

Beaches and Coastal Environments of Washington

Southern WA Coast – sandy beaches, spits, lagoons, sediment supply from Columbia River, northward longshore transport

Northern WA Coast – headland beaches, cliff erosion, gravel beaches, stacks and island remnants offshore

Straits of Juan de Fuca – headland beaches, cliff erosion, river supply, eastward swell from ocean, large and complex spits

Puget Sound – headland beaches, cliff erosion, rivers with deltas, much local variability due to morphology

Wind patterns affecting WA state

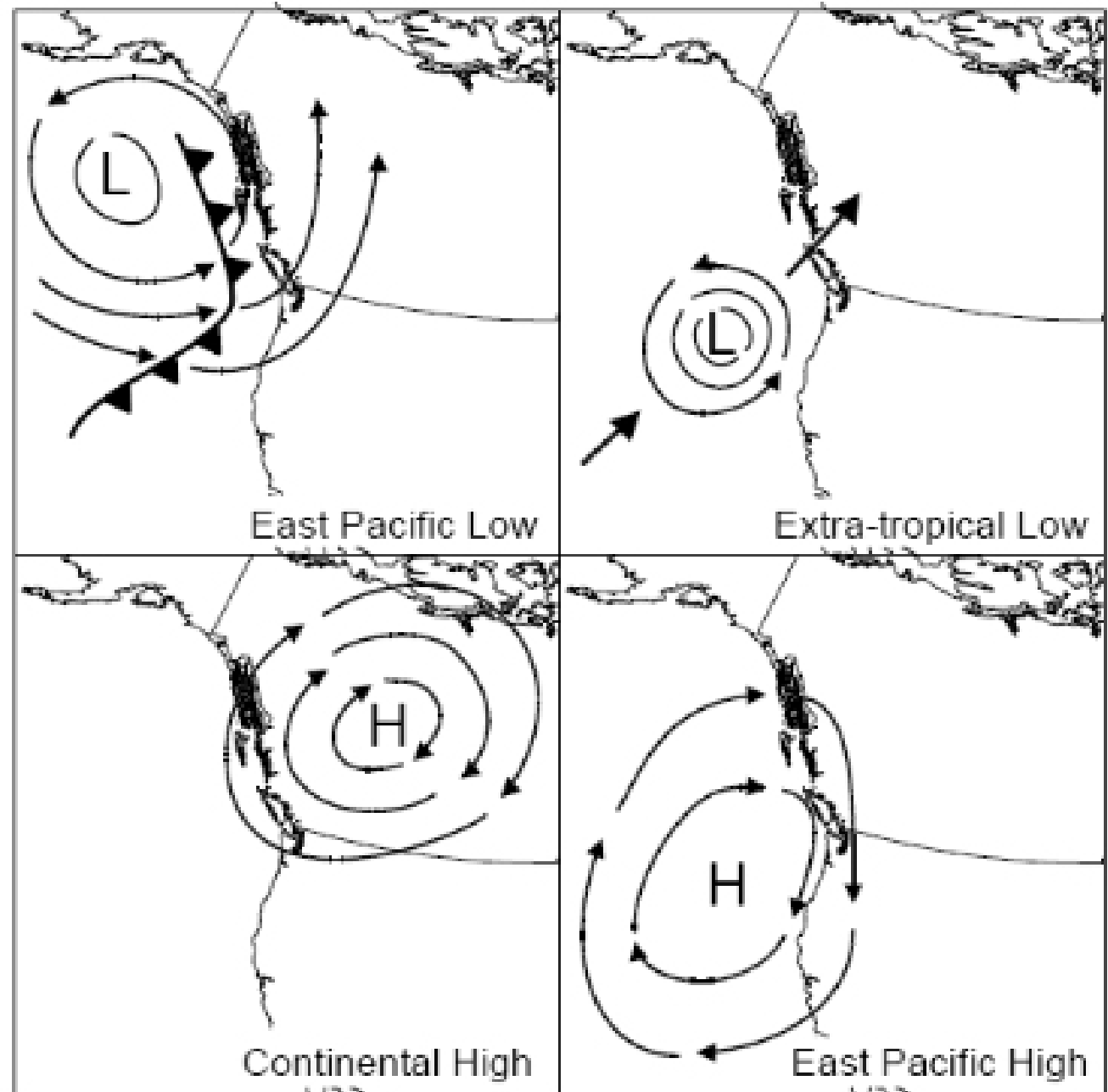
Winter Conditions

Low-pressure systems generate winds from S and SW, which push water against coast - causing storm surge

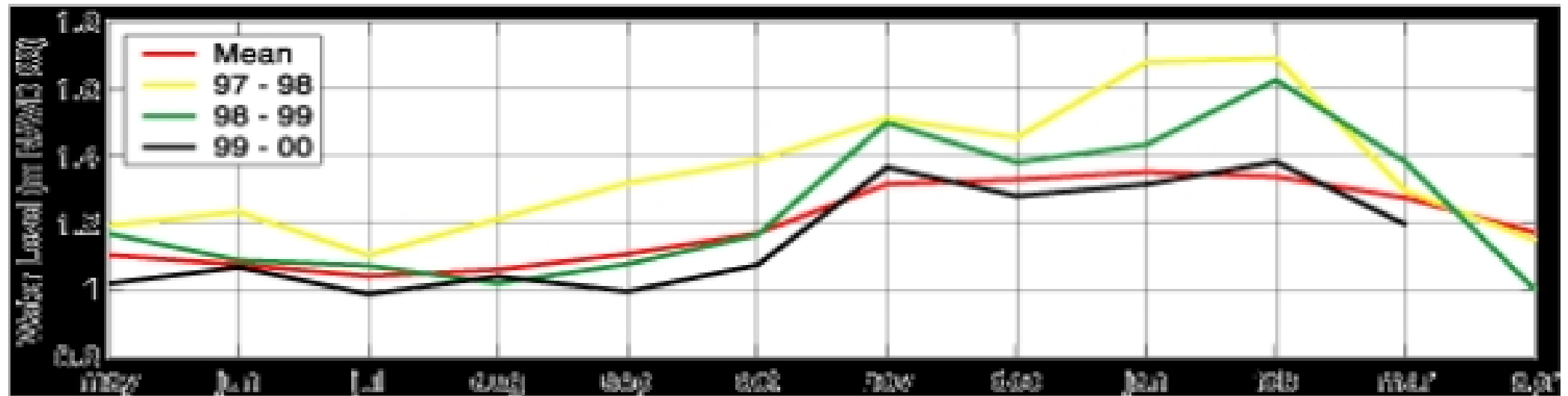
Summer Conditions

High-pressure systems generate winds from N and NE, which pull water away from coast - causing deep water to upwell with nutrients

Winter conditions dominate longshore transport

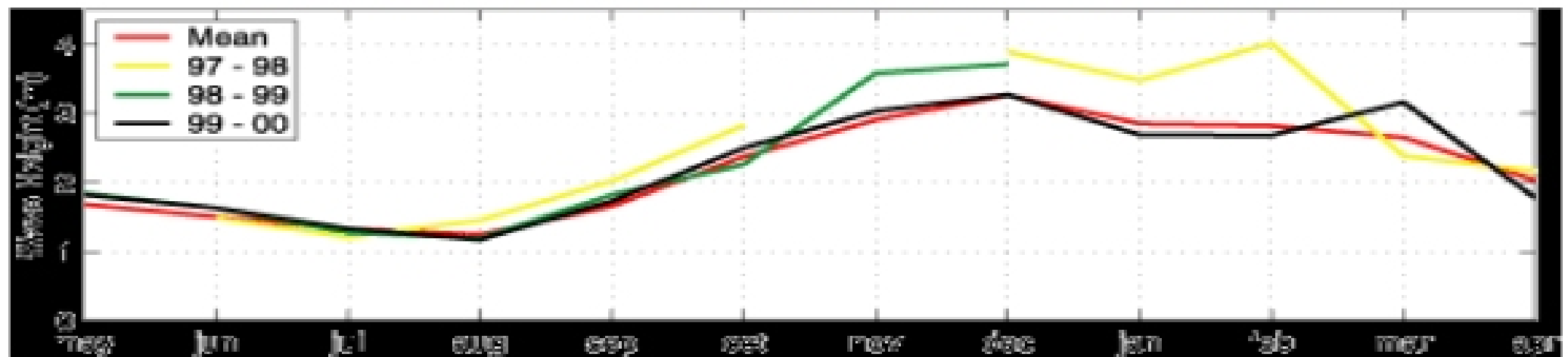


Seasonal changes in water level and wave height



May August December
March

Sea level ~0.5 m rise due to winds during winter



Wave height increases from ~1 m in summer to ~4 m in winter