

## GYPSY MOTH FACT SHEET

Shenandoah National Park

June 26, 1989

As the defoliation of thousands of acres of forest rapidly spreads across the Park, even the most casual observer cannot help but be struck by the winter-like scene in mid-summer. Many people are witnessing the gypsy moth at work for the first time, and, not surprisingly, have a number of questions regarding this pest. The information presented here is intended to answer the questions commonly asked when the gypsy moth spreads into previously uninfested areas.

### HOW MUCH LAND IS BEING DESTROYED ?

Gypsy moth caterpillars do NOT destroy land, they defoliate, or eat the leaves from trees. In 1988, defoliation in Shenandoah National Park reached 16,000 acres. Defoliation this year appears to be at similar or somewhat higher levels. Accurate estimates will be made when Park managers analyze aerial photographs of the affected area.

### HOW LONG WILL THESE CATERPILLARS BE AROUND ?

Gypsy moth larvae, or caterpillars, hatch out in early May. The caterpillars grow quickly until they reach a maximum size of 3 to 4 inches in late June. The larvae then spin a cocoon, and form a pupa. About 10 days to 2 weeks later, the adult moth will emerge. Male moths will fly about actively seeking the egg-laden, flightless female moth. Mating takes place, and the female moth deposits a tan-colored egg mass, containing several hundred eggs, on a tree trunk, rock, wall, or other surface. The eggs will remain there until the following April, when the cycle begins again.

### WILL THE DEFOLIATED TREES DIE ?

Some trees will die following defoliation. Just how many trees die is dependent on a number of other stress factors which may be operating. Drought, disease, other insects, storm damage, and previous defoliations will all decrease a tree's chances of survival. In a year with normal to above average rainfall, like this year, more than 90 percent of the trees which are being defoliated for the first time will probably survive. Five weeks from now, the brown mountainsides you are seeing will once again be green, as the trees put out a second set of leaves.

Not all trees are equally preferred by gypsy moth caterpillars. The oaks are highly favored, while some types are eaten only as a last resort (like ash), or not at all (tulip poplar). Oaks in the northern end of the Park which were defoliated once under the severe drought conditions of 1986 or 1987 showed 20 percent mortality overall. Those that were stripped in both 1986 and 1987 suffered 50 percent mortality.

#### WHAT WILL HAPPEN NEXT YEAR ?

Gypsy moth populations in a given area will normally defoliate one or two years. After that, their numbers grow so large that there is not enough food available to sustain them through the caterpillar growth stage. They become stressed by hunger, and a number of diseases, mainly viruses, strike the population, causing it to crash to near zero. This natural population crash allows the trees time to recover their strength, and is the underlying reason for the Park's gypsy moth management policy.

#### WHAT IS THE PARK'S GYPSY MOTH MANAGEMENT POLICY ?

Park managers first developed a gypsy moth management plan in 1984. The plan has undergone several revisions since then, but the basic management philosophy has remained the same. Gypsy moths are generally not controlled anywhere in the Park except developed areas, such as campgrounds, picnic areas, lodges and waysides. Developed areas are treated, when necessary, to provide for the continued enjoyment of visitors, since the primary purpose of these facilities is recreational. Spraying developed areas also helps slow the artificial spread of the pest by people into uninfested areas. The developed zone also includes a narrow corridor along the Skyline Drive. This strip is treated to minimize the danger of dead trees falling onto this heavily travelled roadway.

Developed areas in the Park represent approximately 4 percent of the total land base. The remaining 96 percent is designated as natural or wilderness areas where rarely are suppression actions taken against the gypsy moth. One exception this year was the treatment of three small areas that comprise the critical habitat of the endangered Shenandoah salamander. As explained above, the gypsy moth population will crash naturally, while spraying would prevent a natural collapse and prolong the infestation period. Widespread spraying of pesticides would also be detrimental to the ecosystem, and contrary to policy. National Park Service policy permits controlling alien species if the species has a significant impact on Park resources and there is a reasonable chance of successful control, without disrupting native species and ecosystems with the control efforts. Although the effects of gypsy moth defoliation are significant, long-term control through the use of pesticides has proven to be a futile effort.

#### WHY IS MATHEWS ARM CAMPGROUND DEFOLIATED ?

Mathews Arm campground is located within a large Gypchek research site, consisting of twelve 30-acre treatment blocks. Gypchek is a virus which kills only gypsy moth caterpillars, and shows promise as an environmentally-safe control agent for the pest. The main campground area was not located in a Gypchek treatment block. Instead, the area was sprayed separately after all of the test blocks had been treated. Unfortunately, the supply of Gypchek is quite limited, and it was running out when the last batch was mixed to spray the campground. The dose received by the campground was only 60 percent of normal, and obviously was not enough to protect the area. The treatment blocks sprayed with Gypchek, however, showed good foliage protection.