Factsheet
Fungal Conservation Best Practices: Invasive Cultivated Mushrooms

the challenge

Fungi cultivated for food or medicine can escape into the wild. Once established, they may outcompete native fungi and alter decomposition and nutrient cycling.

why it matters

- Fungi drive decomposition, soil health, and forest regeneration.
- Cultivated mushrooms are a $50-billion global industry, and many species are transported internationally for food, medicine, and hobby growing.
- Once established, fungal invasions are nearly impossible to eliminate.

species of concern

- Golden Oyster Mushroom (*Pleurotus citrinopileatus*): spreading throughout eastern North America; reduces native fungal diversity in dead trees.
- Orange Pore Conk (*Favolaschia claudopus*) and Devil's Fingers (*Clathrus archeri*): Spreading globally through wood and horticultural trade.

Above: Golden Oyster Mushroom (*Pleurotus citrinopileatus*). Photo by Jim Couillard.
Below: Orange Pore Conk (*Favolaschia claudopus*). Photo by Georgia Steel.

preventive measures

- Avoid outdoor cultivation of non-native mushrooms, especially species that are new to your region.
- Kill the fungus from grow-kits before disposal by baking at >150 °C (300 °F) for at least 1 hour or pressure cooking.
- Ask vendors not to sell known invasive species and request disposal instructions on packaging.
- Encourage the use and development of spore-free or low-spore cultivars.

early detection, monitoring, and control actions

- Collect fruiting bodies into impermeable containers when encountered.
- Report unusual or non-native mushrooms on citizen science platforms (e.g., iNaturalist).
- Use DNA barcoding or other genetic tools, where available, when identification is uncertain or native lookalikes exist.
- Respond quickly to early reports as containment and eradication are most feasible in the first stages of invasion.

policy and regulation

- Support local, state, and federal rules that limit import or sale of high-risk fungi (for example, permit systems or restricted lists).
- Support including fungi in invasive-species policies, risk assessments, and pathway management plans.

research and collaboration needs

- Support research that models where cultivated fungi might spread under current and future climates.
- Encourage studies on traits that make cultivated fungi more invasive (e.g., rapid growth, high spore production, temperature tolerance).
- Build collaborative networks across universities, botanical gardens, mycological societies, and citizen scientists to track emerging fungal invasions.

take-home message

Cultivated mushrooms are a new and often preventable source of biological invasion. Combining prevention, regulation, monitoring, and public awareness can help protect native fungal diversity and maintain healthy, resilient ecosystems.

authors

Jessica L. Allen, Shirley Tucker Lichenologist, Santa Barbara Botanic Garden

Jeffery Stallman, Fungal Conservation Coordinator, Global Center for Species Survival

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