Sedimentation in the subtropical to equatorial deep-sea, example of the Pacific:

(c) MODEL TO ACCOUNT FOR PACIFIC STRATIGRAPHY
Curve of diversity (morphological ‘species’) for the most important pelagic unicellular microfossils, over the last 220 million years.

Bown et al. in press
Model of general distribution of shelf sediments:
The structural diversity of coastal benthic environments:

- Rocky shores
- Soft-substratum shores
- Estuaries
- Marshes
- Mangroves
- Coral reef
- Kelp forests

Spartina alterniflora
Global clines in species richness of fish (A), corals (B), snails (C), and lobsters (D). Scales show number of species present. (E) Concordance of the top 10% most species-rich cells among taxa. Red cells were included for all four taxa, orange for three, yellow for two, and blue for one. (F) Threats to reefs in each grid cell, calculated using data from Bryant et al. (3, 13). Blue represents low risk (average threat score between 1 and 1.67); yellow, medium risk (score between 1.68 and 2.33); and red, high risk (score 2.34). (G) Concordance in patterns of range rarity among the top-scoring 10% of cells for each taxon. Color codes are as in (E). Places outlined show multitaxon centers of endemism (13).

Roberts et al. 2002
Deep-Sea benthic Biodiversity

Strong decline in density and biomass.

But …

3 areas along the eastern coast of USA, of which the relatively homogenous slope off NJ.

- 233 areas of 0.09 m² = total 21 m²
- 10 stations at 1500 m
- 3 stations at 2500 m

Figure 1. Location of 14 deep-sea box-coring stations on the continental slope off New Jersey and Delaware.
A total of 556 box-cores samples, and 50 m² examined: 707 species of polychaetes and 426 species of peracard crustacea, much more than the census realized in shallow waters around WHOI and in the Chesapeake Bay during years!

Possible explanation for this surprising diversity:

- Absence of widespread disruption of habitat
- Patchy food resource
- Small-scale disturbance
- Large area
Cumulative curves of species number versus geographic range size. Range size is expressed as the number of cells containing reef habitat within each species' extent of occurrence.
Mol_Oce: Class #3

Principles of cellular biology, genetics and evolutionary genetics
Any name that sounds unfamiliar to you?
Try: http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/
a very useful web-site for any definition in the
field of Biology:
Fig. 3.2 The DNA double-helix. A DNA sequence, which specifies the properties of each gene, is read (transcribed) in a particular direction—referred to as 5' to 3'—along the molecule. Bases on each strand of the helix are linked by a sugar-phosphate backbone and the bases are joined between strands by hydrogen bonds which bind A to T (or U) bases and C to G bases. From Dickerson (1983) with permission (illustration by Irving Geis).