Update on Deep Ocean EOVs: Biogeochemistry

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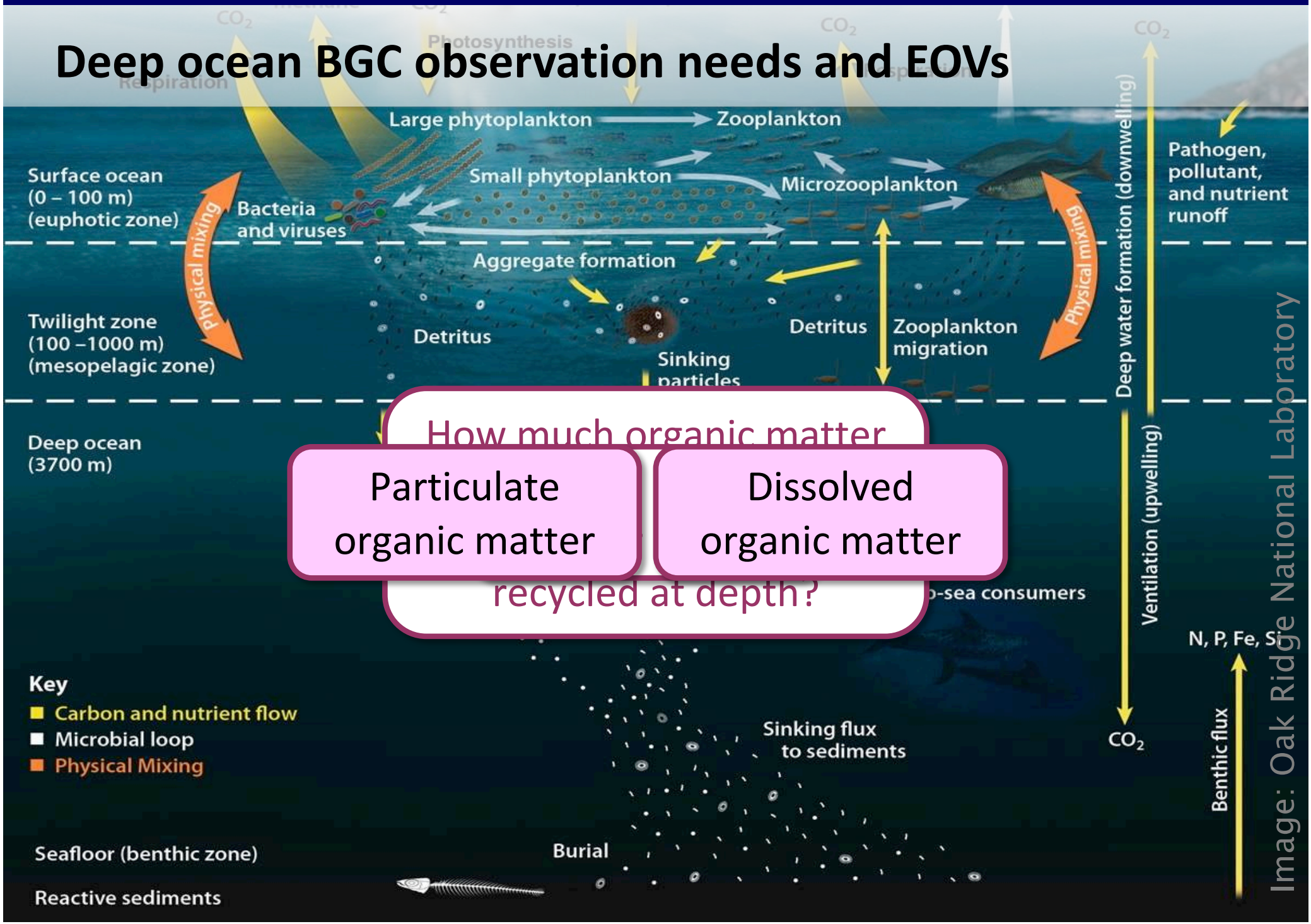
DEEP OCEAN OBSERVING STRATEGY

DOOS BGC EOV update

Identify & specify deep-ocean biogeochemistry EOVs needed to address scientific and societal needs

BGC EOV overview

Deep ocean BGC observation needs and EOVs



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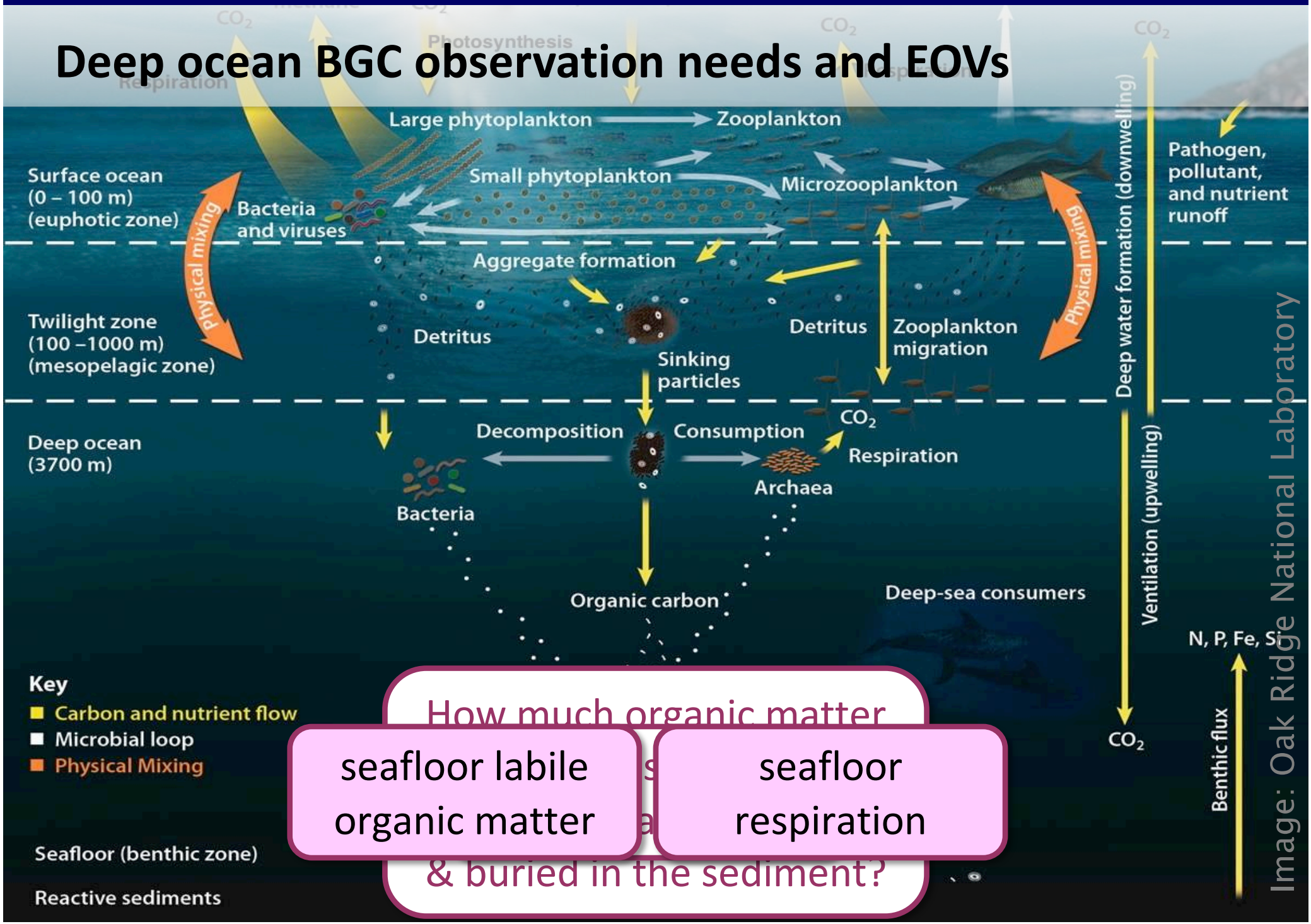
Deep ocean BGC observation needs and EOVs



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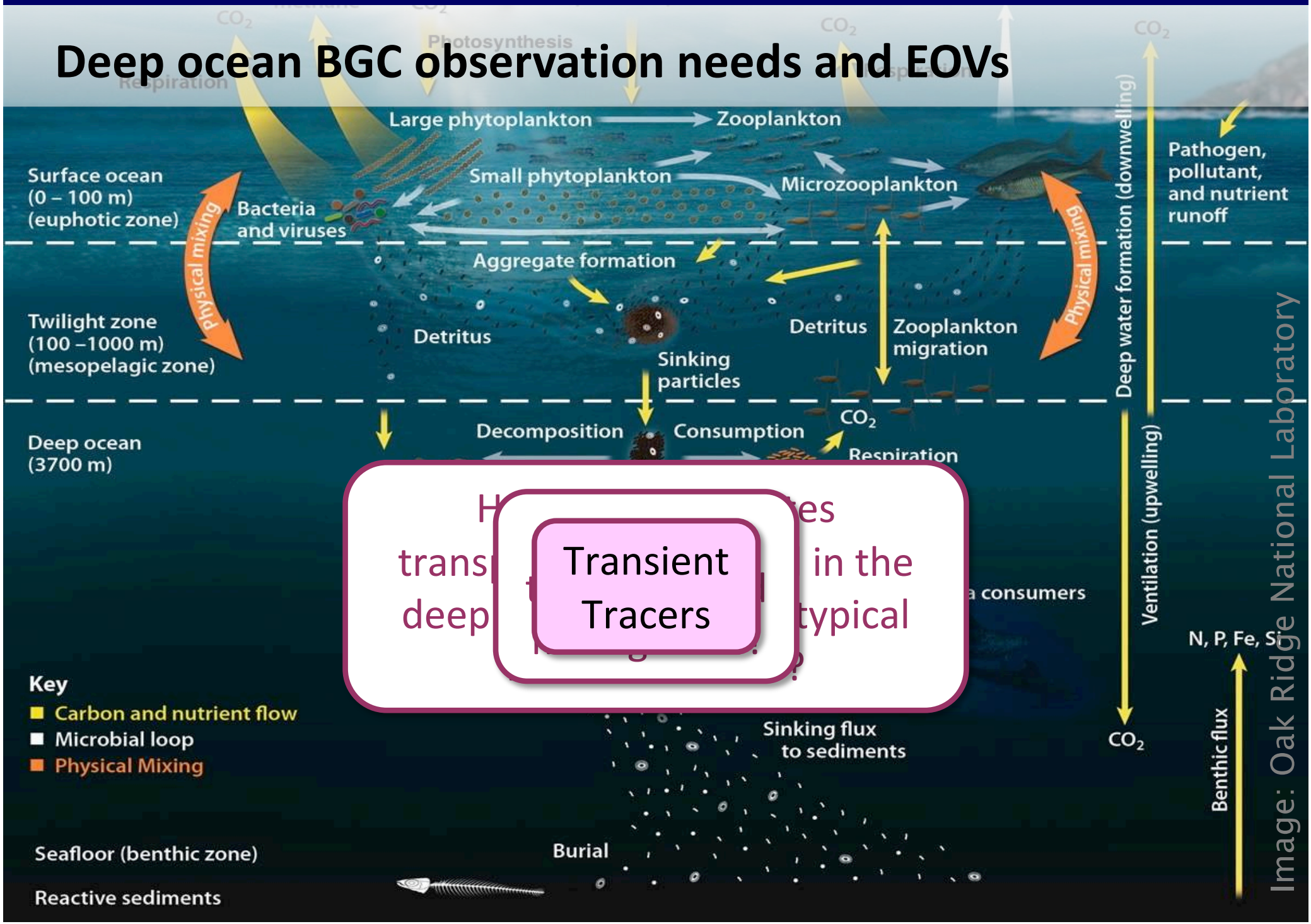

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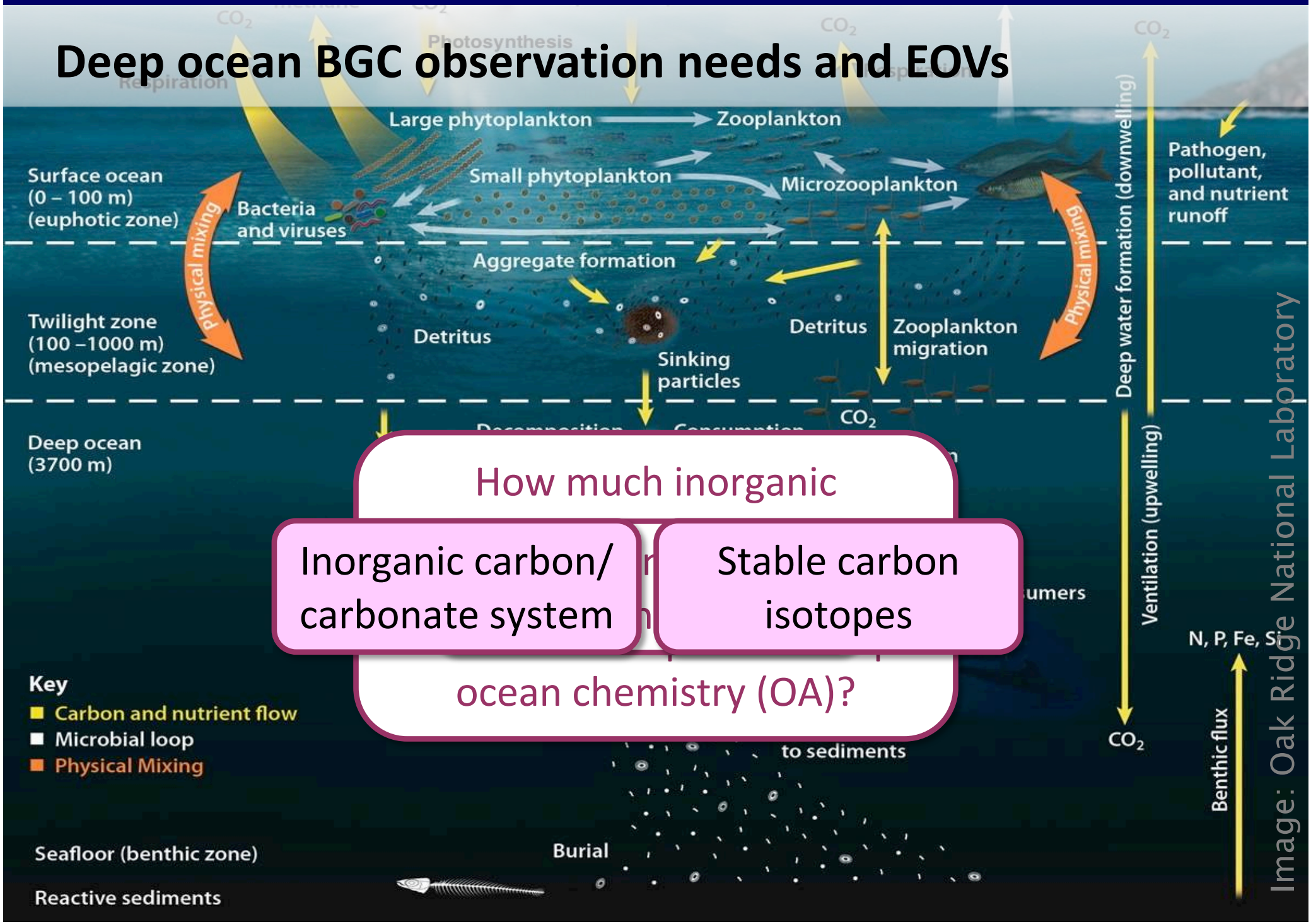

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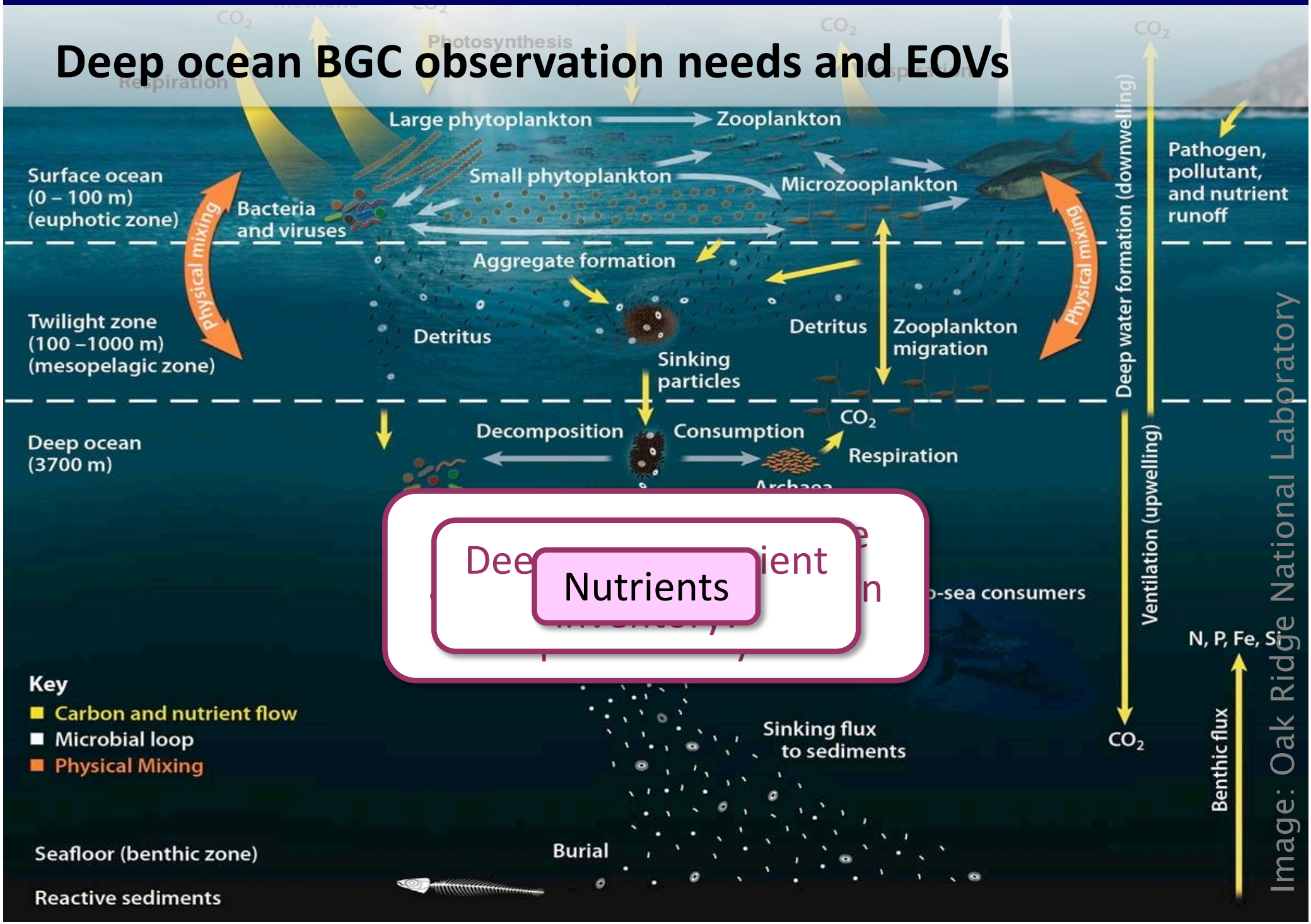

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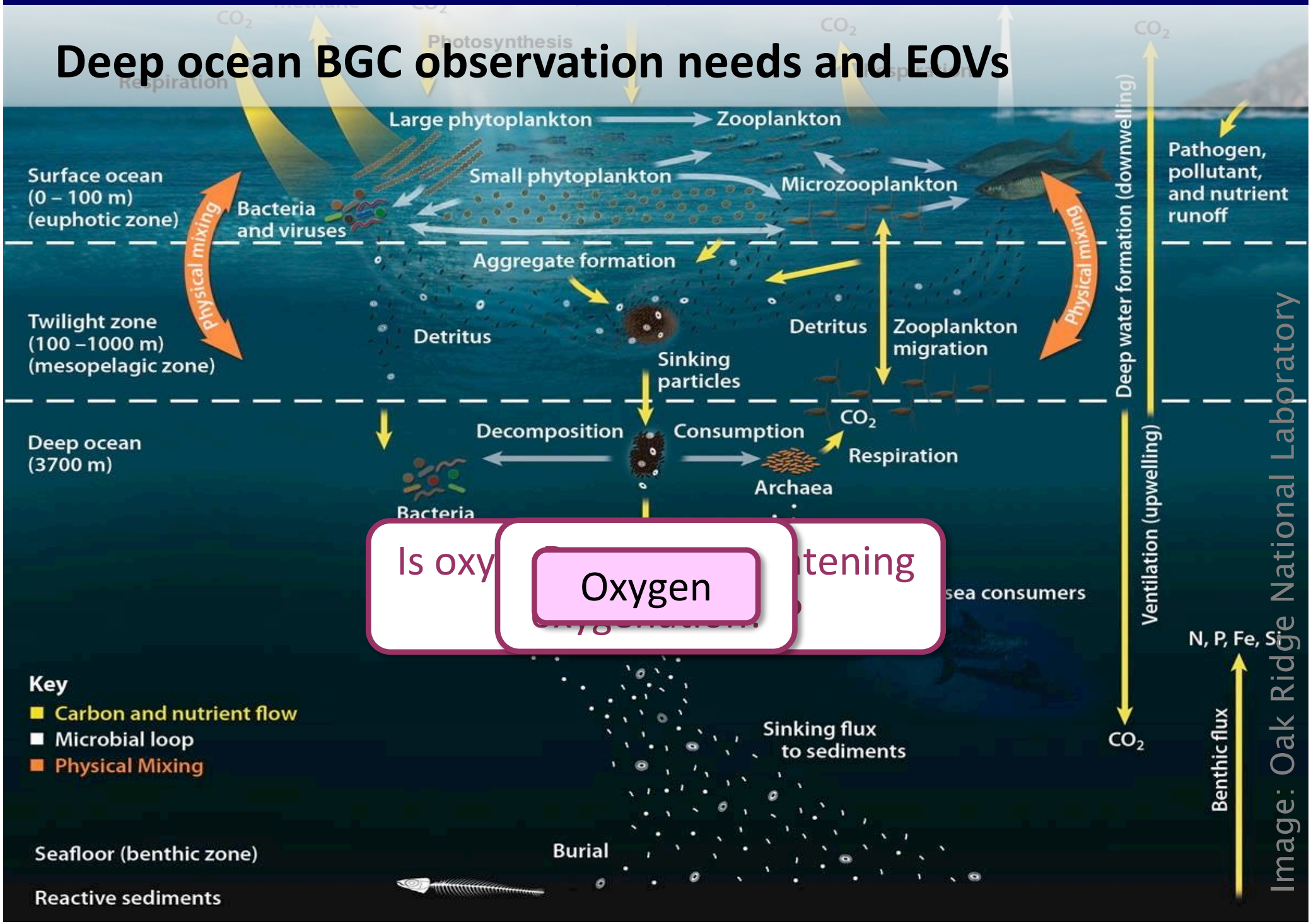

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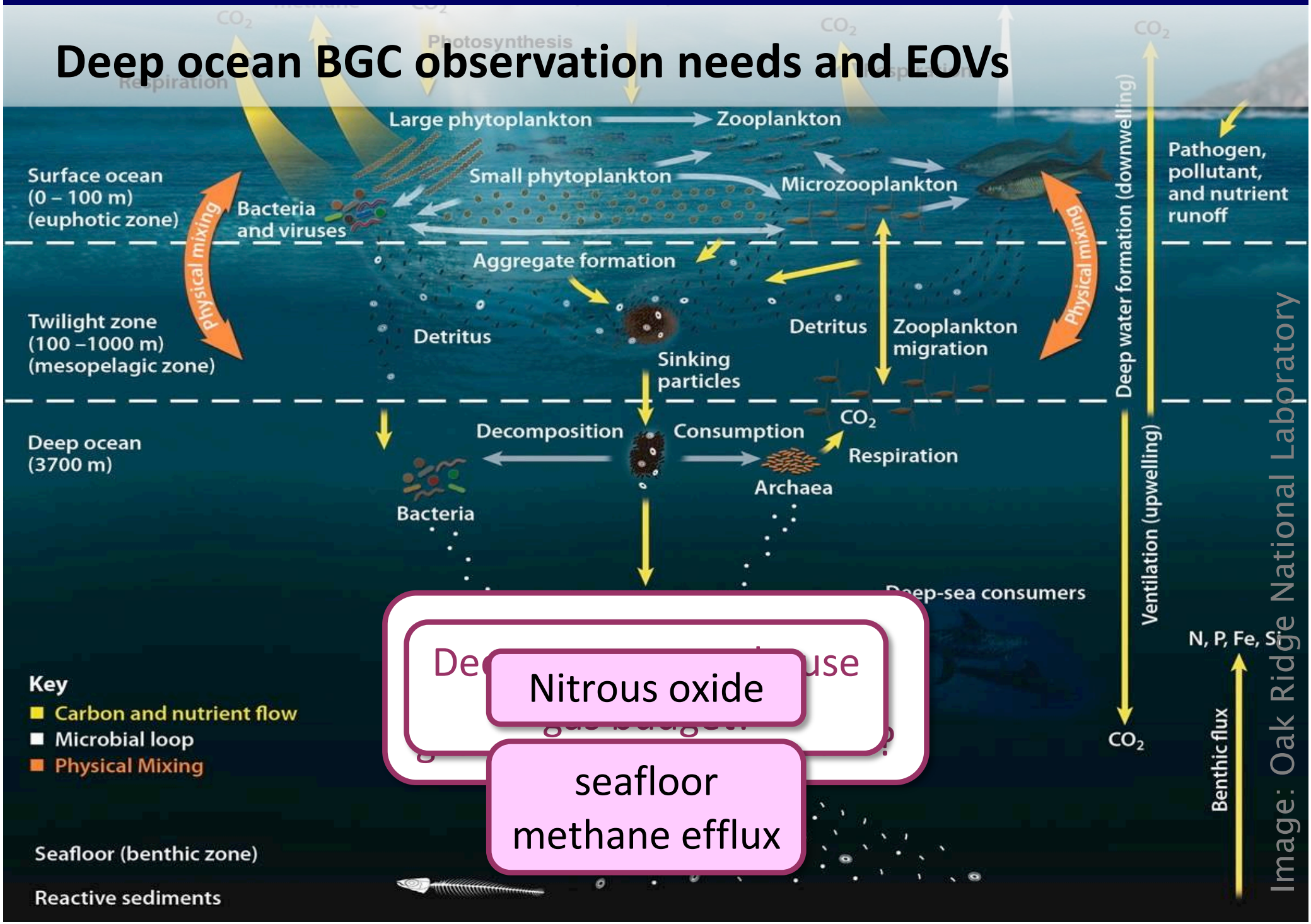
Deep ocean BGC observation needs and EOVs

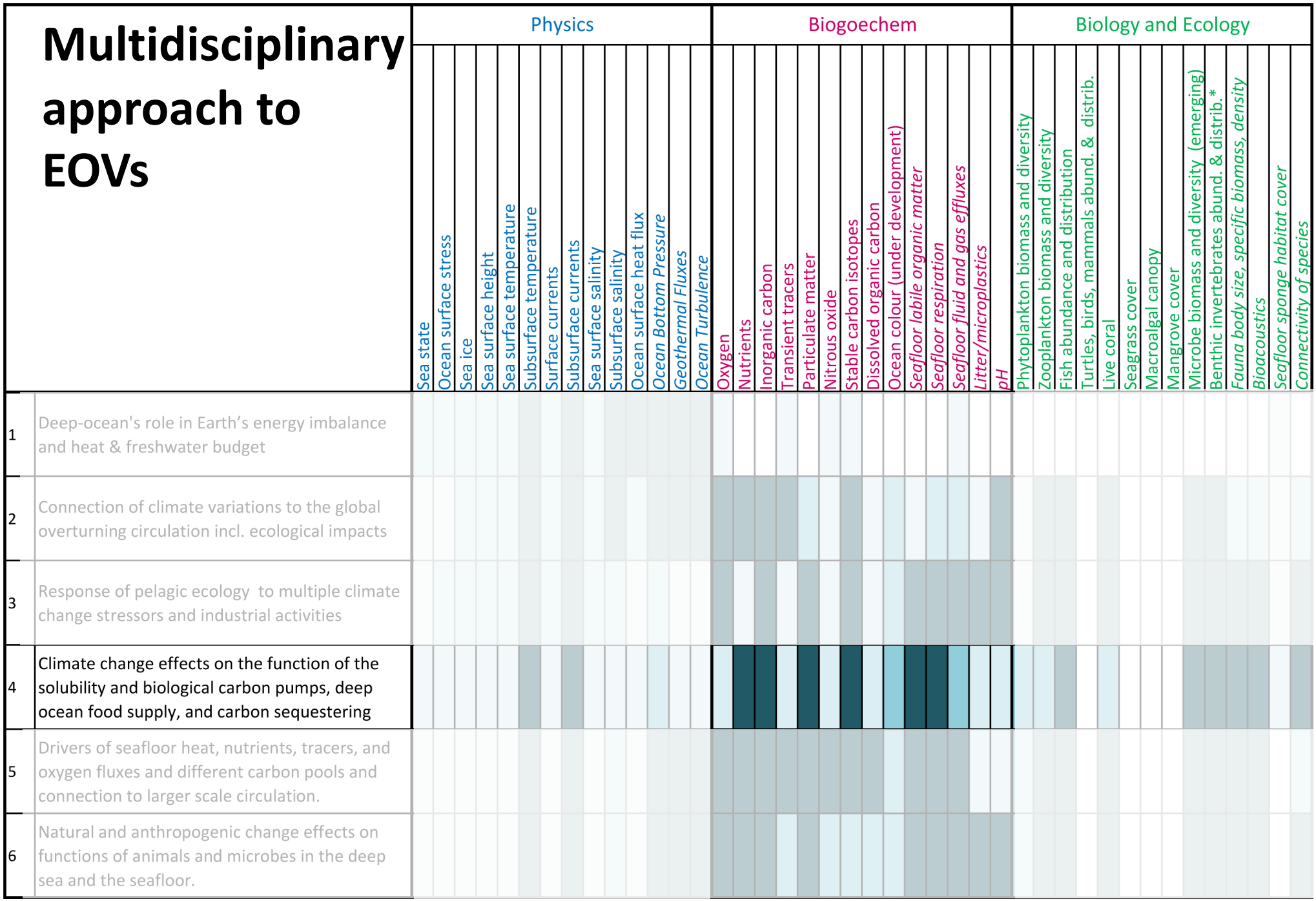


BGC EOV overview

Current list of GOOS & DOOS BGC EOVs

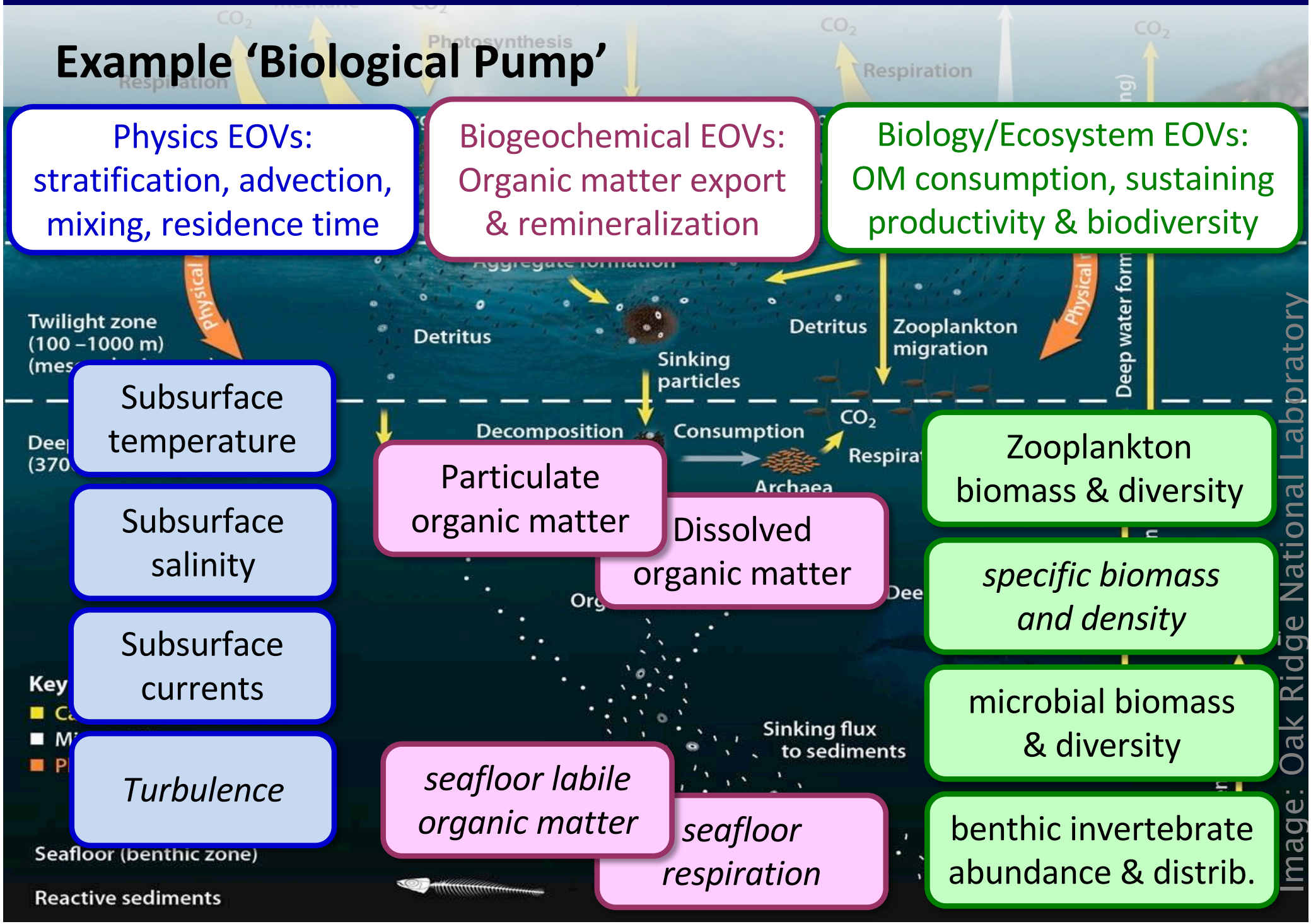
EOV	
Inorganic C / carbonate system	
^{13}C inorganic carbon	
Inorganic macro nutrients	
Dissolved oxygen	
Dissolved organic matter	
Particulate (organic) matter	
Nitrous oxide	
Transient tracers	
Respiration rates	
Seafloor labile organic matter	**DOOS and GOOS**
Seafloor methane efflux	**DOOS only**
Ocean Color	**GOOS only**

BGC EOV overview



BGC EOV overview

Example 'Biological Pump'



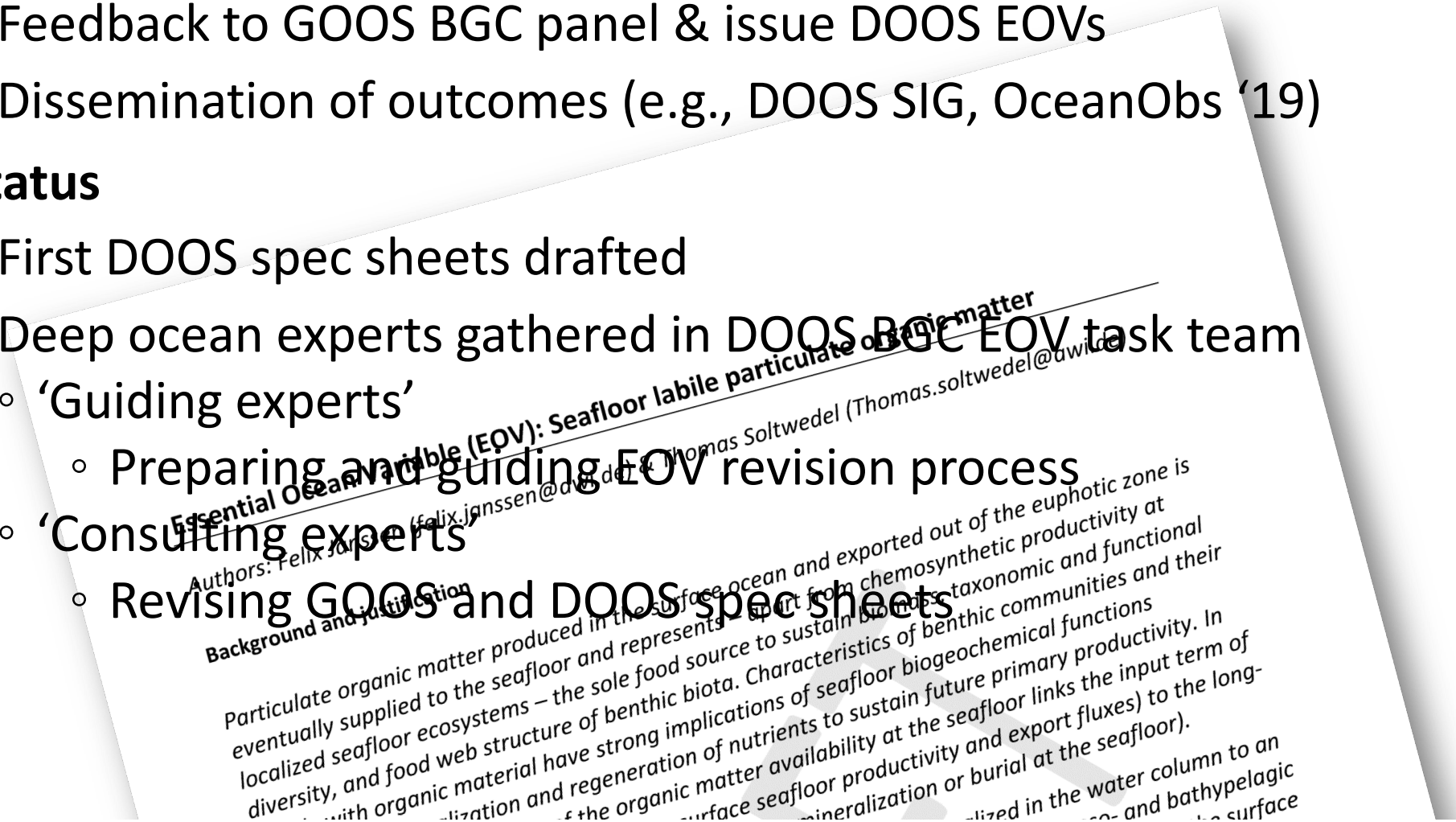
DOOS BGC EOV revision

Tasks

- Identify missing BGC EOVs, draft spec sheets
- Revise representation of deep-ocean specificities in GOOS EOV spec. sheets (e.g., phenomena, scales, observation networks)
- Feedback to GOOS BGC panel & issue DOOS EOVs
- Dissemination of outcomes (e.g., DOOS SIG, OceanObs '19)

Status

- First DOOS spec sheets drafted
- Deep ocean experts gathered in DOOS BGC EOV task team
  - 'Guiding experts'
    - Preparing and guiding EOV revision process
  - 'Consulting experts'
    - Revising GOOS and DOOS spec sheets



BGC EOV overview

Current list of GOOS & DOOS BGC EOVs

EOV	DOOS experts
Inorganic C / carbonate system	Christopher L. Sabine, Peter Brown
^{13}C inorganic carbon	Christopher L. Sabine, Peter Brown
Inorganic macro nutrients	Sinhue Torres Valdes
Dissolved oxygen	Clare Reimers, Rick Wanninkhof, Sinhue Torres Valdes
Dissolved organic matter	Thorsten Dittmar
Particulate (organic) matter	Ian Salter
Nitrous oxide	Hermann W. Bange
Transient tracers	Marie-Jose Messias, Peter Brown, Toste Tanhua
Respiration rates	Clare Reimers, Frank Wenzhöfer,
Seafloor labile organic matter	Henry Ruhl, Thomas Soltwedel
Seafloor methane efflux	Matthias Haeckel
Ocean Color	

Thank you!