



Biodiversity benefits from diverse legume mixtures

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Using legumes: a (very) potted history

- Romans
- Norfolk Rotation
- 1940s– CAP
- Green Revolution
- Organic Movement
- 1962 Silent Spring
- 1974 IFOAM



Role of Legume Leys





Pollinators

- Pollinate 80% of farmed crops
- Threatened by habitat loss, climate change, agricultural intensification



Bees love legumes!



The Joy of Legumes



Project objectives

- To assess the additional benefits of planting the LegumeLINK mixture, concentrating on ecosystem services and biodiversity.

Pollination-

In decline

Low in agricultural landscape

Management

Decomposition-

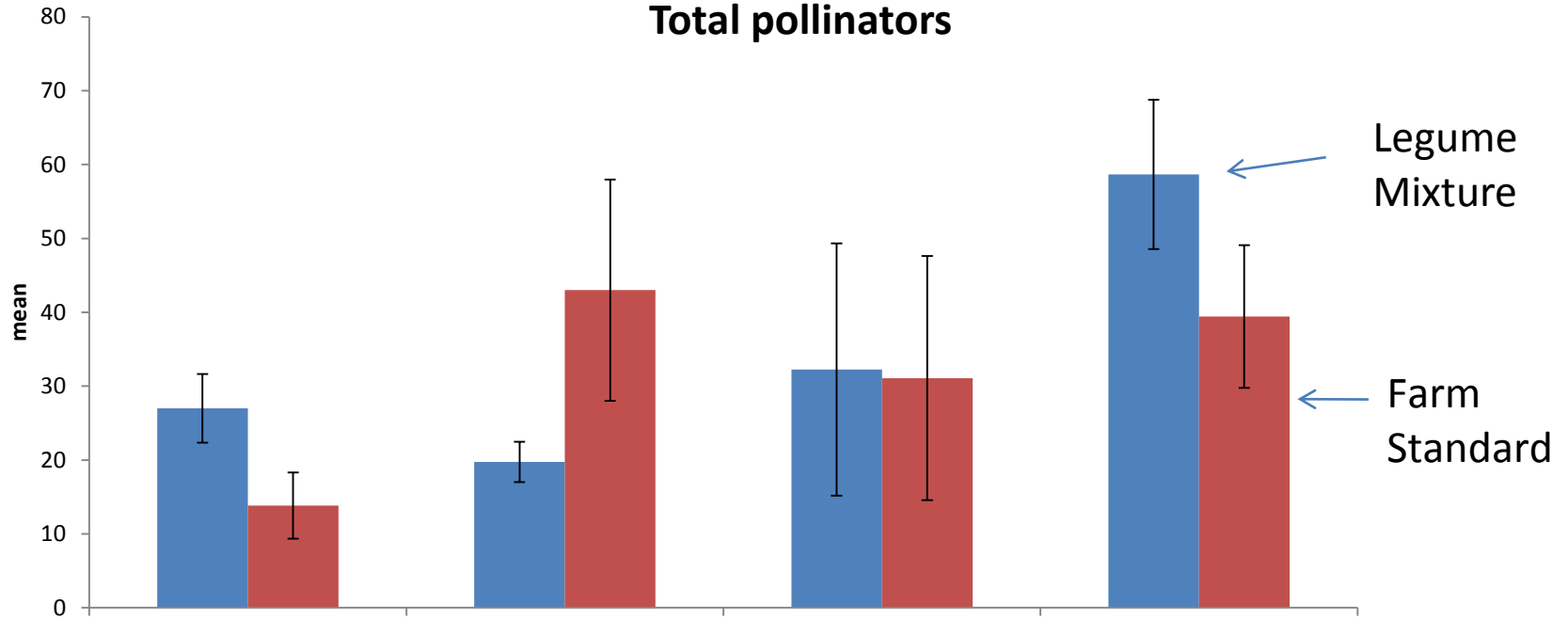
Low in agricultural systems

Pollinator preference

POLLINATOR GROUP	Early	Mid	Late
Bumblebee	CC, BM	S, AC, WC, RC	RC, WC
Solitary bee	BM	S, AC	-
Butterfly	CC	BM, L	L
Hoverfly	BM	-	L, RC

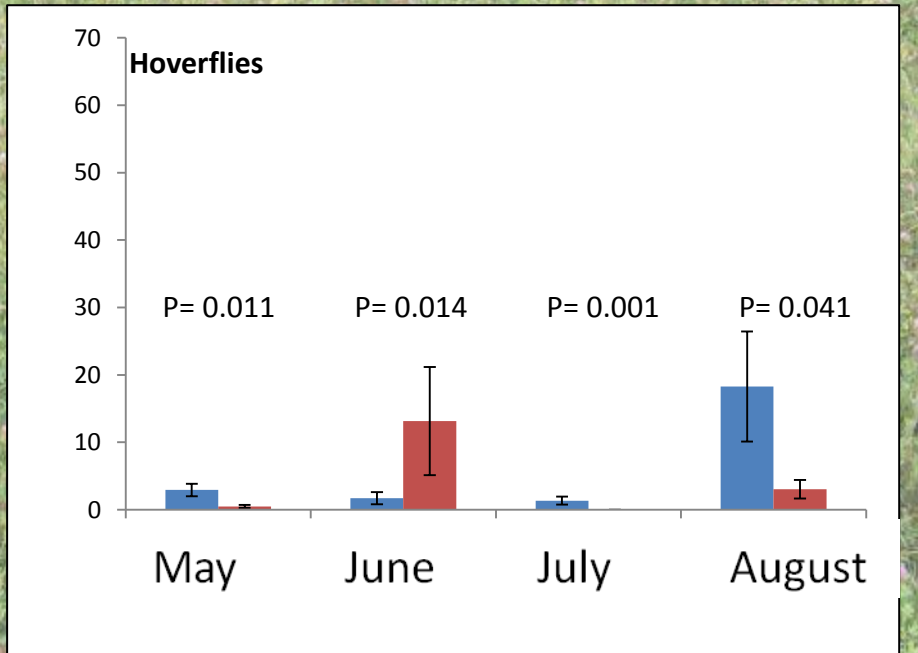
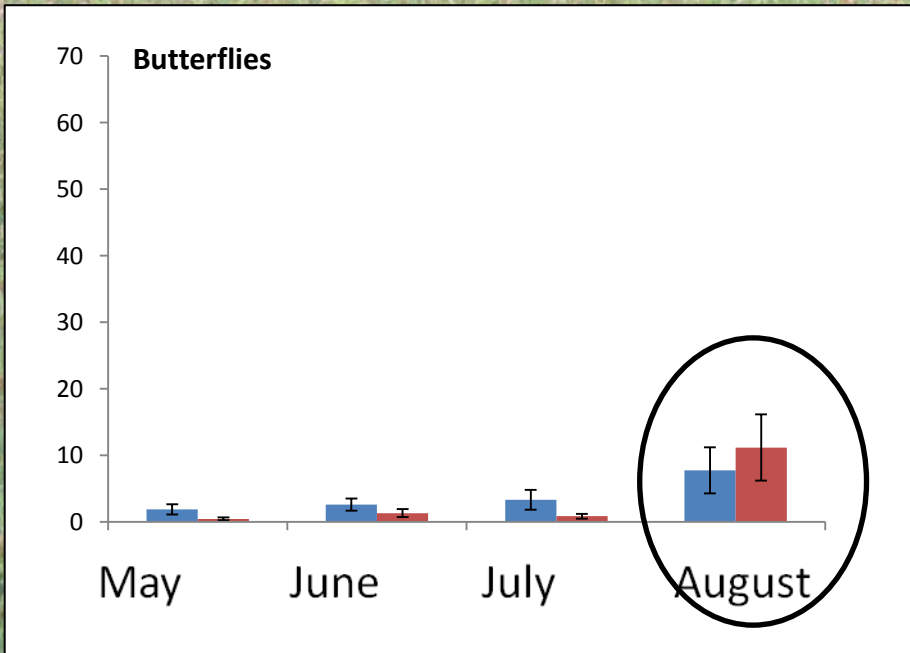
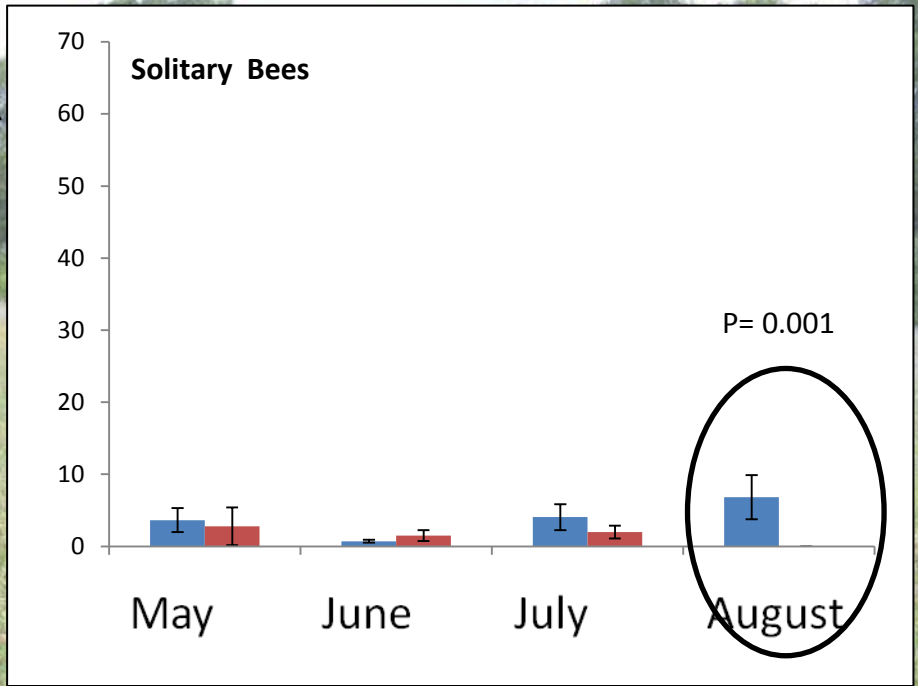
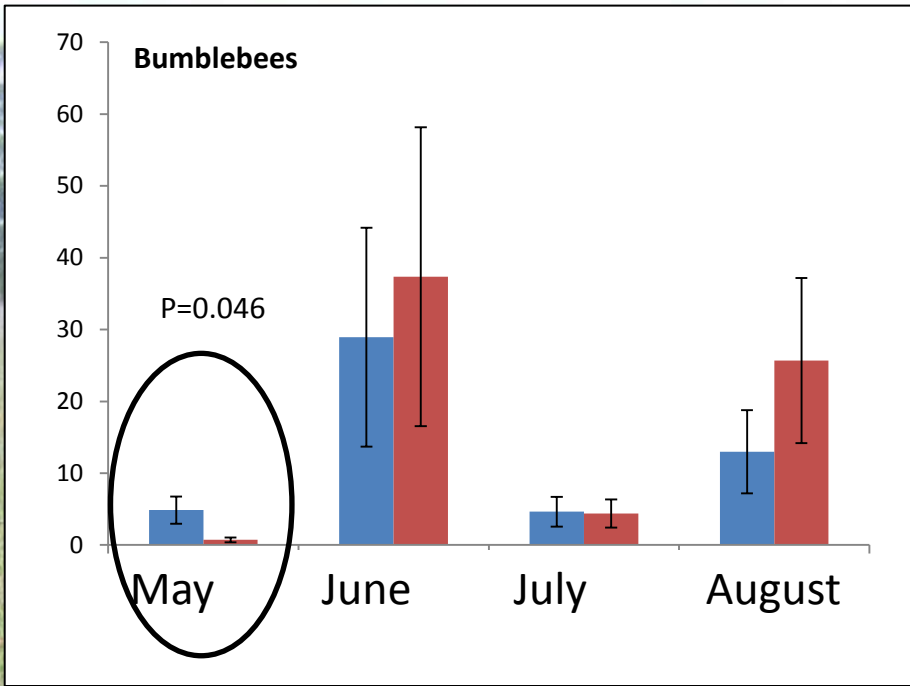


Total pollinators



	MAY	JUNE	JULY	AUGUST
AC	+	+	1	2
BM	4	3	2	1
BT	0	+	+	1
CC	2	+	+	0
L	0	+	+	2
RC	0	+	+	2
S	0	0	+	+
WC	0	2	1	1
WSC	0	0	0	+
BM	2	1	+	+
L	0	+	+	1
RC	0	+	+	1
WC	+	3	2	1

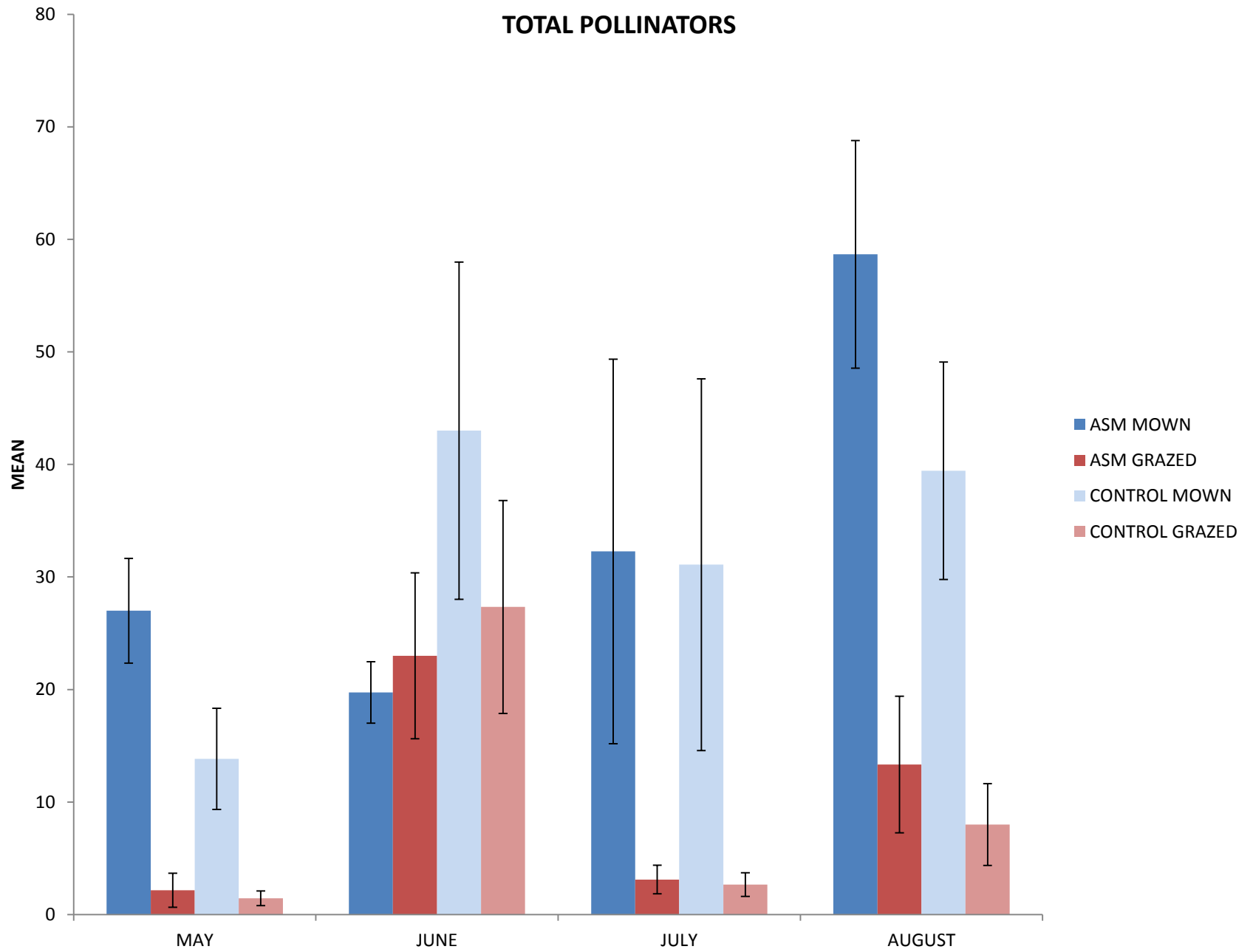




Management: to mow or munch?



TOTAL POLLINATORS



Pollinators

- Diverse mixture supports more pollinators
- Management
 - Grazing reduces the number of flowers
 - Time of cutting

Decomposers

- Diversity of leaf litter affects rate of loss

Future Work

- Diversity and abundance
 - Continue survey work on farm sites
 - Preference experiments
- Management
 - Mowing regime experiment
 - Tillage/incorporation experiment
- Ecosystem service
 - Experiments





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