ESJWQC RESPONSE

Melissa Turner

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Monitoring Schedule

- At least 2 storm events per year
- Trigger is 0.25 inches
- First flush is difficult to capture
  - Overland flow is primarily from the east side of the Coalition region
  - Occurs after saturation of the soil from previous rains
- Sediment testing is done after deposition of fine sediments
  - End of storm season
  - End of irrigation season

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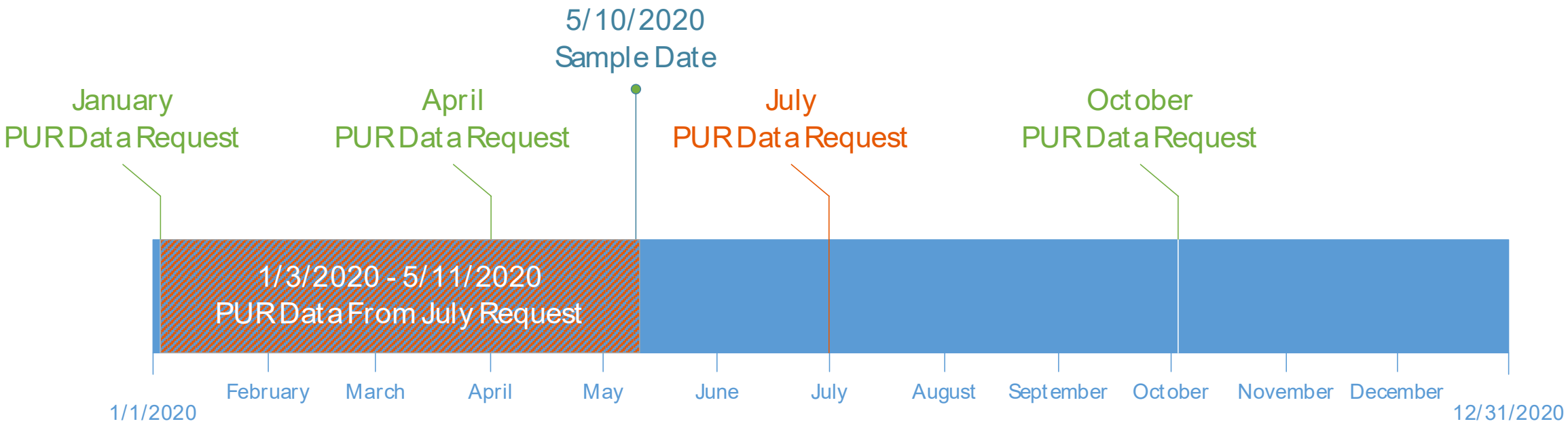
Keeping Up With Changing Pesticide Use

- Pesticide Evaluation Protocol
  - Uses last 3 years PUR data including the water year immediately preceding
  - Allows rapid tracking of changes in applied chemicals

Exceedance Source Identification

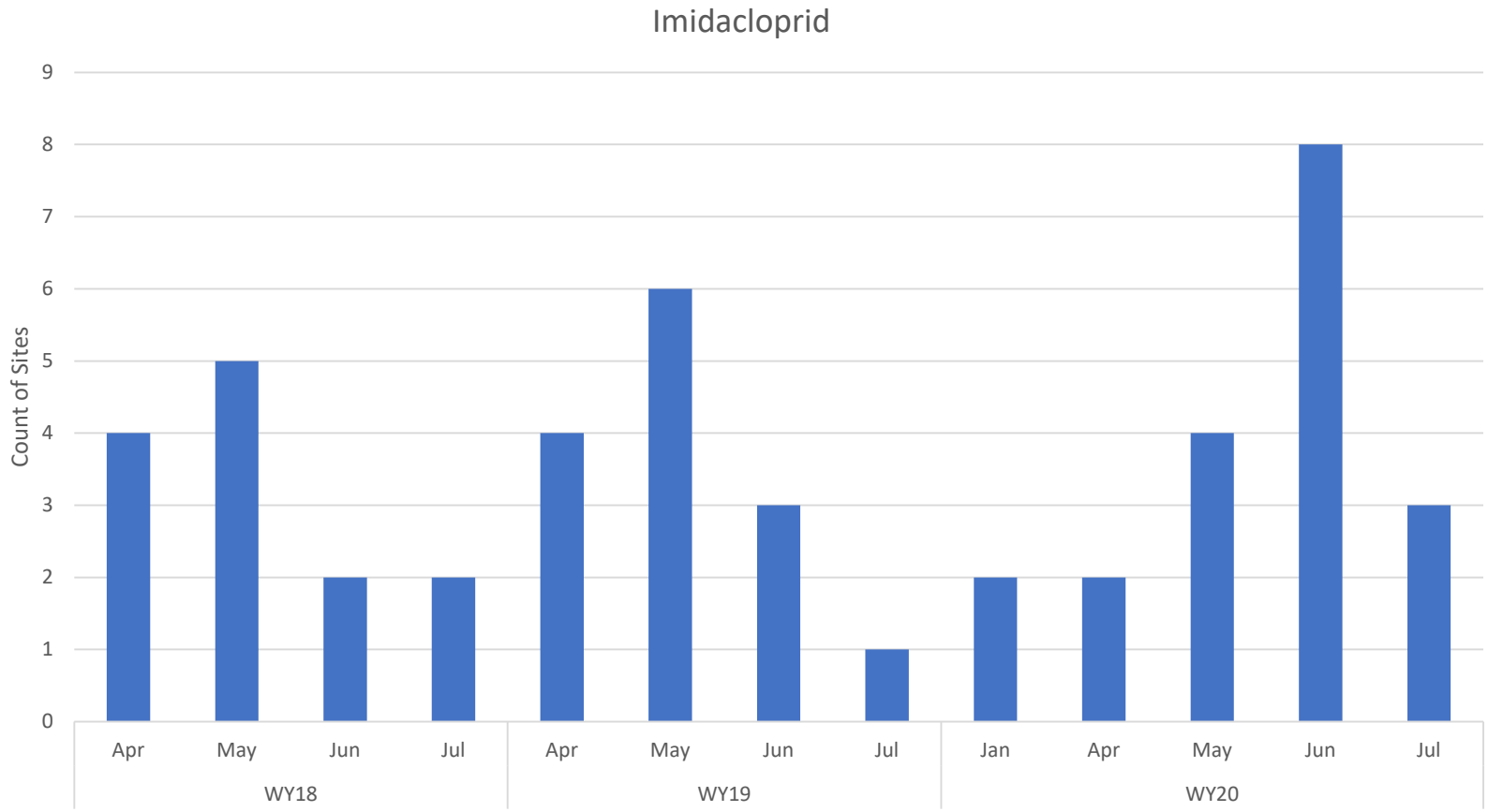
- Request PUR data on a quarterly basis
- Data are considered preliminary
- Receive relevant PUR data 45 days after receiving water quality results (about 3 months after sample date)



PEP Process

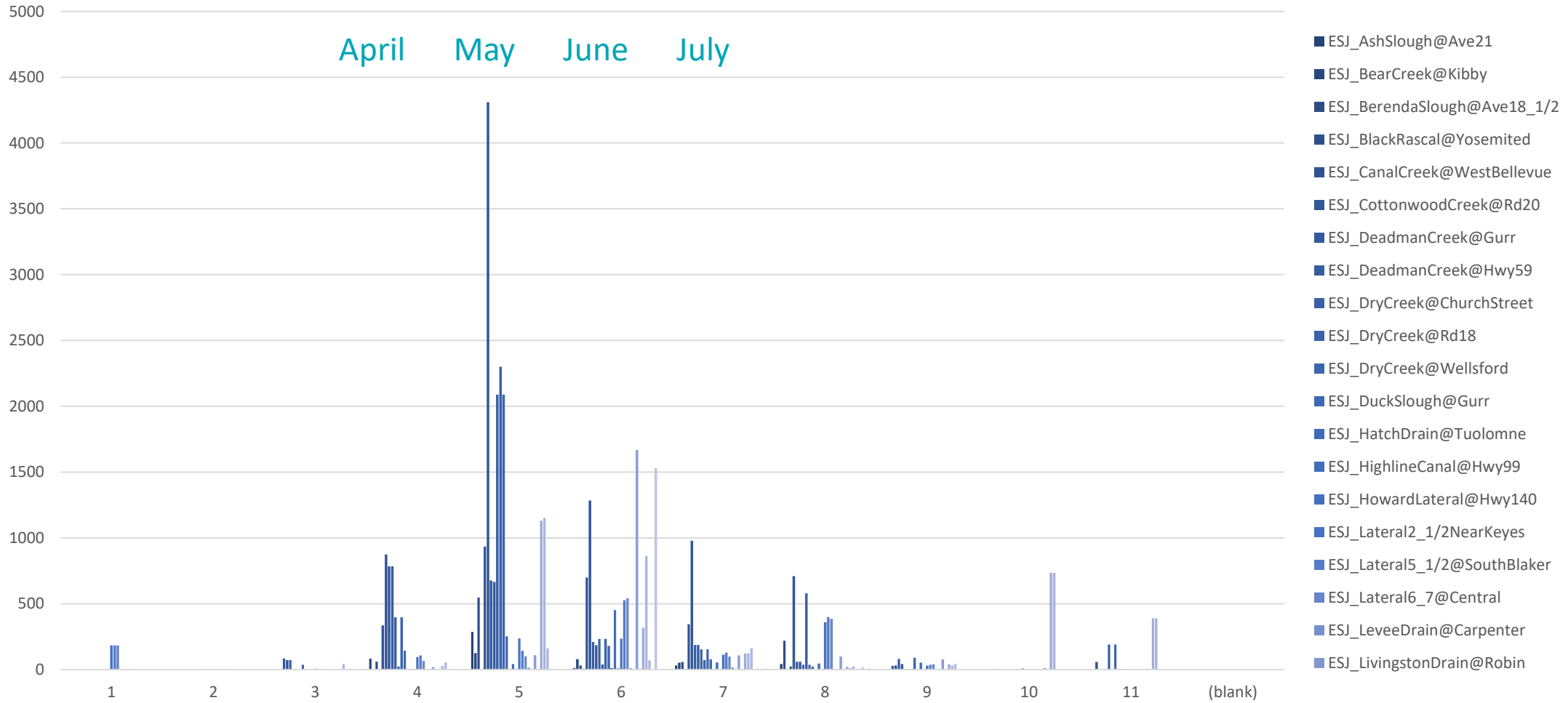
- Step 1: Compile PUR data
- Step 2: Preliminary Ranking (Relative Risk)
- Step 3: Evaluation of available data
- Step 4: Evaluation of Environmental Fate
- Step 5: Site specific or regulatory consideration that justifies the removal of a pesticide from the list
- Step 6: Availability of Chemical Analysis Method
- Step 7: Final Monitoring Plan Proposal

Frequency of Monitoring



- Neonicotinoids (Imidacloprid Example)– months of monitoring based on use, aquatic life reference values and environmental fate

January 2017 – December 2019
Imidacloprid Pounds Applied



Neonicotinoid Laboratory Analysis

- If an EPA or Standard Method is available, the Coalition uses this method first

LabAgency	Method Name	Analyte	RL	MDL	First Sample Date	Last Sample Date
APPL	EPA 8321A	Imidacloprid	0.4	0.2	4/21/2020	6/11/2020
			1	0.5	4/9/2018	1/17/2020
		Thiamethoxam	1	0.5	10/10/2017	10/10/2017
NCL	NCL ME 340	Acetamiprid	0.02	0.0031	10/10/2017	11/30/2018
		Clothianidin	0.02	0.0038	10/10/2017	7/10/2018

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Chironomus Testing

- Most commonly used in freshwater sediment testing
- Not currently an EPA promulgated method for water
- Testing based on SWAMP methodology
- Concerns with reproducibility between laboratories without an EPA method in place
- Difficulties in getting test organism during storm season
  - Age = 7-10 days old, post hatch, <=0.12 mg/individual
  - Important to have the same age organism

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Chironomus Testing

- Delta RMP Comparison of Chironomus Testing
  - EPA / ASTM Draft Methods
  - SWAMP Measurement Quality Objectives (from their QAPP)
  - Granite Canyon Method
  - UC Davis Toxicity Laboratory (APHL)
- Found differences between methods regarding:
  - Feeding
  - Water renewals
  - Organism age (Granite Canyon and UCD did not include size)

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Chironomus Testing

- Limited commercial laboratories with experience conducting the Chironomus test in water
  - Delta RMP memo references only Pacific EcoRisk (located in Fairfield)
- In a regulatory program, methods should be commercially available and reproducible
  - ELAP certification based on EPA approved methods
  - Interlaboratory studies to ensure reproducibility
- In the meantime, monitoring for neonicotinoids will occur during months of highest risk

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Monitoring locations and sediment deposition

- Coalition provided a written explanation of site selection
  - Farthest downstream location with upstream agriculture footprint
  - Depositional area is not primary feature used to identify monitoring locations
  - Depositional area is identified in proximity to monitoring location
- Analysis of grain size and sediment toxicity indicates that grain size of 0.075mm is not cutoff for toxicity
  - No statistically significant association between sediment size and survival of the *Hyalella*
    - Sufficient fines to bind to pyrethroids and result in toxicity
  - No association between TOC and survival

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