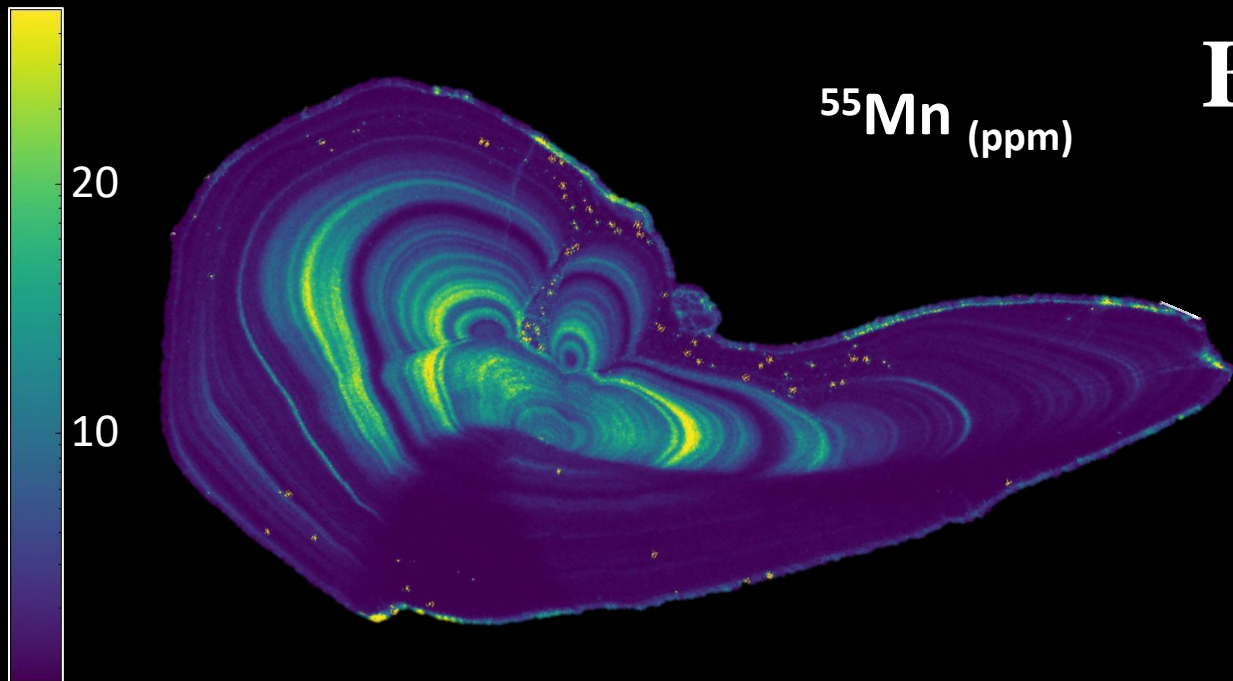
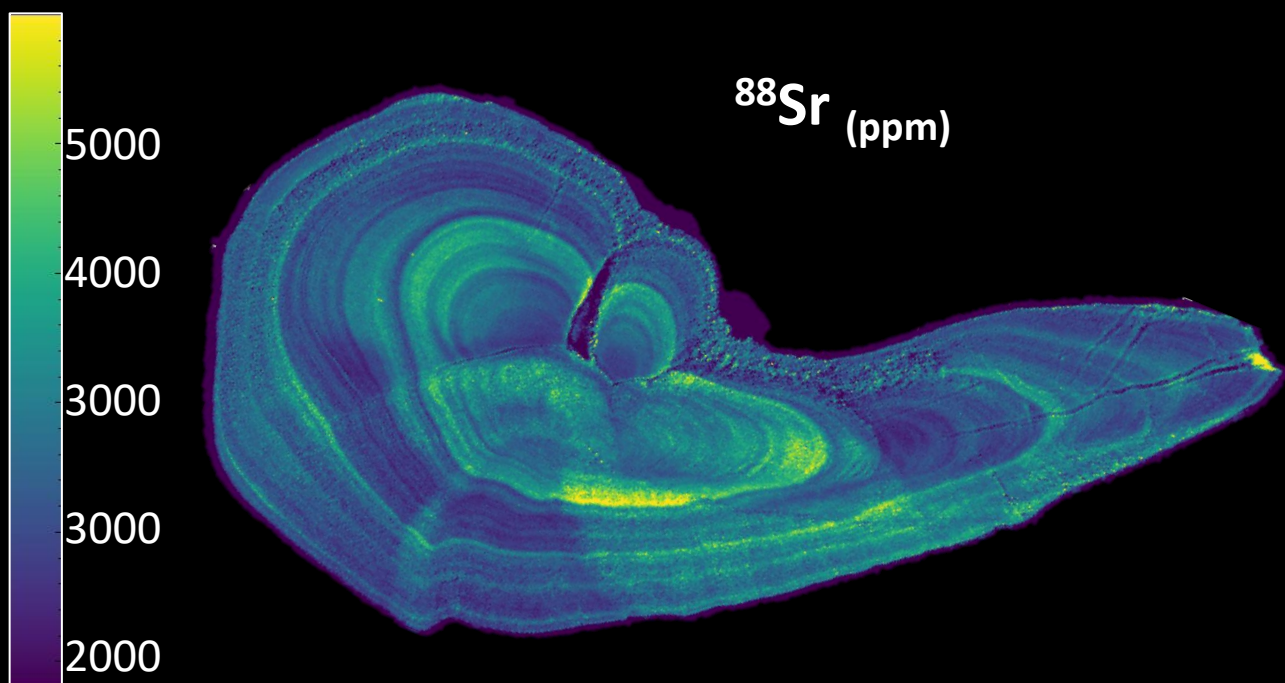
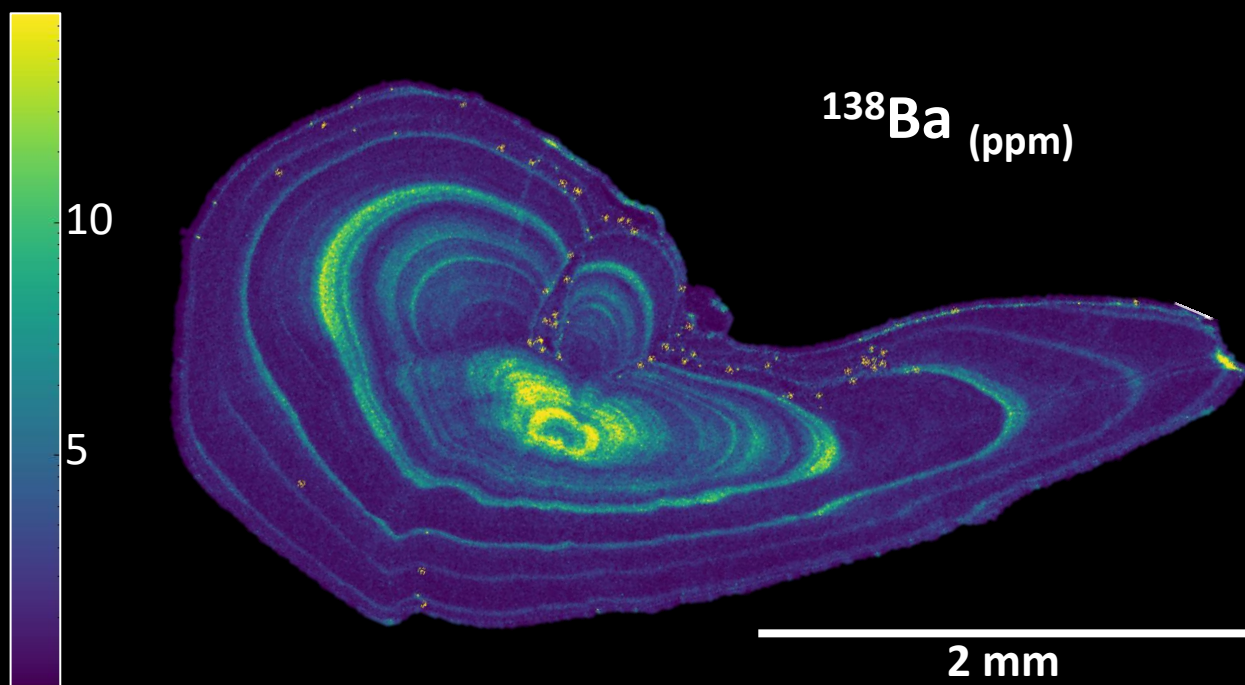
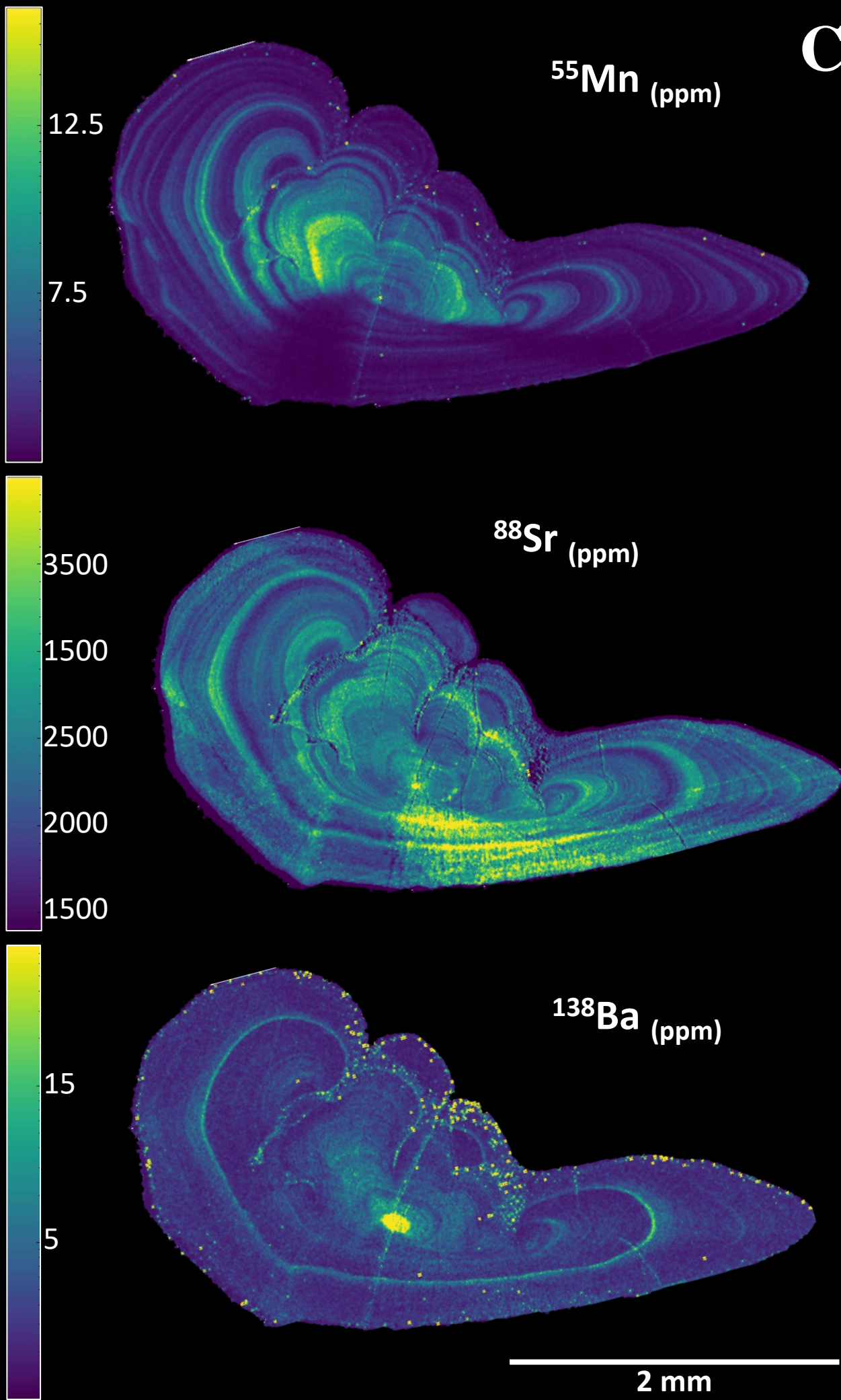


**B** $^{55}\text{Mn}$  (ppm) $^{88}\text{Sr}$  (ppm) $^{138}\text{Ba}$  (ppm)

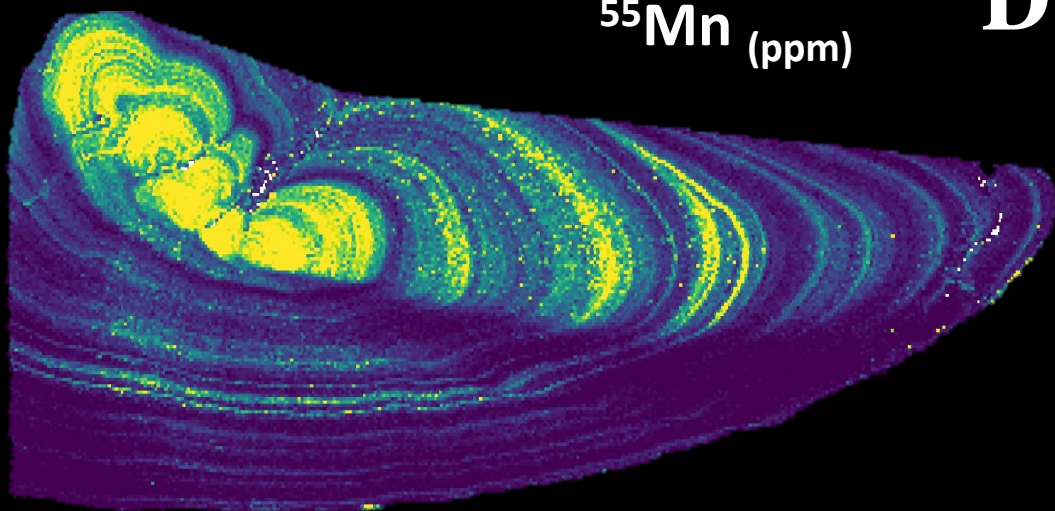
2 mm

**C**

**D** $^{55}\text{Mn}$  (ppm)

12.5

5

 $^{88}\text{Sr}$  (ppm)

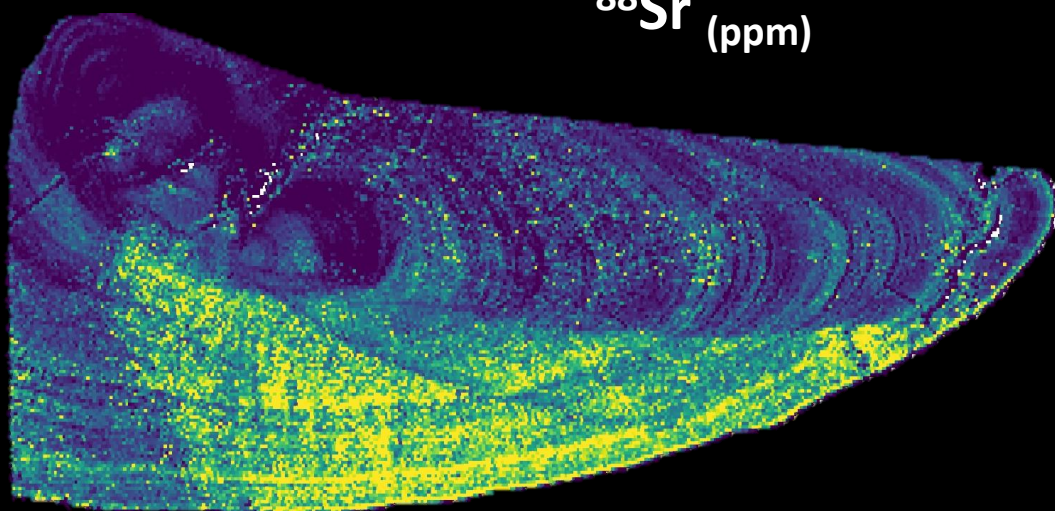
5000

4000

3000

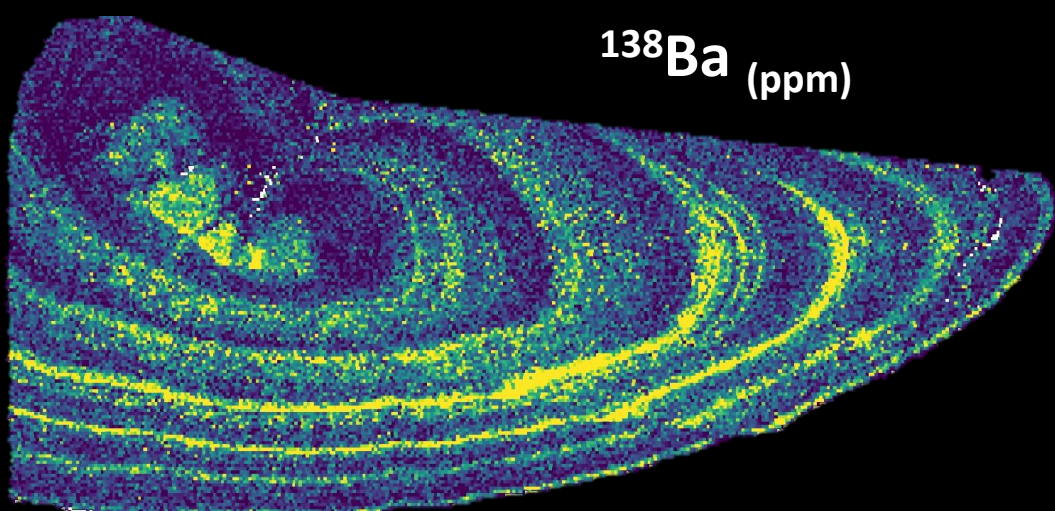
3000

2000

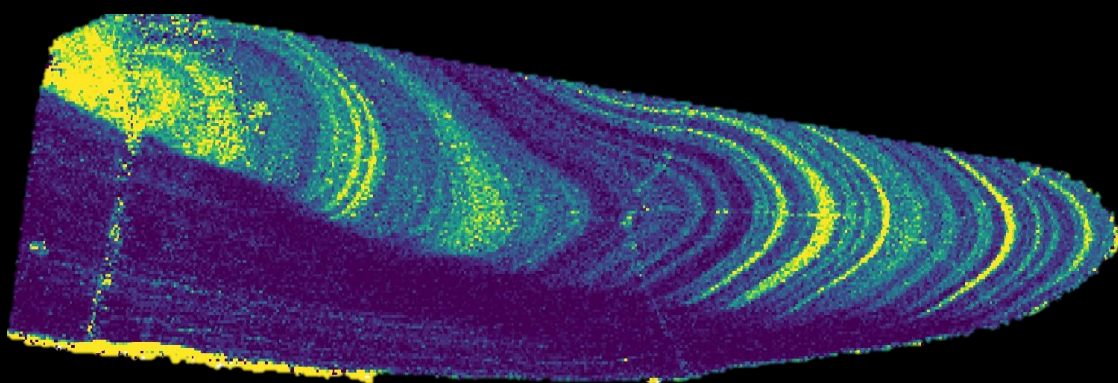
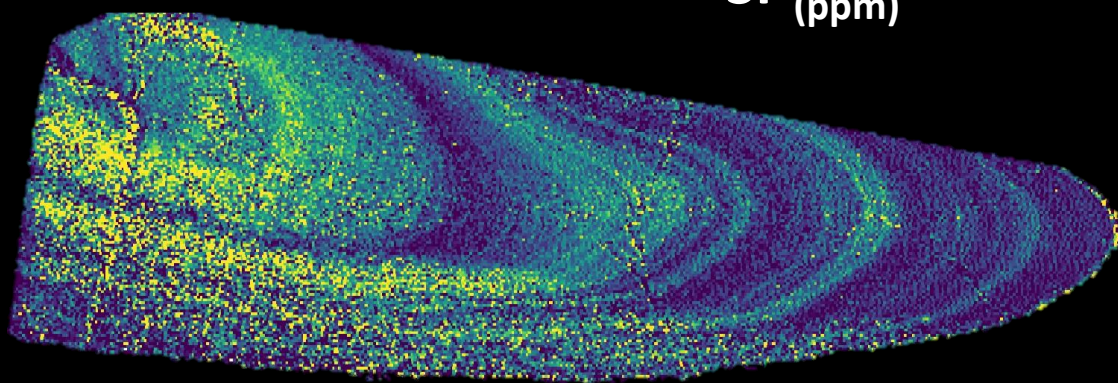
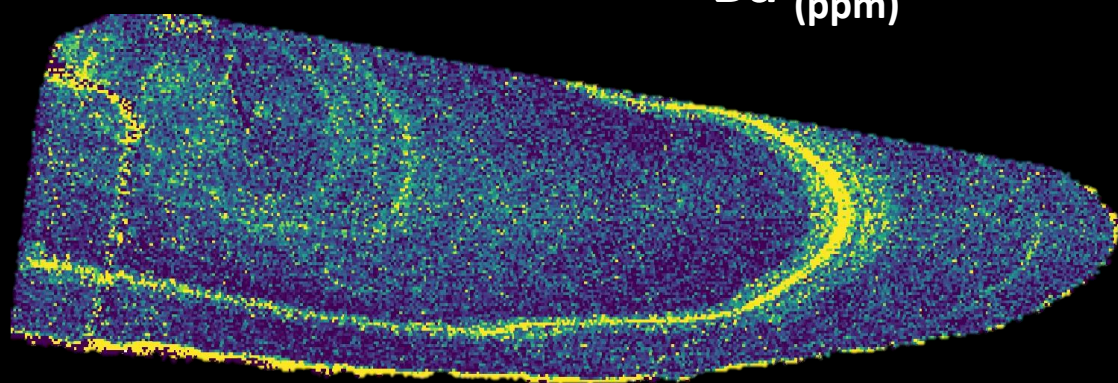
 $^{138}\text{Ba}$  (ppm)

5.5

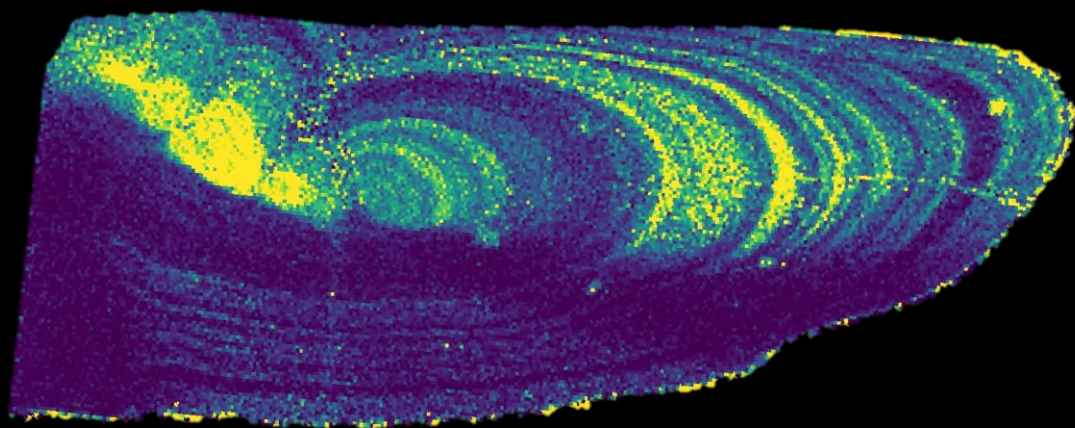
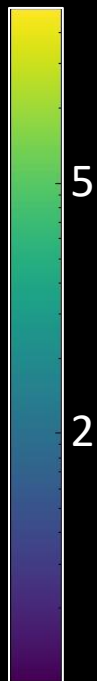
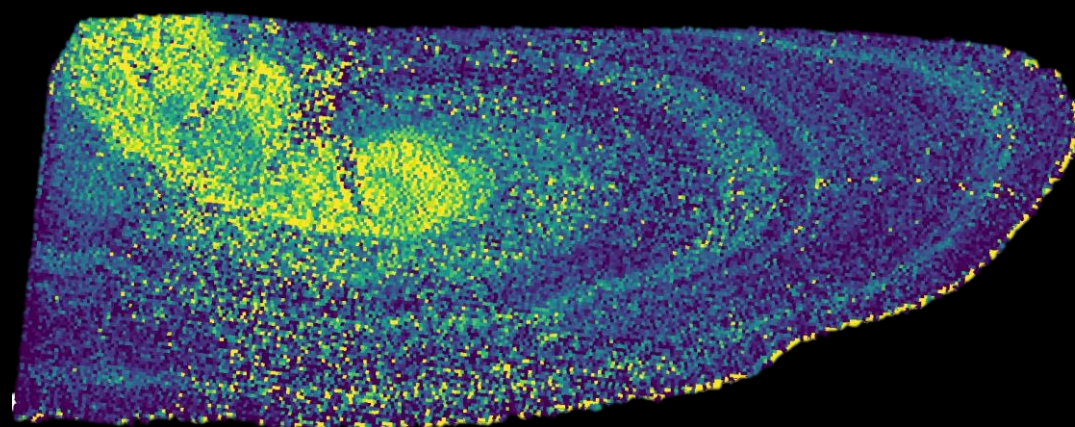
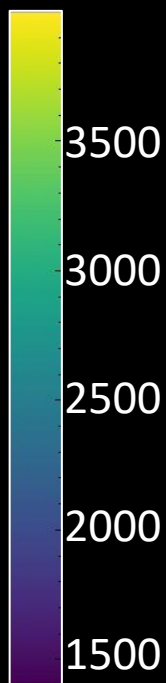
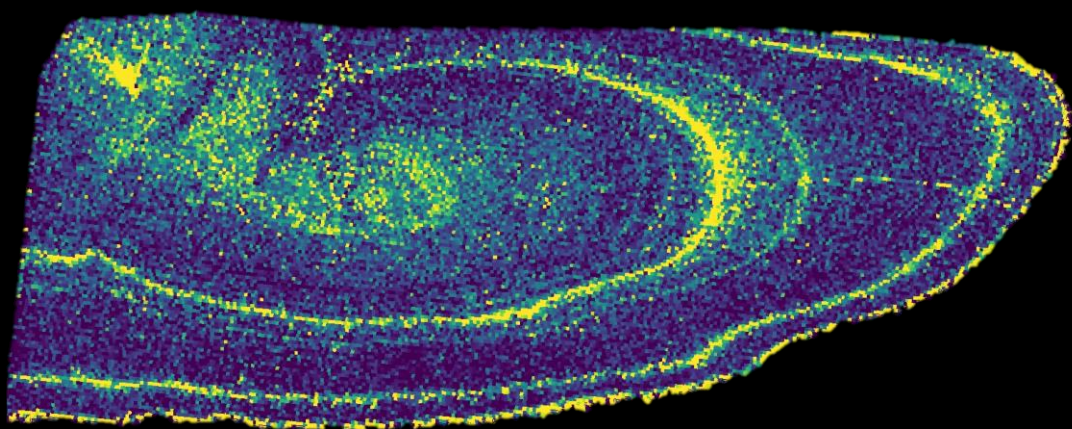
2.5



1 mm

**E** $^{55}\text{Mn}$  (ppm) $^{88}\text{Sr}$  (ppm) $^{138}\text{Ba}$  (ppm)

1 mm

**F** $^{55}\text{Mn}$  (ppm) $^{88}\text{Sr}$  (ppm) $^{138}\text{Ba}$  (ppm)

1 mm

## Supplementary Figure 2

2D maps of the geochemistry of the otoliths of (A–F) 6 different white hake (*Urophycis tenuis*) sampled in Maine and New Hampshire from 2007 through 2021. Peaks in concentrations of isotopes of manganese (Mn), strontium (Sr), and barium (Ba)— $^{55}\text{Mn}$ ,  $^{88}\text{Sr}$ , and  $^{138}\text{Ba}$ —in parts per million (ppm) were analyzed. For information on the type of 2D map (partial or complete) for each otolith and for the sex, total length, and estimated age of each fish from which the otoliths were sampled, see [Supplementary Table 3](#).