

March 2004

5.10

WEB July 2010

By Ken Gibson  
US Forest Service

## Forest Health Protection and State Forestry Organizations

# Management Guide for Western Pine Tip Moth

*Rhyacionia bushnelli* Busck

### Topics

Damage 1

Life History 1

Identification 2

[Management](#) 2

[Other Reading](#) 2

[Field Guide](#)

[Management  
Guide Index](#)

**Larvae distort and kill  
both terminal and lateral  
shoots.**

**Host:  
Ponderosa pine**

### *Damage*

Outbreaks of western pine tip moth have occurred periodically in areas of eastern Montana with an abundance of young ponderosa pines. Tip moths present persistent problems in field and farmstead windbreaks in Montana and North Dakota.

Damage is seen in upper- and mid-crowns of young ponderosa pines. The feeding activity of larvae distorts and kills both terminal and lateral shoots. This often stunts growth and deforms trees.

### *Life History*

A single generation per year occurs in most parts of the intermountain West. Winter is passed as pupae in cocoons in the litter or soil beneath infested trees.

Adult moths emerge by late May or early June, mate, then females deposit eggs on needles, buds, and shoots of young trees. Newly hatched larvae either feed between needles or mine them.

Later instars feed inside needle sheaths or buds, then enter new shoots, and mine within developing shoots.

Larvae complete growth by midsummer or fall, emerge from shoots, and drop to the ground to pupate, where they spend the winter.

### Key Points

- Damage occurs in young ponderosa pine, generally less than ten feet tall.
- Trees are not killed but may be stunted or deformed.
- Experimental control uses insecticide to kill moths as they emerge from pupae in soil under damaged trees.

### *Identification*

In June, larvae can be found in resinous pitch tents near bases of new needle fascicles or in needle sheaths. Recently damaged or currently infested shoots are covered with matted frass, dead needles, and webbing. New shoots

are greatly shortened and rapidly turn yellow, then brown. Shoots are packed with large amounts of coarse, loose frass but pith is generally intact. Larvae are yellowish with black heads, and less than one-half inch long.

## Management

- Experimentally, a systemic insecticide applied to the soil in the spring has protected young pines for two growing seasons.
- Work needs to be directed at protecting young ponderosa pines until they reach a height of about 10 feet.
- Very few attacks occur on trees over 10 feet in height.

## Identification

Adults, though rarely seen, have forewings mottled with yellowish gray and reddish brown. Hind wings are gray. Wingspan extends to about three-quarters inch.

## Other Reading

Furniss, R.L.; Carolin, V.M. 1977. Western forest insects. Misc. Publication Number 1339. Washington, D.C.: USDA Forest Service. 654 p.

Jennings, D. T. 1975. Life history and habits of the southwestern pine tip moth, *Rhyacionia neomexicana* (Dyar) (Lepidoptera: Olethreutidae). Annals Entomological Society of America. 68 (3):597-606.

Stevens, R.E. 1966. Ponderosa pine tip moth. Forest Pest Leaflet 102. Washington, D.C.: USDA Forest Service. 6 p.

Stevens, R. E.; Brewer, L. 1977. Pine tip moths, characteristics and control. Service in Action Number S529. Ft. Collins, CO. Colorado State University Extension Service. 2 p

### Forest Health Protection and State Forestry Organizations

#### Assistance on State And Private Lands

Montana: (406) 542-4300

Idaho: (208) 769-1525

Utah: (801) 538-5211

Nevada: (775) 684-2513

Wyoming: (307) 777-5659

N. Dakota: (701) 228-5422

#### Assistance on Federal Lands

US Forest Service

Region One

Missoula: (406) 329-3605

Coeur d'Alene: (208) 765-7342

US Forest Service

Region Four

Ogden: (801) 476-9720

Boise: (208) 373-4227

