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## July 2002 Green Pond Oil Spill Site Monitoring Program News

Prepared by The Eco-Strategies Group  
For U.S.EPA Region II Oil Spill Removal Program

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### 3000 Galerucella recruits pressed into action at Green Pond Site



On July 24th, 3000 *Galerucella* adults were added to the existing Green Pond population by Craig Bitler, The Eco-Strategies Group's Biological Control expert. Mr. Bitler, shown here, distributing the beetles to areas of loosestrife growth that had not been assaulted by the beetles introduced in June 2001. Although the "2001 class" has performed admirably in the biological control program,

the loosestrife was extremely prolific in seed production with new plants becoming established in other areas of the wetland, thus the need for introducing additional beetles.

The new recruits were supplied by the State of New Jersey Department of Agriculture's Bureau of Biological Control Laboratory. According to Craig Bitler, these recruits will eat their fill, drop to the ground, hibernate just below the soil surface and will emerge next spring (*continued on page 3.*)

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### Wetland Monitoring Wells reveal oil still present

A number of monitoring wells were installed in the early days of 1996 at the Green Pond Site Oil Spill by the City of Newark and the USEPA at the edge of the wetland and upland portion of the site. These shallow 12 inch diameter wells serve as a good monitoring device for the groundwater level below the marsh and if oil is still present. (*cont'd on*



#### Special points of interest: Upcoming Issues

- The Federal Invasive Species Presidential Executive Order
- The pre-Revolutionary War graveyard
- Status of Oil Recovery Operations at the Green Pond Oil Spill Site
- The Pequannock River Coalition

## Candidate Control Area for the Green Pond Oil Spill site survey identified

Dr. Ralph Tiner, national wetland expert with the USF&W, visited the Green Pond Oil Spill site several years ago and remarked that a control area would enhance the scientific aspects to the survey. Up to that time, we were concentrating on utilizing a temporal control by comparing the changes that were occurring after the spill and cleanup with pre-spill conditions. Unfortunately, pre-spill plant community delineation with species composition data does not exist. A comparison with nearby plant communities that are growing in similar topographical and hydrologic conditions would be helpful to interpret the data from the Green Pond Oil Spill Monitoring Program efforts. We found such a site on the south bank of the Pequannock River .25 miles from present study location as shown in the adjacent photos. The control site is a sedge grass dominated community with a mix of herbaceous species present.



## Winged Creatures at the Green Pond Oil Spill Site: Up Front and Personal by R.J.Nadeau

Hummingbird clearwing  
Moth sighting 25 July

Hummingbird moths are certainly one of the most interesting moths. At first glance you think it as a hummingbird because it exhibits the same behaviors. It darts from flower to flower, sips nectar and hovers the exactly the manner as "hummers." In reality, you are



Hummingbird clearwing Photo: Paul Opler

looking at the Hummingbird clearwing (*Hemaris thysbe*), a common inhabitant of New Jersey's gardens and open and second-growth habitats. It ranges from Alaska south to Oregon; east through the Great Plains/ Great Lakes area to Maine and Newfoundland; south to Florida and Texas

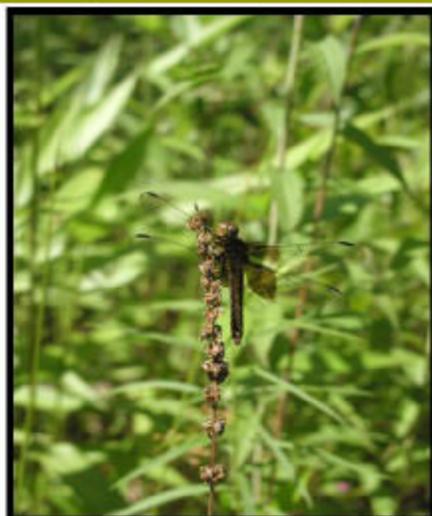
## ERT's Oil Pollution Guru visits the Green Pond Site



Dr. Harry L. Allen, acclaimed national and international expert on oil pollution matters with the USEPA Environmental Response Team, visited the Green Pond Oil Spill site on July 12th. Dr. Allen, shown here examining damage to a loosestrife plant from the Galerucella beetles, was impressed with the biological control program instituted at the Green Pond site to control the Purple Loosestrife.

Dr. Allen is most renowned for his work on bioremediation of petroleum and pesticide contaminated soils at Superfund sites but yet over the course of his thirty year career with EPA has served as the agency's technical advisor to the US Coast Guard at a number of major oil spills including the Exxon Valdez and State Department at the Blowout in Uzbekistan.

## Winged Creatures cont'ed.....



Female *Libellula luctosa* (ID pending) at the Green Pond Site .



Female *Libellula luctosa* (photo from Internet)

Dragonflies and damselflies are common visitors to the Green Pond site during the summer months. Pictured here is the Widow Skimmer (*Libellula luctosa*) which ranges from Ontario and Atlantic Coast south to Georgia, west to Texas and northern Mexico, north to South Dakota. The females and males differ in morphology and behaviors. The males spend lots of time fighting over females and possess more showy reflective barring on their wings. Following mating, the females drop the fertilized eggs into shallow quiescent water bodies. The eggs develop into larvae called naiads which crawl out of the water a few feet on vegetation and emerge as adults in late summer. The adults eat smaller flying insects including mosquitoes; the naiads are aggressive feeders on smaller aquatic insect larvae forms.

Of the approximately 450 species of Dragonflies and Damselflies (Order Odonata) in North America, 178 species are found throughout all the physiographic provinces of New Jersey. Located in the mid-Atlantic region of U.S., New Jersey is at the northern limit of some of the southern species, while the highlands in northern New Jersey where the Green Pond site is located, provide habitat for some species near the southern limit of their range.

Dragonflies and Damselflies are considered good indicators of environmental quality for both aquatic and terrestrial habitats. Being that throughout their life cycle, they are predatory and carnivorous, their survival and success is dependent on an abundant and diverse food supply in and out of the water.

## New Recruits brought to Green Pond Site continued.....

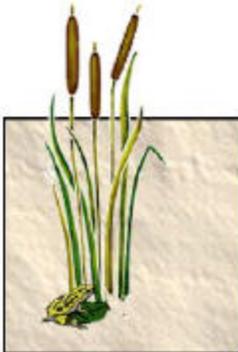
With ravenous appetites for the newly emerging Purple Loosestrife plants. These recruits will lay eggs and produce larvae with equally voracious appetites for the terminal portions of the plant. Damage to the terminal portions adversely affects the flowering and ultimately the seed production of the plants. The prolific nature of Purple Loosestrife is largely attributed to the prodigious seed production of each plant which can be more than a million seeds per plant. These seeds are tiny and are carried easily by water, birds and animals to new locations.



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**History of the Green Pond Oil Spill Site continued from June Newsletter**

*The Oil Spill Section of the EPA's Region II Emergency Removal Program was notified and thereby initiated a surface cleanup followed by the present subsurface oil recovery /removal operation.*

*During the initial response phase, once the river was boomed, attempts were then made to find the source of the oil. The abandoned pipeline and pumping station were known to be in close proximity but the exact location was uncertain. Later in February of 1996, a number of piezometers were installed to determine the depth and surface of the groundwater and possible locations of oil lying on the groundwater surface. These piezometers were installed using a grid system design to maximize on the data which would be used to create subsurface maps and depictions.*

*The Newark Watershed Authority provided copies of deed information as well as aerial imagery from 1920 and early 1930. This information was useful to EPA in identifying potential responsible parties.*

*More to come in upcoming Newsletters.*

**Subsurface oil still present under marsh at Green Pond.....continued**



Oil was detected in slight amounts in three of the wells indicating that there is subsurface contamination still present necessitating the continued monitoring of groundwater levels.

Figure 1: Water and Oil Measurements

|     | Depth to Water | Depth to Oil | Oil Thickness<br>(in tenths of inches) |
|-----|----------------|--------------|--|
| RW1 | NA*            |              |  |
| RW2 | 4.20           | 4.00         | .20                                    |
| RW3 | 3.37           | 3.27         | .08                                    |
| RW4 | 2.55           | 2.47         | .08                                    |
| RW5 | 2.68           | NA*          |  |
| RW6 | 3.88           | NA*          |  |
| RW7 | 1.90           | NA*          |  |

No water or oil detected at this location as determined by the oil/water interface meter.

Measurements to fluid surface from Top of Casing of unsurveyed well

