

Run off Cycle

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Runoff Cycle

- It is a part of hydrological cycle
- The part between the precipitation from the atmosphere over land areas and its subsequent discharge through streams channels.

Conditions of Runoff Cycle

1. End of dry period
2. Shortly after beginning of rainfall
3. Near the end of isolated heavy rainfall
4. After the end of rainfall

1. End of dry period

- At the end of dry period and just beginning of heavy rainfall all the surface and channel storage gets depleted (dried) except from lakes, reservoirs and ponds resulted from the previous rains.
- The only source of stream flow is the ground water flow entering the river channel.

2. Shortly after beginning of rainfall

- Shortly after beginning of rainfall and before interception, depression storage have been satisfied.
- The stream flow intercepted by vegetation and buildings can't contribute to runoff.
- This intercepted water is eventually returned to the atmosphere through evaporation.
- At this stage, a part of precipitation falls directly on the stream which gives an immediate increment to stream flow.

3. Near the end of isolated heavy rainfall

- After many hours of heavy rainfall virtually all depression storage and interception requirements gets filled up.
- The soil moisture deficiency is also satisfied to a considerable extent.
- Infiltration rate is near the minimum.
- Similarly the flow into the filled depression is essentially balanced by over land flow and infiltration.
- Thus at this stage over land flow mainly contribute to stream flow.
- Sub surface flow also contributes to stream flow.

4. After the end of rainfall

- When rain and overland flow ceases (stops), the stream flow consists of only base flow and channel storage.
- Evaporation takes place quite from soil moisture.
- Transpiration also takes place from vegetative cover.
- Water from depression storages also continues to infiltrate.
- Also the gravity water still not drained up to the water table continues its downward journey to join water table.

Thanks