Urban Stream Dynamics

In nature, there is a balance between the function of terrestrial (land) and aquatic ecosystems. Changes in land use in our urban environment has significantly altered this balance and degraded the aquatic environment.

Disturbances to a stream corridor system typically result in a causal chain of alterations to stream structure and function. Negative urban impacts include increased flooding, increased stream velocity, erosion, sedimentation, and loss of habitat.

Reducing factors like impervious surfaces and restoring riparian corridors and streams are ways to foster a return of stable conditions. This would enhance a stream's potential to meet its designated or potential aquatic life, and recreational and water-supply uses.

DEFINITIONS

ECOSYSTEM A system formed by the interaction of a community of organisms and their environment.

RIPARIAN CORRIDOR The land that is adjacent to a stream channel, generally considered to be 100 feet on each side of the channel. This area provides stream bank stability, cover and shade, and energy dissipation in times of high flow.

STREAM VELOCITY The speed at which water flows through a stream. The higher the velocity, the greater the erosive force of the stream.

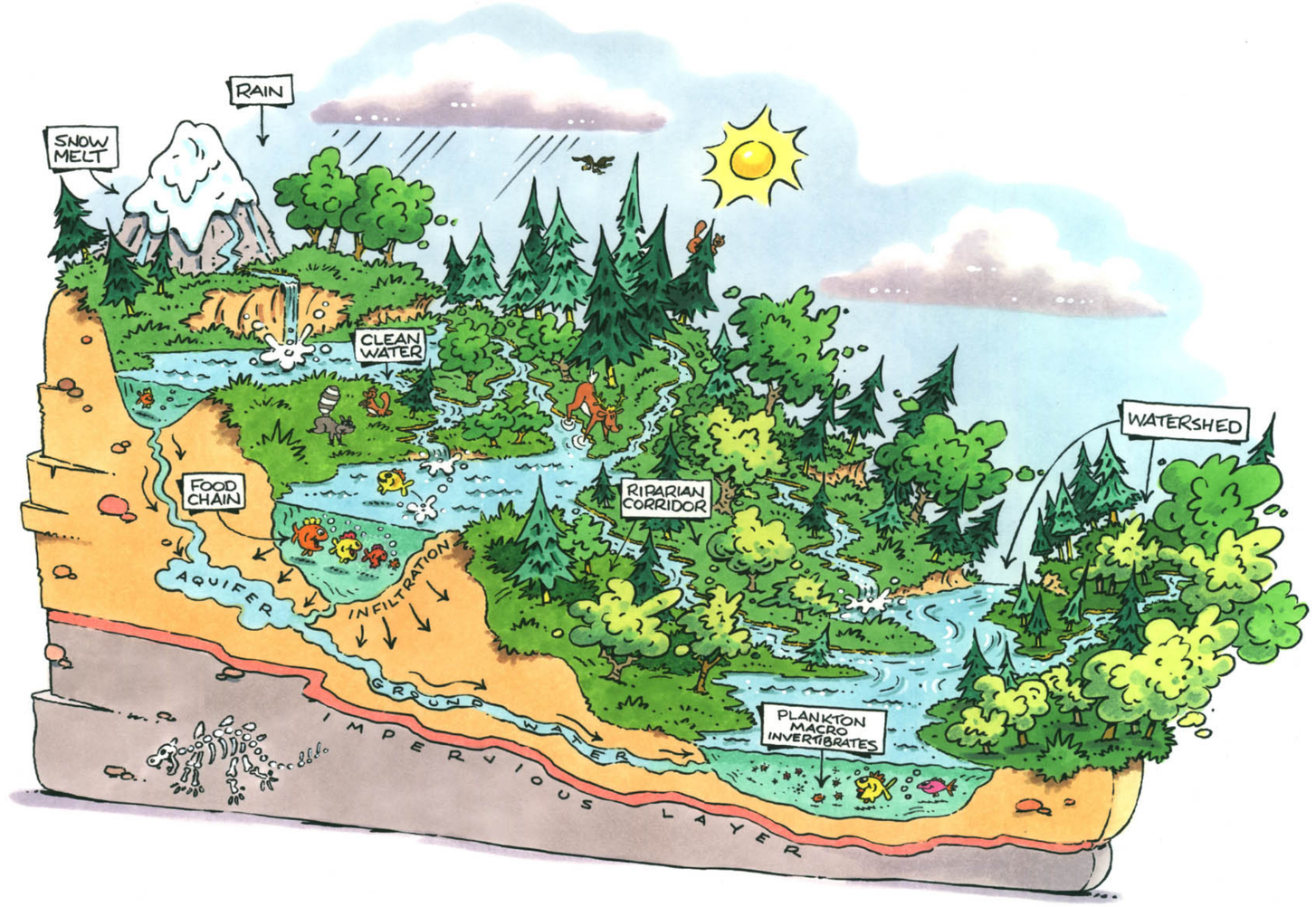
EROSION The process of wearing away of land by various forces. Flash hydrology and currents acting on unvegetated stream banks cause erosion. As the hydrology becomes flashier and current velocities increase, bank erosion increases. Erosion results in large volumes of sediment being deposited within the channel, which can contribute to unwanted flooding and loss of habitat.

SEDIMENTATION The accumulation of sediment derived from erosion within a stream channel. As sediment builds, it obstructs the current and diverts it toward adjacent banks, also increasing erosion.

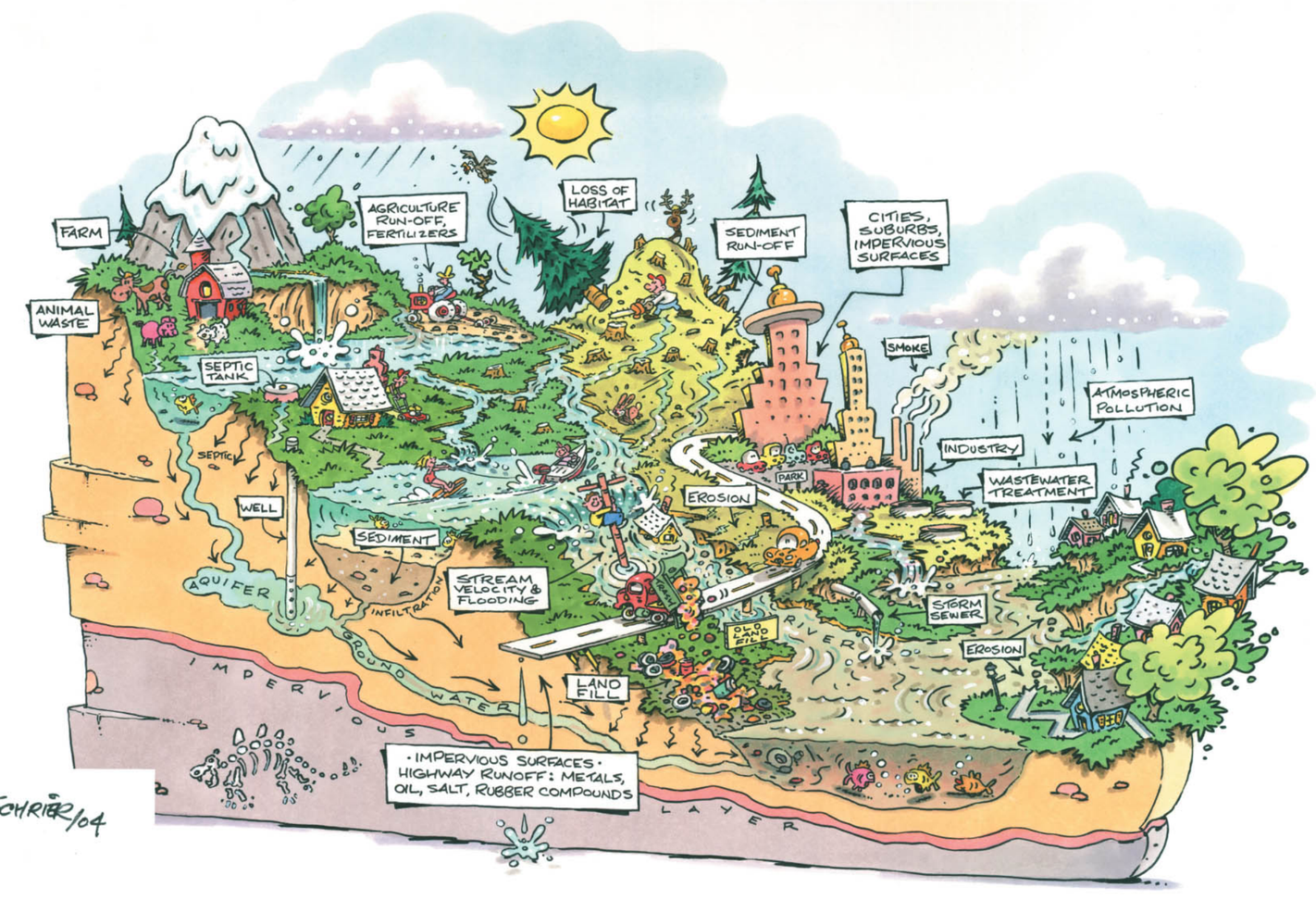
IMPERVIOUS SURFACES Mainly constructed surfaces (rooftops, sidewalks, roads, and parking lots) covered by impenetrable materials such as asphalt, concrete, brick, and stone. These materials seal surfaces, repel water and prevent precipitation and meltwater from infiltrating through the soils. These surfaces increase the volume and velocity of storm water that reaches our waterways.

WATERSHED An area of land that drains downslope to the lowest point. The water moves through a network of drainage pathways, both underground and on the surface. Generally, these pathways converge into streams and rivers, which become progressively larger as the water moves downstream, eventually reaching a lake or estuary.

WATERSHED PARTNERSHIP A group of individuals representing various types of stakeholders actively working to protect their watershed by taking destiny into the hands of local people.



NATURAL ENVIRONMENT



URBANIZED ENVIRONMENT

The Tinkers Creek Watershed Map Corporate Sponsors:

The Village of Walton Hills

Portage Soil and Water Conservation District

The Village of Valley View

Portage Park District

Reminderville — A Great Place To Call Home

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Cuyahoga Soil and Water Conservation District

Village of Oakwood — Proud & Progressive

Tinkers Creek Watershed Partners — Rediscover • Respect • Revitalize

Tinkers Creek Watershed Percentage Drainage*
By Community
*61,696 acres is the total drainage area within the Tinkers Creek Watershed

The Tinkers Creek Watershed Map & Urban Stream Information

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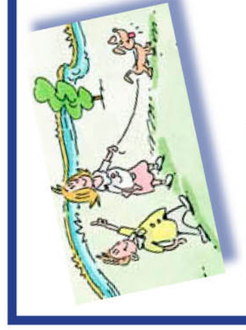

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