

## Idealized sequence of Standard Facies Belts (from Wilson, 1975)

re-drawn by Nassir Alnaji (2002)

Belt	BASIN	OPEN SEA SHELF	DEEP SHELF MARGIN	FORESLOPE	ORGANIC BUILD UP	WINNOWED EDGE SANDS	SHELF LAGOON OPEN CIRCULATION	RESTRICTED CIRCULATION SHELF & TIDAL FLATS	EVAPORITES ON SABKHAS - SALINAS
	1	2	3	4	5	6	7	8	9
Diagrammatic cross section & Facies Number									
Facies	a) Fine Clastics b) Carbonates c) Evaporites	a) Carbonates b) Shale	Toe of Slope carbonates	a) Bedded fine grain & slumps b) Foreset debris & lime sands c) Lime mud masses	a) Boundstone b) Crust on accumulations of debris lime mud; bindstone c) Bafflestone	a) Shoal lime sands b) Islands w. dune sands	a) Lime sand bodies b) Wackestone-mudstone areas, bioherms c) Areas of clastics	a) Bioclastic wackestone, lagoons and bays b) litho-bioclastic sands in tidal channels c) Lime mud-tide flats d) Fine clastic units	a) Nodular anhydrite & dolomite on salt flats. b) Laminated evaporites in ponds
Lithology	Dark shale or silt, thin limestones (starved basin); evaporite fill w. salt	Very fossiliferous limestone interbedded with marls; well segregated beds.	Fine grain limestone; cherty in some cases.	Variable, depending on water energy upslope; sedimentary breccia and lime sands	Massive limestone-dolomite	Calcareous oolite-lime sand or dolomite	Variable carbonate and clastics	Generally dolomite and dolomitic limestone	Irregularly laminated dolomite and anhydrite, may grade to red beds
Color	Dark brown, black, red	Gray, green, red, brown	Dark to light	Dark to light	Light	Light	Dark to light	Light	Red, yellow, brown
Grain type and depositional texture	Lime mudstone; fine calcisiltites	Bioclastic and whole fossil wackestone; some calcisiltites	Mostly lime mudstone with some calcisiltites	Lime silt and bioclastic wackestone-packstone; lithoclastics of varying sizes	Boundstones and pockets of grainstone; packstone	Grainstones well sorted rounded	Great variety of textures; grainstone to mudstone	Clotted, pelleted mudstone & grainstone; laminated mudstone; coarse lithoclastic wackestone in channels	
Bedding and sedimentary structure	Very even mm laminations; rhythmic bedding; ripple cross lamination	Thoroughly burrowed; thin to medium; wavy to nodular beds; bedding surfaces show diastems	Lamination may be minor; often massive beds; lenses of graded sediment; lithoclasts & exotic blocks. Rhythmic beds	Slump in soft sediments; foreset bedding; slope bioherms; exotic blocks	Massive org. structure or open framework with roofed cavities; Lamination contrary to gravity	Medium to large scale crossbedding; festoons common	Burrowing traces very prominent	Birdseye, stromatolites, mm lamination, graded bedding, dolomite crusts on flats. Cross-bedded sand in channels	Anhydrite after gypsum; nodular, rosettes, chickenwire, and blades; irregular lamination; carbonate caliche
Terrigenous clastics admixed or interbedded	Quartz silt & shale; fine grain siltstone; cherty	Quartz silt, siltstone, & shale; well segregated beds	Some shales, silt, & fine grained siltstone	Some shales, silt, & fine grained siltstone	None	Only some quartz sand admixed	Clastics and carbonates in well segregated beds	Clastics and carbonates in well segregated beds	Windblown, land derived admixtures; clastics may be very important units
Biota	Exclusively nektonic-pelagic fauna preserved in abundance on bedding planes	Very diverse shelly fauna preserving both infauna & epifauna	Bioclastic detritus derived principally from upslope	Colonies of whole fossil organisms & bioclastic debris	Major frame building colonies with ramose forms in pockets; in situ communities dwelling in certain niches	Worn and abraded coquinas of forms living at or on slope; few indigenous organisms	Open marine fauna lacking; mollusca, sponges, forams, algae abundant; patch reefs present	Very limited fauna, mainly gastropods, algae, certain foraminifera & ostracods	Almost no indigenous fauna, except for stromatolitic algae