

Sedimentary Depositional Environments

Depositional Environment	Environmental Characteristics	Organisms	Sediment	Sedimentary Structures	Sedimentary Rocks	
non-marine	river channel	variable stream current (high- to low-E), water may dry-up, oxidation	land-freshwater plants & critters	gravel, sand, mud; variable sorting & rounding	crossbeds, ripple marks, graded beds, mudcracks, plant & animal fossil fragments	conglomerate sandstone mudstone
	flood plain	floods (low-E), drying, oxidation, soil formation	land-freshwater plants & critters	mud, sand; well-sorted	bedding, ripple marks, graded beds, mudcracks, abundant fossils	mudstone (red beds) sandstone
	river delta	stream current, tides, low-E	land-freshwater plants & critters	sand, mud; well-sorted	bedding, cross beds, ripple marks, graded beds, abundant fossils	sandstone mudstone
	alluvial fan	periodic flash floods, mudflows, high-E	land plants & critters	gravel > sand; poorly-sorted & angular	plant & animal fossil fragments	sedimentary breccia arkose
	desert dune	variable wind current (high- to low-E), dry, oxidizing	small insects & reptiles; sparse plants	sand; well-sorted & well-rounded	cross beds, ripple marks, trace fossils	sandstone
	playa	low-E, high evaporation, floods periodically, dry	small insects, reptiles; few plants	evaporites, mud	mud cracks, ripple marks, trace fossils	evaporite mudstone
	lake	low-E, shallow-deep standing water	land-freshwater plants & critters	mud, sand, carbonate sediment	bedding, ripple marks, graded beds, abundant fossils	mudstone sandstone limestone
	glacier	ice, bare rock, cold	sparse plants & critters	gravel; angular & poorly sorted	few	till
	transitional	beach	waves (high- to low-E), tides, currents, wind	marine & non-marine critters	gravel, sand, mud, carbonate sediment; well-sorted & well-rounded	ripple marks, crossbeds, abundant fossils & fossil fragments
lagoon		low-E, tides, not very oxidized	marine & non-marine plants & critters	mud	bedding, ripple marks, abundant fossils	mudstone (green-black, not red)
marine	shallow marine	waves (high- to low-E), tides, strong ocean currents, wind	marine plants & critters	sand, mud, carbonate sediment; well-sorted & well-rounded	bedding, crossbeds, ripple marks, abundant marine fossils	sandstone mudstone limestone
	reef	waves (high- to low-E), tides, strong ocean currents, wind	marine plants & critters	gravel, sand, mud; carbonate sediment; variable sorting	abundant marine fossils	limestone breccia sandstone mudstone
	deep marine	low-E, variable currents	weird marine plants & critters	mud, carbonate & siliceous ooze	abundant marine fossils	mudstone limestone chert