

# Ecology and Evolution: Toxins in the Hudson

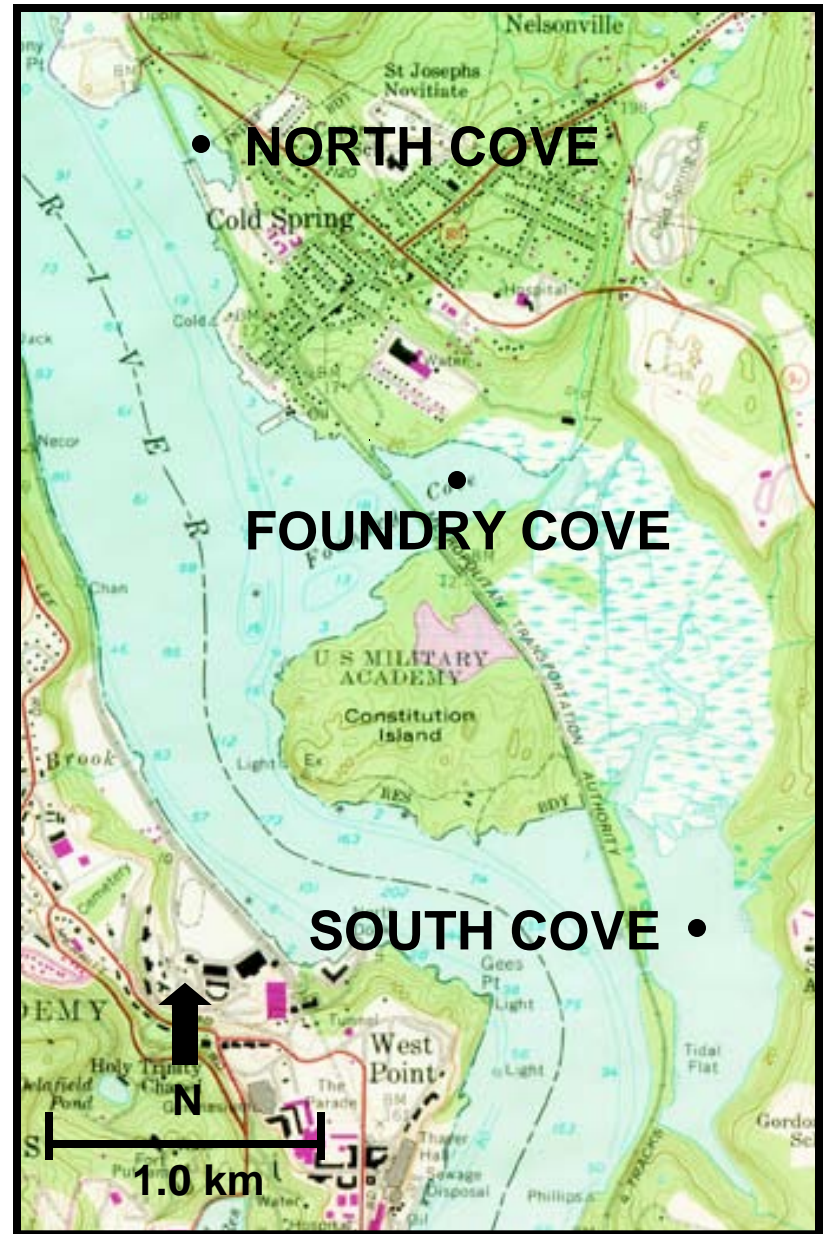


**Cadmium in the Cove**

## Scientists collecting samples in Foundry Cove



Marathon Battery Factory  
made nickel-cadmium  
batteries in Foundry Cove  
from 1952-1979.



# Heavy Metal Pollution

- between 1952 and 1979, over 112,000 pounds of **cadmium** was released into Foundry Cove
- Foundry Cove became “the most cadmium polluted site in the world”
- **nickel** and **cobalt** were released in much smaller amounts

Periodic Table of the Elements

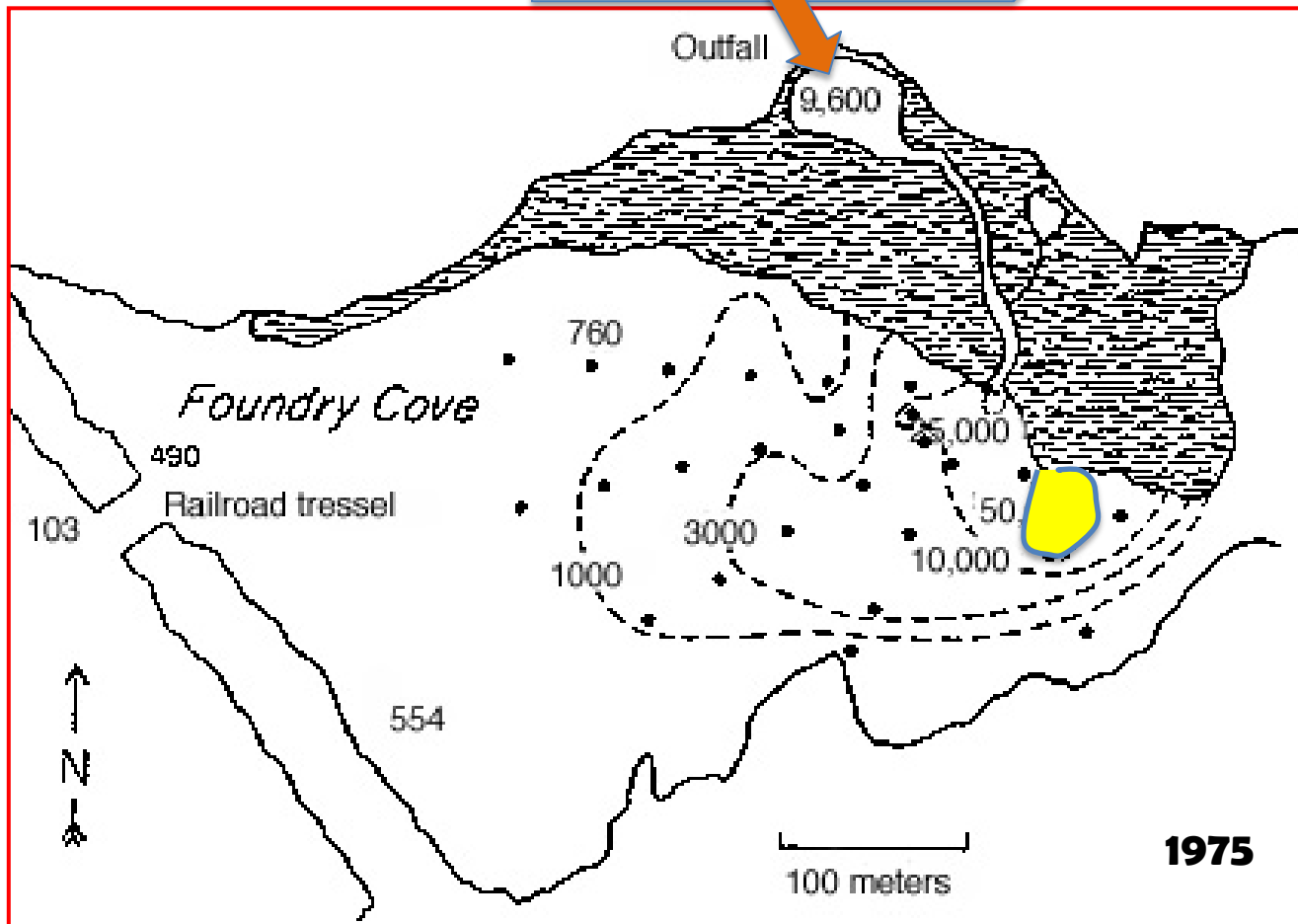
1	2																	10	18	36	54	86	
1	2																	10	18	36	54	86	
3	4																	5	6	7	8	9	10
11	12																	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36						
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
55	56	57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86						
87	88	89	104	105	106	107	108	109	110														

* Lanthanide Series	58	59	60	61	62	63	64	65	66	67	68	69	70	71
	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
+ Actinide Series	90	91	92	93	94	95	96	97	98	99	100	101	102	103
	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

How could scientists find out where the cadmium went after it left the Marathon Battery outfall?

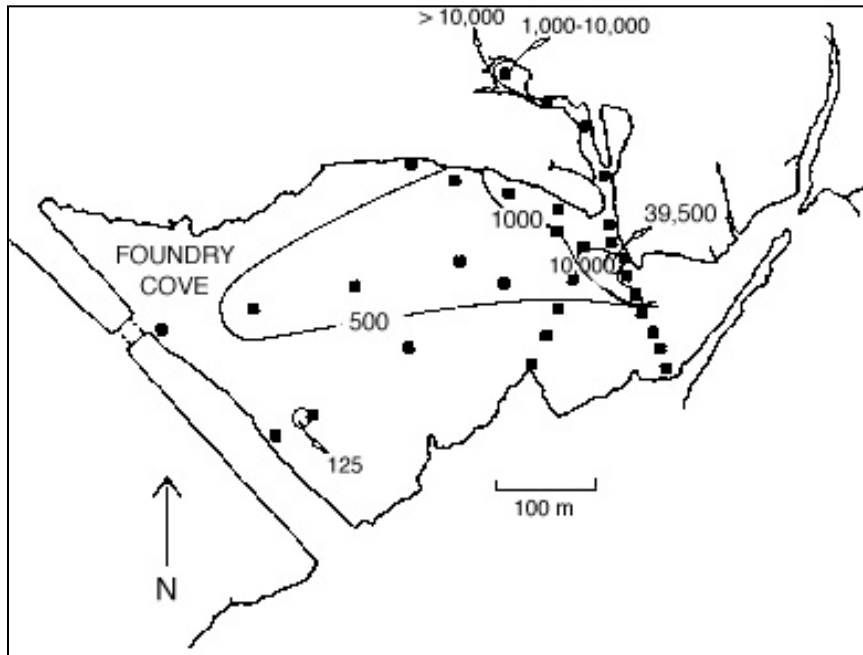
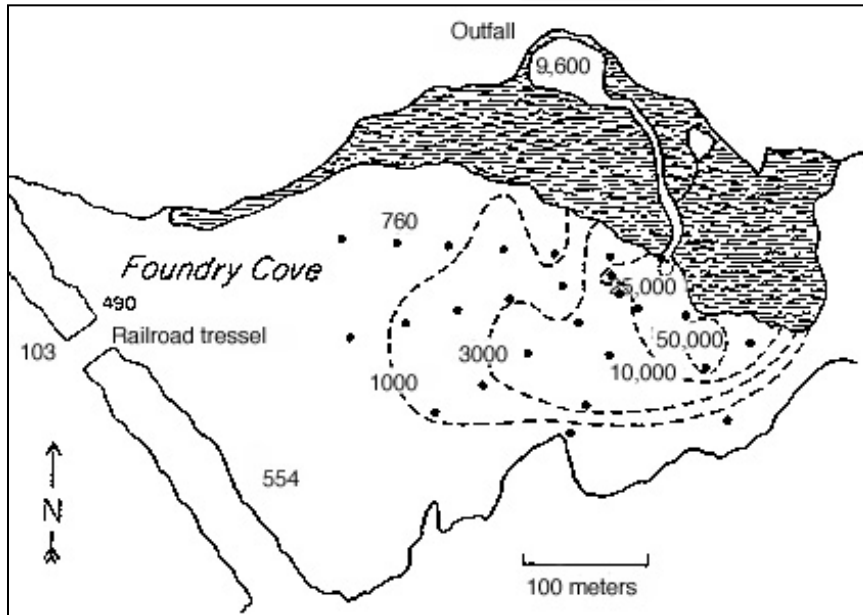


Marathon Battery Factory



= 50,000+ ppm cadmium in sediments of Foundry Cove

ppm = parts per million

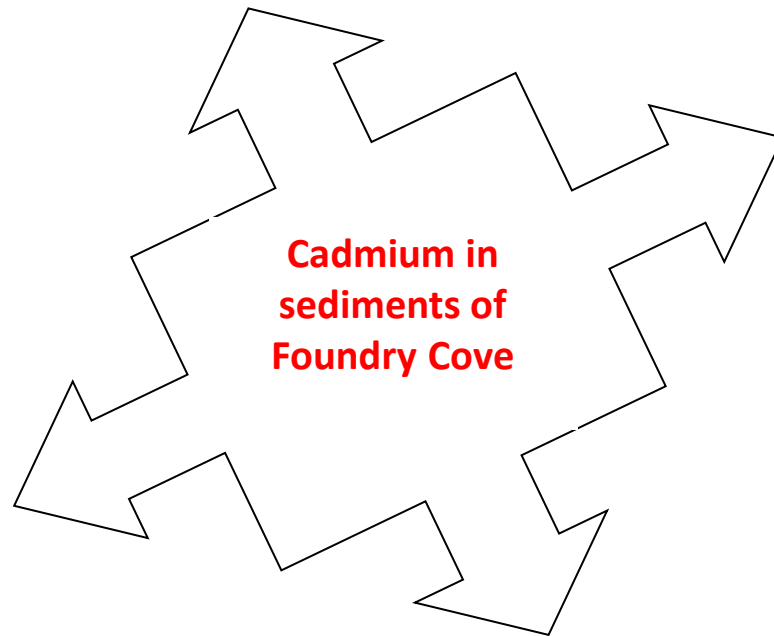


What changed?





# What happened to the cadmium between 1979 and 1983?



## Where could it have gone?

# Sampling at the train trestle, Foundry Cove

Outgoing  Tide  Incoming



# Major Cadmium Pathways

What happens to cadmium that gets eaten?

**Eaten** by organisms

**Buried** by sediments carried in by tides or freshwater runoff

Cadmium  
in  
sediments  
of Foundry  
Cove

**Transported out** by tides

**Redistributed** by water  
Movements within the cove