PSP_SOP 1.0
Pesticide Stewardship Partnership Operating Procedure
Pilot Study Areas

1.0 Purpose

Pilot study areas are used to assess whether pesticide residues exist within a watershed area and if so the level of concern that those residues pose to human health or aquatic life. A pilot study is distinguished from a designated Pesticide Stewardship Partnership (PSP) in that there are no management measures associated with a pilot study and therefore no need to develop extensive strategic action plans. The sole purpose of a pilot study is to better define the pesticidal concern, local partner support, and extent of a concern such that an informed decision can be made regarding the establishment of a PSP area and the allocation of resources necessary to achieve success. Generally, a pilot study will last two years at which point a decision would be made to proceed with a designated PSP or cease Water Quality Pesticide Management Team (WQPMT) supported activities within the study area.

2.0 Beginning a Pilot Study – Development of Candidate List

Areas under consideration for a pilot study are developed and evaluated by the WQPMT. This evaluation occurs every two years using the rating system in Appendix One. Data used in the evaluation must conform to that outlined in the Pesticide Stewardship Partnership Strategic Plan (2020). Using the rating system, a list of candidate areas is developed.

Following the development of a candidate list by the WQPMT, the list is presented to the Stakeholder Advisory Group (SAG) for consultation. At this time the SAG will be briefed on the rational used to develop the list. In consultation with the SAG, the WQPMT will develop and prioritize the candidate list. Initiating new pilot studies from the list will depend upon available funding and a local watershed group's willingness to commit to a study area.

Key stakeholders in candidate watersheds will be contacted to assess interest in the development of a pilot study. If local interest and capability exists the WQPMT will begin work with the local sponsor group to address the watershed elements needed to qualify the watershed as a priority candidate for a pilot study. The results of a pilot study should form the basis for either the establishment of a designated PSP watershed or provide evidence to demonstrate that a designated PSP is not necessary to address the potential concerns.

A pilot study will be considered by the WQPMT only if sufficient resources allow for activities to commence and continue through the duration of the study period. Resources should come from a mixture of state and local sources. The results of a pilot study should form the basis for either the establishment of a designated PSP watershed or provide evidence to demonstrate that a designated PSP is not necessary to address the stated concern.

3.0 Elements Necessary to Establish a Pilot Study

The WQPMT will consider numerous elements in the evaluation of watersheds for potential pilot studies. The major elements to be considered in evaluating watersheds for potential pilot studies are:

1) Evidence that a local sponsor group or organization within the subject watershed will act as a local focal point to work with the WQPMT and to supply supporting evidence that a study is justified[1].
2) Data regarding land uses associated with pesticide use including reviewing the common pesticides used in the area and a determination of the overlap with the WQPMT's current list of statewide Pesticides of High and Moderate Concern.
3) An analysis of existing water quality impairments and vulnerabilities determined by other federal, state, local, or tribal programs or monitoring data. This should include both surface and groundwater resources.
4) An assessment of salmon-bearing habitats within the watershed or sub-watershed that are vulnerable to pesticide impacts that pose a threat to endangered species.
5) An assessment of the potential to impact waterbodies used as public or private drinking water sources by pesticide applications within the watershed or sub-watershed
6) An assessment of hydrologic conditions within the watershed or sub-watershed that may increase the potential for transport of pesticides into surface water bodies or groundwater.
7) Evidence of cooperation between land owners and study managers regarding pesticide application timing and the identification of monitoring locations.

Note: When considering watersheds for new pilot areas the WQPMT will put priority on those watersheds that demonstrate ecological (aquatic life) vulnerability OR drinking water vulnerabilities. To be considered a high priority watershed only one of these criteria need be met. These elements will be used by the WQPMT in evaluating watersheds according to the rating system contained in Appendix One.

Once the information above is received and evaluated by the WQPMT, a decision will be made as to whether one or more watershed(s) supports the establishment of a pilot study. If the WQPMT decides that there exist watersheds that meet the criteria, preliminary work in consultation with the local sponsor will begin on identifying the following:

1) Proposed monitoring locations (and justifications for selection)
2) An initial list of pesticides to focus on during the study
3) Need for additional environmental monitoring (stream discharge, sediment)

4.0 Final Evaluation of a Pilot Study Proposal

Once all the WQPMT has identified priority watershed and initial conversation(s) with potential local stakeholders have been completed, the recommended pilot study areas and justification

[1] *A local sponsor group is different from a PSP coordinating council in that it does not need to consist of a wide range of local stakeholder organizations or interests necessary to demonstrate commitment to a long-term designated PSP.*

documentation will be presented to the SAG for final consultation. This will be accomplished prior to the commencement of any environmental monitoring by the PSP in support of the pilot study.

A final review by the SAG will include a review of the following elements:

1) Does the application meet the objectives of the Pesticide Stewardship Partnership and is there strong evidence of potential water quality problems?
2) Is there sufficient local support to begin and sustain a pilot study?
3) Are there sufficient resources at the state level to support a pilot study for a two-year period?

During final review by the SAG, representatives of the local sponsor group will be encouraged to be present to address any final questions which may come from the SAG.

5.0 Commencement of a Pilot Study

Once the pilot study proposal has been accepted by the WQPMT monitoring shall commence at the next feasible monitoring interval (Spring or Fall). Initially, the first phase of monitoring will consist of the deployment of passive samplers for organic contaminants using either the semipermeable membrane device (SPMD) or the polar organic chemical integrative sampler (POCIS). These devices have proved to provide reliable data regarding the presence or absence of organic chemicals of concern such as pesticide residues.

The devices will be deployed at monitoring locations previously selected by the study applicant in consultation with the WQPMT. The normal deployment will be as follows:

Initial deployment: First Year - during the spring and fall (March-June and September – October). The initial sampling would consist only of SPMD or POCIS devices. Devices will be installed for a period generally of 28 days. Grab samples will be collected upon placement and retrieval of the devices.

Follow-up: Second Year – deployment of SPMD or POCIS will again be conducted the spring and fall. Grab samples will be collected upon placement and retrieval of the devices.

Considerations: Following analysis, data obtained from the initial round of sampling will be reviewed by the local sponsor and the WQPMT. Monitoring locations for which there were no or very few detections will be eliminated from further consideration. It is likely that a second round of passive sampler deployment will occur at those sites from which detections occurred. Additional monitoring locations may be added in the second round to better understand pesticide distribution within the study area.

Prior to commencing grab sampling, cooperation from stakeholder groups in providing accurate application timing information will be required. This is essential to the effectiveness of the

monitoring program in capturing peak concentrations in water. Data from this effort will form the basis in determining whether a full PSP should be established or if the pilot study should be terminated and if so what recommendation should be made.

6.0 Determining When to Proceed with a PSP

A determination whether to establish a long-term Pesticide Stewardship Area will be based primarily on the results of the passive and grab sampling results. The two major factors will be the concentrations and frequencies of the pesticides detected, as well as the number of active ingredients and degradates detected. If stream discharge measurements are collected, pesticide loading results will also be considered. In addition, a demonstration of broad-based support from a diverse array of partner is necessary

A long-term PSP would be considered when:

1) A pesticide has been determined to be a high concern based on the WQPMT's *Decision Matrix Based on Water Monitoring Data* for the period of grab sample collection and analysis, or
2) Three or more pesticides have been determined to be of moderate concern based on the WQPMT's *Decision Matrix Based on Water Monitoring Data* for the period of grab sample collection and analysis.
3) Additionally, the applicant and local stakeholder groups must be willing to commit to the development of a strategic plan to address the pesticides identified as being of high concern.

A long-term PSP would not be considered when:

1) A pesticide has been determined to be of low concern. In this case any further action would be deferred to the local applicant and local stakeholder group(s).

A long-term PSP would **not** be recommended by the WQPMT when:

1) Two or fewer pesticides have been determined to be of moderate concern, and no pesticides have been determined to be of high concern, based on WQPMT's *Decision Matrix Based on Water Monitoring Data* for the period of grab sample collection and analysis. In this case the WQPMT in consultation with the applicant and local stakeholder group would develop recommendations for future actions that would focus on education and outreach as a method to reduce or eliminate the concentration and frequency of pesticides of moderate concern.

Appendix One Pilot Study Rating System

Watershed Pesticide Vulnerability / Risk Criteria		Point Values or Range
A. Land use diversity and patterns (Max 10 pts)		
A.1.	Agriculture (less vs. more intense agriculture) *(The types of agriculture and the estimated acreage will be considered.)*	0 – 5
A.2.	Urban (homeowner-recreational-landscaping-commercial) *(In addition to an evaluation of the land area and estimated pesticide use, the presence or absence of an established targeted program will be considered)*	0 – 5
A.3.	Forested (federal – state – private) *(The amount of federal and state forest area will be compared to the amount of private forest lands)*	0 – 3
A.4.	Other *(Other land uses to be considered will be rangeland, scrubland, and other land uses that may impact pesticide use.)*	0 - 2
B. Surface Water & Sediment Related Factors (Max. 20 pts.)		
B.1.	Is surface water a public drinking water source?	0 – 5
B.2.	Are endangered or threatened aquatic species present?	0 – 5
B.3.	Are Slope and/or soil type conducive to erosion?	0 – 3
B.4.	Listed pesticide impairments or surrogates.	0 – 3
B.5.	Local water management activities (e.g. irrigation types)	0 – 2
B.6.	Local pest / crop management activities present?	0 – 2
C. Groundwater / Human Health Related Factors (Max 20 pts.)		
C.1.	Presence of public water system (GW)	0 – 3
C.2.	Human population/composition/vulnerability	0 – 5
C.3.	Private domestic wells	0 – 5
C.4.	Hydrologic features impacting GW vulnerability	0 – 3
C.5.	Listed pesticide impairments or surrogates (nitrate)	4 if > 3ppm
B. Pesticide Use and Properties (Max 50 pts.)		
D.1.	Evaluation of overlap of registered products and land use	up to 15
	a) Toxicity of identified pesticides	up to 20
	b) Fate and transport of identified pesticides	up to 15

Other Weight of Evidence Considerations

Previous Surface water monitoring data (PSP, USGS, etc.)
Previous Groundwater monitoring data
Presence / absence of riparian vegetation
Environmental Justice Considerations

Administrative Considerations

a) Is there a local sponsor agency or stakeholder group willing to act as a focal point with the WQPMT and to supply supporting evidence that a study is justified?

b) Is there cooperation between land owners and monitoring entities that will allow for sampling to occur within two weeks of pesticide application[2]?

In conducting this rating, the WQPMT in highly encouraged to make use of state, federal and local GIS databases. This will provide for the use of the most efficient and accurate information in determining pesticide and land use, and assessing vulnerabilities.

[2] An answer of No to this question should be considered as a substantial impediment to commenting a pilot study.