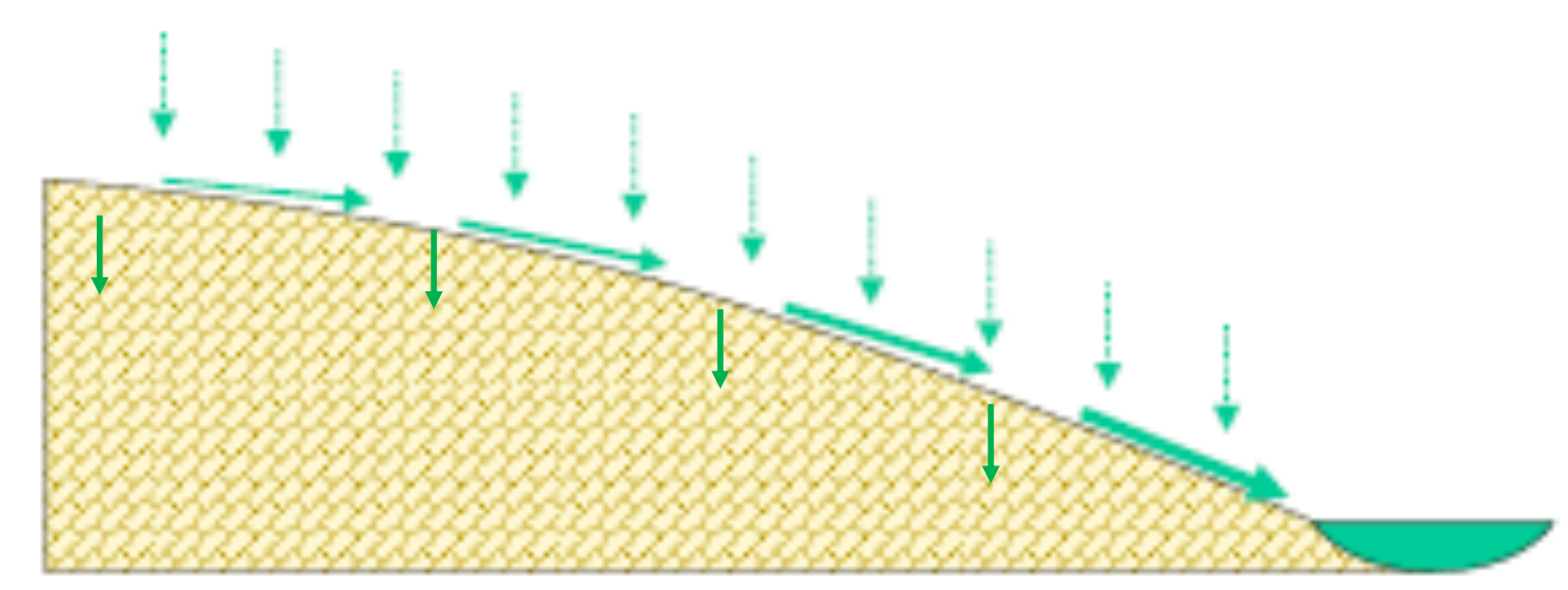
Infiltration Excess Overland Flow

also called Hortonian overland flow (HOF)



Rainfall intensity exceeds surface infiltration capacity

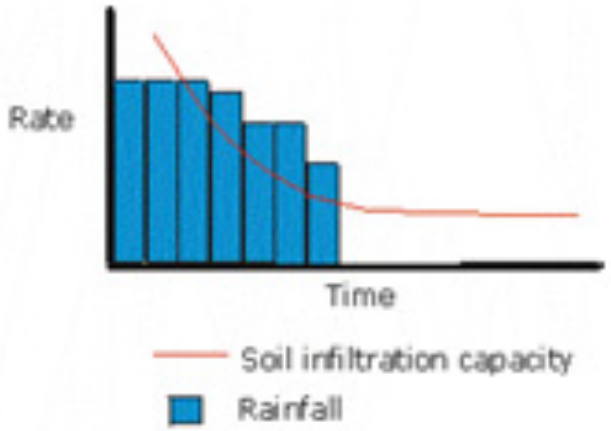
$$Q_{ho}(t) = w(t) - f(t)$$

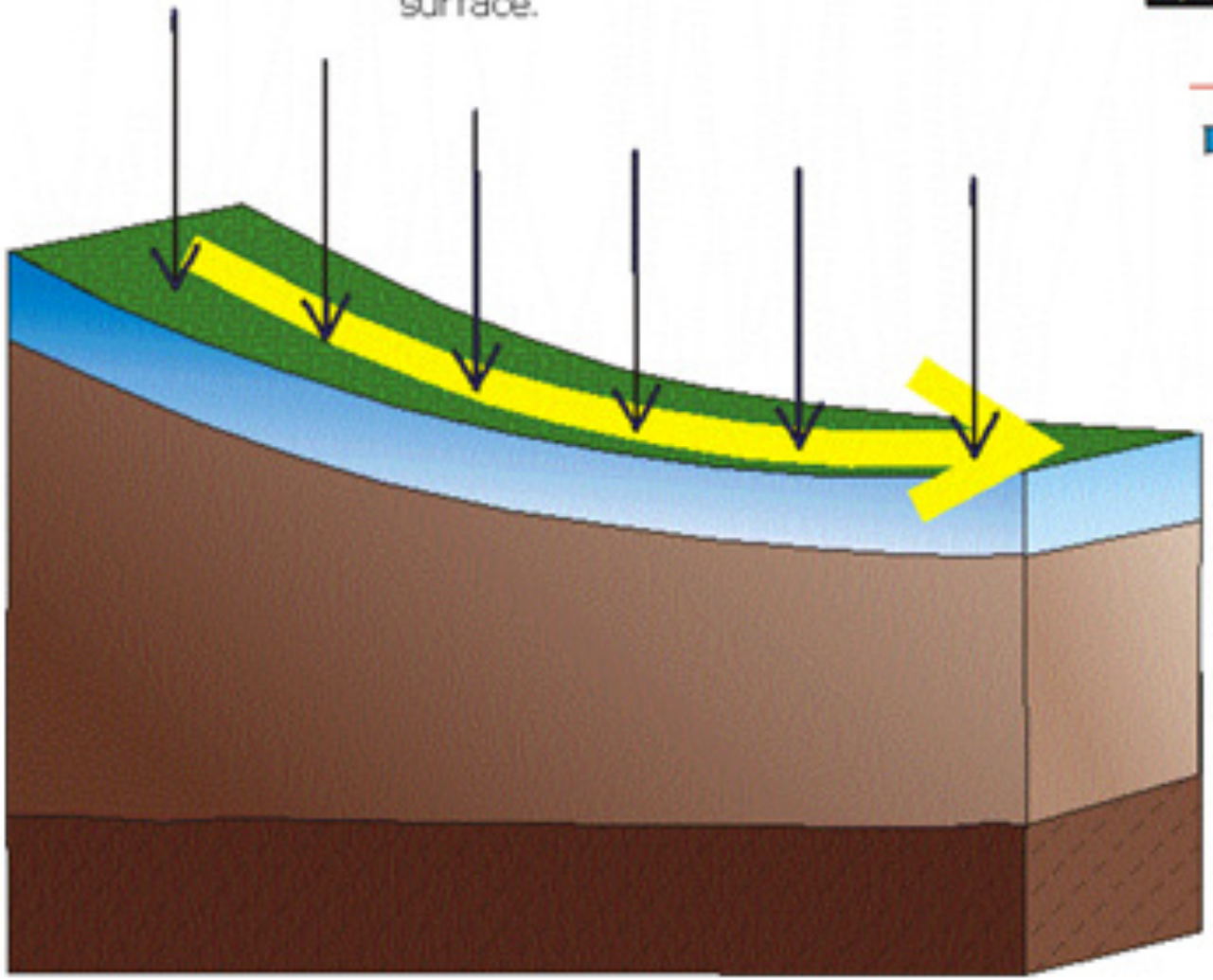
where:

$w(t)$ is the water input rate

$f(t)$ is the infiltration rate

Over time the infiltration capacity of the soil continues to decrease below the rate of precipitation. The result is an increase in runoff from the land surface.





http://soilandwater.bee.cornell.edu/research/VSA/processes/processes_infil.html

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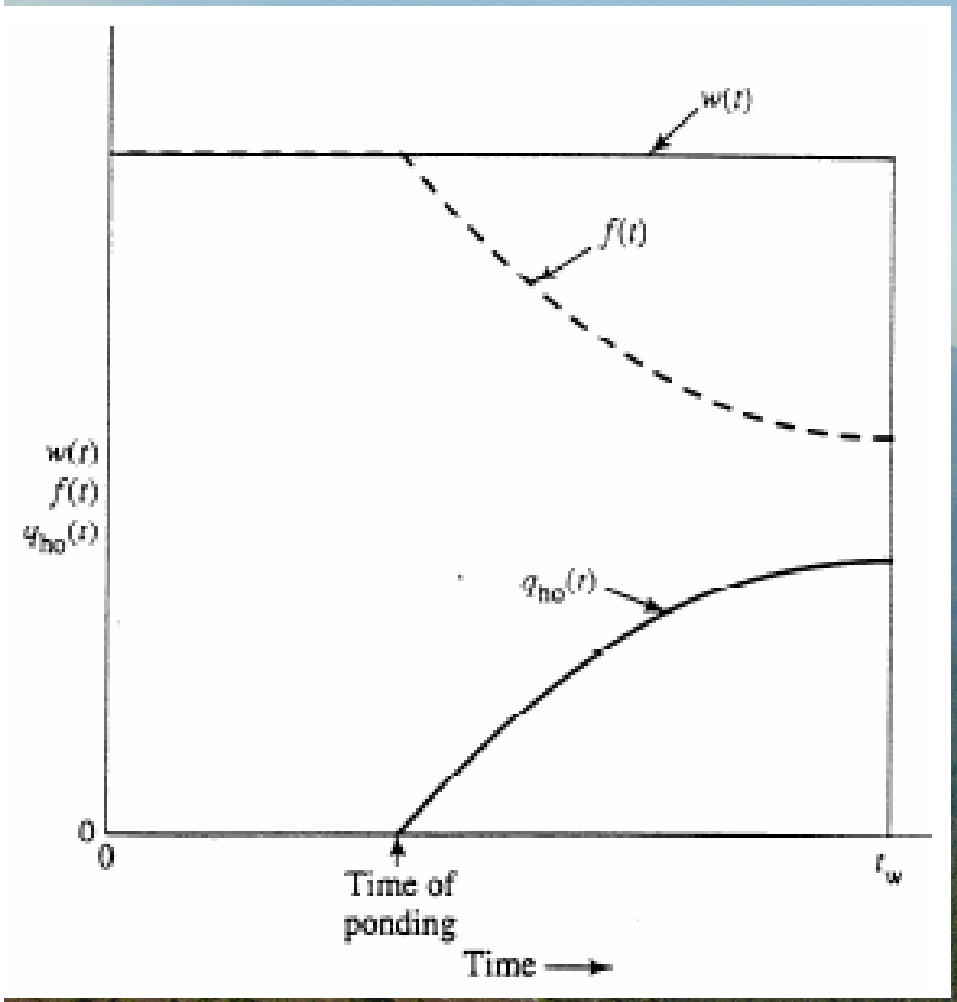

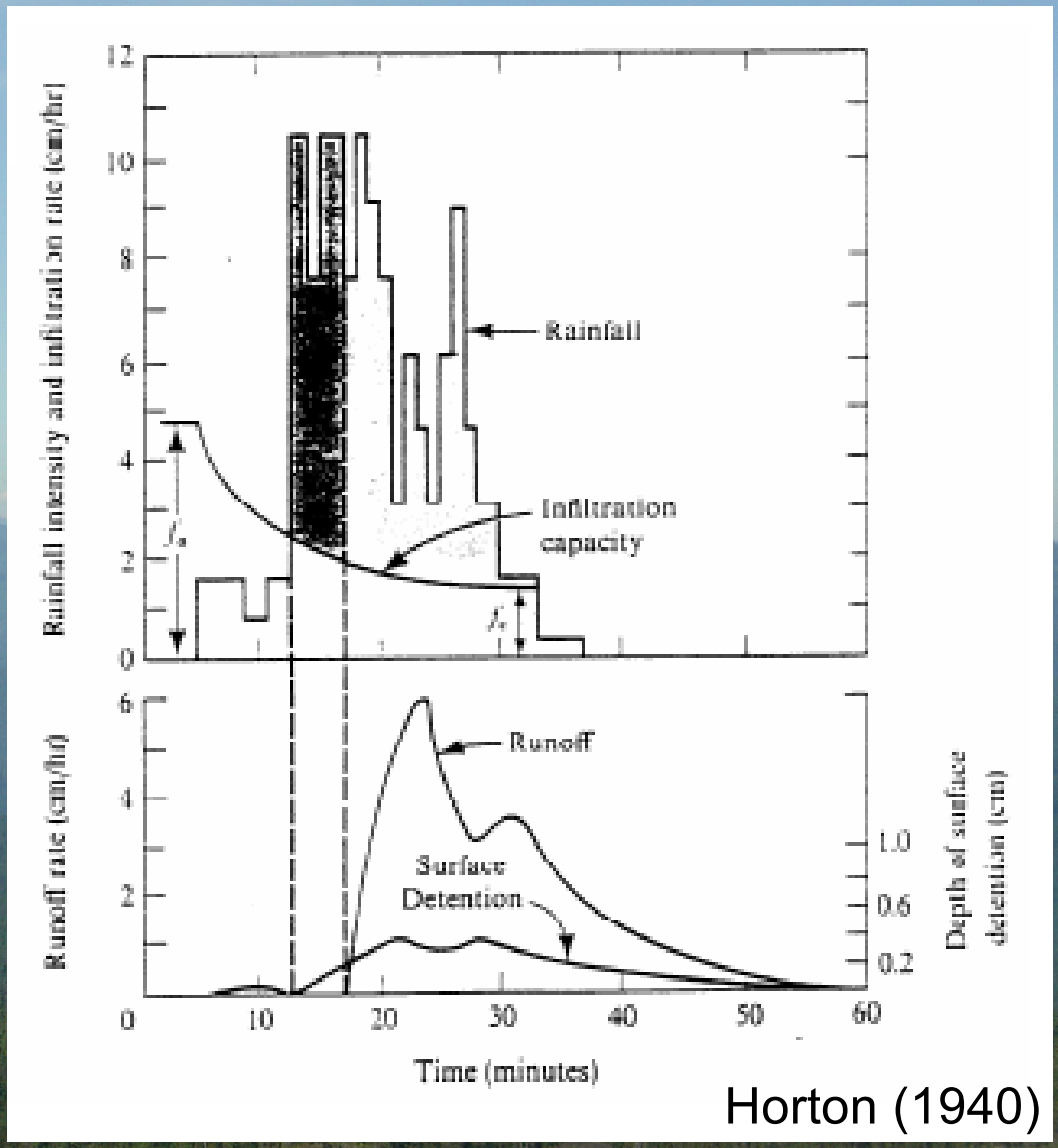

Infiltration excess overland flow (HOF)

- Occurs in:
  - impermeable areas;
  - compacted soils;
  - hydrophobic soils;
  - silt-clay soils without macropores;
  - semi-arid and arid areas with intense rainfall

- Almost never uniform over a surface
- Uncommon in humid, densely vegetated areas


Courtesy Cleveland Metroparks