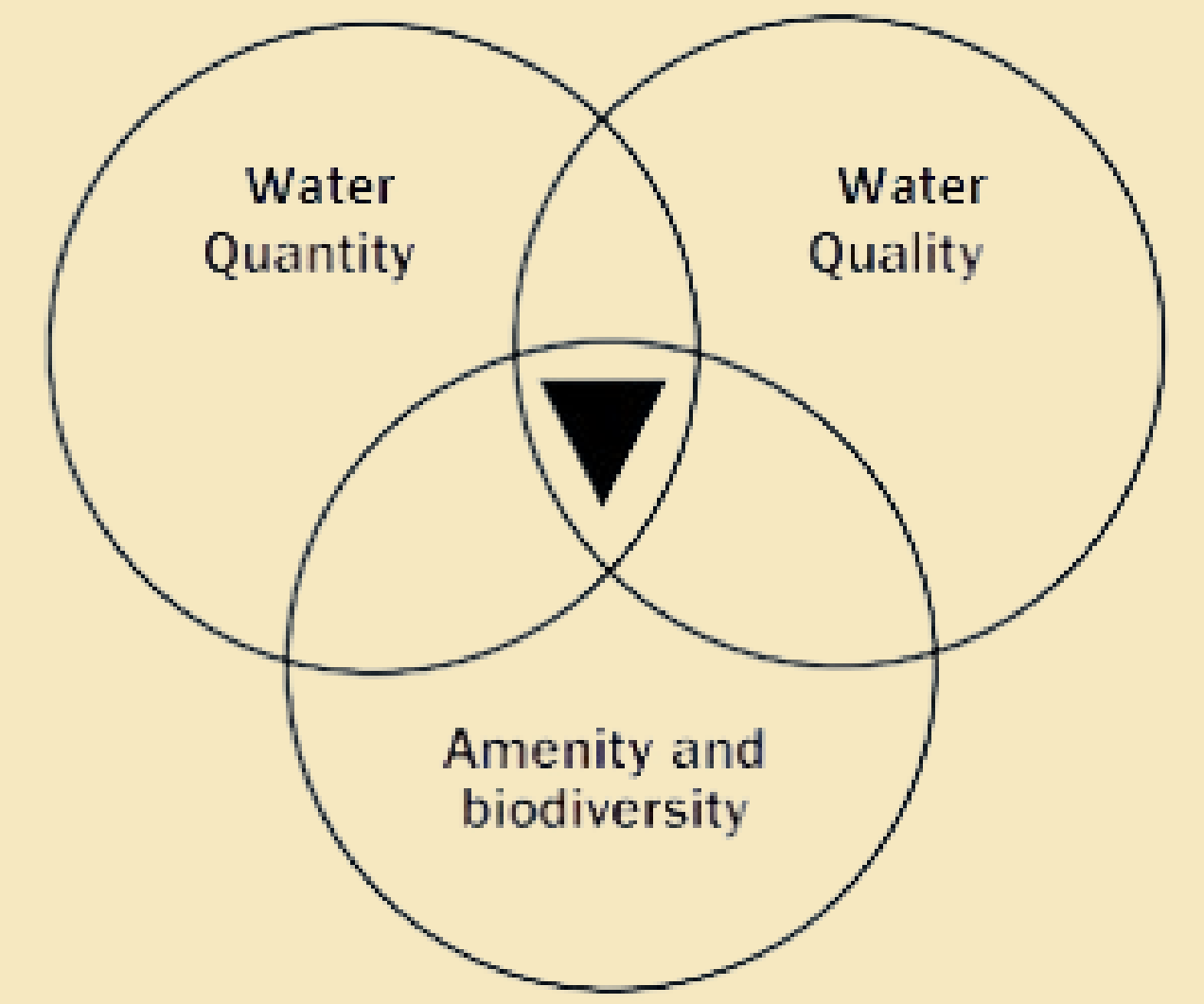


Pollination ecosystem service support by sustainable urban drainage systems (SUDS)

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- Changes in land use and climate-induced shifts in phenology are the main drivers of pollinator declines globally¹.
- Besides being important pollinators, hoverflies (Syrphidae) provide additional ecosystem services: pest control, recycling of organic matter, long distance pollen transfer². Hoverflies with aquatic larval stages (e.g. *Eristalis tenax*) are pollution and urbanisation tolerant³.
- but little research on biodiversity benefits⁴. Sustainable Urban Drainage Systems (SUDS) are engineering solutions which mimic natural drainage systems, improve climate resilience and accumulate pollutants,
 - ➔ growing resource for urban biodiversity?⁵
 - ➔ habitat support for hoverflies?



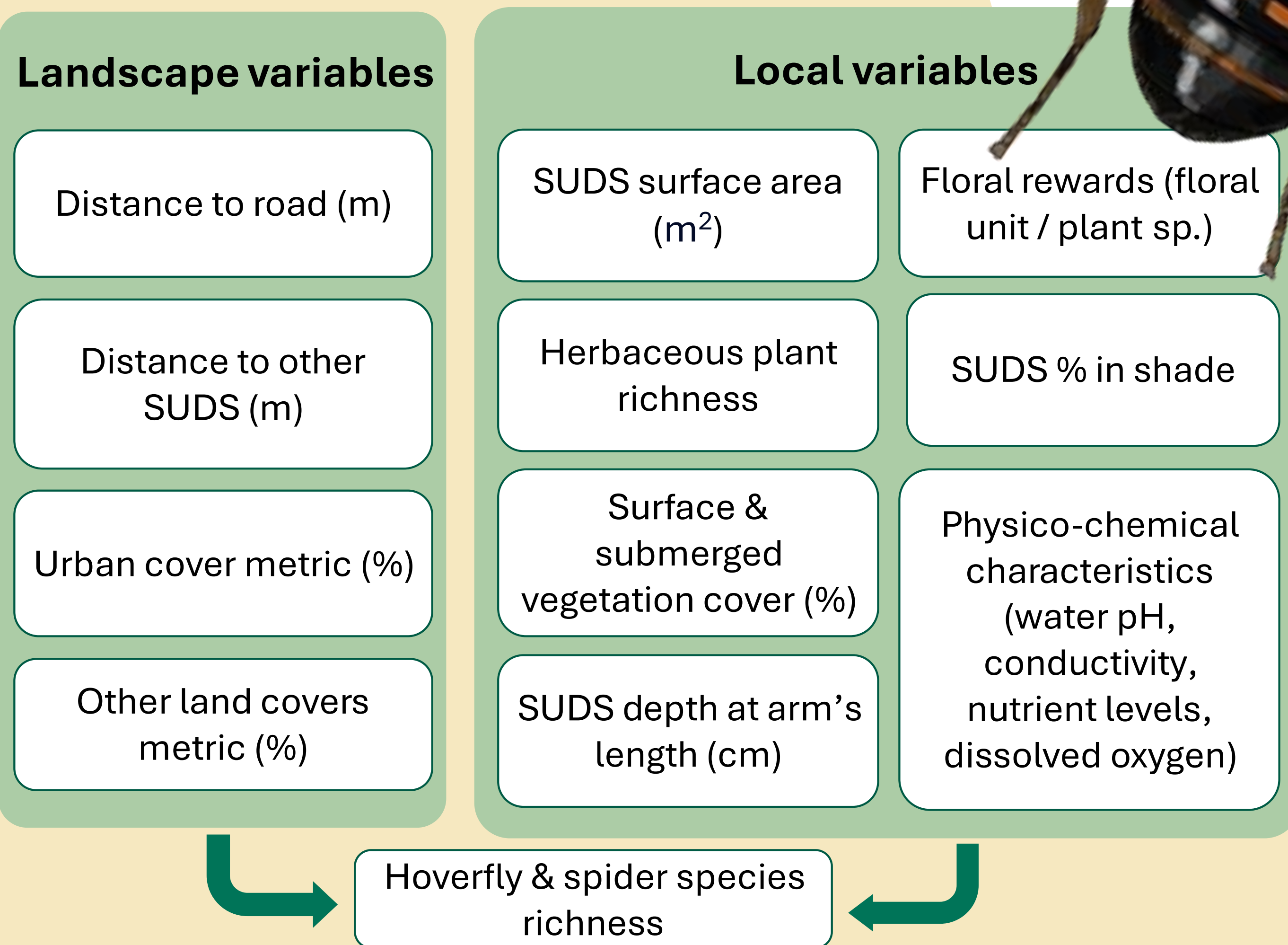
1 Question 1:

What **SUDS features**, including physico-chemical characteristics and surrounding vegetation, drive variation in hoverfly assemblages?

Invertebrate sampling:

- pan traps and walking transects
- freshwater sampling of aquatic larvae

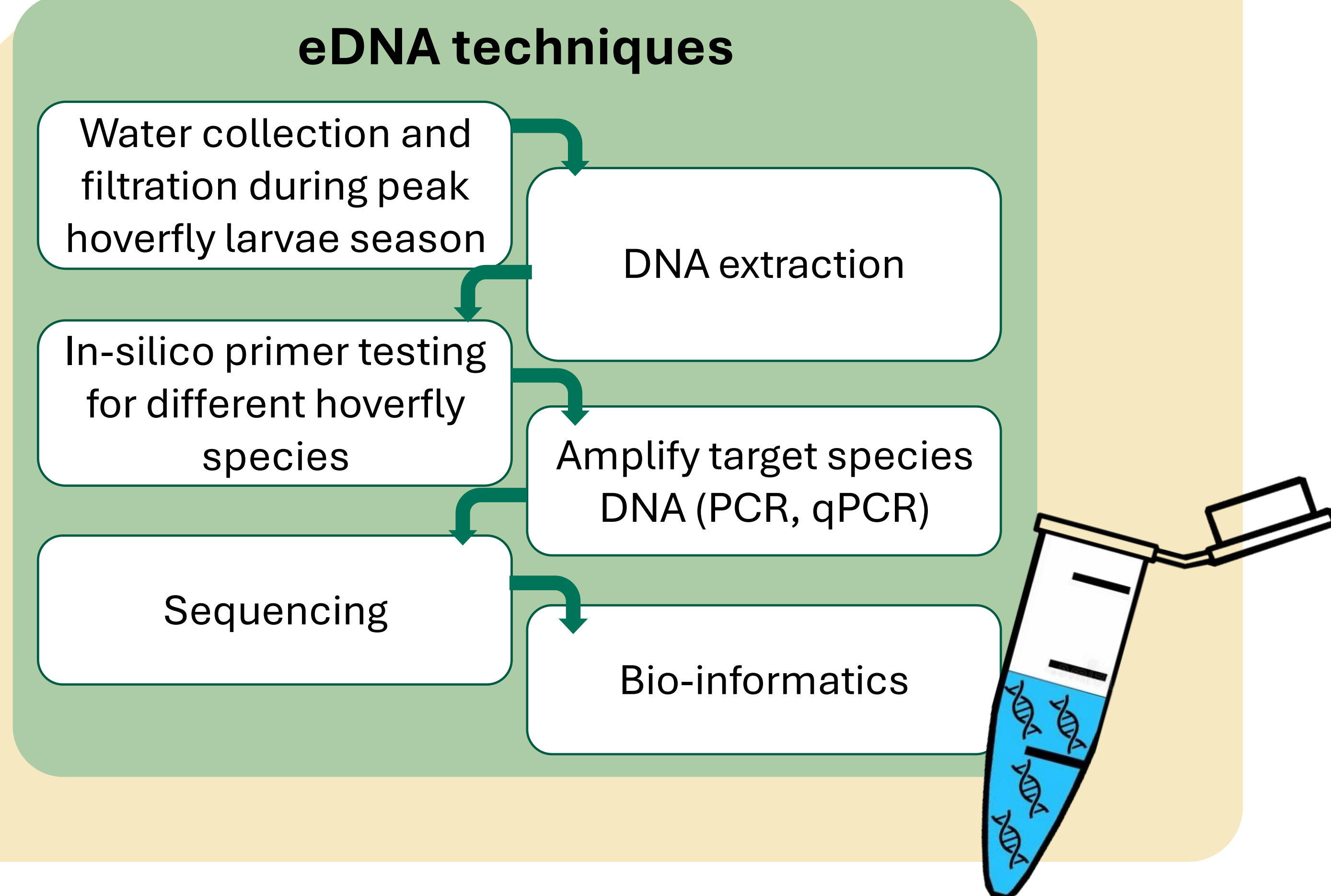
Environmental variables:



2 Question 2:

What is the relative efficacy of eDNA techniques for accurate assessments of hoverfly pollinator diversity in artificial egg laying sites (**hoverfly lagoons**) and SUDS compared to traditional methods?

- **Deploy artificial egg laying sites (hoverfly lagoons)** to evaluate recruitment rates of hoverflies with aquatic larval stage to a site
- Sample larvae and allow them to pupate in the lab before identifying adults



Pollinator Strategy for Scotland

Work with NatureScot to inform their policy for Green Infrastructure Strategic Intervention projects.

Urban conservation

Provide urban developers with targeted conservation measures for pollinators in urban greenspaces.

Connectivity corridors

Evaluate SUDS connectivity and incorporate them into habitat corridors for pollinators, similar to the Buglife B-lines scheme.

Further research

eDNA innovation for pollination research is crucial for urban biodiversity and ultimately for creating more resilient and sustainable cities.

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