## Small Stream Management Benefits Environment

**HUNTINGDON** (Huntingdon Co.) - Small streams are natural treasures, supplying some of our cleanest and healthiest water and feeding larger trout streams and rivers. Managing these small streams properly helps protect and improve the environment, said an aquatic ecologist in Penn State's College of Agriculture.

'People shouldn't be too quick to 'clean out' their small streams," said Dr. James R. Pratt, assistant professor of aquatic ecology in the college's School of Forest Resources. "They'll probably find some small fish in the pools that debris creates, and by giving the algae and microbes in the water a chance to break down fertilizers and other materials, they'll be helping the environment.'

Bacteria, algae and protozoa live in these streams and break down sewage and other organic matter and take up nutrients from fertilizer runoff. Microbes help streams "clean" themselves, Pratt said. "When sewage or chemicals enter a stream, the microbes function like a small treatment plant, feeding on the pollution."

Bacteria, molds and protozoa also feed on leaves, wood scraps, and debris that fall into the stream. Microbes and the small leaf fragments left behind are eaten by larger organisms such as insects and fish.

An important way to care for a small stream is to leave intact piles of brush and logs that clog it. "These little dams help the stream and the environment in several ways," Pratt said. "Even insecticides and other chemicals can be broken down in small streams when the water pools up."

These pools slow the water flow during rainstorms and stop

contaminants, such as manure and fertilizer, from washing downstream. When water is retained behind debris dams, silt and sediment settle out. In turn, the nutrient-rich silt helps feed the microbes that break down leaves, pollutants, and debris.

Pratt said this process also produces more and better food for fish in the stream. "Holding back the water even slightly gives nutrients more time to be absorbed by algae and other stream organisms that the fish feed on," he said.

Damming also holds back damaging storm water. "The energy of water rushing downhill is diminished by the little debris dams," Pratt said. "This keeps the stream from cutting deeper into the ground and keeps the stream channel stable.

"Removing debris from a stream, particularly with heavy equipment, can cause erosion and other problems. This erosion can undercut culverts and bridge abutments, slump stream banks, and destroy cross-stream fencing.

Pratt said that very large debris dams that cause flooding should be thinned, but not completely destroyed.

## Cargill To Build Facility To Make Biodegradable Plastic

MINNEAPOLIS, Minn. -Cargill announced that it will build a large-scale plant to produce lactic acid polymer, a biodegradable plastic made from renewable resources that can replace petrochemical-based plastics in a variety of food service, packaging, and other applications.

The \$8-million plant, to be located at Savage, Minn., will make the polymer from natural lactic acid, which is produced by bacterial fermentation of sugars derived from such agricultural products as corn and other grains, potatoes, sugar beets, and milk.

Among the possible applications for the new product would be disposable fast-food, dairy and deli containers, food service ware, and disposable diapers, medical garments, personal hygiene products, and yard waste bags.

"The growing worldwide concern over solid waste disposal has prompted consumers, retailers, and manufacturers to consider a product's ultimate disposability or recyclability when purchasing or designing packaging and other plastic articles," said Mike Urbanic. president of Cargill's Corn Milling Division. "Our product offers the performance benefits of petrochemical-based plastics, but is compatible with various forms

of waste disposal, including

composting." The plant, to be built at Port Cargill on the Minnesota River near Minneapolis, is expected to be operational by February 1994, and will have a capacity of 10 million pounds annually, Urbanic said. "We expect that demand for this product will lead to an even larger plant to produce cornderived lactic acid polymers as early as 1996," he said.

Cargill's Corn Milling Division has processing plants in Cedar Rapids and Eddyville, Iowa; Dayton, Ohio; and Memphis, Tenn. Major products of those plants are corn sweeteners, cornstarches, corn oil, citric acid, sodium citrate, and corn gluten feed ingredients. The division opened an ethanol refinery at the Eddyville plant in 1992.

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