Invertebrate Drift from Headwater Drainage Channels in the Greater Toronto Area Study

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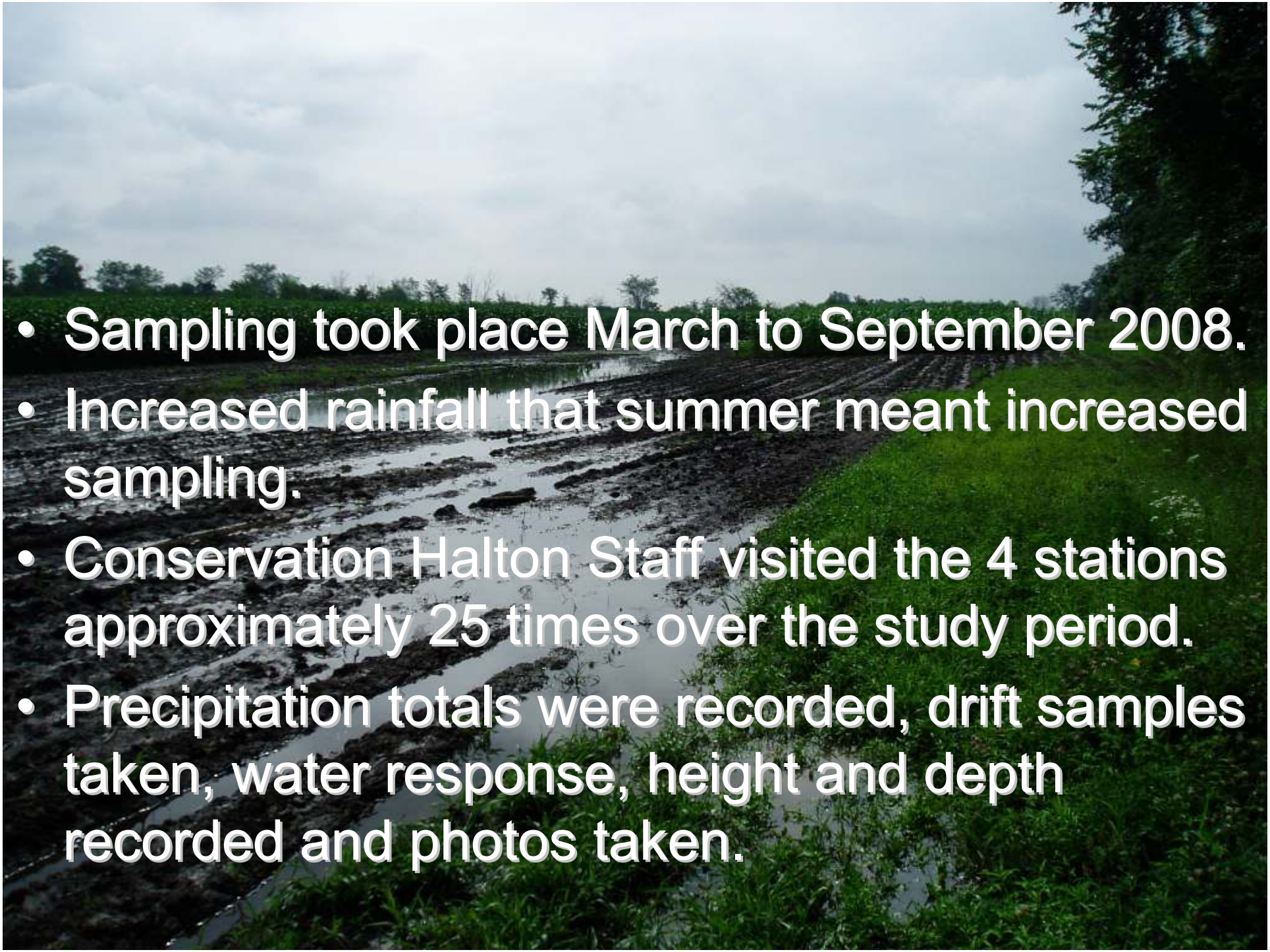
The drift study was conducted to evaluate the potential contributions of headwater drainage features to fish production in permanent downstream reaches.

Field Locations



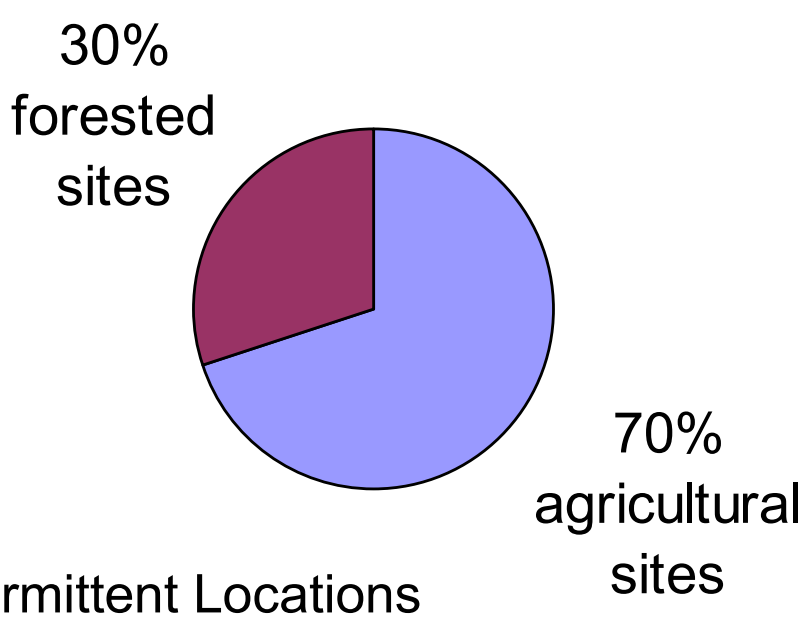
- Sampling took place March to September 2008.
- Increased rainfall that summer meant increased sampling.
- Conservation Halton Staff visited the 4 stations approximately 25 times over the study period.
- Precipitation totals were recorded, drift samples taken, water response, height and depth recorded and photos taken.

47 Drift samples were taken at the Halton stations and sent to the lab to be analyzed. After major storms the bags were full of all sorts of organic matter, invertebrates and sediment.

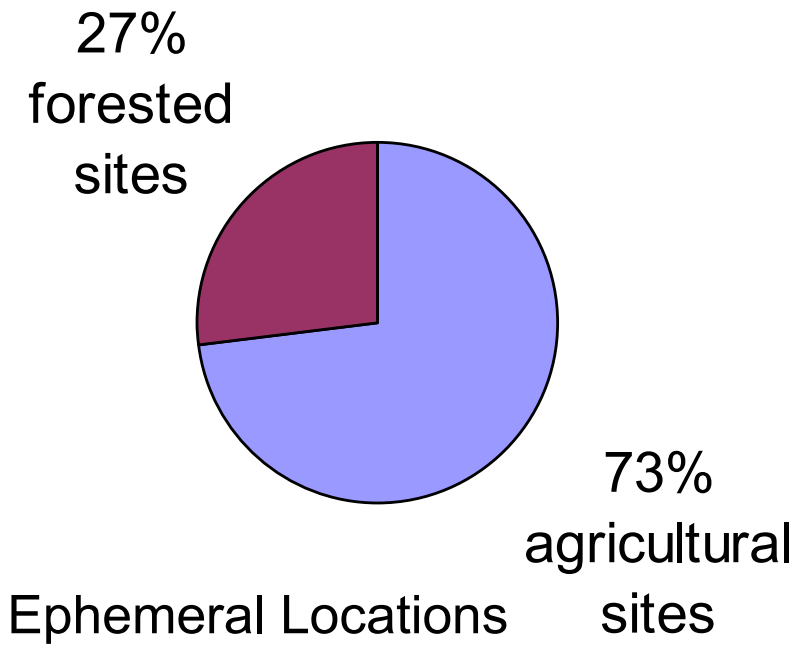
- Forested channels transport approximately twice the amount of plant matter than agricultural catchments per event.

- Drift from a headwater stream after a storm event

- **Intermittent Stream** – flows during wet portions of the year.
- 87% of all invertebrates collected were aquatic
- 73% of all animal biomass were collected from forested sites



- **Ephemeral Stream** – only flows during and after precipitation.
- 57% of all invertebrates collected were terrestrial
- 87% of all animal biomass were collected from agricultural sites



- Overall, agricultural sites transport a large amount of small animals.
- Larger animals were found almost exclusively in forested catchments.
- Both forested and agricultural channels transported the same variety of animals.

- The amounts of invertebrates transported are substantial and these animals are available for immediate consumption by fish.

- Over the course of the summer surface runoff continually decreased from forested sites. Surprisingly, the number of animals collected increased.
- This suggests that terrestrial animals may contribute a significant amount of food available for fish when the channels begin to flow.
- Removal of these channels (paving, pipe, etc) will eliminate habitat for many of these animals.

Conclusion:
Headwaters are Very Important!