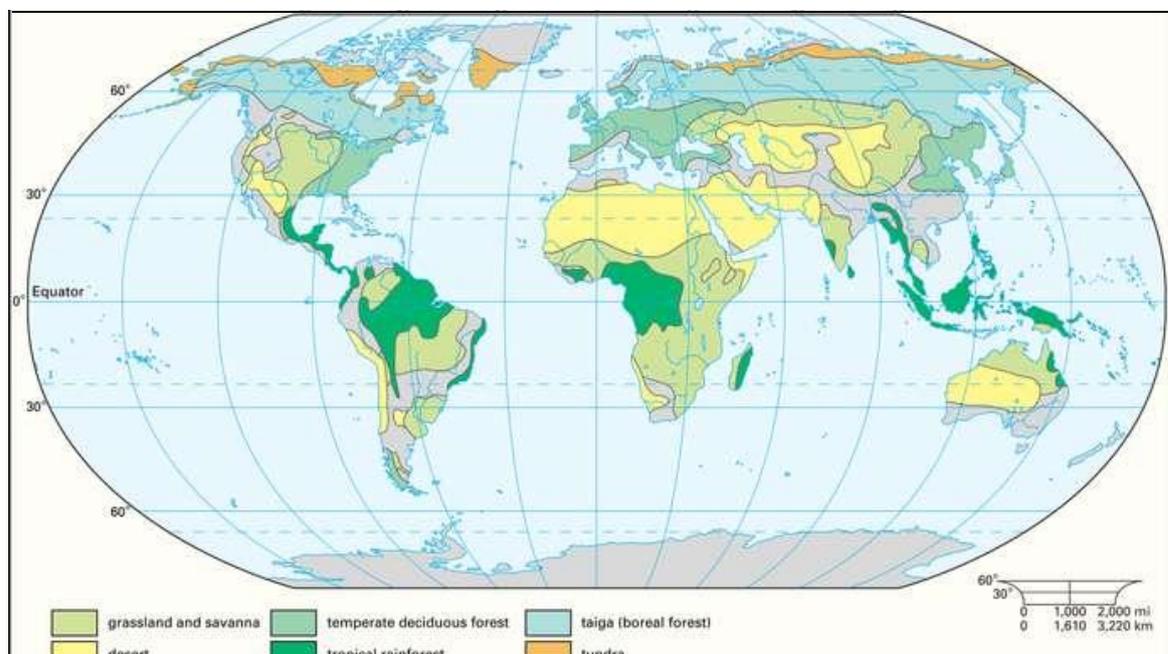


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BIOME, ALSO CALLED **MAJOR LIFE ZONE**, THE LARGEST GEOGRAPHIC BIOTIC UNIT, A MAJOR COMMUNITY OF PLANTS AND ANIMALS WITH SIMILAR LIFE FORMS AND ENVIRONMENTAL CONDITIONS. IT INCLUDES VARIOUS COMMUNITIES AND IS NAMED FOR THE DOMINANT TYPE OF VEGETATION, SUCH AS GRASSLAND OR CONIFEROUS FOREST. SEVERAL SIMILAR BIOMES CONSTITUTE A BIOME TYPE—FOR EXAMPLE, THE TEMPERATE DECIDUOUS FOREST BIOME TYPE INCLUDES THE DECIDUOUS FOREST BIOMES OF ASIA, EUROPE, AND NORTH AMERICA. “MAJOR LIFE ZONE” IS THE EUROPEAN PHRASE FOR THE NORTH AMERICAN BIOME CONCEPT.



TERRESTRIAL BIOMES OF THE WORLD

WORLDWIDE DISTRIBUTION OF MAJOR TERRESTRIAL BIOMES.

SOURCE: ENCYCLOPÆDIA BRITANNICA, INC.

THE TERM WAS SUGGESTED IN 1916 BY **FREDERIC EDWARD CLEMENTS** (SEPTEMBER 16, 1874 – JULY 26, 1945), ORIGINALLY AS A SYNONYM FOR BIOTIC COMMUNITY OF MÖBIUS (1877). LATER, IT GAINED ITS CURRENT DEFINITION, BASED ON EARLIER CONCEPTS OF PHYTOPHYSIOGNOMY, FORMATION AND VEGETATION (USED IN OPPOSITION TO FLORA), WITH THE INCLUSION OF THE ANIMAL ELEMENT AND THE EXCLUSION OF THE TAXONOMIC ELEMENT OF SPECIES

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COMPOSITION. IN 1935, TANSLEY ADDED THE CLIMATIC AND SOIL ASPECTS TO THE IDEA, CALLING IT ECOSYSTEM. THE INTERNATIONAL BIOLOGICAL PROGRAM (1964–74) PROJECTS POPULARIZED THE CONCEPT OF BIOME.

HOWEVER, IN SOME CONTEXTS, THE TERM BIOME IS USED IN A DIFFERENT MANNER. IN GERMAN LITERATURE, PARTICULARLY IN THE WALTER TERMINOLOGY, THE TERM IS USED SIMILARLY AS BIOTOPE (A CONCRETE GEOGRAPHICAL UNIT), WHILE THE BIOME DEFINITION USED IN THIS ARTICLE IS USED AS AN INTERNATIONAL, NON-REGIONAL, TERMINOLOGY—IRRESPECTIVELY OF THE CONTINENT IN WHICH AN AREA IS PRESENT, IT TAKES THE SAME BIOME NAME—AND CORRESPONDS TO HIS "ZONOBIOIME", "OROBIOIME" AND "PEDOBIOIME" (BIOMES DETERMINED BY CLIMATE ZONE, ALTITUDE OR SOIL).

IN BRAZILIAN LITERATURE, THE TERM "BIOME" IS SOMETIMES USED AS SYNONYM OF "BIOGEOGRAPHIC PROVINCE", AN AREA BASED ON SPECIES COMPOSITION (THE TERM "FLORISTIC PROVINCE" BEING USED WHEN PLANT SPECIES ARE CONSIDERED), OR ALSO AS SYNONYM OF THE "MORPHOCLIMATIC AND PHYTOGEOGRAPHICAL DOMAIN" OF AB'SÁBER, A GEOGRAPHIC SPACE WITH SUBCONTINENTAL DIMENSIONS, WITH THE PREDOMINANCE OF SIMILAR GEOMORPHOLOGIC AND CLIMATIC CHARACTERISTICS, AND OF A CERTAIN VEGETATION FORM. BOTH INCLUDE MANY BIOMES IN FACT.

THE WORLD'S BIOMES

BIOMES ARE DEFINED AS "THE WORLD'S MAJOR COMMUNITIES, CLASSIFIED ACCORDING TO THE PREDOMINANT VEGETATION AND CHARACTERIZED BY ADAPTATIONS OF ORGANISMS TO THAT PARTICULAR ENVIRONMENT" (CAMPBELL 1996). THE IMPORTANCE OF BIOMES CANNOT BE OVERESTIMATED. BIOMES HAVE CHANGED AND MOVED MANY TIMES DURING THE HISTORY OF LIFE ON EARTH. MORE RECENTLY, HUMAN ACTIVITIES HAVE DRASTICALLY ALTERED THESE COMMUNITIES. THUS, CONSERVATION AND PRESERVATION OF BIOMES SHOULD BE A MAJOR CONCERN TO ALL. FOR FURTHER INFORMATION, PLEASE CONSULT THE REFERENCES PAGE.

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HERE WE GROUP BIOMES INTO SIX MAJOR TYPES:



FRESHWATER



MARINE



DESERT



FOREST



GRASSLAND



TUNDRA

CONSERVATION AND PRESERVATION OF BIOMES



A CORAL REEF SURROUNDS AN ISLAND IN FRENCH POLYNESIA.

BECAUSE WE SHARE THE WORLD WITH MANY OTHER SPECIES OF PLANTS AND ANIMALS, WE MUST CONSIDER THE CONSEQUENCES OF OUR ACTIONS. OVER THE PAST SEVERAL DECADES, INCREASING HUMAN ACTIVITY HAS RAPIDLY DESTROYED OR POLLUTED MANY ECOLOGICAL HABITATS THROUGHOUT THE WORLD. IT IS IMPORTANT TO PRESERVE ALL TYPES OF BIOMES AS EACH HOUSES MANY UNIQUE FORMS OF LIFE. HOWEVER, THE CONTINUED HEAVY EXPLOITATION OF CERTAIN BIOMES, SUCH AS THE FOREST, FRESHWATER, AND MARINE, MAY HAVE MORE SEVERE IMPLICATIONS.

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FORESTS ARE IMPORTANT AS THEY ARE HOME TO THE MOST DIVERSE BIOTIC COMMUNITIES IN THE WORLD. HIDDEN WITHIN THESE BIOMES ARE POTENTIAL MEDICINES AND MANY THOUSANDS OF UNSEEN AND UNDISCOVERED SPECIES. ALSO, FORESTS HAVE A GLOBAL CLIMATE-BUFFERING CAPACITY, SO THEIR DESTRUCTION MAY CAUSE LARGE-SCALE CHANGES IN GLOBAL CLIMATE.

LOGGING HAS DEPLETED MANY OLD-GROWTH TEMPERATE FORESTS. THE INCREASED DEMAND FOR HOMES, PAPER, AND OTHER WOOD PRODUCTS HAVE NOT ALLOWED FOR MUCH CONSERVATION. MORE RECENTLY, PEOPLE HAVE BEGUN TO REALIZE THAT LOGGING HAS CLEARED MUCH OF THESE FORESTS. WISER USE OF THE FORESTS AND EFFORTS TO REPLANT TREES HAVE HELPED TO SLOW DOWN THE DEPLETION OF THESE COMMUNITIES.

TROPICAL FORESTS HAVE FALLEN VICTIM TO TIMBER EXPLOITATION, SLASH AND BURN FARMING, AND CLEARFELLING FOR INDUSTRIAL USE OR CATTLE RANCHING, PARTICULARLY IN LATIN AMERICA. OUR INCREASING DEMAND FOR MEAT PRODUCTS HAS SPURRED THESE EVENTS. FOR YEARS, THIS DESTRUCTION WAS OCCURING AT A RAPID RATE. OVER HALF OF THE WORLD'S ORIGINAL TROPICAL FORESTS ARE ALREADY GONE. PUBLIC ATTENTION TO THIS EXPLOITATION HAVE HELPED TO ALLEVIATE THE PROBLEM SOMEWHAT, THOUGH MANY CHALLENGES ARE STILL TO BE FACED.

THE FRESHWATER AND MARINE BIOMES ARE PROBABLY THE MOST IMPORTANT OF ALL THE BIOMES. THEIR MEDIUM, WATER, IS A MAJOR NATURAL RESOURCE. WATER IS THE BASIS OF LIFE, IT SUPPORTS LIFE, AND COUNTLESS SPECIES LIVE IN IT FOR ALL OR PART OF THEIR LIVES. FRESHWATER BIOMES SUPPLY US WITH OUR DRINKING WATER AND WATER FOR CROP IRRIGATION. THE WORLD'S OCEANS HAVE AN EVEN GREATER EFFECT ON GLOBAL CLIMATE THAN FORESTS DO. WATER HAS A HIGH CAPACITY FOR HEAT, AND BECAUSE THE EARTH IS MOSTLY COVERED WITH WATER, THE TEMPERATURE OF THE ATMOSPHERE IS KEPT FAIRLY CONSTANT AND ABLE TO SUPPORT LIFE. IN ADDITION TO THIS CLIMATE-BUFFERING CAPACITY, THE OCEANS CONTAIN SEVERAL BILLION PHOTOSYNTHETIC PLANKTON WHICH ACCOUNT FOR MOST OF THE PHOTOSYNTHESIS OCCURING ON EARTH. WITHOUT THESE, THERE MIGHT NOT BE ENOUGH

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OXYGEN TO SUPPORT SUCH A LARGE WORLD POPULATION AND COMPLEX ANIMAL LIFE.

FRESHWATER BIOMES HAVE SUFFERED MAINLY FROM POLLUTION. RUNOFF CONTAINING FERTILIZER AND OTHER WASTES AND INDUSTRIAL DUMPINGS ENTER INTO RIVERS, PONDS, AND LAKES AND TEND TO PROMOTE ABNORMALLY RAPID ALGAE GROWTH. WHEN THESE ALGAE DIE, DEAD ORGANIC MATTER ACCUMULATES IN THE WATER. THIS MAKES THE WATER UNUSABLE AND IT KILLS MANY OF THE ORGANISMS LIVING IN THE HABITAT. STRICTER LAWS HAVE HELPED TO SLOW DOWN THIS THOUGHTLESS POLLUTION.

OVERFISHING AND POLLUTION HAVE THREATENED TO MAKE OCEANS INTO ECOLOGICAL DISASTER AREAS. INDUSTRIAL POLLUTANTS THAT ARE DUMPED UPSTREAM OF ESTUARIES HAVE RENDERED MANY MARINE HABITATS UNSUITABLE FOR LIFE. AGAIN, TIGHTER REGULATIONS HAVE BEEN USED TO PREVENT FURTHER DESTRUCTION OF THE OCEAN BIOMES.

BY EDUCATING PEOPLE ABOUT THE CONSEQUENCES OF OUR ACTIONS, WE CAN ALL GAIN A BETTER UNDERSTANDING OF HOW TO PRESERVE THE EARTH'S NATURAL BIOMES. THE AREAS THAT HAVE BEEN DESTROYED THE MOST WILL NEVER REGAIN THEIR ORIGINAL FORMS, BUT CONSERVATION WILL HELP TO KEEP THEM FROM GETTING WORSE.