

Invasive species sleeper populations

How important are they, and what do they mean for management?

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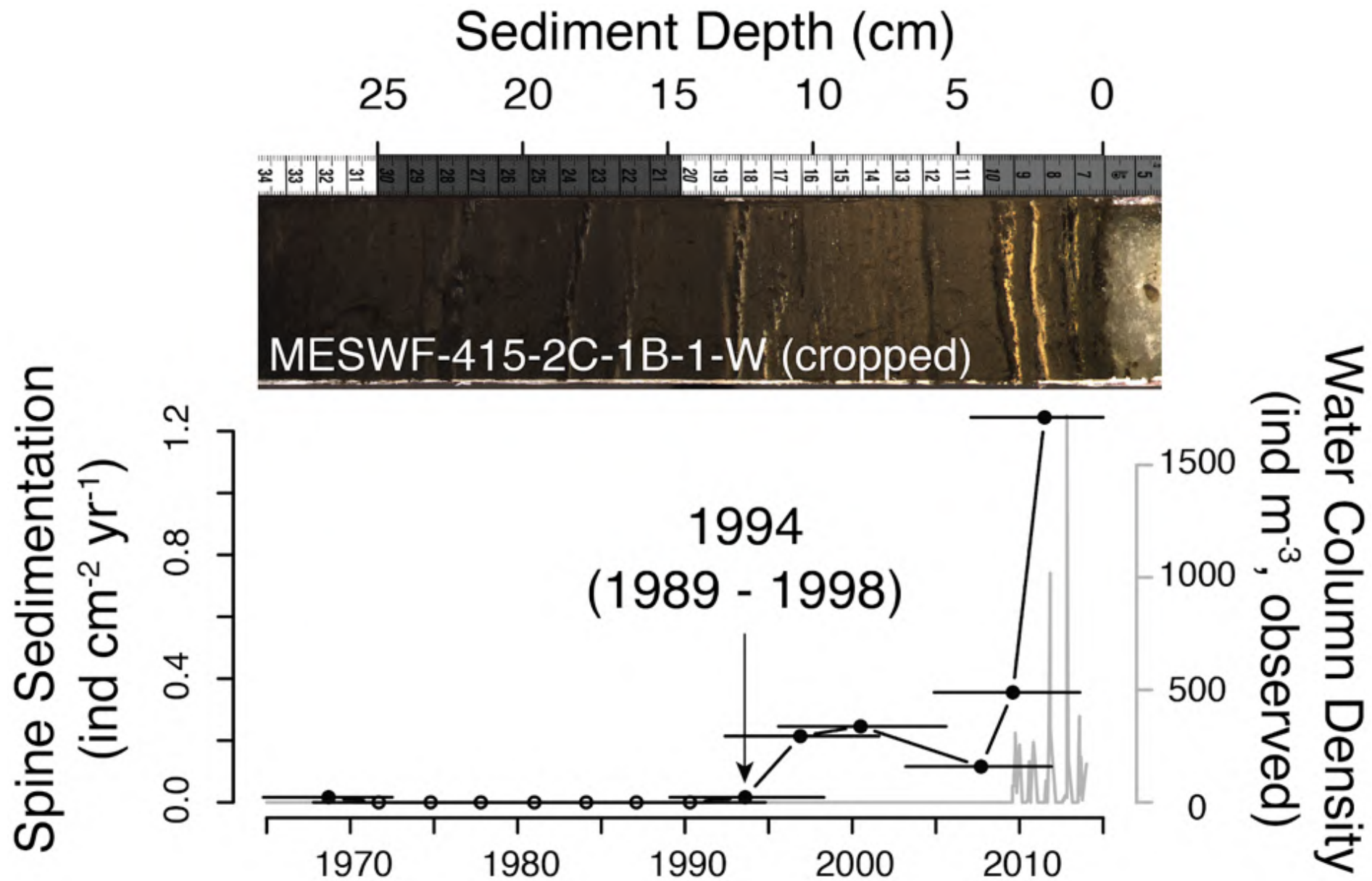
³ McGill University, Redpath Museum



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Invasive species “sleeper populations”

1. How important are they?
2. What do they mean for management?

THE
ECOLOGY OF
INVASIONS

BY ANIMALS
AND PLANTS



CHARLES S.
ELTON

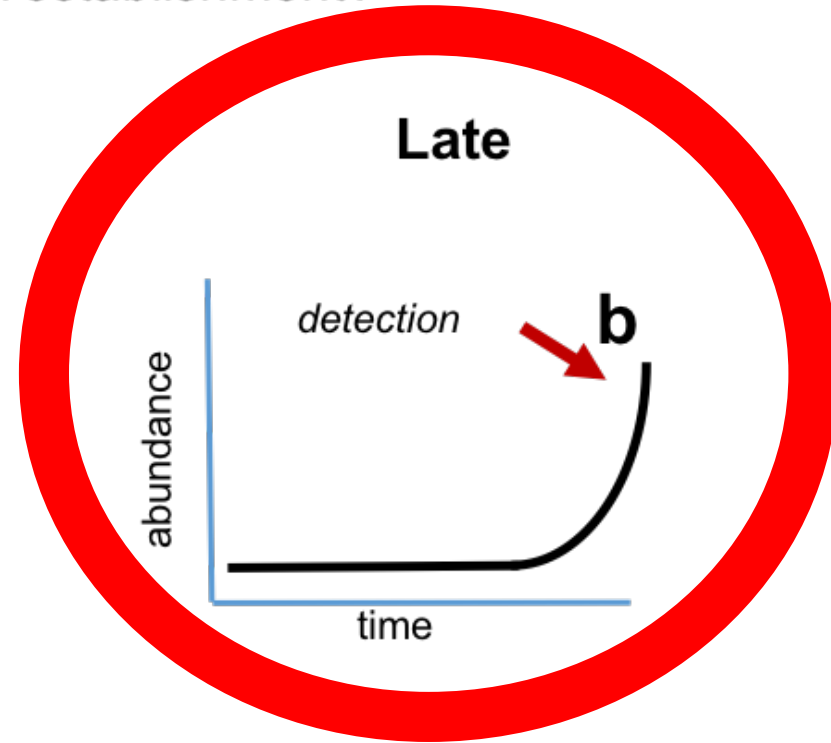
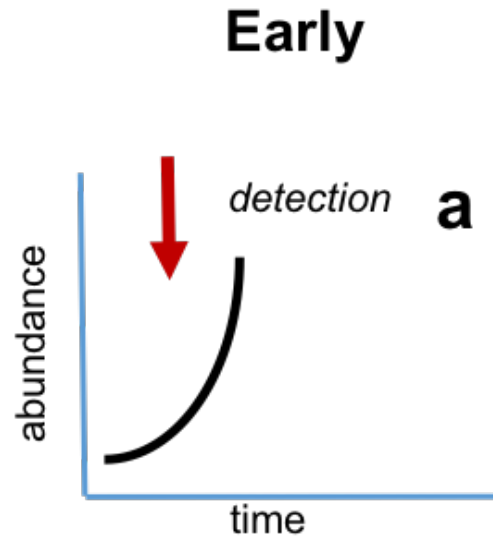
METHUEN

*“[Examples] point to two rather different kinds of outbreaks in populations: those that occur because a foreign species successfully invades..., and those that happen in native or **long-established populations.**” --*

Charles S. Elton, The Ecology of Invasions by Animals and Plants (1958)

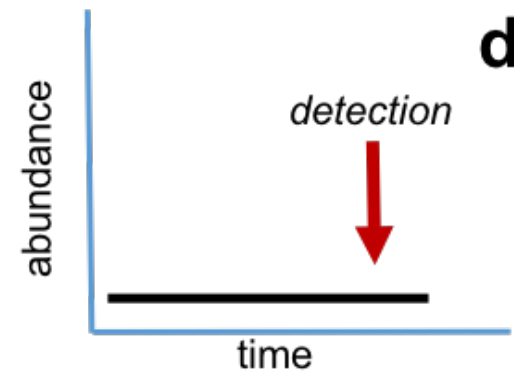
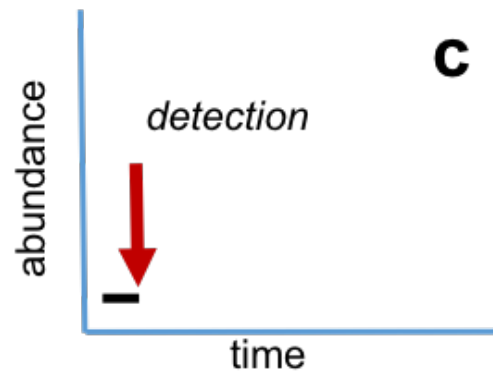
When is the invasive species detected relative to population establishment?

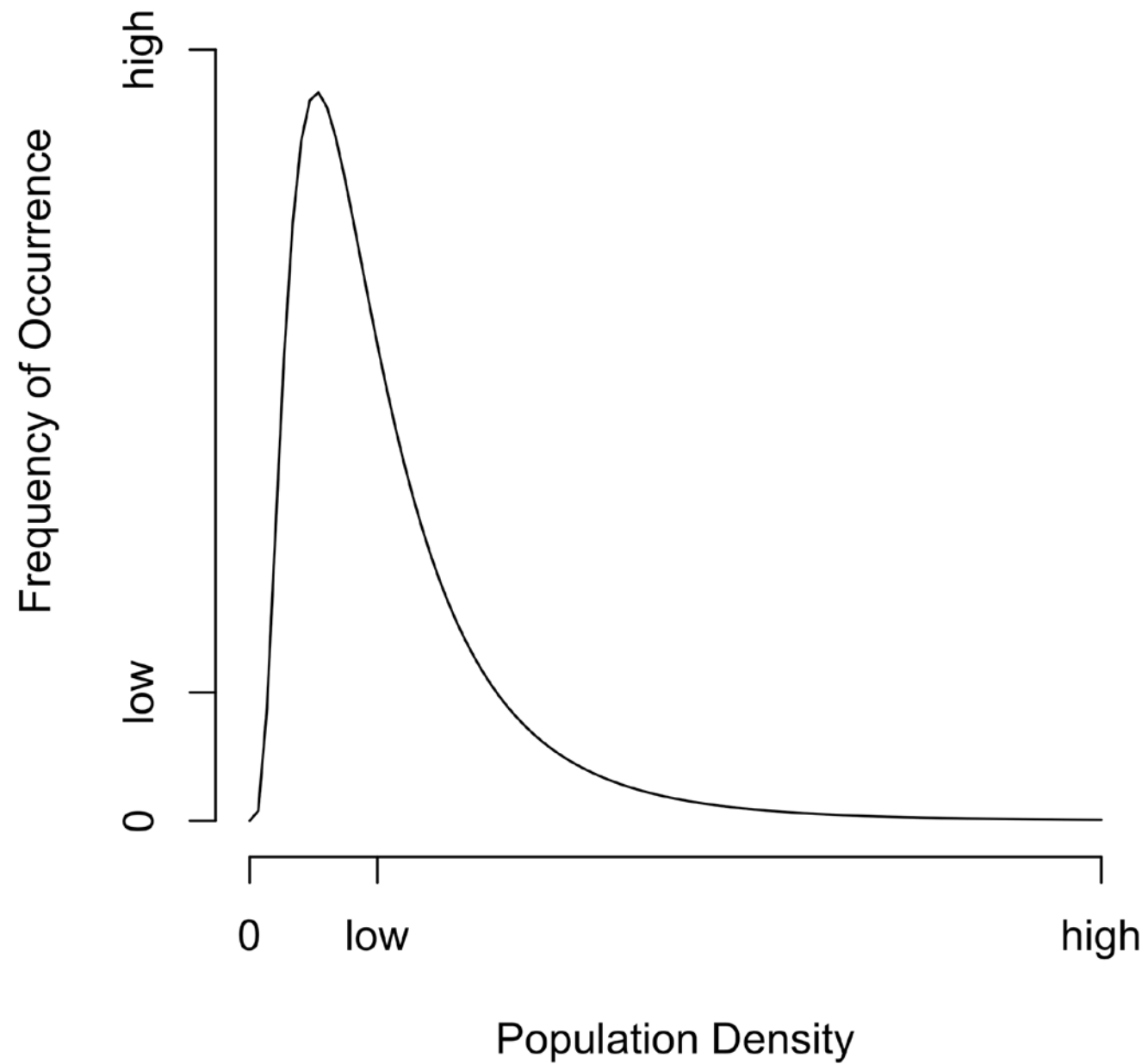
High density

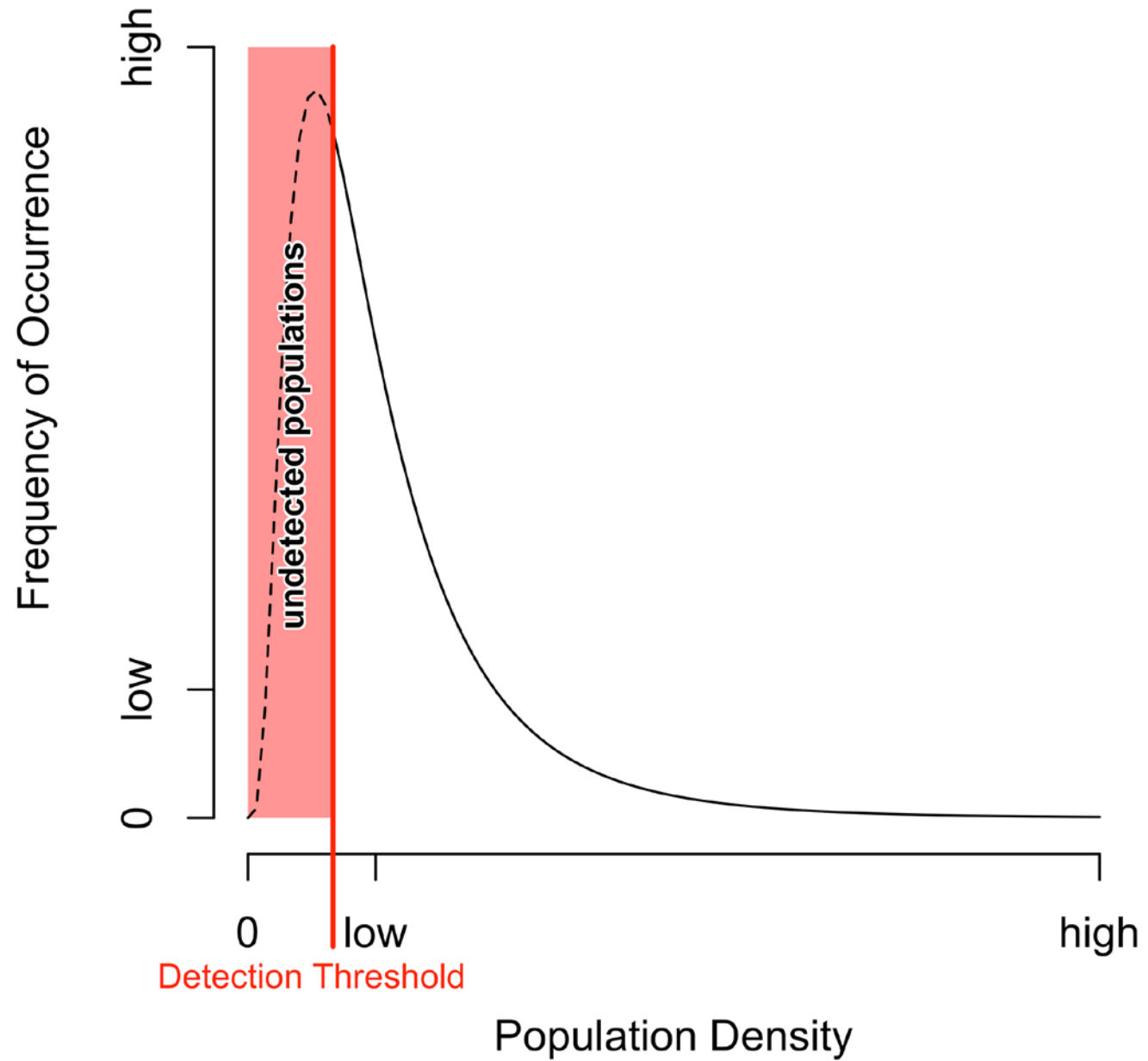


What is the population state when detected?

Low density

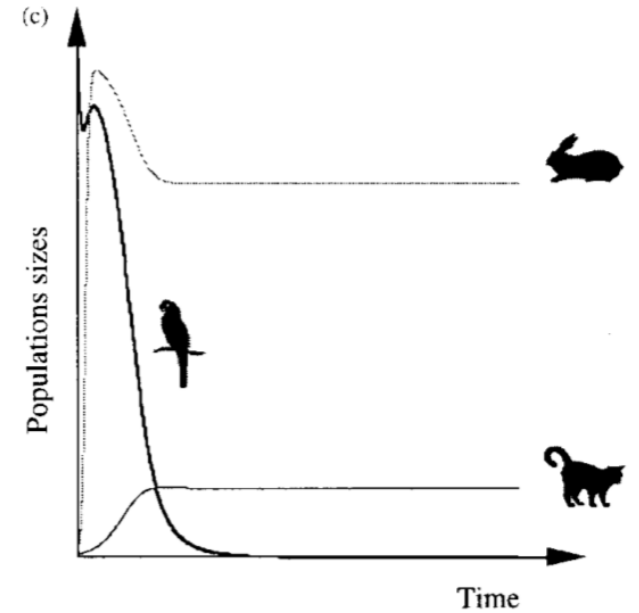
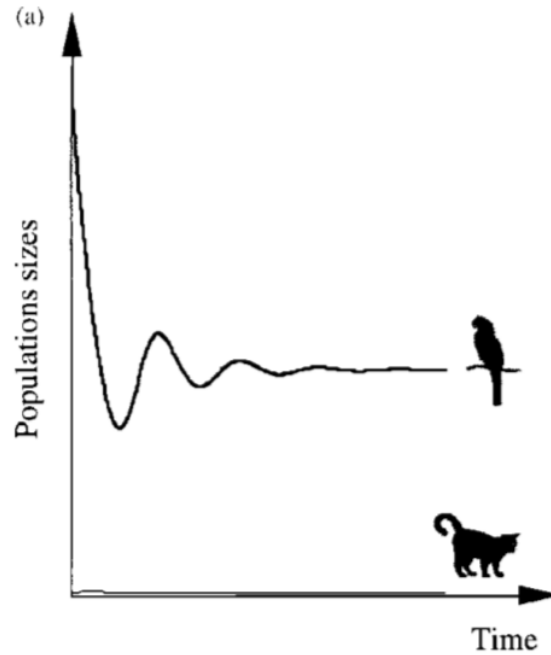






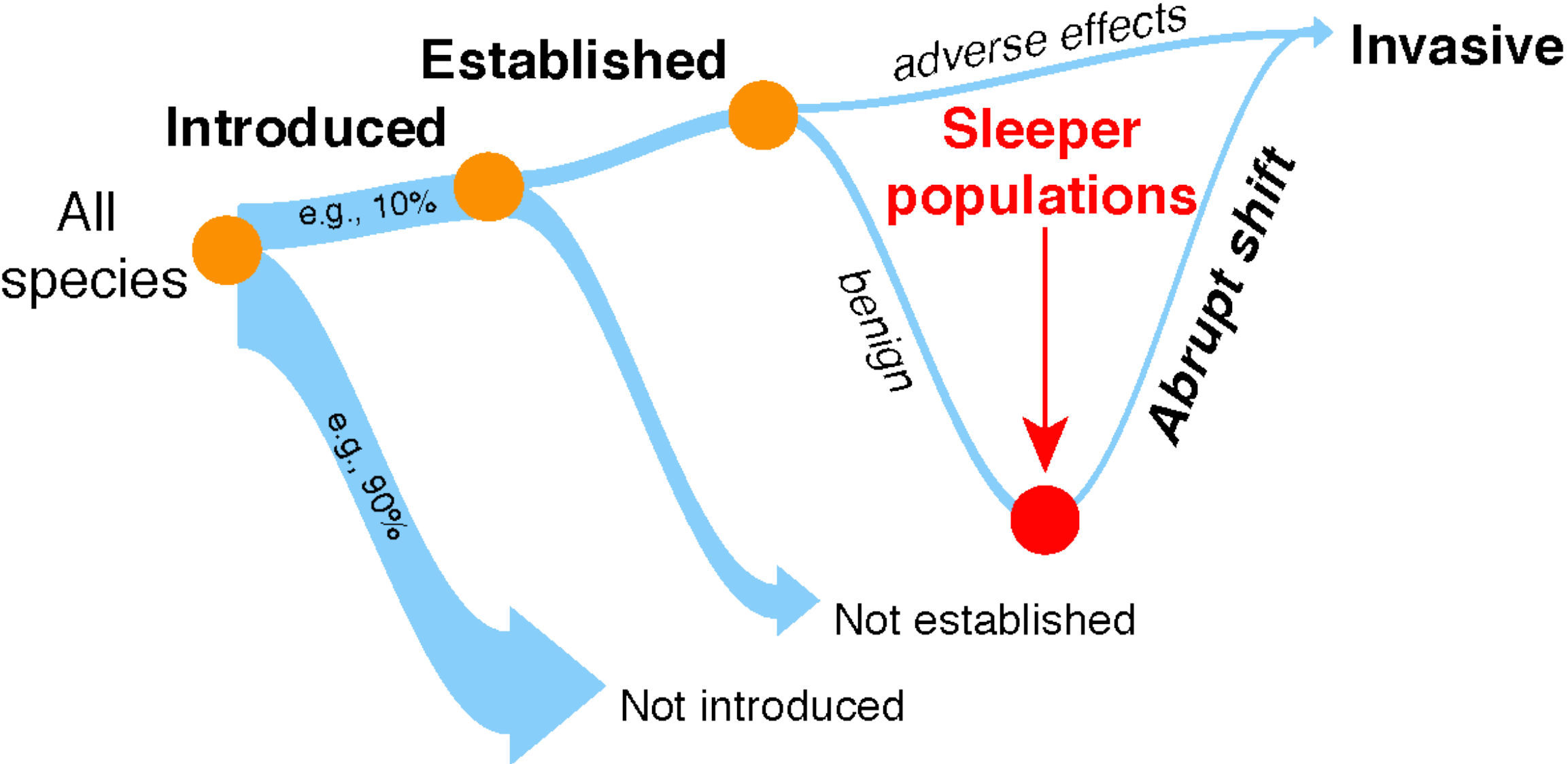
Abrupt Shift Triggers

- Food web changes
- Completion of a mutualism
- Gradual change
- Stochasticity



Courchamp et al. 2000

Sleeper Populations and the Tens Rule



Sleeper Populations and Invasion Debt

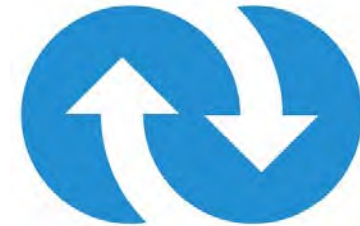
- More dynamic and overlooked compared to inherent “lags”
- Potentially large source of debt considering global change and rise in frequency & severity of disturbance
- Places added value on improving detection and prevention

Ways Forward

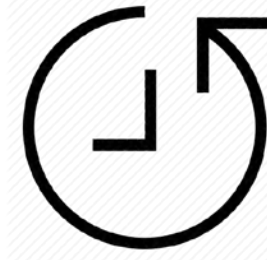
- Improve low-density detection.



- Dynamize our risk assessments.



- Prioritize invasion post-mortems.





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