

Science of the Sea – Fall 2009

Biological Oceanography Glossary - Lectures 1-6

Lecture 1 – Origins of Life

Marine Biology	- Scientific study of organisms that live in the marine environment
_____	- How organisms interact with each other and the environment
Biological Oceanography	- How physical and environmental properties of the ocean control biological processes
Life	- Self-replicating, self-repairing, responsive, adaptive
Monosaccharides	- Most basic form of carbohydrate, simple sugars
_____	- Two monosaccharides joined
Polysaccharide	- Complex sugar, multiple monosaccharides joined
DNA	- Deoxyribonucleic Acid
RNA	- Ribonucleic Acid
Panspermia	- Theory of how life began on Earth. Single celled life forms exist through the universe, and these landed on Earth through meteors and rocks
Divine Creation	- Philosophy of life on earth. Life was created by a divine being.
_____	- Theory on how life began on Earth. Life evolved from inanimate matter.
Evolution	- Change in genetic material passed from one generation to the next
Heredity	- Traits passed to offspring
_____	- Beneficial traits will be passed on and retained in future generations
Genetic Drift	- Genes change randomly between populations

Lecture 2 – Classification of Life

Binomial Nomenclature – Two part taxonomy system devised by Carl Linnaeus

Prokaryotes – Group of organisms that lack a cell nucleus

_____ – Cells contain complex structures enclosed in membranes

Species – a group of organisms capable of interbreeding and producing fertile offspring of both genders

Phylogenetic Tree – Tree showing evolutionary relationships

Node – Where trees branch because of a speciation event

Genetic Distance – divergence between species or between populations

Phylogeny – Genetic relatedness among groups of organisms

Cladistics – Science – classify organisms based on shared ancestry

Lecture 3 - Primary Production

Autotroph

- An organism that can make its own food by photosynthesis or chemosynthesis

Photosynthesis

- Energy produced from light, water and carbon dioxide

- Energy produced using inorganic compounds, such as sulphur, ammonia and hydrogen

Phytoplakton

- planktonic organisms that can photosynthesize

Radial Symmetry

- Body parts radiate from a central axis

- Body plan has a left and a right side

Lecture 4 - Consumers

- Heterotroph** - Organisms that gain energy by feeding on other organisms
- Primary Consumer** - Herbivores
- _____ - Carnivores that eat Herbivores
- Tertiary Consumer** - Carnivores that eat Carnivores
- Phagocytosis** - Absorb cells through cell membranes
- _____ - Feeding by extending cell membrane to attach and bring it into the cell
- Pallium Feeding** - Feeding by growing membrane and surrounding cells
- Filter Feeding** - filter particles out of water using specialized apparatus

Lecture 5 - Invertebrates

- Invertebrate** - Without vertebral column
- Exoskeleton** - Skeleton on the outside of soft tissue
- Benthic** - lives on the seafloor
- _____ - Stinging cells found in Cnidarians
- Radula** - Mouthparts of a mollusk

Lecture 6 - Vertebrates

- Vertebrate** - With vertebral column
- Endoskeleton** - Skeleton surrounded by soft tissue
- _____ - Axial rod
- Pharyngeal Slits** - pharynx split by up to 200 slits with rows of cilia beating water through mouth
- Endostyle** - longitudinal ciliated groove on the ventral wall of the pharynx which produces mucus to gather food particles
- Lateral Line** - sense organ in fish used to detect movement and vibration in water
- Baleen** - Keratin fibers in Whales used as filters to filter feed on plankton