

BATS ARE KEY

'KEYSTONE SPECIES' - "THOSE SPECIES THAT ARE CENTRAL TO THE FUNCTIONING OF THE NATURAL ECOSYSTEM WHERE THEY ARE EMBEDDED" - DISPROPORTIONATELY INFLUENCE COMMUNITY DYNAMICS, ECOSYSTEM PROCESSES, AND "THE PERSISTENCE OF ALL OTHER SPECIES."

CHIROPTERANS COMPOSE "[AN ORDER OF MAMMALS WHOSE] EFFECTIVE CONSERVATION ... IS CRITICAL FOR THE ECOSYSTEMS AND OTHER SPECIES DEPENDENT UPON THEM."

GLOBALLY, > 1,400 SPECIES CONTRIBUTE IMMENSELY TO MAMMALIAN BIODIVERSITY AND ECOSYSTEM INTEGRITY, COMMONLY FUNCTIONING AS "KEYSTONES OF THE BIOLOGICAL COMMUNITY."



ACROSS THE PALAEOTROPICS, PTEROPODIDS (OLD WORLD FRUIT BATS) ARE "KEYSTONE SPECIES FOR ISLAND CONSERVATION," DISPERSING AND POLLINATING NATIVE ISLAND PLANT COMMUNITIES. BECAUSE OF ISLAND COLONIZATION HISTORY AND ANTHROPOGENIC EXTINCTIONS, INSULAR PTEROPODIDS ARE OFTEN THE ONLY REMAINING VERTEBRATES CAPABLE OF DISPERSING LARGE SEEDS AND TRAVELING THE LONG-DISTANCES NEEDED TO CONNECT FRAGMENTED PLANT POPULATIONS.

LEPTONYCTERIS SPECIES (LONG-NOSED BATS) ARE IMPORTANT POLLINATORS OF COLUMNAR CACTI AND AGAVES, WHICH PLAY KEYSTONE ECOLOGICAL ROLES IN ARID ECOSYSTEMS BY PROVIDING STRUCTURAL RESOURCES, NUTRIENTS AND WATER FOR A VARIETY OF ANIMALS.

GLOBALLY, "RURAL AND TRADITIONAL POPULATIONS IN POOR AREAS ARE OFTEN MORE DEPENDENT ON ECOSYSTEM SERVICES FOR THEIR LIVELIHOODS AND WILL BE DISPROPORTIONATELY AFFECTED BY DECLINES IN POLLINATOR POPULATIONS." IN THE MUNICIPALITY OF TECHALUTA DE MONTENEGRO, MEXICO LEPTONYCTERIS' POLLINATION SERVICES EQUATE TO \$480,000. "HIGHLIGHTING THE GREAT IMPORTANCE OF BAT POLLINATORS FOR THE WELFARE OF THE RURAL PRODUCTION REGION, AND THE SEVERE ECONOMIC CONSEQUENCES SHOULD BAT POLLINATOR POPULATIONS DECLINE."



IN TROPICAL MODIFIED LANDSCAPES, FRUGIVORES ARE PARTICULARLY IMPORTANT KEYSTONE SPECIES, DISPERSING PRIMARY AND SECONDARY RAINFOREST PLANTS AND THUS, INCREASING PLANT GENETIC CONNECTIVITY AND POPULATION VIABILITY. "THE SURVIVAL OF BATS IN THESE LANDSCAPES THEREFORE IS CONSIDERED KEY TO FUTURE FOREST RECOVERY."

IN SUBTERRANEAN ECOSYSTEMS (CAVE AND KARST HABITATS), BATS ARE KEYSTONES OF BIOTICALLY DIVERSE CAVE COMMUNITIES. "PROMOTING THE INFLOW OF NUTRIENTS FROM ABOVEGROUND ECOSYSTEMS VIA THE DEPOSITION OF GUANO." "CAVE ECOSYSTEMS HOST A VARIETY OF HIGHLY ADAPTED AND SENSITIVE ORGANISMS, THE MAJORITY OF WHICH ARE CAVE OBLIGATES AND DEPEND ON BAT GUANO FOR NUTRIENTS."

ACROSS TROPICAL ECOSYSTEMS, BATS ARE KEYSTONE POLLINATORS OF MANY SOCIO-ECONOMICALLY VALUABLE PLANTS. MOST COLUMNAR CACTI (CACTACEAE) ARE HIGHLY DEPENDENT ON BATS FOR POLLINATION, INCLUDING ALL 22 MEMBERS OF THE STENOCCEREUS GENUS, WHICH HAVE BEEN WIDELY UTILISED FOR FRUIT PRODUCTION IN MEXICO SINCE PRE-HISPANIC TIMES.