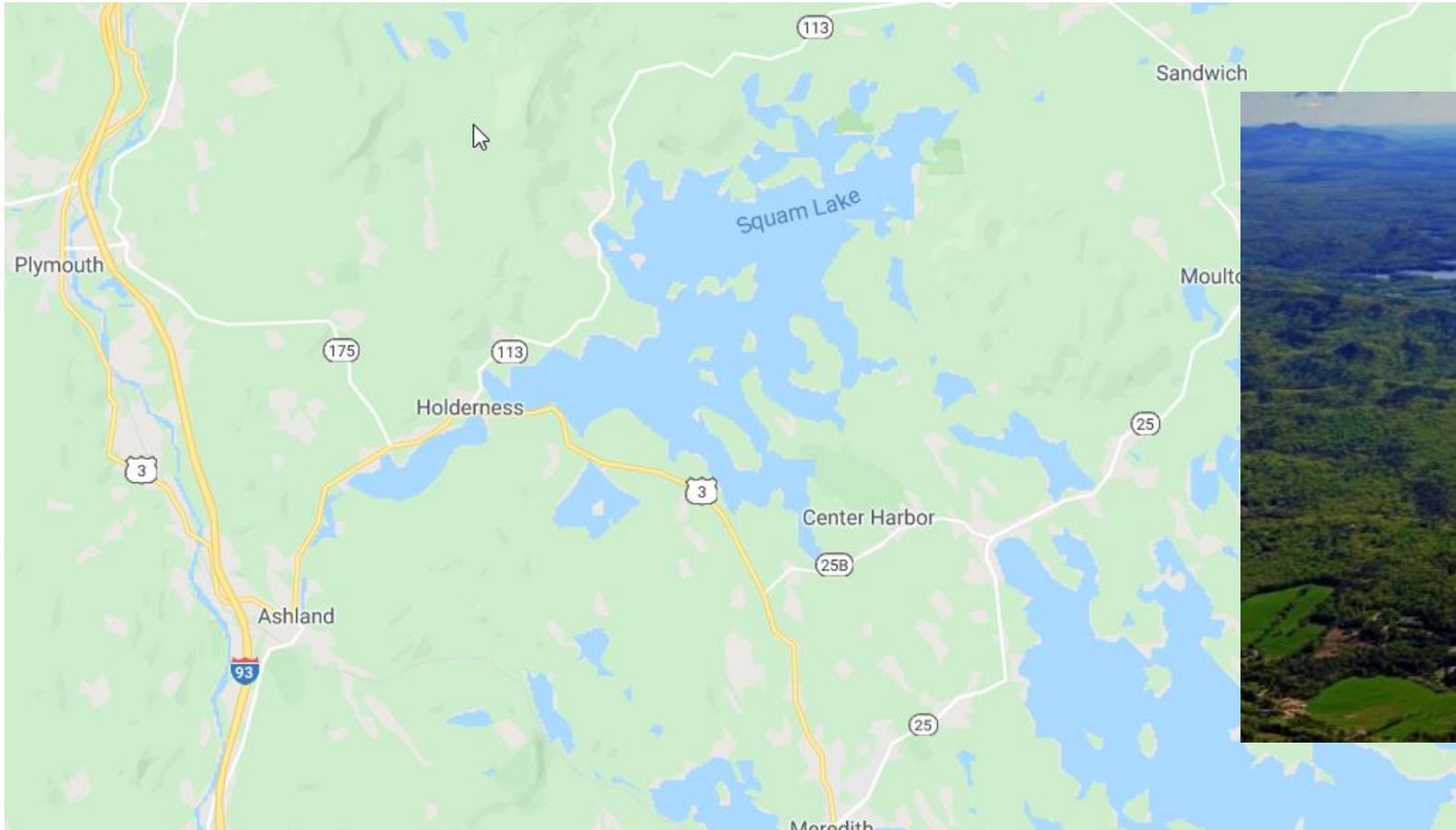


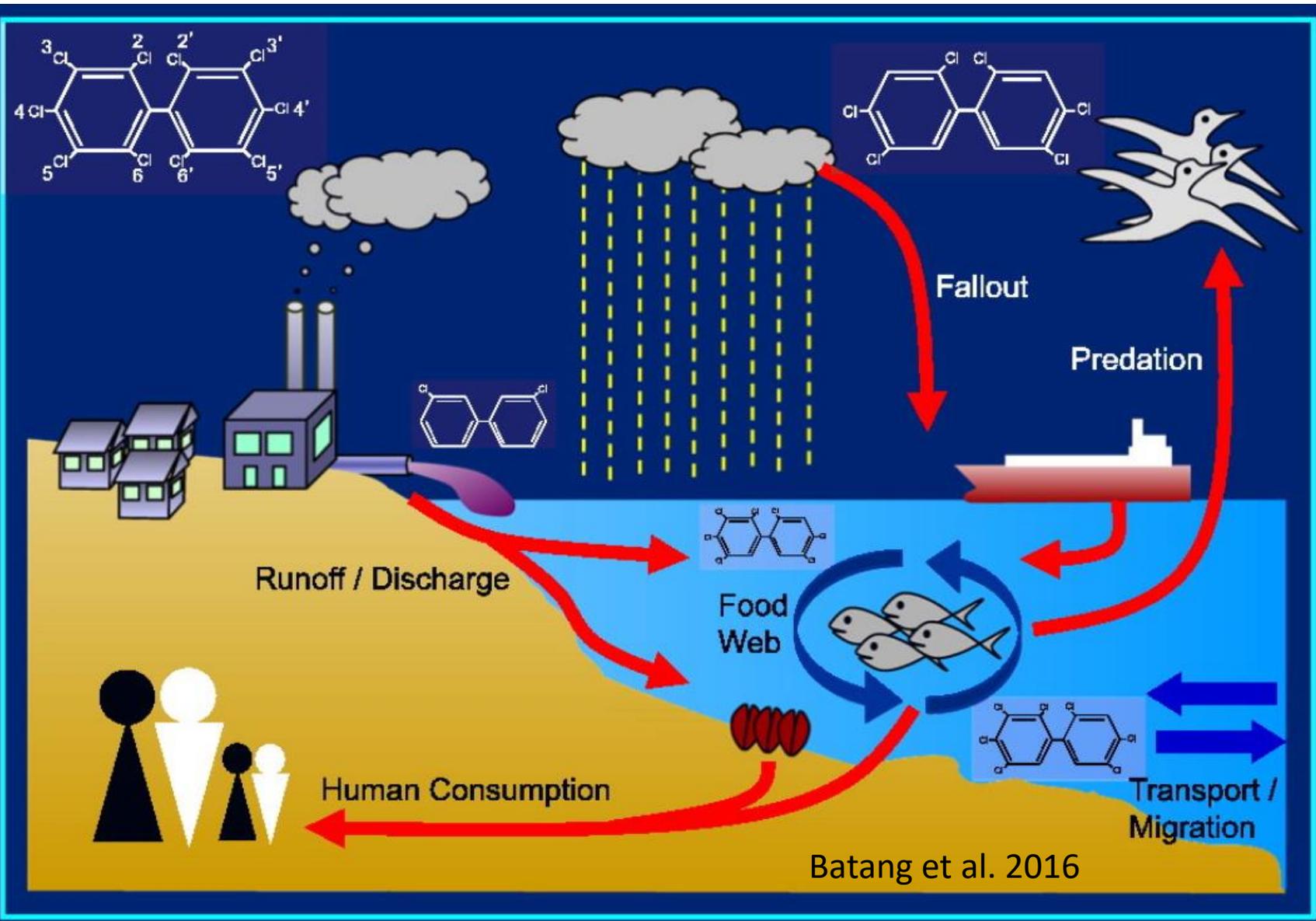
Squam Lake Fish and PCBs



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PCBs Facts



Batang et al. 2016

General

- 209 individual compounds known as “congeners”
- Banned from production in US in 1979
- No known natural sources
- Good insulators (don't burn) used in electrical equipment

In the Environment

- Released directly as pollution or diffusely as legacy waste material
- Can be transported atmospherically
- Bioaccumulates in the food web
- Sticks to sediments in aquatic communities

Health risks

- Dermal rash, acne
- Nervous and endocrine system impacts
- Probable human carcinogen

Investigative Timeline

2005-07 – Unhatched loon eggs collected for contaminant analysis by Loon Preservation Committee (LPC)

2013-2015 – Crayfish and sediment samples collected and analyzed for contaminants (LPC)

2017 – LPC contacts NHDES about findings which include:

- PCB, DDT, and Dioxin levels in **loon eggs** above levels that negatively effect bird species
- PCB, DDT, and Dioxin levels high in **crayfish** from certain Squam Lake tributaries
- PCB, DDT, and Dioxin levels high in some **sediment samples**

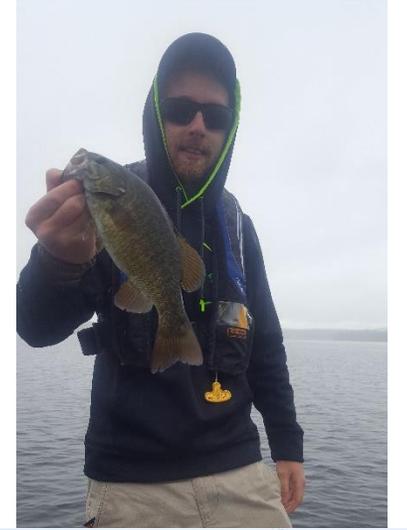
2018 Fall – Squam Lake Association (SLA) repeats sediment sampling at select locations with similar findings.

2018 Fall – NHDES collects smallmouth bass and yellow perch from Squam Lake for fillet tissue analysis (PCBs, PFAS, Hg)

2019 – EPA contract lab analyzes fillet tissue for PCBs (209 congeners) and PFAS (33 compounds)

2020 – NHDES receives data and, based on PCB results, issues restrictive consumptive guidelines

Fish Tissue Collection



Samples sent to EPA contract lab for **PCB** and PFAS analysis; small amount returned to NHDES for mercury analysis.

Data Summary

5 Smallmouth Bass Composites (21 fish total fish)

Composite (length mm)	Sum PCBs (ppb)
1 (388-445)	22.8
2 (340-366)	15.4
3 (280-335)	4.0
4 (264-304)	11.0
5 (210-260)	8.5
Average	12.3
95th percentile	21.3

7 Yellow Perch Composites (34 fish total fish)

Composite (length mm)	Sum PCBs (ppb)
1 (231-296)	4.3
2 (202-249)	3.8
3 (199-225)	3.4
4 (165-196)	5.0
5 (172-205)	7.5
6 (176-191)	4.3
7 (148-177)	3.5
Average	4.6
95th percentile	6.8

Lifetime Cancer Risk Screening Level = 13.9ppb

Squam Lake Fish Consumption Recommendations based on total PCB concentration

Group	Species	Advisory Recommendation
Adults and children >7 years of age (8 oz. meal)	Yellow Perch	12 meals/year
	ALL other fish	3 meals/year
Women of childbearing age (8 oz. meal)	Yellow Perch	6 meals/year
	ALL other fish	2 meals/year
Children <7 years of age (4 oz. meal)	Yellow Perch	6 meals/year
	ALL other fish	1 meals/year

Notes:

- “ALL other species” recommendation based on smallmouth bass PCB concentration as conservative estimate for those species not yet tested (salmon, trout, hornpout, white perch).
- Statewide mercury advisory: 4 meals / month for adults and kids ≥ 7 yrs; 1 meal / month for woman childbearing and kids < 7 yrs (4oz. meal). THE PCB CONSUMPTION LIMIT IS MORE RESTRICTIVE.

Next Steps

- Press release issued Monday, 3/30/2020.
- Advisory signs currently ordered for posting at lake access points
- Analysis of PFAS data from 2018 Squam fish tissue underway (w/in two weeks)
- Request support for testing of additional fish species from Squam Lake for PCBs
- Request support for test of additional contaminants (DDT, Dioxin) from Squam Lake fish
- Determine the frequency of contaminant presence in fish tissue from other NH lakes/ponds