

**AIPM GYPSY MOTH MONITORING PROGRAM
1992 Trapping Summary**

**NEW RIVER GORGE NATIONAL RIVER
GAULEY RIVER NATIONAL RECREATION AREA
BLUESTONE NATIONAL SCENIC RIVER**

WEST VIRGINIA

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The gypsy moth (Lymantria dispar) is an insect pest of oaks and other hardwoods. It has one life cycle per year starting with larvae (caterpillars) that hatch in the spring from egg masses laid the previous summer. The larvae which are about an eighth of an inch long hang by silken threads and are dispersed by the wind. This is the destructive life stage that feeds on oak and other hardwood leaves. Over the next six to eight weeks the larvae grow to almost two inches in length. The later stages are very hairy and have five pairs of blue dots and six pairs of red dots down their backs. In the early summer the larvae form dark brown, hard pupa cases which hatch about ten days later. Males are brown with black wavy bands on the wings. They are about an inch long and have large feathery antennae. Females are cream colored with dark wavy bands on their wings and they cannot fly. Females release a pheromone to attract males and shortly after mating they lay 500-1000 eggs in a mass and cover it with buff colored hairs from their body. Mating takes place in late summer and the female only mates once then dies. The quarter sized egg masses overwinter and hatch in the spring.

Gypsy moths were introduced into this country in Boston in 1869, when Professor M. Trouvelot was working on establishing a silk industry in the United States by breeding silkworms with the gypsy moth (Lymantria dispar). His efforts were futile and, when several gypsy moth caterpillars escaped, the results were disastrous. In 1992 more than 17 states are battling the off-

spring of Professor Trouvelot's experiment.

West Virginia and Virginia are two of those states, and have joined in a cooperative program to work on suppression of this pest. In 1988 the Appalachian Integrated Pest Management Gypsy Moth Demonstration Project (or AIPM) was started. This five year project was initiated for the purpose of monitoring gypsy moth population spread and to test and develop innovative intervention methods. The monitoring involved is of two types: egg mass surveying and male moth trapping. The male moth traps are bright green and shaped like a half gallon milk carton. They contain a substance similar to the pheromone given off by the female and a pesticide strip. Egg mass surveys are performed at high level populations when trap catches reach 500 moths per trap. This information is then used to determine which areas will be treated.

The project involves 18 counties in Virginia and 20 counties in West Virginia. Three National Park Service management areas in southern West Virginia are included in this project; New River Gorge National River, Gauley River National Recreation Area and Bluestone National Scenic River. These areas are being monitored using male moth trapping only. National Park Service (NPS) personnel are currently responsible for male moth trapping on parts of eleven quads comprising the three management areas. Those quads are: Ansted, Summersville Dam, Fayetteville, Winona,

Thurmond, Danese, Prince, Meadow Creek, Hinton, Pipestem and Flat Top. Trapping for 1992 began on May 26 and ended on September 18 and was done on either a 3 kilometer or 1 kilometer grid.

This year a change was made in the sampling area covered by NPS personnel. In past years sampling areas were determined by quad map coverage, however, this year the sampling area was trimmed to more closely fit the park's boundaries. Trappers from the state of West Virginia were responsible for the balance of each quad (see maps pgs. 8 and 9).

A total of 145 sites were checked by NPS personnel this season. Of those, 96 were done on a regular 3 kilometer grid, 44 were done on a 1 kilometer grid and 5 were omitted for safety or access reasons. The 1 kilometer grid was used as a transition between NPS sites and other cooperators who monitored the rest of the quads on 1 kilometer grids. At this population level, intensive trapping is a suppression technique as well as a monitoring system.

There were eight moths caught in the 140 traps placed this year. Those moths were spread out over six quads in all three management areas (see table 1 and maps pgs 8 & 9). This compares to five moths for 1991 and 22 moths for 1990 for the same reduced areas. For the entire area sampled in 1991 there were 26 moths caught on six quads (see table 2), and 43 moths caught in 1990 on

eight quads (see table 3).

There is no definite pattern to the moth catches over the past three years with only three quads (Winona, Hinton and Flat Top) having moth catches all three years. Three sites have had repeated moth catches; Hinton site 59 caught one moth in 1991 and two moths this year. Flat Top sites 114 and 151 caught moths in both 1990 and 1991 but were monitored by the state this year. This indicates that there are no established isolated populations in or near the park and the catches are from moths or caterpillars carried or blown in. The true leading edge of the bulk of the population is roughly 100 miles northeast of the town of Summersville, WV.

This is the last year of the AIPM project, however, the park intends to continue gypsy moth monitoring in 1993 and beyond. Monitoring will either be a park based project or as part of the Forest Service funded Slow The Spread project. This monitoring will be based roughly on AIPM protocols and will have an emphasis on areas where moths have been caught previously. The spread of the gypsy moth and the associated defoliation is unavoidable, but with proper planning and monitoring, permanent damage to park resources could be kept to a minimum.

Table 1. 1992 Positive Trap Sites

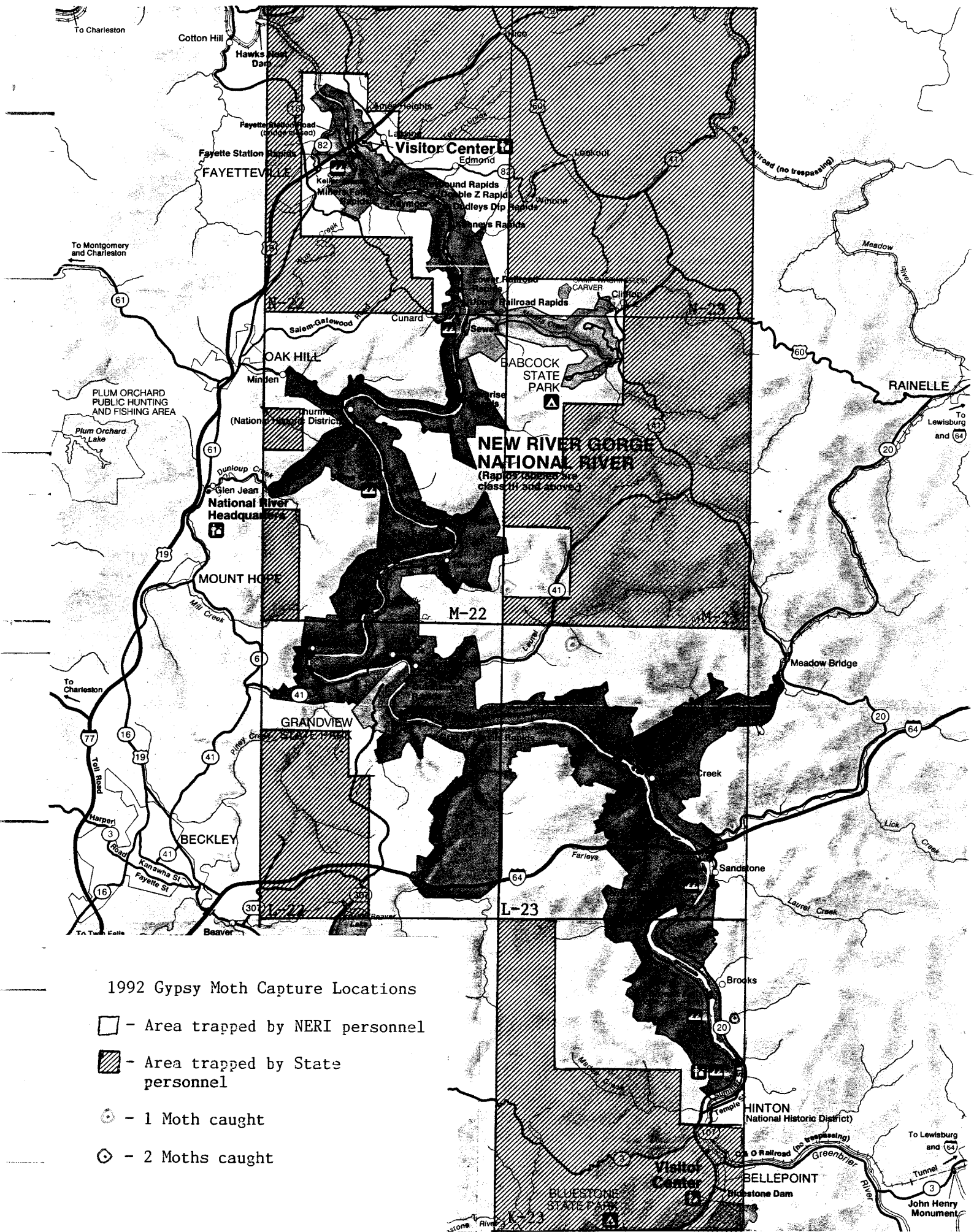
Quad	Site #	# Moths Caught
Summersville Dam(P23)	68	1
Winona (N23)	150	1
Danese (M23)	133	1
Meadow Creek (L23)	5	1
	110	1
Hinton (K23)	59	2
Flat Top (J22)	133	1

Table 2. 1991 Positive Trap Sites * Sites trapped 1991 and 1992

Quad	Site #	# Moths Caught
Ansted (P22)	42 *	1
	138	1
Thurmond (M22)	61 *	1
Winona (N23)	78	1
	144	1
Hinton (K23)	59 *	1
Pipestem (J23)	5	1
	146	1
Flat Top (J22)	51	1
	90	2
	91	1
	102	1
	113	2
	114	1
	134 *	2
	151	1
	158	2
	161	1
	162	1
	163	1

Table 3. 1990 Positive Trap Sites * Sites trapped 1990 and 1992

Quad	Site #	# Moths Caught
Ansted (P22)	69 *	1
	72 *	1
Summersville Dam(P23)	103 *	7
Fayetteville (N22)	17	1
	20	1
	47 *	3
	119 *	2
Winona (N23)	46	1
	87	1
	122	1
Hinton (K23)	53 *	1
	122	1
Meadow Creek (L23)	8 *	1
Pipestem (J23)	2	1
	74 *	3
	80	2
	119 *	1
Flat Top (J22)	73	1
	79	2
	82 *	2
	114	2
	117	1
	148	3
	151	3



1992 Gypsy Moth Capture Locations

-  - Area trapped by NERI personnel
 - Area trapped by State personnel
 - 1 Moth caught
 - 2 Moths caught

