

NH₄/NO₃, effect on: germination fumigation of Sphagna occurrence of plant species

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Germination experiment



Pilot experiment

2.0 mm NH4NO₃

3:1, 1:1, 1:3

Lotus uliginosis,

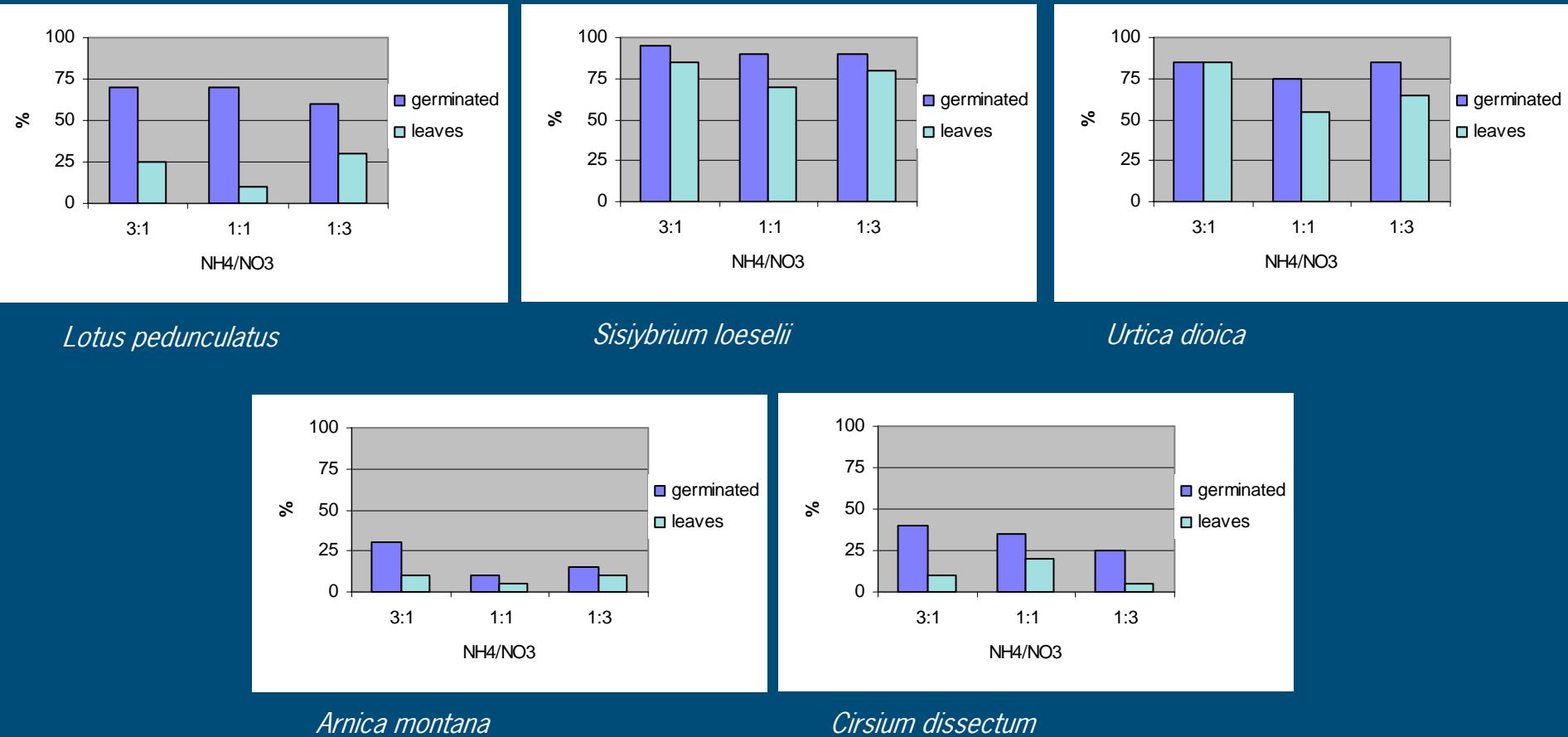
Syimbrium loeselii,

Urtica dioica,

Arnica montana

Cirsium dissectum

Germination experiment



Differences are small, but may be present not only for germination, but also in the seedling stage

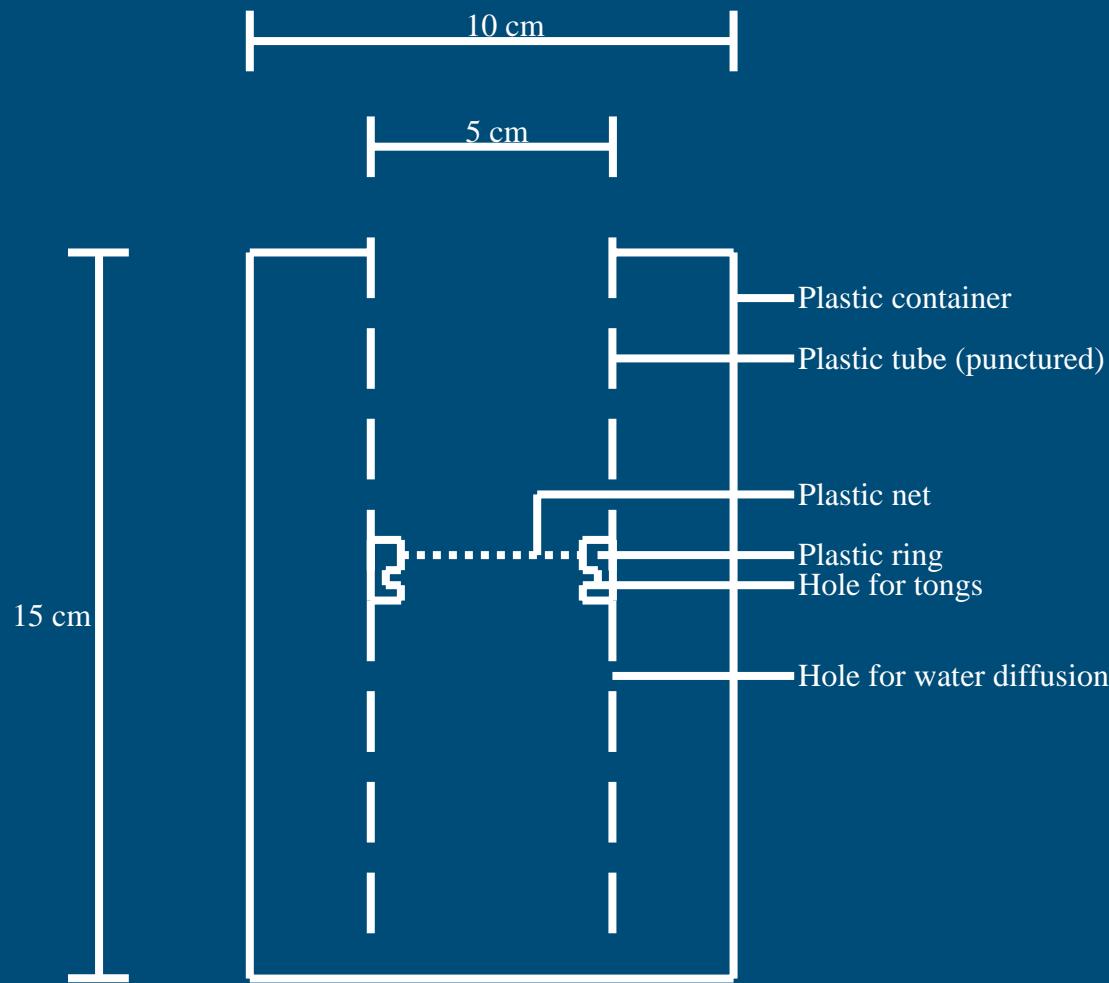
Fumigation of *Sphagnum recurvum* and *Sphagnum magellanicum*



Closed fully controlled fumigation chambers

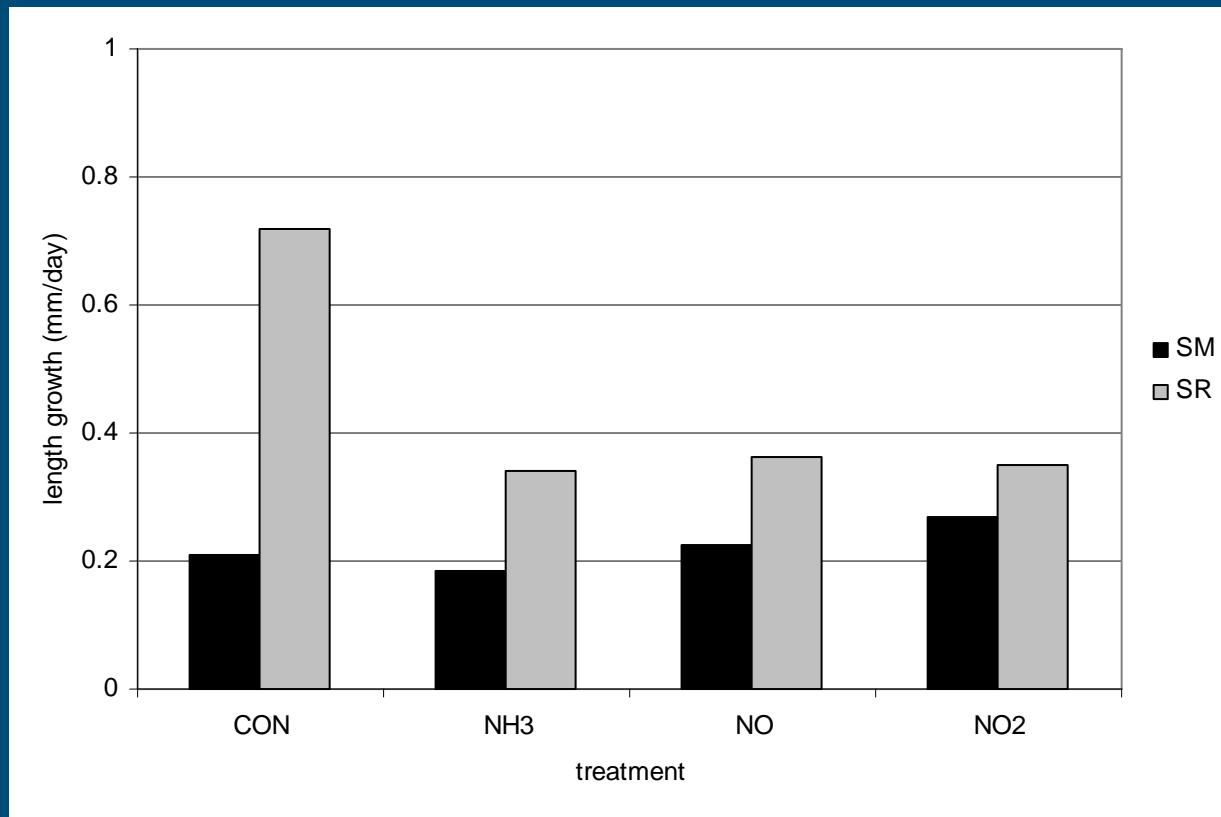
ambient air,
85 ppb NH₃,
85 ppb NO,
85 ppb NO₂

Fumigation of *Sphagnum recurvum* and *Sphagnum magellanicum*



Fumigation of *Sphagnum recurvum* and *Sphagnum magellanicum*

Length growth



Fumigation of *Sphagnum recurvum* and *Sphagnum magellanicum*

Length growth

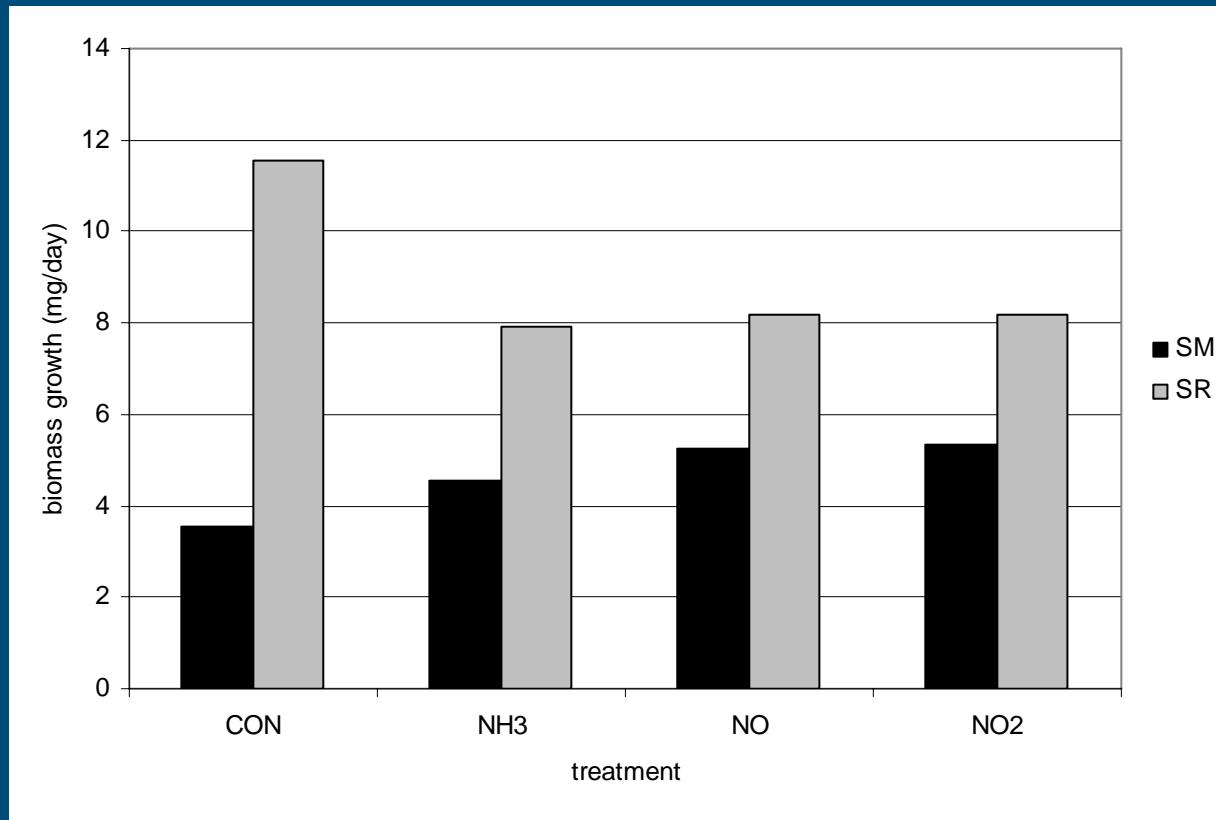
***** Analysis of variance *****

Variate: lg

Source	of variation	d.f.	s.s.	m.s.	v.r.	F pr.
block	stratum	2	2.27948	1.13974	26.97	
block.*Unit	stratum	3	0.43899	0.14633	3.46	0.022
treatment		1	0.87309	0.87309	20.66	<.001
species		3	0.51155	0.17052	4.03	0.011
treatment.species		62	2.62046	0.04227		
Residual		71	6.72357			
Total						

Fumigation of *Sphagnum recurvum* and *Sphagnum magellanicum*

biomass growth



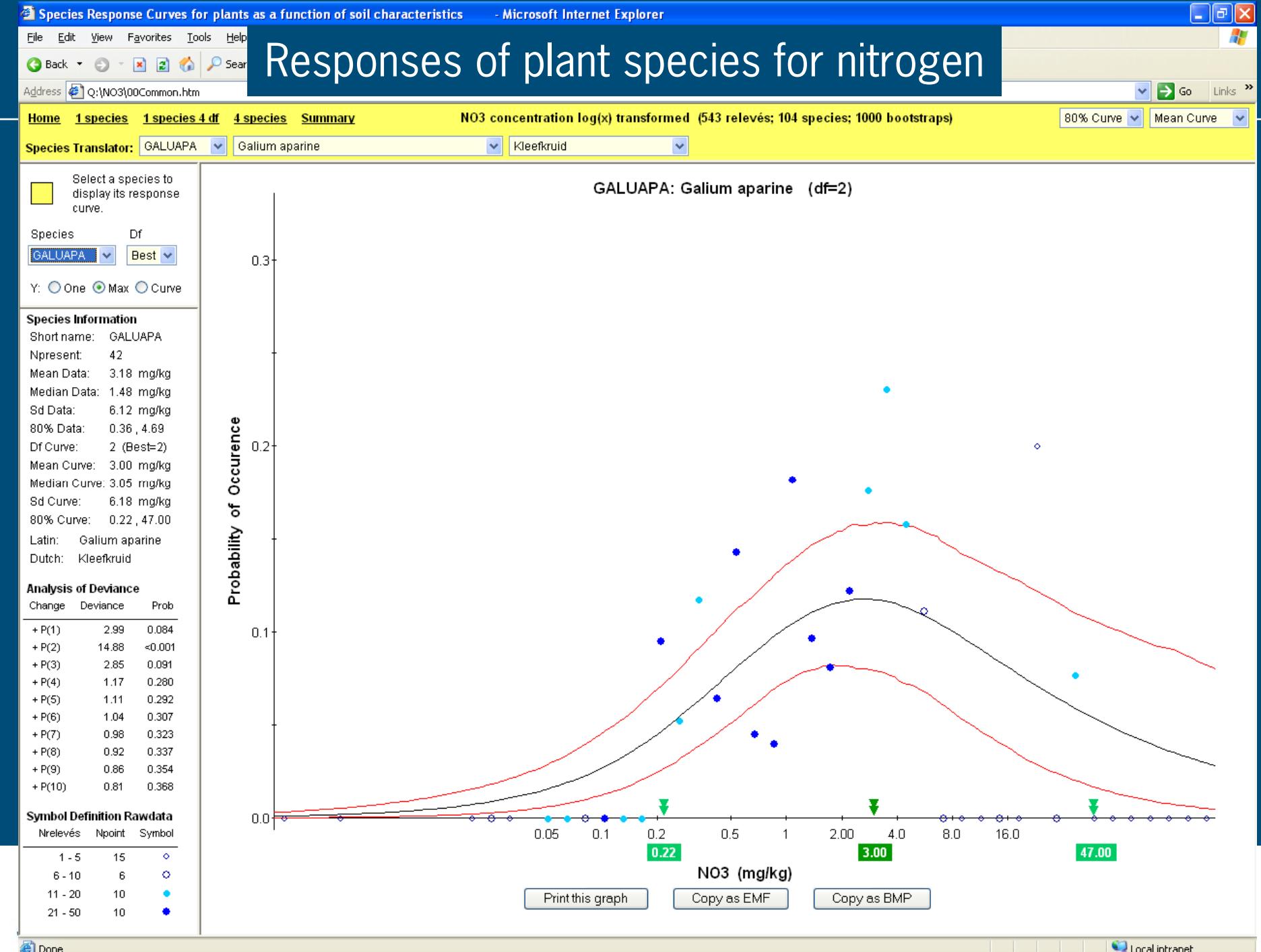
Fumigation of *Sphagnum recurvum* and *Sphagnum magellanicum*

biomass growth

***** Analysis of variance *****

Variate: gr_mg_dag

Source	of variation	d.f.	s.s.	m.s.	v.r.	F pr.
blok	stratum	2	3667.66	1833.83	164.71	
blok.*Units stratum						
treatment		3	16.07	5.36	0.48	0.697
species		1	328.96	328.96	29.55	<.001
treatment.species		3	83.51	27.84	2.5	0.068
Residual		62	690.28	11.13		
Total		71	4786.47			



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Home 1 species 1 species 4 df 4 species Summary

Ammonia; log(x) transformed (723 relevés; 155 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: FESTR-C Festuca rubra

Rood zwenkgras s.s.

Select a species to display its response curve.

Species Df
FESTR-C Best

Y: One Max Curve

Species Information

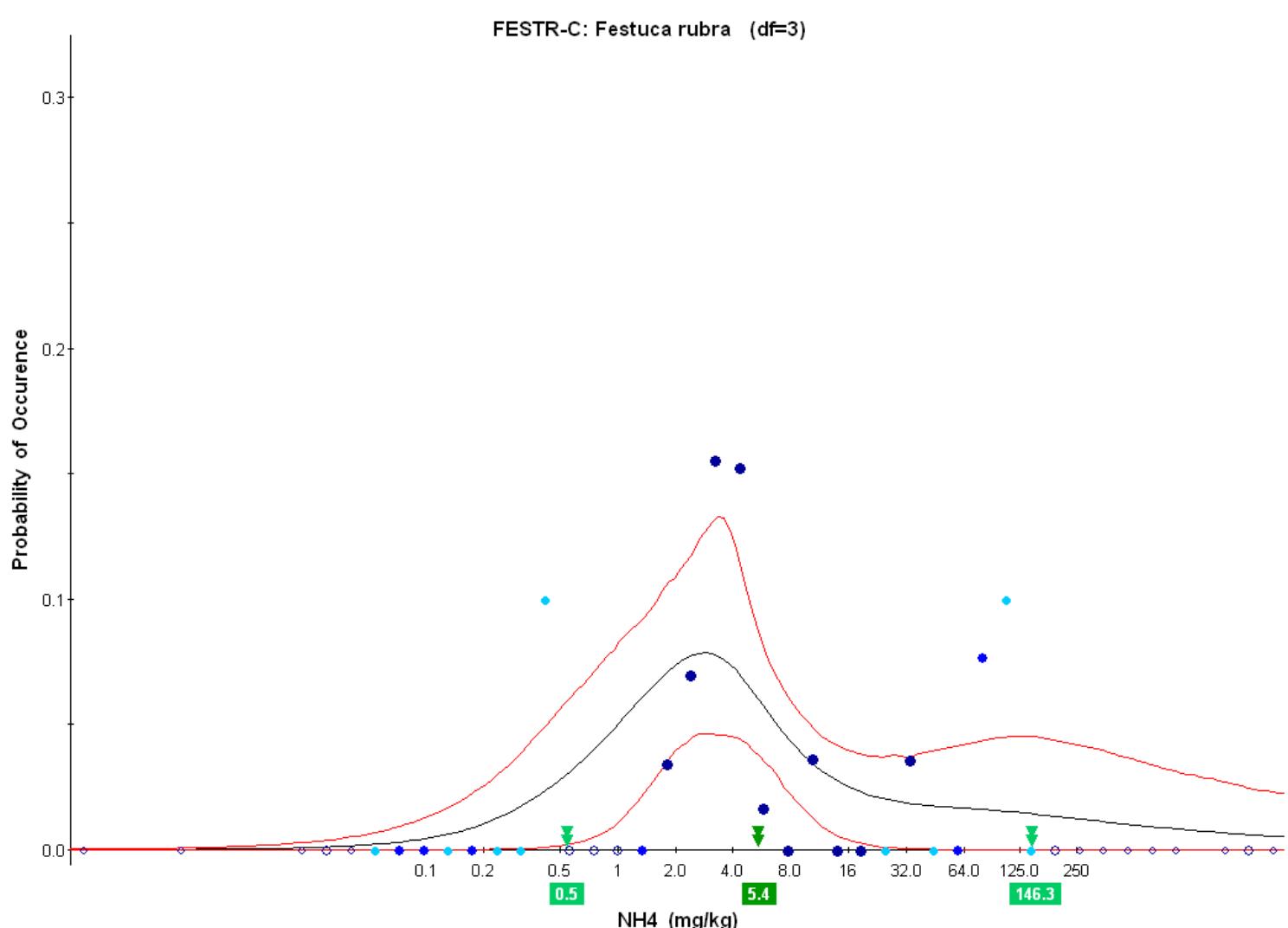
Short name: FESTR-C
 Npresent: 29
 Mean Data: 10.7 mg/kg
 Median Data: 3.9 mg/kg
 Sd Data: 16.2 mg/kg
 80% Data: 2.6, 22.1
 Df.Curve: 3 (Best=3)
 Mean Curve: 5.4 mg/kg
 Median Curve: 3.6 mg/kg
 Sd Curve: 11.7 mg/kg
 80% Curve: 0.5, 146.3
 Latin: Festuca rubra
 Dutch: Rood zwenkgras s.s.

Analysis of Deviance

Change	Deviance	Prob
+ P(1)	0.01	0.904
+ P(2)	14.03	<0.001
+ P(3)	7.36	0.007
+ P(4)	5.66	0.017
+ P(5)	5.13	0.024
+ P(6)	4.40	0.036
+ P(7)	3.72	0.054
+ P(8)	2.70	0.100
+ P(9)	2.20	0.138
+ P(10)	2.06	0.151

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 3	11	○
4 - 6	6	○
7 - 12	9	●
13 - 24	6	●



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Home 1 species 1 species 4 df 4 species Summary

NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: AGRS-SP Agrostis species Struisgras (G)

Select a species to display its response curve.

Species Df
AGRS-SP Best

Y: One Max Curve

Species Information

Short name: AGRS-SP
 Npresent: 38
 Mean Data: 2.61
 Median Data: 0.89
 Sd Data: 6.69
 80% Data: 0.27, 5.51
 Df Curve: 2 (Best=2)
 Mean Curve: 1.77
 Median Curve: 1.64
 Sd Curve: 4.06
 80% Curve: 0.10, 33.44
 Latin: Agrostis species
 Dutch: Struisgras (G)

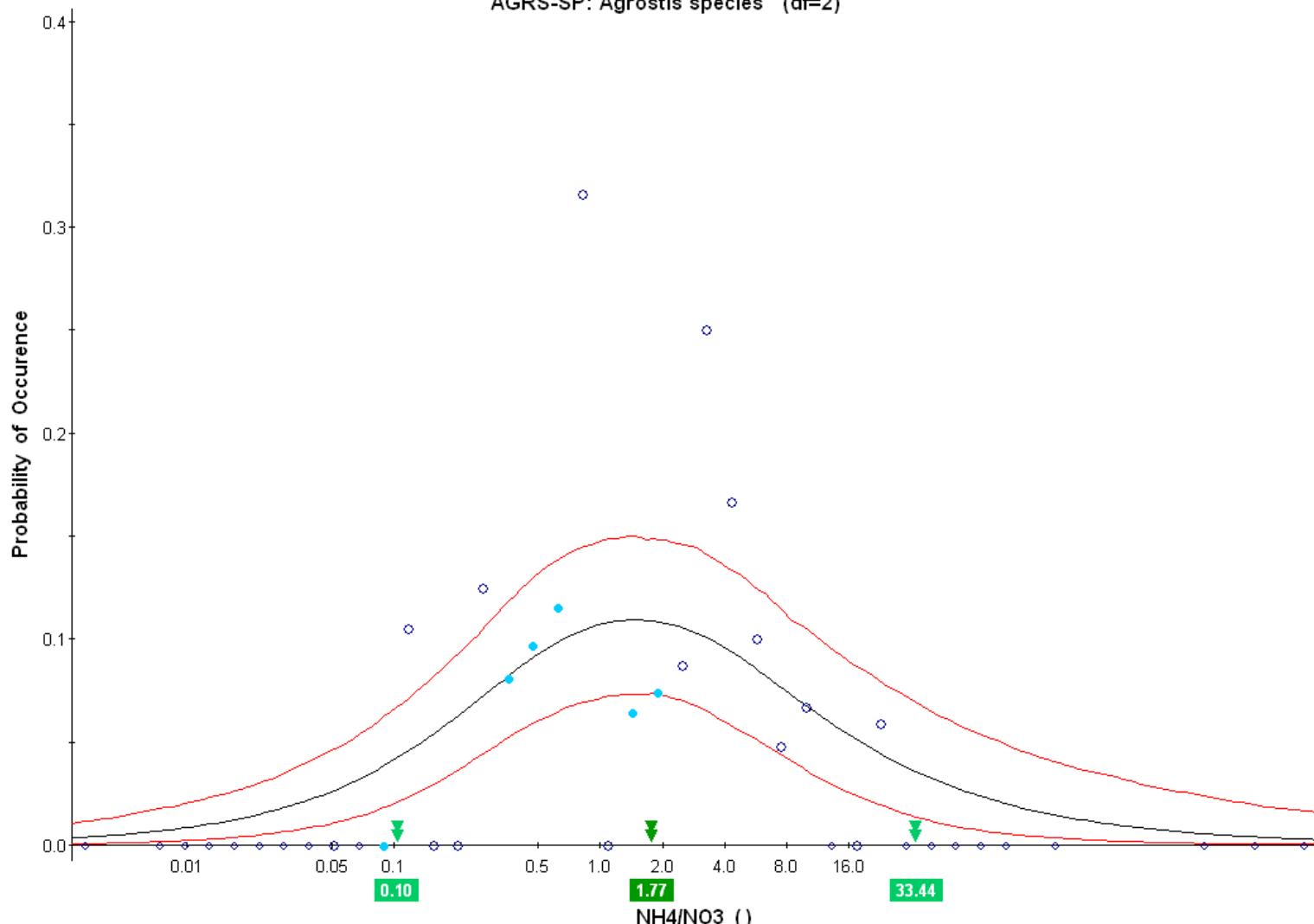
Analysis of Deviance

Change	Deviance	Prob
+ P(1)	0.22	0.640
+ P(2)	15.13	<0.001
+ P(3)	3.55	0.059
+ P(4)	1.73	0.189
+ P(5)	1.79	0.181
+ P(6)	1.92	0.166
+ P(7)	2.10	0.147
+ P(8)	2.16	0.142
+ P(9)	2.18	0.140
+ P(10)	2.08	0.149

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	◊
11 - 25	15	◊
26 - 50	6	●

AGRS-SP: Agrostis species (df=2)



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Home 1 species 1 species 4 df 4 species Summary

NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: AGRSCAN Agrostis canina Moerasstruisgras

Select a species to display its response curve.

Species Df
AGRSCAN Best

Y: One Max Curve

Species Information

Short name: AGRSCAN
Npresent: 105
Mean Data: 52.24
Median Data: 0.45
Sd Data: 554.61
80% Data: 0.06, 5.33
Df Curve: 3 (Best=3)
Mean Curve: 1.62
Median Curve: 0.52
Sd Curve: 7.34
80% Curve: 0.00, 1376.20
Latin: Agrostis canina
Dutch: Moerasstruisgras

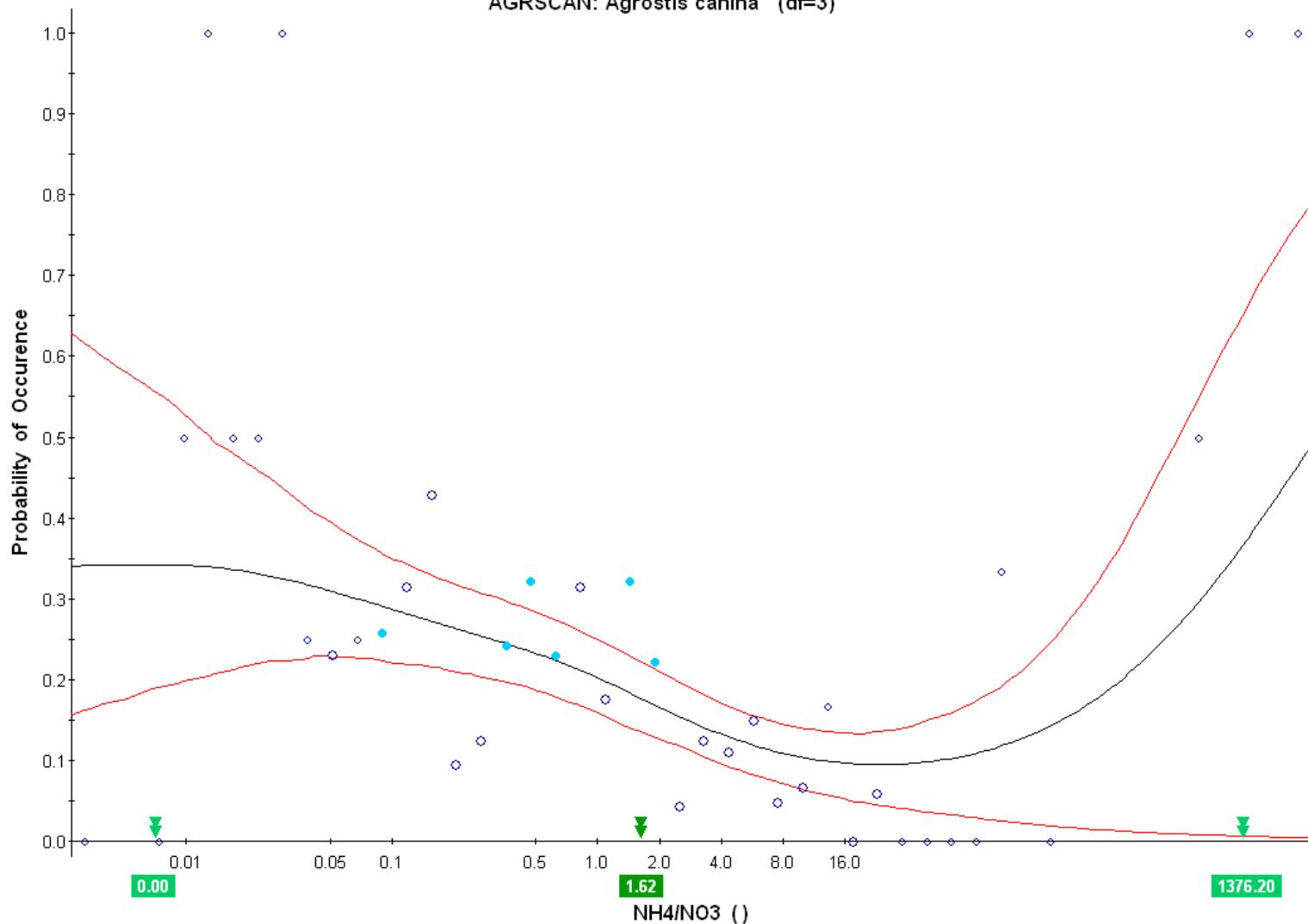
Analysis of Deviance

Change	Deviance	Prob
+ P(1)	12.91	<0.001
+ P(2)	7.67	0.006
+ P(3)	7.78	0.005
+ P(4)	5.80	0.016
+ P(5)	3.86	0.049
+ P(6)	2.61	0.106
+ P(7)	1.92	0.166
+ P(8)	1.67	0.196
+ P(9)	1.67	0.196
+ P(10)	1.77	0.183

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	◊
11 - 25	15	◊
26 - 50	6	●

AGRSCAN: Agrostis canina (df=3)



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NH4/NO₃ log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: AGRSSTO Agrostis stolonifera

Fioringras

Select a species to display its response curve.

Species Df
AGRSSTO Best

Y: One Max Curve

Species Information

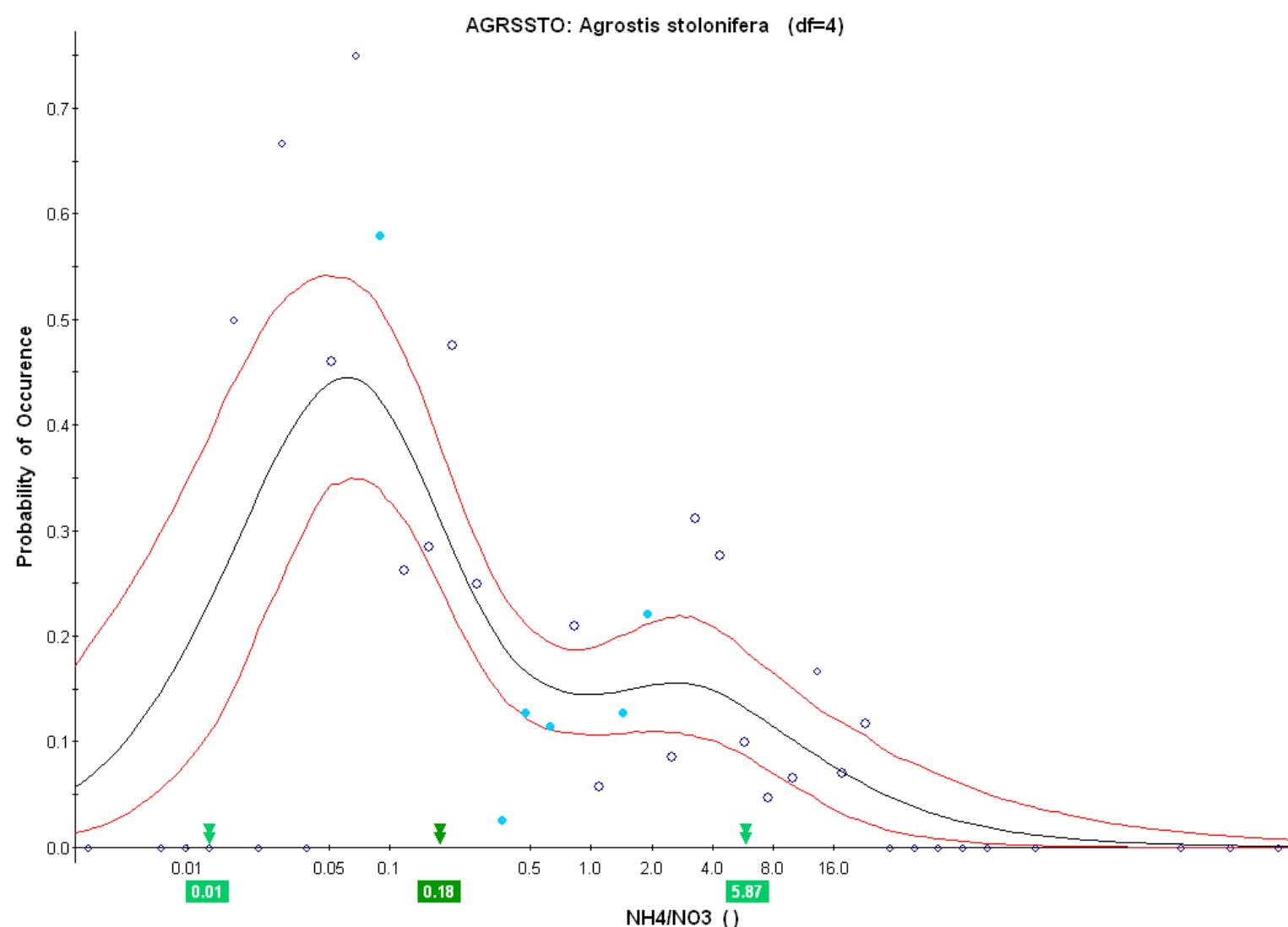
Short name: AGRSSTO
Npresent: 101
Mean Data: 1.77
Median Data: 0.23
Sd Data: 4.42
80% Data: 0.06, 4.11
Df Curve: 4 (Best=4)
Mean Curve: 0.18
Median Curve: 0.10
Sd Curve: 0.42
80% Curve: 0.01, 5.87
Latin: Agrostis stolonifera
Dutch: Fioringras

Analysis of Deviance

Change	Deviance	Prob
+ P(1)	29.52	<0.001
+ P(2)	6.34	0.012
+ P(3)	10.25	0.001
+ P(4)	10.83	0.001
+ P(5)	6.19	0.013
+ P(6)	2.87	0.090
+ P(7)	1.94	0.164
+ P(8)	1.95	0.162
+ P(9)	2.22	0.137
+ P(10)	2.47	0.116

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	○
11 - 25	15	○
26 - 50	6	●





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NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: ALISPLA Alisma plantago-aquatica Grote waterweegbree

Select a species to display its response curve.

Species Df
ALISPLA Best

Y: One Max Curve

Species Information

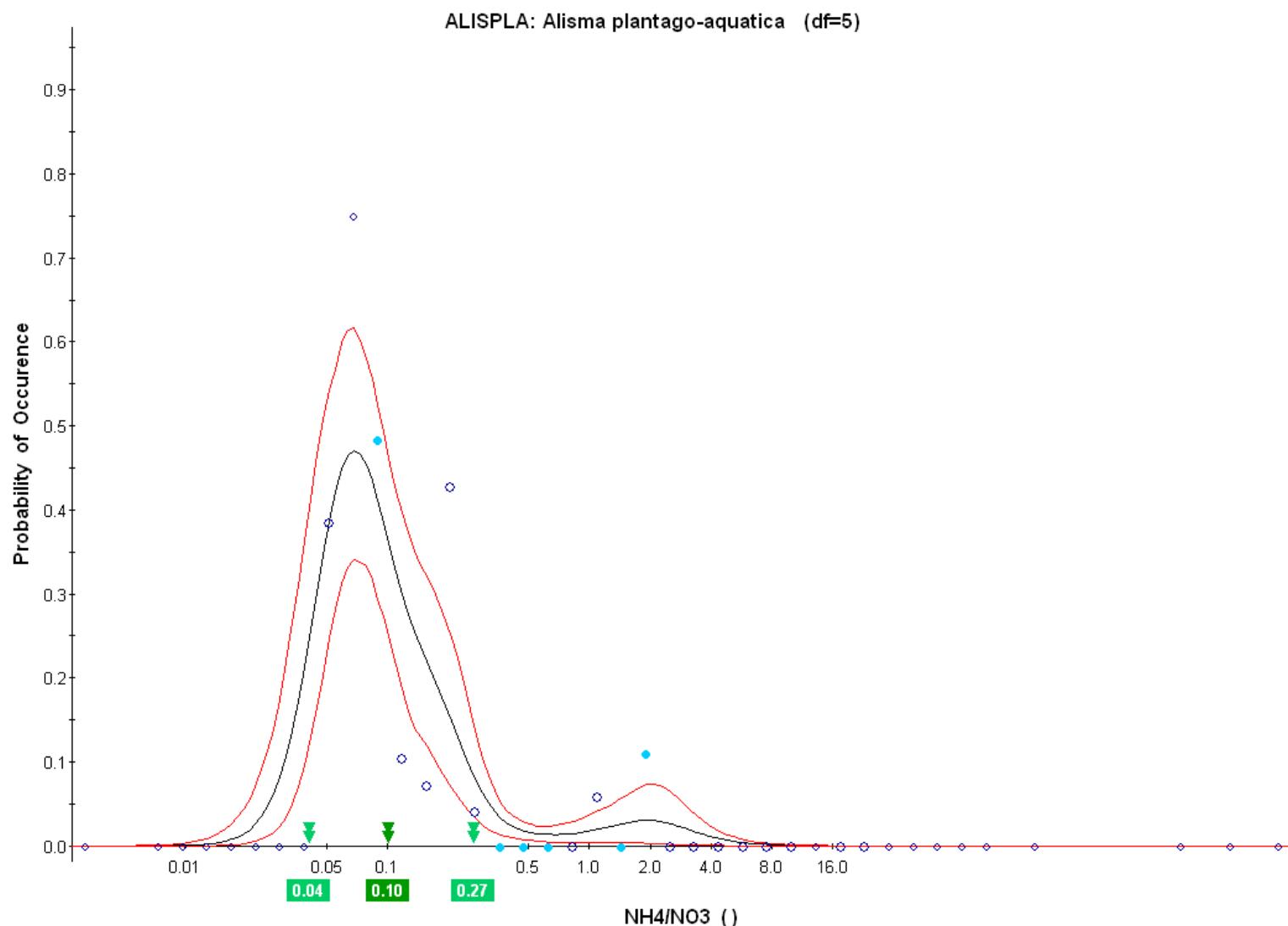
Short name: ALISPLA
 Npresent: 43
 Mean Data: 0.28
 Median Data: 0.10
 Sd Data: 330.13
 80% Data: 0.06, 0.42
 Df Curve: 5 (Best=5)
 Mean Curve: 0.10
 Median Curve: 0.08
 Sd Curve: 0.10
 80% Curve: 0.04, 0.27
 Latin: Alisma plantago-aquatica
 Dutch: Grote waterweegbree

Analysis of Deviance

Change	Deviance	Prob
+ P(1)	50.91	<0.001
+ P(2)	24.32	<0.001
+ P(3)	14.05	<0.001
+ P(4)	9.71	0.002
+ P(5)	9.19	0.002
+ P(6)	10.30	0.001
+ P(7)	9.58	0.002
+ P(8)	5.62	0.018
+ P(9)	4.23	0.040
+ P(10)	4.46	0.035

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	◊
11 - 25	15	◊
26 - 50	6	●



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NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: ALNUGLU Alnus glutinosa

Zwarte els

Select a species to display its response curve.
Species Df
ALNUGLU Best

Y: One Max Curve

Species Information
Short name: ALNUGLU
Npresent: 36
Mean Data: 9.85
Median Data: 1.91
Sd Data: 4.00
80% Data: 0.12, 34.31
Df Curve: 2 (Best=2)
Mean Curve: 18.28
Median Curve: 36.12
Sd Curve: 65.43
80% Curve: 0.07, 1264.90
Latin: Alnus glutinosa
Dutch: Zwarte els

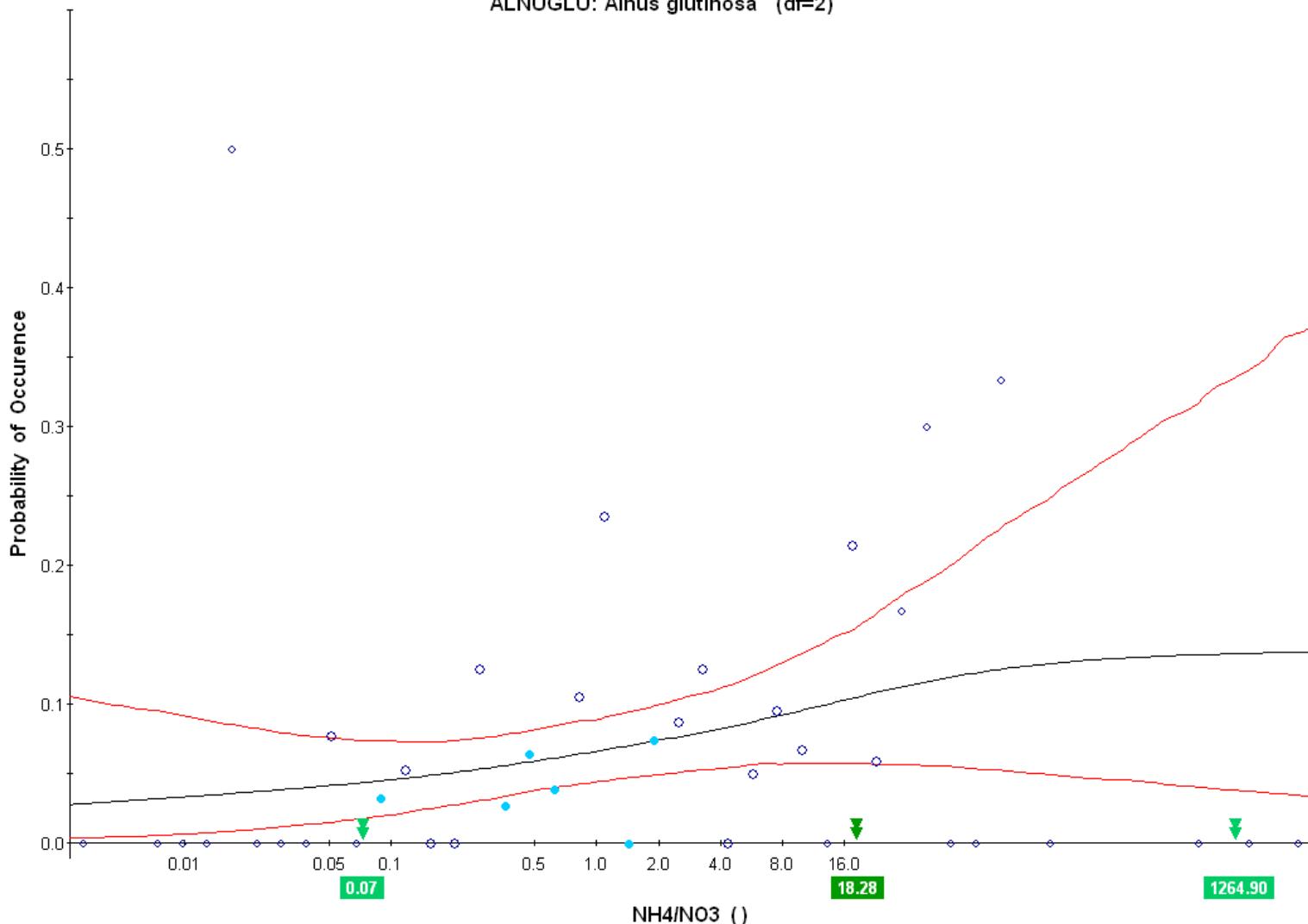
Analysis of Deviance

Change	Deviance	Prob
+ P(1)	3.87	0.049
+ P(2)	0.59	0.444
+ P(3)	0.84	0.360
+ P(4)	1.01	0.316
+ P(5)	1.02	0.312
+ P(6)	0.87	0.350
+ P(7)	0.68	0.410
+ P(8)	0.54	0.461
+ P(9)	0.51	0.477
+ P(10)	0.55	0.458

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	◊
11 - 25	15	◊
26 - 50	6	●

ALNUGLU: Alnus glutinosa (df=2)



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NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: ANTISYL

Anthriscus sylvestris

Fluitenkruid

Select a species to display its response curve.

Species Df
ANTISYL Best

Y: One Max Curve

Species Information

Short name: ANTISYL

Npresent: 31

Mean Data: 0.88

Median Data: 0.42

Sd Data: 16.96

80% Data: 0.24, 1.78

Df Curve: 3 (Best=3)

Mean Curve: 0.53

Median Curve: 0.46

Sd Curve: 0.59

80% Curve: 0.16, 2.11

Latin: Anthriscus

sylvestris

Dutch: Fluitenkruid

Analysis of Deviance

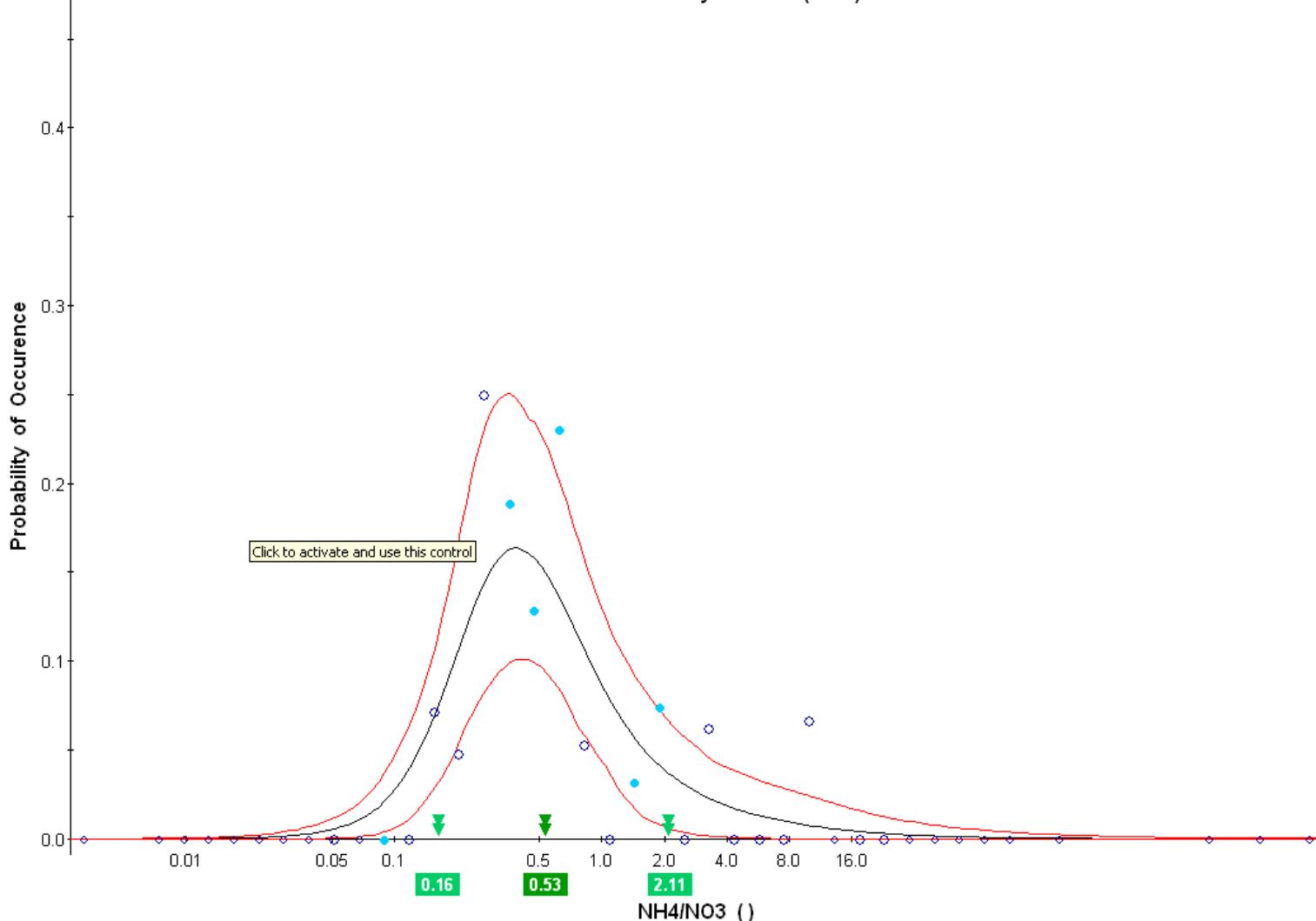
Change Deviance Prob

Change	Deviance	Prob
+ P(1)	3.78	0.052
+ P(2)	27.44	<0.001
+ P(3)	9.39	0.002
+ P(4)	3.20	0.073
+ P(5)	1.97	0.160
+ P(6)	1.87	0.171
+ P(7)	2.08	0.149
+ P(8)	2.13	0.144
+ P(9)	1.84	0.175
+ P(10)	1.41	0.236

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	○
11 - 25	15	○
26 - 50	6	●

ANTISYL: Anthriscus sylvestris (df=3)





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NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: DICUSCO Dicranum scoparium Gewoon gaffeltandmos

Select a species to display its response curve.

Species Df
DICUSCO Best

Y: One Max Curve

Species Information

Short name: DICUSCO
Npresent: 43
Mean Data: 19.17
Median Data: 8.00
Sd Data: 2.59
80% Data: 2.51 , 45.66
Df Curve: 2 (Best=2)
Mean Curve: 99.66
Median Curve: 115.95
Sd Curve: 204.95
80% Curve: 6.12 , 1412.80
Latin: Dicranum scoparium
Dutch: Gewoon gaffeltandmos

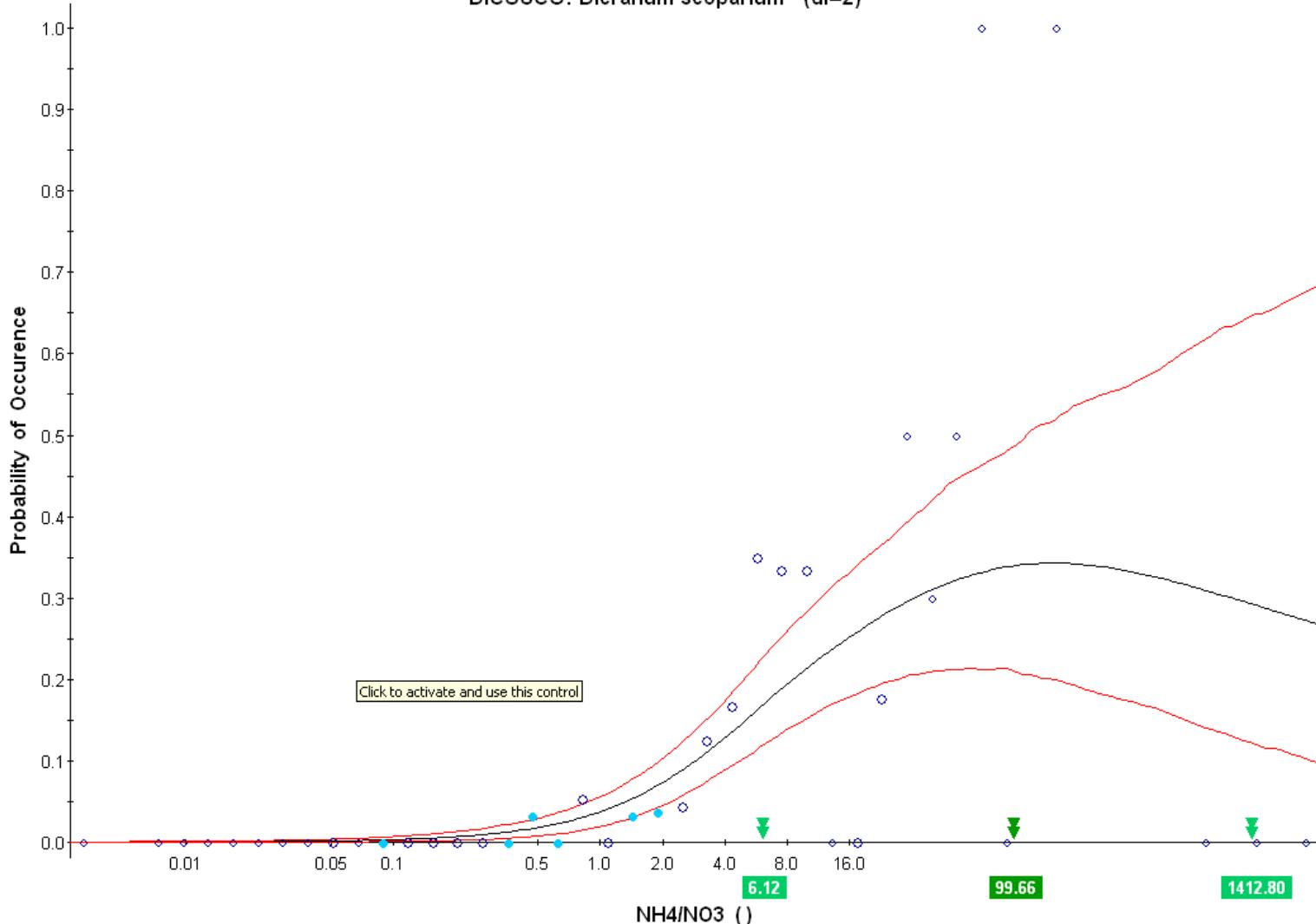
Analysis of Deviance

Change	Deviance	Prob
+ P(1)	53.06	<0.001
+ P(2)	17.79	<0.001
+ P(3)	5.04	0.025
+ P(4)	3.42	0.064
+ P(5)	3.37	0.066
+ P(6)	2.85	0.091
+ P(7)	2.26	0.132
+ P(8)	1.83	0.176
+ P(9)	1.54	0.215
+ P(10)	1.31	0.253

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	○
11 - 25	15	○

DICUSCO: Dicranum scoparium (df=2)



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NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: EQUIFLU Equisetum fluviatile Holpijp

Select a species to display its response curve.

Species Df
EQUIFLU Best

Y: One Max Curve

Species Information

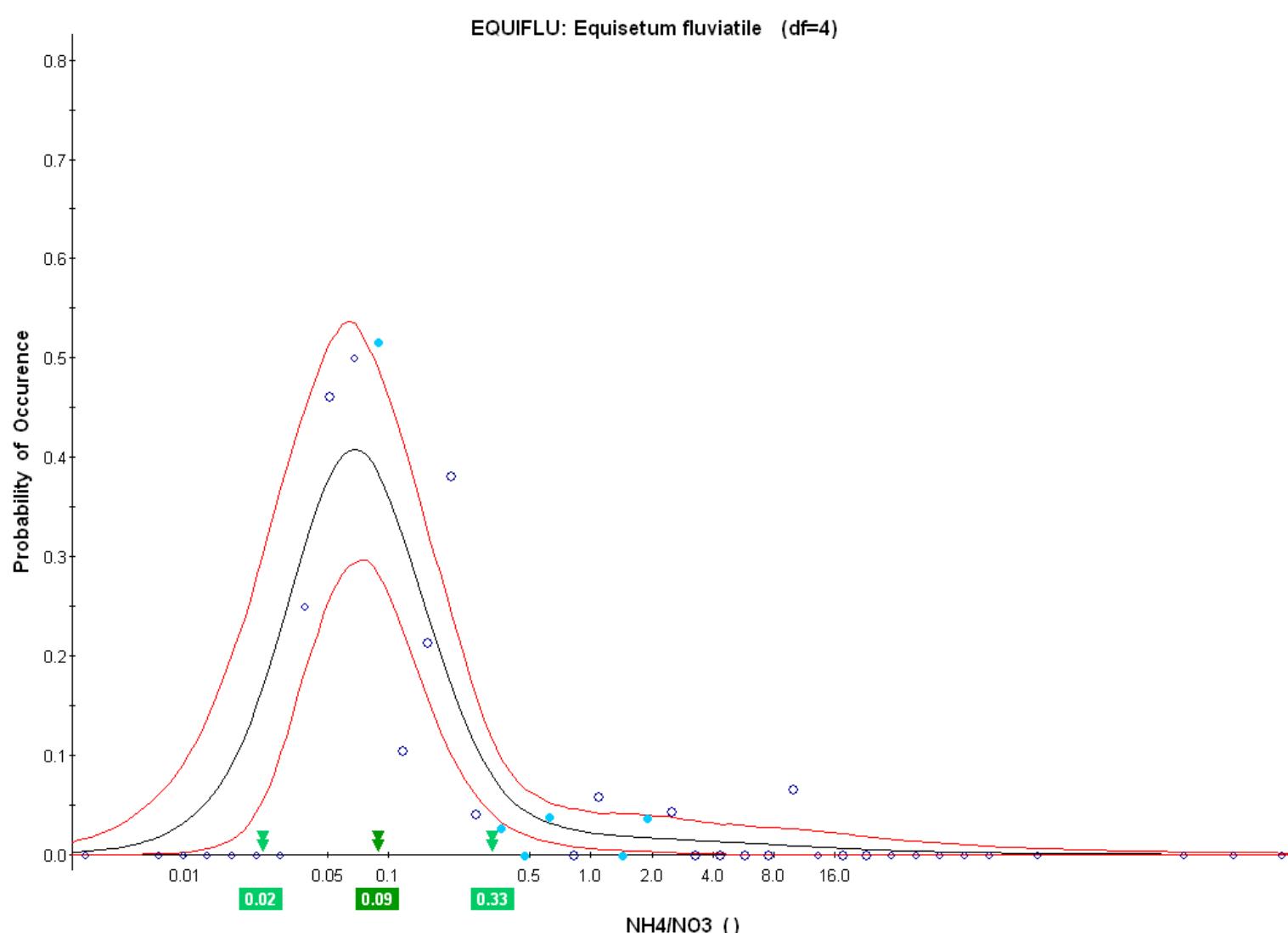
Short name: EQUIFLU
 Npresent: 47
 Mean Data: 0.45
 Median Data: 0.10
 Sd Data: 371.61
 80% Data: 0.06, 0.60
 Df Curve: 4 (Best=4)
 Mean Curve: 0.09
 Median Curve: 0.07
 Sd Curve: 0.12
 80% Curve: 0.02, 0.33
 Latin: Equisetum fluviatile
 Dutch: Holpijp

Analysis of Deviance

Change	Deviance	Prob
+ P(1)	52.29	<0.001
+ P(2)	21.93	<0.001
+ P(3)	12.95	<0.001
+ P(4)	7.37	0.007
+ P(5)	4.39	0.036
+ P(6)	3.45	0.063
+ P(7)	3.43	0.064
+ P(8)	3.24	0.072
+ P(9)	2.83	0.092
+ P(10)	1.04	0.307

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	◊
11 - 25	15	◊
26 - 50	6	●



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Home 1 species 1 species 4 df 4 species Summary

NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: QUERROB Quercus robur

Zomereik

Select a species to display its response curve.

Species Df

QUERROB Best

Y: One Max Curve

Species Information

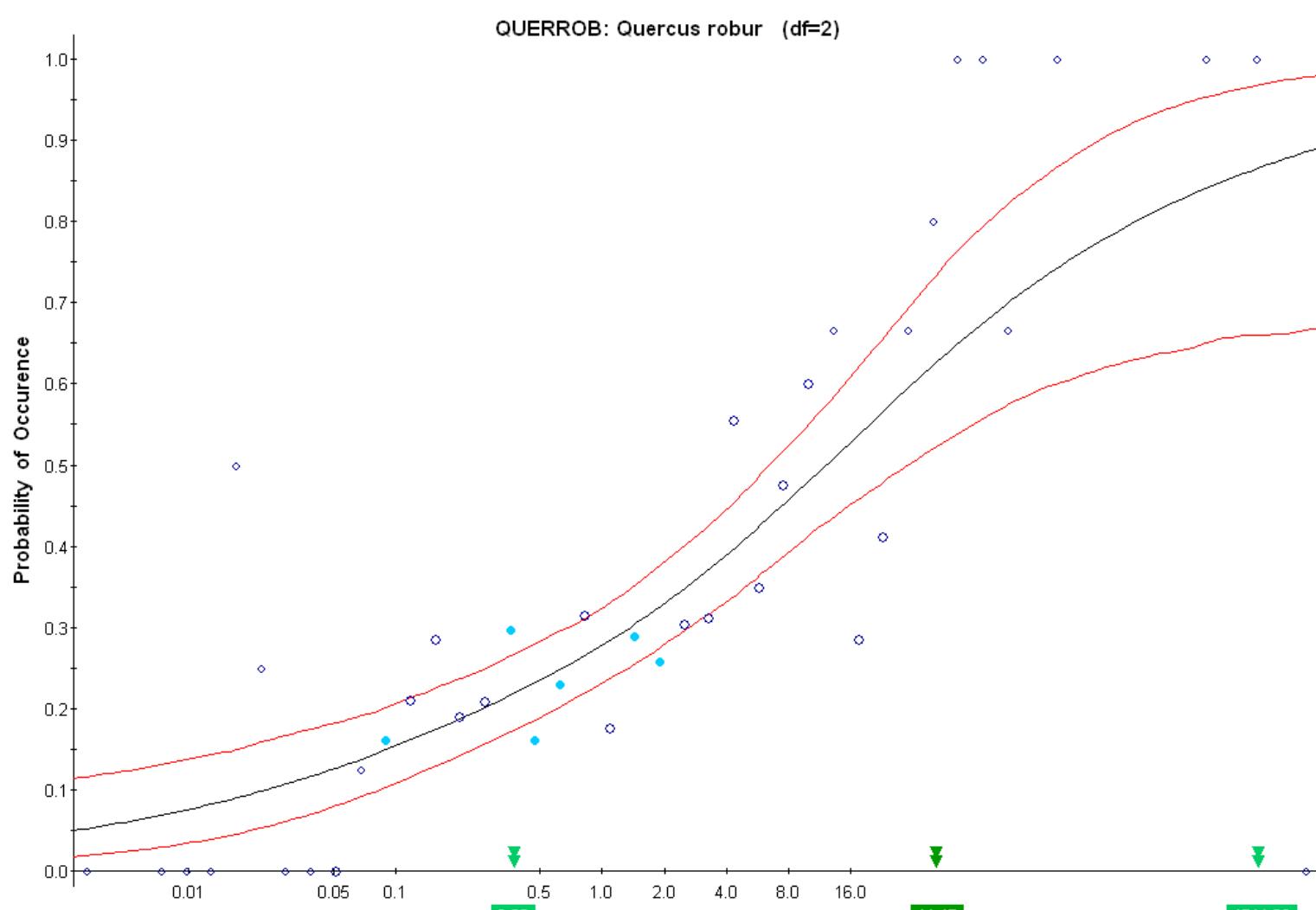
Short name: QUERROB
 Npresent: 160
 Mean Data: 31.24
 Median Data: 31.10
 Sd Data: 13.44
 80% Data: 0.18, 39.70
 Df Curve: 2 (Best=2)
 Mean Curve: 41.47
 Median Curve: 79.99
 Sd Curve: 131.37
 80% Curve: 0.38, 1511.20
 Latin: Quercus robur
 Dutch: Zomereik

Analysis of Deviance

Change	Deviance	Prob
+ P(1)	55.88	<0.001
+ P(2)	0.91	0.340
+ P(3)	1.18	0.277
+ P(4)	1.50	0.221
+ P(5)	1.79	0.181
+ P(6)	2.11	0.147
+ P(7)	2.26	0.133
+ P(8)	2.21	0.137
+ P(9)	2.10	0.147
+ P(10)	2.03	0.155

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	◊
11 - 25	15	◊
26 - 50	6	●



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Home 1 species 1 species 4 df 4 species Summary

NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: URTIDIO Urtica dioica Grote brandnetel

Select a species to display its response curve.

Species Df
URTIDIO Best

Y: One Max Curve

Species Information

Short name: URTIDIO
 Npresent: 72
 Mean Data: 2.40
 Median Data: 0.61
 Sd Data: 8.85
 80% Data: 0.15, 3.53
 Df Curve: 3 (Best=3)
 Mean Curve: 0.24
 Median Curve: 0.27
 Sd Curve: 0.68
 80% Curve: 0.00, 9.00
 Latin: Urtica dioica
 Dutch: Grote brandnetel

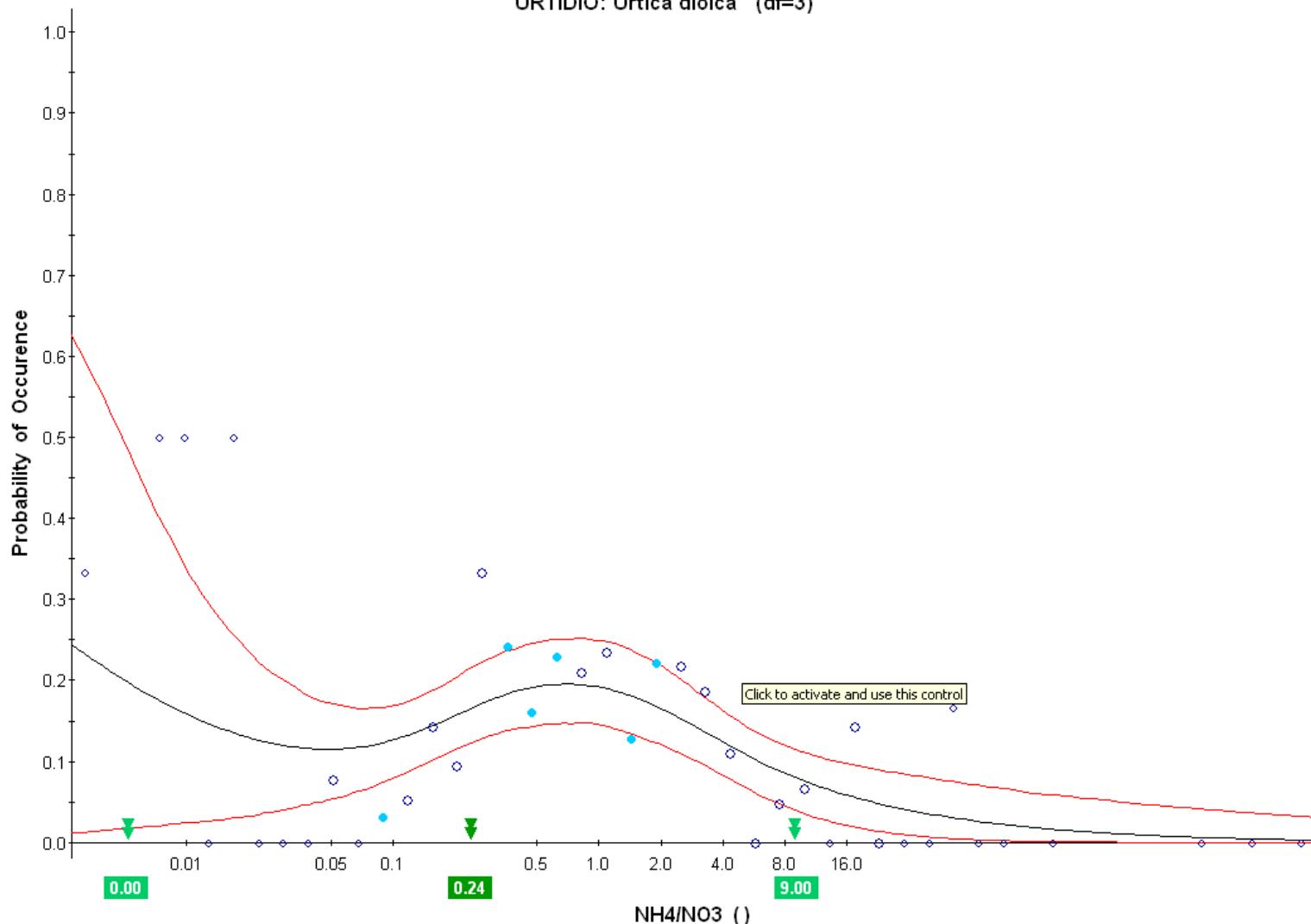
Analysis of Deviance

Change	Deviance	Prob
+ P(1)	4.11	0.043
+ P(2)	10.33	0.001
+ P(3)	7.16	0.007
+ P(4)	4.49	0.034
+ P(5)	2.78	0.095
+ P(6)	2.28	0.131
+ P(7)	2.15	0.142
+ P(8)	1.91	0.167
+ P(9)	1.54	0.215
+ P(10)	1.20	0.273

Symbol Definition Rawdata

Nrelevés	Npoint	Symbol
1 - 10	19	○
11 - 25	15	○
26 - 50	6	●

URTIDIO: Urtica dioica (df=3)



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NH4/NO3 log-transformed (520 relevés; 98 species; 1000 bootstraps)

80% Curve Mean Curve

Species Translator: VACIMYR

Vaccinium myrtillus

Blauwe bosbes

Select a species to display its response curve.

Species Df

VACIMYR Best

Y: One Max Curve

Species Information

Short name: VACIMYR

Npresent: 33

Mean Data: 11.61

Median Data: 5.71

Sd Data: 8.15

80% Data: 0.49, 35.60

Df Curve: 2 (Best=2)

Mean Curve: 54.66

Median Curve: 69.27

Sd Curve: 136.82

80% Curve: 1.87, 1262.30

Latin: Vaccinium myrtillus

Dutch: Blauwe bosbes

Analysis of Deviance

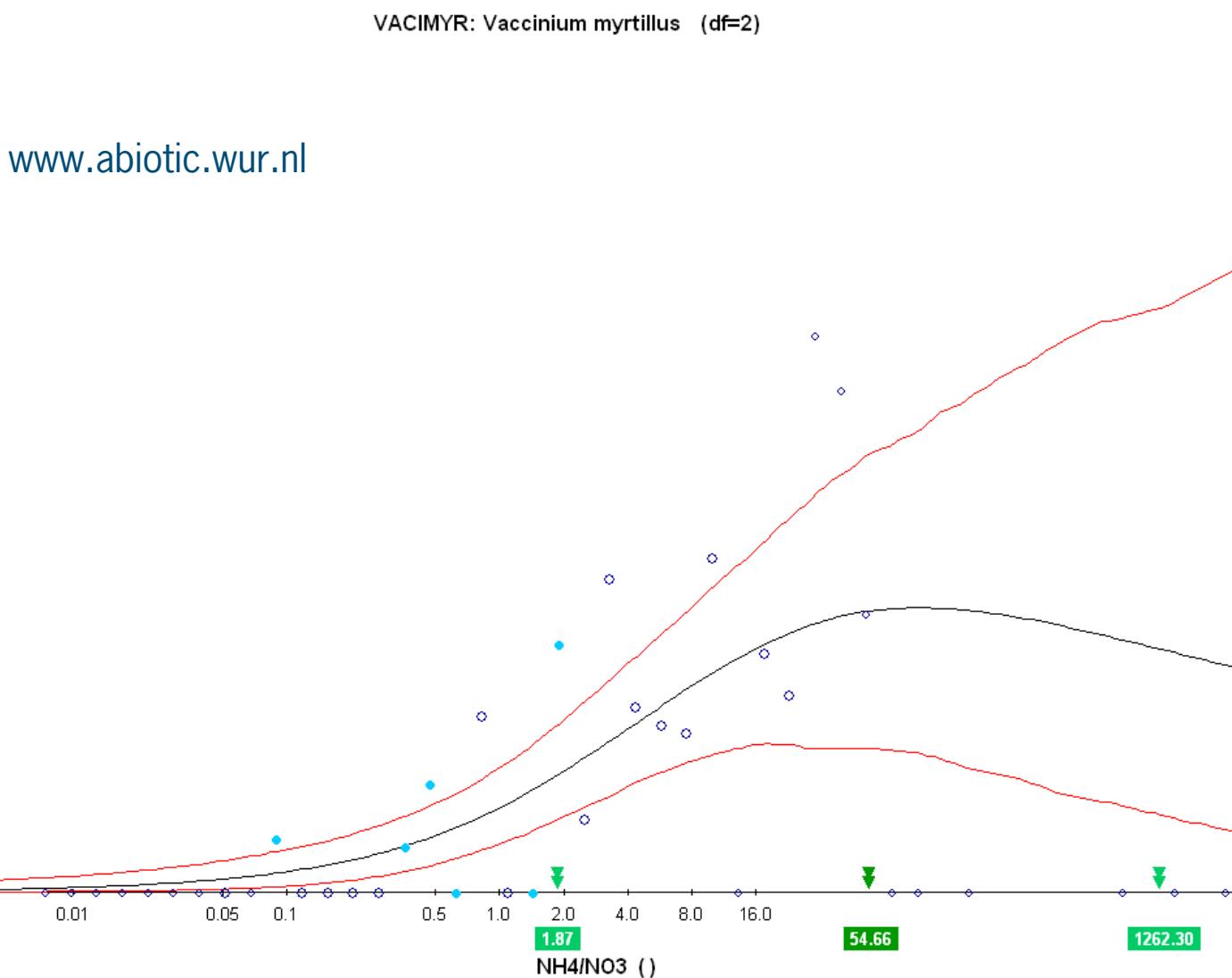
Change Deviance Prob

Change	Deviance	Prob
+ P(1)	18.85	<0.001
+ P(2)	6.40	0.011
+ P(3)	1.50	0.220
+ P(4)	0.60	0.437
+ P(5)	0.60	0.437
+ P(6)	0.78	0.377
+ P(7)	1.02	0.312
+ P(8)	1.17	0.279
+ P(9)	1.25	0.263
+ P(10)	1.26	0.262

Symbol Definition Rawdata

Nrelevés Npoint Symbol

1 - 10	19	◊
11 - 25	15	◊
26 - 50	6	●



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