

# Lecture 15 – Iron Ocean Chemistry

## Iron Distributions

## Iron Speciation and Solubility

See:

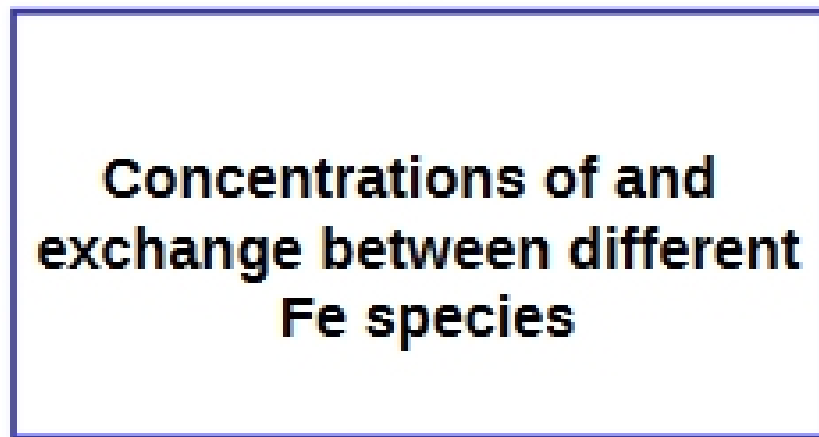
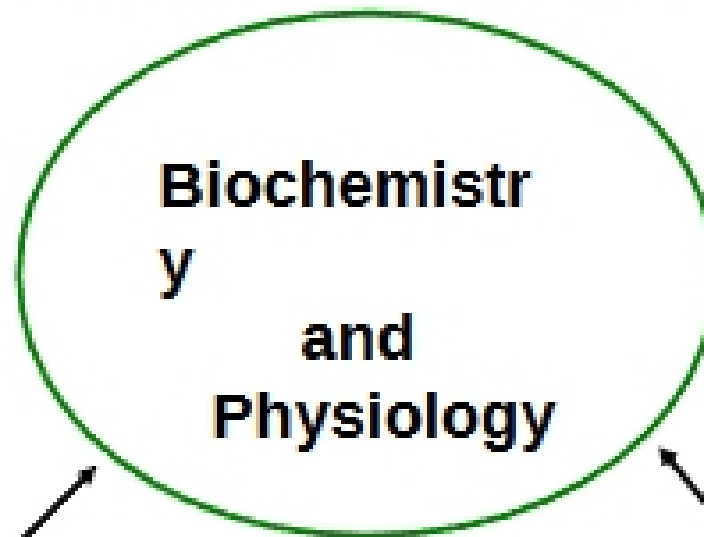
Johnson, Gordon and Coale (1997)

What controls dissolved iron concentrations in the world ocean?

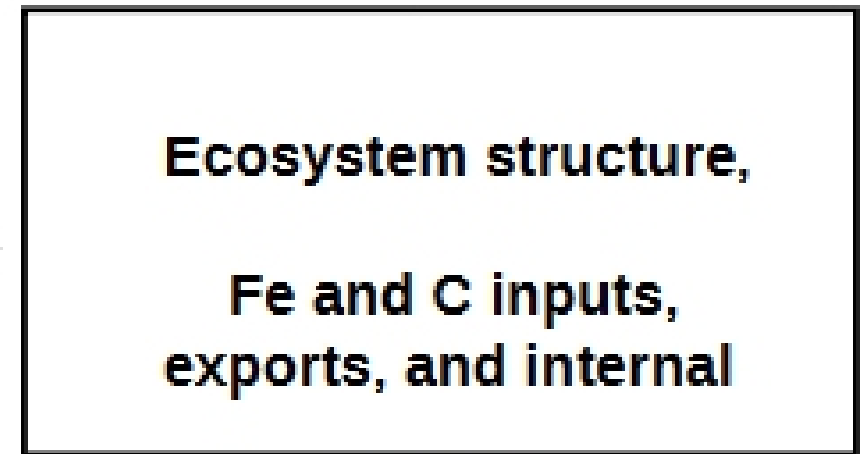
Marine Chemistry, 57, 137-161

# The Biogeochemical Cycle of Iron in Seawater

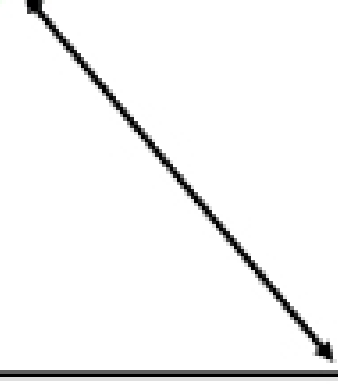
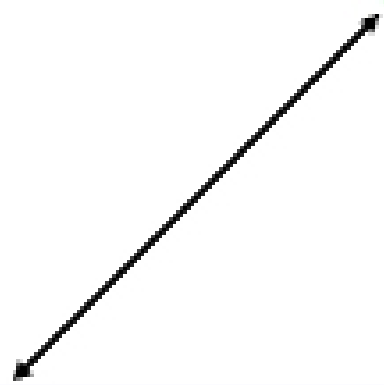
## Biological component



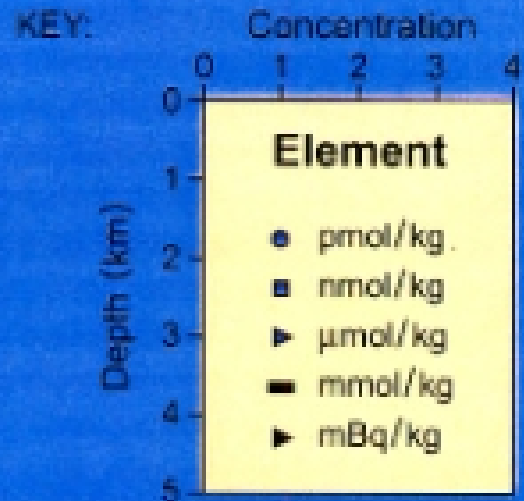
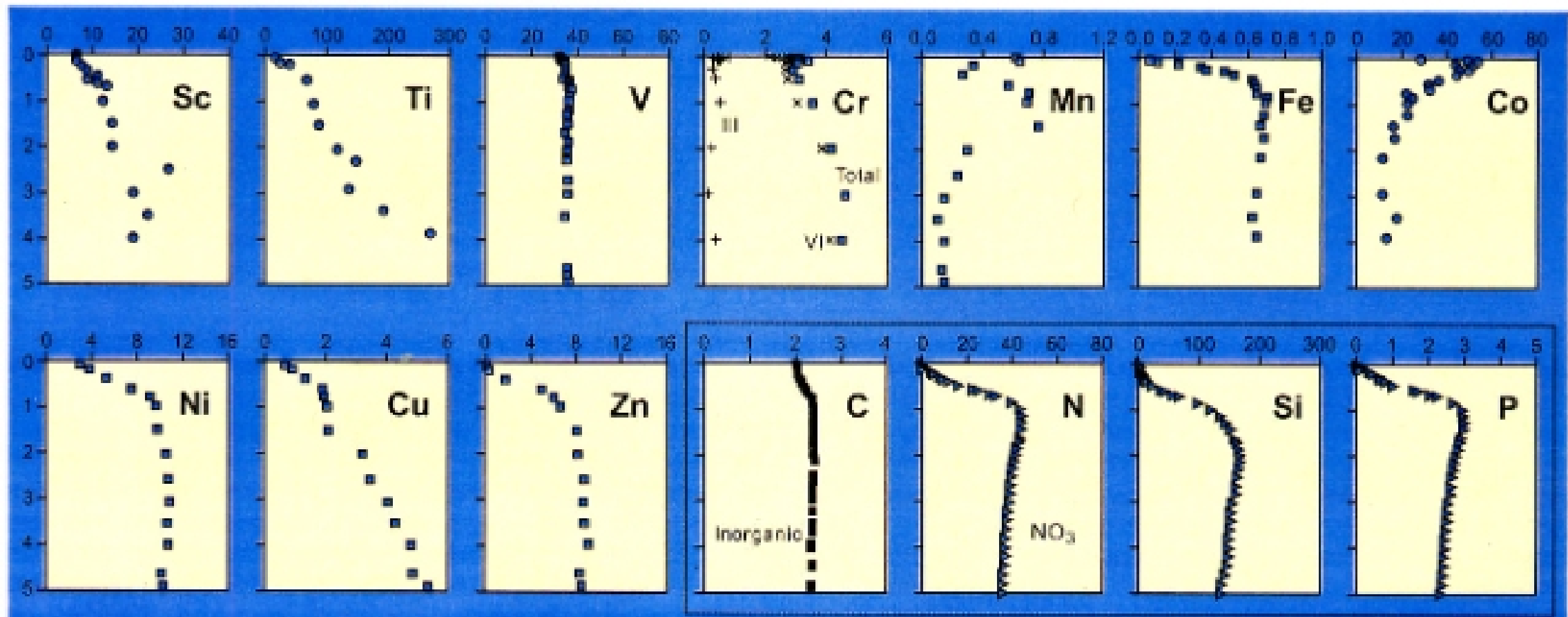
## Chemical component



## Ecological/Physical/Geochemical component



## Vertical Profiles of Selected Metals in the North Pacific Ocean (from Butler (1998) Science, 281, 207)



**Fig. 2.** Vertical profiles of the first-row transition metal ions and selected other elements in the North Pacific Ocean. Speciation is not included. Data compiled by Y. Nozaki (2). References for plotted data include: Sc (40), Ti (41), V (3), Cr (42), Mn (43), Fe (44), Co (44), Ni (45), Cu (45), and Zn (45). For a recent review, which includes speciation, see (1).