

NC Department of Health and Human Services

Fish Consumption Advisories

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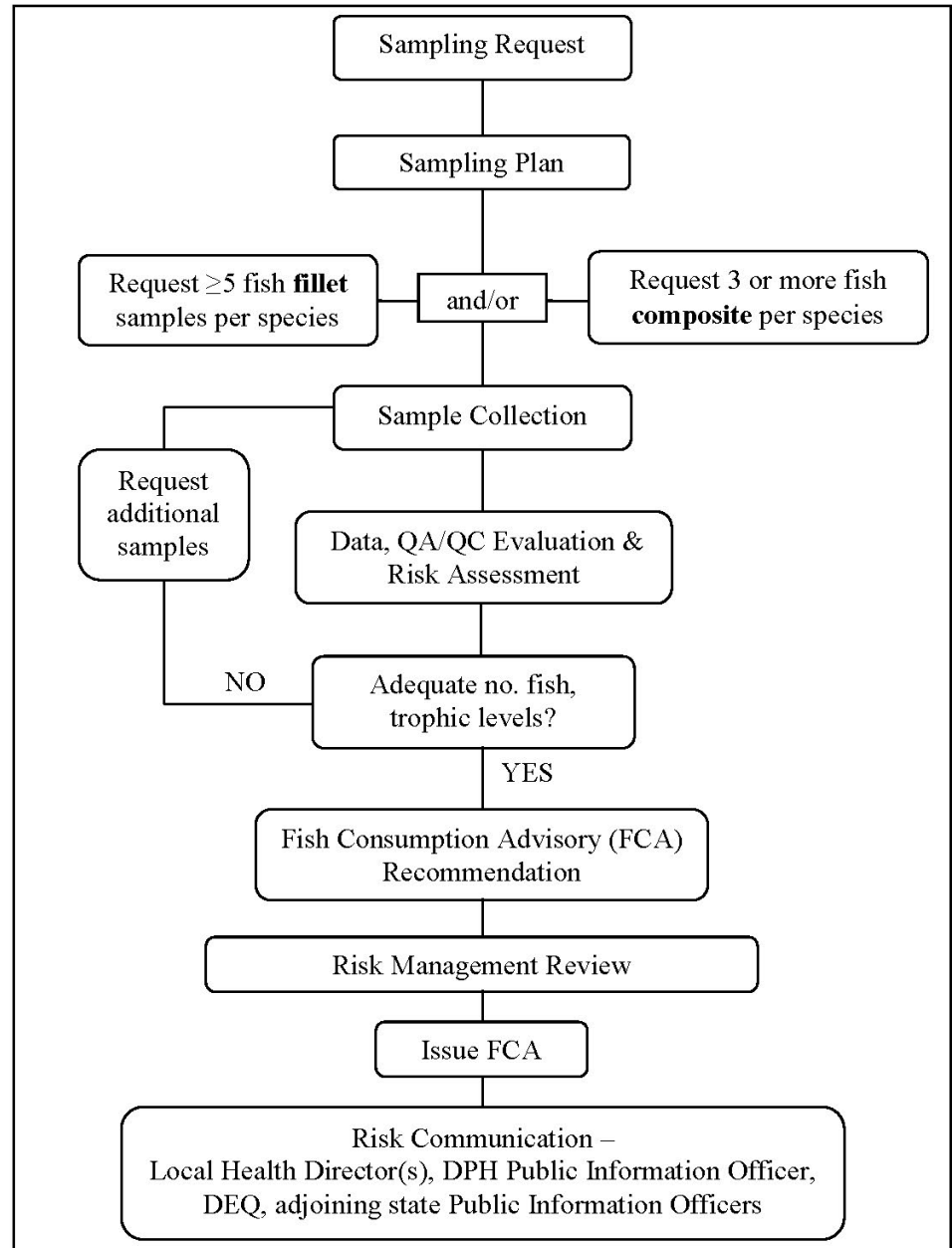
Occupational and Environmental Epidemiology Branch

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Summary of Approach

- **Multiple reasons to sample fish**
 - Routine sampling
 - Updating old advisories
 - Responding to citizen requests
 - Understanding potential risks and reduce exposure to contaminants in fish
- **Minimum needs**
 - 5 fish fillet samples for each trophic level or
 - 3 fish composite sample for each trophic level
- **Timing**
 - Usually 3-8 months for entire process

Work Plan



Steps for Conducting an Assessment

- 1. Coordinate with DEQ, NC Wildlife Resource Commission (NC WRC), EPA, and local health departments to design sample collection activities**
- 2. Samples collected, prepared, and analyzed**
- 3. Data submitted to OEEB for review**
- 4. OEEB compares tissue concentrations to health screening levels**
 - Fish consumption advisory developed if concentrations exceed screening levels.**
- 5. Fish consumption advisory disseminated to stakeholders and the public**

Methods – Fish Sampling

- **Fish collected will be those commonly consumed by persons fishing in the designated waterway.**
 - **Suitable surrogate species (from same trophic level) may be used if the desired species are not available.**
- **The minimum number of samples for a sampling location, per trophic level are**
 - **3 fillet composite samples consisting of tissue from 3-7 fish or**
 - **5 fillet samples each from individual fish**

Methods – Fish Sampling Cont.

- **Fish of same species combined in composite**
 - **Multiple species' composites can be used to represent a single trophic level**
- **Multiple sampling locations may be appropriate for large waterbodies**
- **Specific sampling locations may be designated by DPH or N.C. DEQ based on known or suspected inflows into a specific waterway or known popular fishing locations.**

Methods - Analytical

- **EPA approved analytical and method performance criteria are to be used when available for the chemicals of interest in fish tissue.**
 - **Laboratory approval is at the discretion of OEEB.**
- **When measuring for arsenic, it is preferred that inorganic and total arsenic are measured, due to the known higher toxicity of inorganic arsenic.**
- **OEE requires 209-congener data (acquired by EPA Method 1668A) for polychlorinated biphenyl (PCB) fish tissue evaluations, as human health risk assessments based on Aroclor data are not accurate and can over- or underestimate risk.**

Methods – Data Review

- **The initial evaluation of the data will be to determine if sufficient information exists for a formal risk assessment based on sampling recommendations discussed previously in this SOP.**
- **If additional data cannot be obtained, OEE will perform a risk assessment based on the existing information with a caveat detailing the potential error and uncertainty inherent due to insufficient data.**
- **If laboratory reporting limits exceed screening levels (SLs), then one-half the reporting limit should be used for analytical results listed as not detected in calculating average concentrations for contaminants.**

Methods – Data Review

- **If the data evaluation indicates that SL for a specific chemical has not been exceeded based on an arithmetic mean, then a recommendation is made that a fish consumption advisory will not be issued.**
- **If the data exceed a N.C. SL based on an arithmetic mean, then a risk assessment will be performed and recommended meal limits calculated. If calculated meal limits are less than 7 meals/week, then a fish advisory will be issued. If calculated meal limits are 7 meals/week or greater, then a fish advisory will not be issued.**
- **A recommendation is prepared that includes a brief write-up of the survey, data conclusions, recommendations, and uncertainties.**

Communication

- **When the decision is made to issue a fish consumption advisory, OEE notifies impacted stakeholders about the fish consumption advisory. If current fish tissue data indicates no advisory is necessary, then the results should be communicated to the requesting party and other relevant stakeholders.**

Communication

- **Communication of a fish advisory to the public should include one or more of the following:**
 - **Posting the advisory to the DPH fish advisory web page**
 - **Posting of fish advisory signs on the waterway**
 - **A public service announcement**
 - **Press releases in the local newspaper**
 - **Postings on the County web page**
 - **Notification in NC WRC publications and web sites**

PFAS in Fish

- **Some states (including AL, MI, MN, NJ, WI) have developed fish consumption advisory “triggers”**
 - **Advisories are site-specific and based on local data.**
 - **Advisories related to specific PFASs vary from state to state.**
- **Can only develop advisories for PFAS for which we have toxicological values¹²³**

¹Massachusetts Department of Environmental Protection

<https://www.mass.gov/files/documents/2019/12/27/PFAS%20TSD%202019-12-26%20FINAL.pdf>

²USEPA <https://www.epa.gov/chemical-research/human-health-toxicity-assessments-genx-chemicals>

³USEPA <https://www.epa.gov/chemical-research/learn-about-human-health-toxicity-assessment-pfbs>

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