



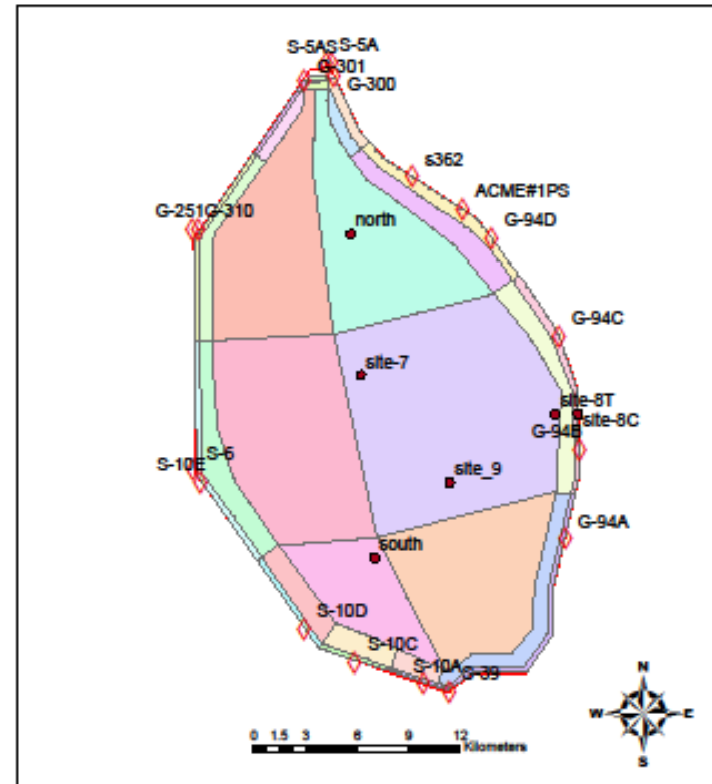
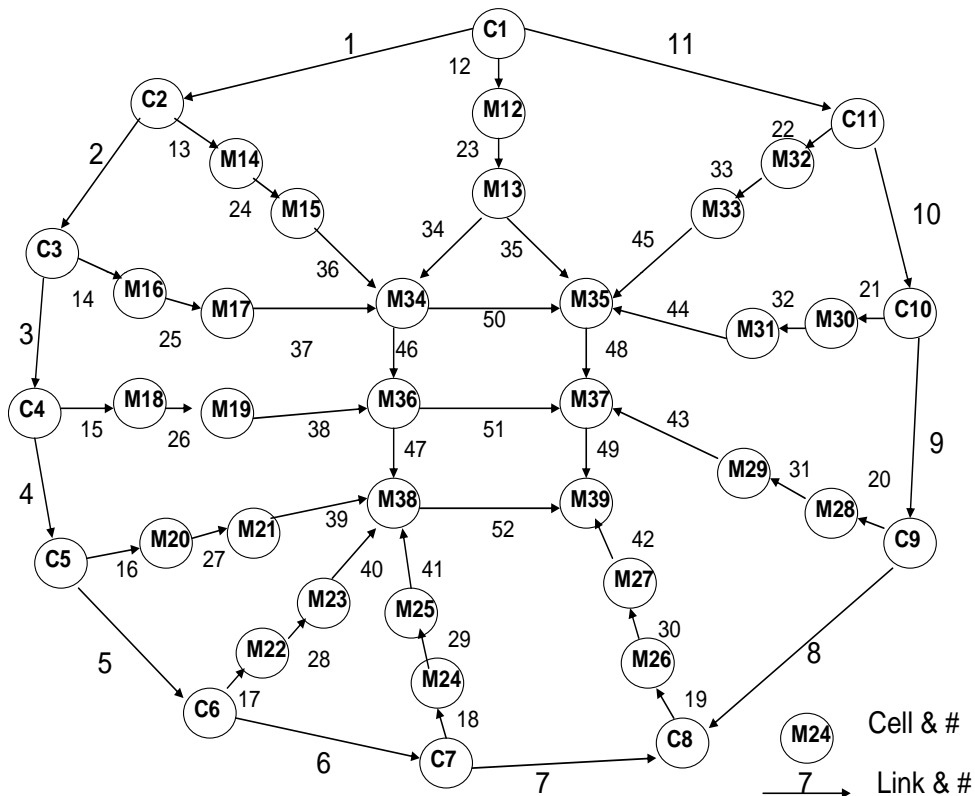
Multiple-Compartment Refuge Model

(39 Compartments)

Contents

- Structure
- Preliminary Results
 - Stage
 - CL
 - TP

Structure



The thirty-nine compartments

The path of water flow including exchange flow and nutrient transport is illustrated in this link-node structure of the model.

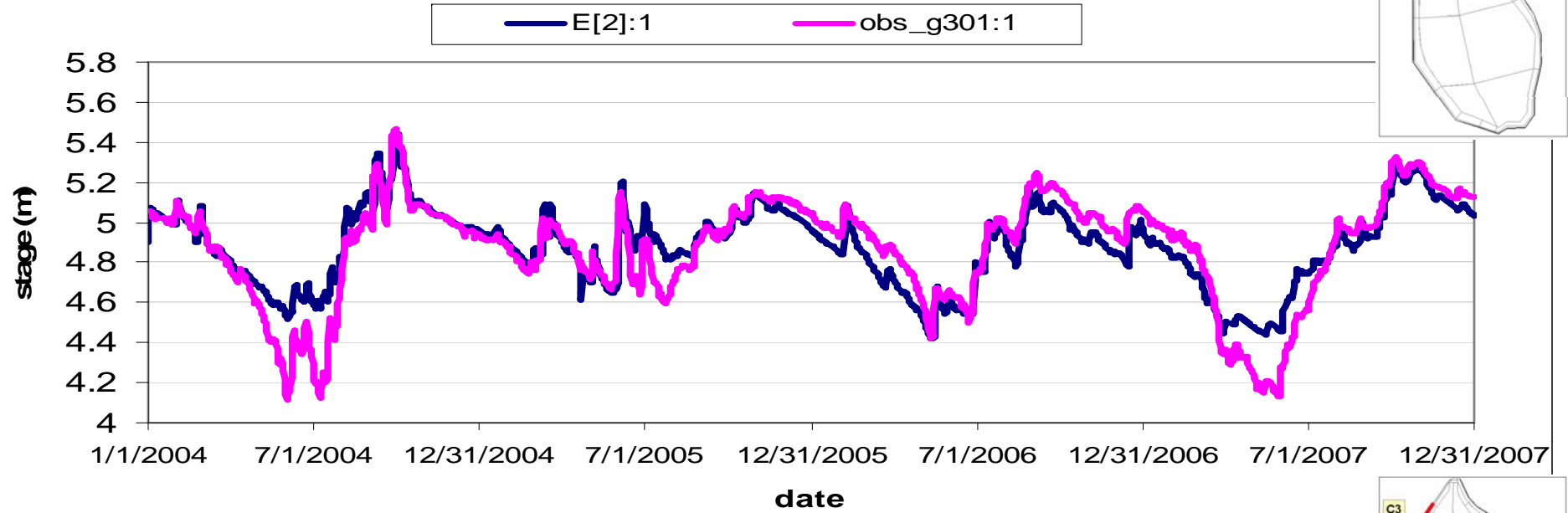
Parameters

Parameter	Description	Unit	Value
lseep	canal seepage constant	1/day	0.042
rseep	marsh seepage constant	1/day	0.000131527
B1	transport coefficient between canal and marsh cells	1/m/day	8.7
B2	transport coefficient between marsh and marsh cells	1/m/day	2.3
B5	transport coefficient between canal and canal cells	1/m/day	6.5
ETmin	minimum ET reduction factor	-	0.2
Het	depth below which ET is reduced	m	0.25
evap	fraction of ET that is evaporation	-	0.65
kd	dispersion coefficient	m ² /day	43200
KhalfSO4	sulfate half saturation constant	g/m ³	1
KmaxSO4	sulfate maximum removal rate	g/m ² /year	14.4
K1tp	total phosphorus maximum uptake rate	m ³ /g/year	0.1064 (EMG), 0.221 (PEW)
K2tp	total phosphorus recycle rate	m ² /g/year	0.002 (EMG), 0.0042 (PEW)
K3tp	total phosphorus burial rate	1/year	0.3192 (EMG), 0.6631 (PEW)
interP	total phosphorus internal loading rate	mg/m ² /year	0
wd_cl	wet deposition, chloride	mg/L	2
dd_cl	dry deposition, chloride	mg/m ² /year	1136
wd_tp	wet deposition, total phosphorus	mg/L	0.01
dd_tp	dry deposition, total phosphorus	mg/m ² /year	40
wd_so4	wet deposition, sulfate	mg/L	1
dd_so4	dry deposition, sulfate	mg/m ² /year	138.2

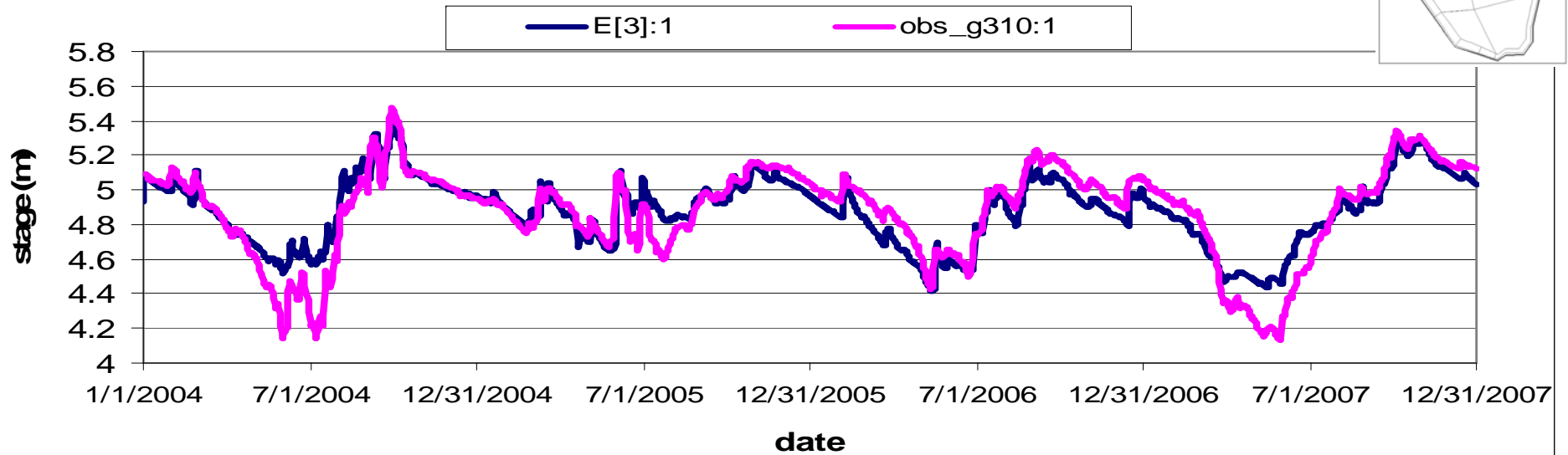
Preliminary Results: Stage

- Order:
 - Canal: C2 to C11
 - Marsh: M35, M37, M38

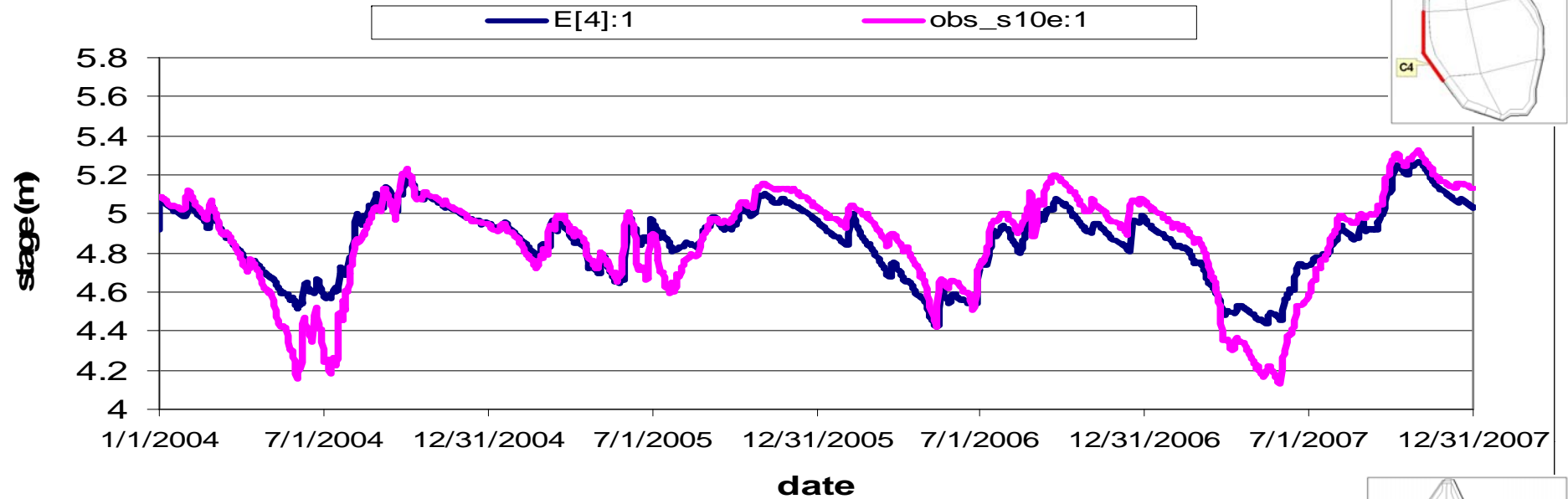
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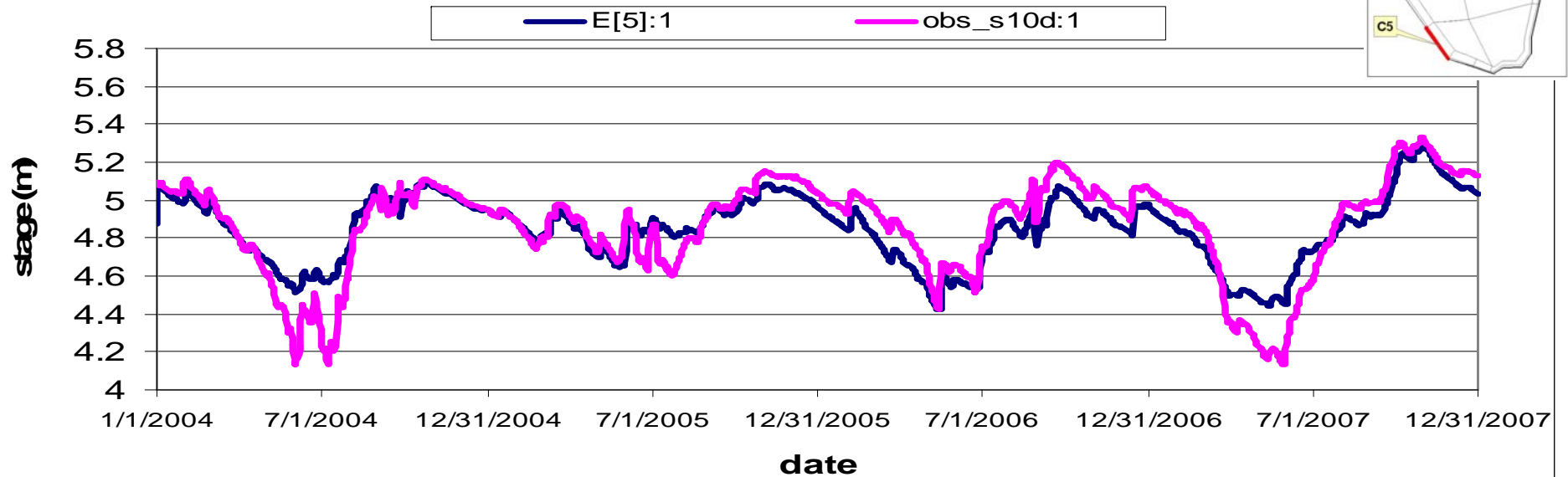
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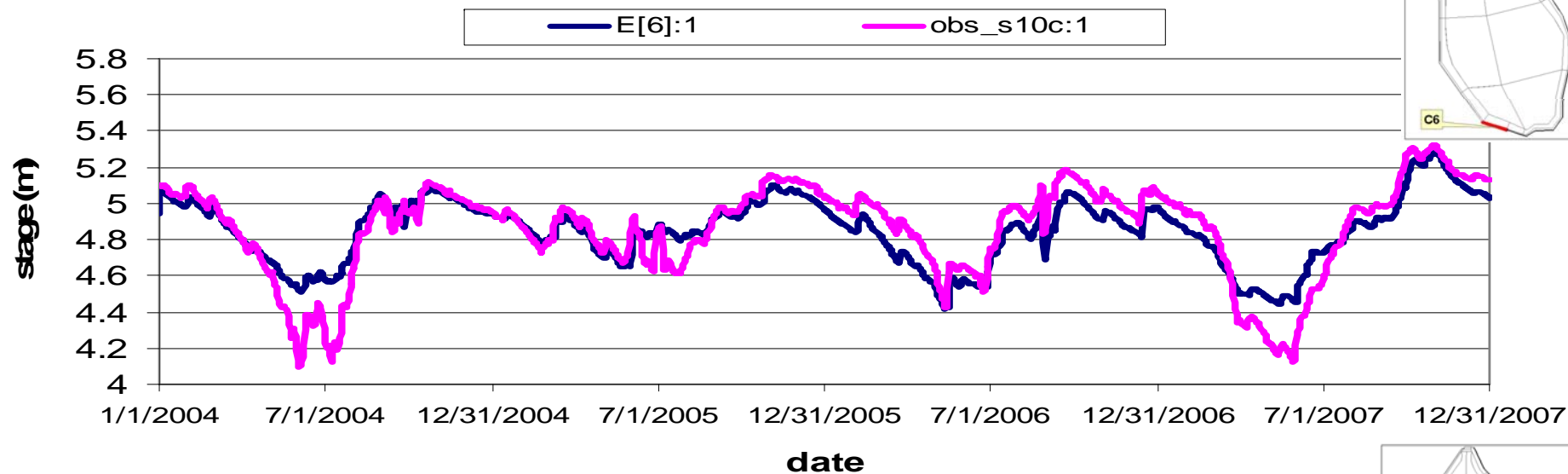
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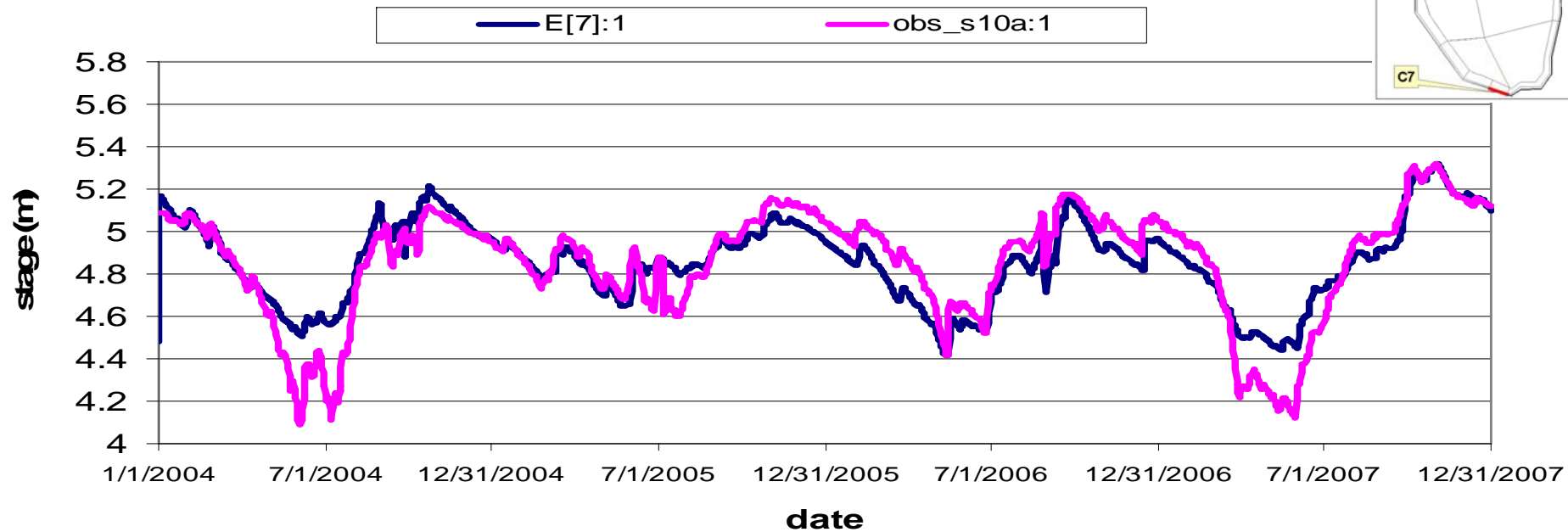
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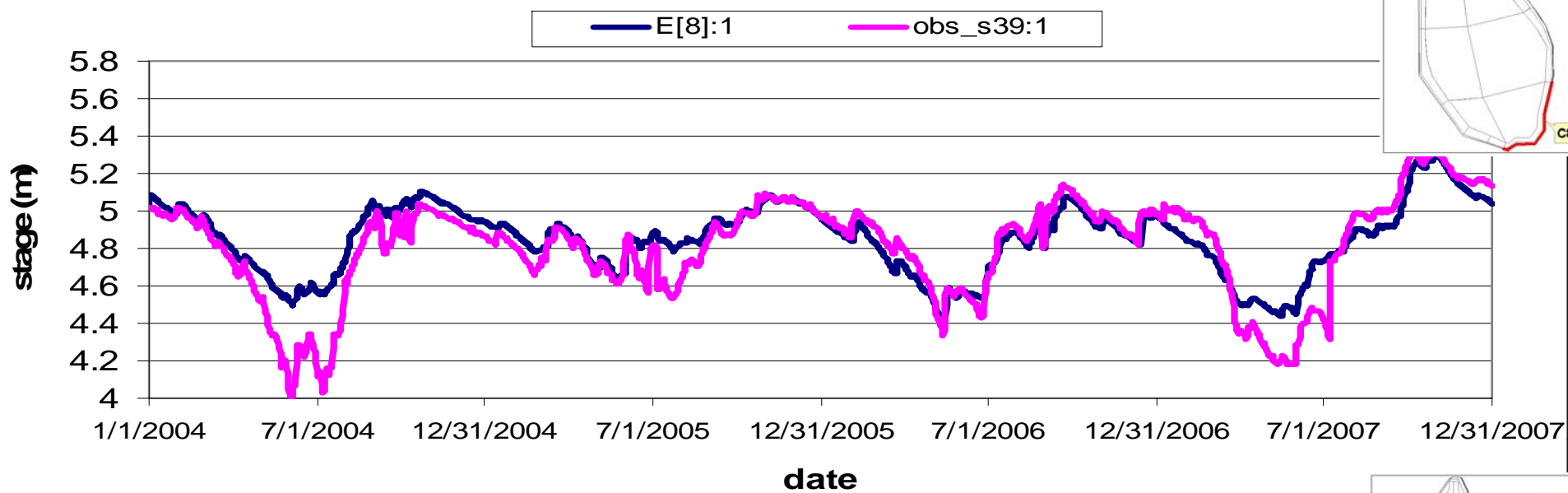
Canal 6



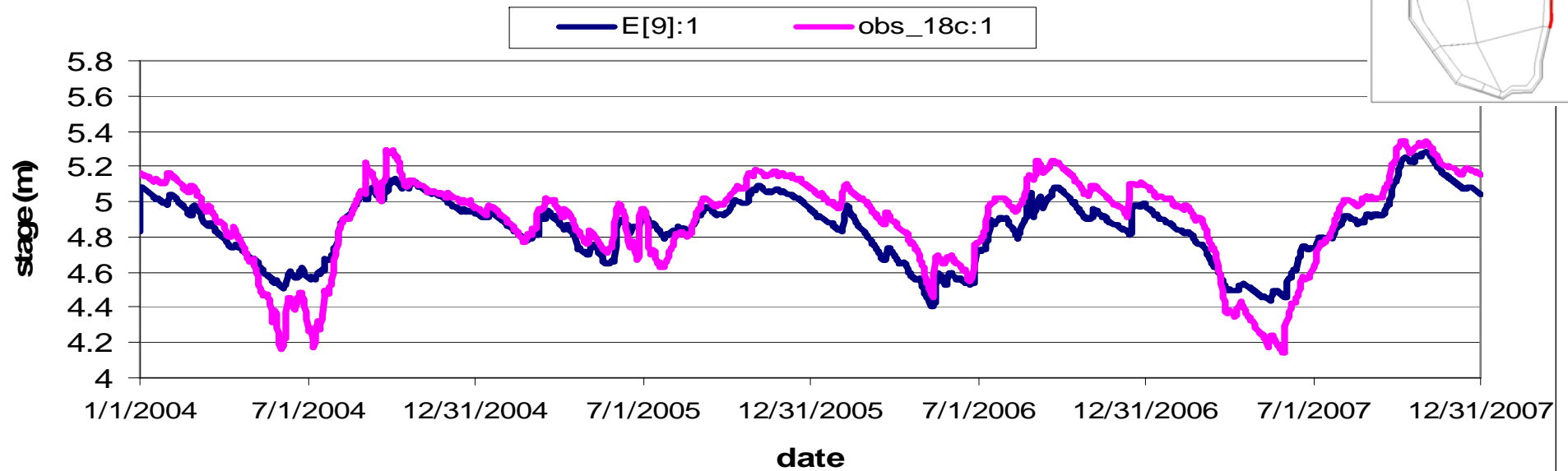
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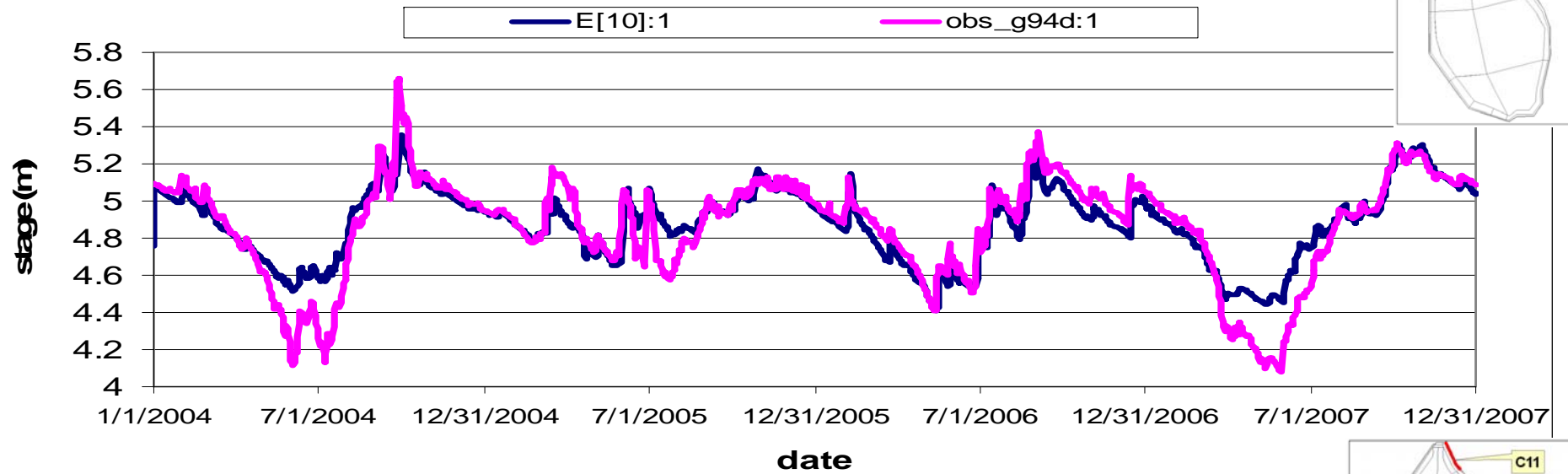
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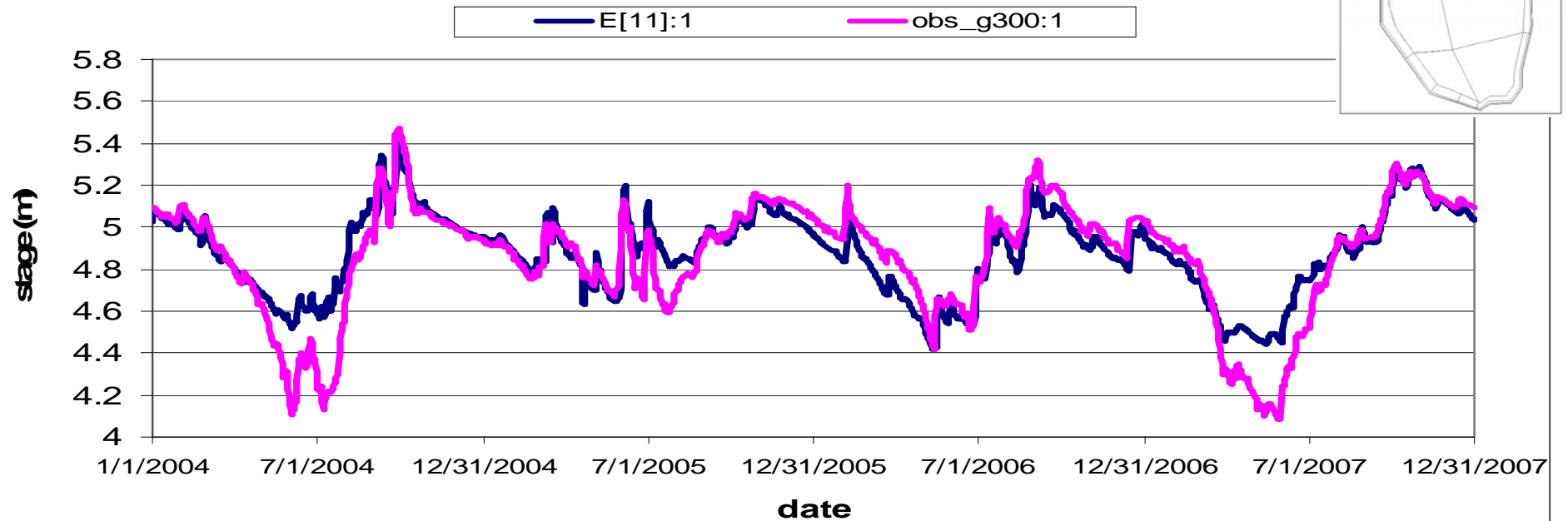
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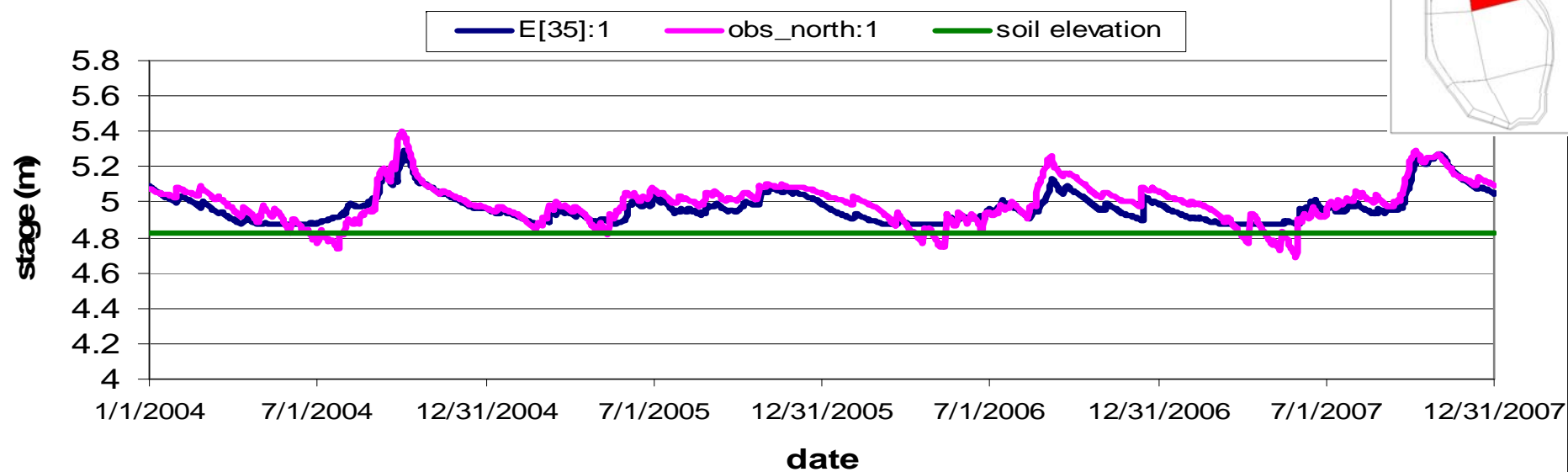
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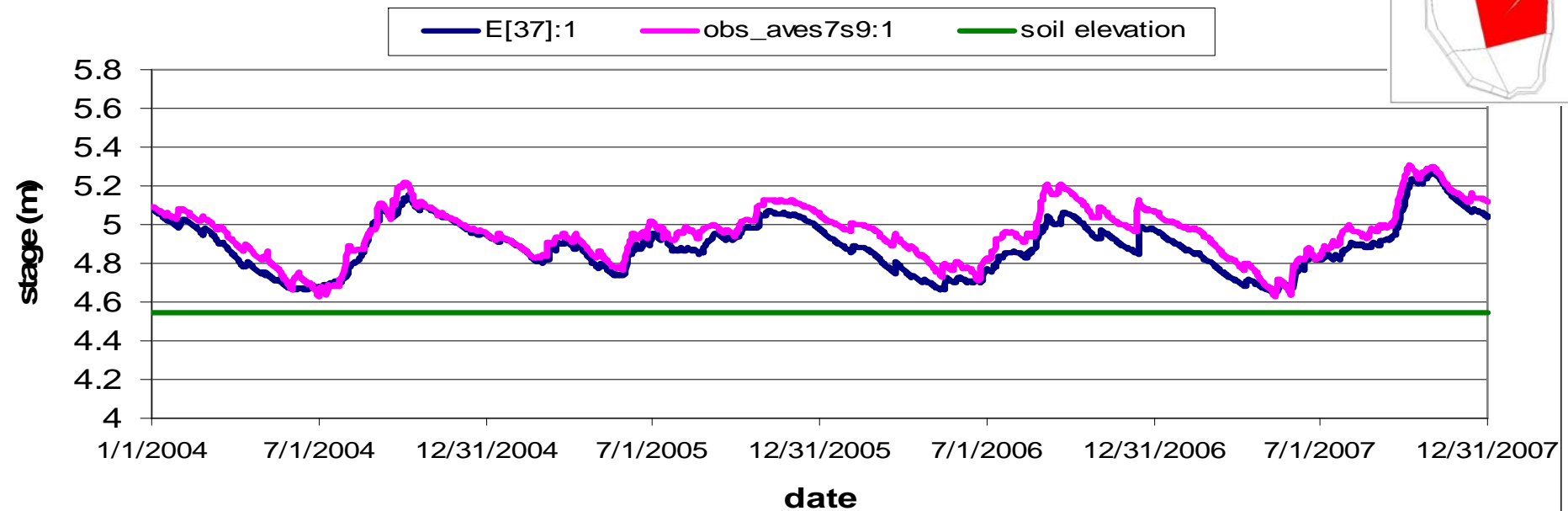
Canal 11

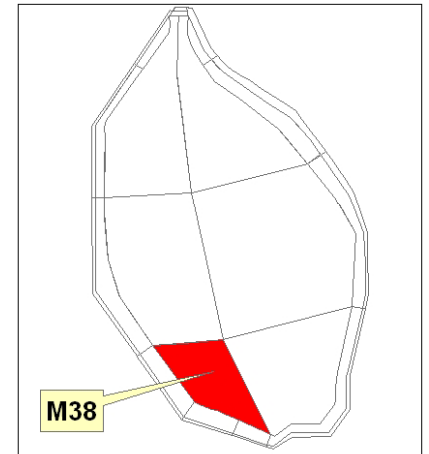


Marsh 35

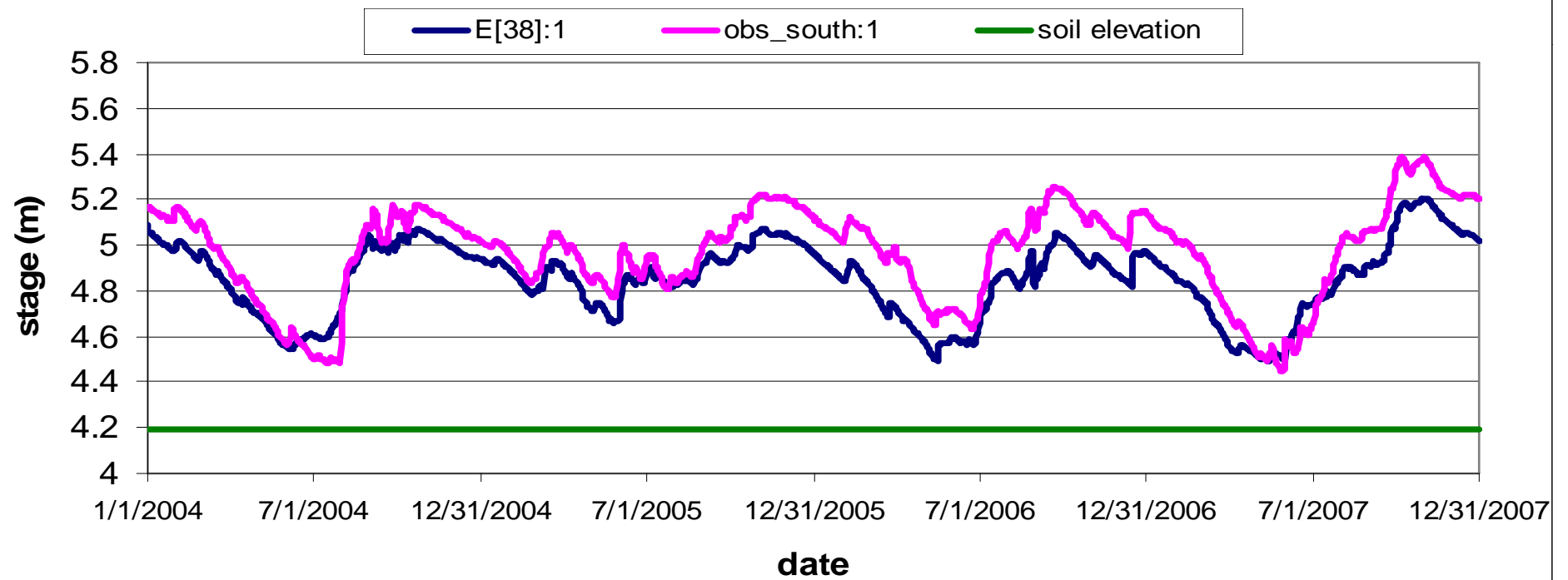


Marsh 37





Marsh 38



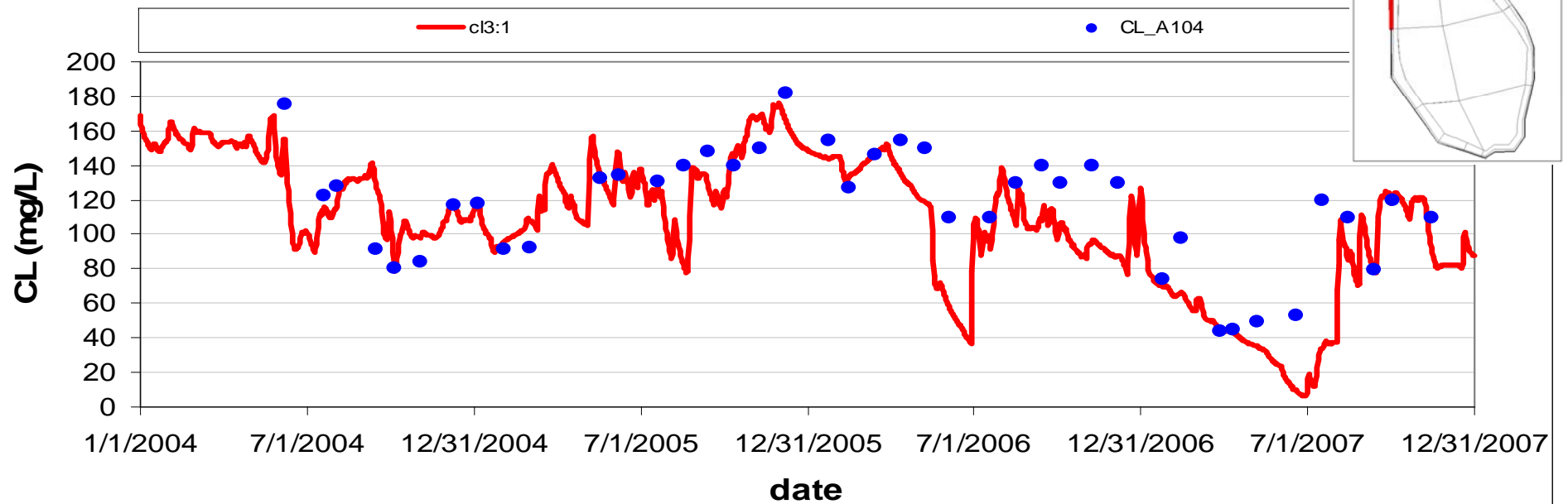
Preliminary Results: Water Quality

Canal	station	Marsh	station
c3	A104	M17	A105
c4	S10E, X0, Z0, A115	M18	A116, A121, X1, Z1
c5	S10D	M19	A117, A122, X2, Z2
c6	S10C	M21	A123
c7	S10A	M23	Lox15
c8	S39	M27	Lox14
c9	G94B	M28	A126, Lox6
c10	A129, A132, A135	M30	A130*, A133, A136
		M31	A130, 131, 134, 137, 140, Lox4
		M33	A101, A140*
		M34	A102,103, 106, 107, 108, 109, 110
		M35	Lox3, Lox5, A138, 139
		M36	Lox9, 10, 12, A111, 112, 113, 114, 128, 118, 119, 120, x3, x4, Y4, Z3, Z4
		M37	Lox6, 7, 8, 11, A127
		M38	Lox16, lox12*
		M39	Lox13, 14, A124

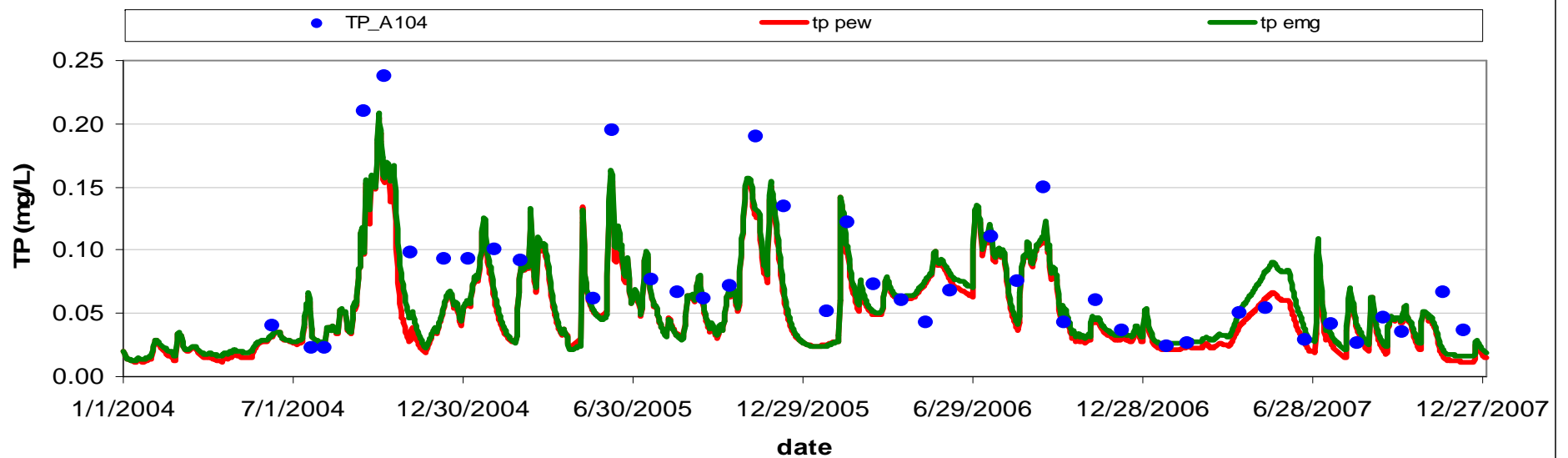
Order of WQ Slides

- First canal cells: C3→ C10
- Then marsh cells: M17 → M39
- A total of 24 compartments have observation data to compare with simulations.

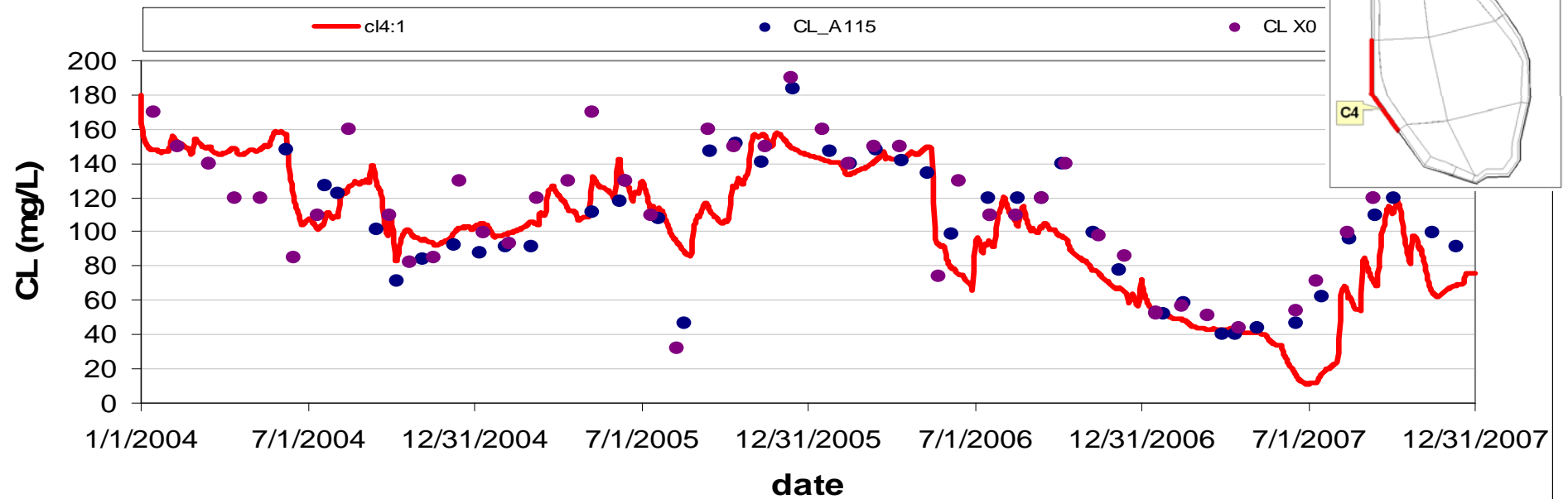
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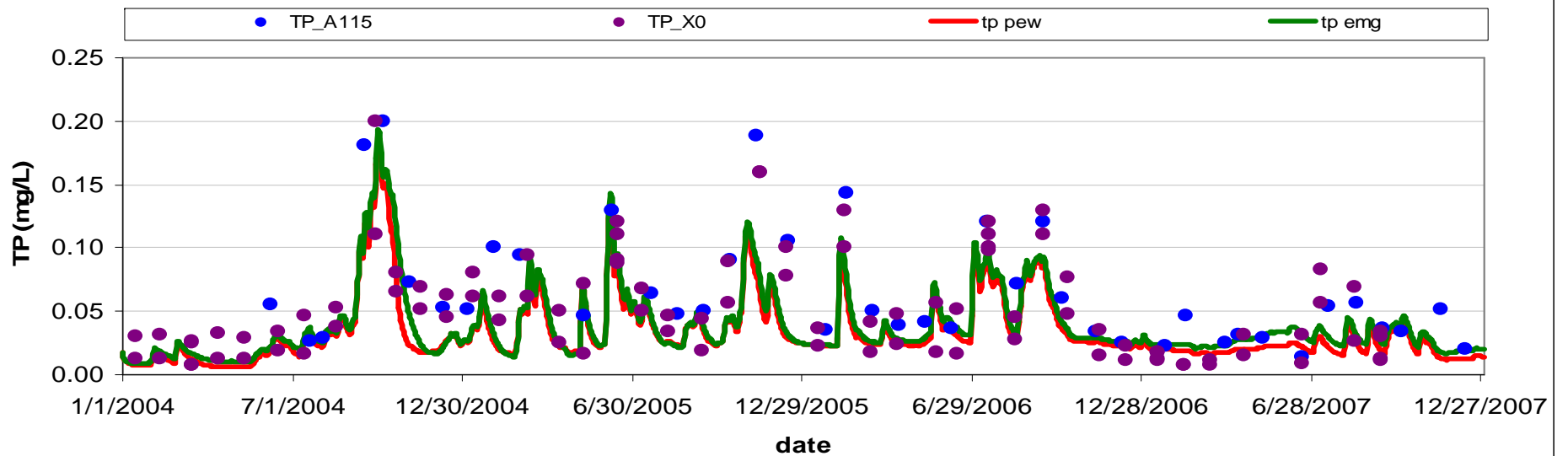
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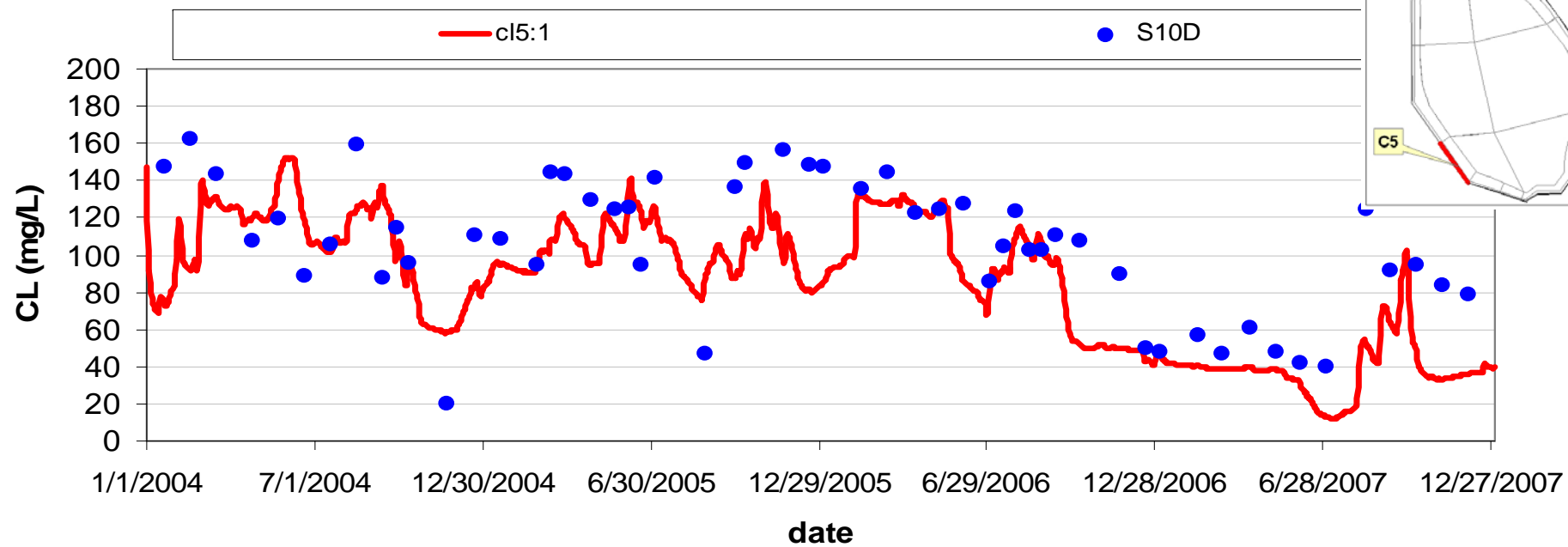
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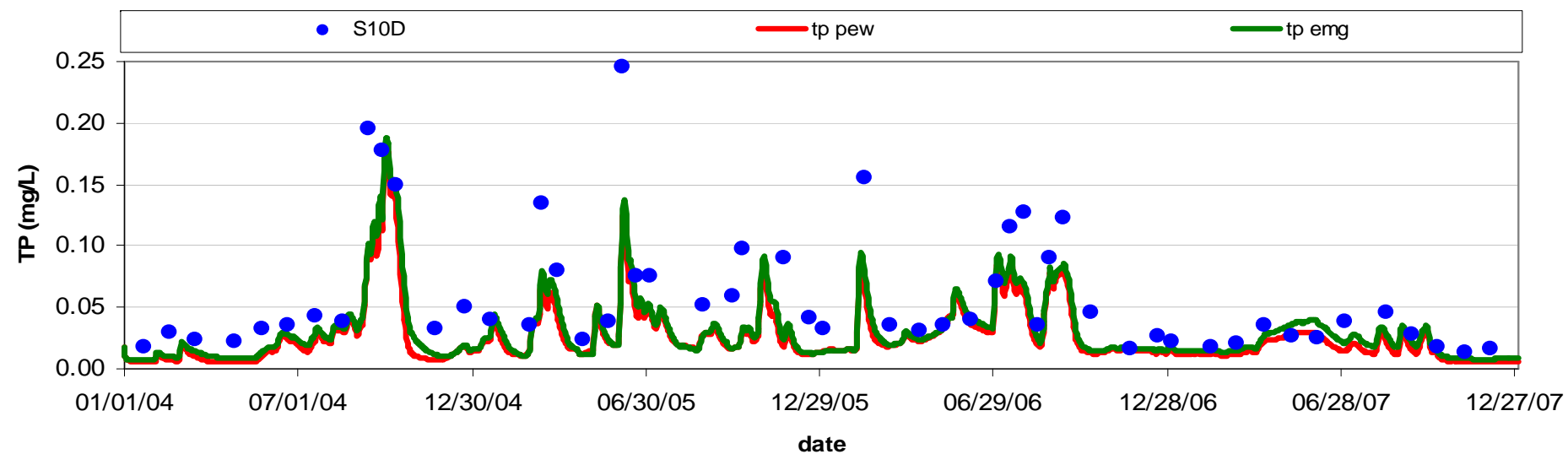
Canal 4



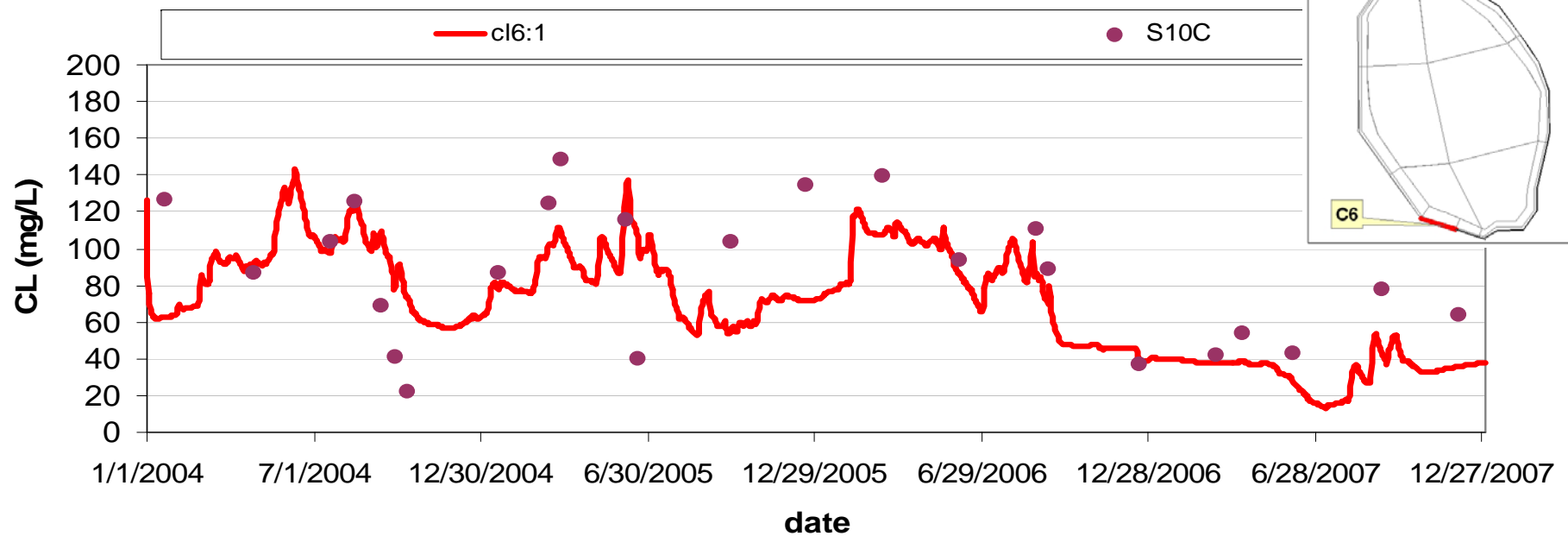
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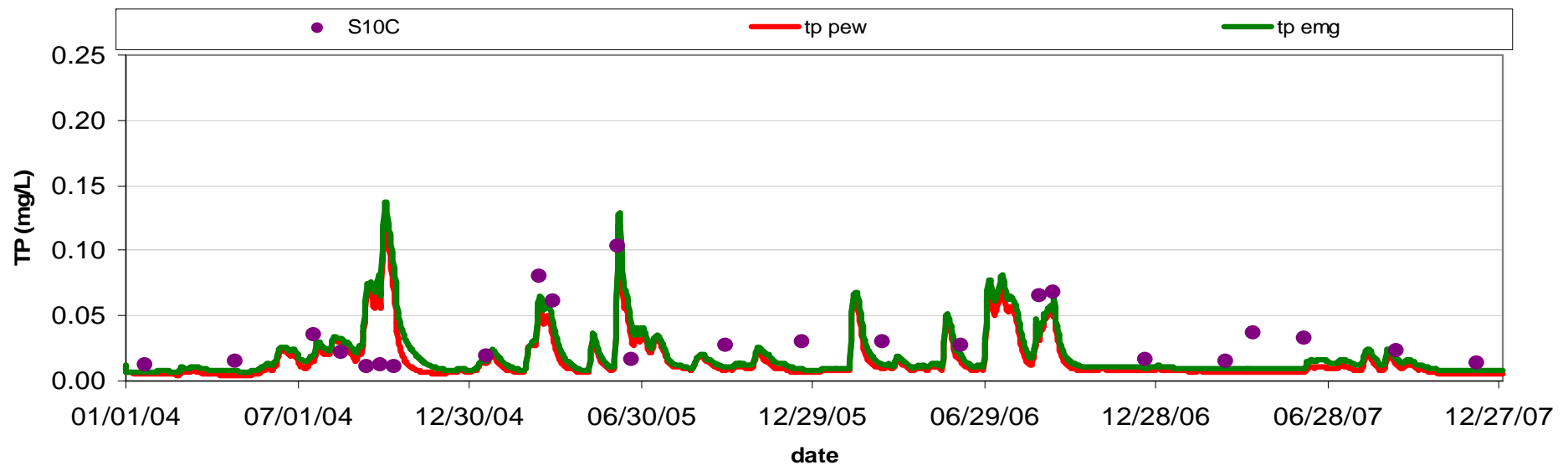
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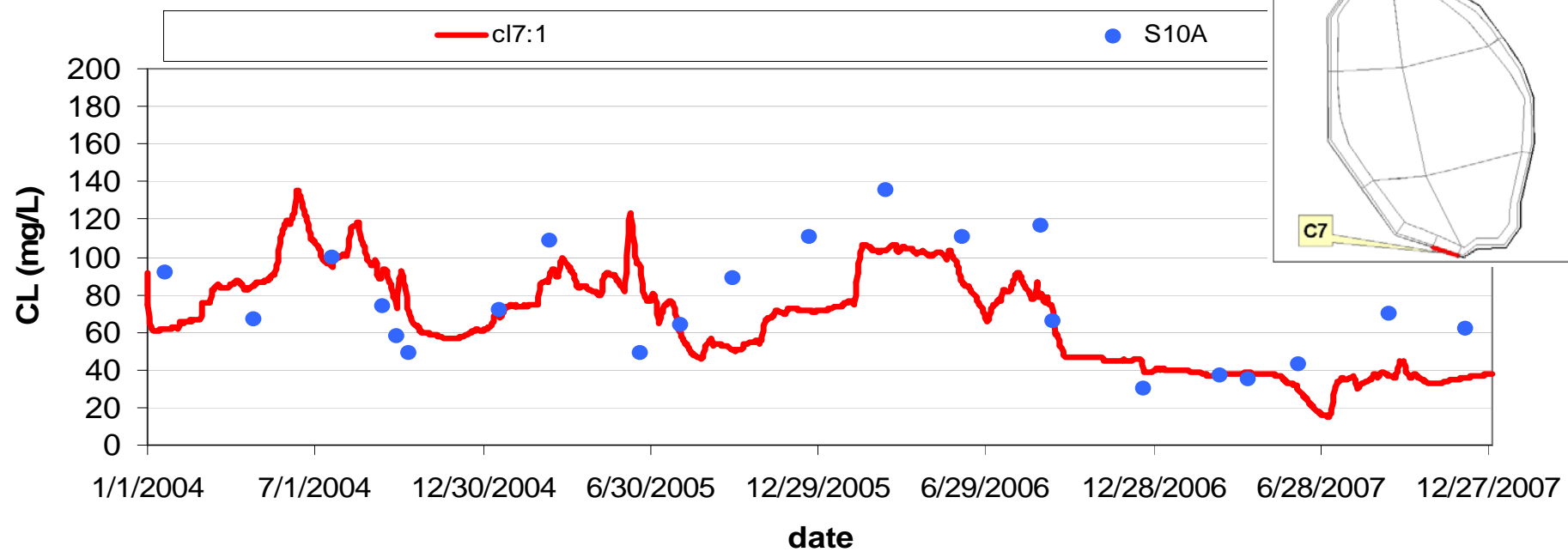
Canal 6



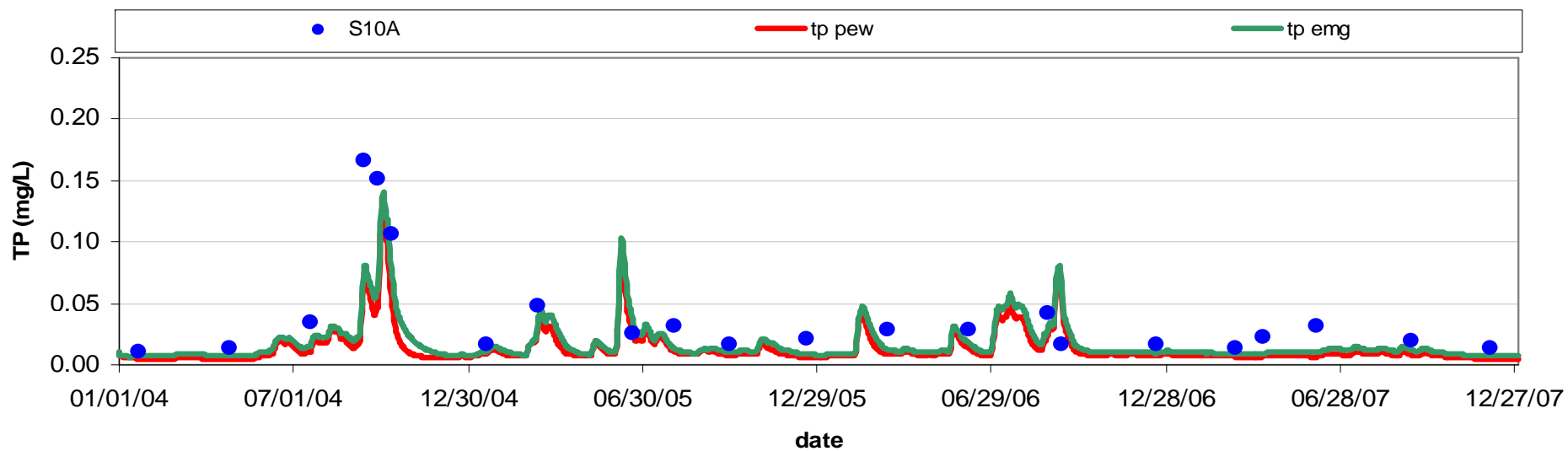
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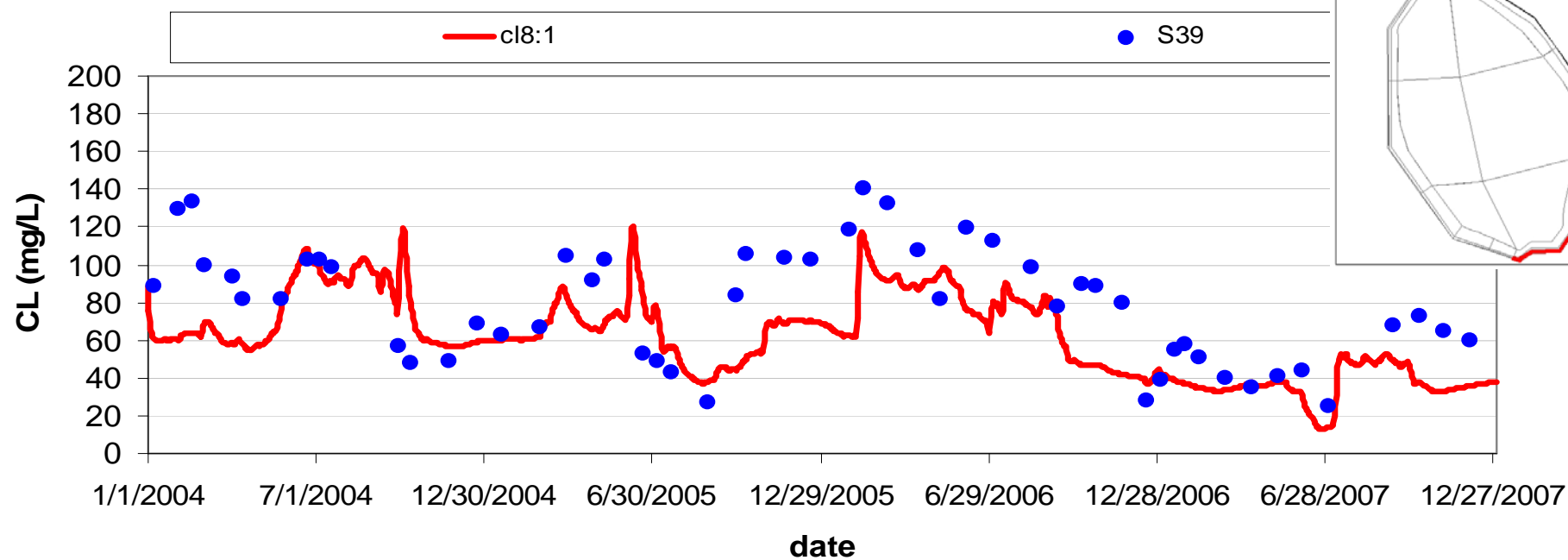
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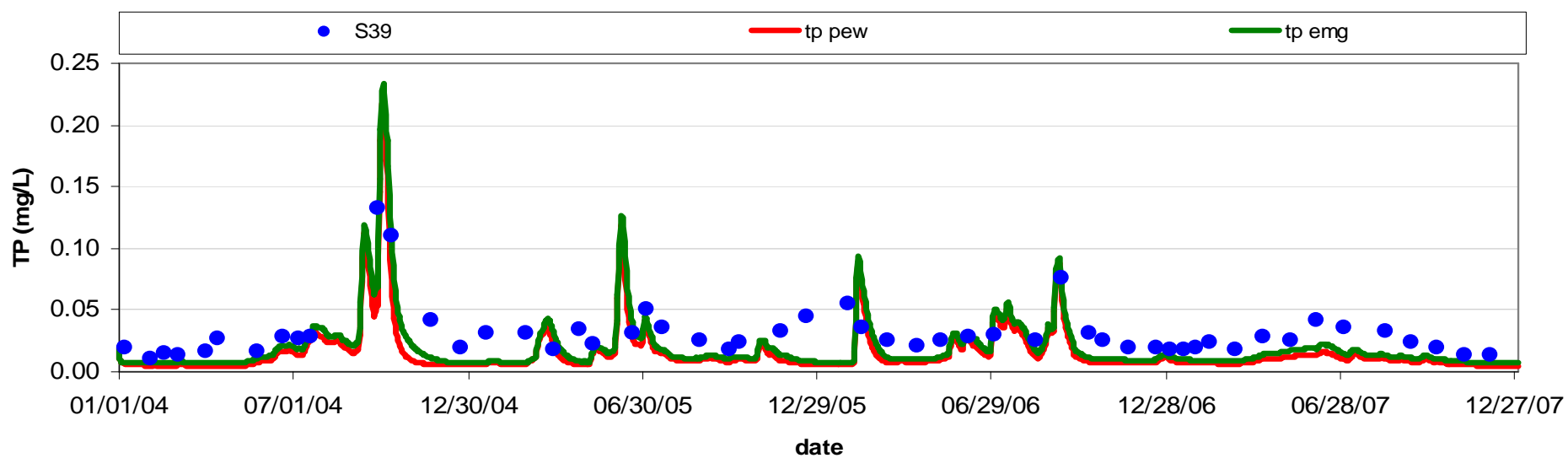
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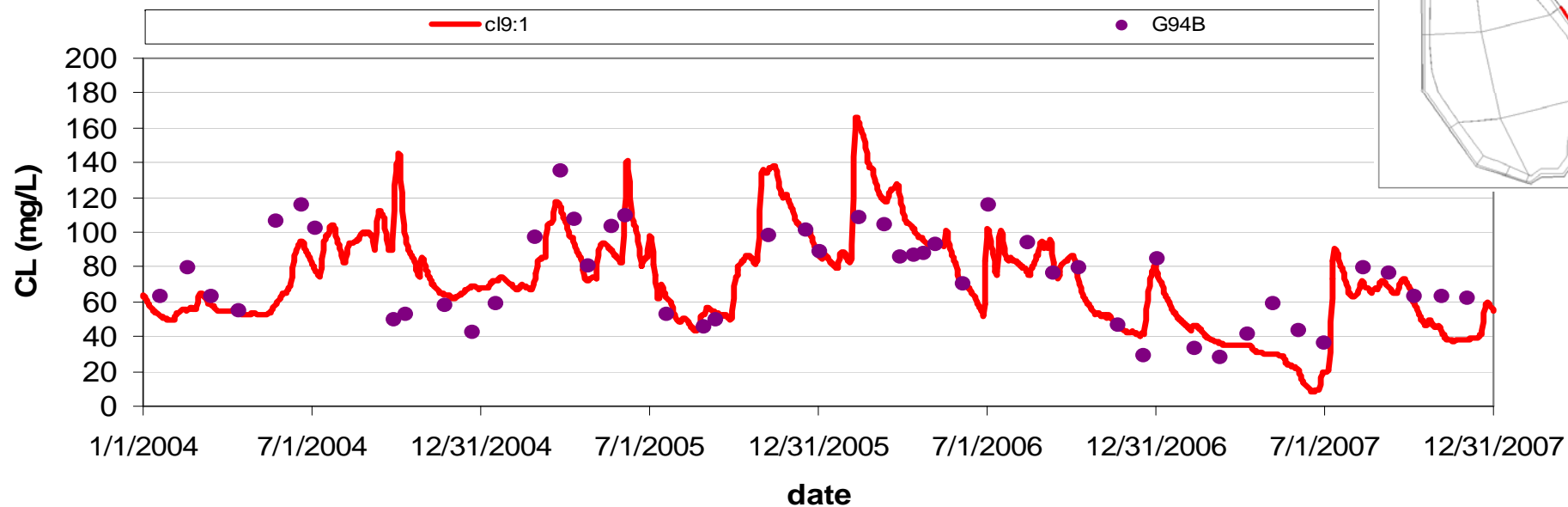
Canal 8



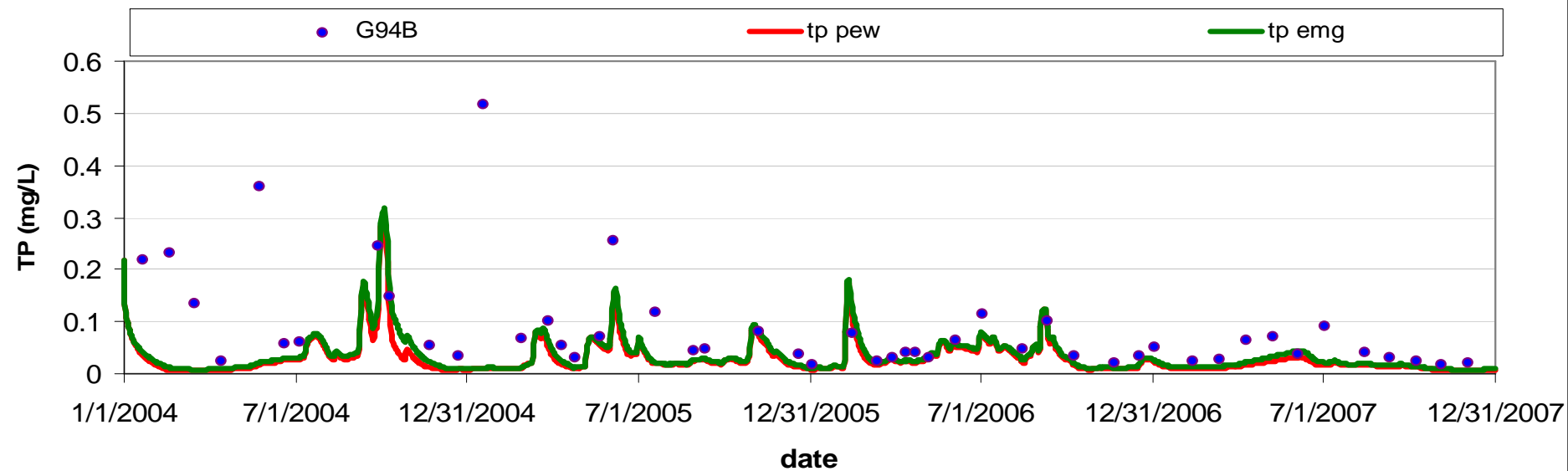
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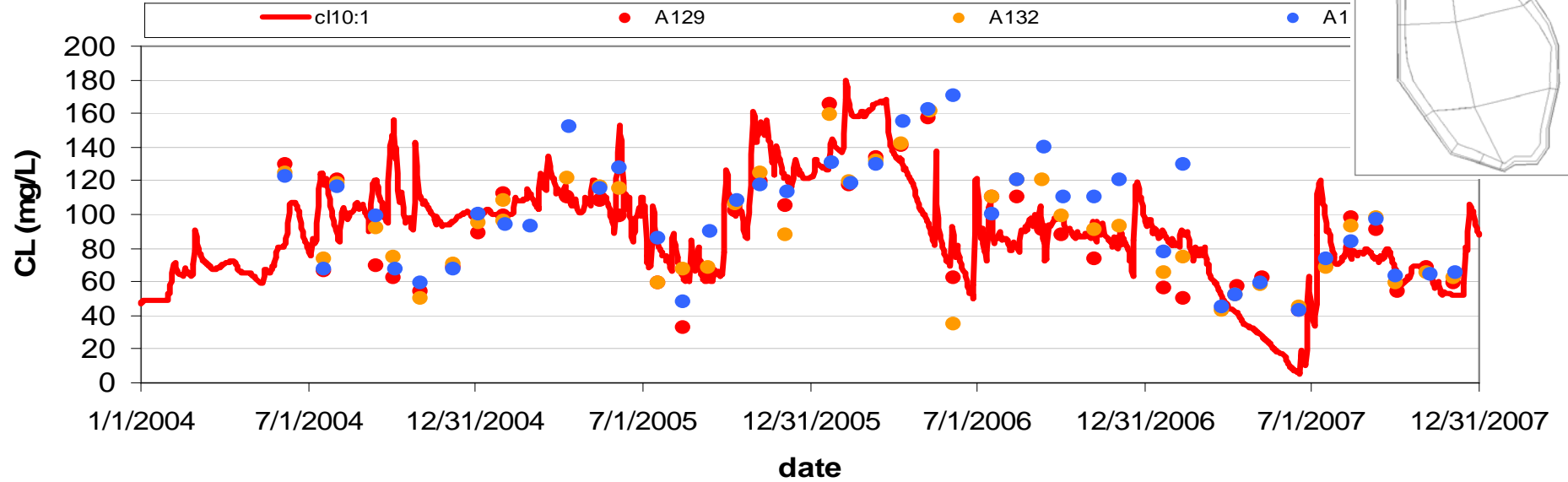
Canal 9



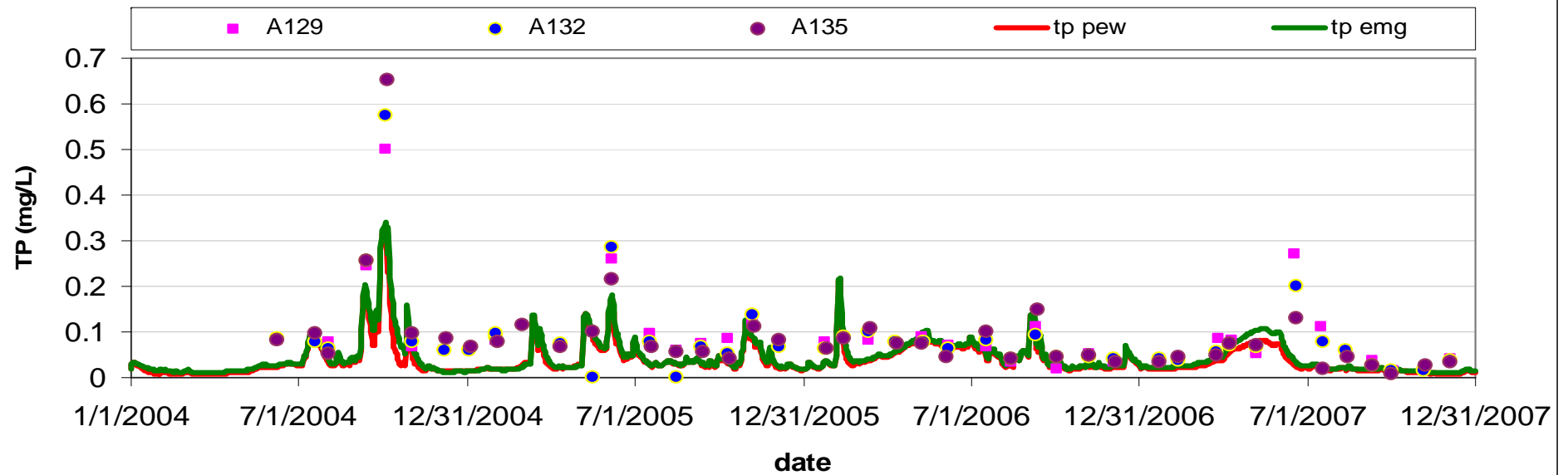
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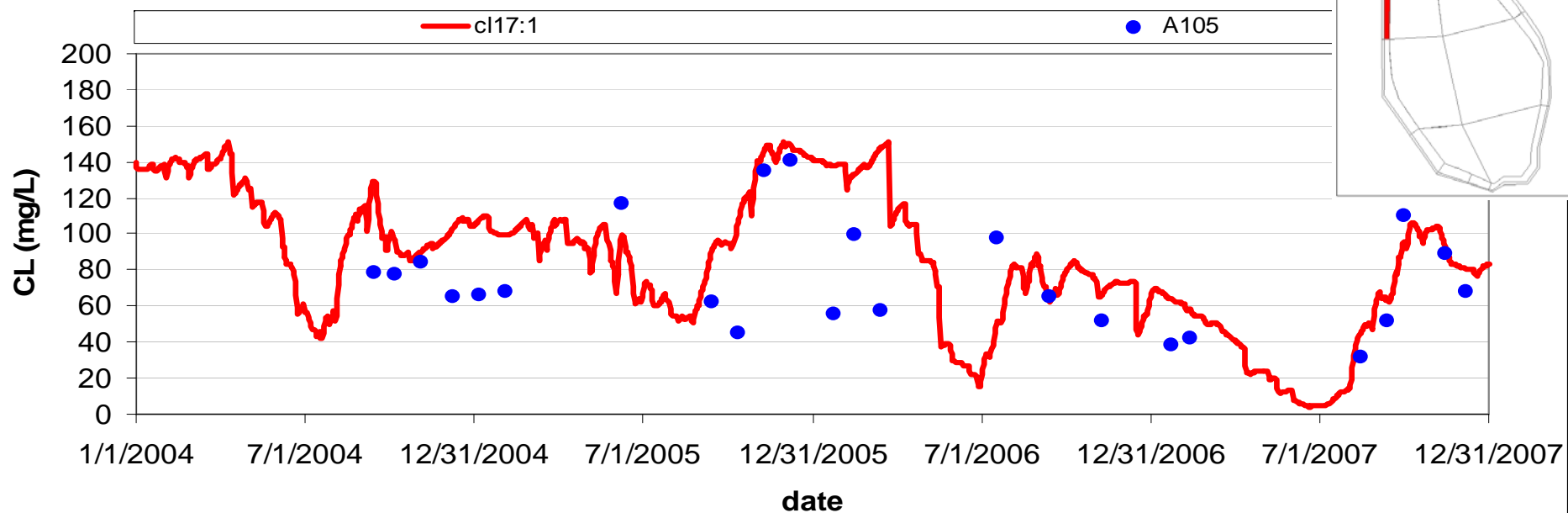
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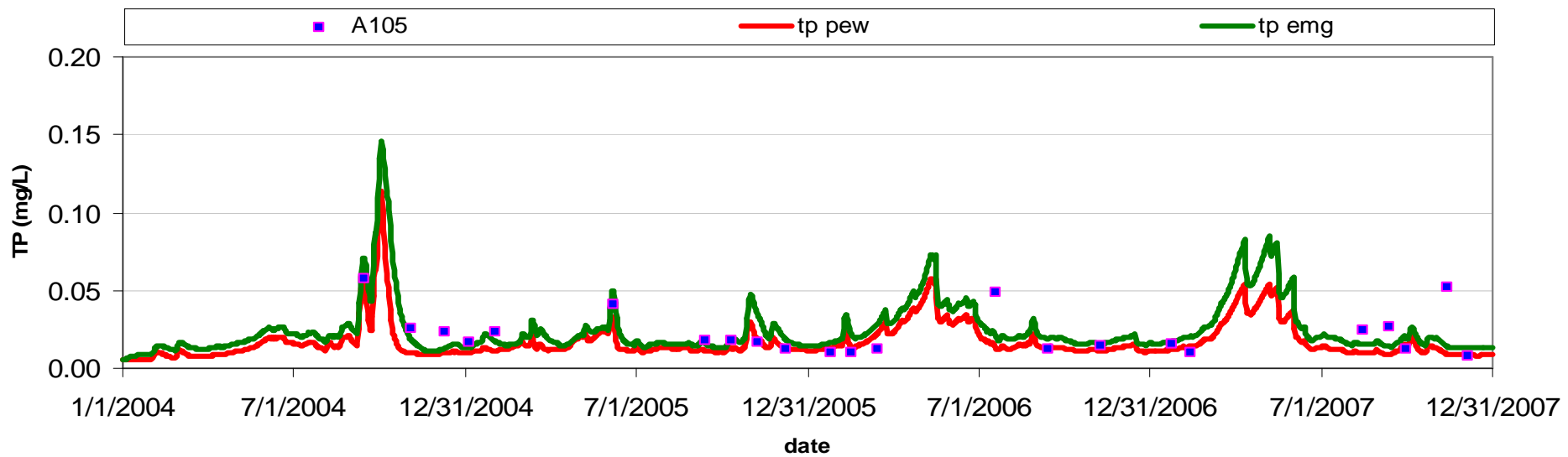
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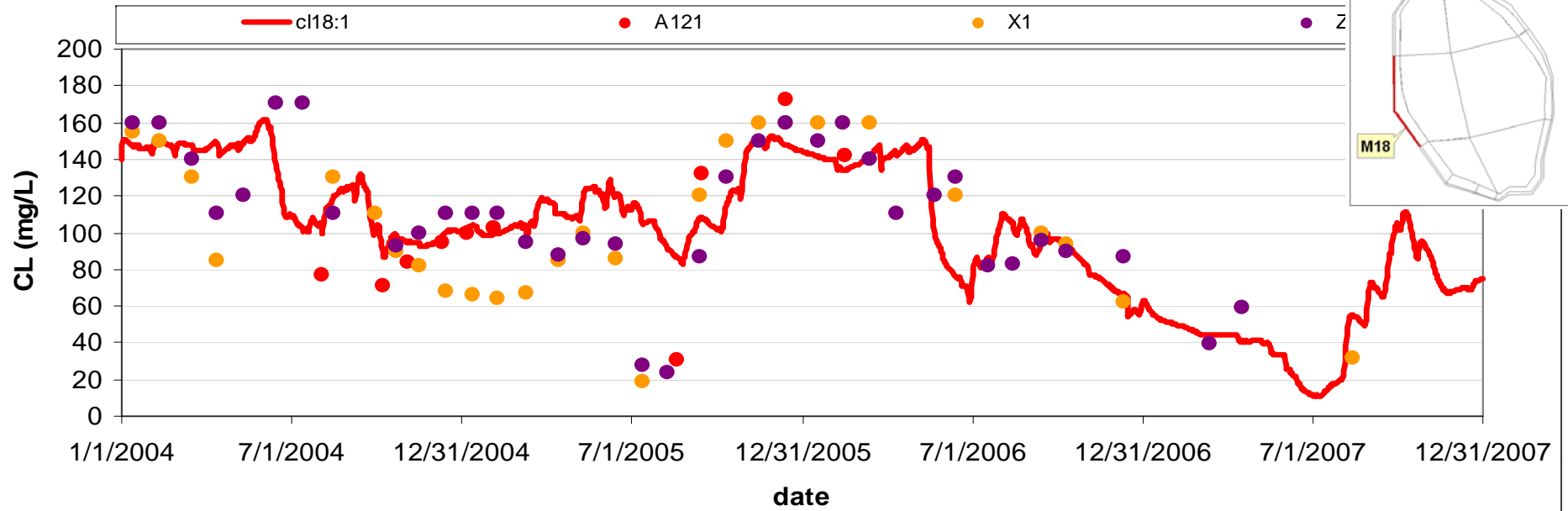
Marsh 17



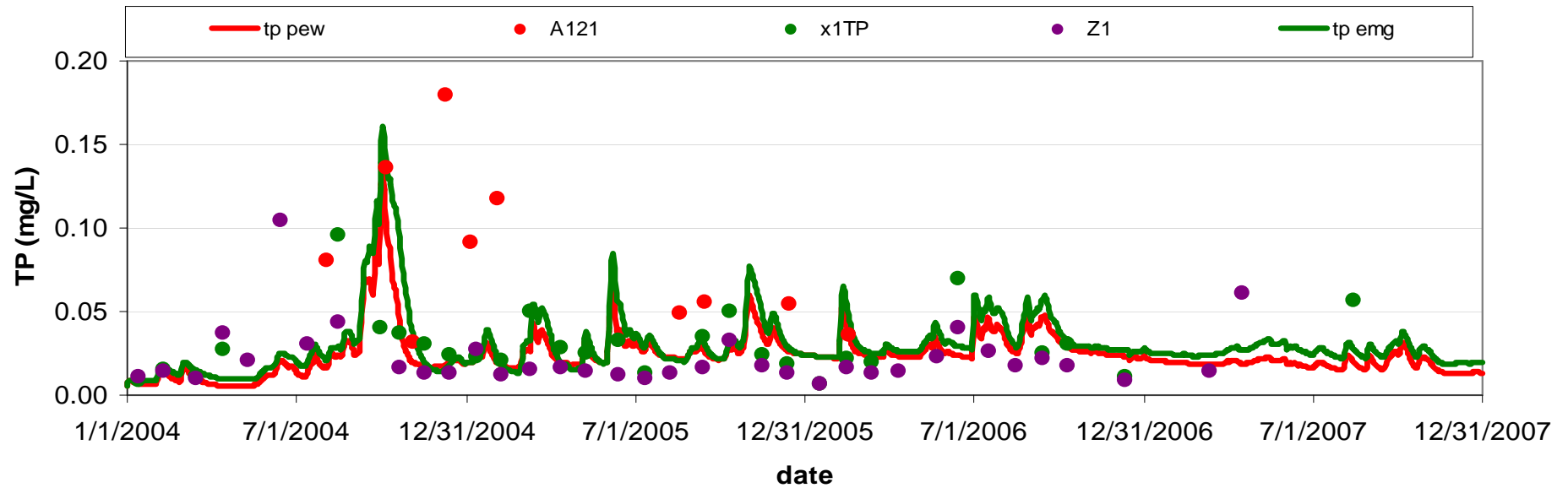
Marsh 17

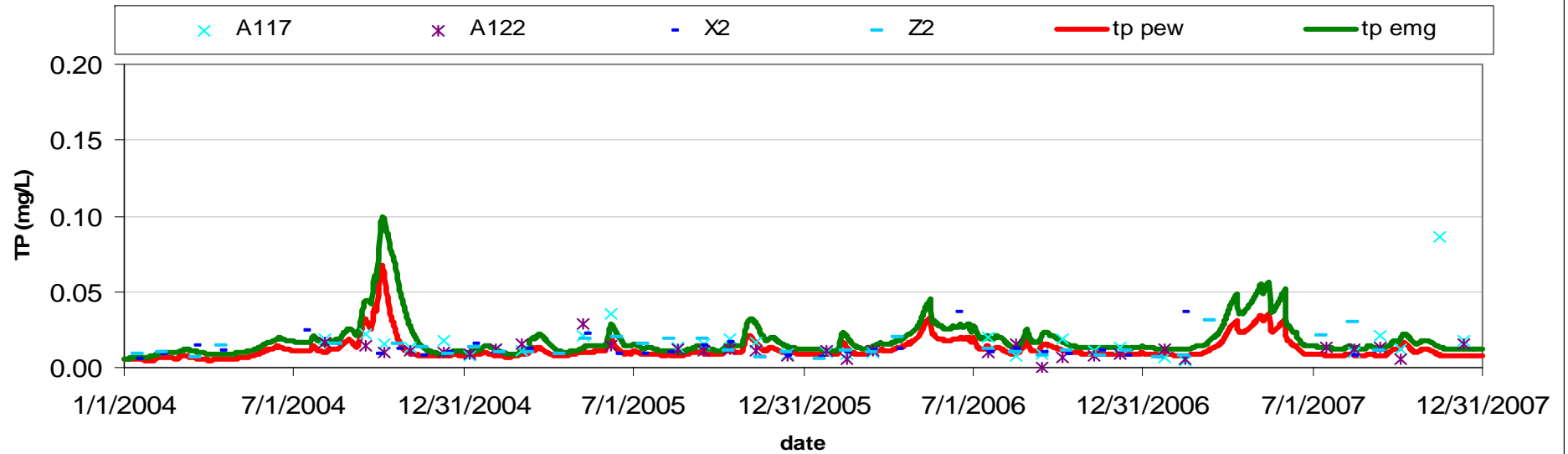
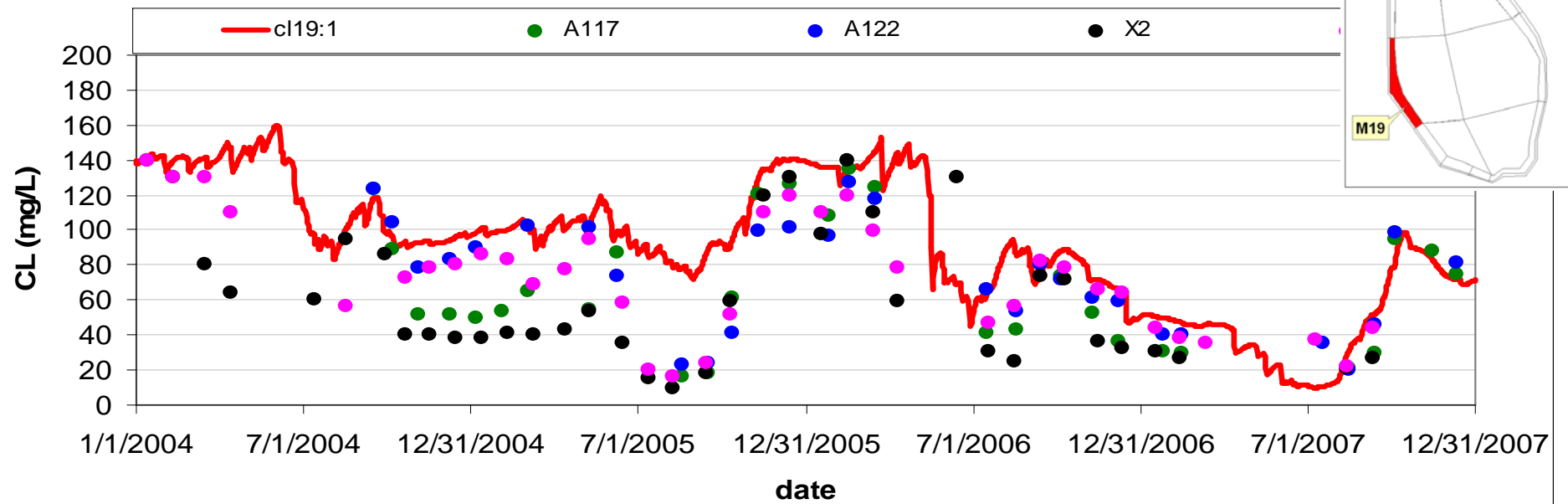


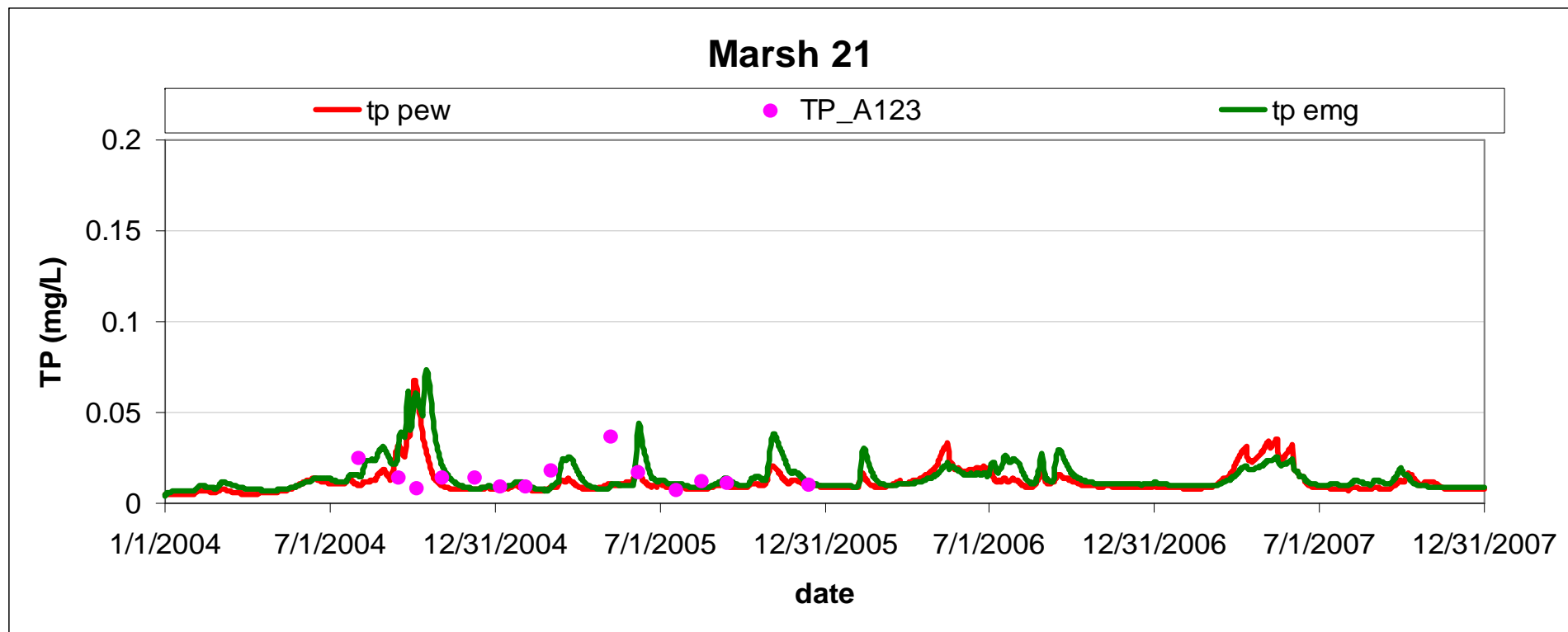
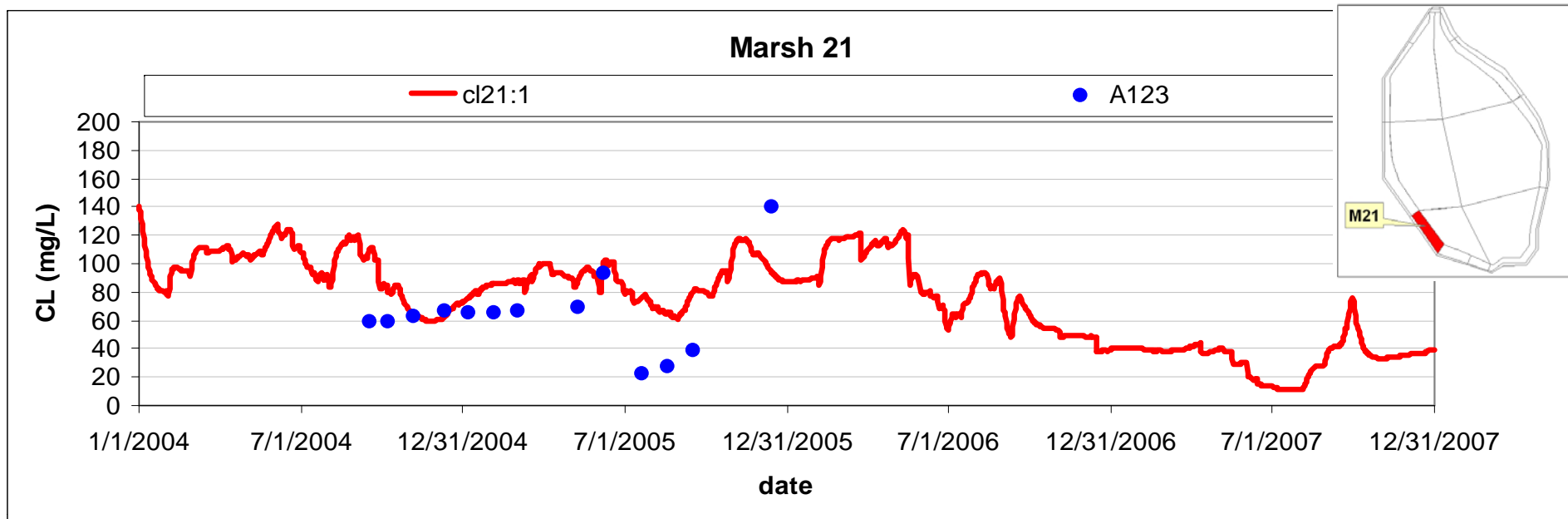
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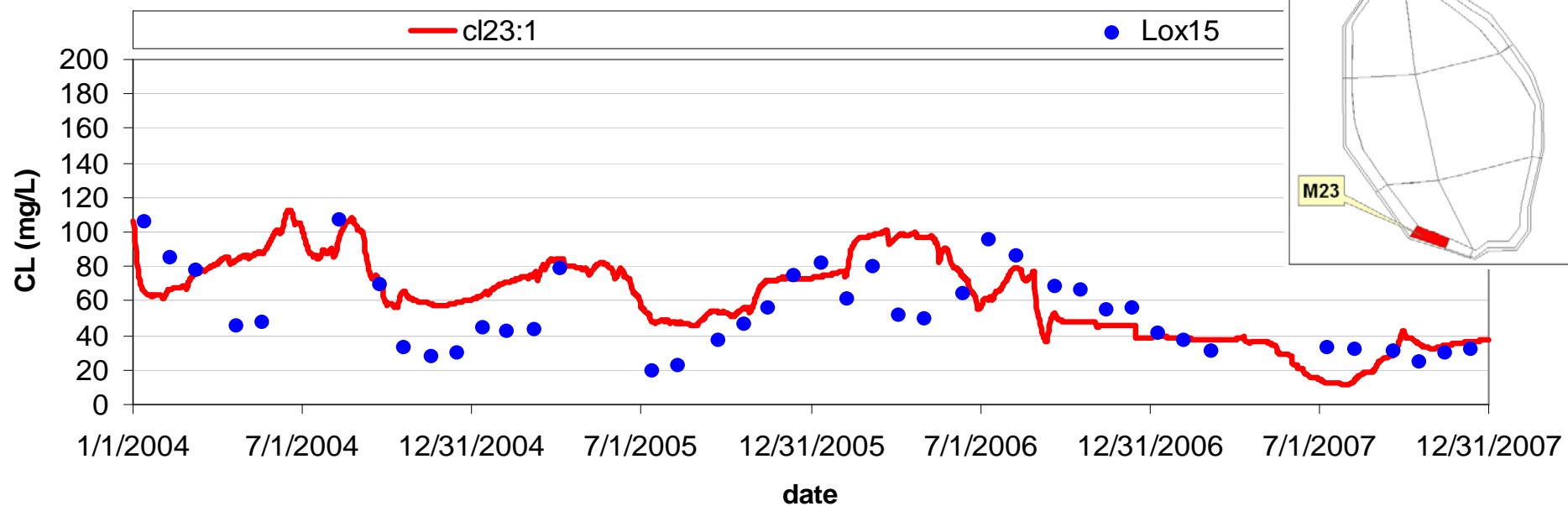
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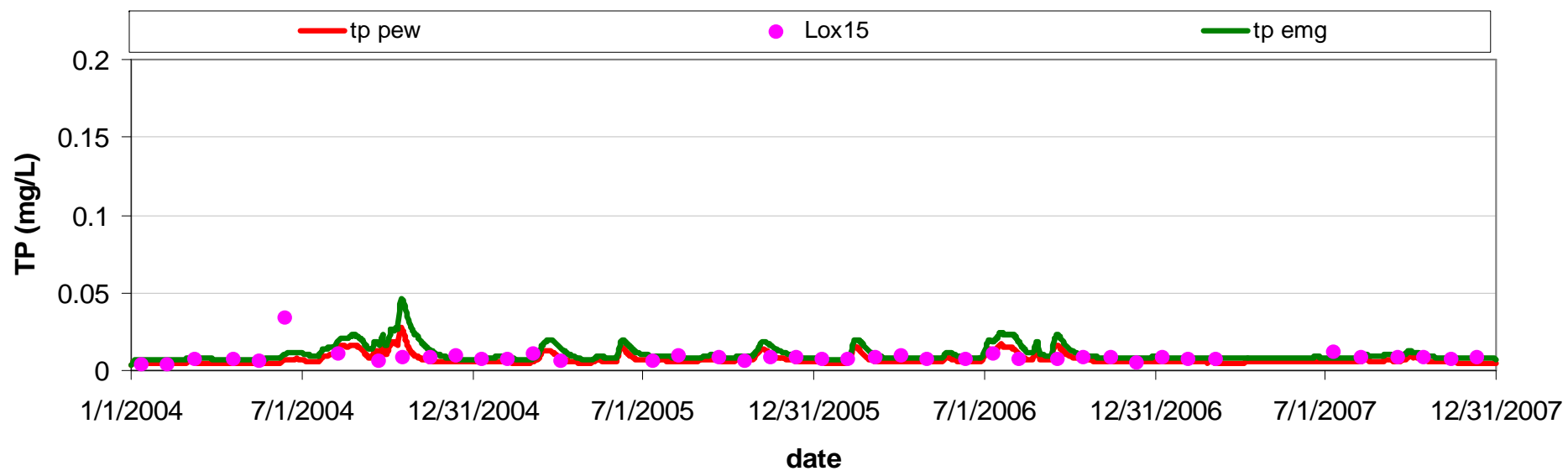


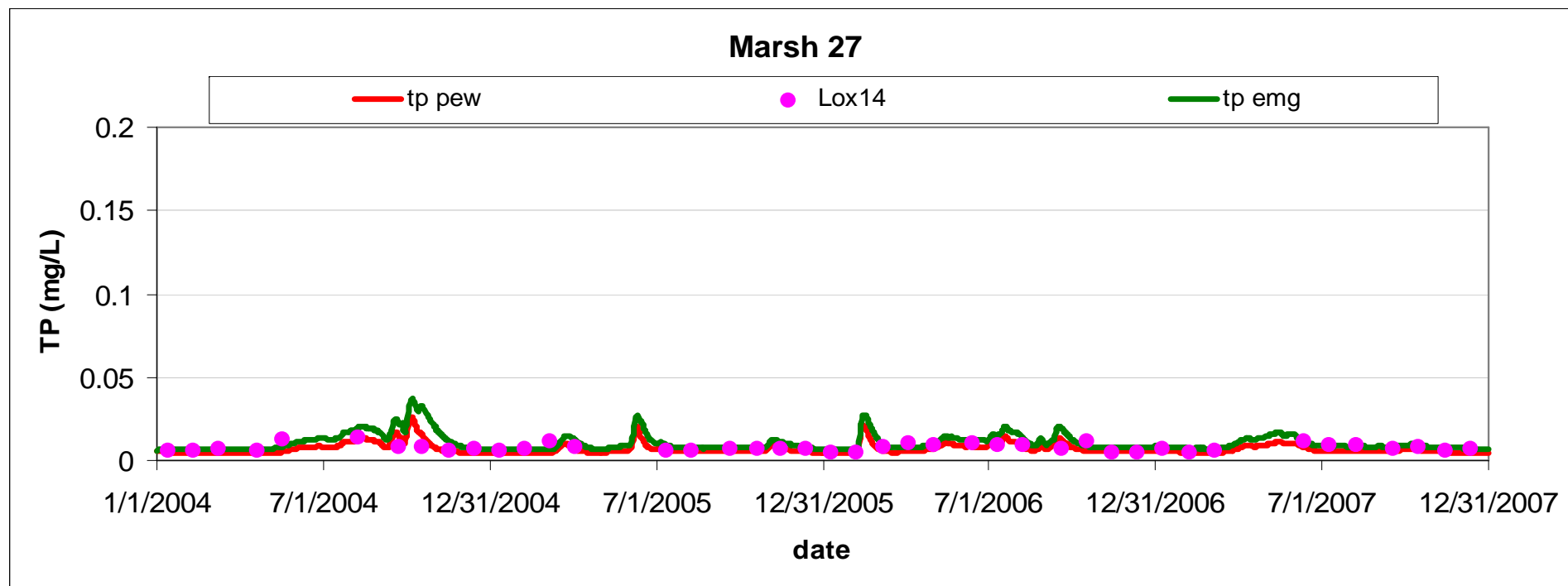
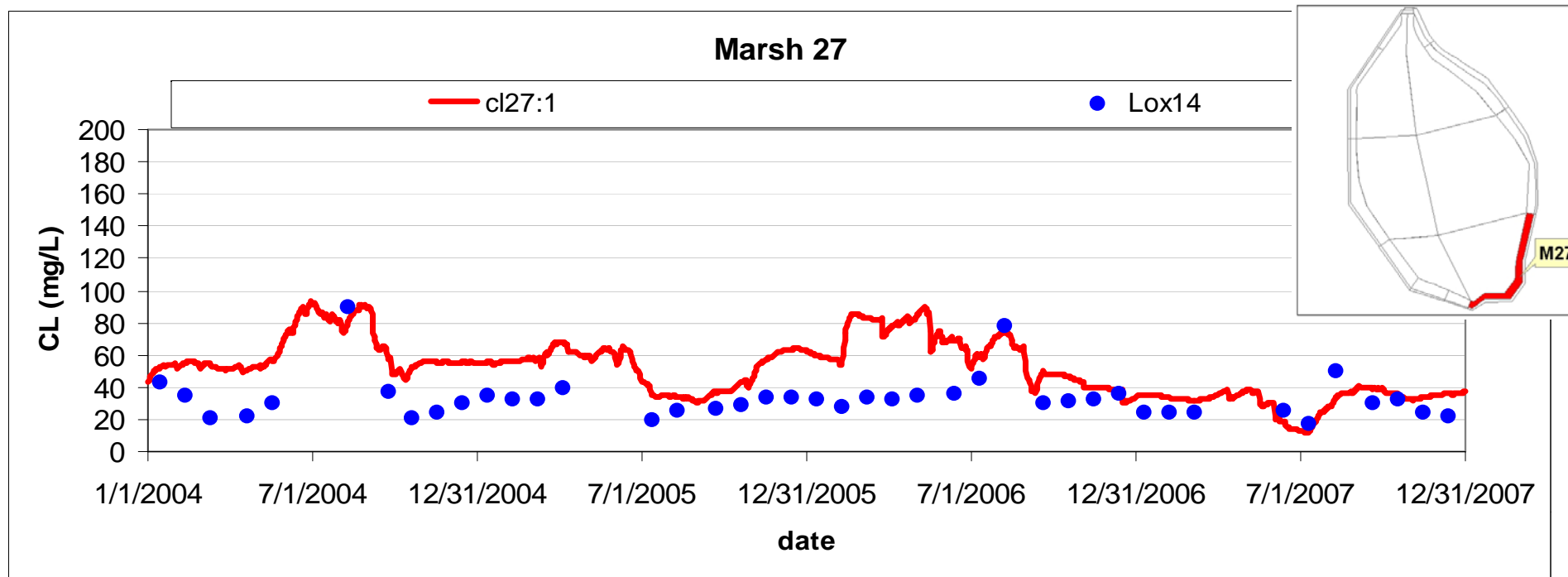


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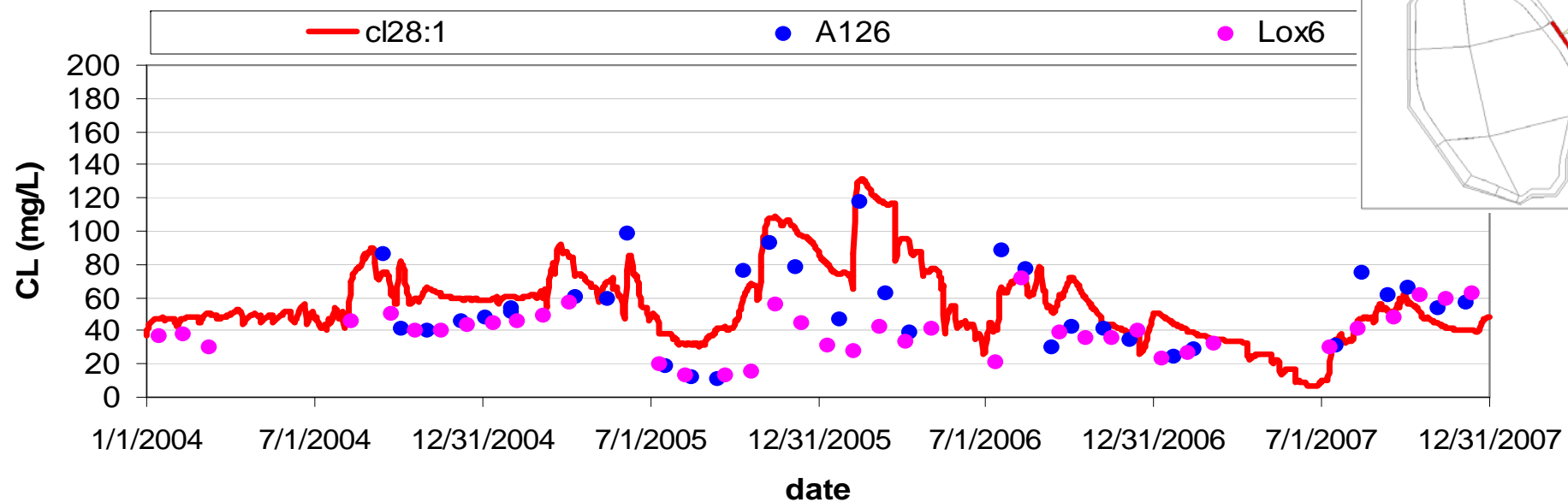


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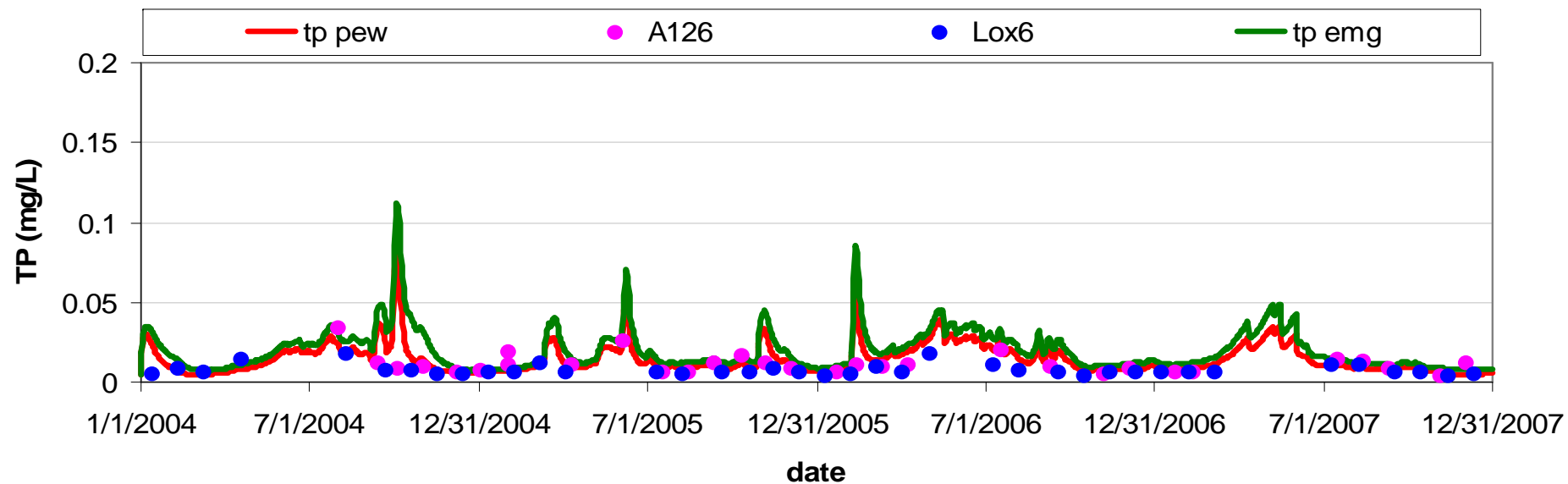




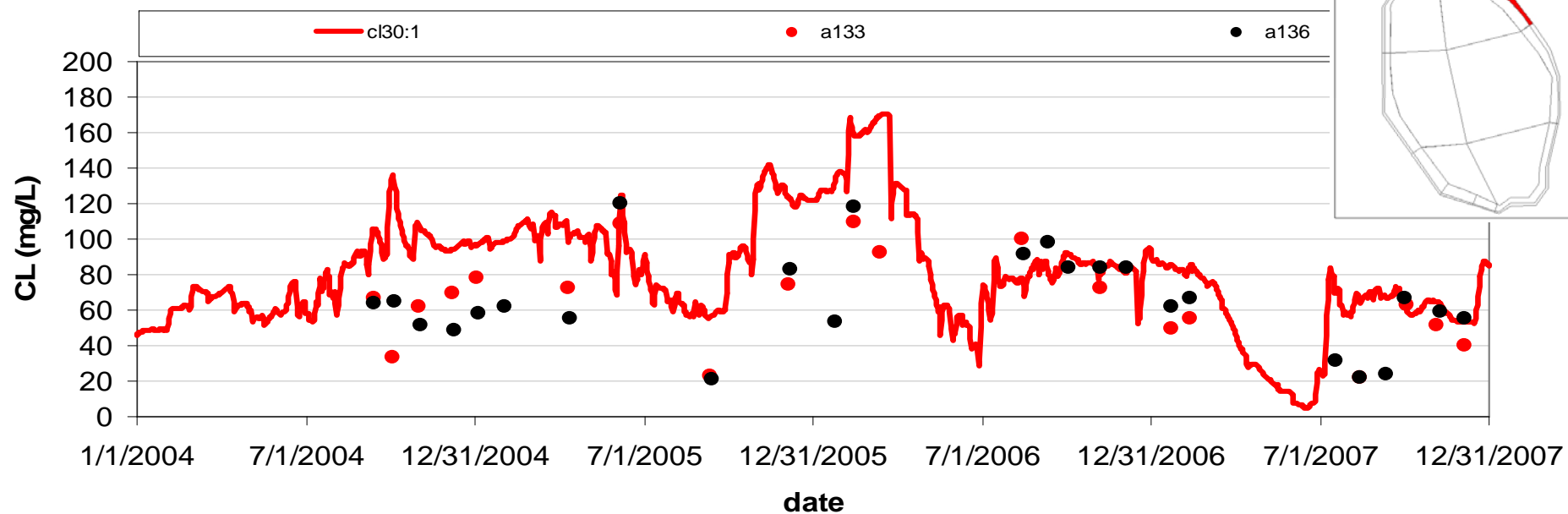
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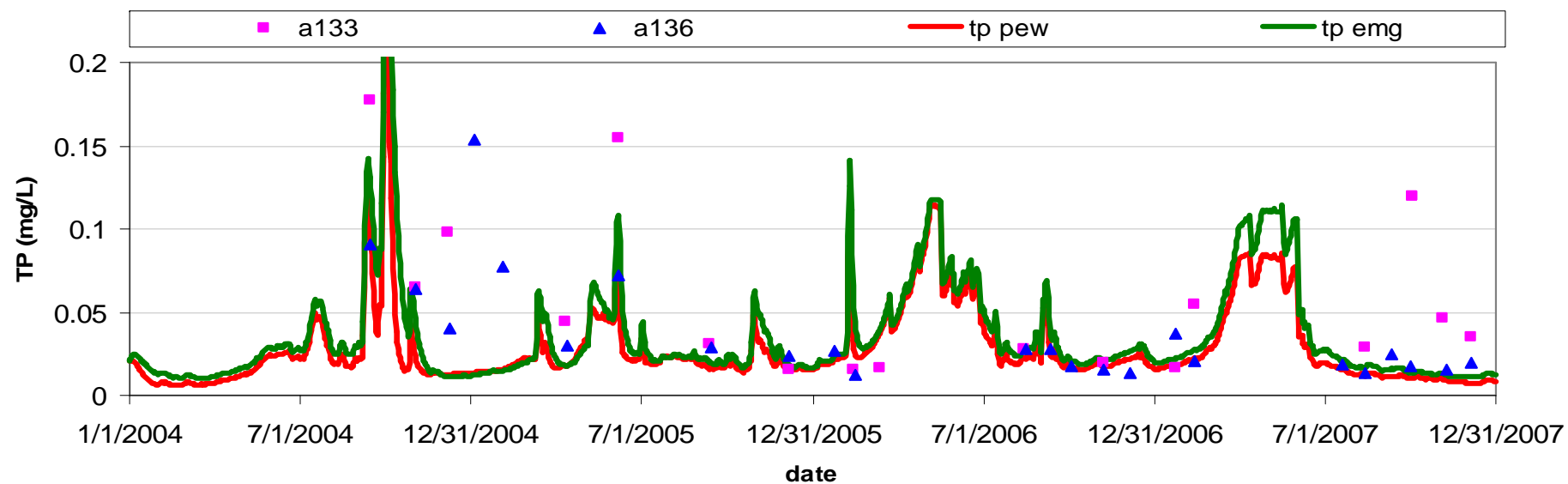
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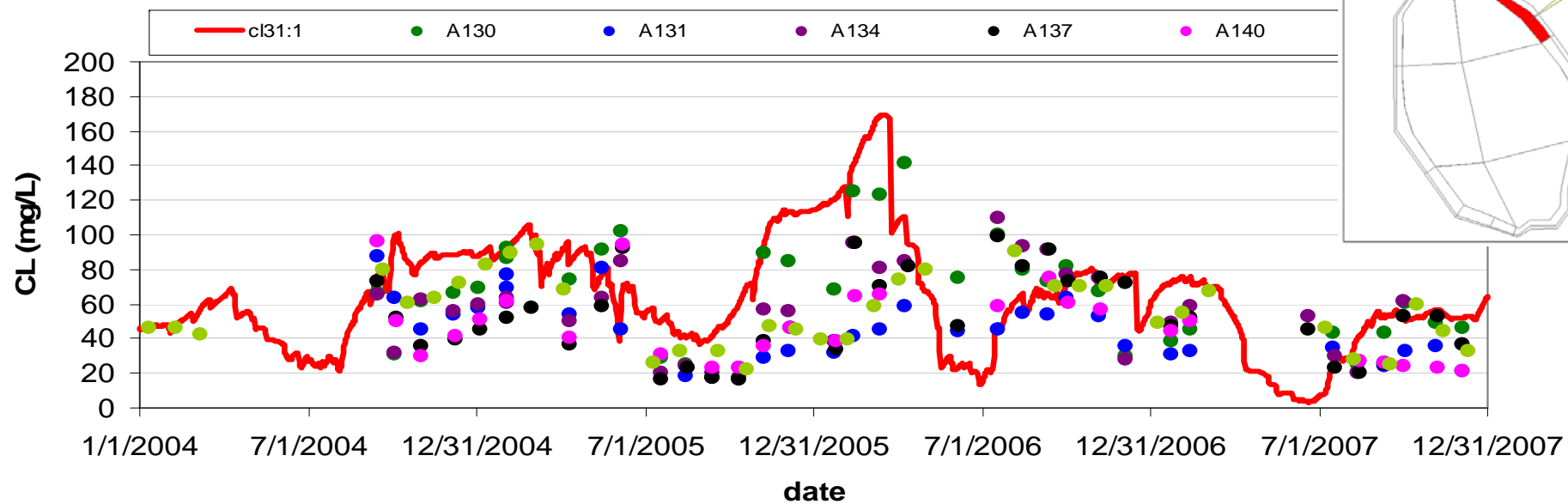
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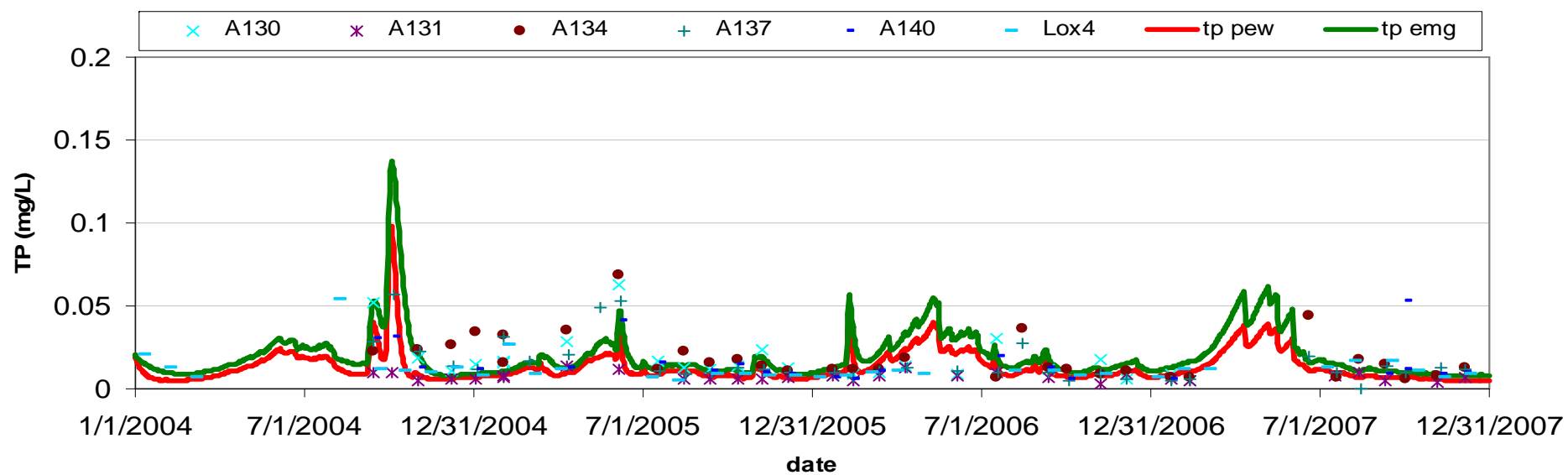
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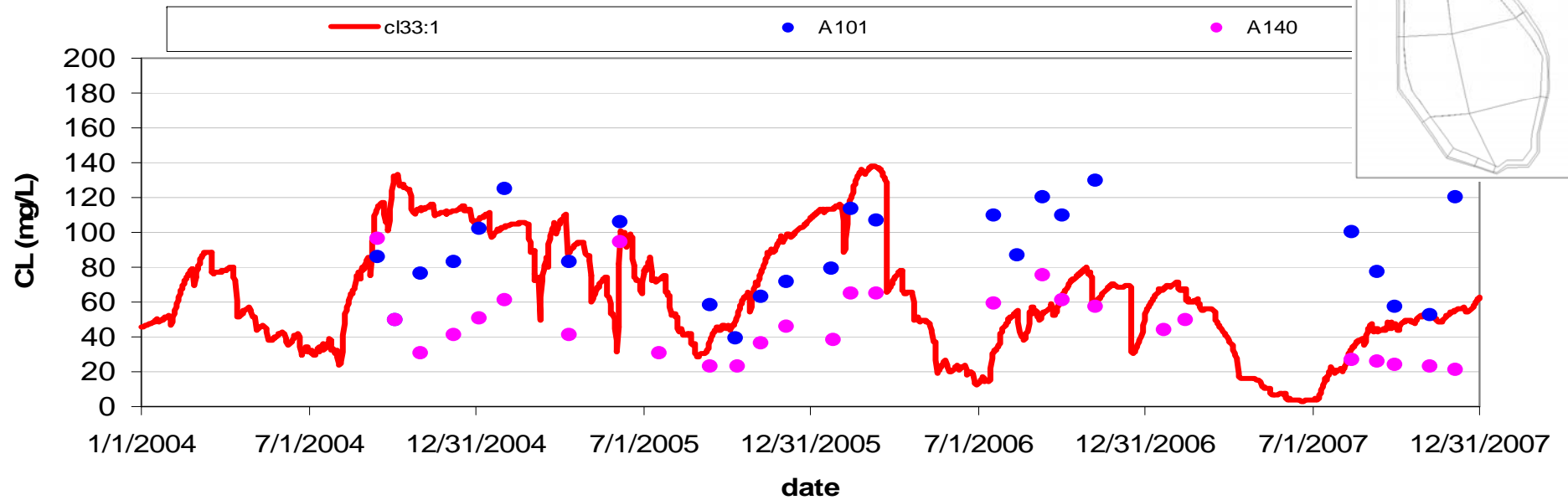
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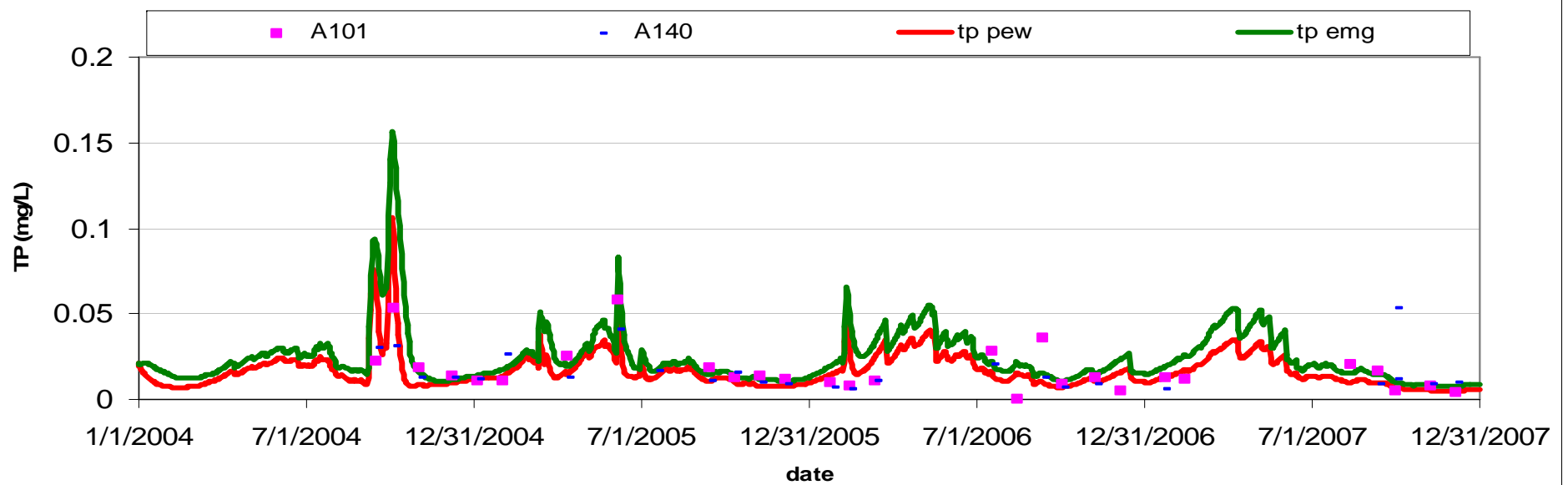
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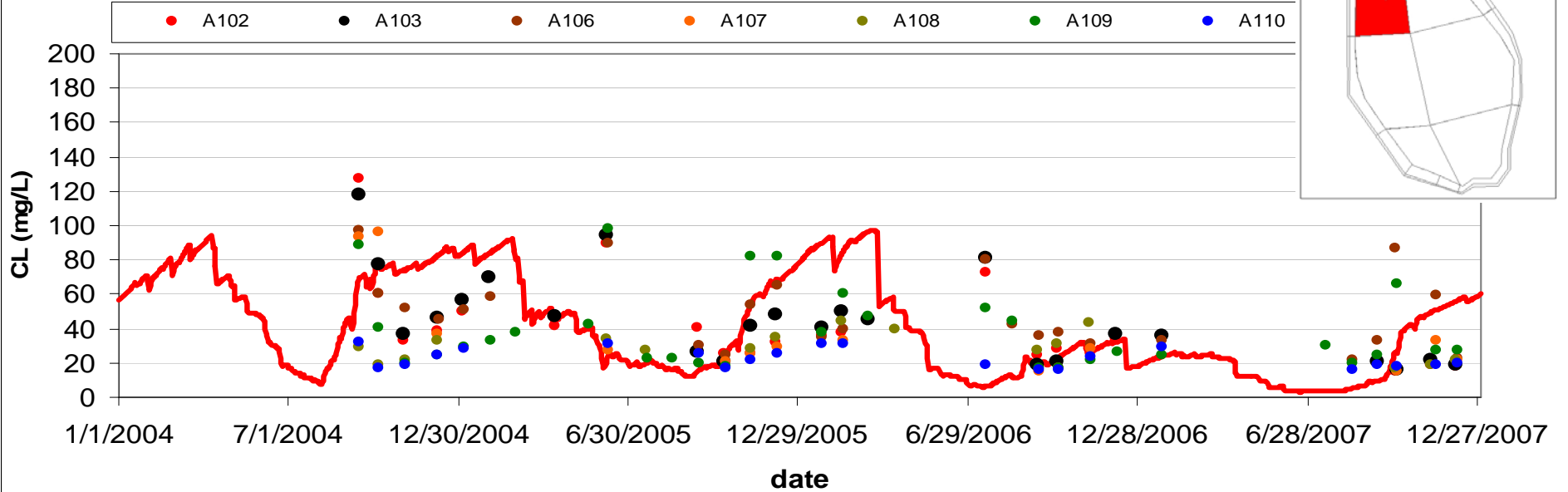
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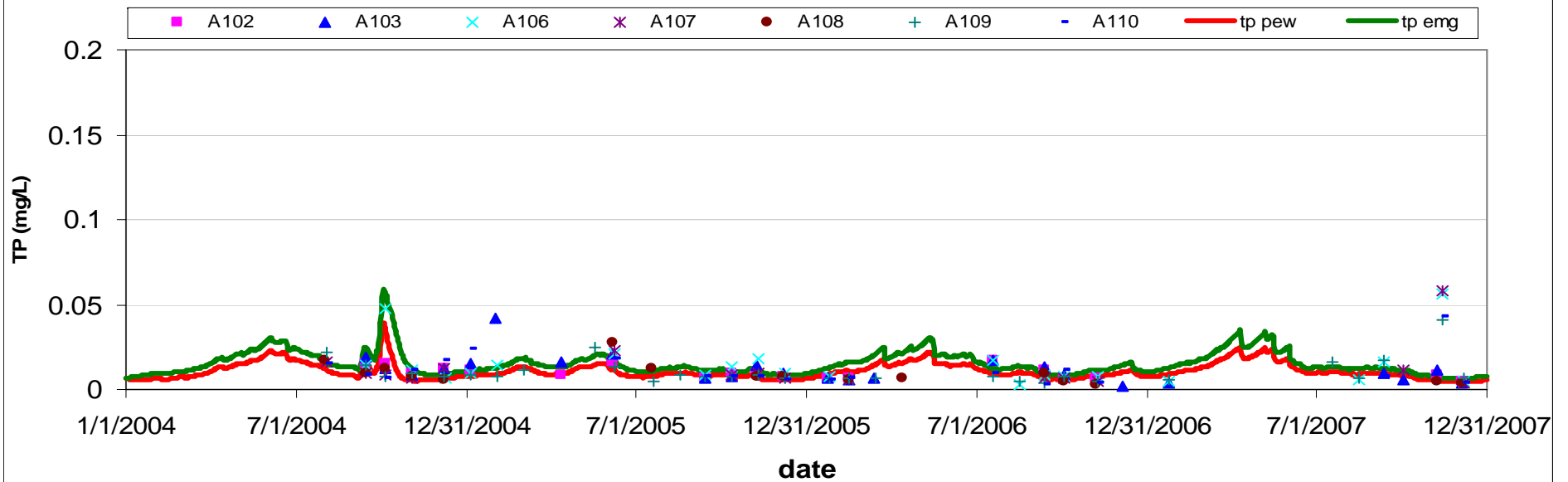
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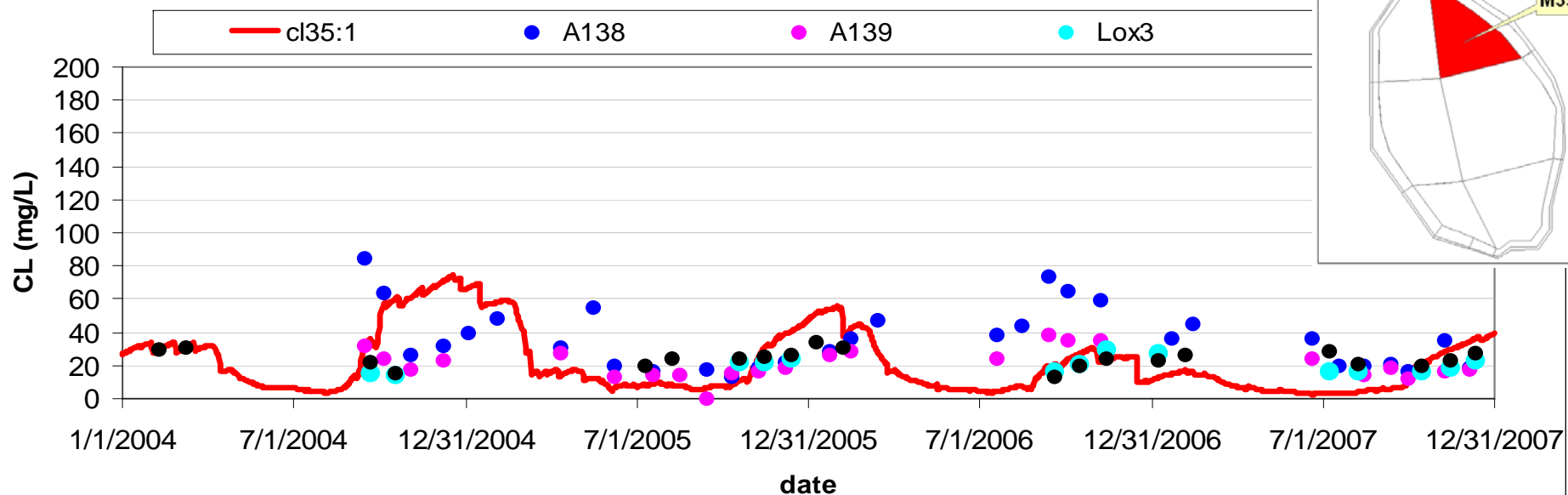
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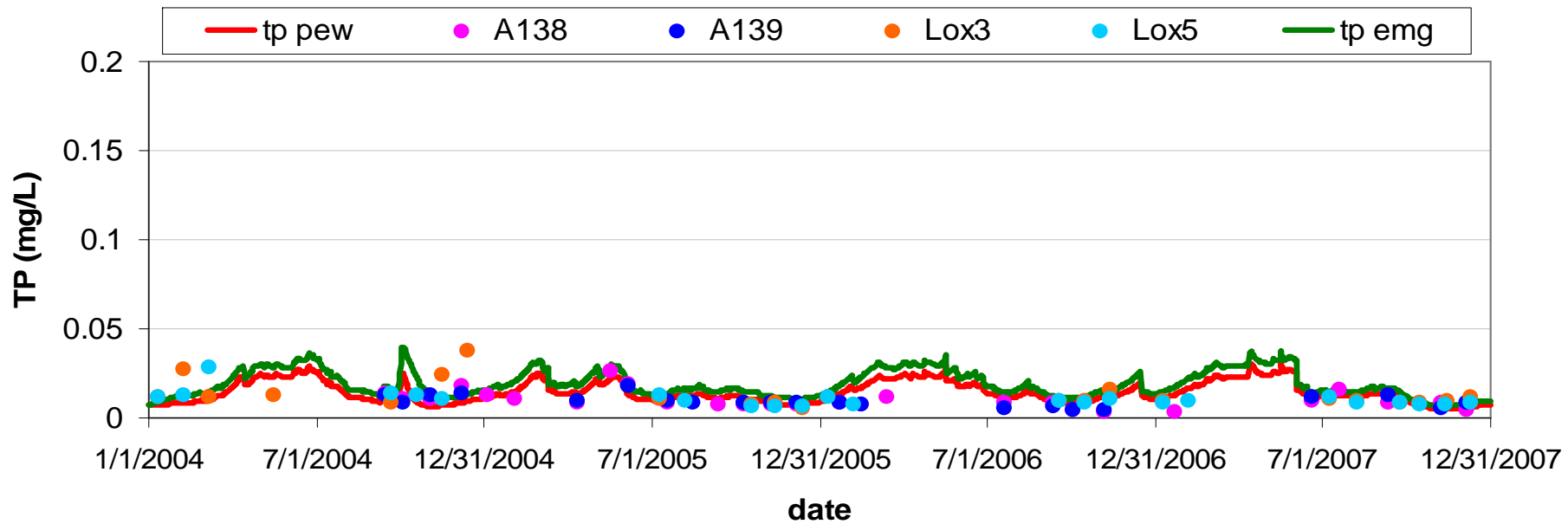
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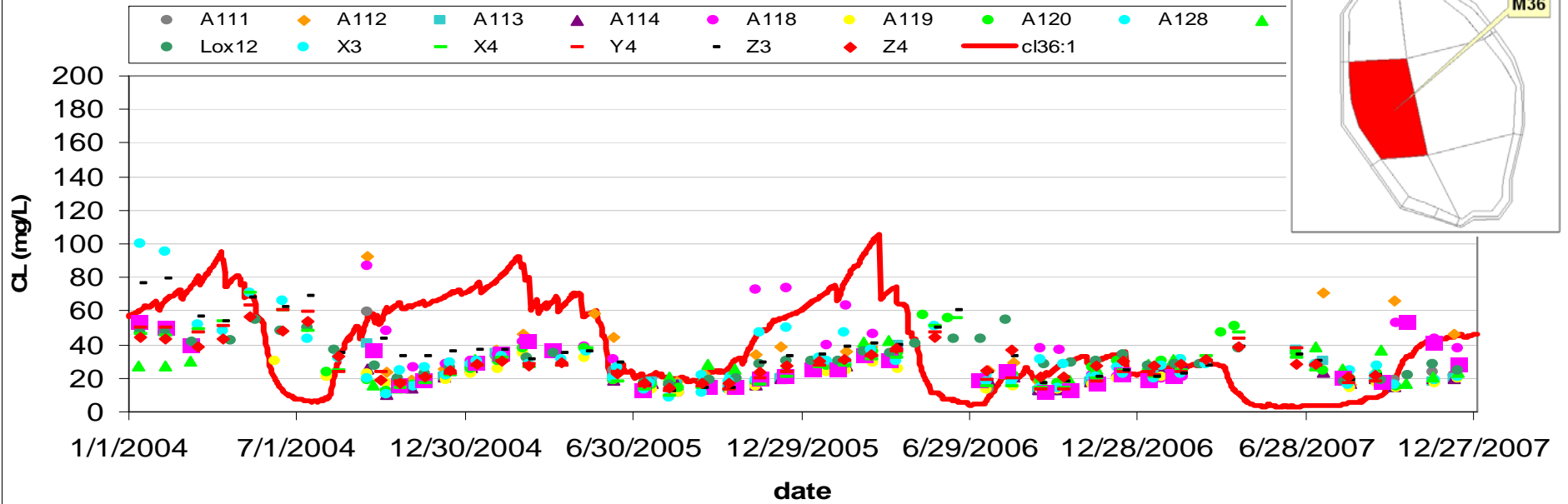
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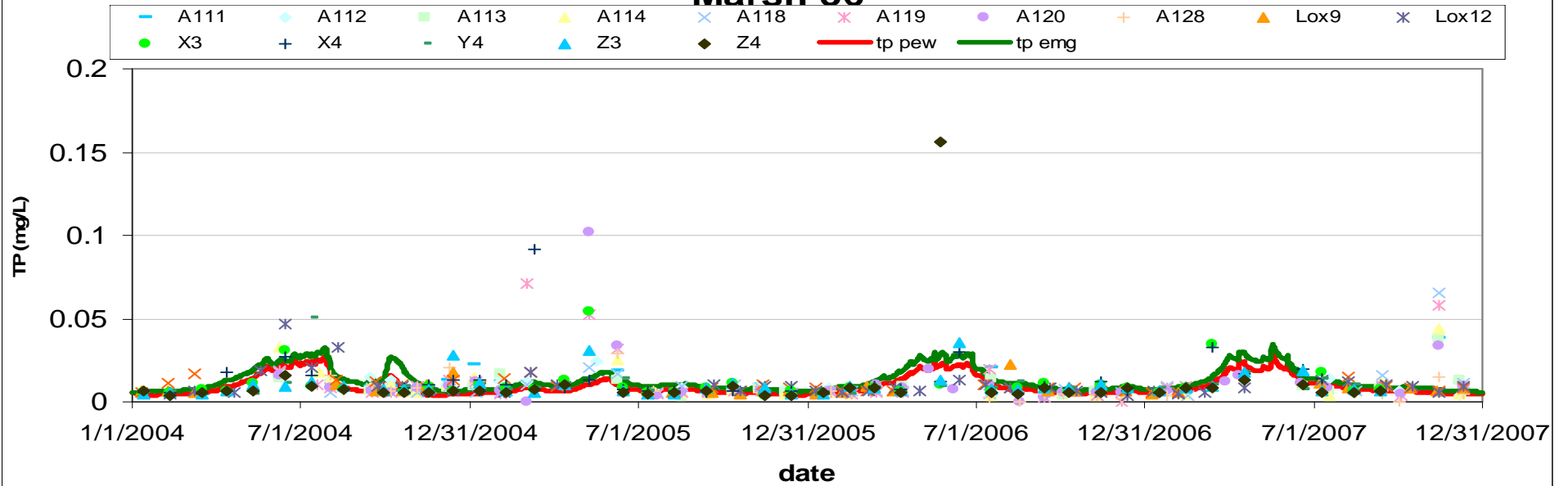
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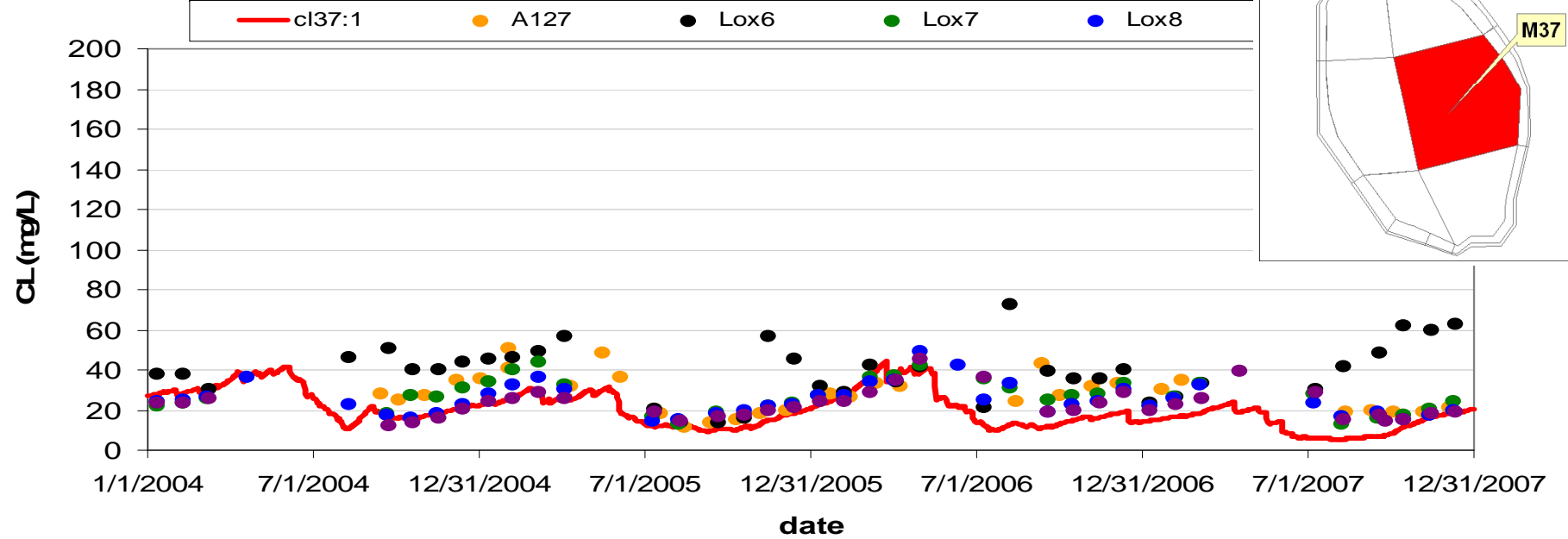
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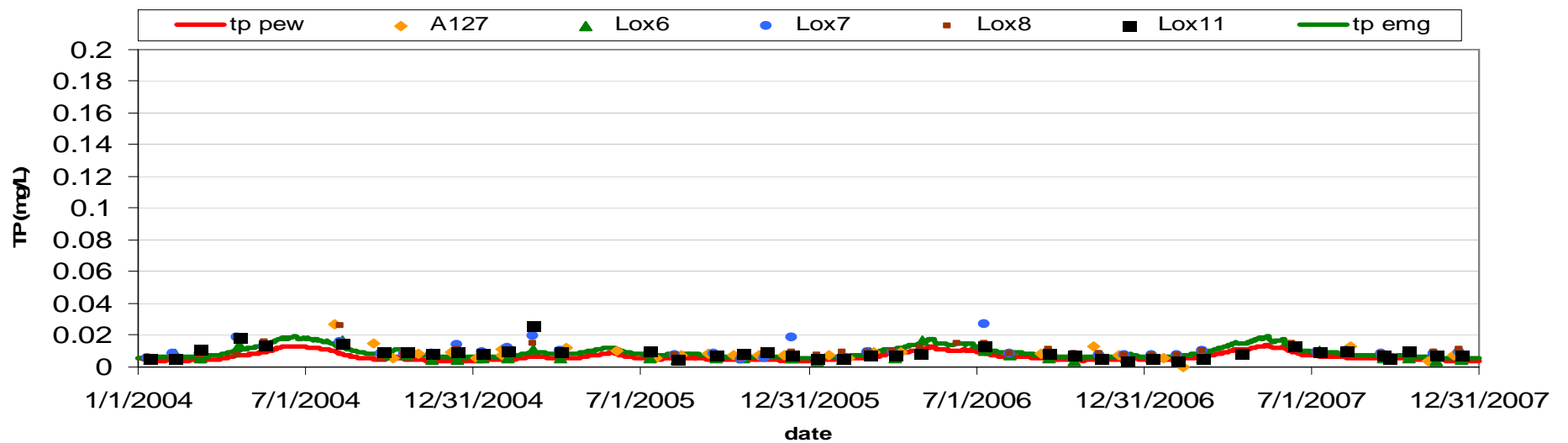
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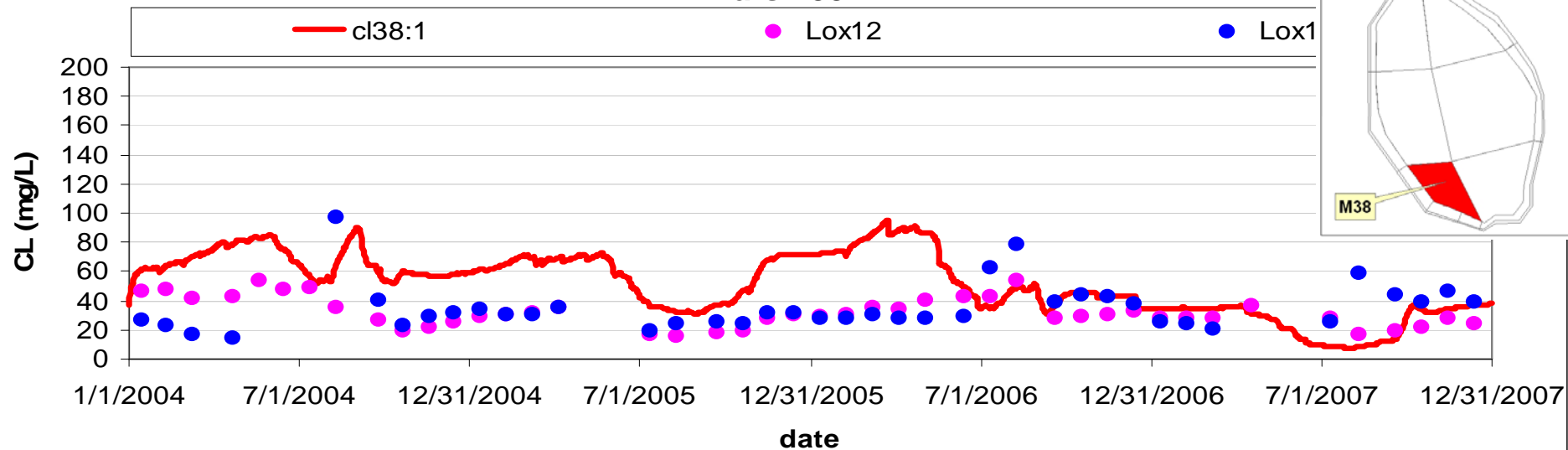
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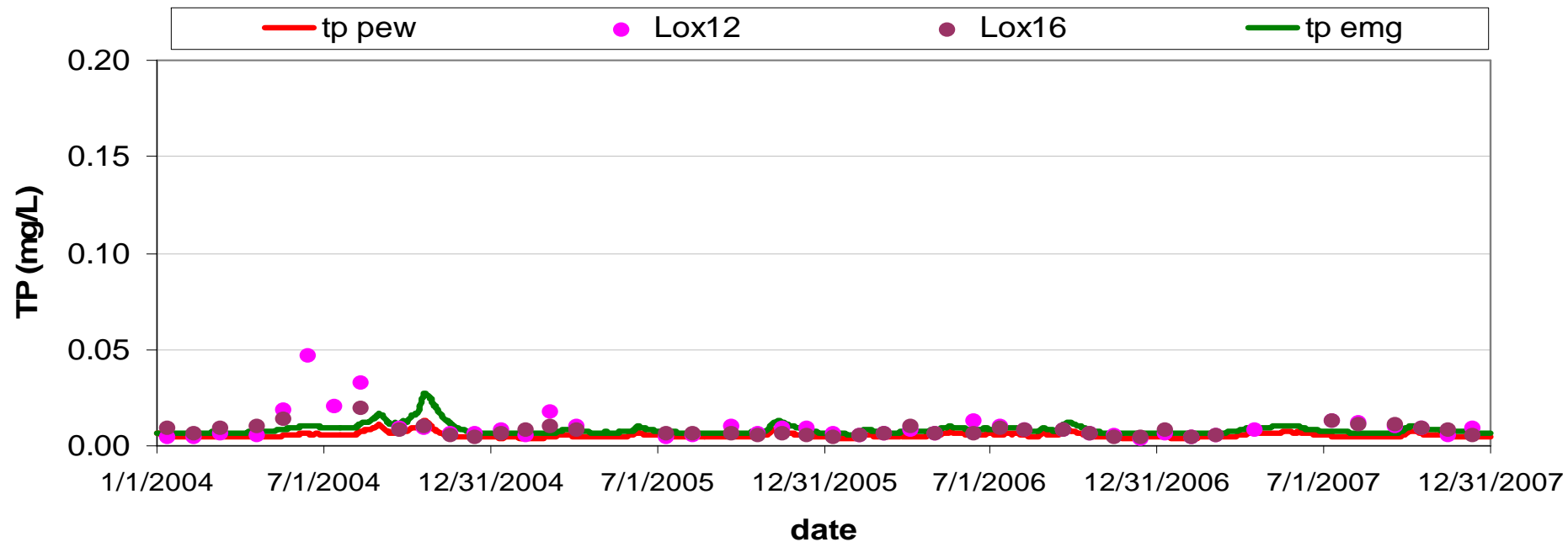
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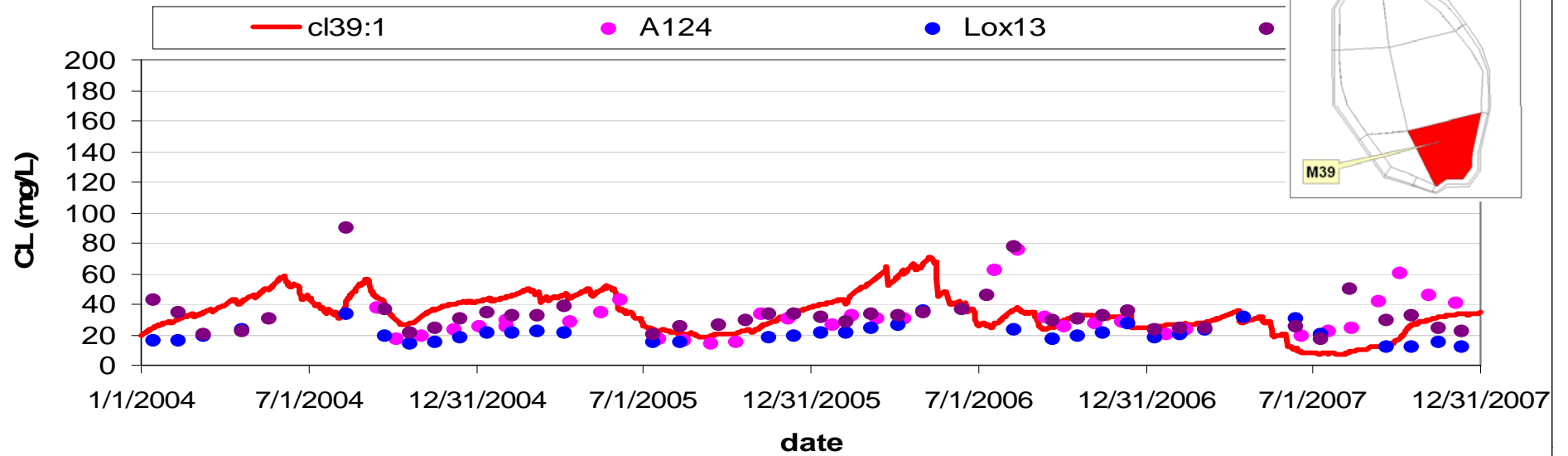
Marsh 38



Marsh 38



Marsh 39



Marsh 39

