DOWNLOAD PDF DICTIONARY OF ECOLOGY

Chapter 1 : Ecology | Definition of Ecology by Merriam-Webster

This is the fourth edition of the most comprehensive and authoritative dictionary of ecology available. Written in a clear, accessible style, it contains over 6, entries on all aspects of ecology and related environmental scientific disciplines such as biogeography, genetics, soil science, geomorphology, atmospheric science, and oceanography.

By Editors Ecology Definition Ecology is the branch of biology that studies how organisms interact with their environment and other organisms. Every organism experiences complex relationships with other organisms of its species, and organisms of different species. These complex interactions lead to different selective pressures on organisms. The pressures together lead to natural selection , which causes populations of species to evolve. Ecology is the study of these forces, what produces them, and the complex relationships between organisms and each other, and organisms and their non-living environment. Scientist can view ecology through a variety of different lenses, from the microscopic molecular level all the way to the planet as a whole. These different types of ecology will be discussed further on. At every level of ecology, the focus is on the selective pressures that cause evolutionary change. These pressures arise from a variety of different sources, and there are numerous methods for observing and quantifying this data. The field of ecology has a huge variety of sub-disciples. Although the types of ecology below are divided by the level of organization being viewed, some ecologist specialize in specific aspects of each field. For example, cognitive ecology is a branch of organismal ecology that studies the mental processes of animals. Other ecologist study only the interactions between humans and the rest of the biome, a field known as human ecology or environmental science. Still other ecologists focus on the interactions between organisms and the abiotic factors that affect their evolution, such as nutrients and toxins in the environment. Ecology is a vast field, a the following are only a sampling of the variety of things scientist study in ecology. Types of Ecology Type 1: Molecular Ecology At the molecular level, the study of ecology focuses on the production of proteins, how those proteins affect the organism and the environment, and how the environment in turn affects the production of various proteins. In all known organisms, DNA gives rise to various proteins, which interact with each other and the environment to replicate the DNA. These interactions lead to some very complex organisms. Molecular ecologist study how these proteins are created, how they affect the organism and environment, and how the environment in turn affects them. Organismal Ecology Taking a step back, the study of organismal ecology deals with individual organisms and their interactions with other organisms and the environment. While organismal biology is a division of ecology, it is still a huge field. Each organism experiences a huge variety of interactions in its lifetime, and to study all of them is impossible. Many scientist studying organismal ecology focus on one aspect of the organism, such as its behavior or how it processes the nutrients of the enviorment. The field of ethology, or the study of behavior, can also be studied as ecology. Instead of just analyzing certain behaviors in animals, behavioral ecologists study how those behaviors affect the organism evolutionarily, and how the environment puts pressures on certain behaviors. For example, a behavioral ecologist might study the way that an eagle hunts for prey, noting which behaviors lead to success and which to failure. In this way, the scientist can hypothesize the forces that cause eagles to behave the way they do. This information can be very important when trying to develop conservation plans to protect animals in the wild. Population Ecology The next level of organism organization, populations, are groups of organisms of the same species. Due to the wide variety of life on Earth, different species have developed many different strategies for dealing with their conspecifics, or organisms of the same species. Some species directly compete with conspecifics, while other organisms form close social bonds and work cooperatively to secure resources. A branch of ecology, social ecology, studies organisms like bees and wolves, which work together to provide for the colony or pack. The complex interactions between these organisms and there environment leads to different selective forces than in animals that compete with conspecifics. In fact, scientist hypothesize that the increased success found in human society may have been what lead humans to be so communicative. Population ecologist study populations of organism and the complex interactions they have with the environment and other populations. Community Ecology Different populations that live in the same environment create communities of

organisms. These communities create niches, or various spaces, for organisms to occupy. For instance, several niches can be found in a wheat field. Various insects live off of the nutrients collected by the wheat. Certain bacteria occupy a niche in the roots, where they convert nitrogen for the plant. Community ecologist study these complex interactions and the selective pressures they produce. Sometimes, organisms in communities will begin to experience coevolution where to or more species both evolve in response to each other. This can be seen in many species, from bees and the flowers they pollinate to predators and the prey they eat. Ecosystem Ecology The largest scale of organismal organization is the ecosystem. An ecosystem is network of interconnected biological communities. The largest ecosystem, the biosphere, encompasses all ecosystems inside of it. Ecosystem ecologist study the complex patterns produced by interacting ecosystems and the abiotic factors of the environment. They may study water, nutrients, or other chemical that cycle through the ecosystem. Ecosystem ecology is a very complex and large-scale science that includes many disciplines. Examples of Ecology Human Ecology Some ecologists studies humans, their effect on each other and other organisms, and their effects on the environment. Humans create an enormous impact on the globe, and some constructions can be seen from space. Some ecologist study this phenomenon, and the possible effects it could have on the biome. Other ecologist study human behavior, where it came from, and the evolutionary pressures that lead to it. Also a discipline needed in anthropology, human ecology is a giant field that analyses human evolution and our interaction with nature. Niche Construction in Termites Ecologists of many different specialties study niche construction, or process by which organisms alter their environment. An example of this is niche construction in termites. Termites build mound that stand over 6 feet tall, and can go much deeper underground. To get oxygen to the inner parts of the next, termites form the nest the keep air flowing deep underground. This behavior can be studied in many ways. In evolutionary ecology, they would look at the proteins that cause the termite to build nests, and how they change over time in response to different environments. In community ecology, scientist might study how termite mounds affect the surroundings, and how they change in response to the environment. In ecosystem ecology, the focus might be on the nutrients the termites recycle underground to support the nearby trees. Although the scope is huge, all of the different aspects are considered the ecology of termites. Related Biology Terms Primary Production â€" The process of converting inorganic energy, such as sunlight, into biological energy, usually glucose. Niche â€" A role or position that a creature can role within an ecosystem. Nutrient cycling â€" The process through which different elements pass from organism to organism, and are used in different ways or returned to the environment. Biosphere â€" The sum of all ecosystems on the planet, acting as one ecosystem. A scientist is studying the structure of a specific protein. He writes a paper on its shape, and what molecule it changes. No Answer to Question 1 B is correct. Talking about a protein alone is not ecology. The study of ecology deals with how organisms respond to their environment. To be ecology, the scientist would have had to discuss why the protein was important to the organism, and how it could change in response to the environment. A beaver cuts down trees, drags them into a stream, and floods an area to create a pond it can live in. What is this behavior called? Forest Thinning Answer to Question 2 B is correct. In this case, the beaver is changing the environment, and creating a niche that was not previously there. Ecologist study this behavior to see the effects it has on other organisms and the environment as a whole. An ecologist studies a pack hyenas, and their interactions with the local lions. Which type of ecology would best describe this study? Community Ecology Answer to Question 3 C is correct. This would be an example of community ecology, or the study of the interactions of different populations of animals. Although they might not like it, the hyenas and the lions are part of the same community. Population ecology might study the pack behavior of the hyenas, while organismal ecology would study the interaction between single hyenas and their environment, including interactions with other hyenas.

Chapter 2 : Ecological | Define Ecological at calendrierdelascience.com

Ecology definition, the branch of biology dealing with the relations and interactions between organisms and their environment, including other organisms. See more.

In this article we will discuss about: Definition of Ecology 2. Study of Ecology 3. The word ecology has been defined variously by different authors. However, much later, in the s ecology was recognised as a distinct field of science. Ecology till recently was considered in academic circles to be a branch of biology, which, along with molecular biology, genetics, developmental biology, evolution etc. Thus, ecology has grown from a subdivision of biological sciences to a major interdisciplinary science that links together the biological, physical and social sciences. Since plants and animals are intimately interrelated, study of plant ecology or animal ecology alone is bound to be imperfect and inadequate. So plant and animal ecology are to be given equal emphasis and it is better to study them under the term Bio-ecology. The term Synecology denotes ecological studies at the community level while the term Autecology denotes ecological studies at the species level. The carving and pictures discovered in France and Spain speak on the observation of the cave-dwellers about the fauna and flora around them. The writings of Romans and Greeks bear evidences of their interest in natural history. In a series of work in , he stressed on habits and adaptations. After this, outstanding advances were made in the study of natural history in the eighteenth and nineteenth centuries. However, the term ecology was first coined by German Biologist, Haeckel in Ecological studies focus on how various organisms interact with their environment. The sub-fields or branches of ecology are: It is concerned with explaining the patterns of behaviour in animals. Physiological Ecology or Eco-Physiology: It also plays an important role in conservation studies. For example, the decline of migratory bird species focuses on how changes in the environment affect the physiological mechanisms that prepare birds for long-distance migration. Organisms obtain energy either through photosynthesis or by consuming other organisms. Thus, the interaction between the biotic and abiotic components called an ecosystem is the sub-field of ecology called ecosystem ecology. Issues of interest at this level is how human activities affect food webs, energy flow and global cycling of nutrients. Population ecology constitutes organisms of the same species living in the same place and same time. It is also related directly to the management of fish and game populations, forestry and agriculture. Community studies is principally on how biotic interactions such as predation, herbivory and competition influence the numbers and distributions of organisms. These are of ecological fields whose study requires the synthesis of several other sub-fields of ecology. Landscape ecology is one that emphasizes the inter-connections among ecosystems of a region. For example, herons forage in the lake, nest in the forest and, thus, the herons move nutrients from water to land. It takes a landscape approach and is related to the maintenance of biodiversity and the preservation of endangered species. It is the study of the fate and action of human-made substances, such as pesticides and detergents, in the natural world. Ecotoxicology focuses on the way in which human-made substances affect human health. Roadside trash pickups and city tree planting drives are well-intentioned public beautification and cleanup activities, but such activities are not science. However, in many cases, individual ecologists conduct work that crosses boundaries of these subfields. Ecological study, thus, is an integrative science, one that requires great innovation, breadth and curiosity. The solution of a particular ecological problem requires several lines of approach. These various lines of approach towards the ecological problem can be translated as: Biotic factors are the direct outcome of the various types of activities amongst the animals. A competition for food and shelter always exists amongst the members of a community. Quantitative study includes an assessment of the population density in a given area and also an estimation of the number of members present in different communities. Climatic factors include both physical and chemical conditions present in a habitat. These factors are ever changing in nature. Physical factors include mainly temperature, light and humidity. Chemical factors include acidity or salinity that are specially present in aquatic habitat. Some animals are so sensitive that a minute climatic change becomes fatal to them. Climatic factors play an important role in the distribution of animals. Taxonomy means classification, naming and description of organisms. The genetic and evolutionary aspects have taken a rightful place in ecological

problems. Evolution is no longer regarded as a thing of the past and it has been proved that evolution is a dynamic process though the progress is very slow. In certain circumstances it has become possible to detect and to measure the rate of evolution in wild population. In so doing, the first information that we need is that whether the food available in the new place is to be taken by these fishes. These two are included within the biotic factors. We will have to determine the number of fishes that are to be let loose in the new locality and the number is to be determined in such a way that they can live there without being overcrowded. Herein lies the involvement of the quantitative aspect. We will have to study the water itself and to find out the extent of the fluctuations in its constitution such as salt content, acidity or alkalinity in order to determine the tolerance of the fishes in the changing factors. If the first lake is a very old one and the fish in question had been isolated there for a great period of time, it is possible that a subspecies or local race might evolve there. In such cases the taxonomist might come forward and help identifying the species. Such a situation opens up a case for the Geneticists and Evolutionists to find out how and at what rate the new forms have evolved.

Chapter 3 : ecology | Definition of ecology in English by Oxford Dictionaries

Ecology definition is - a branch of science concerned with the interrelationship of organisms and their environments. How to use ecology in a sentence. a branch of science concerned with the interrelationship of organisms and their environments.

The third major problem area of modern technological society is that of preserving a healthy environmental balance. Though humans have been damaging the environment for centuries by overcutting trees and farming too intensively and though some protective measures, such as the establishment ofâ€¦ Evolutionary ecology also examines broader issues, such as the observations that plants in arid environments often have no leaves or else very small ones or that some species of birds have helpers at the nestâ€”individuals that raise young other than their own. A critical question for the subject is whether a set of adaptations arose once and has simply been retained by all species descended from a common ancestor having those adaptations or whether the adaptations evolved repeatedly because of the same environmental factors. In the case of plants that live in arid environments, cacti from the New World and euphorbia see spurge from the Old World can look strikingly similar even though they are in unrelated plant families. Physiological ecology asks how organisms survive in their environments. There is often an emphasis on extreme conditions, such as very cold or very hot environments or aquatic environments with unusually high salt concentrations. Examples of the questions it may explore are: How do some animals flourish in the driest deserts, where temperatures are often high and freestanding water is never available? How do bacteria survive in hot springs, such as those in Yellowstone National Park in the western United States, that would cook most species? How do nematode s live in the soils of dry valleys in Antarctica? Physiological ecology looks at the special mechanisms that the individuals of a species use to function and at the limits on species imposed by the environment. Behavioral ecology examines the ecological factors that drive behavioral adaptations. The subject considers how individuals find their food and avoid their enemies. For example, why do some birds migrate see migration while others are resident? Why do some animals, such as lion s, live in groups while others, such as tiger s, are largely solitary? Population ecology , or autecology , examines single species. One immediate question that the subject addresses is why some species are rare while others are abundant. Interactions with other species may supply some of the answers. For example, enemies of a species can restrict its numbers, and those enemies include predators, disease organisms, and competitorsâ€”i. Consequently, population ecology shares an indefinite boundary with community ecology , a subject that examines the interactions between several to many species. Population ecology asks what causes abundances to fluctuate. Why, for example, do numbers of some species, typically birds and mammals, change perhaps threefold or fourfold over a decade or so, while numbers of other species, typically insects, vary tenfold to a hundredfold from one year to the next? Another key question is what limits abundance, for, without limits, species numbers would grow exponentially. Biogeography is the study of the geographical distribution of organisms, and it asks questions that parallel those of population ecology. Some species have tiny geographical ranges, being restricted to perhaps only a few square kilometres, while other species have ranges that cover a continent. Some species have more-or-less fixed geographical ranges, while others fluctuate, and still others are on the increase. If a species that is spreading is an agricultural pest, a disease organism, or a species that carries a disease, understanding the reasons for the increasing range may be a matter of considerable economic importance. Biogeography also considers the ranges of many species, asking why, for example, species with small geographic ranges are often found in special places that house many such species rather than scattered randomly about the planet. Community ecology , or synecology, considers the ecology of communities , the set of species found in a particular place. Because the complete set of species for a particular place is usually not known, community ecology often focuses on subsets of organisms, asking questions, for example, about plant communities or insect communities. There are many large-scale patterns; for example, more species are present in larger areas than smaller ones, more on continents than on islands especially remote ones , and more in the tropics than in the Arctic. There are many hypotheses for each pattern. Ecological factors also cause the diversity of species to

vary over smaller scales. For example, though predators may be harmful to individual species, the presence of a predator may actually increase the number of species present in a community by limiting the numbers of a particularly successful competitor that otherwise might monopolize all the available space or resources. The questions above are generally applied to species at the same trophic levelâ€”say, the plants in a community, or the insects that feed on the plants there, or the birds that feed on the insects there. Yet a different set of questions in community ecology involves how many trophic levels there are in a particular place and what factors limit that number. Conservation biology seeks to understand what factors predispose species to extinction and what humans can do about preventing extinction. Species in danger of extinction are often those with the smallest geographic ranges or the smallest population sizes, but other ecological factors are also involved. Ecosystem ecology examines large-scale ecological issues, ones that often are framed in terms not of species but rather of measures such as biomass, energy flow, and nutrient cycling. Carbon is the basis of life see carbon cycle , so these questions may be framed in terms of energy. How much food one has to eat each day, for instance, can be measured in terms of its dry weight or its calorie content. The same applies to measures of production for all the plants in an ecosystem or for different trophic levels of an ecosystem. A basic question in ecosystem ecology is how much production there is and what the factors are that affect it. Not surprisingly, warm, wet places such as rainforest s produce more than extremely cold or dry places, but other factors are important. Nutrients are essential and may be in limited supply. The availability of phosphorus and nitrogen often determines productivityâ€”it is the reason these substances are added to lawns and cropsâ€”and their availability is particularly important in aquatic systems. On the other hand, nutrients can represent too much of a good thing. Human activity has modified global ecosystems in ways that are increasing atmospheric carbon dioxide , a carbon source but also a greenhouse gas see greenhouse effect , and causing excessive runoff of fertilizers into rivers and then into the ocean , where it kills the species that live there. Methods in ecology Because ecologists work with living systems possessing numerous variables, the scientific techniques used by physicists, chemists, mathematicians, and engineers require modification for use in ecology. Moreover, the techniques are not as easily applied in ecology, nor are the results as precise as those obtained in other sciences. It is relatively simple, for example, for a physicist to measure gain and loss of heat from metals or other inanimate objects, which possess certain constants of conductivity, expansion, surface features, and the like. To determine the heat exchange between an animal and its environment, however, a physiological ecologist is confronted with an array of almost unquantifiable variables and with the formidable task of gathering the numerous data and analyzing them. Ecological measurements may never be as precise or subject to the same ease of analysis as measurements in physics , chemistry , or certain quantifiable areas of biology. In spite of these problems, various aspects of the environment can be determined by physical and chemical means, ranging from simple chemical identifications and physical measurements to the use of sophisticated mechanical apparatus. The development of biostatistics statistics applied to the analysis of biological data , the elaboration of proper experimental design, and improved sampling methods now permit a quantified statistical approach to the study of ecology. Because of the extreme difficulties of controlling environmental variables in the field, studies involving the use of experimental design are largely confined to the laboratory and to controlled field experiments designed to test the effects of only one variable or several variables. The use of statistical procedures and computer models based on data obtained from the field provide insights into population interactions and ecosystem functions. Mathematical programming models are becoming increasingly important in applied ecology, especially in the management of natural resources and agricultural problems having an ecological basis. Controlled environmental chambers enable experimenters to maintain plants and animals under known conditions of light, temperature , humidity, and day length so that the effects of each variable or combination of variables on the organism can be studied. Biotelemetry and other electronic tracking equipment, which allow the movements and behaviour of free-ranging organisms to be followed remotely, can provide rapid sampling of populations. Radioisotopes are used for tracing the pathways of nutrients through ecosystems, for determining the time and extent of transfer of energy and nutrients through the different components of the ecosystem, and for the determination of food chains. The use of laboratory microcosmsâ€”aquatic and soil micro-ecosystems, consisting of biotic and

nonbiotic material from natural ecosystems, held under conditions similar to those found in the fieldâ€”are useful in determining rates of nutrient cycling, ecosystem development, and other functional aspects of ecosystems. Microcosms enable the ecologist to duplicate experiments and to perform experimental manipulation on them.

Chapter 4 : Ecology | Define Ecology at calendrierdelascience.com

A Dictionary of Ecology by Allaby, Michael [Oxford University Press,] (Paperback) 4th Edition [Paperback] by Allaby. Paperback. $ $ 55

Ecosystems, for example, contain abiotic resources and interacting life forms i. Ecosystems are dynamic, they do not always follow a linear successional path, but they are always changing, sometimes rapidly and sometimes so slowly that it can take thousands of years for ecological processes to bring about certain successional stages of a forest. A single tree is of little consequence to the classification of a forest ecosystem, but critically relevant to organisms living in and on it. Each of those aphids, in turn, support diverse bacterial communities. The former focus on organisms distribution and abundance, while the later focus on materials and energy fluxes. Biological organisation and Biological classification System behaviors must first be arrayed into different levels of organization. Behaviors corresponding to higher levels occur at slow rates. Conversely, lower organizational levels exhibit rapid rates. For example, individual tree leaves respond rapidly to momentary changes in light intensity, CO2 concentration, and the like. The growth of the tree responds more slowly and integrates these short-term changes. Hence, ecologists classify ecosystems hierarchically by analyzing data collected from finer scale units, such as vegetation associations, climate, and soil types, and integrate this information to identify emergent patterns of uniform organization and processes that operate on local to regional, landscape , and chronological scales. To structure the study of ecology into a conceptually manageable framework, the biological world is organized into a nested hierarchy , ranging in scale from genes , to cells , to tissues , to organs , to organisms , to species , to populations , to communities , to ecosystems , to biomes , and up to the level of the biosphere. Biodiversity Biodiversity refers to the variety of life and its processes. It includes the variety of living organisms, the genetic differences among them, the communities and ecosystems in which they occur, and the ecological and evolutionary processes that keep them functioning, yet ever changing and adapting. The term has several interpretations, and there are many ways to index, measure, characterize, and represent its complex organization. Natural capital that supports populations is critical for maintaining ecosystem services [20] [21] and species migration e. Habitat Biodiversity of a coral reef. Corals adapt to and modify their environment by forming calcium carbonate skeletons. This provides growing conditions for future generations and forms a habitat for many other species. Habitat shifts provide important evidence of competition in nature where one population changes relative to the habitats that most other individuals of the species occupy. For example, one population of a species of tropical lizards Tropidurus hispidus has a flattened body relative to the main populations that live in open savanna. The population that lives in an isolated rock outcrop hides in crevasses where its flattened body offers a selective advantage. Habitat shifts also occur in the developmental life history of amphibians, and in insects that transition from aquatic to terrestrial habitats. Ecological niche Termite mounds with varied heights of chimneys regulate gas exchange, temperature and other environmental parameters that are needed to sustain the internal physiology of the entire colony. Evelyn Hutchinson made conceptual advances in [32] [33] by introducing a widely adopted definition: The fundamental niche is the set of environmental conditions under which a species is able to persist. The realized niche is the set of environmental plus ecological conditions under which a species persists. A trait is a measurable property, phenotype , or characteristic of an organism that may influence its survival. Genes play an important role in the interplay of development and environmental expression of traits. This tends to afford them a competitive advantage and discourages similarly adapted species from having an overlapping geographic range. The competitive exclusion principle states that two species cannot coexist indefinitely by living off the same limiting resource ; one will always out-compete the other. When similarly adapted species overlap geographically, closer inspection reveals subtle ecological differences in their habitat or dietary requirements.

Chapter 5 : Definition of Ecology | Cary Institute of Ecosystem Studies

The dictionary will be invaluable to students and professionals interested in ecology, biology, conservation, and the environmental sciences as well as general readers with an interest in the natural world.

Definition of Ecology Our definition of ecology is: The scientific study of the processes influencing the distribution and abundance of organisms, the interactions among organisms, and the interactions between organisms and the transformation and flux of energy and matter. Our definition is unique in that it emphasizes several things: A starting focus on organisms, aggregations of organisms, or systems incorporating organisms or their by-products The bounding of ecology by both the biological and physical sciences The breadth of subject matters within ecology The joint consideration of both biotic and abiotic aspects of nature Depending on the ecological specialty, the focus can be on different proportions of biotic or abiotic aspects of nature The relationships between organisms and the physical world can be bidirectional, although different specialties may emphasize the effect of the organisms and systems containing them on the physical world, or the effect of the physical world on the organisms The boundary between the abiotic and the biotic aspects of ecology is blurry The disciplinary focus is on "processes", "interactions" and "relations" rather than on the physical entities per se Ecology was originally defined in the midth century, when biology was a vastly different discipline than it is today. The original definition is from Ernst Haeckel, who defined ecology as the study of the relationship of organisms with their environment. In the intervening century and a half, other definitions of ecology have been proposed to reflect growth of the discipline, to found new specialties, or to mark out disciplinary territory. There are three pervasive definitions of ecology The first definition stems from the Haeckelian form -- the study of the relationship between organisms and environment. The second definition, which is perhaps the most commonly repeated, considers ecology to be the study of the distribution and abundance of organisms Andrewartha and Birch The third definition focuses ecology on the study of ecosystems Odum The 3 kinds of definitions each have their l imits and advantages. The hallmark of ecology is its encompassing and synthetic view of nature, not a fragmented view. Our definition of ecology is a blend of the second and third definitions. This new overarching definition attempts to bridge the spectrum of ecological approaches, with the goal of promoting synthesis and integration. However, as a reflection of its vintage, it emphasizes that organisms are the relevant manifestation of the biotic world. The midth century, with its largely macroscopic view of the world, neglected inconspicuous organisms, such as microbes, the chemical products of organisms in the environment, and ecological systems at larger scales or higher hierarchical levels than organisms. Their work clearly includes the abiotic environment as well as the biotic environment as factors influencing distribution and abundance. This is shown by their recognition of the importance of climatic fluctuations, for example. However, in its application, the definition of Andrewartha and Birch has often been associated with a predominately biotic focus. This definition has become somewhat of a rallying cry for community and population centered ecology. Clearly, this definition has not stimulated exploration of the frontier of ecology with the sciences of the physical environment. He provided several statements of the scope of ecology, including the difficult-to-interpret statement that ecology was simply environmental biology. Truest to his brand of ecosystem thinking was his definition of ecology as the study of the structure and function of nature. The limits and advantages of the 3 definitions of ecology The positive side of the first definition is that it is simple and it emphasizes both biotic and abiotic aspects of nature. On the negative side is its overemphasis on the organism as the focus. Haeckelian statements should always be cast as the study of relationships rather than the study of organisms in relation to environment. The second definition is positive in its emphasis on quantifiable and unambiguous parameters, but it falls short because it omits a range of critical ecological subjects. To its credit, the third definition is not restricted to patterns or organisms and recognizes that ecology is about processes. All of the definitions take organisms as their starting point. However, they are not in all cases explicit that ecology can consider all manner of systems in the broadest sense that include organisms and their products. The three definitions have limits or connotations imposed by their vintage and history of use. Haeckel operated in a time when biology was dominated by focus on

organisms as anatomical, physiological or taxonomic subjects. Many of the modern concerns of ecology, and indeed of biology, were far in the future when Haeckel wrote. Odum was concerned with the justification of ecosystem ecology as an academic specialty. He highlighted ways in which ecology differed from other university departments in the immediate post-World War II era.

Chapter 6 : A Dictionary of Ecology - Google Books

Theoretical Ecology" is one of three Springer new journals in the field of ecology. Ecology and AI journals from Springer Krebs, a pioneer in experimental ecology, has spent almost 50 years studying changes in mammal populations in Canada and, more recently, Australia.

Chapter 7 : What is ECOLOGY? definition of ECOLOGY (Psychology Dictionary)

Ecology is the study of the relationships between plants, animals, people, and their environment, and the balances between these relationships.

Chapter 8 : Ecology - Biology-Online Dictionary | Biology-Online Dictionary

The updated fourth edition of the Dictionary of Ecology is the most comprehensive and authoritative dictionary of ecology available. Written in a clear, accessible style, it contains more than 6, entries on all aspects of ecology and related environmental scientific disciplines such as biogeography, genetics, soil science, geomorphology, atmospheric science, and oceanography.

Chapter 9 : A Dictionary of Ecology - Michael Allaby - Oxford University Press

the relation of plants and living creatures to each other and to their environment; the study of this plant/animal/human ecology the ecology movement Oil pollution could damage the fragile ecology of the coral reefs.