Vegetative and wetlands to filter pollutants in runoff

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Attenuation

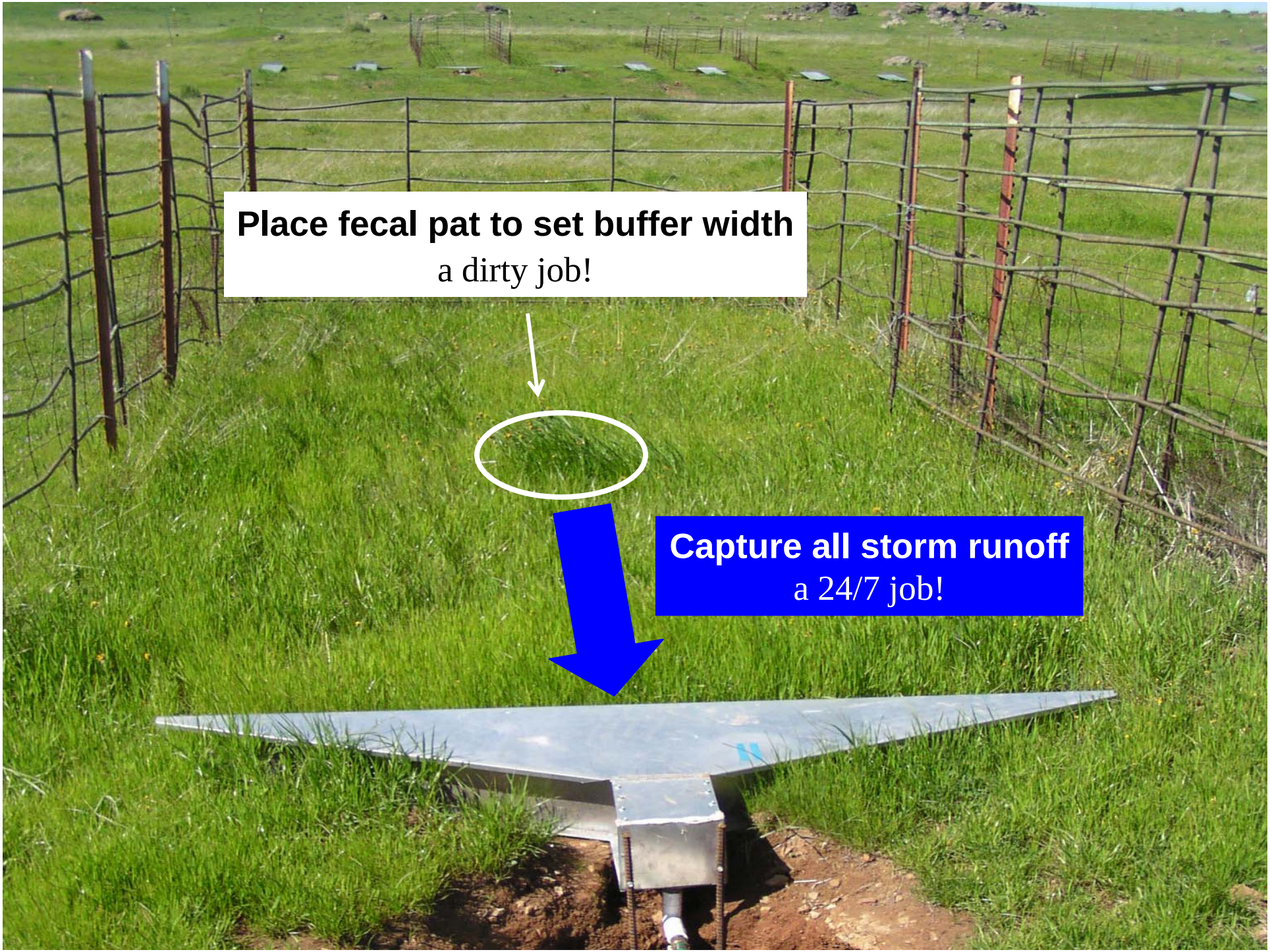
- **The filtering capacity of buffer strips and wetlands for pollutants.**

annual rangeland

wetlands

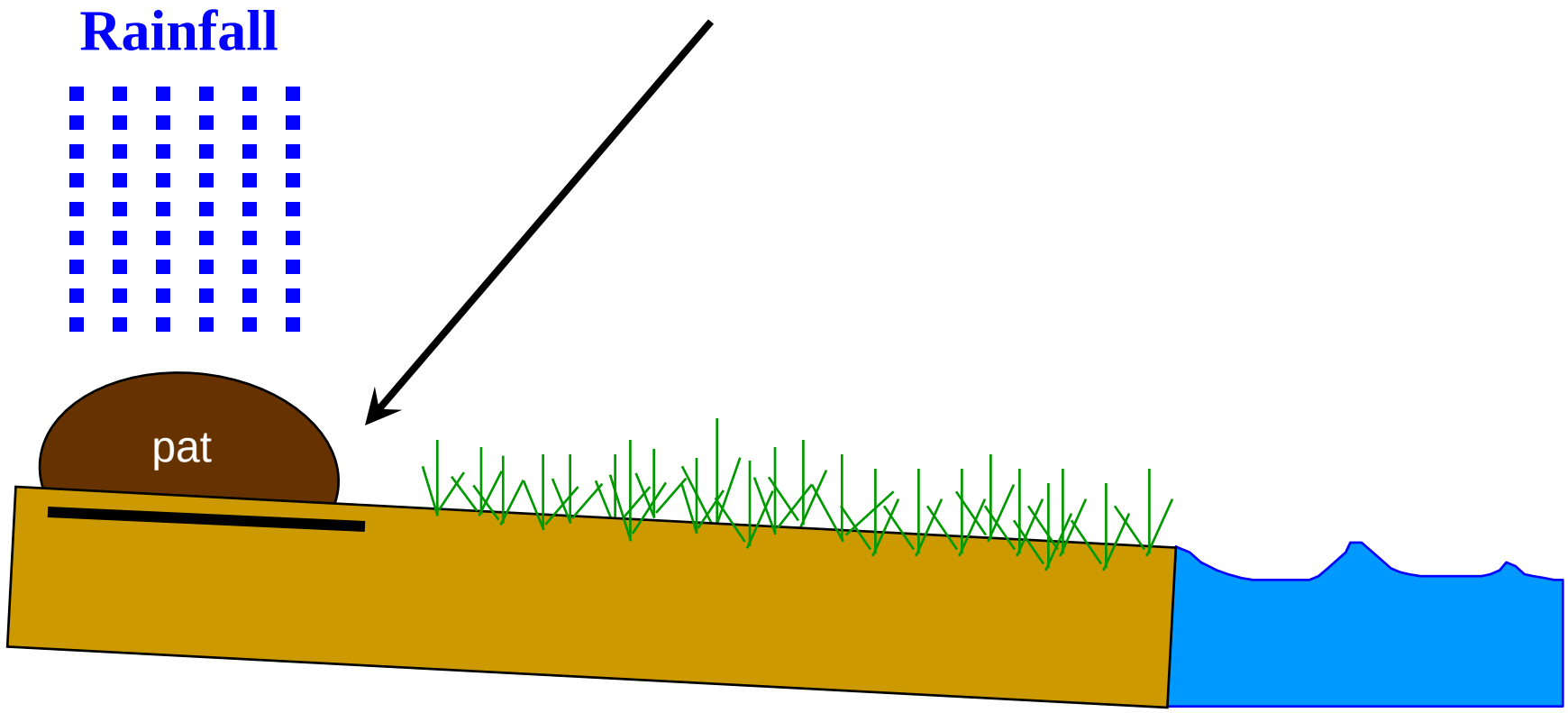
Annual Rangelands

- *E. coli, C. Parvum, Salmonella, Giardia*
- Natural rainfall, runoff, slope, veg. conditions.
- 48 plots.
- 3 land slopes.
- 4 vegetative cover levels.
- 0.1, 1.1, 2.1 m buffer width.
- 40+ storm events.


Place fecal pat to set buffer width
a dirty job!
Capture all storm runoff
a 24/7 job!

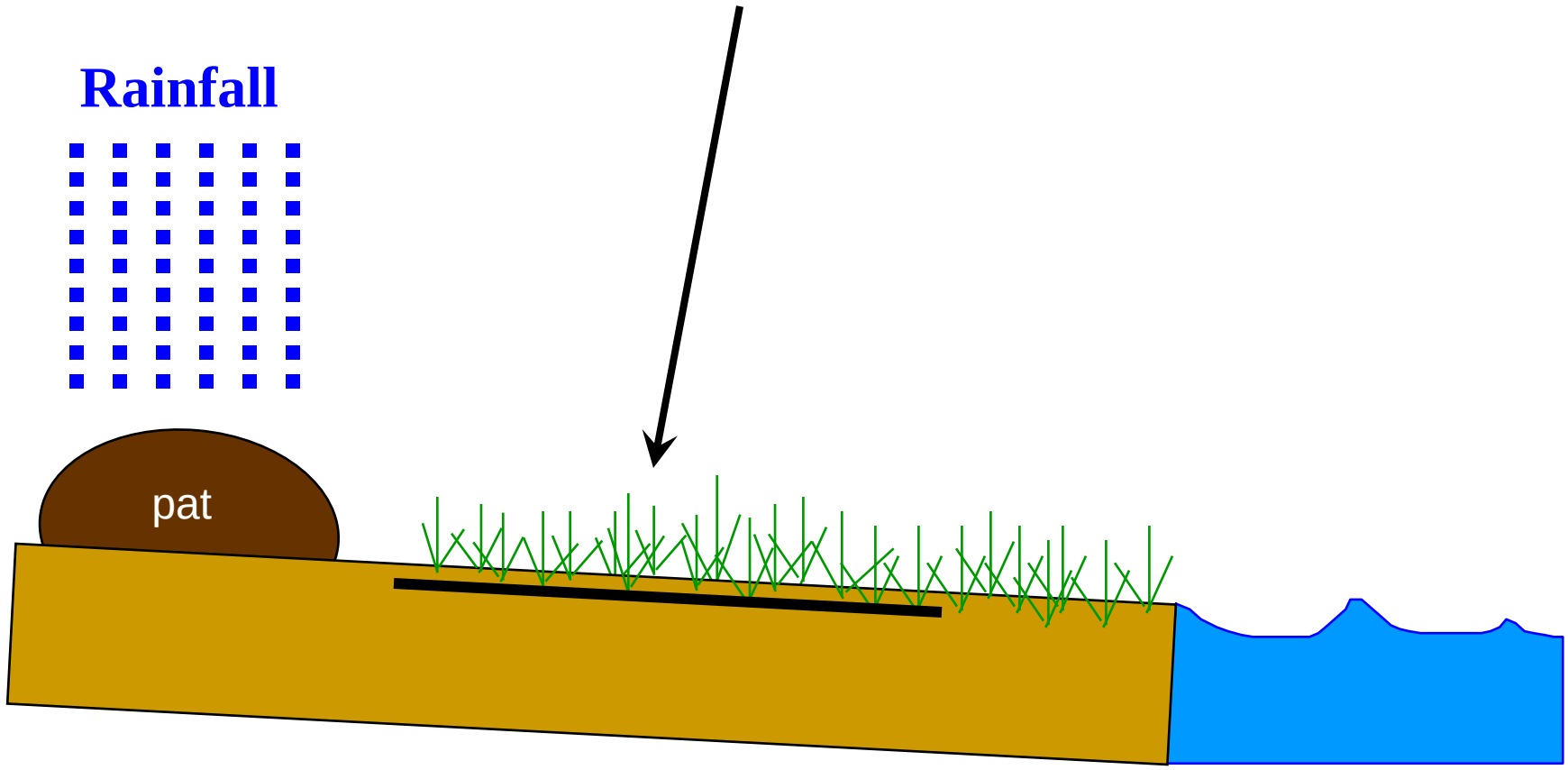
Results

>90% of *E. coli*, *C. parvum, Giardia, Salmonella* load retained in the fecal pat or trapped within 1 ft



Results

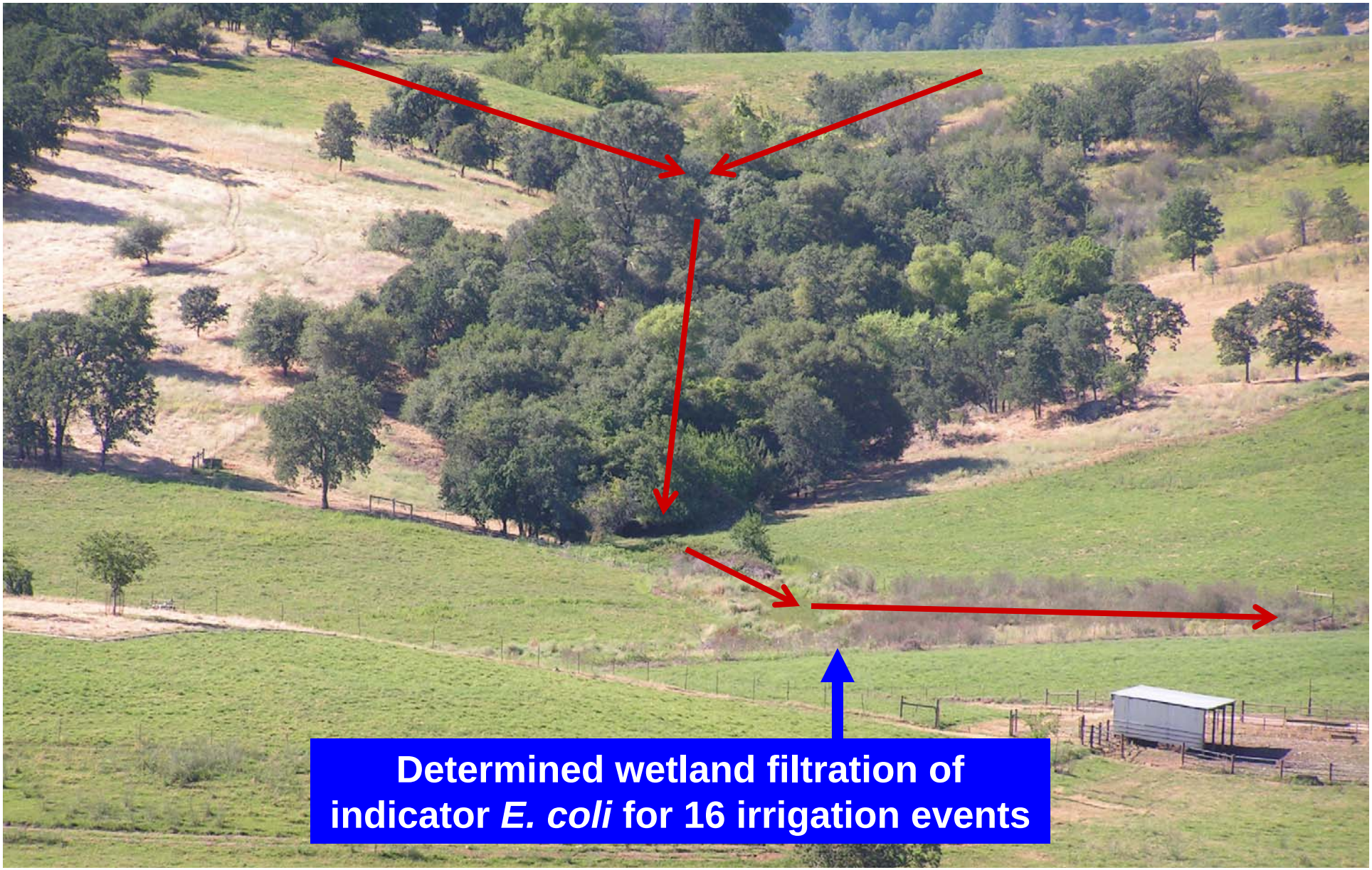
An additional 30% to 99.9% trapped within 1 yard of pat



Wetlands to filter pasture runoff?

Filter multiple fields at once, additional ecological benefits

Case Study – Irrigated Foothill Pasture

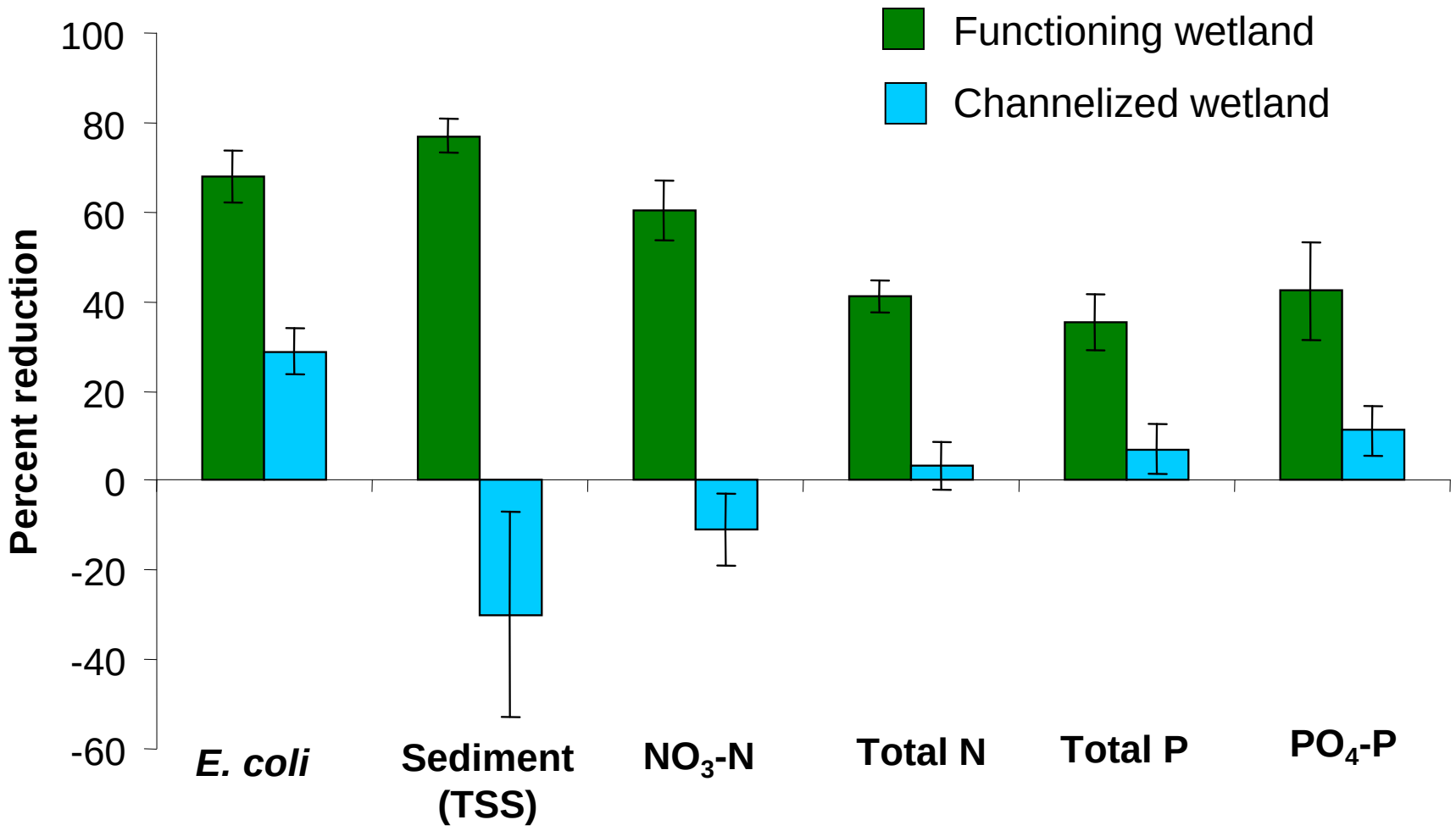


Two wetlands enrolled in the study

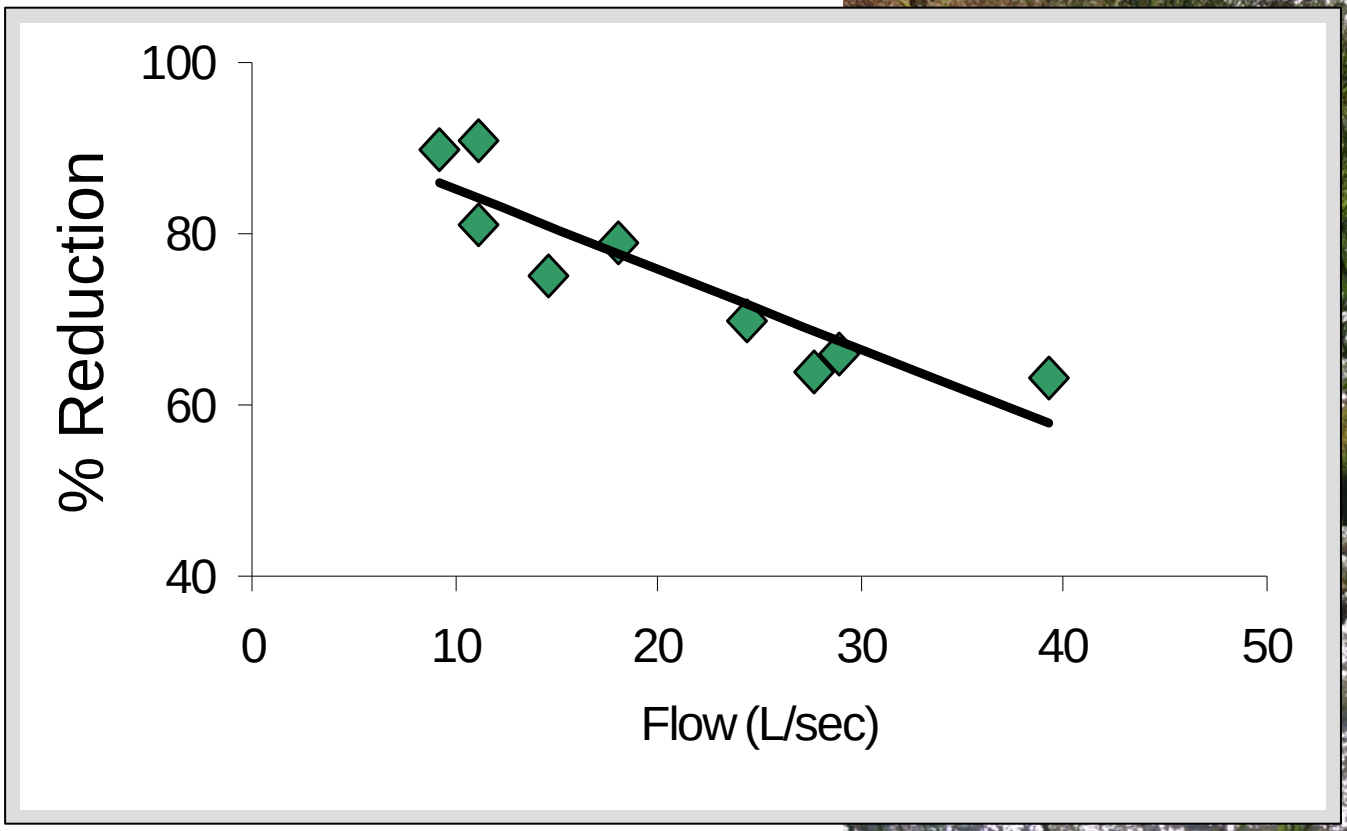
Functioning Wetland

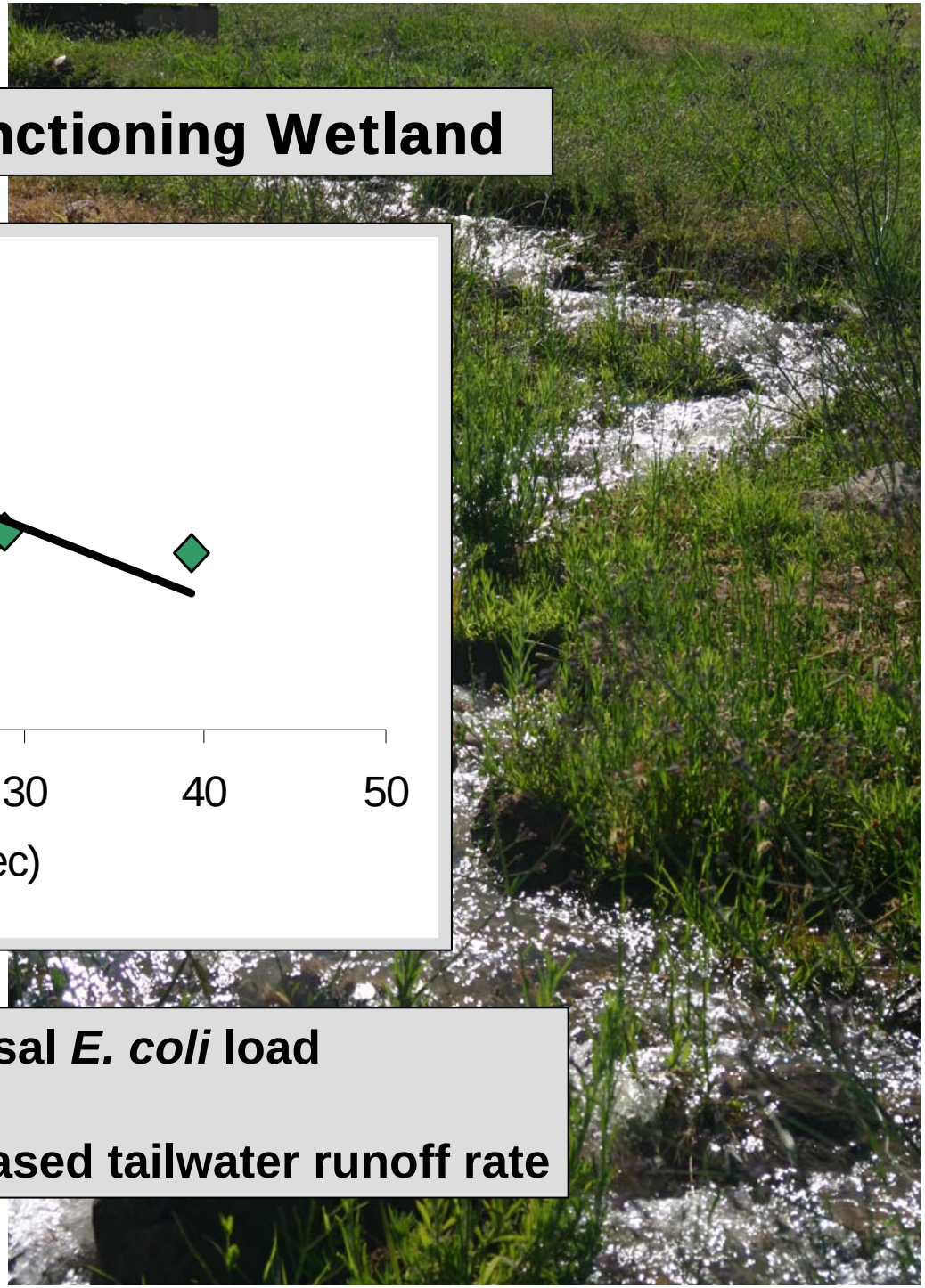
Channelized Wetland

Reduction of Pollutants due to Wetland



E. coli Reduction by a Functioning Wetland





60 to 90% reduction in commensal *E. coli* load

Efficiency decreased with increased tailwater runoff rate

Buffers Work

- Buffers and wetlands can remove microbial and nutrient pollution in runoff from pasture and range.
- Failure at high runoff.
- Integrate with irrigation and/or grazing management.