

ECOSYSTEM SERVICES AND VINEYARDS

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VINEYARDS AS PROVIDERS OF ECOSYSTEM SERVICES

Vineyards provide ecosystem services (Tompkins et al., 2012), which are the **benefits people** obtain from **nature** (MEA, 2005).

Three categories:



pic: Kimberly Nicholas

provisioning services, e.g., provision of grapes



pic: Joshua Viers

regulating services, e.g., pest control

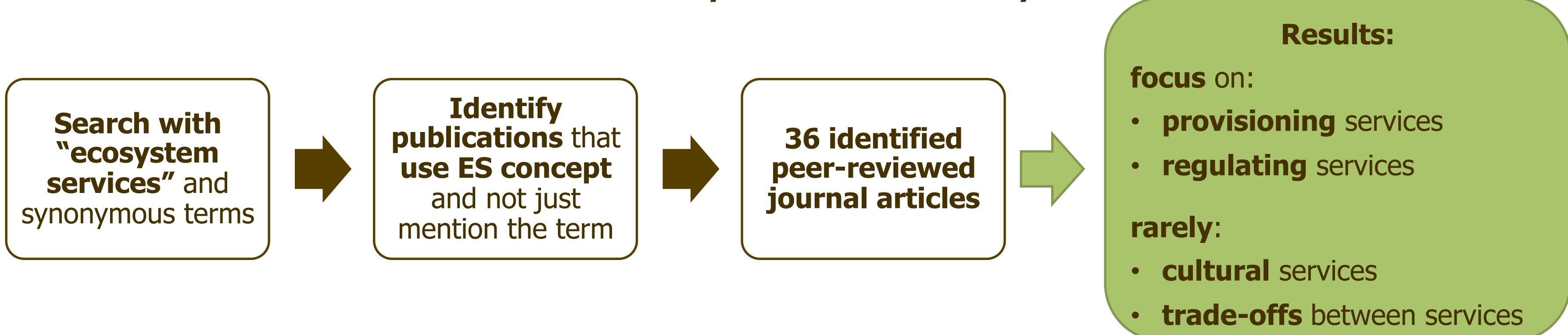


pic: Kimberly Nicholas

cultural services, e.g., aesthetics

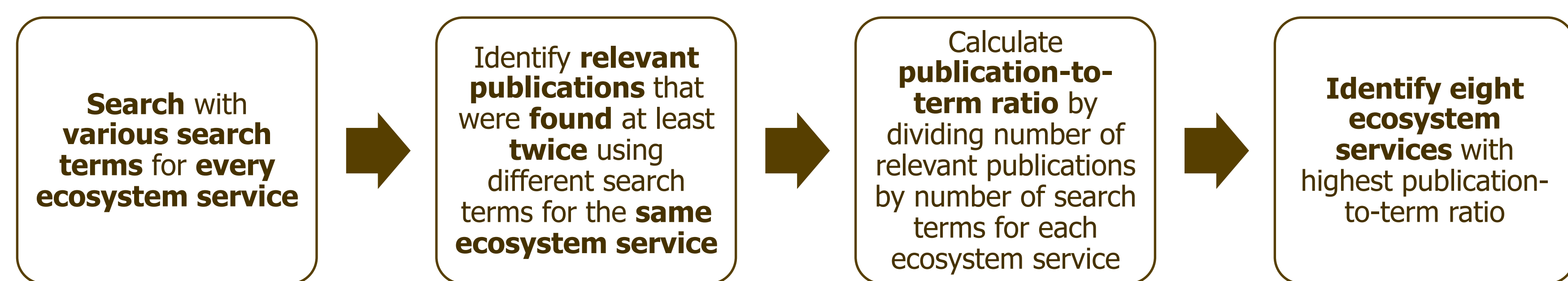
WHAT ECOSYSTEM SERVICES ARE PROVIDED BY VINEYARDS?

We conducted a **literature review**, using Scopus (database for peer-reviewed literature) to identify **scientific journal articles** on **ecosystem services in vineyards**.

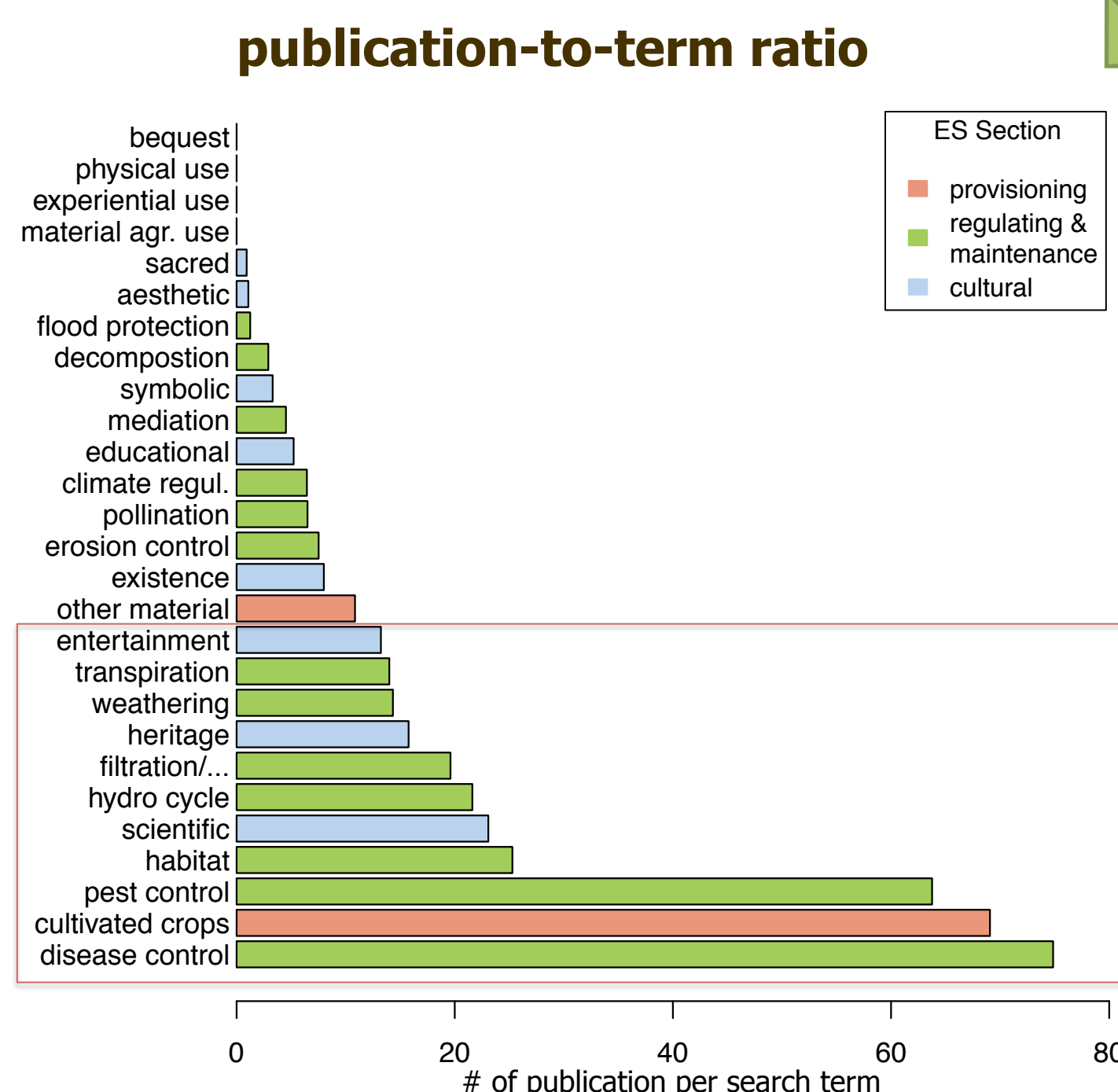


HOW CAN ECOSYSTEM SERVICES KNOWLEDGE CONTRIBUTE TO MORE SUSTAINABLE VINEYARD ECOSYSTEMS?

We conducted a **literature review**, quantitatively analyzing over 5,800 **scientific publications** on single **ecosystem services in vineyards**. We investigated **eight ecosystem services in detail** and tried to identify how they are **linked**.

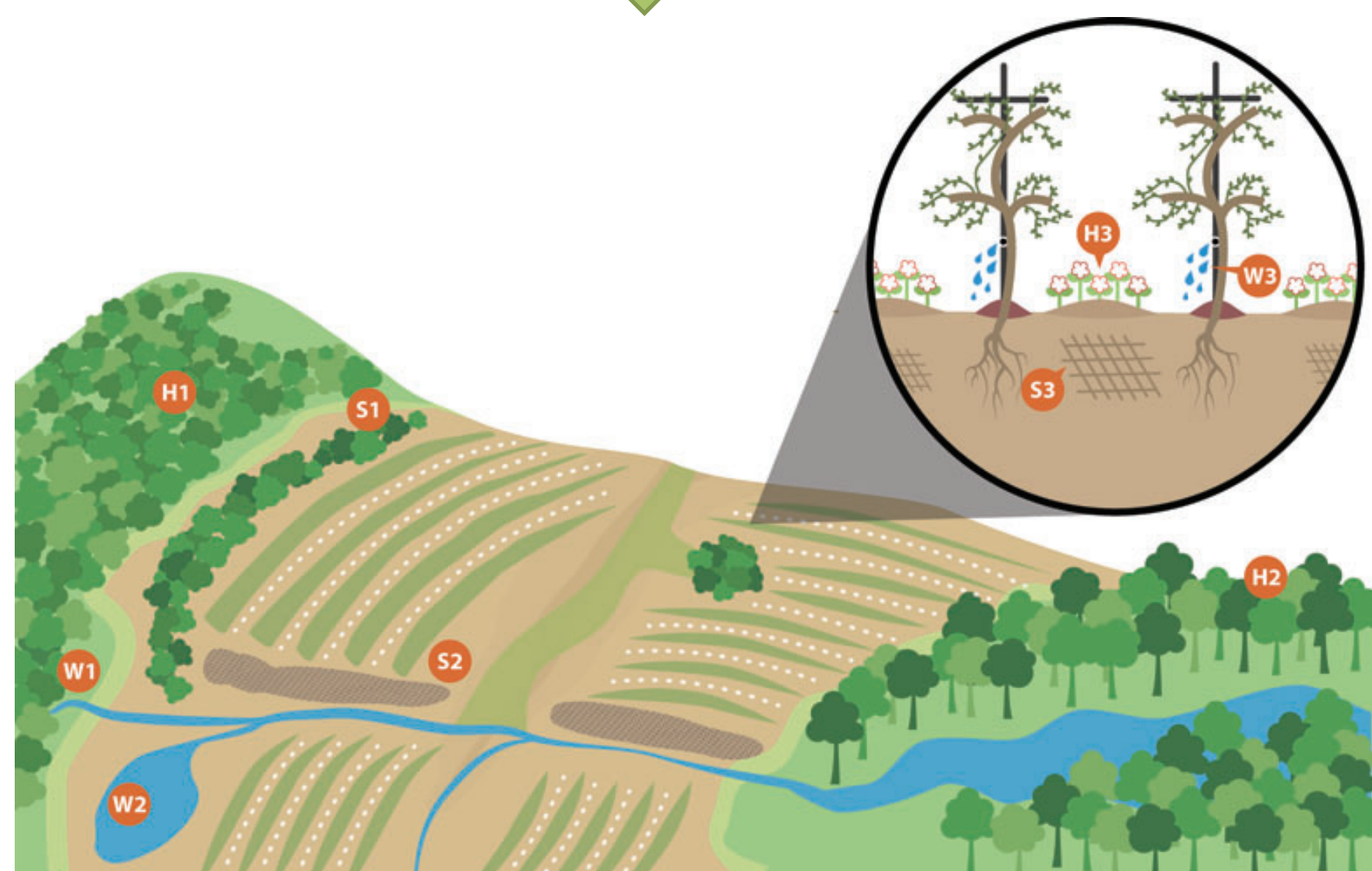


- Most frequently studied ecosystem services**
- disease & pest control
 - crop production
 - habitat maintenance
 - hydrological cycle
 - filtration/ sequestration/ ...
 - soil formation
 - recreation & tourism
 - heritage, sense of place



EFFECTS OF MANAGEMENT ON ECOSYSTEM SERVICES

Conventional management (1)
Focus on **maximizing grape production**



Viers et al., 2013, Conserv. Lett.

Exemplary **practice recommendations**

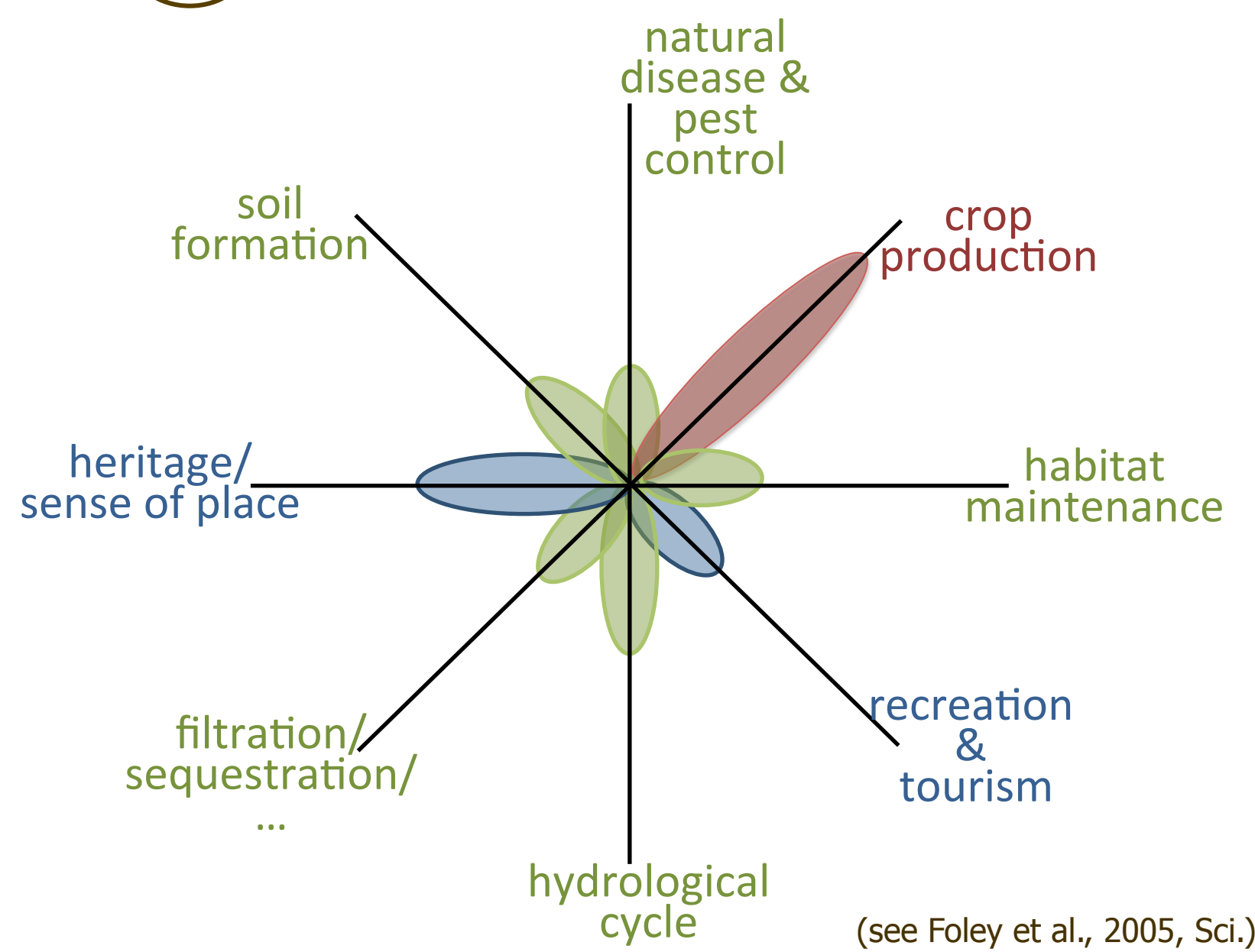
- **Cover cropping (H3)**
 - **Flowering strips (S2)**
 - **Restoration of wetlands (W1)**
- improved pest control and soil formation
- improved hydrological cycle

"Optimized" Management (2)

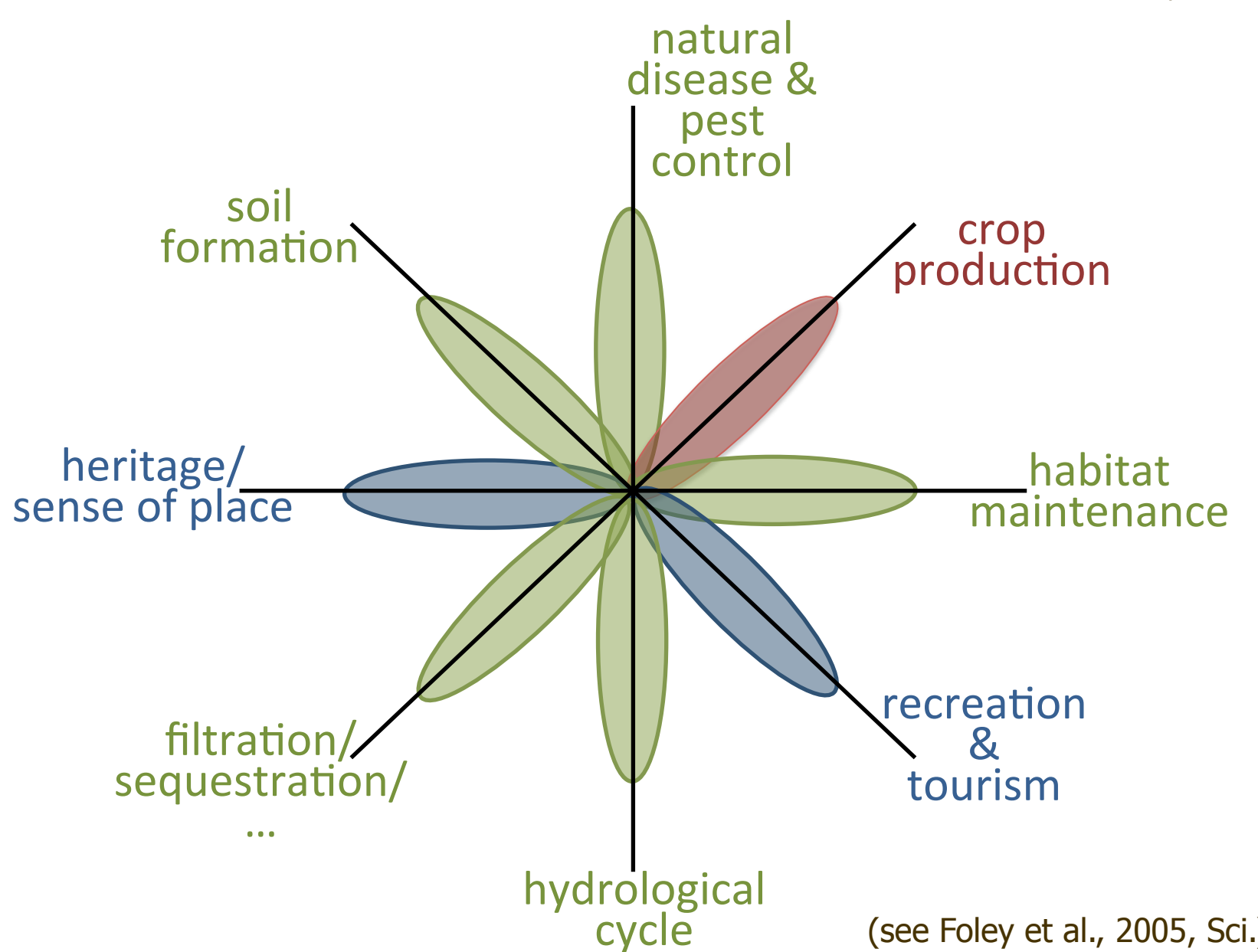
Ecosystem services allow holistic view of vineyard and sustainability

Optimizing ecosystem services delivery improves long-term outcomes for vineyards

1 CONVENTIONAL MANAGEMENT



2 "OPTIMIZED" MANAGEMENT (e.g., Viers et al., 2013, Orre-Gordon, 2013)



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