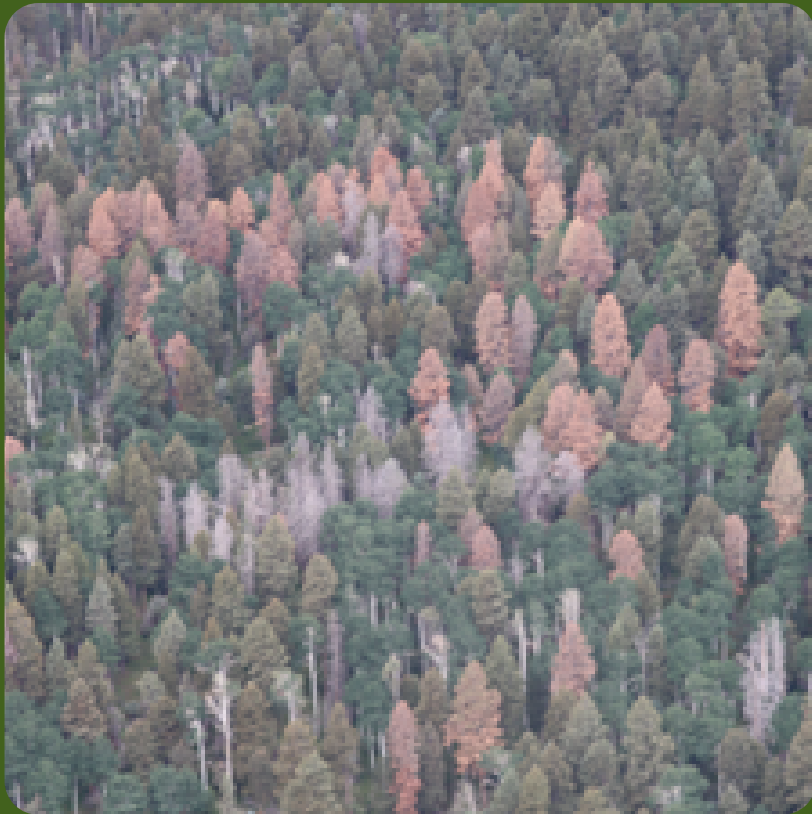


DOUGLAS FIR & WHITE FIR BARK BEETLES

SIGNS & SYMPTOMS

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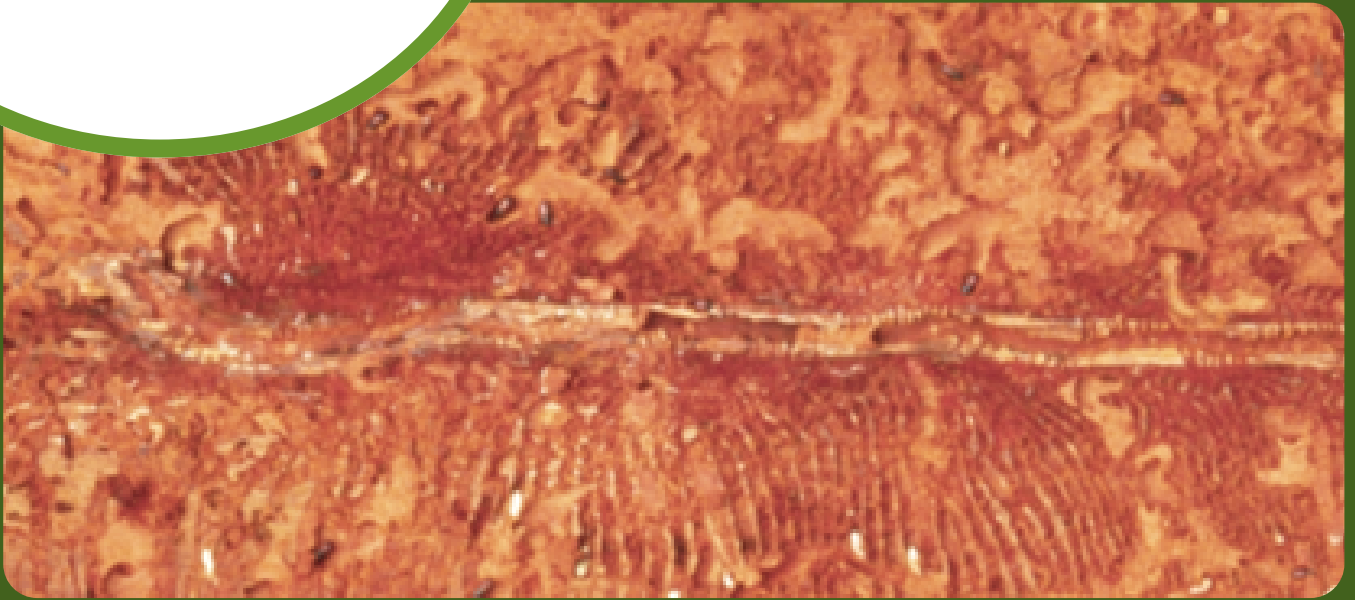


Aerial (left) and ground (right) view of fading Douglas fir trees caused by the Douglas fir beetle, *Dendroctonus pseudotsugae* attack.



Frass of Douglas fir beetle in bark fissures of Douglas fir tree.

DID YOU KNOW?
Douglas fir trees protect
from beetle attacks by
using an anti-
aggregation pheromone.



Douglas fir beetle gallery showing alternating arrangement.

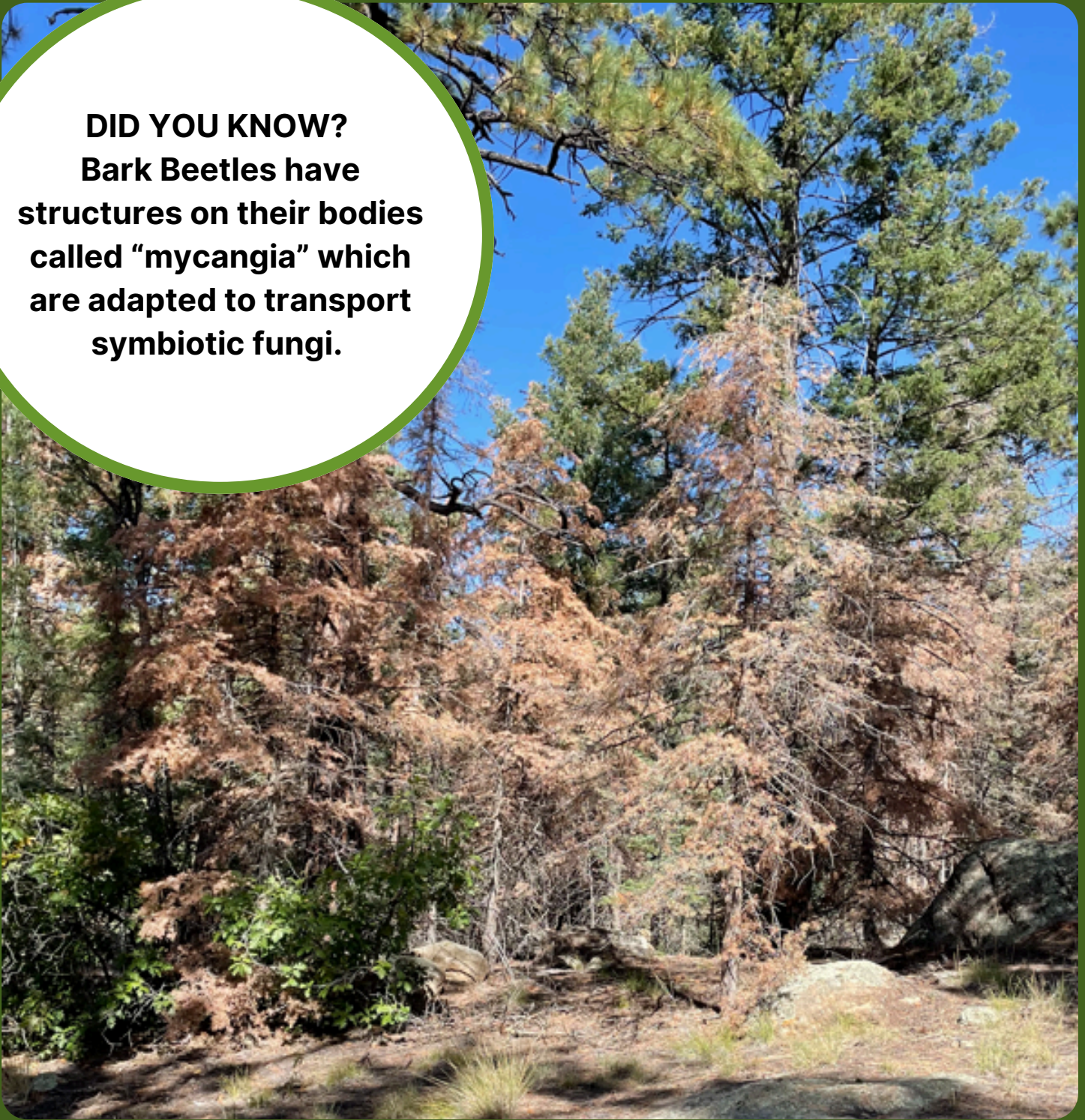


Life stages of the Douglas fir beetle. Adult beetles (4-6mm) and egg (left), larvae (center), and pupae (right). Photos courtesy of Malcolm Furniss & Sandra Kegley, USFS.



Fir engraver beetle egg galleries run perpendicular to the wood grains and larval galleries run parallel to the wood grain (top). Fir engraver beetles introduce a pathogenic pouch fungus to the host tree (left bottom).

DID YOU KNOW?
Bark Beetles have structures on their bodies called “mycangia” which are adapted to transport symbiotic fungi.



White fir understory attacked by fir engraver beetle, *Scolytus ventralis*. The blue-green trees fade to a light orange when attacked by the fir engraver (top). Fir engraver beetle, 2.5 mm (bottom). Beetle photo courtesy of Don Owen, Bugwood.com.