



Save MI Hemlocks!





Annual Cost of Tree Insect Pests

	Government		Households		Markets
TOTALS	Federal	Local	Spent	Property values	Timber
Woodborers (71 species)	92	1770	760	830	130
Defoliators (155 species)	110	170	160	410	18
Sap-feeders (192 species)	14	170	130	260	4

Aukema et al. 2011. PLoS One Vol. 6: 1-7





Photo credit: Chris Evans, University of Illinois, Bugwood.org

UGA1346067



Hemlocks effect on thermoregulation

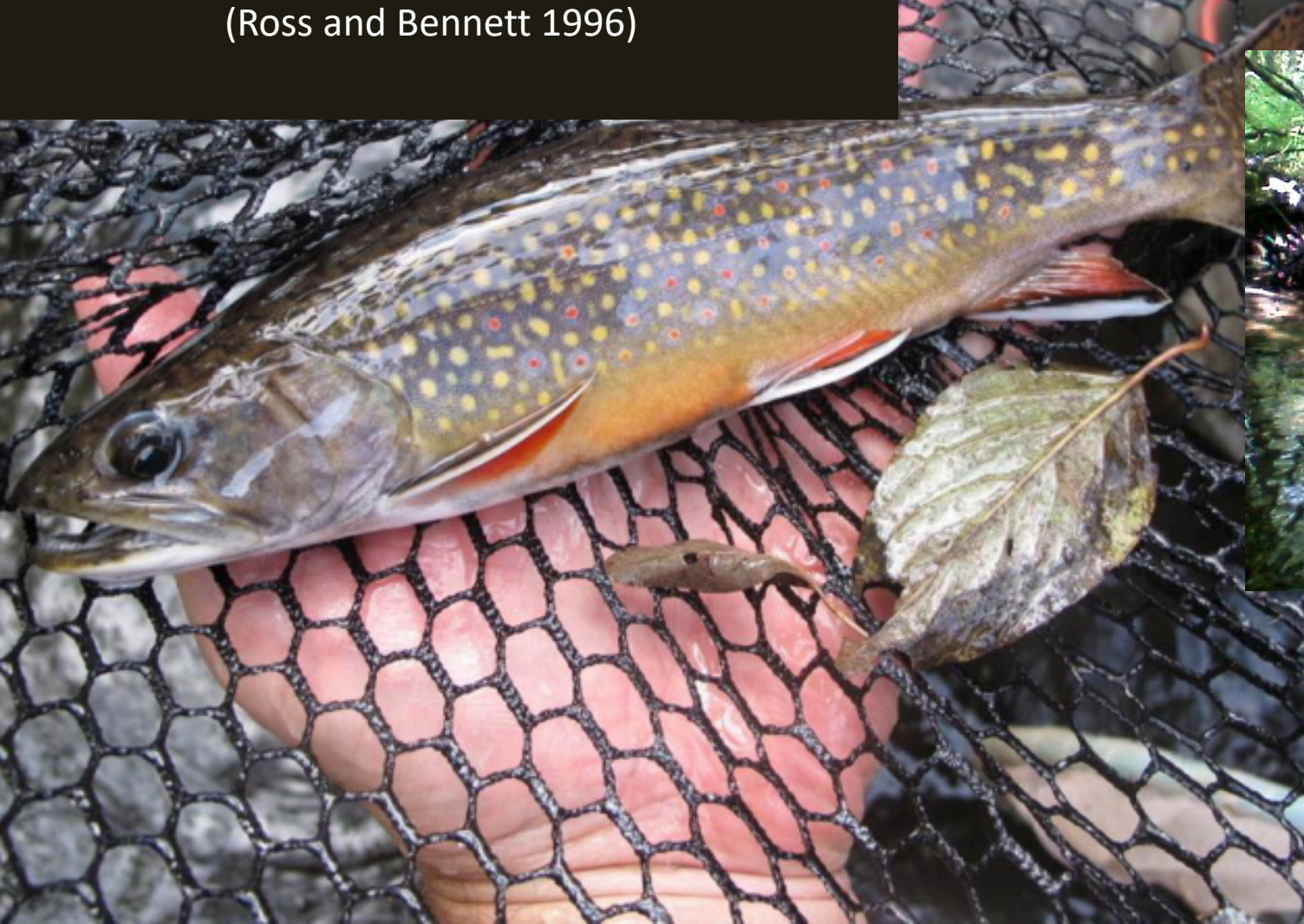
1.8-3.6°F cooler in summer

Warmer in winter

>68°F stressful for brook trout

3% w/ hemlock vs. 18% w/o hemlock

(Ross and Bennett 1996)





Defoliation in stream canopy

Algal productivity ↑ 35%- 80%
(Sheath et al. 1986)





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What can **YOU** do?





Identify



Report



Take Action



Learn More

Step 1. Educate yourself.

Remember that HWA:

- **Has “wool” that is attached to the twig not the needle.**
- **Is immobile when covered in wax**
- **Is waxy, not silky or stretchy**
- **Is wispy like a cotton ball, not fabric-like**
- **Has separate balls of “wool”**
- **Doesn't look painted on (like pine sap)**





Identify



Report



Take Action



Learn More

Step 1. Educate yourself.

Step 2. Educate your friends, family & neighbors.

Step 3. Check out hemlocks-even healthy looking ones!

Step 4. Prevent the further spread.





Identify



Report



Take Action



Learn More

Step 1. **Educate yourself**

Step 2. **Educate your friends, family & neighbors.**

Step 3. **Check out hemlocks-even healthy looking ones!**

Step 4. **Prevent the further spread.**

Step 5. **Report It!**

Step 6. **Treat infested trees.**

Why is this of utmost importance?

Cost will significantly increase

- Management
- Consequences

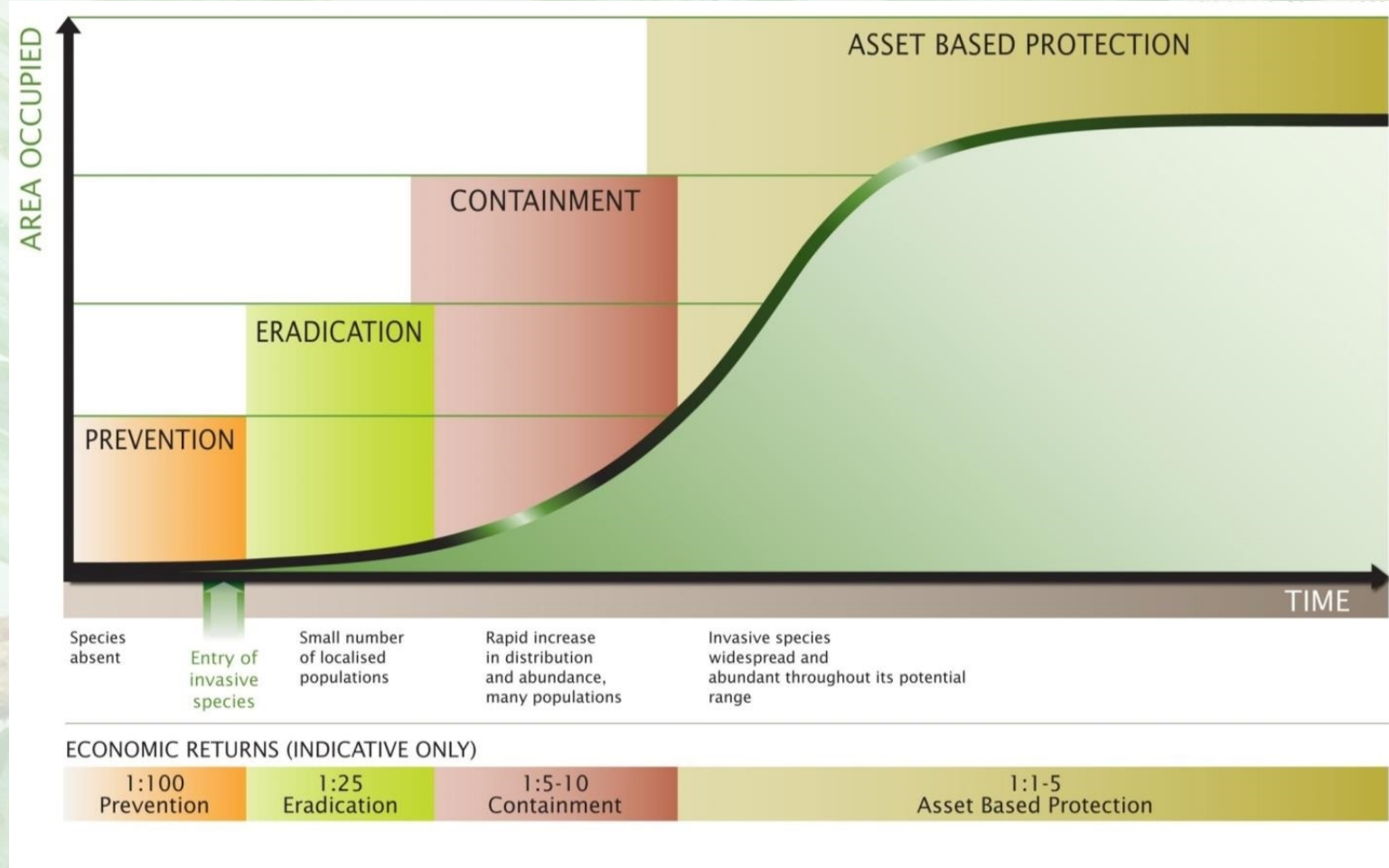




Photo credit: Great Smoky Mountains National Park Resource Management

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**Protect our forests.
Protect our water.**

saveMIhemlocks.org