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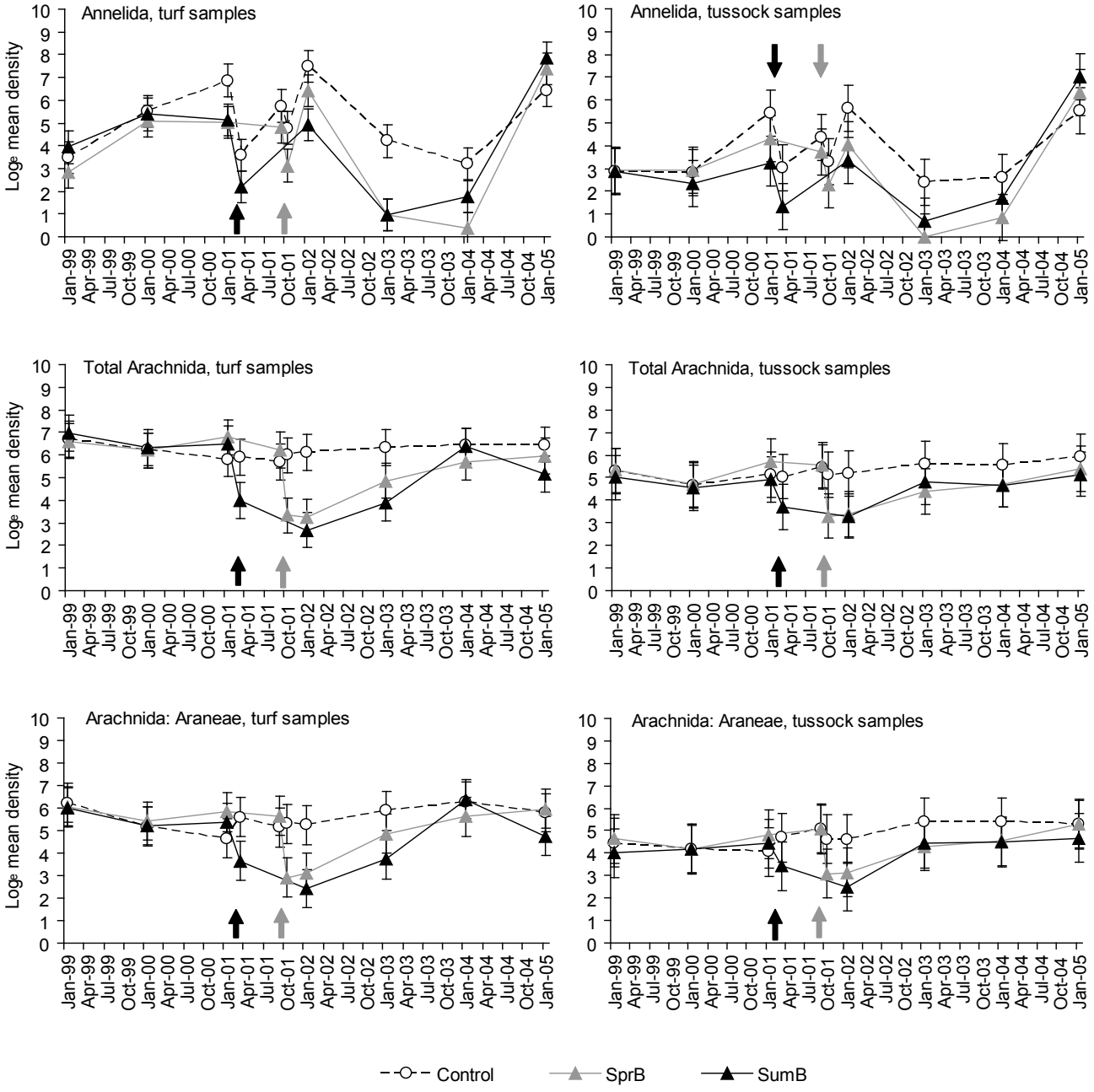
Appendix 4

MEAN DENSITY OF INVERTEBRATE GROUPS AT DEEP STREAM

Graphs show the mean density (number individuals/m^2) of invertebrate groups present in control, spring-burnt (SprB) and summer-burnt (SumB) plots. Density is expressed as $\log_e$ mean density throughout the study period. Error bars represent 2 SEMs. Arrows indicate summer (black arrow) and spring (grey arrow) burn dates.



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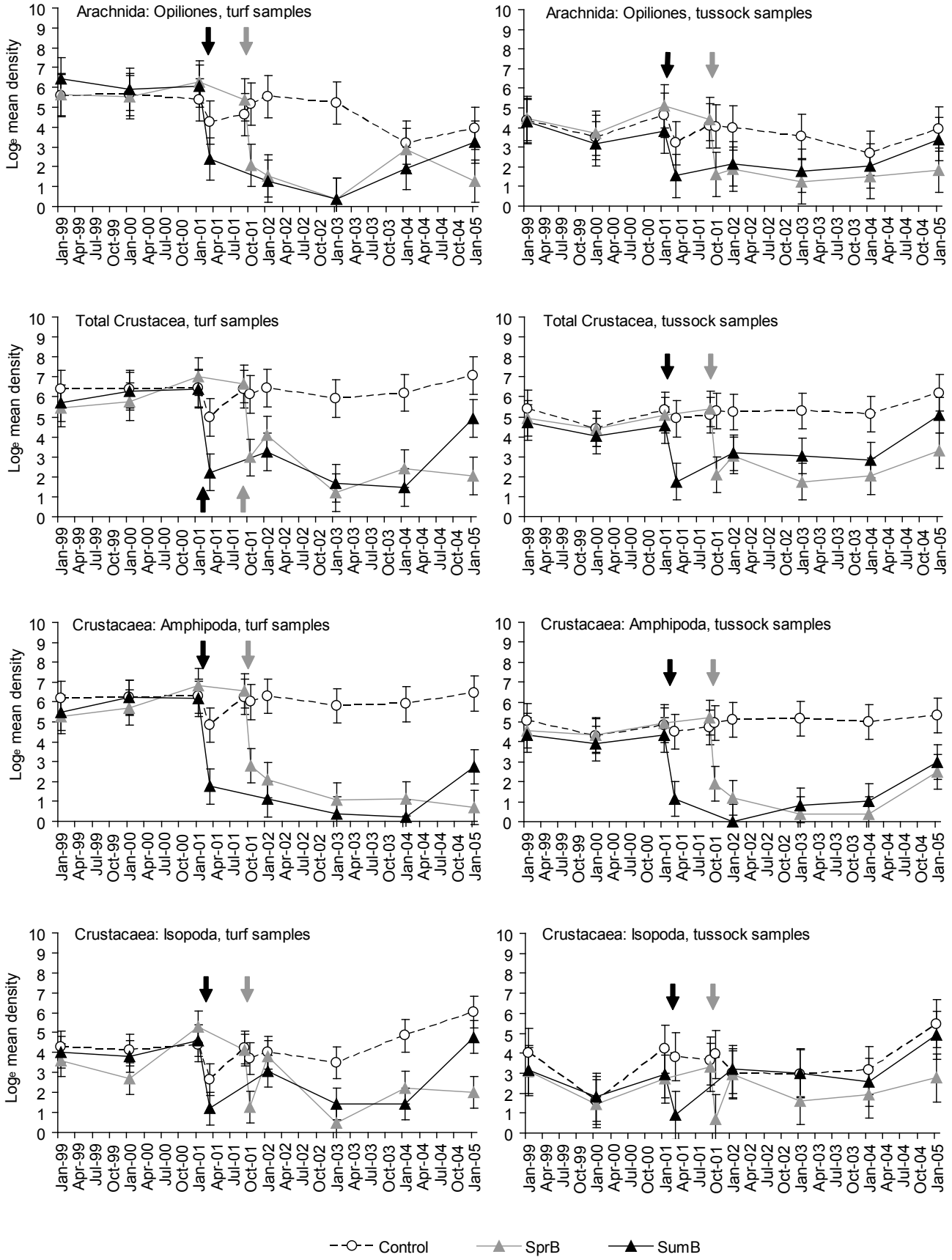

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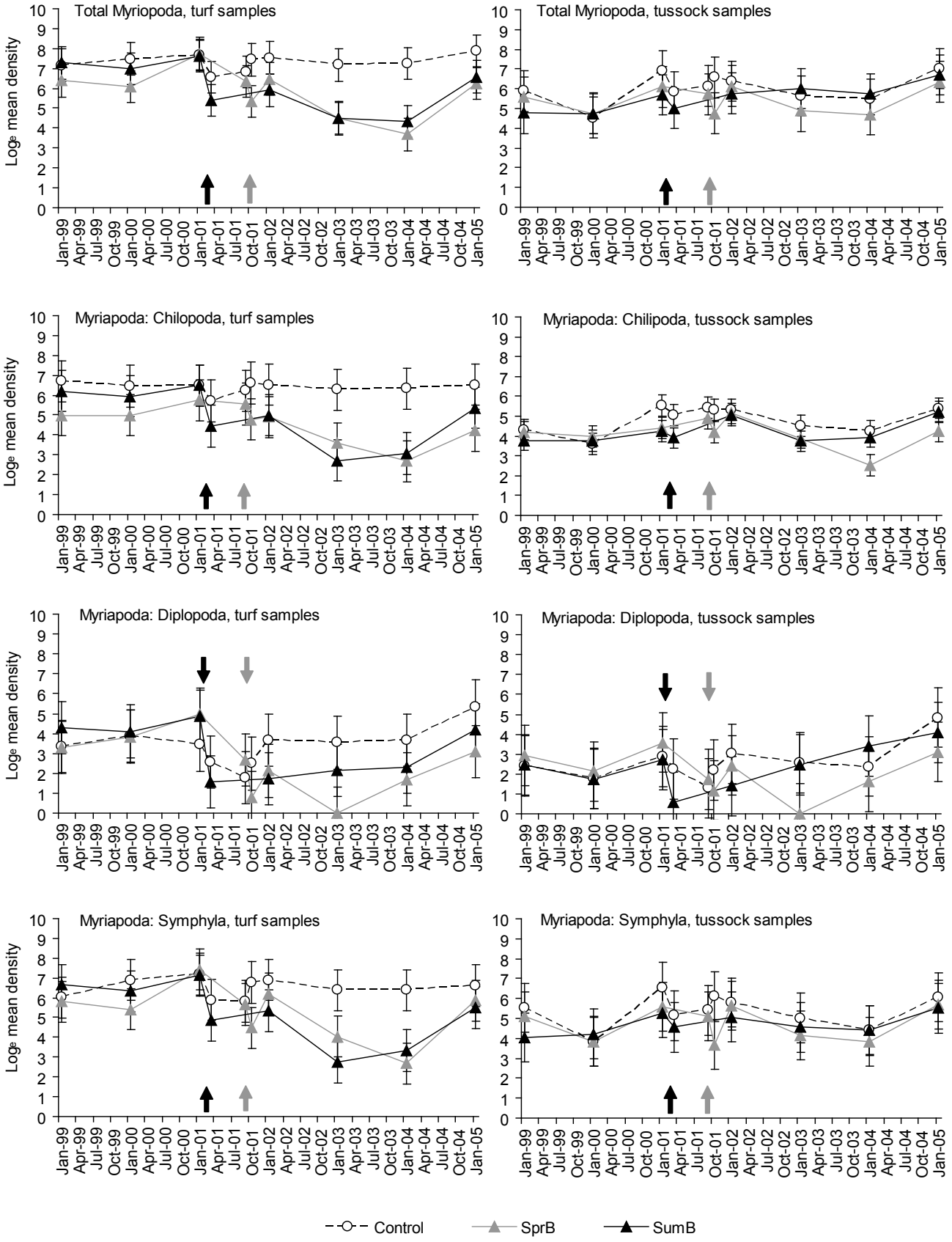

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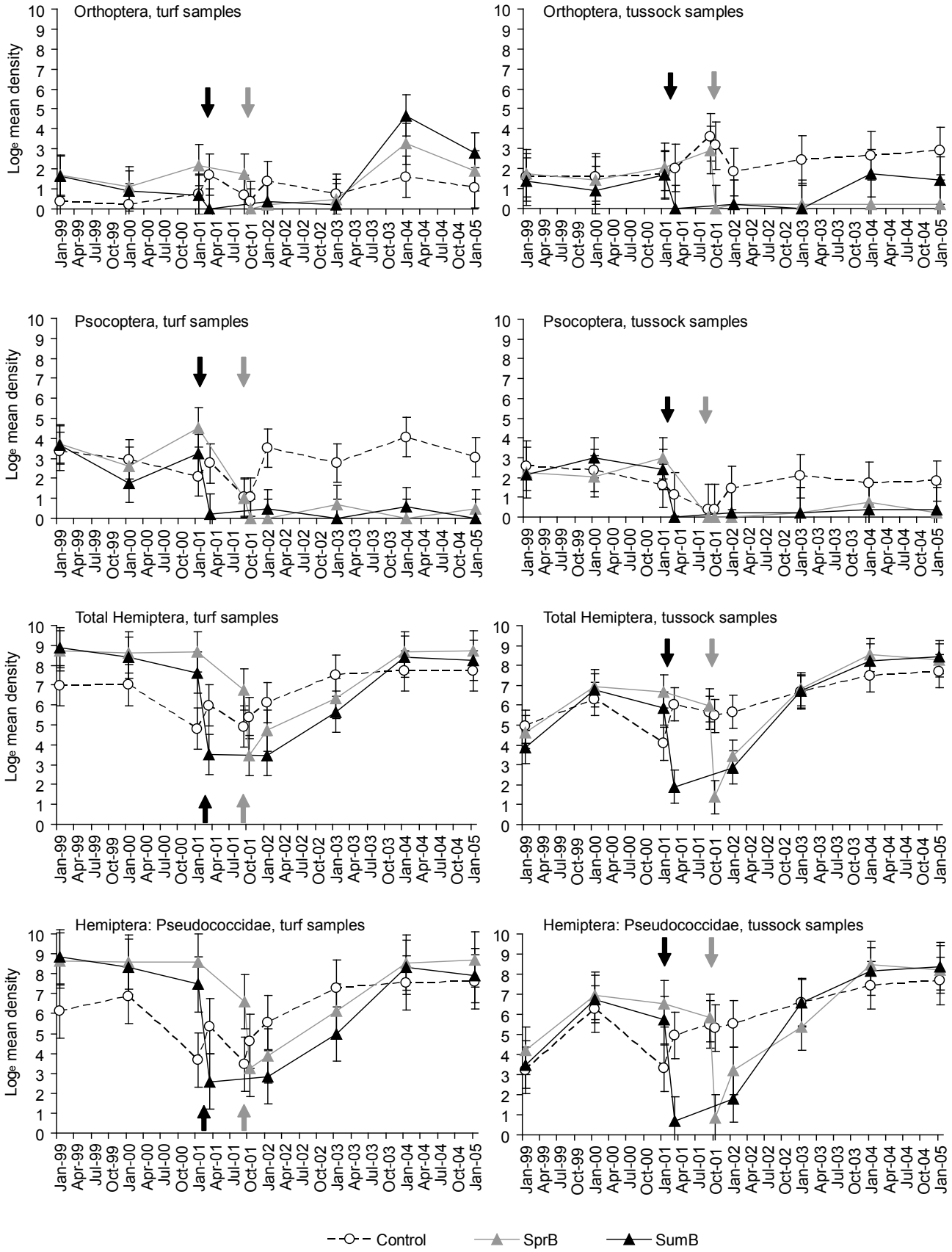

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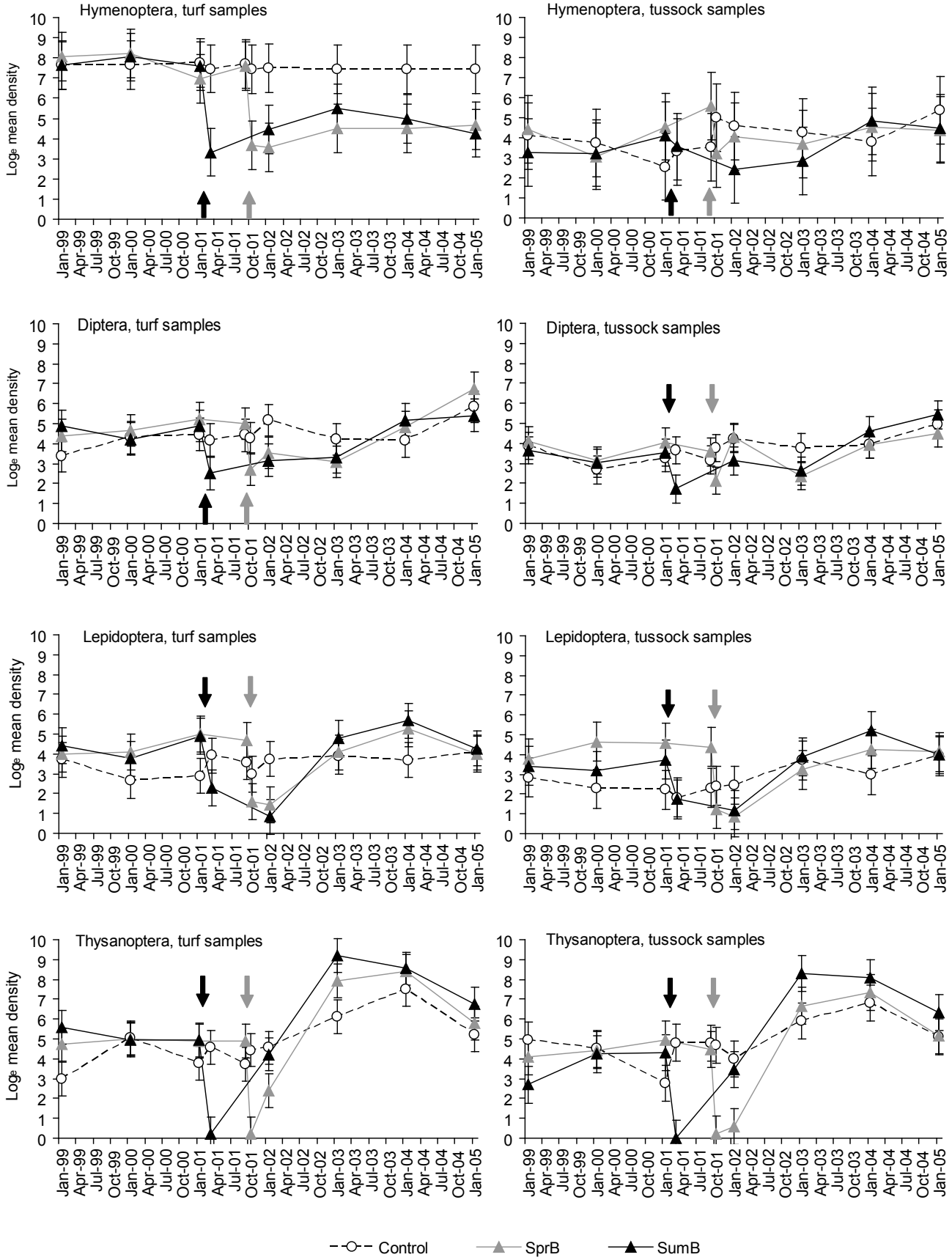
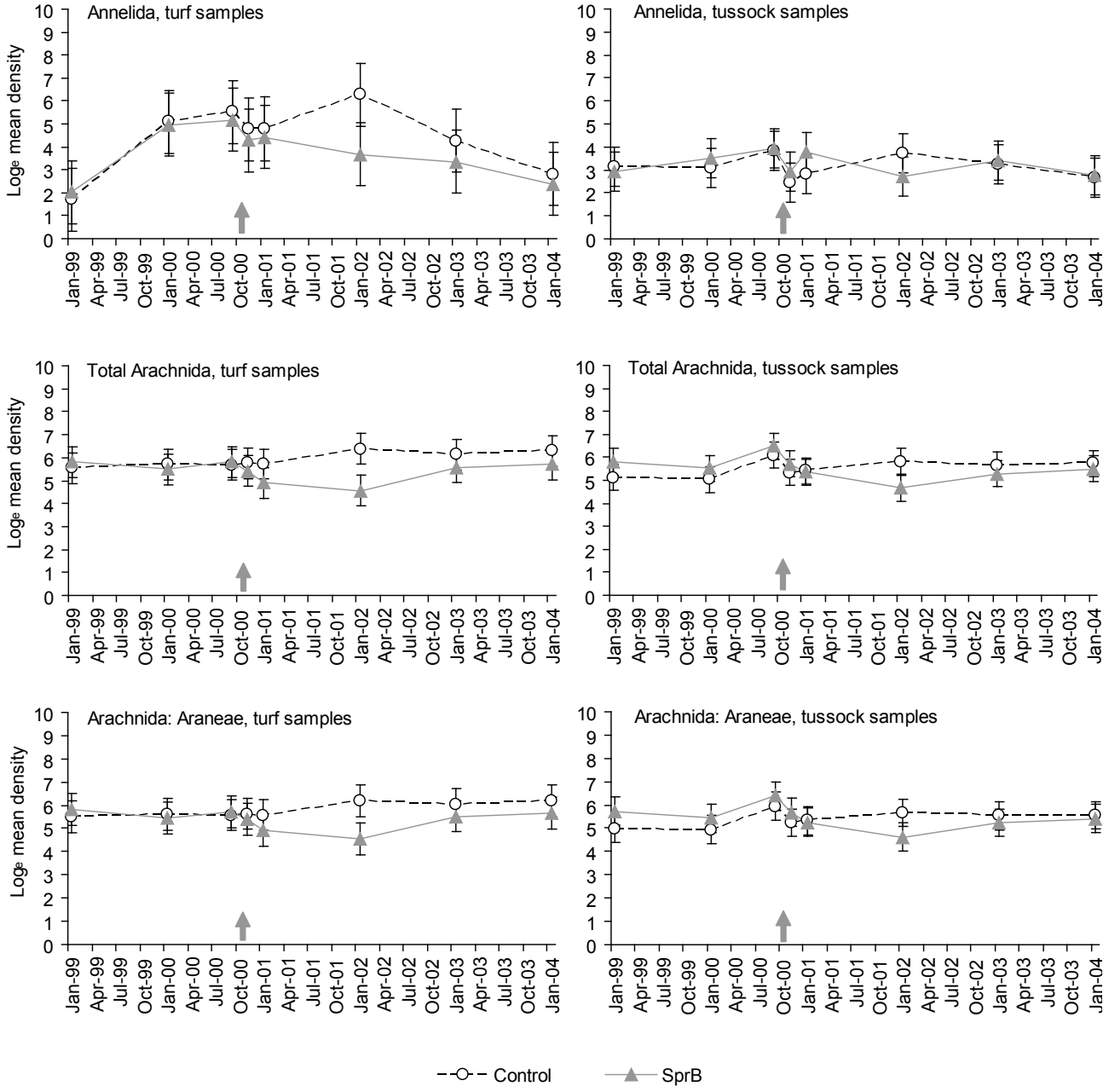

Hymenoptera, turf samples
Hymenoptera, tussock samples
Diptera, turf samples
Diptera, tussock samples
Lepidoptera, turf samples
Lepidoptera, tussock samples
Thysanoptera, turf samples
Thysanoptera, tussock samples
Log$_e$ mean density
Control
SprB
SumB

Appendix 5

MEAN DENSITY OF INVERTEBRATE GROUPS AT MOUNT BENGER

Graphs show the mean density (number individuals/m^2) of invertebrate groups present in control and spring-burnt (SprB) plots. Density is expressed as $\log_e$ mean density throughout the study period. Error bars represent 2 SEMs. Arrow indicates the spring burn date.



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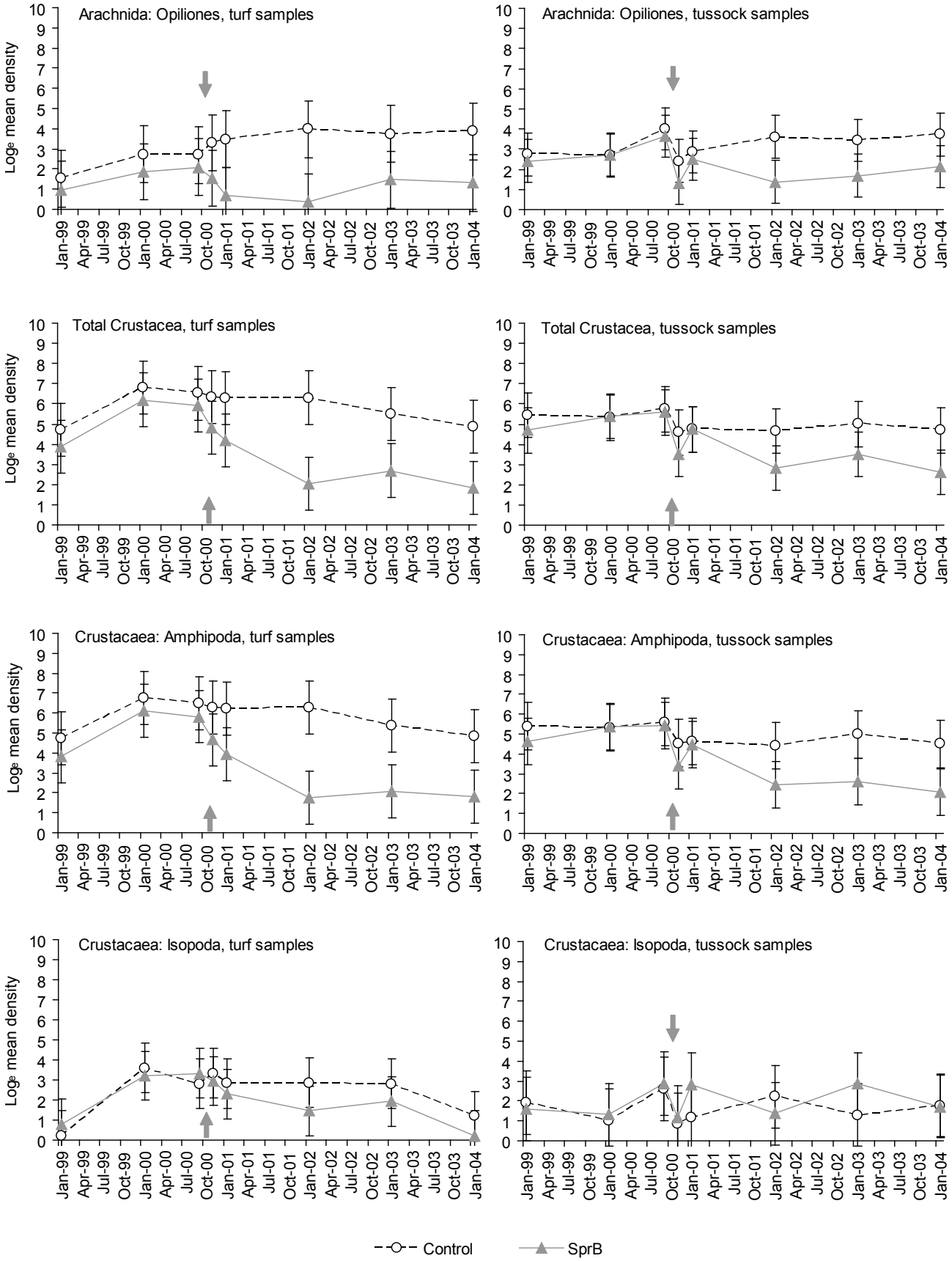

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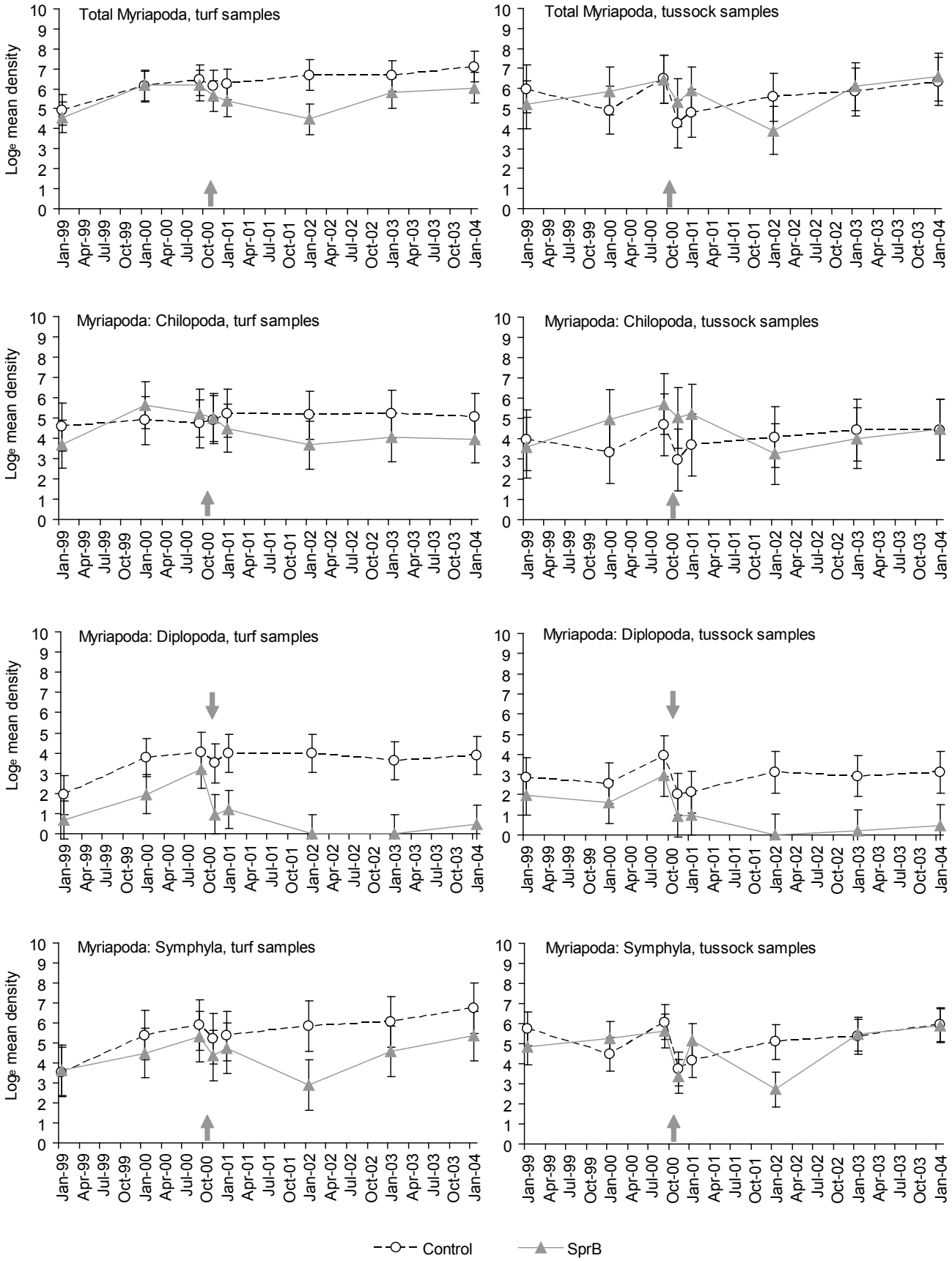

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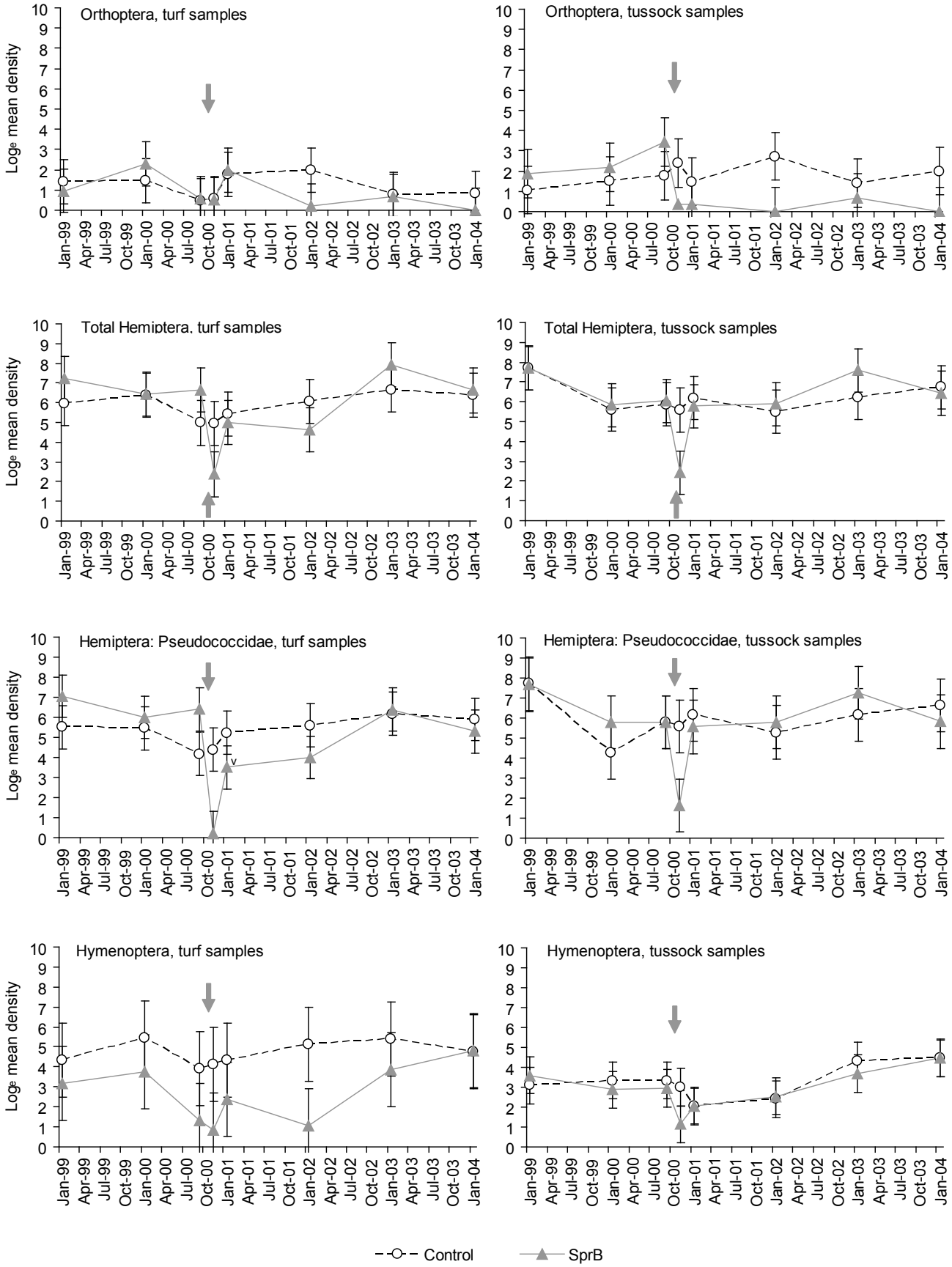

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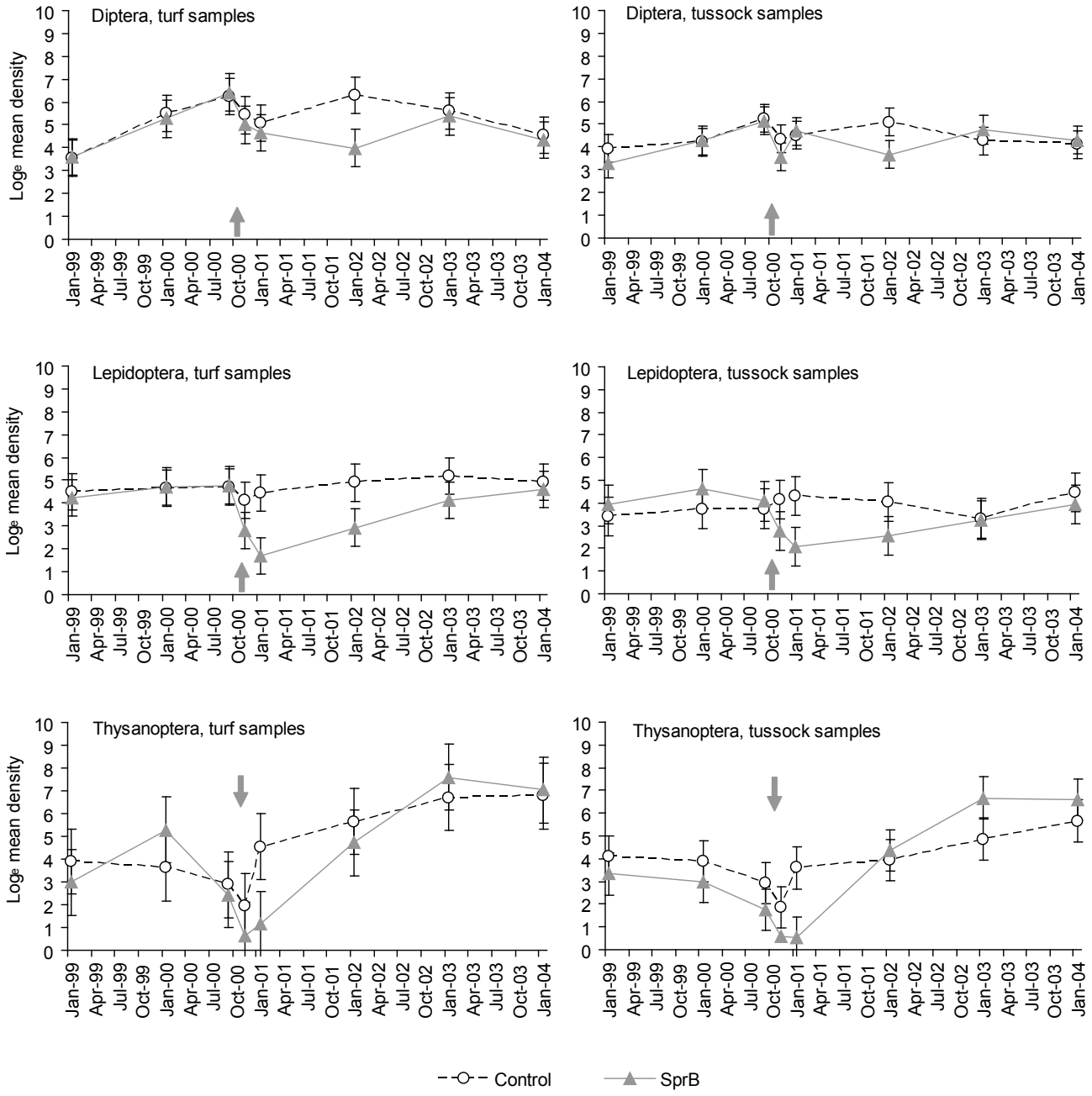
Diptera, turf samples
Diptera, tussock samples
Lepidoptera, turf samples
Lepidoptera, tussock samples
Thysanoptera, turf samples
Thysanoptera, tussock samples
Loge mean density
0
1
2
3
4
5
6
7
8
9
10
Jan-99
Apr-99
Jul-99
Oct-99
Jan-00
Apr-00
Jul-00
Oct-00
Jan-01
Apr-01
Jul-01
Oct-01
Jan-02
Apr-02
Jul-02
Oct-02
Jan-03
Apr-03
Jul-03
Oct-03
Jan-04
Control
SprB

Appendix 6

SUMMARY OF COLEOPTERA TAXA RECORDED AT DEEP STREAM (DS) AND MOUNT BENGER (MB)

Families represented (×) and an estimate of the numbers of genera and species are given. Where genus is not know, the number of genera is an estimate, particularly for Staphylinidae. Data do not include larvae.

FAMILY	PRESENCE		NO. GENERA			NO. SPECIES		
	DS	MB	DS	MB	TOTAL	DS	MB	TOTAL
Anthicidae	×		1	0	1	2	0	2
Anthribidae	×	×	1	1	1	1	1	1
Archeocryptidae		×	0	0	1	0	1	1
Byrrhidae	×	×	2	2	2	2	5	5
Cantharidae	×		1	1	1	1	0	1
Carabidae	×	×	10	9	13	12	10	17
Ceramabycidae	×		2	0	2	2	0	2
Chrysomelidae	×	×	4	3	4	5	7	9
Coccinellidae	×	×	3	3	3	7	8	11
Corylophidae	×	×	1	1	1	2	2	2
Cryptophagidae	×	×	2	2	2	3	2	3
Curculionidae	×	×	11	15	18	26	30	41
Dermestidae	×	×	2	2	2	2	1	2
Elateridae	×	×	4	3	5	4	3	5
Erotylidae		×	0	1	1	0	1	1
Latridiidae	×	×	5	4	5	7	5	7
Leiodidae	×	×	2	1	2	2	1	2
Melandryidae		×	0	1	1	0	1	1
Melyridae	×	×	1	1	1	1	1	1
Mycetophagidae	×	×	1	2	2	1	1	2
Oedemeridae		×	0	1	1	0	1	1
Ptiliidae	×	×	1	1	1	3	3	3
Scarabaeidae	×	×	3	2	3	3	1	3
Scirtidae		×	0	2	2	0	2	2
Scolytidae		×	0	1	1	0	1	1
Scraptiidae	×		1	0	1	1	0	1
Scydmaenidae	×	×	2	1	3	3	1	3
Staphylinidae	×	×	19*	17*	25*	46	40	61
Tenebrionidae	×	×	2	1	2	4	4	6
Trogossitidae		×	0	1	1	0	1	1
Zopheridae	×	×	1	1	3	3	1	4
Total	24	28	82	80	111	142	135	202

* Estimate only.

How does fire affect tussock grassland invertebrates?

The impacts of spring and summer burns on tussock grassland invertebrate communities were investigated at two sites in Otago, New Zealand. The density of most taxa was initially reduced following burning. However, recovery rates in the years following the burning treatments varied between taxa. In general, herbivore populations recovered within 2–3 years of burning, whereas litter-dwelling taxa were most negatively impacted. Using Coleoptera as an indicator group, there was no evidence of an increase in the proportion of exotic species in the community following fire. Contrary to expectation, summer fires did not appear to be any more detrimental to invertebrate communities than spring fires.

Barratt, B.I.P.; Ferguson, C.M.; Barton, D.M.; Johnstone, P.D. 2009: Impact of fire on tussock grassland invertebrate populations. *Science for Conservation 291*. 75 p.