

## Harnessing enforcement leverage at the border to minimize biological risk from international live species trade

Dec 01, 2016

**Author:**

Michael R. Springborn, Amanda R. Lindsay. And Rebecca S. Epanchin-Niell

**Abstract**

Allocating inspection resources over a diverse set of imports to prevent entry of plant pests and pathogens presents a substantial policy design challenge. We model inspections of live plant imports and producer responses to inspections using a “state-dependent” monitoring and enforcement model. We capture exporter abatement response to a set of feasible inspection policies from the regulator. Conditional on this behavioral response, we solve the regulator’s problem of selecting the parameters for the state-dependent monitoring regime to minimize entry of infested shipments. We account for exporter heterogeneity, fixed penalties for noncompliance, imperfect abatement control and imperfect inspections at the border. Overall, we estimate that state-dependent targeting (based on historical interceptions) cuts the rate of infested shipments that are accepted by one-fifth, relative to uniformly allocated inspections.

**Read the full article in the [Journal of Economic Behavior & Organization](#). [1]**

<http://ae.oxfordjournals.org/content/62/4/218>

**Associated Project:**

[Globalization of the Live Plant Trade: Informing Efficient Strategies for Reducing Non-Native Pest Invasion Risk](#) [2]

**DOI for citing:**

<http://doi.org/10.1016/j.jebo.2016.03.011>

---

**Source URL:**

<https://www.sesync.org/harnessing-enforcement-leverage-at-the-border-to-minimize-biological-risk-from-international-live>

**Links**

[1] <http://www.sciencedirect.com/science/article/pii/S0167268116300245>

[2] <https://www.sesync.org/globalization-live-plant-trade>