Pesticides in Indiana Fish Tissue 1980 - 2019

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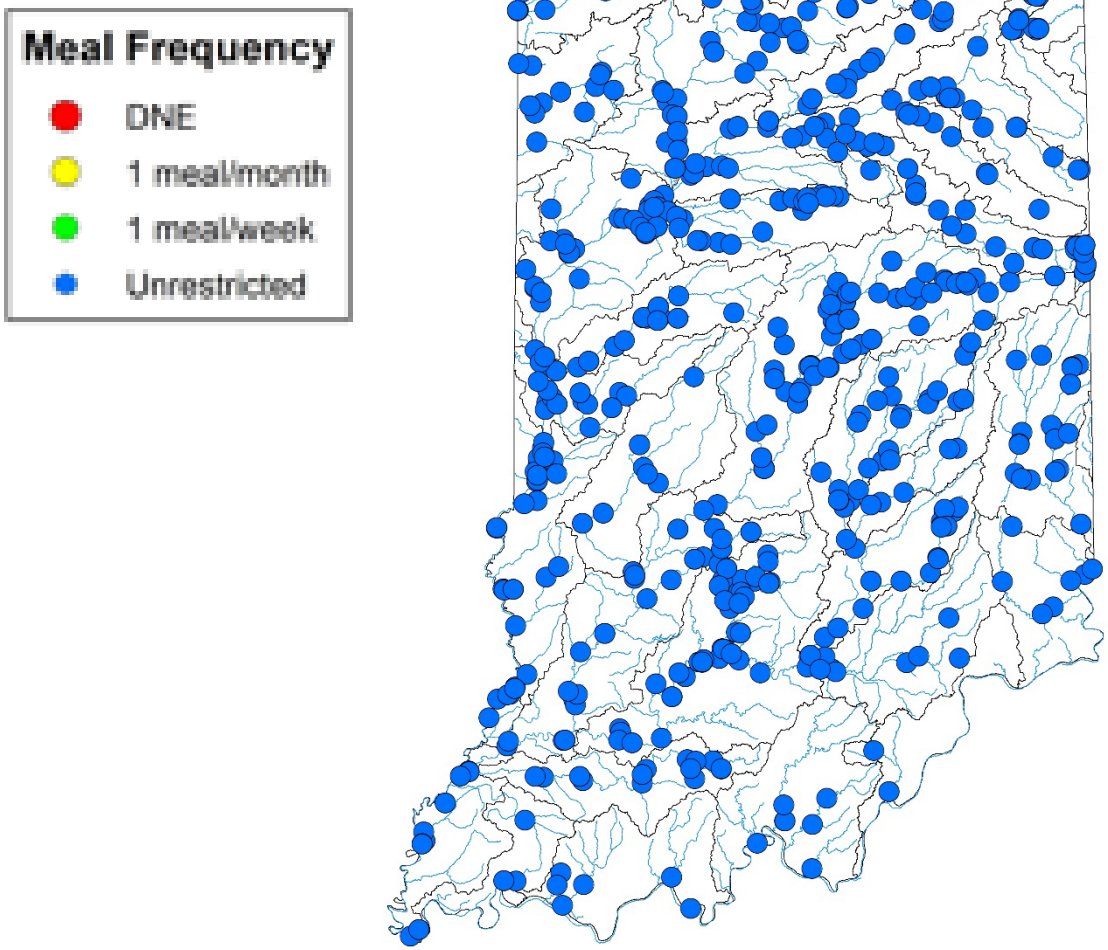
Background

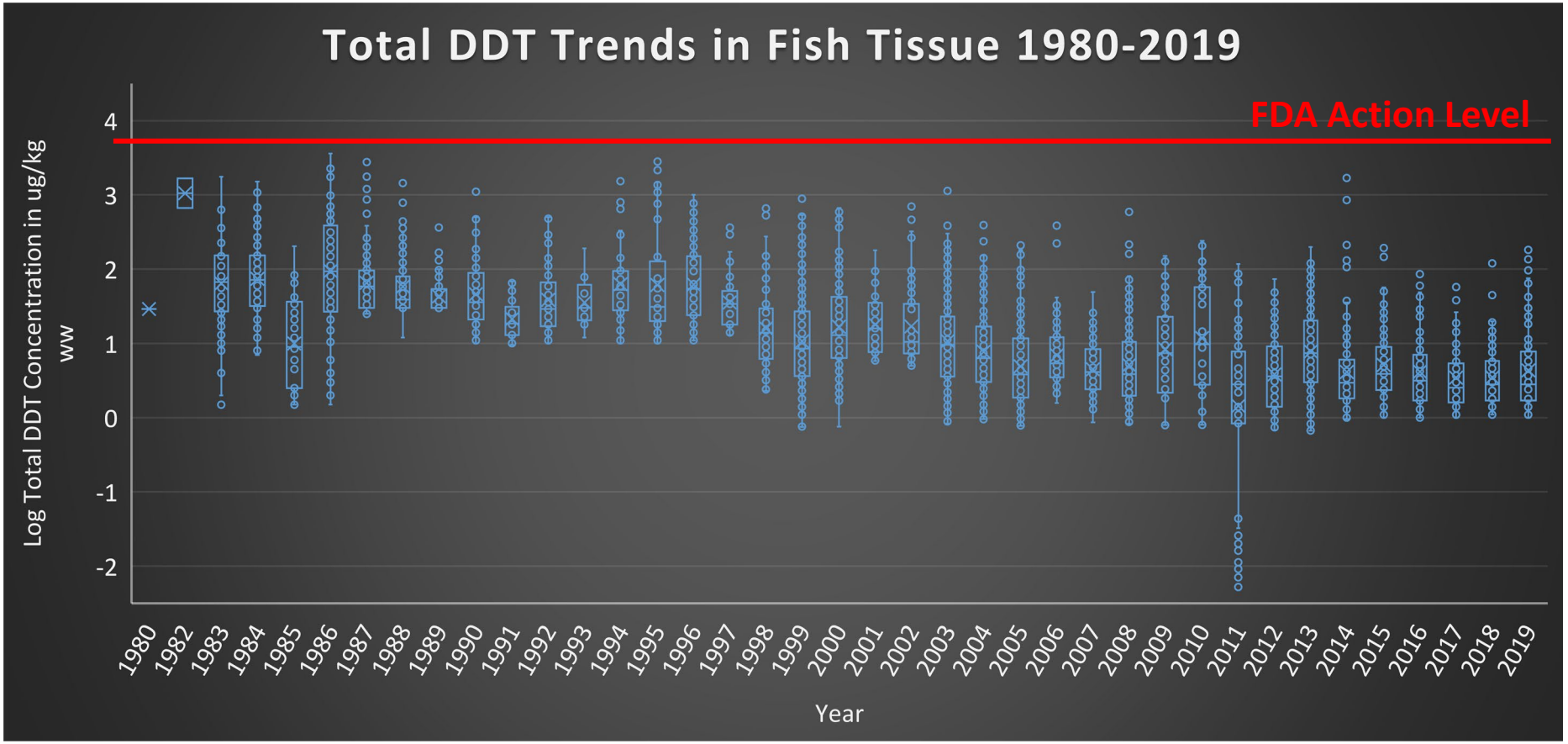
- IDEM has been collecting pesticides in fish tissue since the 1980s
- We currently analyze several dozen parameters, however most are not detected
- Target pesticides that bioaccumulate
- Target pesticides that have a major route for human exposure through fish consumption

Total DDT

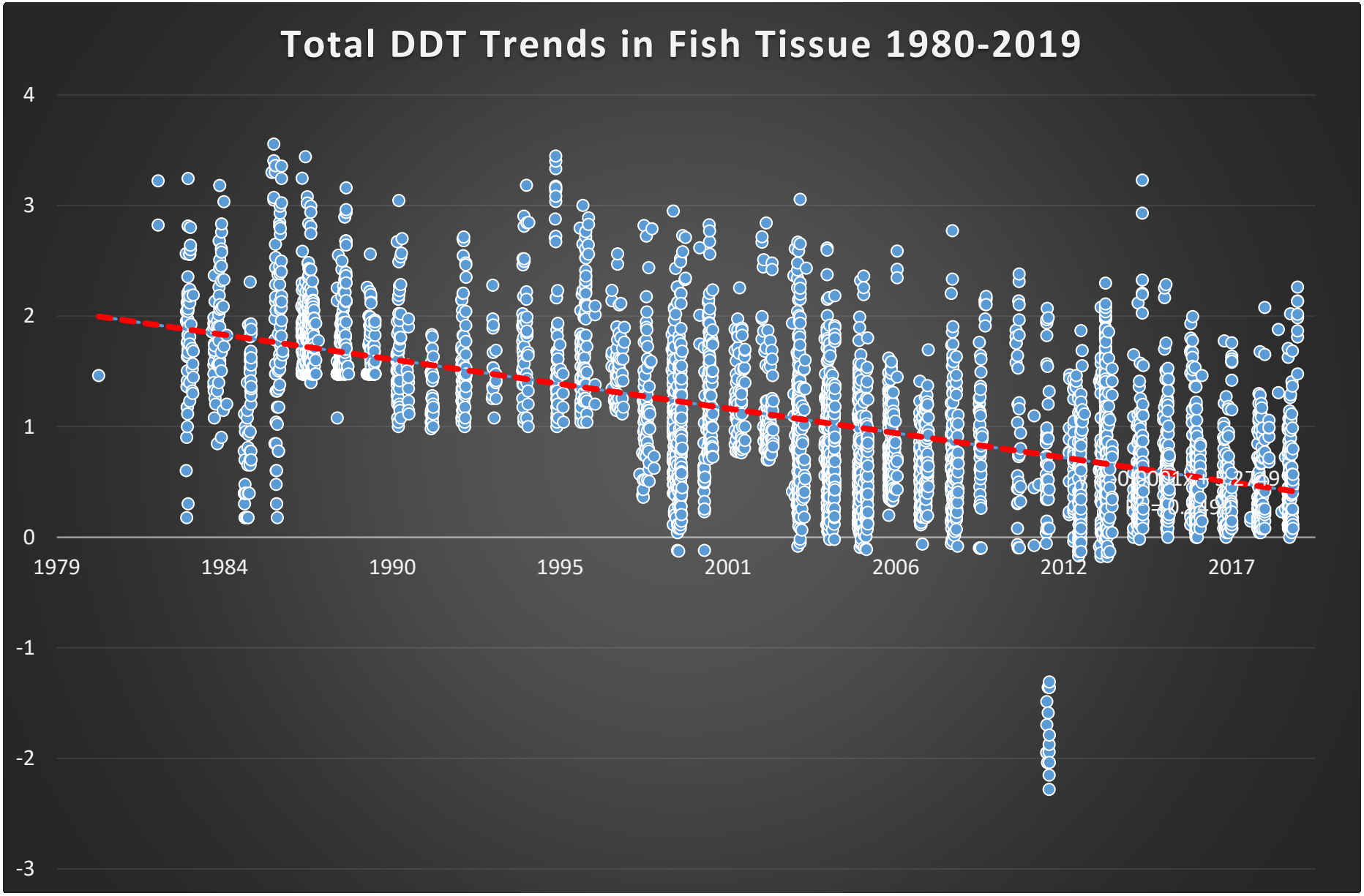
1980 - 2019

FDA Action Level = 500 ug/kg



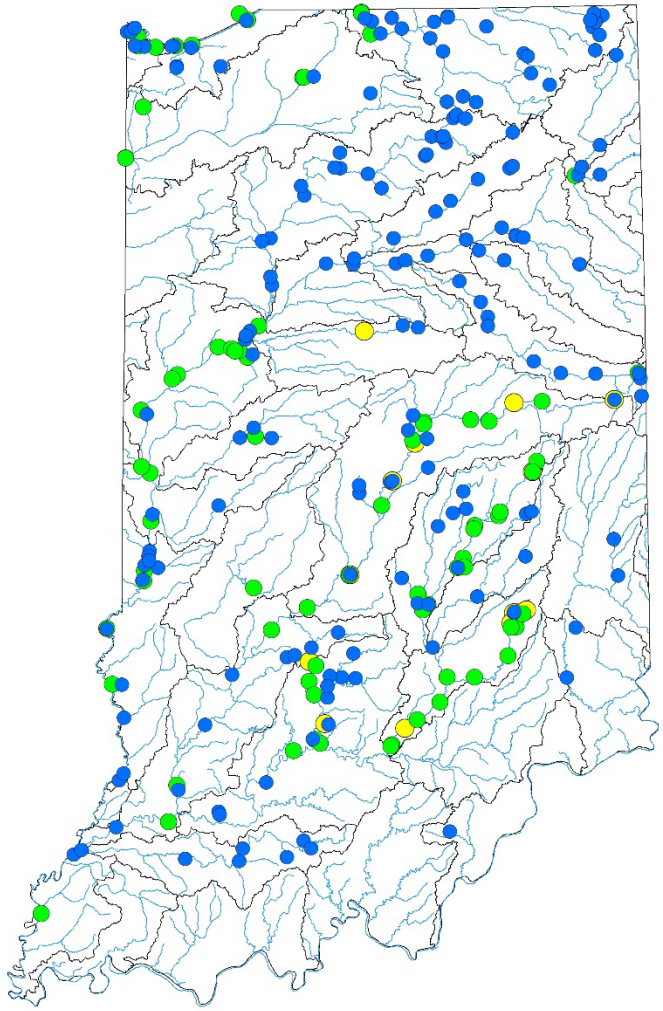


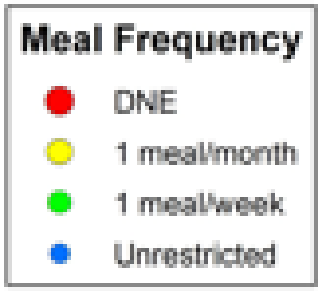
Decade	Maximum (ug/kg)	Average (ug/kg)	No. of Samples	No. Samples > Group 3 Benchmark
1980s	3590	128	836	0
1990s	2800	92	727	0
2000s	1130	25	1377	0
2010s	1690	5	1178	0


Total DDT Trends in Fish Tissue 1980-2019
4
3
2
1
0
-1
-2
-3
1979
1984
1990
1995
2001
2006
2012
2017

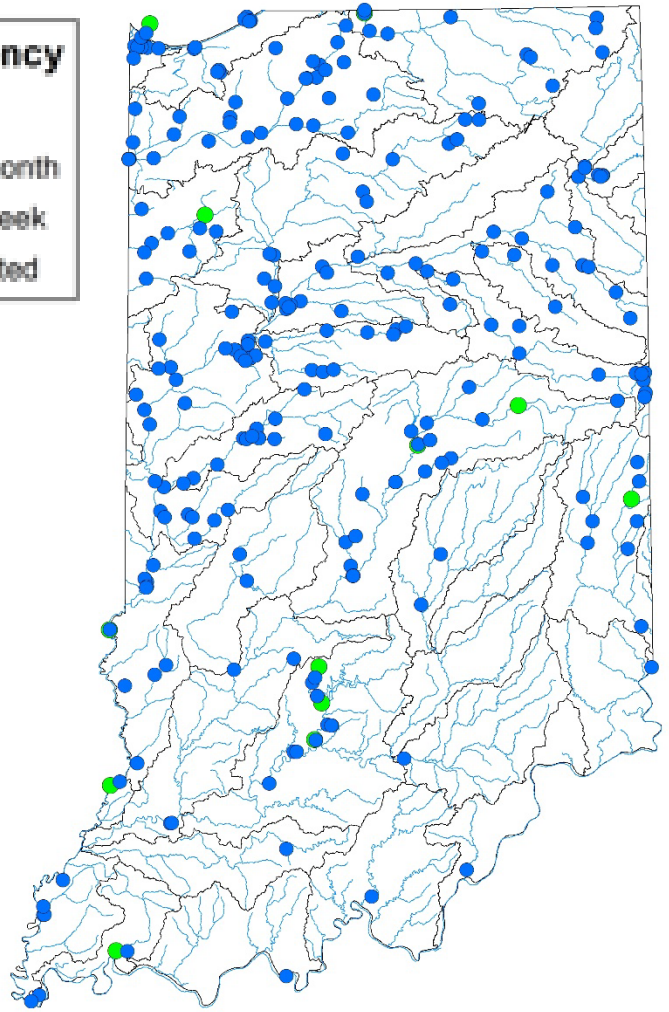
Total Chlordane

1980 - 1989

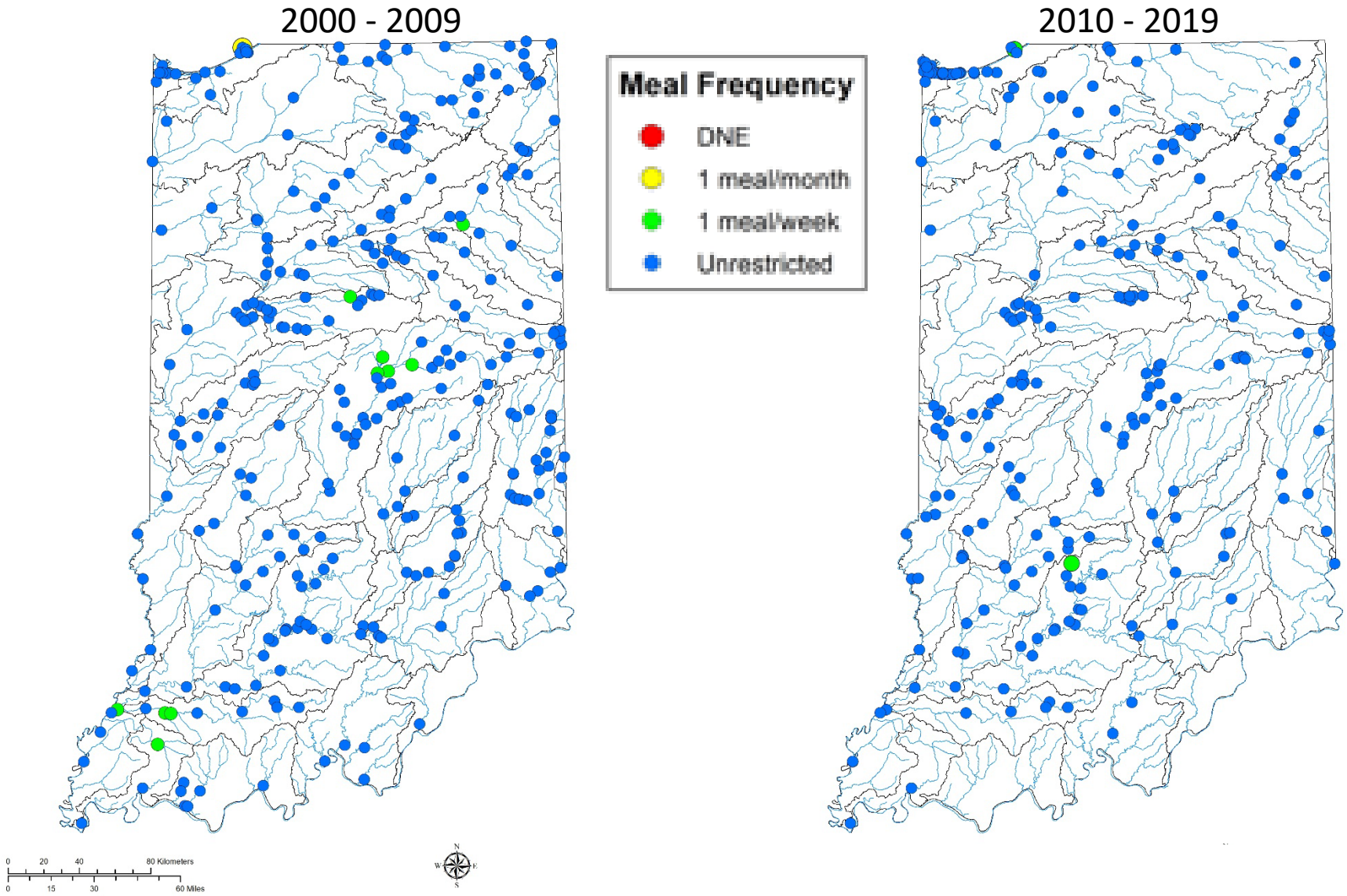


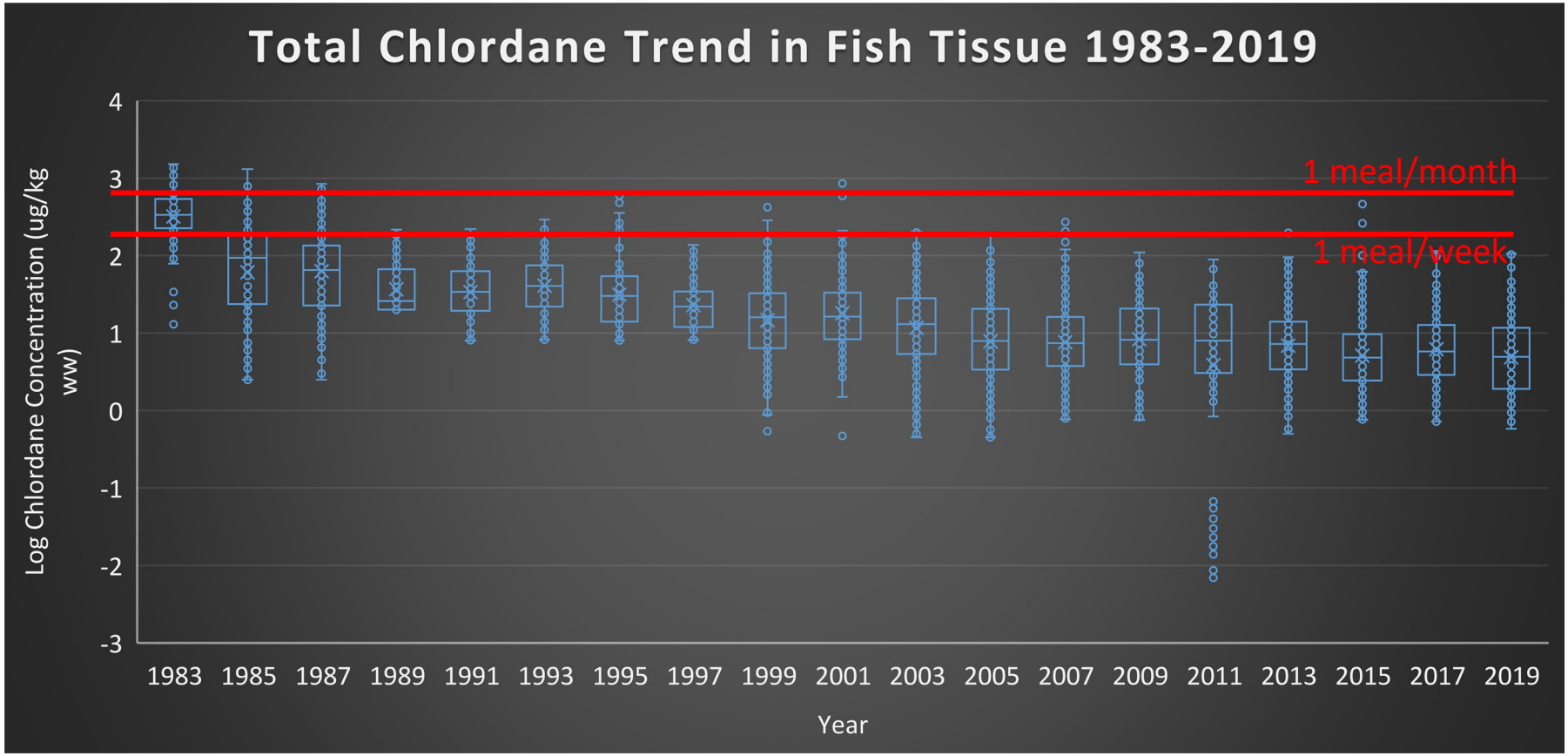


1990 - 1999

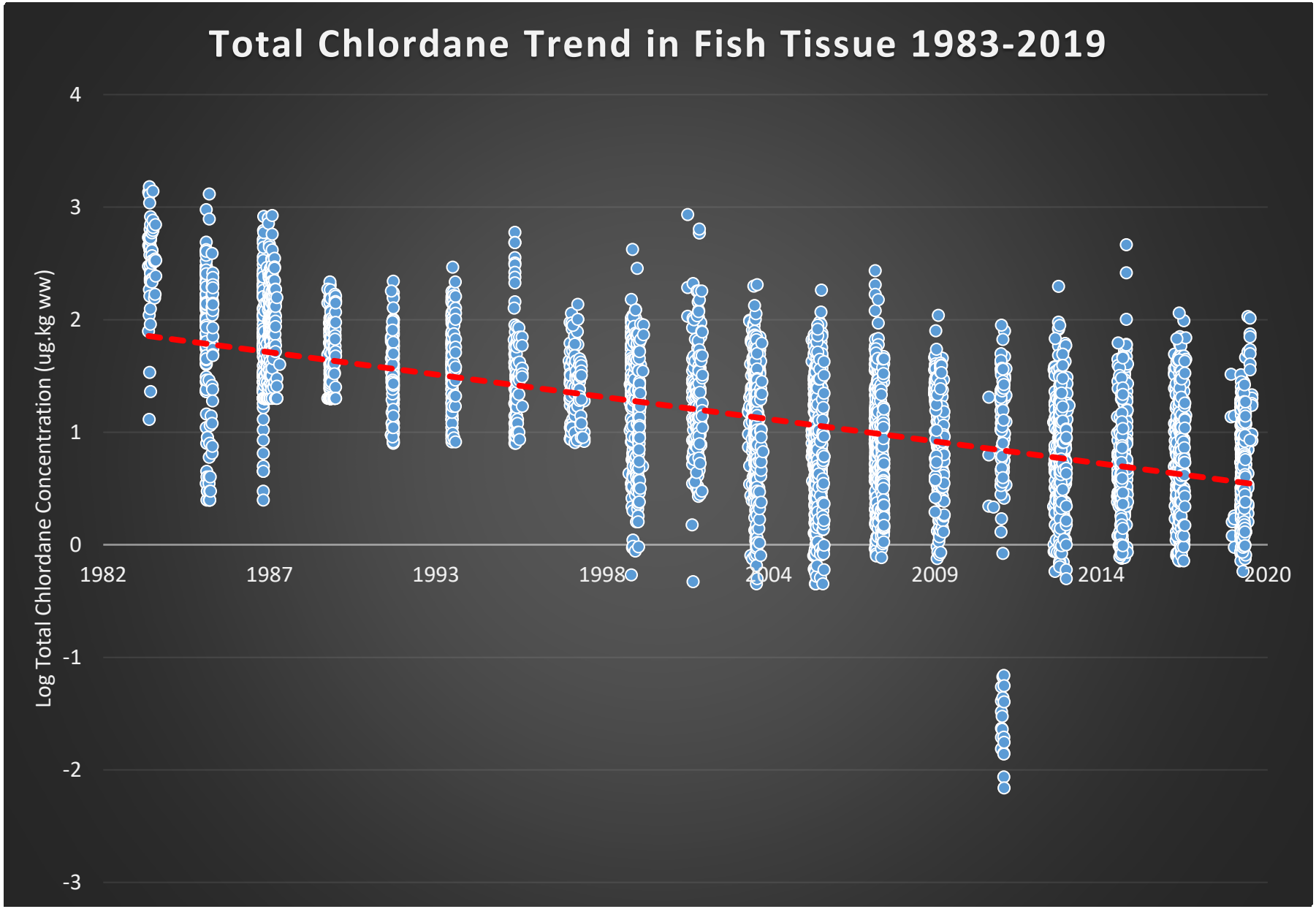


Total Chlordane



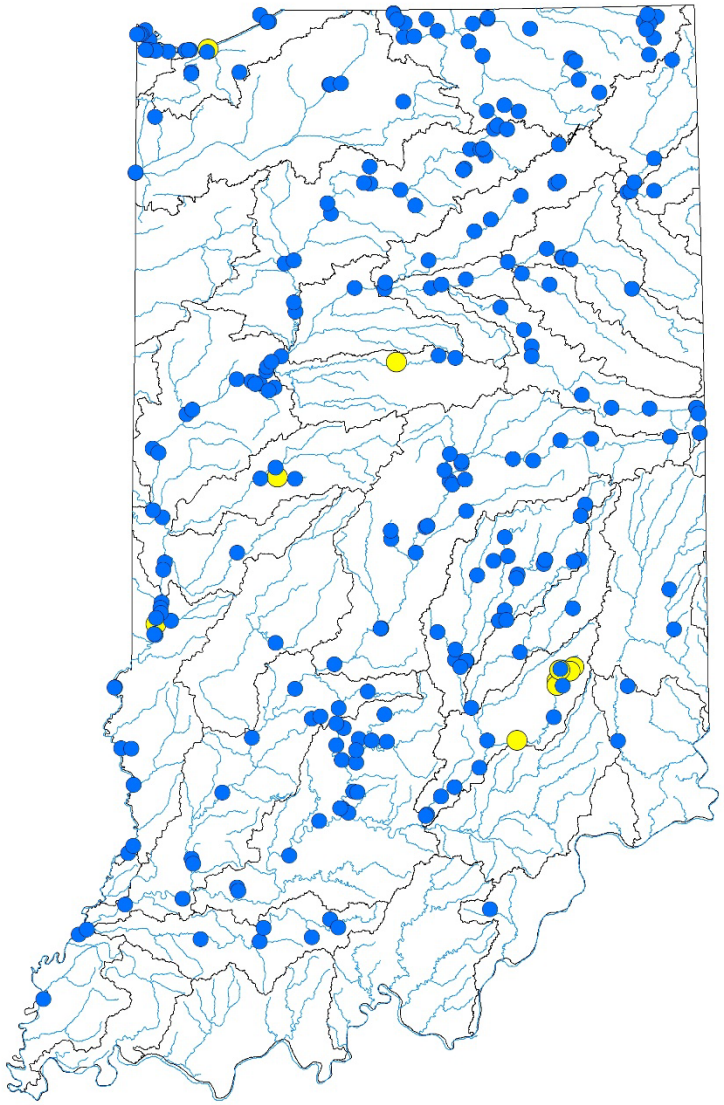


Decade	Maximum (ug/kg)	Average (ug/kg)	No. of Samples	No. Samples > Group 3 Benchmark
1980s	1520	118	798	18
1990s	600	40	745	0
2000s	860	19	1617	0
2010s	460	11	1324	0


Total Chlordane Trend in Fish Tissue 1983-2019
Log Total Chlordane Concentration (ug.kg ww)
4
3
2
1
0
-1
-2
-3
1982
1987
1993
1998
2004
2009
2014
2020

Dieldrin

1980 - 1989

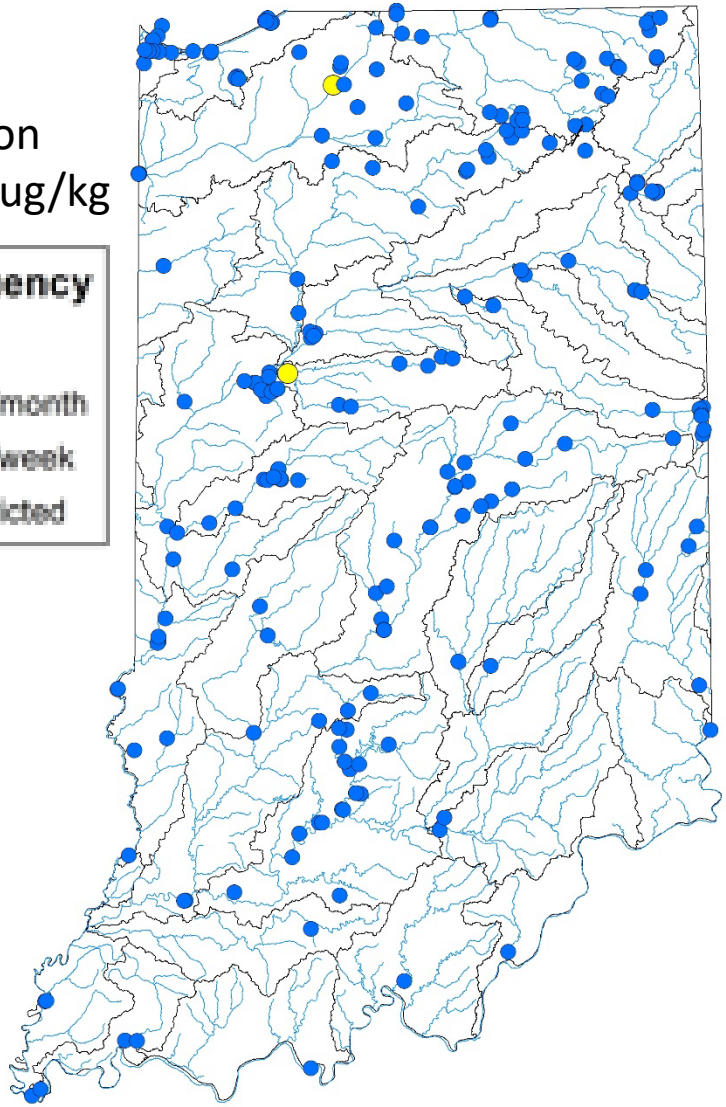


FDA Action Level = 300 ug/kg

Meal Frequency

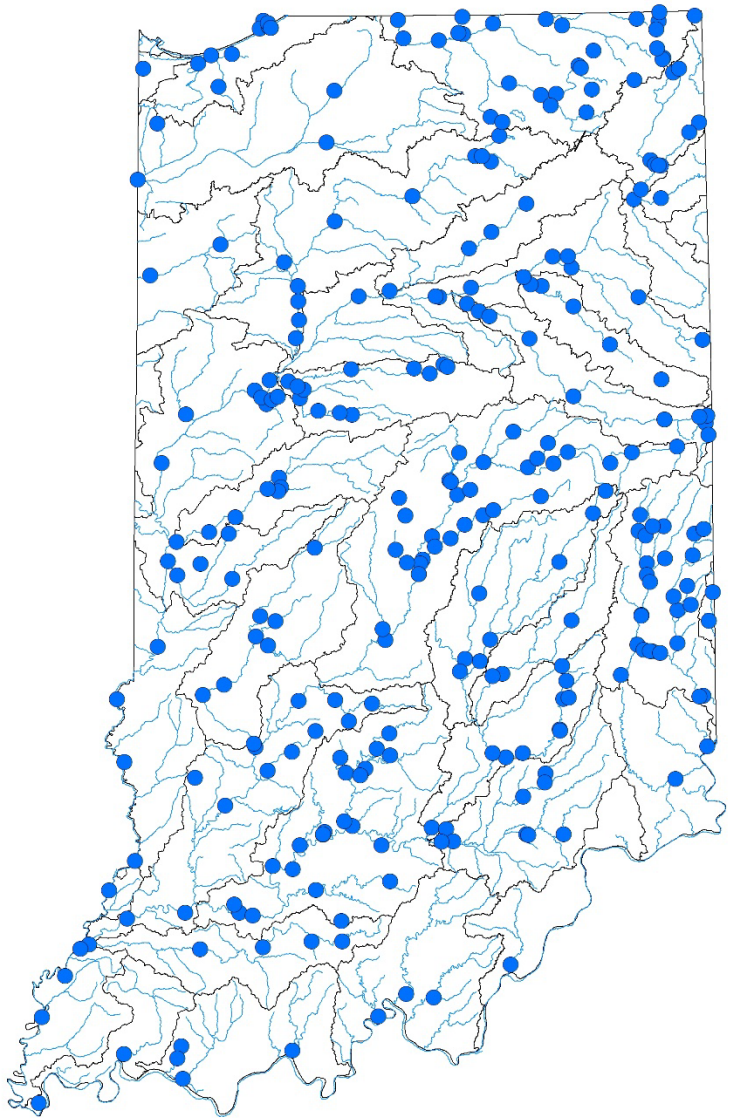
- DNE
- 1 meal/month
- 1 meal/week
- Unrestricted

1990 - 1999

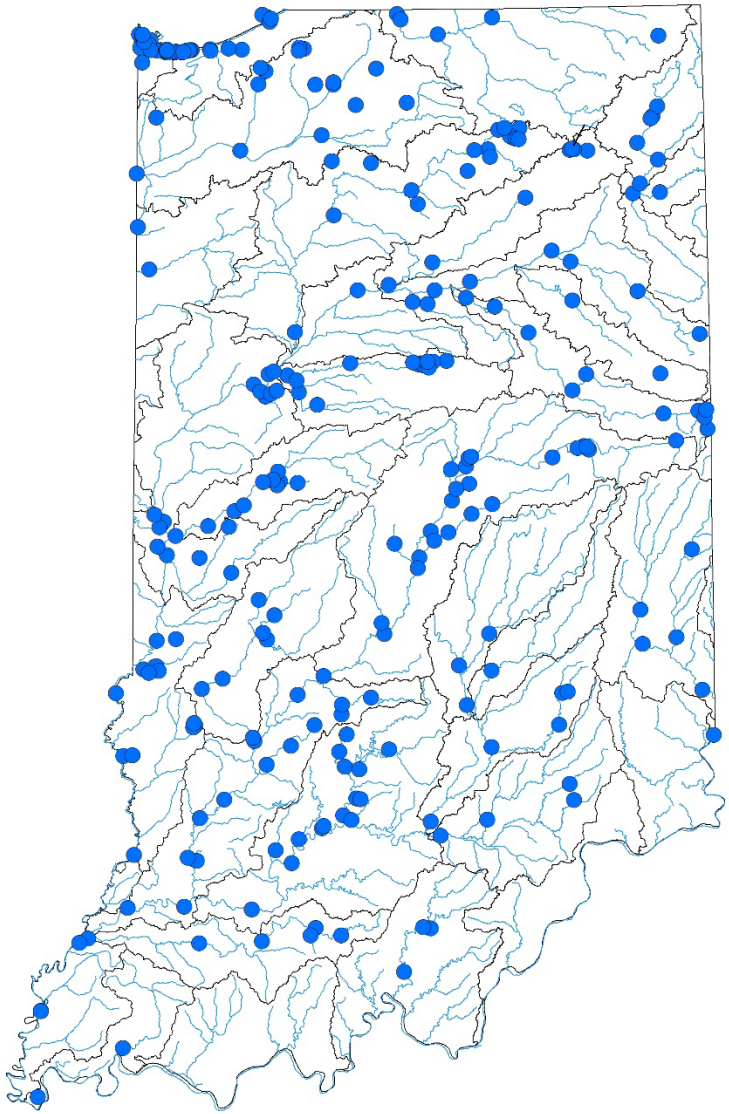


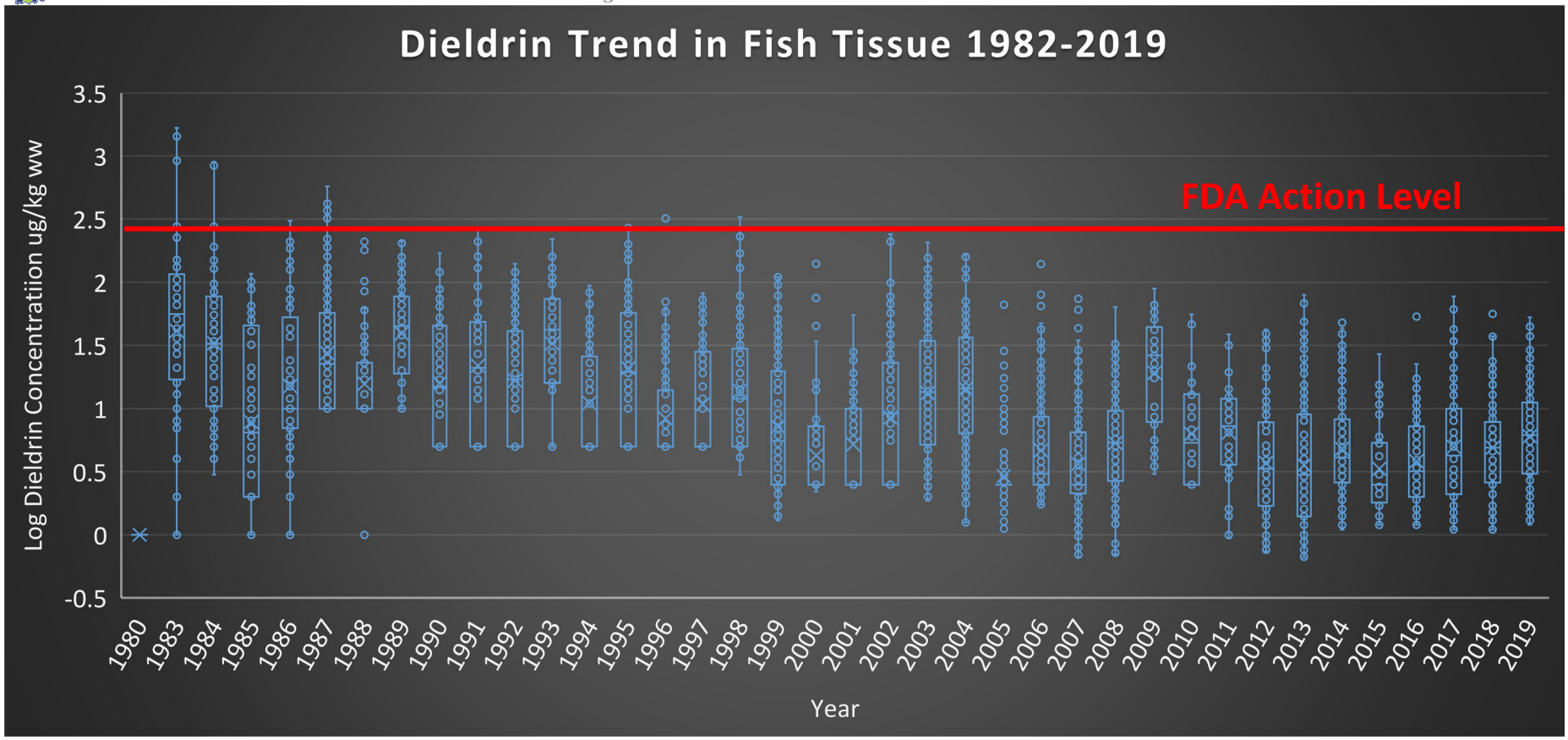
Dieldrin

2000 - 2009

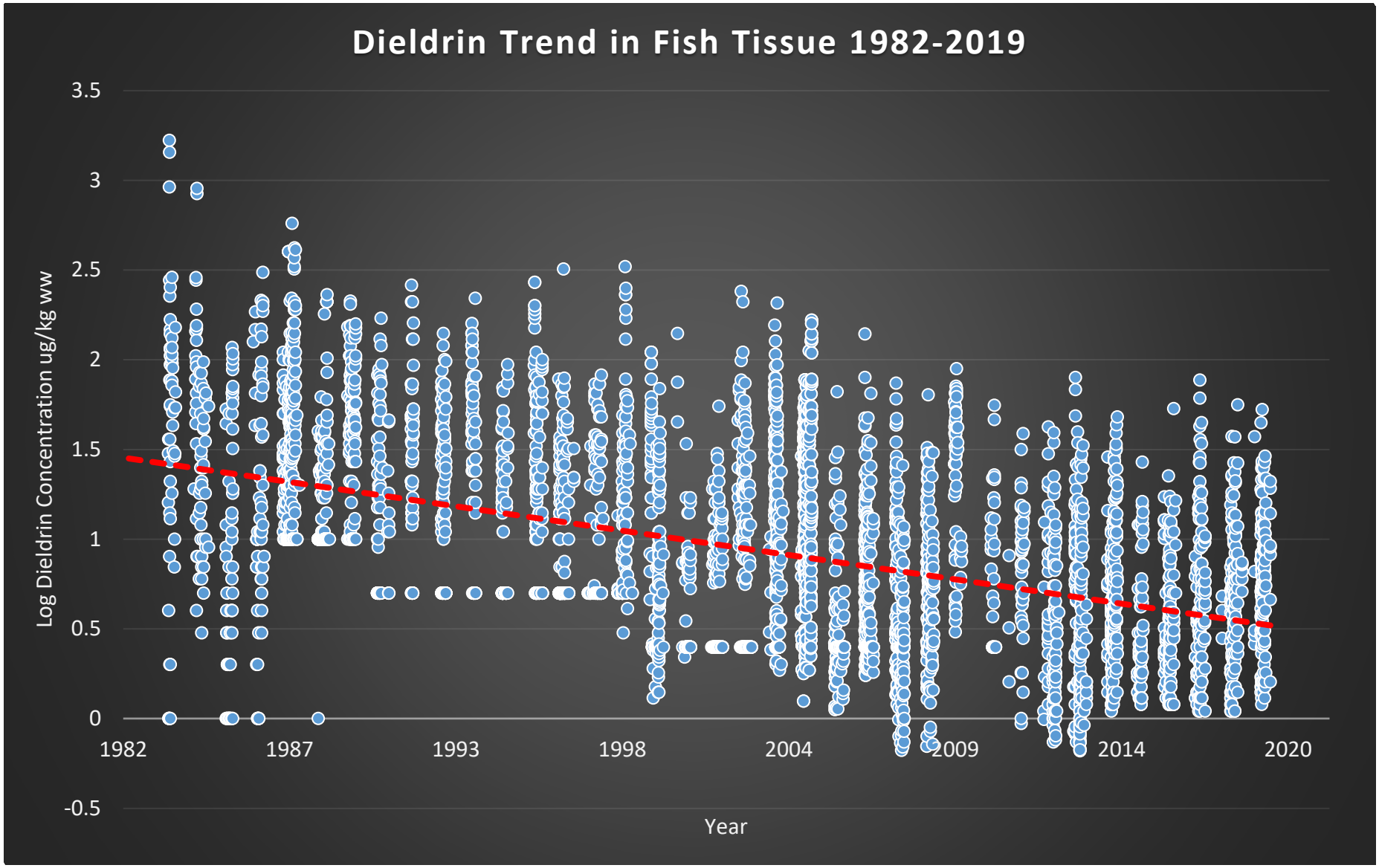


2010 - 2019





Decade	Maximum (ug/kg)	Average (ug/kg)	No. of Samples	No. Samples > Group 3 Benchmark
1980s	1670	53	786	15
1990s	330	25	1116	2
2000s	240	15	2037	0
2010s	80	5	1596	0


Dieldrin Trend in Fish Tissue 1982-2019
Log Dieldrin Concentration ug/kg ww
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
1982
1987
1993
1998
2004
2009
2014
2020
Year

Conclusions

- Decreasing organochlorine pesticide trends shown around the country
- Organochlorine pesticides no longer drive fish consumption advisories
- Discontinued pesticide analysis will free up resources for emerging contaminants
- Limited data use

For More Information

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