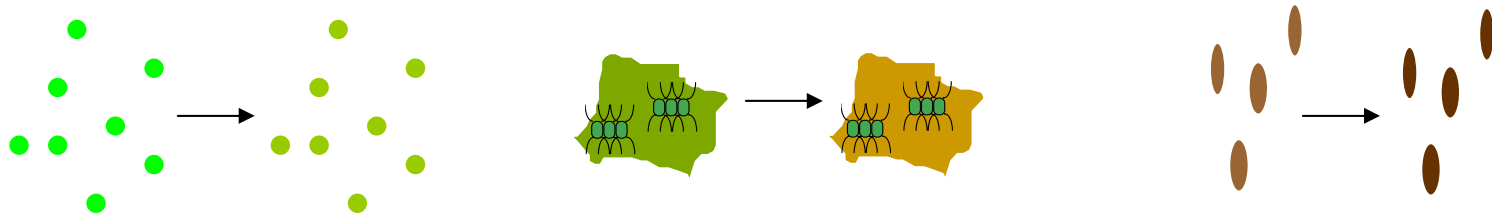


Factors Affecting What POC Reaches the Deep Ocean

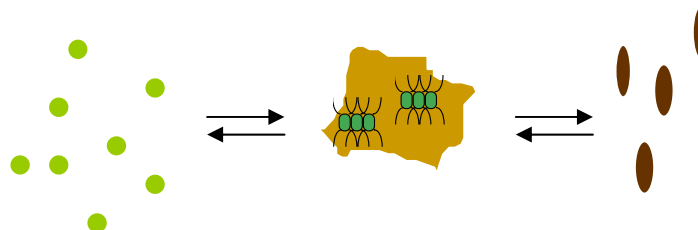
- Source



- Alteration



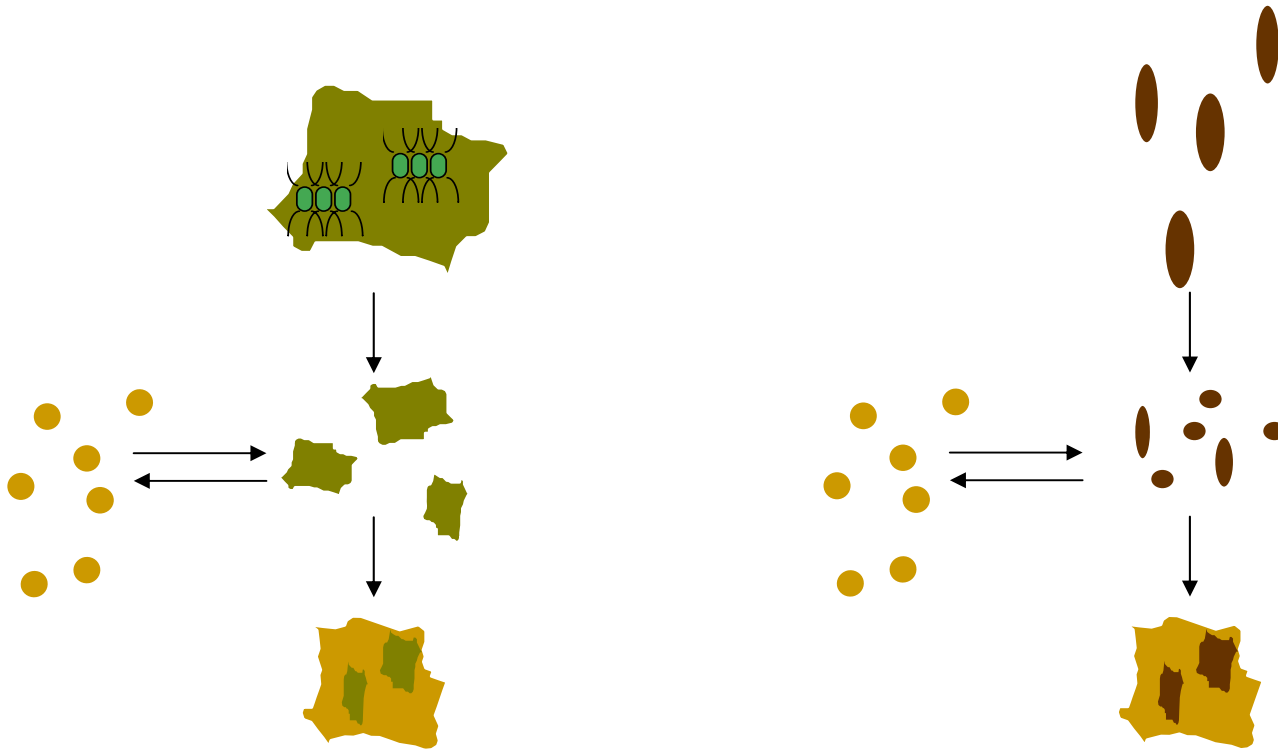
- Exchange





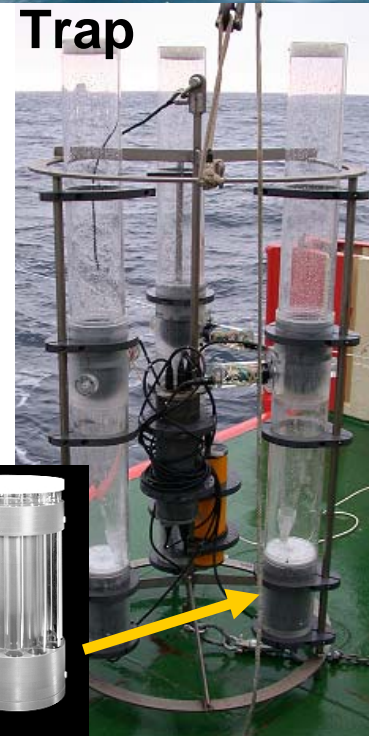
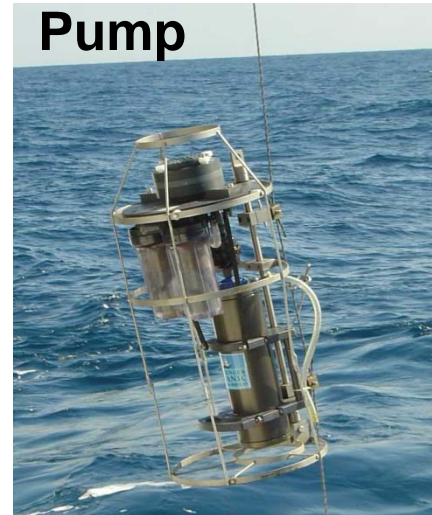
Objective

- Compare extent to which different types of sinking particles (aggregates vs. fecal pellets) undergo exchange with suspended material



Methods

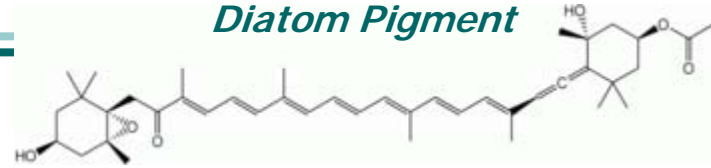
- Compared organic composition of suspended and sinking particles
- Conducted sampling in NW Mediterranean Sea in 2003 and 2005
- Particle types:
 - **Suspended:**
 - 1-70 μm in-situ pump samples
 - **Sinking:**
 - >70 μm in-situ pump samples
 - time-series sediment trap samples



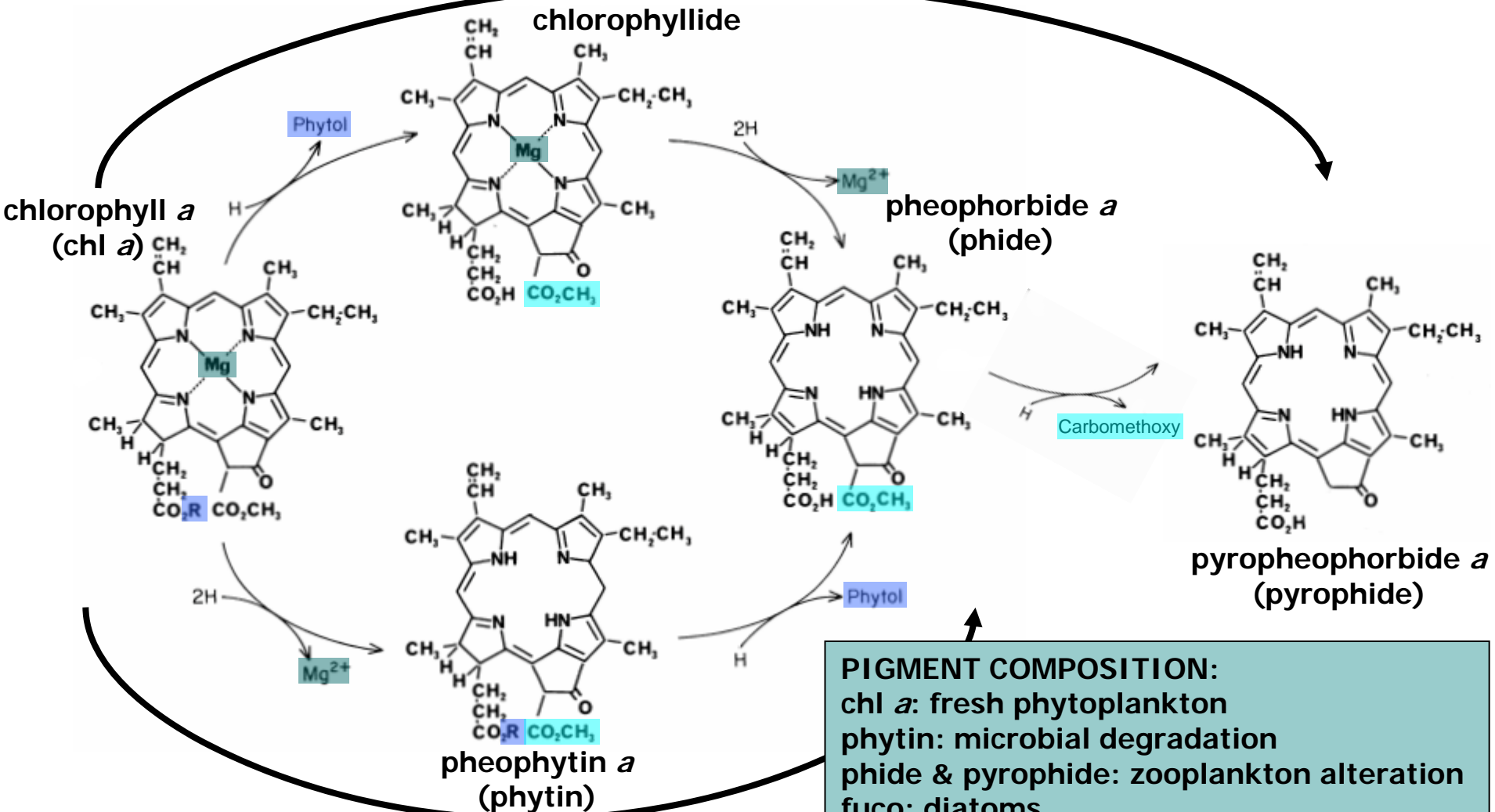


Methods cont.

fucoxanthin (fuco)
Diatom Pigment



Zooplankton Alteration

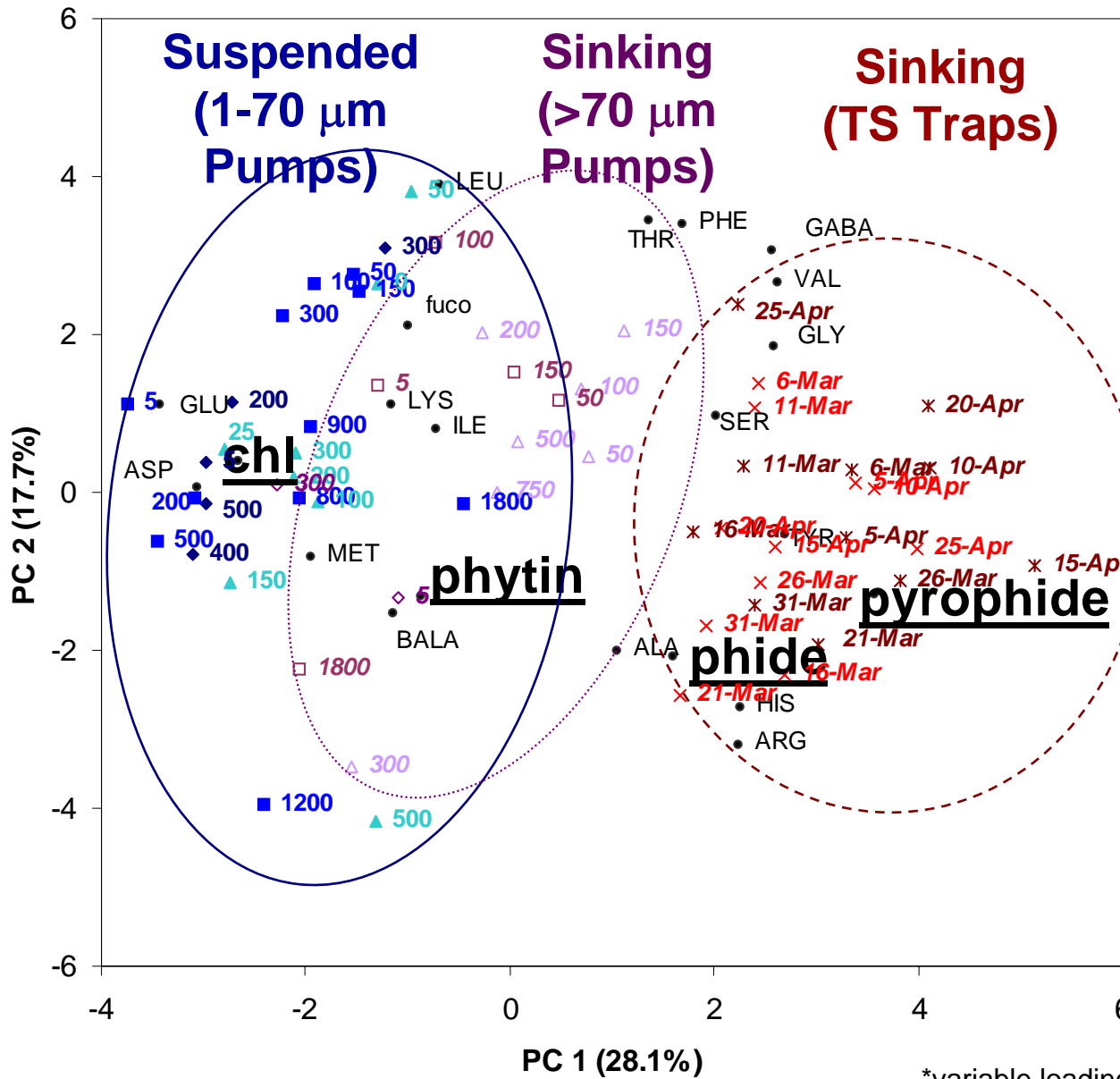


PIGMENT COMPOSITION:
 chl *a*: fresh phytoplankton
 phytin: microbial degradation
 phide & pyropheide: zooplankton alteration
 fuco: diatoms

Microbial Alteration



Results



- Variable loadings
- ◆ SP Mar. 2
- SP Mar. 7-12
- ▲ SP Apr. 29-30
- ◇ LP Mar. 2
- LP Mar. 7-12
- △ LP Apr. 29-30
- × 313 m TS Traps Mar. 4-Apr. 28
- × 924 m TS Traps Mar. 4-Apr. 28

2005 Data

*variable loadings scaled up 10x to fit axes



Conclusions

- **Suspended particles appear to be derived from disaggregated phytoplankton aggregates.**
- **Fecal pellets appear to be more robust and survive transit through the water column.**

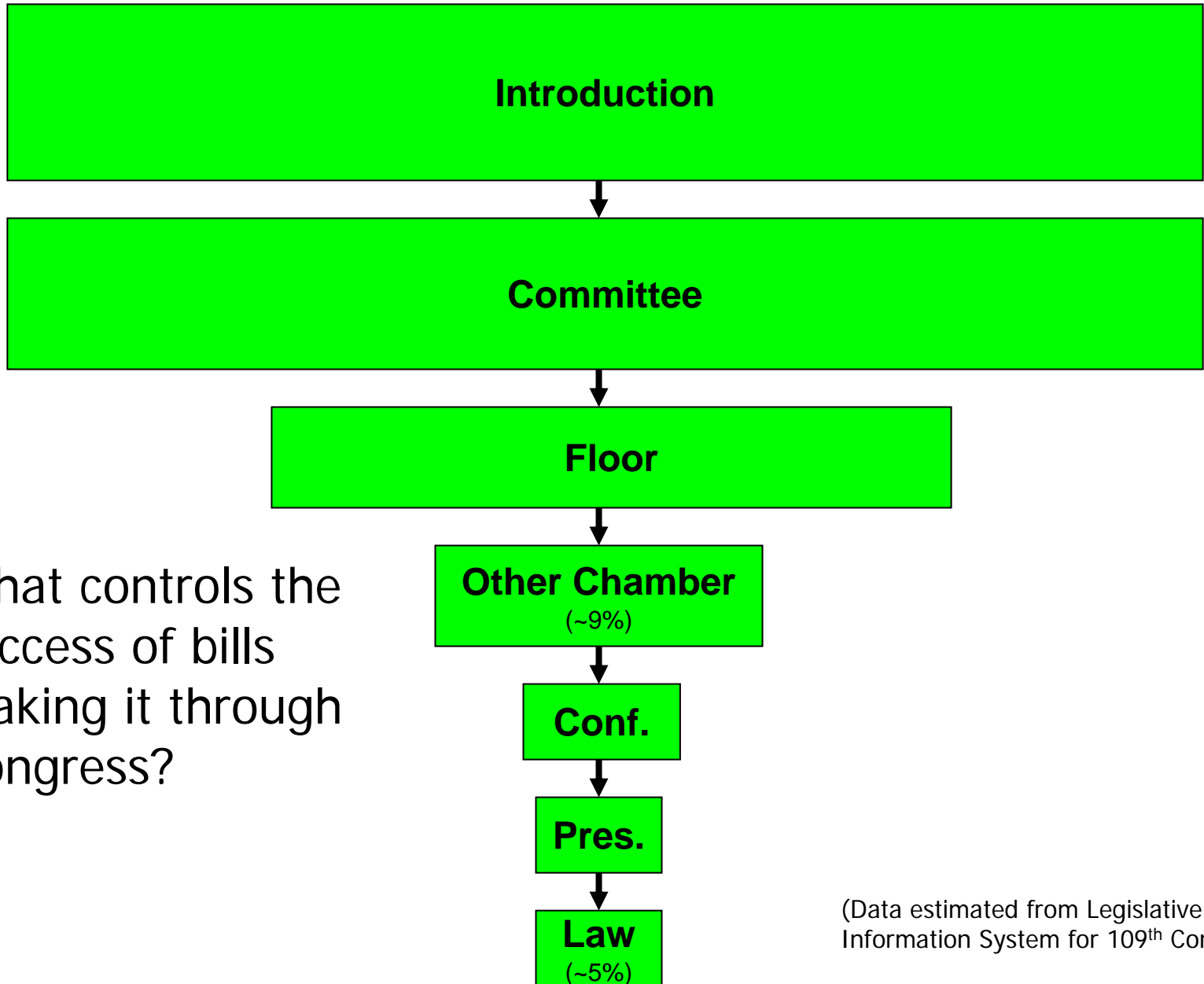


Selected Fellowship Work

Proposed expansion area of the Gulf of the Farallones National Marine Sanctuary



Movement of Bills through Congress



What controls the success of bills making it through Congress?

(Data estimated from Legislative Information System for 109th Congress)

Factors Affecting What Bills Reach the President's Desk

- Source



Barbara
Boxer (D-CA)



James Inhofe
(R-OK)

- Alteration

COMMITTEE AMENDMENT

[STAFF WORKING DRAFT]

May 12, 2008

Purpose: To provide statutory authority for MARAD to consult on Jones Act waiver requests, and make other minor changes.

- Exchange

Energy Speculation ↔ *Offshore Drilling*



Objective

- Advance Senator Boxer's legislative priorities relating to ocean protection



Methods

- Initial legislative proposal:
 - From staff, interest group, or agency
 - Based on recent events or lingering issues
- Decision to proceed:
 - Based on Senator's priorities and interest from constituents, interest groups, agencies, or other offices
- Drafting:
 - Initially done by staff, interest group, and/or agency
- Review:
 - By legislative counsel, other interest groups/ agencies
 - Seek co-sponsorship and negotiate changes
- Introduction:
 - Prepare press release, introduce bill, and circulate widely



Methods (cont.)

- Committee action:
 - Possibly hold hearings
 - Negotiate changes and mark up

SENATE – Environmental Committees:

- Commerce, Science, and Transportation
 - NOAA, NASA, NSF (oceans, atmosphere, research)
- Environment and Public Works
 - EPA, Army Corps (clean air and water)
- Energy and Natural Resources
 - DOE, DOI (energy, public lands, national parks)
- Agriculture, Nutrition, and Forestry
- Appropriations

HOUSE – Environmental Committees:

- Natural Resources
 - NOAA, DOI (oceans, some energy, public lands, national parks)
- Energy and Commerce
 - DOE, EPA (energy)
- Science and Technology
 - NASA, NSF, NWS (environmental and science research)
- Agriculture
- Appropriations



Methods (cont.)

- Chamber action:
 - Major legislation receives floor debate
 - Minor, noncontroversial legislation can move by unanimous consent or via packages/ amendments
- Movement through other chamber:
 - Work with appropriate offices in other chambers
 - Corresponding committees of jurisdiction may negotiate
- Conferencing:
 - Only occurs for major legislation
 - Key staff from members selected for Conference Committee negotiate final changes



Results

Some of the issues I worked on this year:

- Ocean governance reform
 - National Oceans Protection Act (S. 3314)
- Marine sanctuaries
 - Gulf of the Farallones and Cordell Bank National Marine Sanctuaries Boundary Modification and Protection Act (H.R. 1187/ S. 2635)
- OCS oil and gas drilling
- Pacific salmon
- Marine pollution
- Marine mammals
- Fisheries management
- Some public lands/ national parks
- NOAA appropriations



Conclusions

What I have learned about strategies for affecting legislative decisions:

- Prioritize
- Form a clear, concise, targeted message
- Build outside support
- Be conscious of timing
- Target likely allies
- Sometimes target unlikely allies
- Be patient and persistent