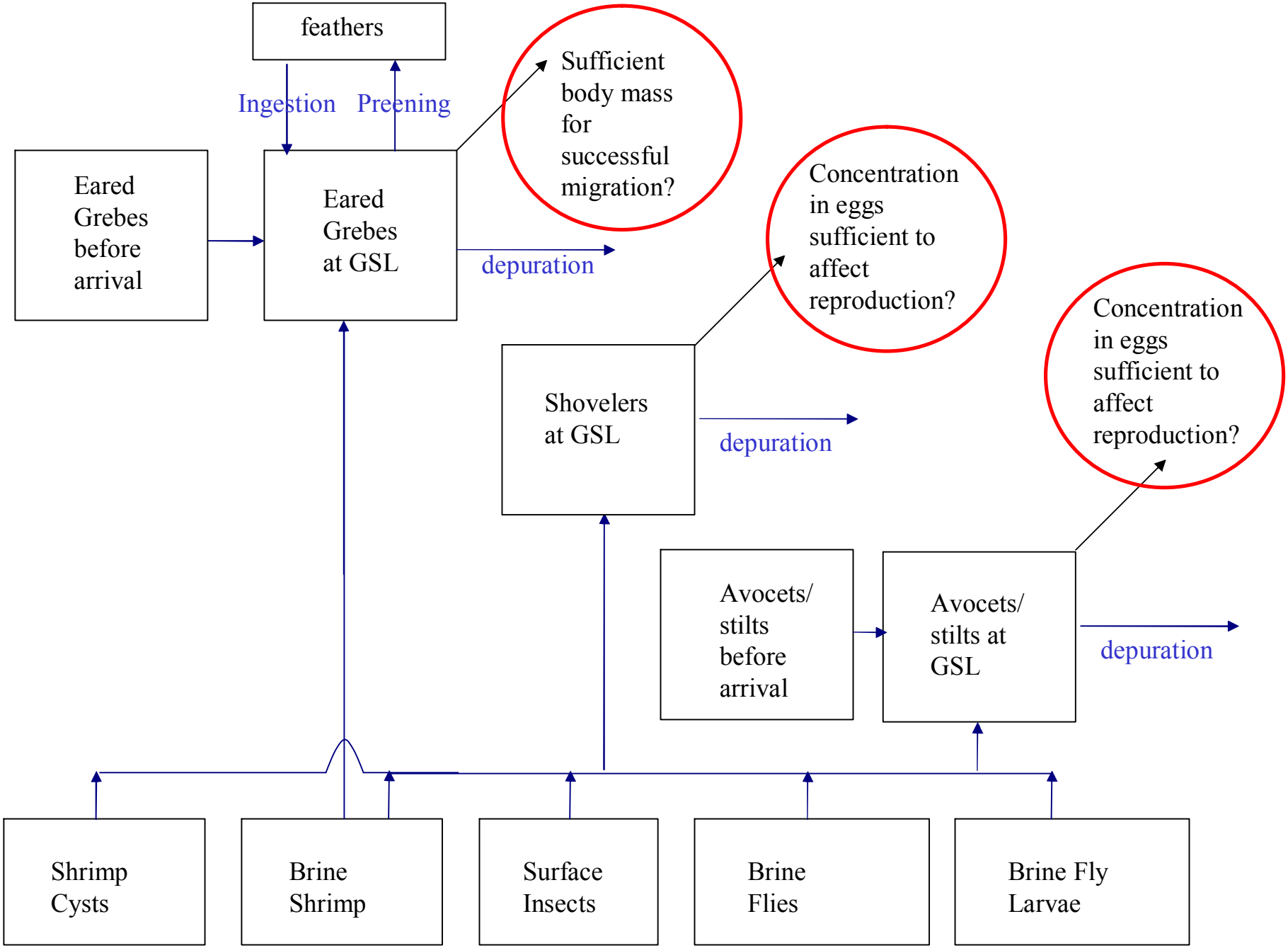
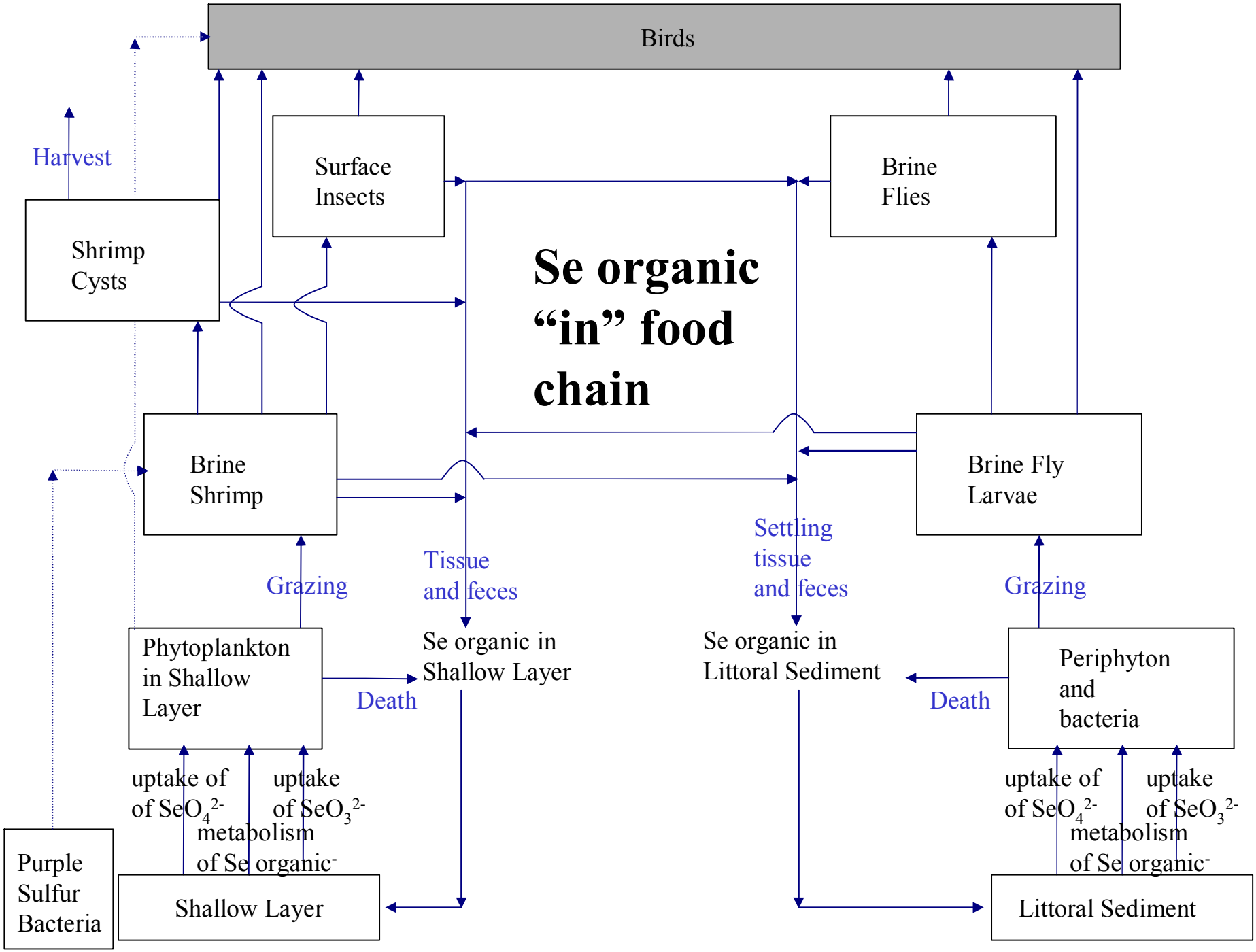
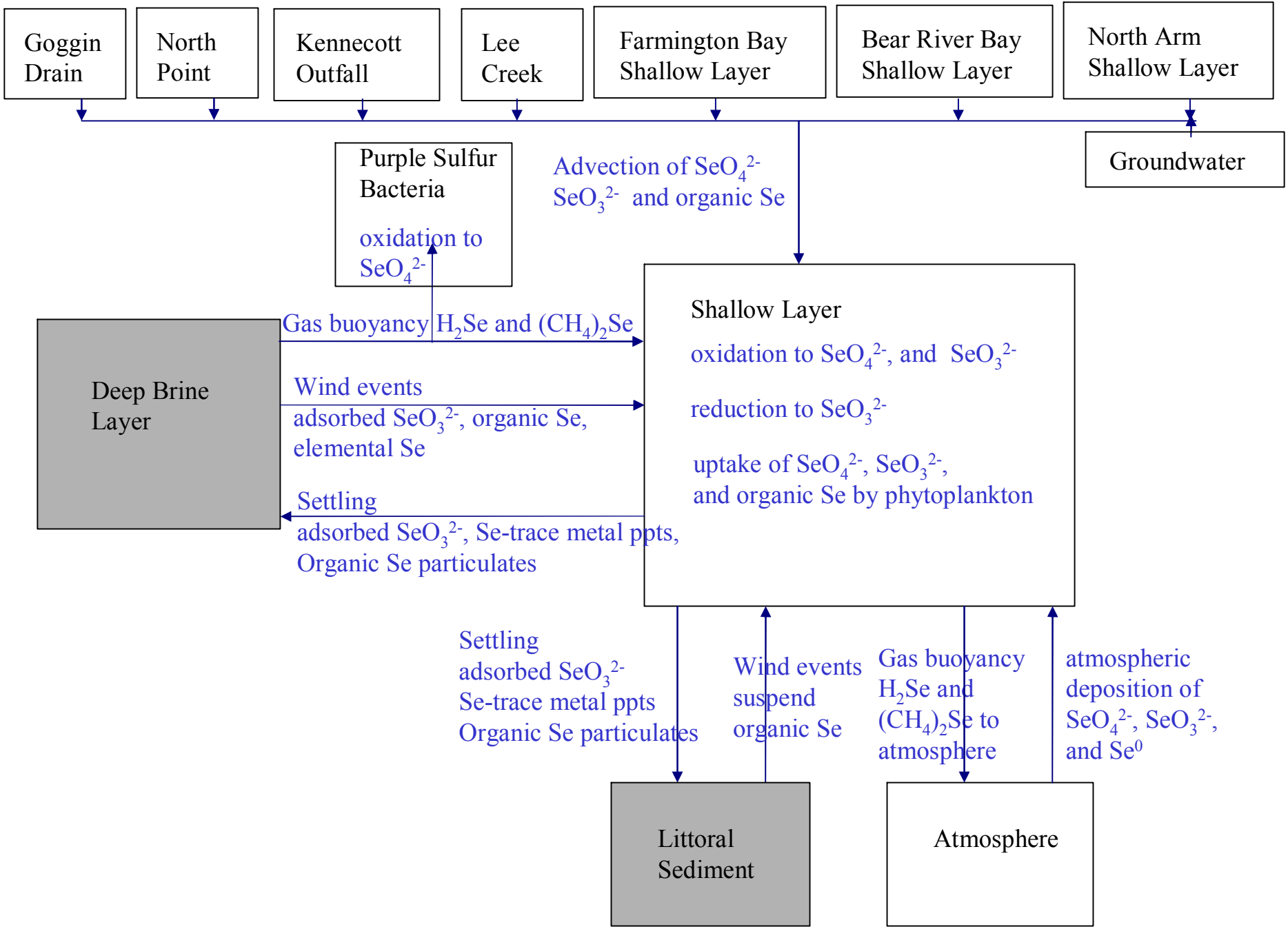
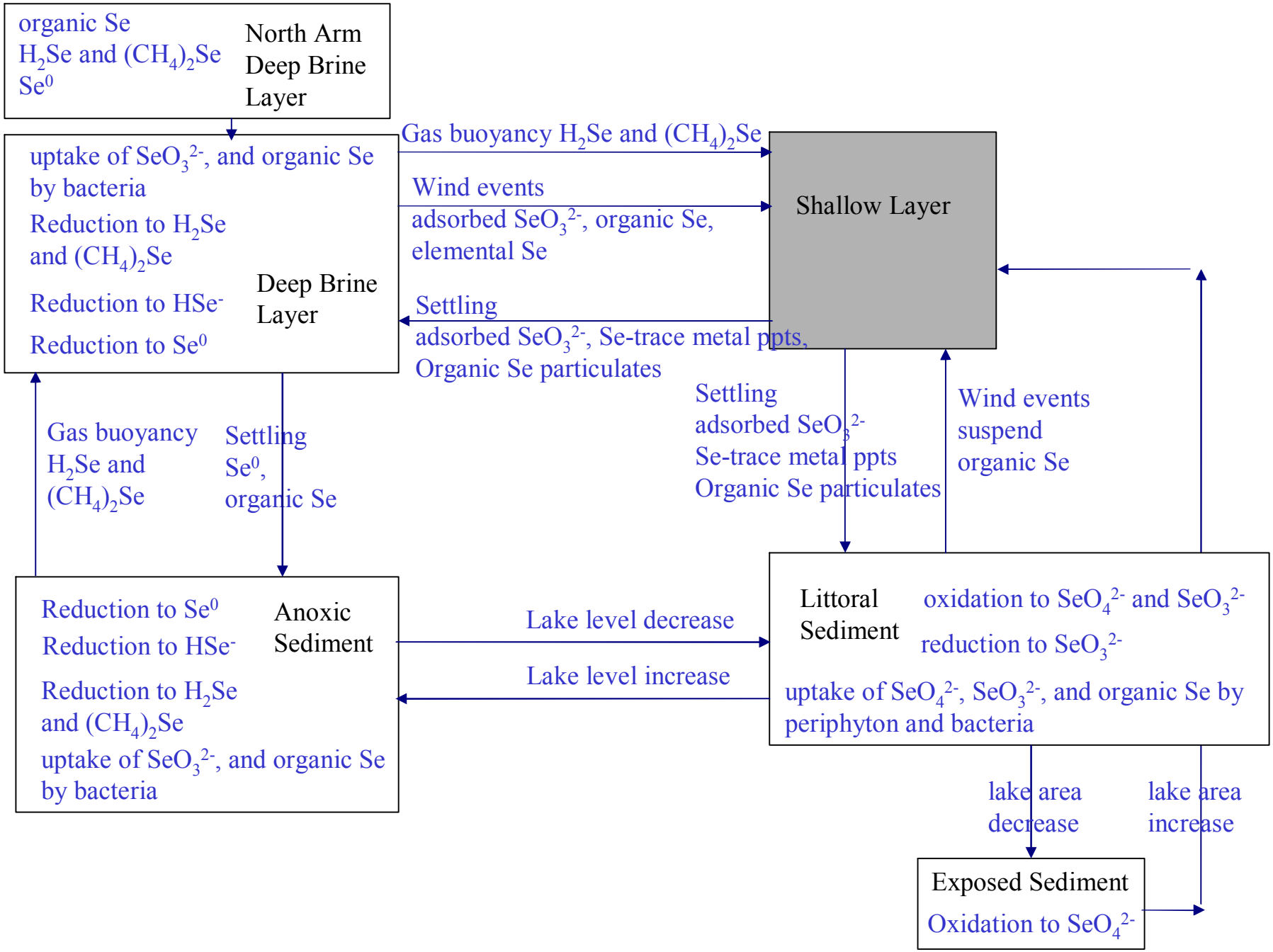
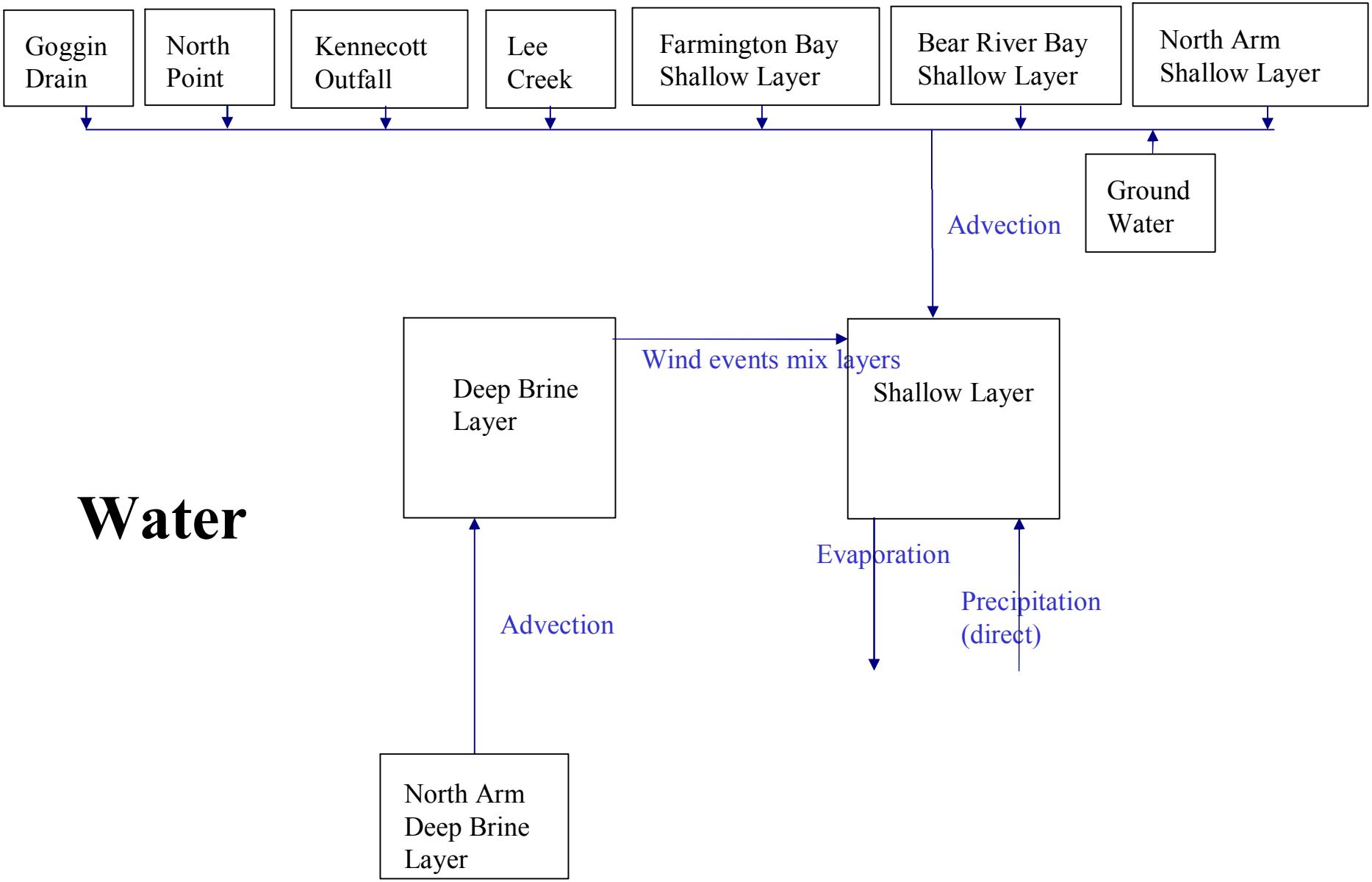

feathers
Ingestion
Preening
Sufficient body mass for successful migration?
Eared Grebes before arrival
Eared Grebes at GSL
depuration
Concentration in eggs sufficient to affect reproduction?
Shovelers at GSL
depuration
Concentration in eggs sufficient to affect reproduction?
Avocets/ stilts before arrival
Avocets/ stilts at GSL
depuration
Shrimp Cysts
Brine Shrimp
Surface Insects
Brine Flies
Brine Fly Larvae


Birds
Harvest
Surface Insects
Brine Flies
Shrimp Cysts
Se organic "in" food chain
Brine Shrimp
Brine Fly Larvae
Settling tissue and feces
Tissue and feces
Grazing
Grazing
Phytoplankton in Shallow Layer
Se organic in Shallow Layer
Se organic in Littoral Sediment
Periphyton and bacteria
Death
Death
uptake of of SeO_4^{2-}
uptake of SeO_3^{2-}
metabolism of Se organic-
uptake of of SeO_4^{2-}
uptake of SeO_3^{2-}
metabolism of Se organic-
Purple Sulfur Bacteria
Shallow Layer
Littoral Sediment


Goggin Drain
North Point
Kennecott Outfall
Lee Creek
Farmington Bay Shallow Layer
Bear River Bay Shallow Layer
North Arm Shallow Layer
Groundwater
Purple Sulfur Bacteria
oxidation to SeO_4^{2-}
Advection of SeO_4^{2-} SeO_3^{2-} and organic Se
Shallow Layer
oxidation to SeO_4^{2-}, and SeO_3^{2-}
reduction to SeO_3^{2-}
uptake of SeO_4^{2-}, SeO_3^{2-}, and organic Se by phytoplankton
Deep Brine Layer
Gas buoyancy H_2Se and $(CH_4)_2Se$
Wind events adsorbed SeO_3^{2-}, organic Se, elemental Se
Settling adsorbed SeO_3^{2-}, Se-trace metal ppts, Organic Se particulates
Settling adsorbed SeO_3^{2-} Se-trace metal ppts Organic Se particulates
Wind events suspend organic Se
Gas buoyancy H_2Se and $(CH_4)_2Se$ to atmosphere
atmospheric deposition of SeO_4^{2-}, SeO_3^{2-}, and Se^0
Littoral Sediment
Atmosphere


organic Se
H_2Se and $(CH_4)_2Se$
Se^0
North Arm Deep Brine Layer
uptake of SeO_3^{2-}, and organic Se by bacteria
Reduction to H_2Se and $(CH_4)_2Se$
Reduction to HSe^-
Reduction to Se^0
Deep Brine Layer
Gas buoyancy H_2Se and $(CH_4)_2Se$
Wind events
adsorbed SeO_3^{2-}, organic Se, elemental Se
Settling
adsorbed SeO_3^{2-}, Se-trace metal ppts, Organic Se particulates
Shallow Layer
Gas buoyancy H_2Se and $(CH_4)_2Se$
Settling Se^0, organic Se
Settling
adsorbed SeO_3^{2-}
Se-trace metal ppts
Organic Se particulates
Wind events suspend organic Se
Reduction to Se^0
Reduction to HSe^-
Reduction to H_2Se and $(CH_4)_2Se$
uptake of SeO_3^{2-}, and organic Se by bacteria
Anoxic Sediment
Lake level decrease
Lake level increase
Littoral Sediment
oxidation to SeO_4^{2-} and SeO_3^{2-}
reduction to SeO_3^{2-}
uptake of SeO_4^{2-}, SeO_3^{2-}, and organic Se by periphyton and bacteria
lake area decrease
lake area increase
Exposed Sediment
Oxidation to SeO_4^{2-}

Water


Goggin Drain
North Point
Kennecott Outfall
Lee Creek
Farmington Bay Shallow Layer
Bear River Bay Shallow Layer
North Arm Shallow Layer
Ground Water
Advection
Deep Brine Layer
Wind events mix layers
Shallow Layer
Evaporation
Precipitation (direct)
Advection
North Arm Deep Brine Layer