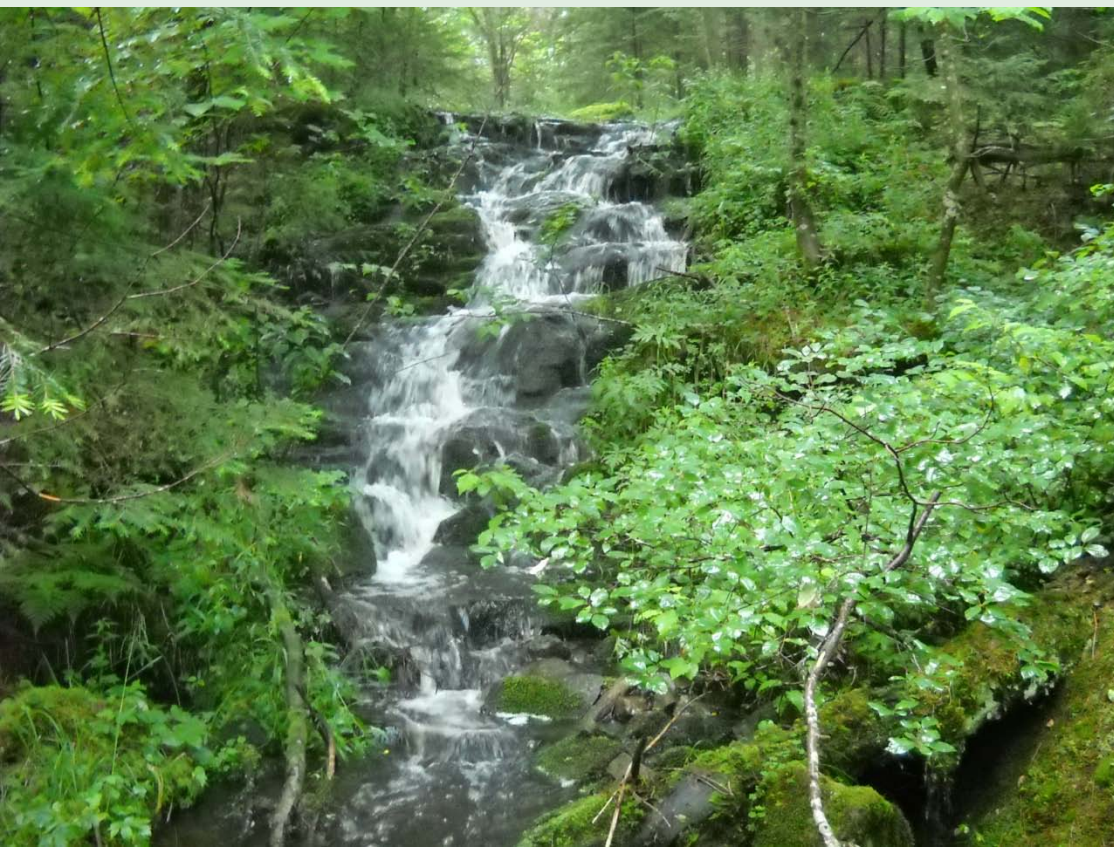
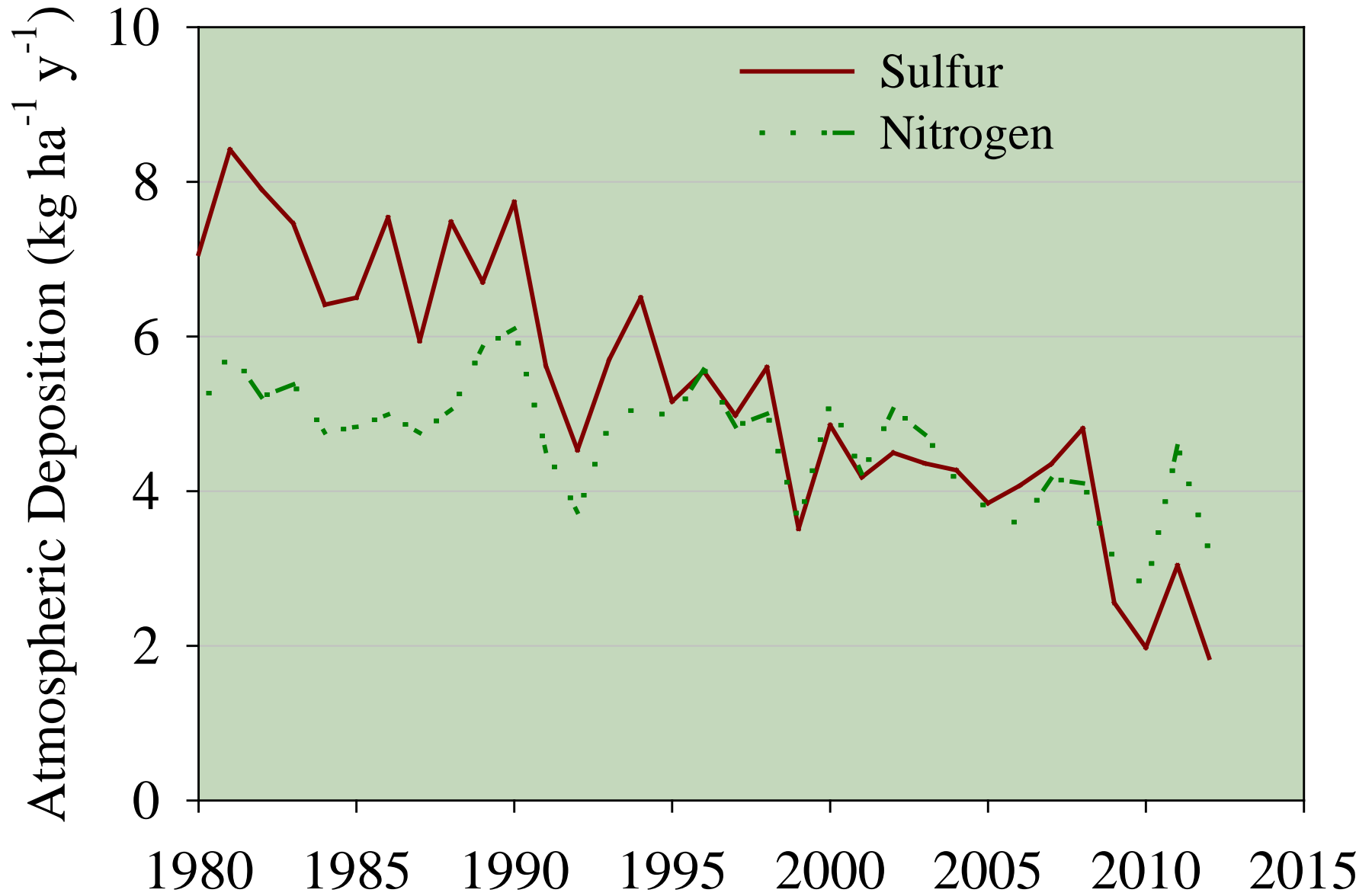


The Latest on Adirondack Soils and Streams as Deposition Continues to Decrease

1. The *ECASS* Adirondack stream survey
2. Watershed Monitoring at *Buck Creek*

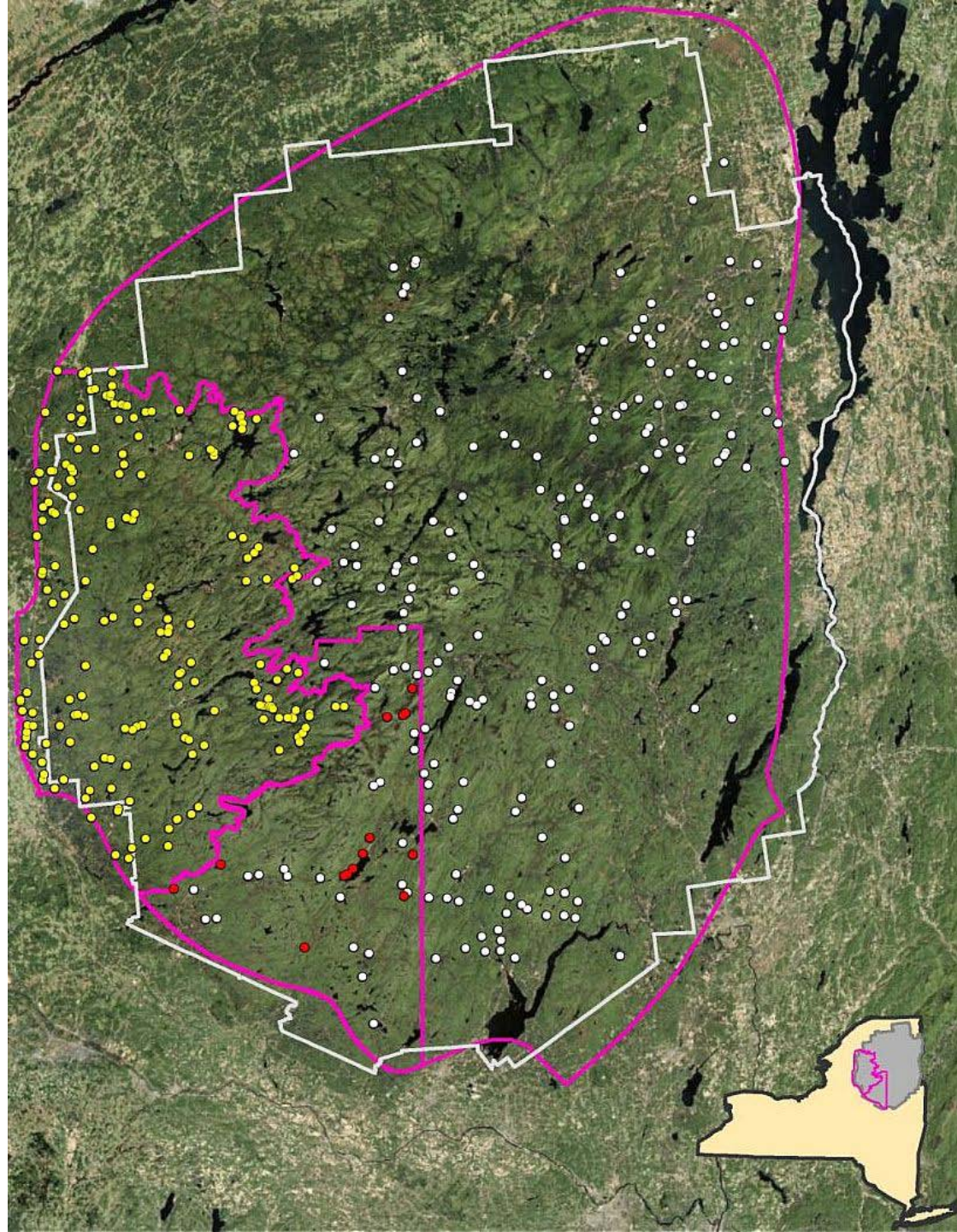


NADP Station - Huntington Wildlife Forest



Adirondack Stream Survey

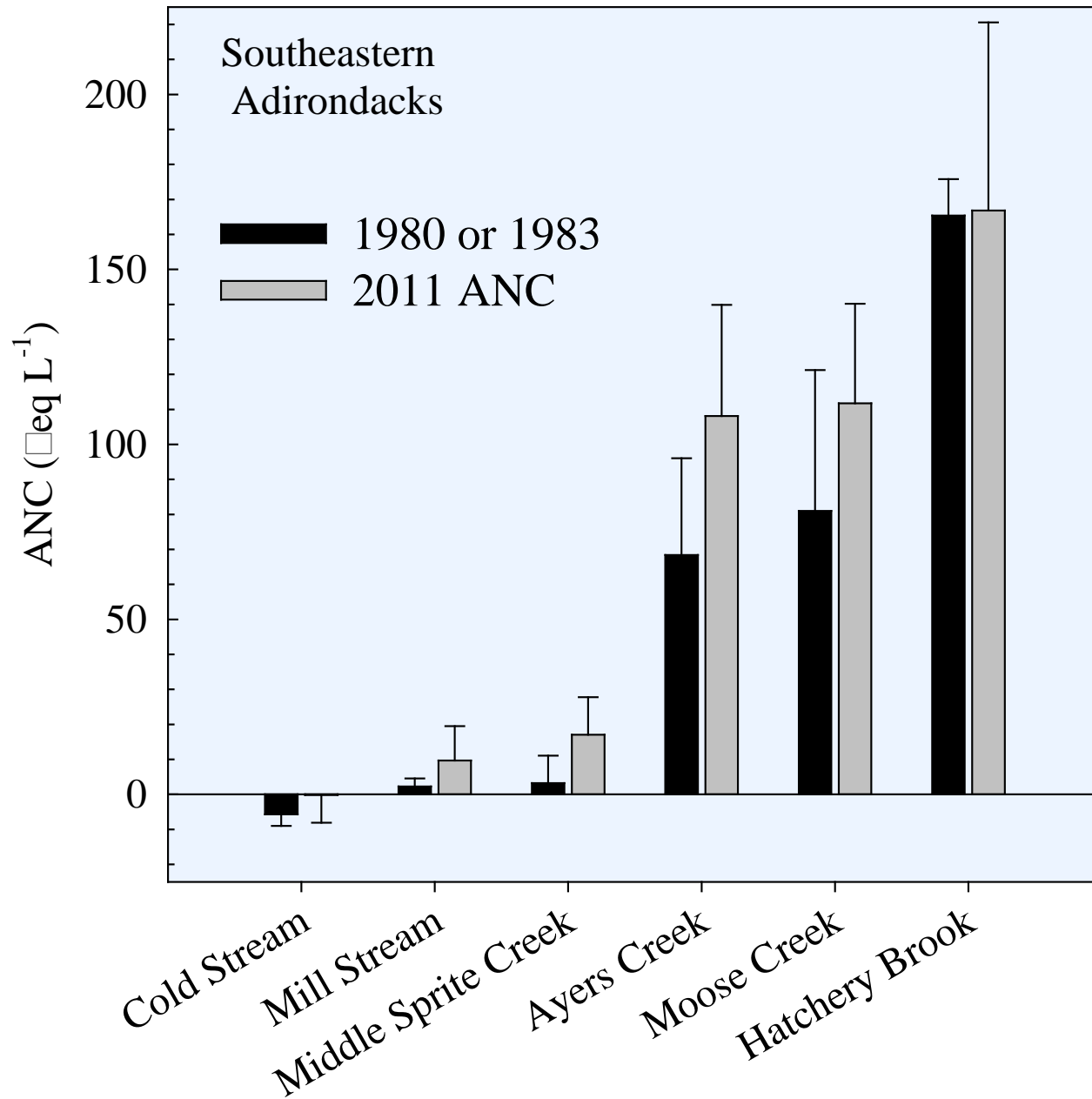
1. Pilot study in western Adirondacks 2003-2005.
2. Remainder of Adirondacks surveyed in 2010-2011.
3. Water sampling, diatom sampling, macroinvertebrate sampling.



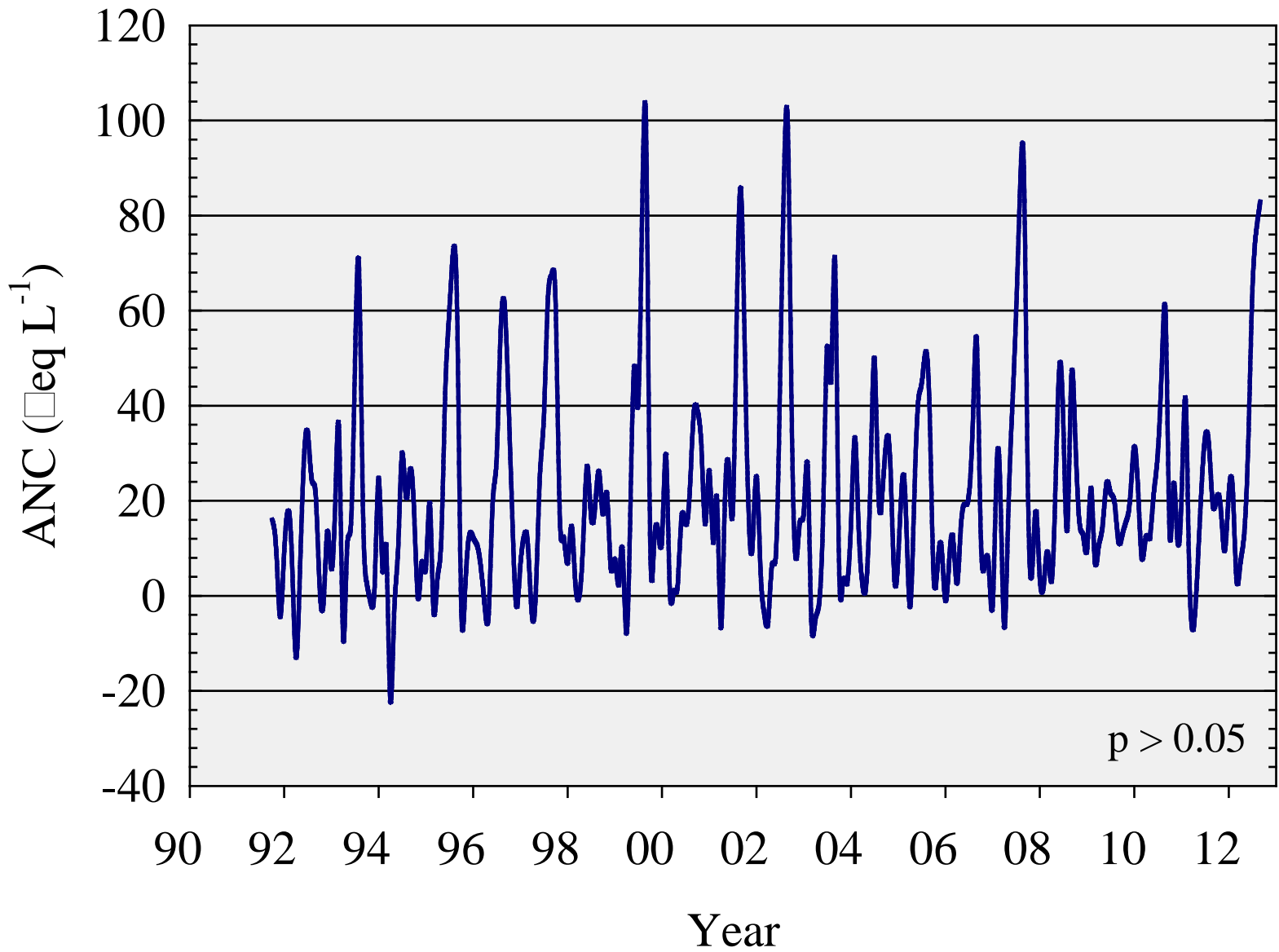
Overall Assessment Results

	ECASS August 2010	ECASS April 2011
# of streams sampled	205	210
# of streams BCS < 0	16 (7.8%)	38 (18%)
# of streams BCS < 25	24 (11%)	78 (37%)
# of streams Al_i > 2.0 μmol L⁻¹	10 (4.9%)	24 (11%)

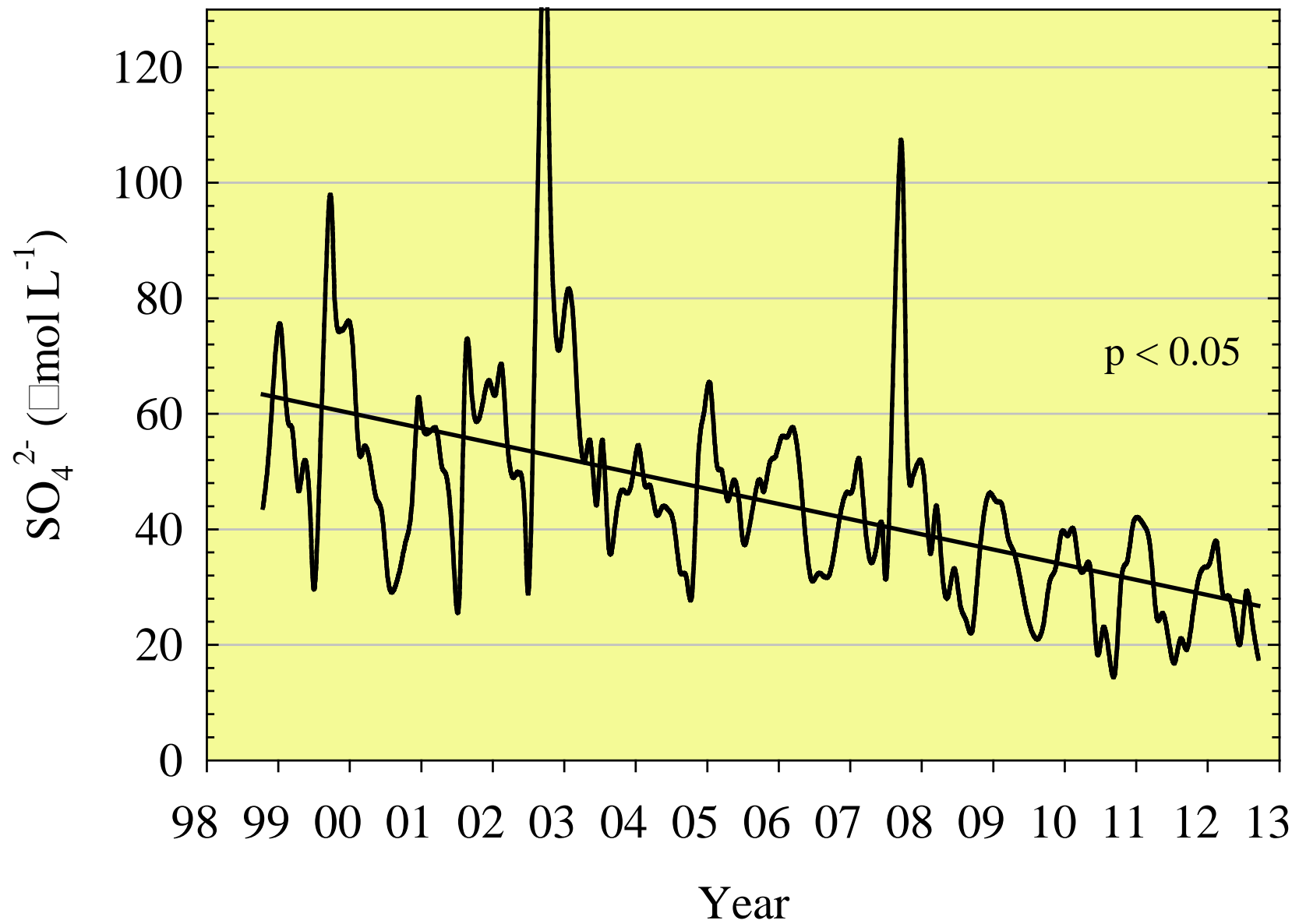
Snowmelt Stream Chemistry



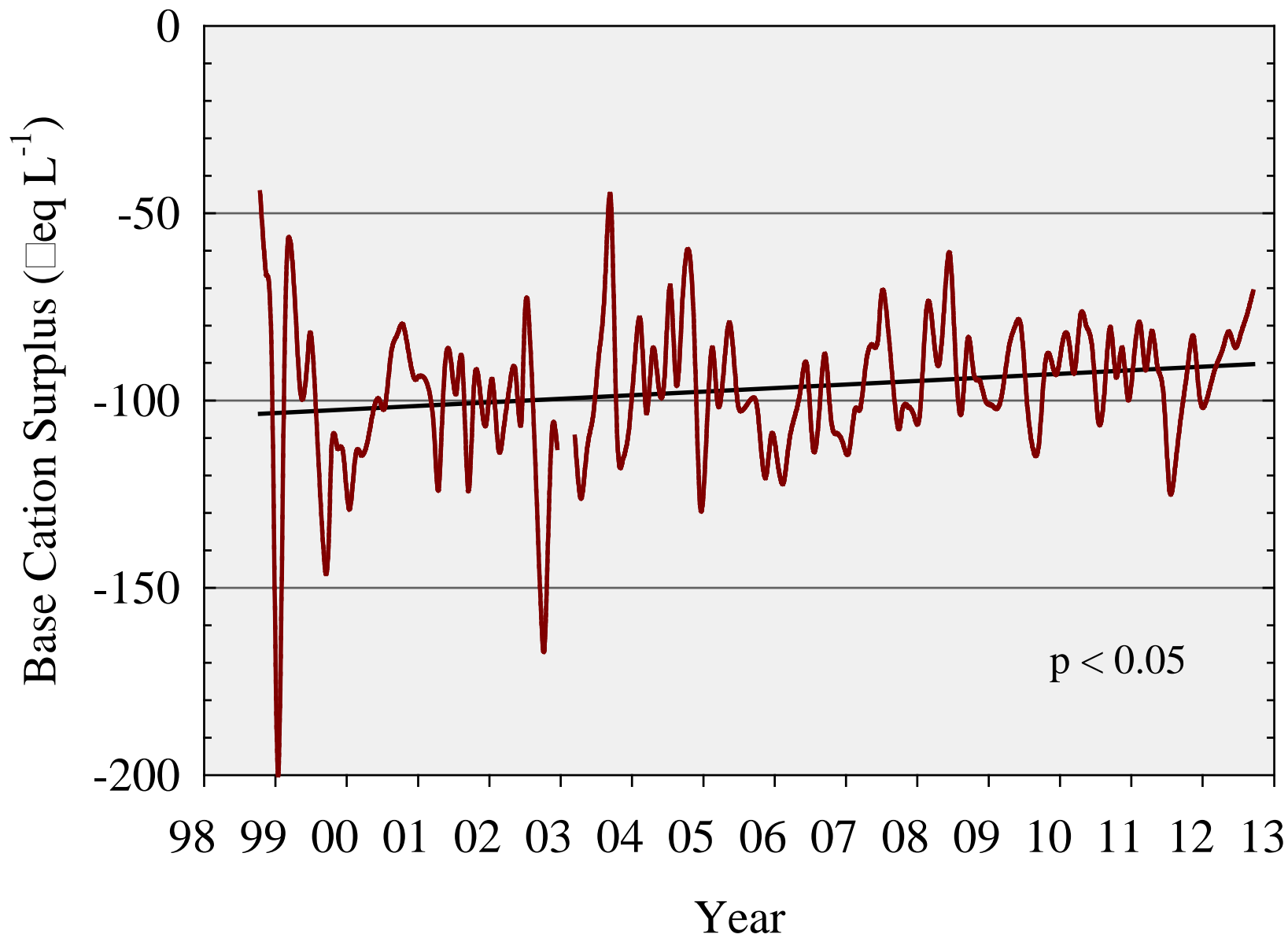
Buck Creek



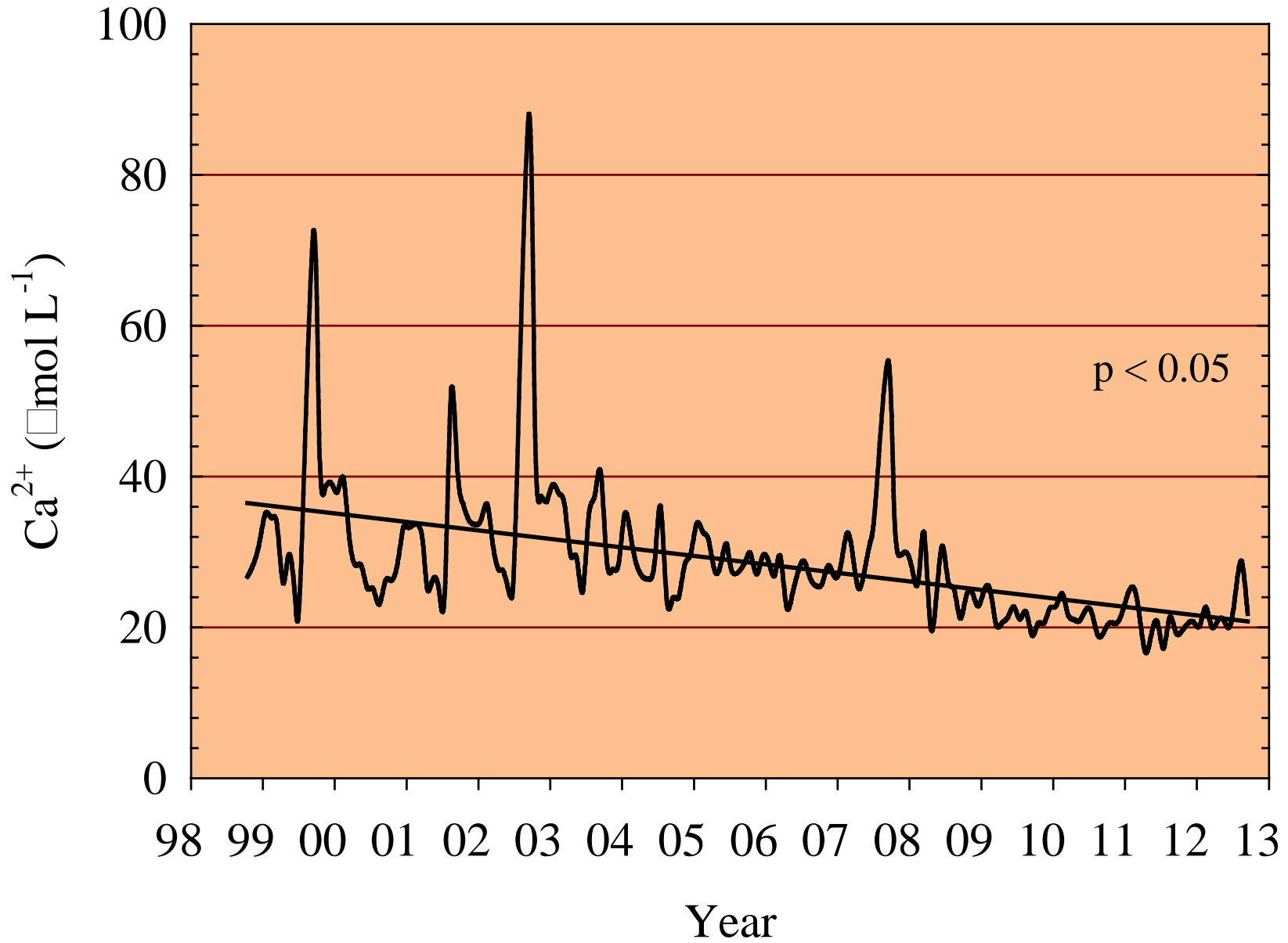
North Tributary Buck Creek



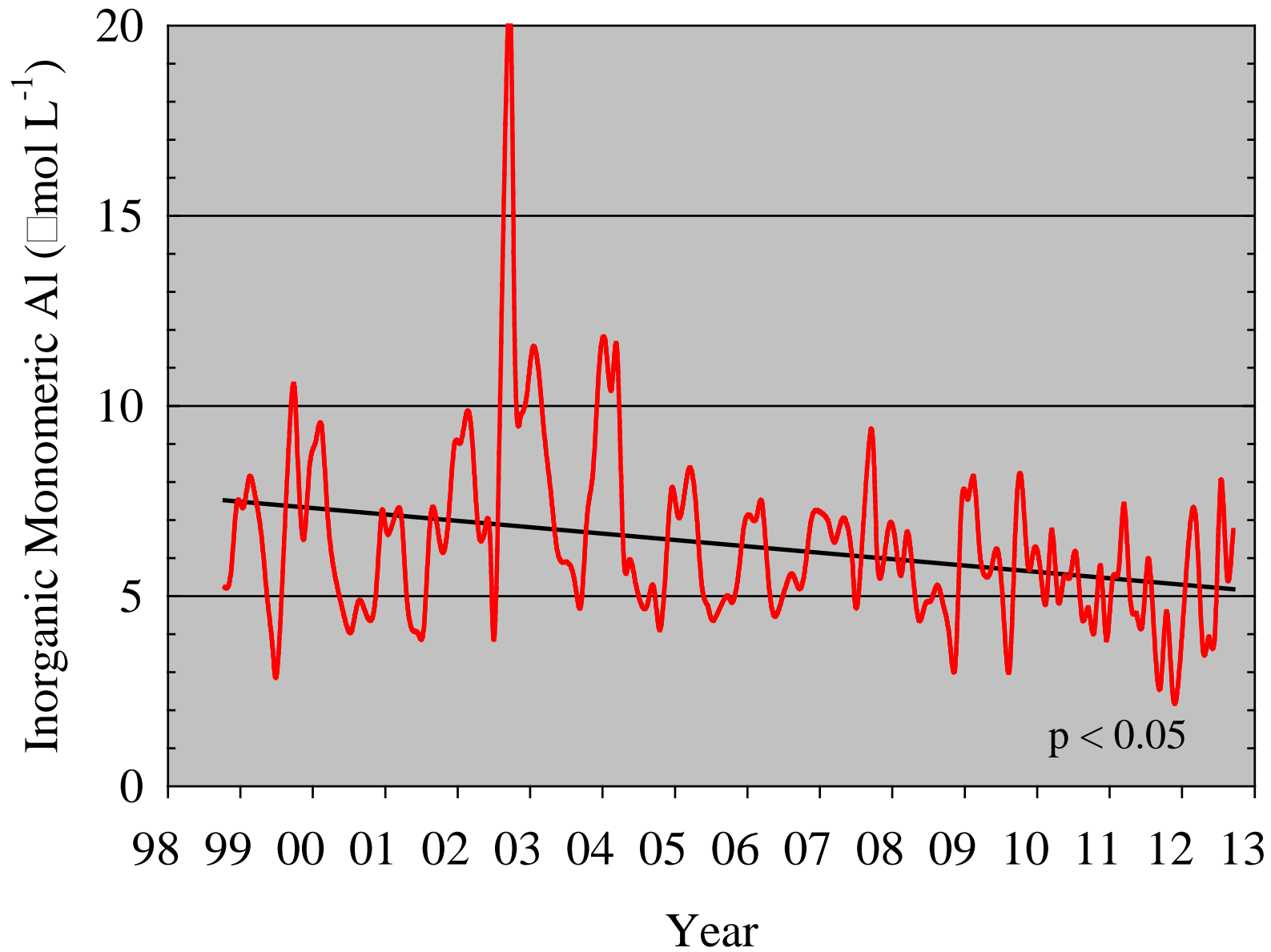
North Tributary Buck Creek



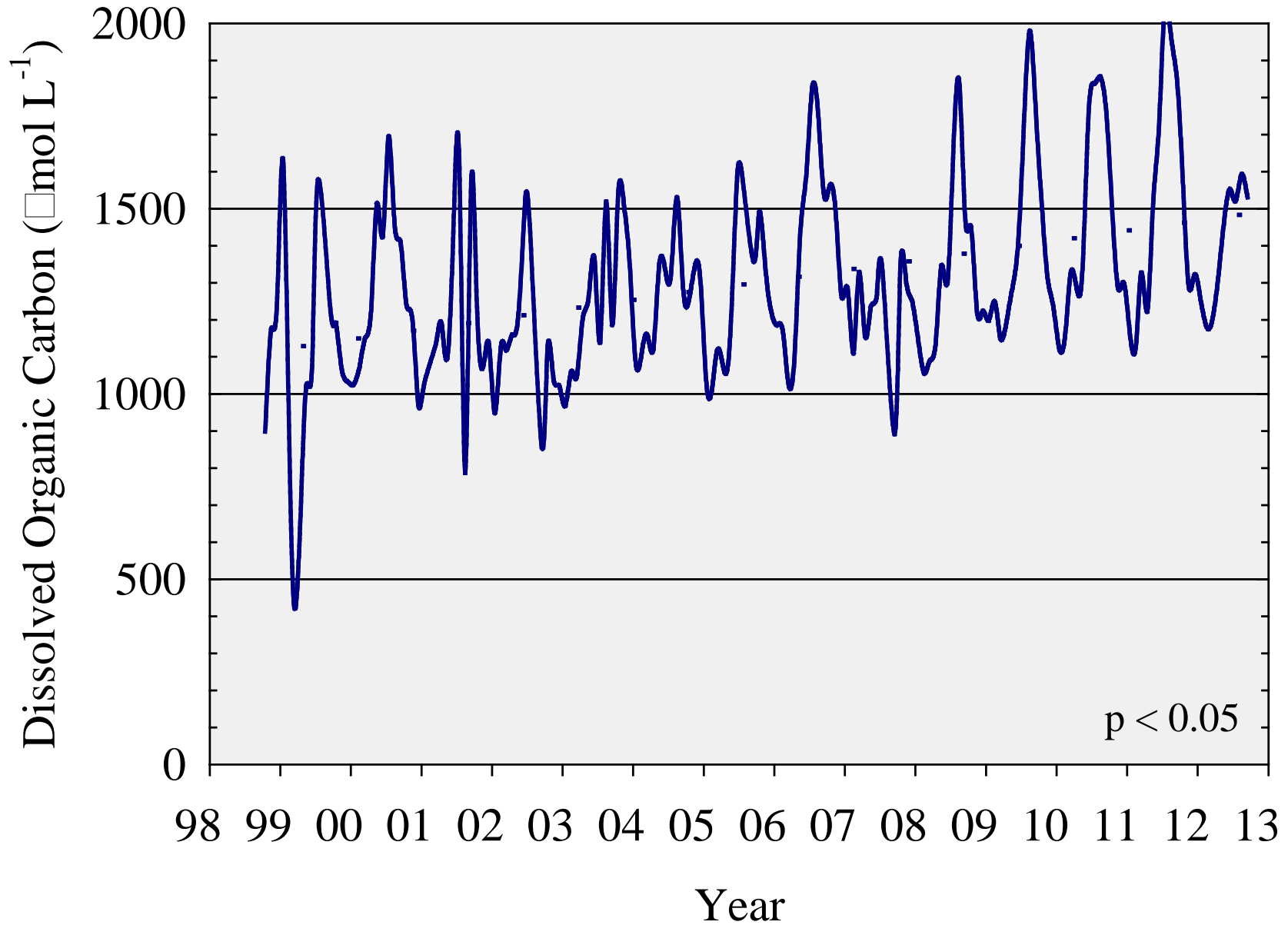
North Tributary Buck Creek



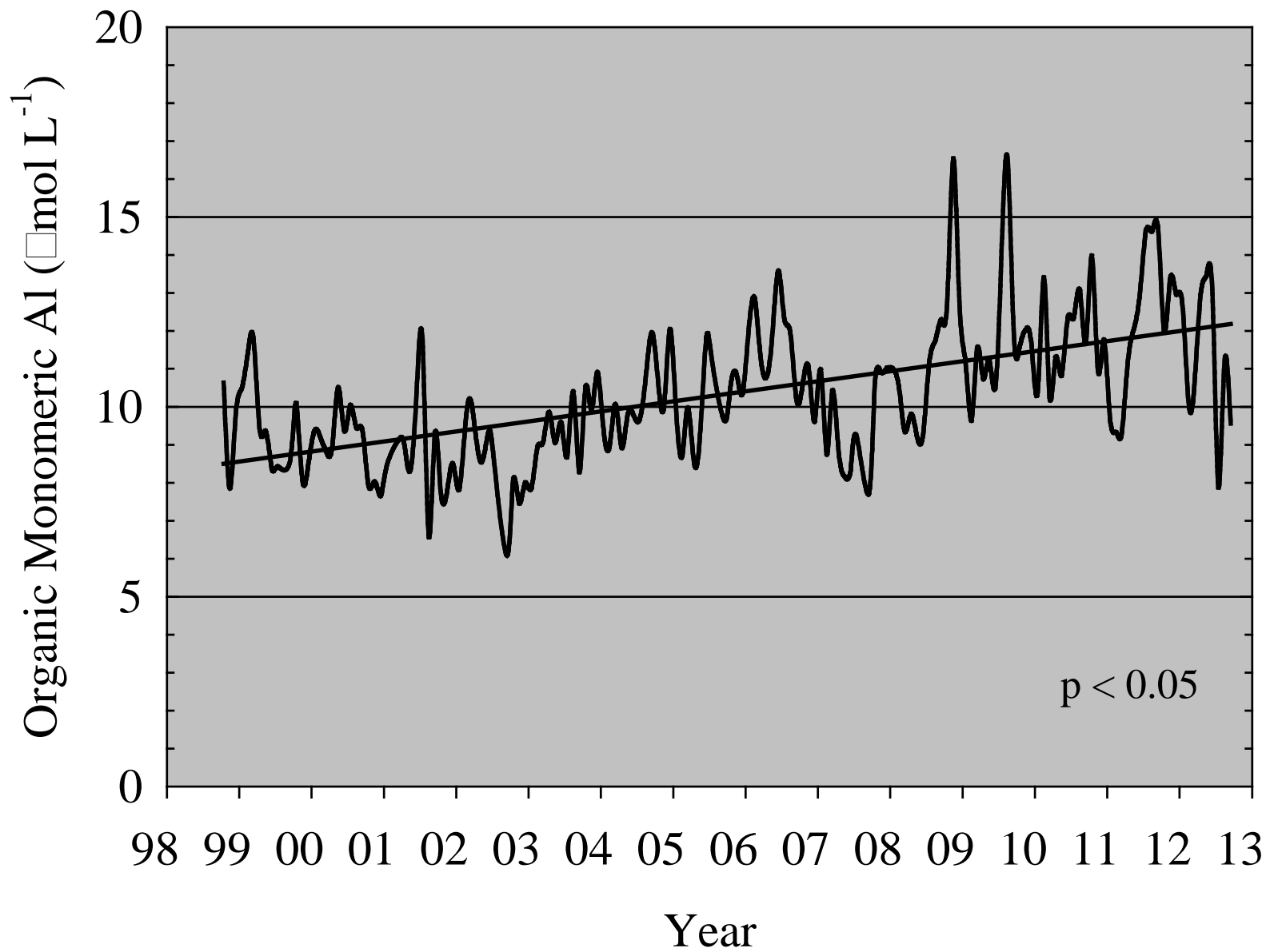
North Tributary Buck Creek

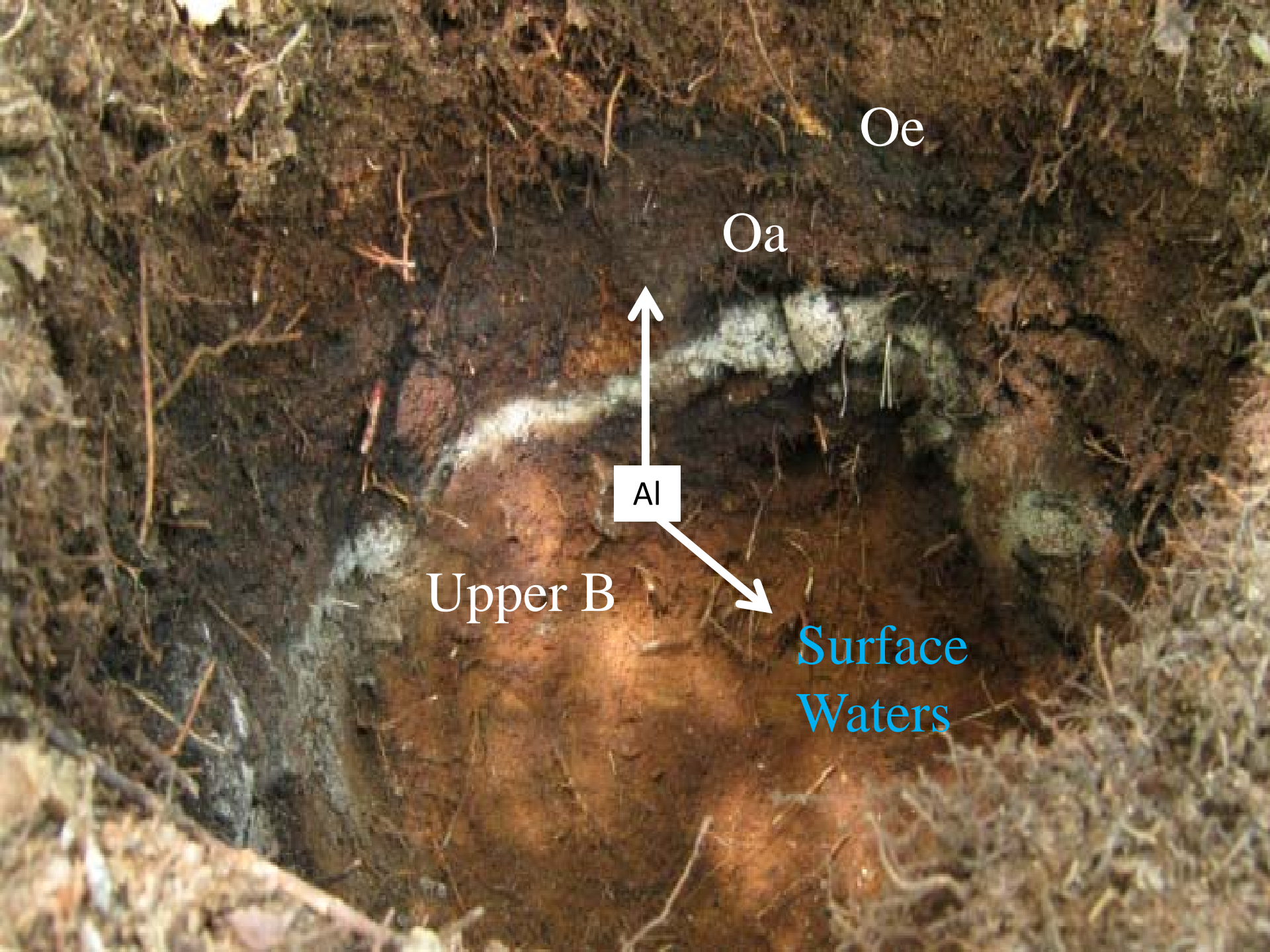


North Tributary Buck Creek



North Tributary Buck Creek





Oe

Oa

AI

Upper B

Surface
Waters

Spruce Stands, Hubbard Brook Experimental Forest, NH

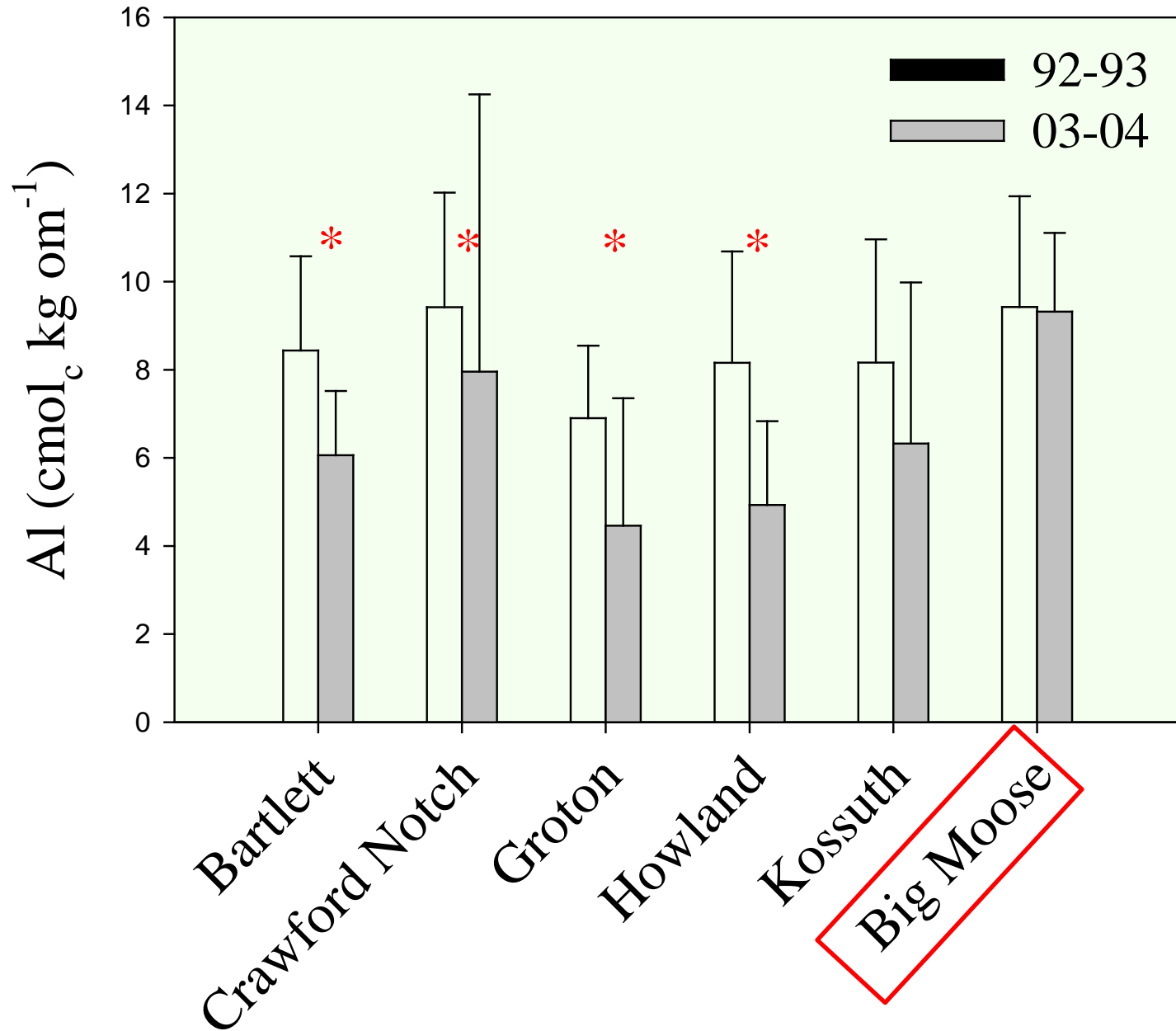
From Lawrence et al., 1995

Oa Horizon

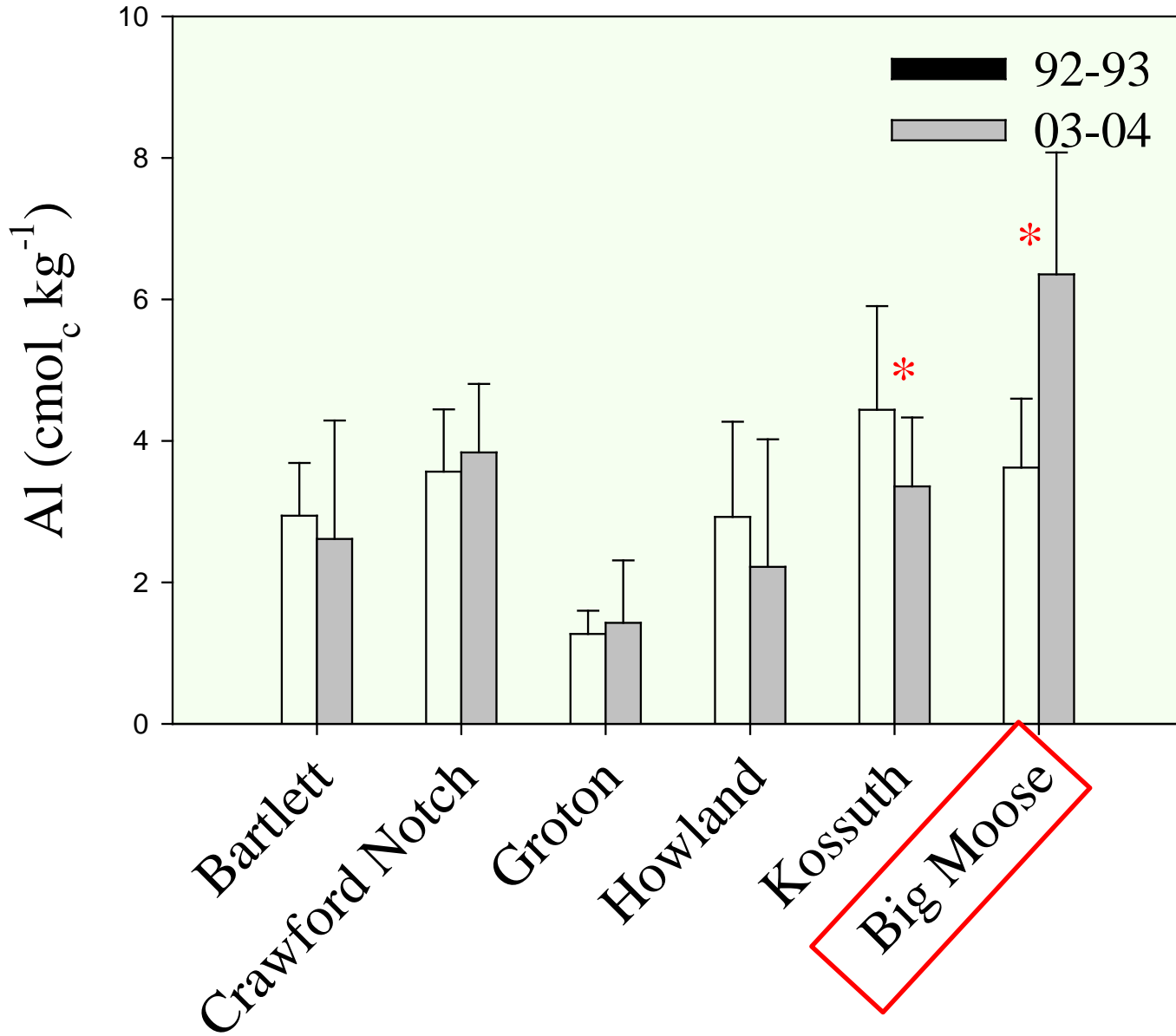
Sampling Period	Exchangeable ($\text{cmol}_c \text{ kg}^{-1}$)		Extractable ($\text{cmol}_c \text{ kg}^{-1}$)	
	Al	Ca	Al	Ca
1969-1970	2.5 ^a (1.1)	8.3 ^a (4.4)	19.3 ^a (10.2)	9.9 ^a (6.4)
1987,1992	3.7 ^a (2.9)	3.5 ^b (2.1)	37.0 ^b (21.6)	4.6 ^b (2.9)

****Warby et al. 2009 --- Loss of Ca and increase in Al in the O horizon between 1984 and 2001***

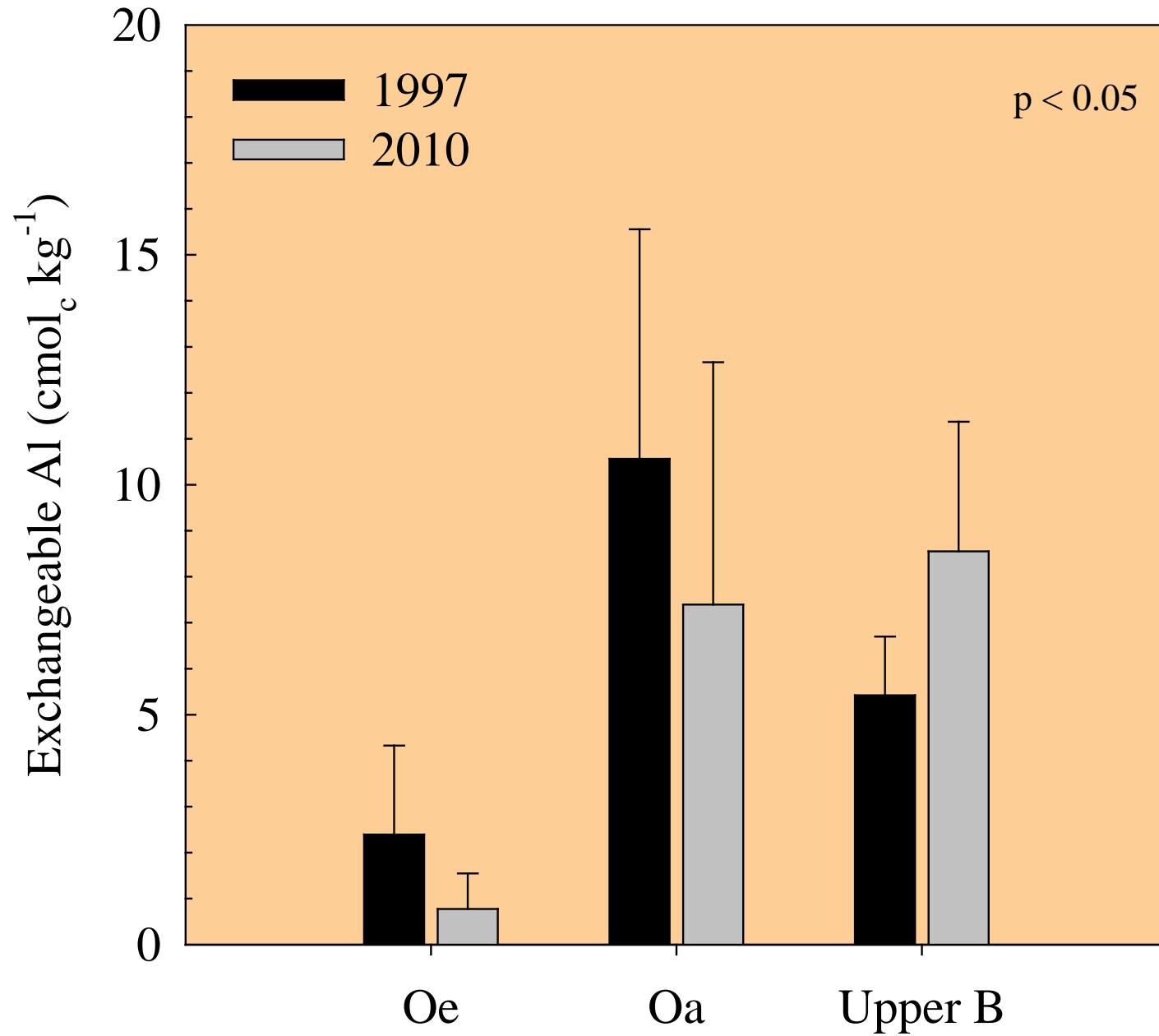
Oa Horizon Exchangeable Al



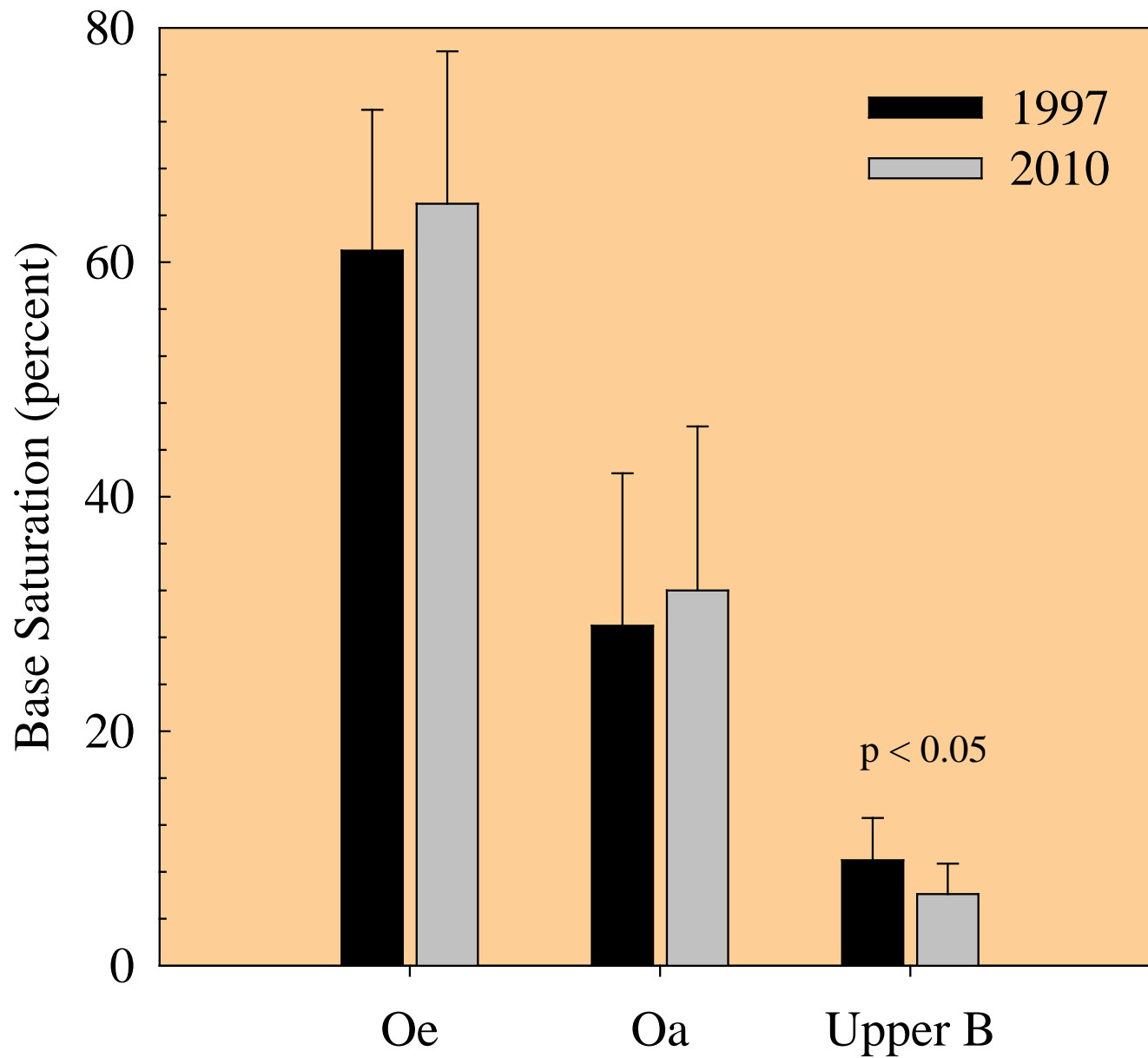
Upper B Horizon Exchangeable Al



North Tributary Soil Chemistry



North Tributary Soil Chemistry



SUMMARY

- Decreases in S deposition accelerated since 2008.
- ECASS streams acidified at baseflow – 7.8 %
- ECASS streams acidified during highflow – 37%
- Some stream recovery since 2008.
- Indications of soil recovery in organic horizons, but worsening in upper mineral horizons.

