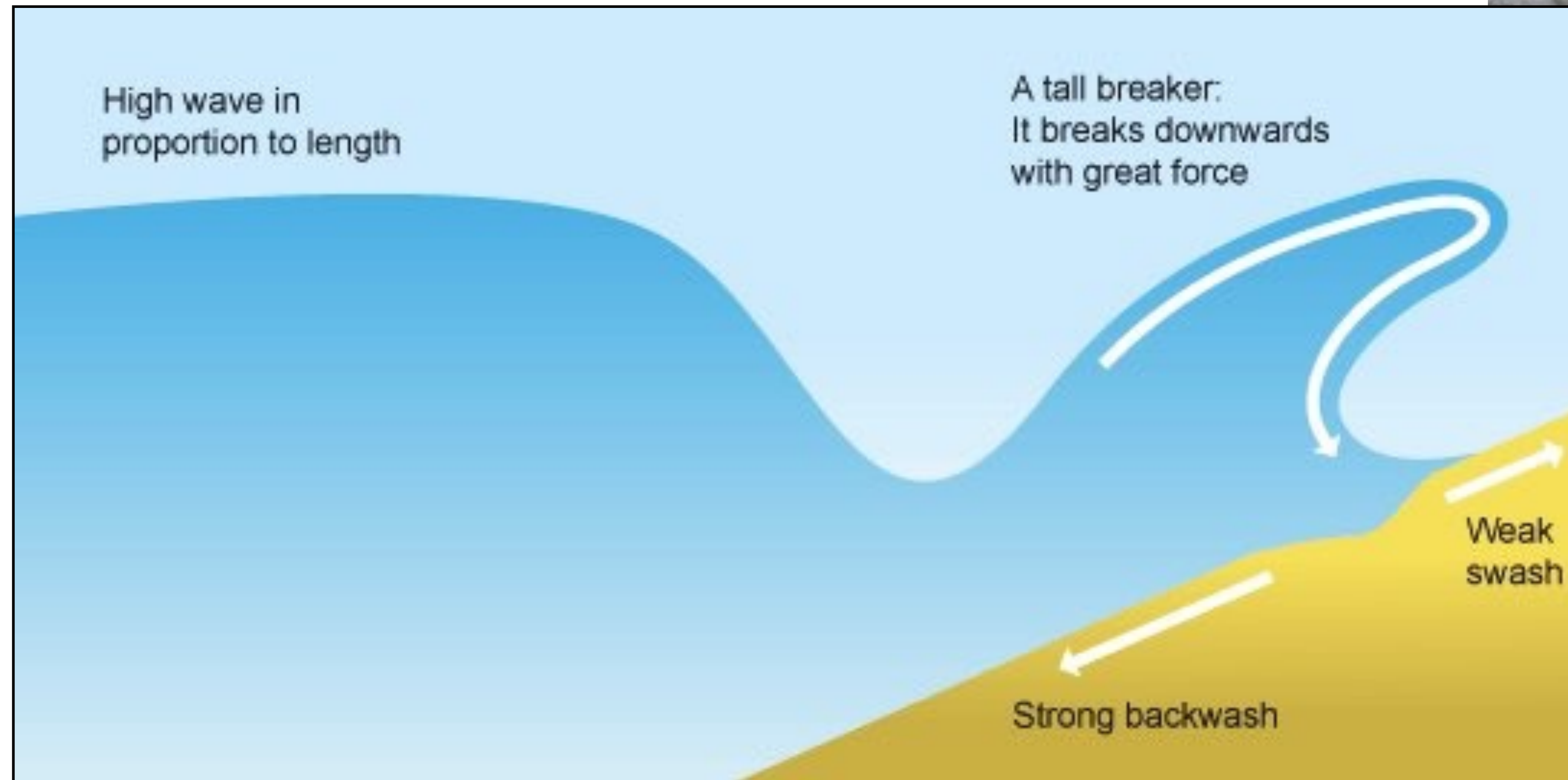


Beach erosion



Shoreward transport



κ_u an empirical coefficient
 g the gravitational acceleration,
 h the water depth

u_b the maximum near-bed orbital velocity,
 \vec{n} the unit vector parallel to the incoming wave direction
 κ_o a correction factor

$$\vec{v}_u = -\kappa_u \frac{\sqrt{gh}}{8} \left(\frac{H}{h} \right)^2 \vec{n}$$

undertow velocity \vec{v}_u :
 derived from the mass flux due to the wave motion & surface roller

onshore current \vec{v}_o :
 linear dependency to near-bed orbital velocity

$$\vec{v}_o = \kappa_o u_b \vec{n}$$

Beach erosion

Zoom of profile evolution through time close to the shoreline

