WHITE SATIN MOTH *Leucoma salicis* (L.)

Factoid: For a classical rock fan, "Nights in White Satin" is a name of a psychedelic top-charter hit of the famous British rock group "Moody Blues" of the late 1960s. The title, however inadvertently, provides an excellent illustration to an outbreak of the White Satin Moth. Attracted to light, the moths can be so numerous that they would coat objects in the vicinity of lights like snow.

Description:

Adults. According to their name, the silvery-white moths are quite pretty and satiny in appearance. The body of the moth itself is black but is covered with a dense jacket of white scales and hairs. The wingspan is from 1 ½ to 2 inches.

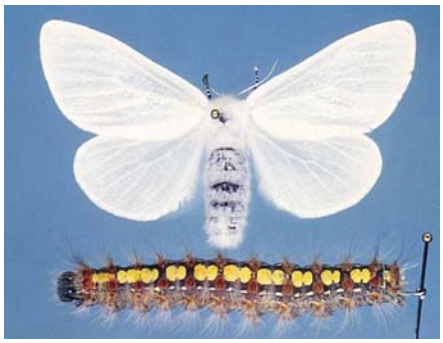

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Fig. 1. White Satin Moth, Adult female and a caterpillar. Source:
http://www.for.gov.bc.ca/hfp/forsite/pest_field_guide/satin_moth.htm
Fig. 2. White Satin Moth, Pupae. Source:
http://www.forestry.ubc.ca/fetch21/FRST308/lab5/leucoma_salicis/pupae.jpg
Fig. 3. White Satin Moth, Egg masses covered with froth. Source:
http://www.insectimages.org/browse/detail.cfm?imgnum=1141028

Larvae. The fully-grown caterpillars are about 1 ¾ inches long, pale to medium grey-brown or black. They have a row of conspicuous, oblong, double, shiny milk-white or yellowish blotches along the middle on the back and tufts of reddish brown hairs on the back and sides.

Pupae. Dark-brown or black, glossy, and hairy, inside a loose cocoon made from silk threads. Often inside rolled leaves.

Eggs. Greenish, flat-round, laid in clusters and covered with white froth.

Current Wyoming Distribution: Probably all SW counties, but at present it has been reported from Uinta Co. only (June 2004).

How did it get to Uinta county? Most probably, it spread from the Pacific coast, although an accidental introduction cannot be ruled out.

Historical Wyoming Distribution: No reports available.

Origin: White Satin Moth is an introduced exotic pest native to Eurasia.

National Distribution: This insect was introduced to North America in the early 1920's, when it was almost simultaneously found in New England and British Columbia. In the intervening years, its populations have gradually spread throughout New York, and the Canadian Maritime Provinces, as well as Washington, Oregon, northern California, and Idaho. In the 1990s, the moth was reported from a region situated as far as >700 miles from the Pacific coast (Edmonton, Alberta). Apparently, the White Satin Moth populations continue to gradually spread towards the interior of the continent but remain largely unnoticed. As such, the actual distribution area of the species is difficult to delineate.

Reasons for Concern: White Satin Moth belongs to the same family of Tussock moths (*Lymantriidae*) as the infamous Gypsy Moth. The caterpillar stages feed principally on the leaves of poplar, cottonwood, aspen and willow trees (family *Salicaceae*) and less commonly on oak. In new outbreaks, White Satin Moth is often seen to prefer hybrid poplar species which are frequently planted in windbreaks or as landscape ornamentals. Repeated attacks cause the death of branches and even of whole trees if they are completely defoliated for several years in succession. In addition to their damaging potential, mature caterpillars may become a nuisance through their wandering about over nearly everything in the area in search of food or a place to spin their cocoons.
Damage is most conspicuous in June, when late-instar caterpillars consume the leaves almost entirely, except for major veins. Young caterpillars which are active in the second half of the summer skeletonize leaves.
Outbreaks of the White Satin Moths have increased in severity over the years and their impact is becoming more and more economically important. In 2004, the moth was found in great numbers in SW Wyoming, where it caused severe defoliation of windbreak stands.

Life Cycle: White Satin Moth produces a single generation per year, although its life cycle is somewhat unusual. The overwintering stage is caterpillar. Caterpillars have two, distinctive periods of feeding, one in late August or September, the other in the early summer of the next year.
Adult moths emerge from pupae late June to mid-August and become most numerous around mid-July.
Females lay eggs on twigs or tree branches starting from July. Egg masses are covered with white froth. Tiny caterpillars hatch from the eggs in August. After feeding for awhile, the still small caterpillars crawl to a crack or crevice in the bark of the trunk or larger branches of the tree in late August or early September and spin a silken hibernating web. These camouflage webs are extremely difficult to notice because they closely resemble the bark. The caterpillars overwinter within these webs and emerge in the spring to resume feeding and development.
Most caterpillars have finished feeding by late June. They spin their cocoons which are made of loosely woven silk. Black hairy pupa is visible inside. Cocoons can be attached to virtually anything, from tree trunks to fence posts and the sides of buildings.

Legislative Status: White Satin Moth is not currently designated as a Noxious pest in Wyoming.

Natural Enemies: Many birds and predatory insects like lacewings attack the larvae of the White Satin Moth. A parasitoid braconid wasp (*Meteorus versicolor*) found in BC attacks larger stages of the caterpillar. A native tachinid fly *Tachinomyia similis* is an important parasitoid of the moth on the West Coast. Several species of parasitic wasps and flies were introduced from Europe to control White Satin Moth. Where established, these natural enemies continue to help suppress populations of the pest. In other areas, however, White Satin Moth defoliates thousands of acres of poplar, willow, aspen and cottonwood annually.

Control: The White Satin moth caterpillars may be controlled by spraying the foliage of host trees with a microbial insecticide containing a particular strain of a bacterium, *Bacillus thuringiensis* var. *kurstaki* (*Btk*). It provokes a disease that kills the larvae. One of such bio-insecticide products is Foray® 48B – flowable concentrate manufactured by Valent BioSciences. The recommended dose rate is 16 to 43 oz./acre. This microbial insecticide acts by ingestion: the caterpillars should consume the treated foliage. Larvae stop feeding and die 2-5 days after application. Maximum activity is against early instar caterpillars. The product is safe for humans and non-target organisms, it is selective, and repeated applications are possible. However, it may be slow, needs UV protection, has only one week persistence, and limited shelf-life. Also, it may cause resistance if applied frequently.

Several chemical insecticides (carbaryl or cyfluthrin) are labeled for the control of this pest. They should be applied in the spring as soon as the foliage is out and caterpillars are starting to feed.

Be sure to follow the application instructions on the container label.

For more information regarding the options to control White Satin Moth, contact UW Extension Entomologist, Dr. Alex Latchininsky (phone 307-766-2298; e-mail latchini@uwyo.edu).