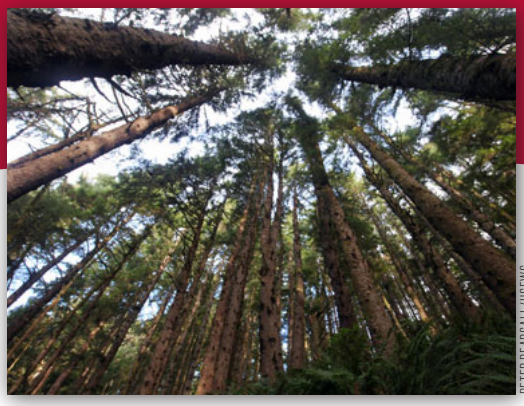
THE **HEAT** IS **ON**

Species feeling the effects of climate change



PETER PEARSALL/USFWS

Sitka Spruce

Picea sitchensis

Region:
Alaska, Pacific Northwest

Area affected:
Kenai Peninsula, Alaska

Climatic change:
Warmer temperatures

Impact:
Increased beetle outbreaks

ABOUT THIS SPECIES

One of the towering conifers of Pacific Northwest forests, Sitka spruce occurs in a narrow band along the West Coast, stretching from northern California to central Alaska. Their growth form ranges from scrubby and contorted on windswept dunes in the southern part of its range, to 200-foot giants in coastal temperate rain forests. They require deep, generally acidic soils and year-round precipitation. Seeds are released from cones when the weather is dry, and cones can open and close repeatedly in response to changing conditions over a period of six weeks or more. Young trees grow fairly rapidly in optimal conditions, and the trees can live 500 years or more. The pale-colored wood of Sitka spruce is prized for its resonant qualities and is probably familiar to most people as the front surface of many acoustic guitars.

DESCRIPTION OF IMPACT

Alaska is warming faster than any other part of the United States, causing big changes statewide. On the Kenai Peninsula in south-central Alaska, spruce beetle outbreaks—linked to rising temperatures—have decimated Sitka spruce, the closely related white spruce and a hybrid of the two called Lutz's spruce. The spruce beetle is not some new, exotic invasive species, but rather a native insect that has existed in the region for millennia. Until recently, its ability to damage the forests was checked by cold temperatures that limited the insect's growth rate. Spruce beetles historically required two years to mature and suffered substantial mortality over the winter. Now longer, warmer summers mean more beetles can mature in just one year, and warmer winters mean less mortality. **Consequently, beetle populations have spiked and they have killed more than a million acres of trees on the Kenai Peninsula alone since the 1990s.**

References

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