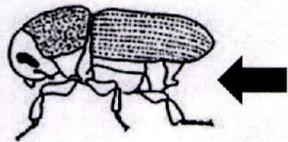
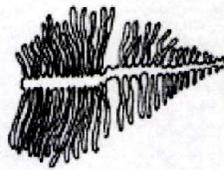


Bark Beetle Identification

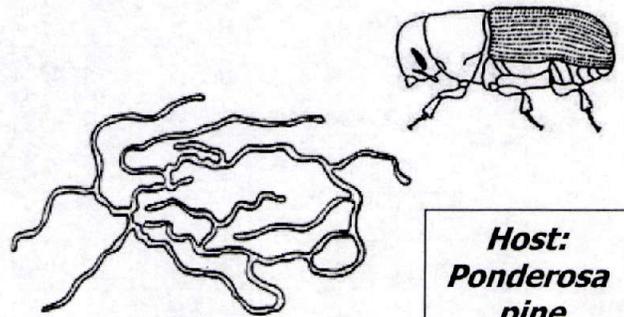
It is best to identify bark beetles by host and gallery pattern.
Larvae and adults often look similar, arrow shows distinguishing characteristic.
Gallery pattern often diagnostic



Host:
Grand fir

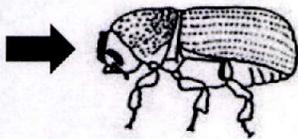


a. Fir engraver

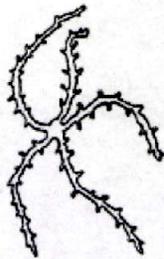


Host:
Ponderosa pine

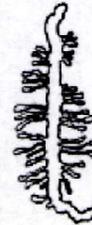
b. Western pine beetle



Host:
Subalpine fir

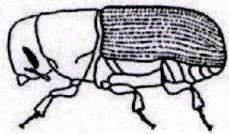


c. Western balsam bark beetle

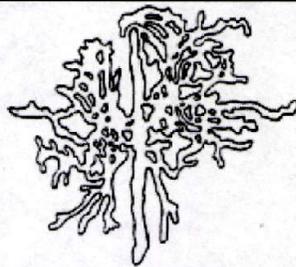


Hosts:
All pines, especially lodgepole, ponderosa

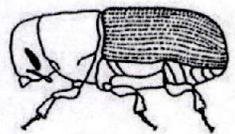
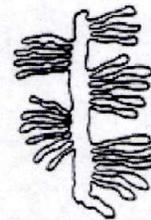
d. Mountain pine beetle



Host:
Engelmann spruce

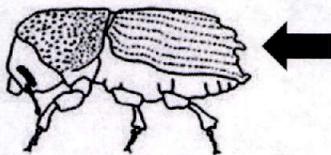


e. Spruce beetle

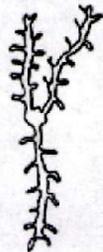


Host:
Douglas-fir

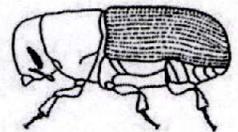
f. Douglas-fir beetle



Hosts:
Ponderosa pine lodgepole pine



g. Pine engraver (*Ips*)



Hosts:
All pines

h. Red turpentine beetle



Target Spacing for Pine Bark Beetle Management

Tree Diameter	Ft ²	Trees/Acre	Spacing	TPA @ Spacing	Ft ² @ Spacing
8	0.35	229-286	13 X 13	256	89
10	0.55	150-180	16 X 16	169	93
12	0.79	100-125	18 X 20	120	94
14	1.07	75-94	22 X 22	89	95
16	1.4	57-71	26 X 26	64	90
18	1.77	45-56	30 X 30	48	85
20	2.18	37-46	32 X 32	42	92
22	2.64	30-38	36 X 36	33	88
24	3.14	25-32	40 X 40	27	85

- **UI Extension**

- <http://www.extension.uidaho.edu/forestry.asp>

- **Idaho Department of Lands Offices**

- IDL Foresters Forums

- <http://www.idl.idaho.gov/forestry/forester-forums/index.html>

- **US Forest Service Information**

- Field Guide:

- https://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5188654.pdf

- Management Guide:

- https://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5186684.pdf

- FIDLs: <http://www.fs.fed.us/r6/nr/fid/wo-fidls/fidls-west.shtml>