Maine Board of Pesticides Control

2003 DRIFT STUDY OF TWO AERIALLY APPLIED BLUEBERRY PESTICIDES

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1. Introduction and Objective

Every year since 1999, the Maine Board of Pesticides Control (BPC) has assessed the Narraguagus and Pleasant River watersheds for the occurrence of pesticide drift by looking for resulting residues of the off-target pesticides. These two Maine river systems support endangered Atlantic Salmon (*Salmo salar*), and meander through blueberry barrens in Washington County. A summary of the past five years of data appears in Appendix A. Two aerially applied pesticides were focused on by the BPC for the 2003 study; a fungicide with the trade name of Orbit and the active ingredient propiconazole, and an insecticide with the trade name Imidan and the active ingredient phosmet.

2. Sampling Site Location and Sampling Methodology

In 2003, as in other years, BPC field staff worked closely with the spray coordinators from Maine's two largest blueberry-growing companies, Jasper Wyman and Sons, Inc. and Cherryfield Foods, Inc., to determine when and where aerial applications of Orbit and Imidan were to be conducted. The spray coordinators provided maps showing spray sites. Sampling sites were chosen on or next to surface water bodies by BPC based on the proximity to pesticide application sites and accessibility for BPC staff and equipment. Two new areas were sampled in 2003, Montegail Pond and Pretty Pond. These ponds, although located only a couple miles from the Pleasant River, do not appear to directly connect to Atlantic salmon waters, according to United States Geological Survey 7.5 minute series topographical maps. However, results from these areas can provide more data on drift in general. Several of the 2003 sites are pictured in Appendix B, and Appendix C displays four relevant maps.

A Garmin® Global Positioning System (GPS) 12XL Personal Navigator Unit was used to document sample site location. The following table provides information relevant to 2003 site location.

DESCRIPTION	BPC SITE DESIGNATION	LATITIUDE[1]	LONGITUDE
Narraguagus River Watershed			
Great Falls Branch trib.– off Rt. 193	14BPCS036	44°42'55.1"	-67°58'04.5"
Poplar Hill, main stem	14BPCS059	44°41'25.7"	-67°58'49.3"
Pleasant River Watershed			
Pleasant River main stem - Crebo	14BPCS043	44°46'09.7"	-67°55'21.2"
Colonel Brook trib.	14BPCS051	44°46'03.9"	-67°55'44.1"
Long Pond – south end next to pump (pond outlets into Colonel Brook)	14BPCS063	44°45'51.0"	-67°55'33.0"
Montegail Pond			
South side next to pump	14BPCS064	44°45'04.5"	-67°46'19.9"
South West side (small peninsula)	14BPCS065	44°45'02.3"	-67°46'30.4"
Pretty Pond			
North side next to pump	14BPCS066	44°49'45.3"	-67°54'17.1"

[1] Datum = NAD83

Sampling equipment, consisting of 185mm diameter drift cards and in some cases an Isco auto sampler, was put out on the banks of the chosen surface waters prior to spraying and samples were collected, using clean gloves, within hours after spraying was completed. The drift card is a laboratory grade piece of filter paper mounted on a small piece of cardboard which is stapled to a wooden stake (see Fig. 1 in Appendix B). The Isco auto sampler is a mechanical instrument that is programmed to automatically collect samples over predetermined intervals (see Fig. 2 in Appendix B). Occasionally, BPC staff arrived on site after a pesticide application, and only surface water grab samples were collected. Each water sample was collected in a 950 ml amber glass jar with a Teflon-lined cap certified as pre-cleaned for the collection of pesticide samples. Each drift card, where collected, was placed into a similar but smaller amber glass jar. These jars were placed immediately in iced coolers to preserve the samples by preventing exposure to sunlight and maintaining cool temperatures. Samples were delivered, per established BPC chain-of-custody procedures, to the University of Maine at Orono, Food Chemical Safety Laboratory as soon as possible and at least within 96 hours of collection.

BPC standard operating procedures for the collection of environmental samples were observed throughout the sampling program, including the collection of equipment blanks, field blanks, and sample duplicates. At least one field blank and one sample duplicate were analyzed for each 20 samples. All QA/QC samples were successful. In addition, the University of Maine, Department of Food Science Laboratory maintains a quality assurance project plan (QAPP) with quality assurance/ quality control (QA/QC) protocols for the Board of Pesticides Control and the United States Environmental Protection Agency for the analysis of samples used in the enforcement of state and federal pesticide regulations.

3. Results

As in most years, weather conditions in 2003 were not always conducive to aerial applications. Due to frequent fog, rain, or wind, many fields could not be treated at the scheduled times which made it hard for BPS staff to conduct the monitoring. However, of the eight sampling sites for 2003, it was determined that three sites had positive detections of phosmet either on drift cards or in the water or both. Propiconazole was not detected at any of the sites. Phosmet was found on two drift cards where Great Falls Branch intercepts Rt. 193, and phosmet was found on all four drift cards and in both water samples at the two sites on Montegail Pond. All results are described in the sections below.

Results for Narraguagus River Watershed:

Table 1 and Table 2 below show some positive detections of phosmet, but not propiconazole, on drift cards, and no positive detections of either active ingredient in water samples from the Narraguagus River watershed. An Isco auto sampler was used at Poplar Hill for both a fungicide and an insecticide application. For the fungicide application, the Isco was set to start sampling prior to pesticide application, and then continue "grabbing" a water sample every 20 minutes, filling a total of 12 bottles. For the insecticide application, the Isco “grabbed” a sample every 30 minutes, filling 12 bottles. The intent was to capture the entire spray event, from prior to spraying to just after. Field conditions are also summarized in the tables below.
Fungicide application: 617 acres were treated with Orbit on 5/16/03.

Table 1. Surface Water Quality Monitoring Results
Narraguagus River Watershed
5/16/03 Application of Orbit

Water Body	Site ID	Wind		Approx. treated field distances (feet)		Propiconazole Results*		
		Speed (mph)	Direction	Closest to site	Upwind of site	Water (ppb)	Drift card (ug)	Number of samples analyzed
Poplar Hill, main stem	14BPCS059	4-6	From NE	4500	14500	ND**	ND	12 water, 1 drift card
Great Falls Branch	14BPCS036	4-6	From NE	6000	6000	NA***	ND	0 water, 3 drift cards plus a duplicate

*Method Detection Limit (MDL) = 0.05ppb for water and 0.2ug for drift cards
**ND = Not Detected
***NA = Not Analyzed
Note: The fields closest to the sites in the table above were not treated on 5/16/03. A field called Popple Hill is approximately 500 feet north of the Poplar Hill sampling site and was sprayed with Orbit on days when BPC staff was not in the area. A field called Hun Ashe is approximately 1500 feet west of the Great Falls Branch site, but again, was sprayed with Orbit on days when BPC staff was not in the area.

Insecticide application:

After the aerial application of the insecticide Imidan, sites 14BPCS059 and 14BPCS036 were again sampled. Samples were collected on drift cards, and at Poplar Hill, an Isco automated water sampler was used again.

Table 2. Surface Water Quality Monitoring Results
Narraguagus River Watershed
7/17/03 Application of Imidan

Water Body	Site ID	Wind		Approximate Field distances (feet)		Phosmet Results*		
		Speed (mph)	Direction	Closest to site	Upwind of site	Water (ppb)	Drift card (ug)	Number of samples analyzed
Poplar Hill, main stem	14BPCS059	2	From West	4500	4500	ND	ND	1 blank water, 12 water, 1 drift card
Great Falls Branch	14BPCS036	2	From West	1500	1500	NA	0.982 and 1.701	0 water, 2 drift cards

*MDL = 0.1ppb for water and 0.2ug for drift cards

Note: The field closest to the Poplar Hill site (Popple Hill field approx. 500 feet north of sampling site) was not treated with Imidan until later in the day after the Isco had finished it's run and BPC staff had left the area. Approximately 450 acres of fields, of 585 acres treated that day, were treated before BPC sampling concluded.

Results for Pleasant River:

Fungicide Application:

Colonel Brook was the only site in the Pleasant River watershed sampled during the aerial application of Orbit. Drift cards were not used at this location, as BPC staff could not get to the sampling site until after the application of Orbit. As Table 3 shows, only a grab sample of water and a sample duplicate were collected, and both samples were negative for propiconazole. The spraying of 800 acres began at approximately 5:45AM and lasted through the morning and the grab samples were collected that evening at 6:30PM. The weather for the day was partially cloudy.

Table 3. Surface Water Quality Monitoring Results
Pleasant River Watershed
5/11/03 Application of Orbit

Water Body	Site ID	Wind		Approximate Field distances (feet)		Propiconazole Results		
		Speed (mph)	Direction	Closest to site	Upwind of site	Water (ppb)	Drift card (ug)	Number of samples analyzed
Colonel Brook	14BPCS051	3-4	From North	250	500	ND	NA	1 water and 1 duplicate

Note: In previous years BPC had detected pesticides in water in this area and as a result Cherryfield Foods has voluntarily used buffers for aerial treatments. Aerial spray crews allow for 250 to 500 foot buffers depending on the existence and amount of trees between the crop and the water resources in this area. In some cases, ground sprayers (typically a large boom sprayer) treat these areas in the buffer with pesticides where needed. In addition, Cherryfield Foods has planted some trees near the water that will hopefully grow and add some extra protection.

Insecticide Application:

Over 138 acres of blueberry fields were treated with Imidan the morning of 7/12/03, and water grab samples were collected in the middle of the afternoon. Weather for the day was partially cloudy. The samples from the Pleasant River sites were negative for phosmet (Table 4.).

Table 4. Surface Water Quality Monitoring Results Pleasant River Watershed 7/12/03 Application of Imidan								
Water Body	**Site ID**	**Wind**		**Approximate Field distances (feet)**		**Phosmet Results**		
		Speed (mph)	**Direction**	**Closest to site**	**Upwind of site**	**Water (ppb)**	**Drift card (ug)**	**Number of samples analyzed**
Pleasant River, Main stem - Crebo	14BPCS043	3-4	From SW	500	900	ND	NA	1 water
Long Pond	14BPCS063	3-4	From SW	250	250	ND	NA	1 water

Results for Montegail Pond and Pretty Pond:

On the morning of 7/13/03, Imidan was aerially applied for 4 - 5 hours to 396 acres of blueberry fields near Montegail Pond. BPC staff collected drift cards and grab water samples at approximately 11:30AM. Weather was clear and in the 70°s. All samples except for the QA/QC blank drift card detected low levels of phosmet. Field conditions are summarized below.

Table 5. Surface Water Quality Monitoring Results 7/13/03 Application of Imidan								
Water Body	**Site ID**	**Wind**		**Approximate Field distances (feet)**		**Phosmet Results**		
		Speed (mph)	**Direction**	**Closest to site**	**Upwind of site**	**Water (ppb)**	**Drift card (ug)**	**Number of samples analyzed**
Montegail Pond South side (next to pump)	14BPCS064	5	From SW	1000	1000	1.95	2.296 and ND (QA/QC)	1 water, 1 drift card, and 1 blank card
Montegail Pond South West side	14BPCS065	5	From SW	1000	1000	0.28	1.455 and 1.186 and 1.000	1 water, 3 drift cards

On 7/16/03 at approximately 5AM, Imidan was aerially applied to blueberry fields near Pretty Pond. Only 4 – 5 acres were treated. Weather was overcast and in the 60°s. A grab sample of water that was collected at 6:30PM was negative for phosmet. Field conditions are summarized below.

Table 6. Surface Water Quality Monitoring Results
7/16/03 Application of Imidan

Water Body	Site ID	Wind		Approximate Field distances (feet)		Phosmet Results		
		Speed (mph)	Direction	Closest to site	Upwind of site	Water (ppb)	Drift card (ug)	Number of samples analyzed
Pretty Pond	14BPCS066	3	From SW	850	Far	ND	NA	1 water

4. Challenges of Drift Studies and Conclusions:

Finding good sampling sites is not necessarily difficult, however it is time consuming. Care is taken to choose sites that are near bearing fields that are likely to receive aerial pesticide treatment, and that are accessible. A site on the map that looks good is not always workable for various reasons. Driving to potential sites before actually choosing the sites is necessary. The more difficult part of conducting a drift study for Maine's blueberry crops is timing the sample collection with the spray event. On 5/12/03 BPC staff spent hours of time getting packed up and traveling to Deblois. The Isco auto sampler and other supplies were carried down a steep slope through about 500 feet of woods to the Poplar Hill sampling site on the Narraguagus River. Everything was set up for the spray event that was to occur early the next morning. However, due to early onset of inclement weather, spraying did not occur that day, or the next few. This was a wasted trip. In addition, a good site on Pork Brook (a tributary to the West Branch of the Narraguagus River) did not work out in 2003 because BPC staff could not coordinate with Jasper Wyman and Sons, Inc. on when the spraying was to occur.

Detailed communication with the blueberry growers and/or the spray crew is essential, and although there is a spirit of cooperation, applications did not always occur as anticipated. Twice in 2003 the Isco auto sampler did not capture the entire spray event as was planned. On 5/16/03, the field closest to the Poplar Hill site (approximately 500 ft. away) was not sprayed. BPC staff had expected that this field would be sprayed since all or most of the other bearing fields in the area were sprayed. It was hoped, however, that the Isco auto sampler would have picked up any pesticide in the water that might have drifted into the river upstream from other fields that were treated, had any drift occurred. BPC staff was not in the area when the Poplar Hill field was sprayed in May. A similar situation occurred on 7/17/03 when the Isco auto sampler finished collecting its twelve samples mid morning when BPC staff had expected the spraying to be complete for the day. Unfortunately, it was discovered after the fact that the Poplar Hill field was not sprayed until later in the day after the sampling equipment had been collected and removed from the site.

Ideally, the BPC would have a larger number of samples. However, the traveling distance from Augusta to the sampling sites, the limited number of available employees, and the many uncertainties about the spray schedule make it difficult to do more without major investments of time and money.

It can be concluded from this drift study and from BPC drift studies from the past few years, that pesticide drift to natural resources such as rivers, streams, brooks, and lakes can and does sometimes occur at low levels. In 2003 pesticide drift was detected at approximately 1000 feet from the nearest application area at one site and at approximately 1500 feet from the nearest application area at another site. In 2001, pesticide drift was detected 270 feet to 1500 feet away from the nearest application areas. In 2000, pesticide drift was detected 100 feet to 5100 feet away depending on the particular sampling site. Details for previous years can be viewed in reports at the BPC main office, and some details are summarized below in Appendix A.

BPC staff welcomes suggestions for future drift studies.

APPENDIX A. Five-Year Summary of BPC Drift Studies

1999 – A water sample from each of 13 sites was collected in July within 24 hours of aerial application of insecticides to the blueberry crops. Only hexazinone and terbacil were detected, two products that were not aerially applied. Two samples were collected on the main stem of the Narraguagus River, and three samples were collected from tributaries to the Narraguagus River. Three samples were collected from the main stem of the Pleasant River, and five samples were from tributaries to the Pleasant River. The complete 1999 Drift Report can be viewed at the BPC office.

2000 - Five sites in the Narraguagus River watershed and four sites in the Pleasant River watershed were assessed for the occurrence of off-target phosmet using a combination of drift cards and water samples. BPC attempted to use water sensitive cards that turn blue where water droplets hit them, but early morning dew made them useless. Effort was given to working with spray coordinators at Jasper Wyman and Sons, Inc. and Cherryfield Foods, Inc. to better select sites based on proximity to specific fields being treated with pesticides. Phosmet was detected in water samples at three sites ranging in concentration from 0.08 to 0.52 ppb. Phosmet was found on drift cards at four sites ranging in concentration from 0.675ug to 21.978ug. Four sites of the nine sites for 2000 showed positive detections of phosmet either in water or on drift cards. See the two tables below for distances from treated fields to sampling sites. Hexazinone in water samples was the only other pesticide detected. The complete 2000 Drift Report can be viewed at the BPC office.

2000 - NARRAGUAGUS RIVER								
Site ID	Sample Date	Wind		Field distances		Phosmet Results		
		Speed (mph)	Direction	Closest to site	Upwind of site	Water (ppb)	Filter	
							(ug/filter)	#/Ac
14BPCS035	07/12/00	4	NNW	21800' N	21800'	ND	ND	
14BPCS048	07/12/00	4	NNW	3300' N	3300'	ND	ND	0.00004
14BPCS056	07/12/00	4	NNW	< 100' N	< 100'	0.52	21.978	0.00727
14BPCS036	07/13/00	6	NNW	4800' NE	7500'	0.08	.675	0.00022
14BPCS037	07/13/00	6	NNW	9700' NE	18000'	ND	Trace	
14BPCS057	07/13/00	6	NNW	3100' N	3400'	ND	ND	0.00001
14BPCS057	07/14/00	3-6	S	5100’ SE	No field S of site	Trace	.688	0.00023

NOTES: #/ac = pounds per acre; MDL = 0.05ppb and 0.3ug

2000 – PLEASANT RIVER								
Site ID	Sample Date	Wind		Field distances		Phosmet Results		
		Speed (mph)	Direction	Closest to site	Upwind of site	Water (ppb)	Filter (ug/filter)	Filter #/Ac
14BPCS043	07/15/00	3-5	SW	1200' W	1300'	ND	ND	0.00002
14BPCS051	07/15/00	3-5	SW	300' NE	No field SW of site	0.1	.731	0.00024
14BPCS053	07/21/00	1-3	WSW	100' W	100'	ND	ND	0.00009
14BPCS058	07/21/00	1-3	WSW	400' SSW	500'	ND	ND	0.00007

2001 – BPC continued to work with spray coordinators at Jasper Wyman and Sons, Inc. and Cherryfield Foods, Inc. to determine when and where aerial application of fungicides and insecticides were to occur. In 2001, an Isco auto sampler was used at a couple sites to automatically grab samples over an interval of time. Three sites in the Narraguagus River watershed were sampled for propiconazole and later in the summer for phosmet, and three sites in the Pleasant River watershed were sampled for chlorothalonil (trade name Bravo) and later in the summer for phosmet. Propiconazole was detected on drift cards, but not in water, at three of three sites where it was applied. Chlorothalonil was detected in water at three of three sites where it was applied, and two of those sites also had a positive detection on a drift card. Overall, phosmet was found in water at two of seven sites and on drift cards at three of seven sites. Phosmet was found in water or on drift cards at five of seven sites. See the four tables below. Hexazinone in water samples was the only other pesticide detected. The complete 2001 Drift Report can be viewed at the BPC office.

Surface Water Quality Monitoring Results Fungicide Application - May 17, 2001 Narraguagus River Watershed								
Water Body	Site ID	Wind		Approximate Field distances (feet)		Propiconazole Results		
		Speed (mph)	Direction	Closest to site	Upwind of site	Water (ppb)	Filter (ug/filter)	
Narraguagus River	14BPCS060	2	NE	300	500	ND	0.411	
Crotch Camp Brook	14BPCS048	3	NE	1150	1150	ND	0.466	
Great Falls Branch	14BPCS036	4	NE	1270	3740	ND	0.543	

NOTE : MDL = 0.2ppb and 0.3ug

Surface Water Quality Monitoring Results Insecticide Application - July 11, 2001 Narraguagus River Watershed								
Water Body	**Site ID**	**Wind**		**Approximate Field distances (feet)**		**Phosmet Results**		
		Speed (mph)	**Direction**	**Closest to site**	**Upwind of site**	**Water (ppb)**	**Filter (ug/filter)**	
Narraguagus River*	14BPCS060	< 1	--	300	--	ND	3.495	
Crotch Camp Brook*	14BPCS048	< 1	--	1150	--	ND	0.152	
Great Falls Branch	14BPCS036	< 1	--	1270	--	ND	0.543	

*Isco® auto sampler used at this site; 12 samples collected.
NOTE: MDL = 0.2ppb and 0.2ug

Surface Water Quality Monitoring Results Fungicide Application – June 2, 2001 Pleasant River Watershed								
Water Body	**Site ID**	**Wind**		**Approximate Field distances (feet)**		**Chlorothalonil Results**		
		Speed (mph)	**Direction**	**Closest to site**	**Upwind of site**	**Water (ppb)**	**Filter (ug/filter)**	
Pleasant River	14BPCS043	< 1	--	1500	--	0.79	ND	
Colonel Brook	14BPCS051	< 1	--	270	--	0.21	1.72	
Bog Stream	14BPCS058	2	SE	700	700	0.103	8.03	

NOTE : MDL = 0.1ppb and 0.1ug

Surface Water Quality Monitoring Results Insecticide Application – July 14, 2001 Pleasant River Watershed								
Water Body	**Site ID**	**Wind**		**Approximate Field distances (feet)**		**Phosmet Results**		
		Speed (mph)	**Direction**	**Closest to site**	**Upwind of site**	**Water (ppb)**	**Filter (ug/filter)**	
Pleasant River	14BPCS043	< 1	--	1500	--	0.253	No filter	
Bog Stream*	14BPCS058	< 1	--	700	--	0.155 – 3.76	ND	
Ingersoll Branch	14BPCS052	< 1	--	500	--	ND	ND	
West Ingersoll	14BPCS061	< 1	--	< 100	--	ND	ND	

*Auto sampler used at this site; 12 samples collected.

2002 – Not as many samples were collected due to BPC staffing changes. The few samples that were analyzed show phosmet in three water samples at Ingersol Stream Eastern Branch (a tributary of the Pleasant River) ranging in concentration from 0.199 to 0.815 ppb. All three of these samples were taken on the morning of 7/21/02. Two drift cards from the same site were non detect and one water sample from the Pleasant River (approximately two miles south of Crebo Flat) was non detect. The latitude and longitude of the Ingersol Stream site (44°45'44.0" and -67°53'01.6") and Pleasant River site (44°43'58.5" and -67°53'51.3") were recorded using a Garmin handheld GPS unit with the NAD83 datum.

2003 – See previous report.

The range of concentrations of phosmet detected in BPC drift studies from 2000 to 2003 appears in the table below. Sites and data from 1999 were not included because the methodology for that study was slightly different from the other four years.

2000-2003		**PHOSMET**		
Site ID	**Yrs. Sampled**	**Water (ppb)**	**Filter (ug)**	
14BPCS035	00	ND	ND	
14BPCS036*	00, '01, '03	ND - 0.08	0.543 - 1.701	
14BPCS037	00	ND	ND	
14BPCS042	02	ND	NA	
14BPCS043*	00, '01, '03	ND - 0.253	ND	
14BPCS048*	00, '01	ND	ND - 0.152	
14BPCS051*	00, '01, '03	ND - 0.1	0.731	
14BPCS052	01, '02	ND - 0.815	ND	
14BPCS053	00	ND	ND	
14BPCS056	00	0.52	21.978	
14BPCS057	00	ND	ND - 0.688	
14BPCS058*	00, '01	ND - 3.76	ND	
14BPCS059	03	ND	ND	
14BPCS060*	01	ND	3.495	
14BPCS061	01	ND	ND	
14BPCS063	03	ND	NA	
14BPCS064	03	1.95	2.296	
14BPCS065	03	0.28	1.00 - 1.455	
14BPCS066	03	ND	NA	
* = site also received hit(s) of propaconizole and/or chlorothalonil				

APPENDIX B. 2003 Site Photos (Where Available)

Figure 1. Drift card at Poplar Hill on the main stem of the Narraguagus River

Figure 2. Isco auto sampler at Poplar Hill, Narraguagus River

Figure 3. BPC staff collecting a grab sample at Poplar Hill, Narraguagus River

Figure 4. Long Pond sampling site. Pond outlets to Colonel Brook.

Figure 5. Montegail Pond, South West site looking north. Two of three drift cards seen here. Drift may have come from the southwest.

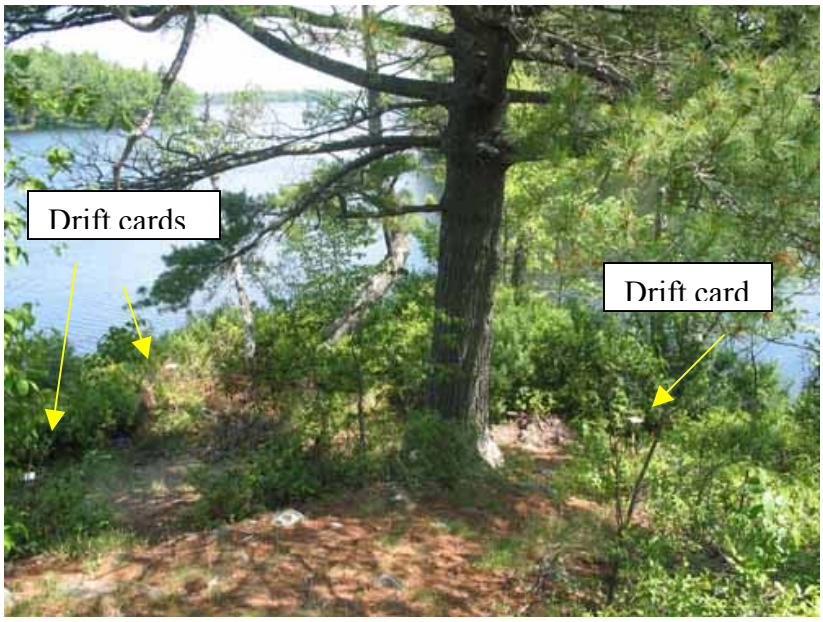
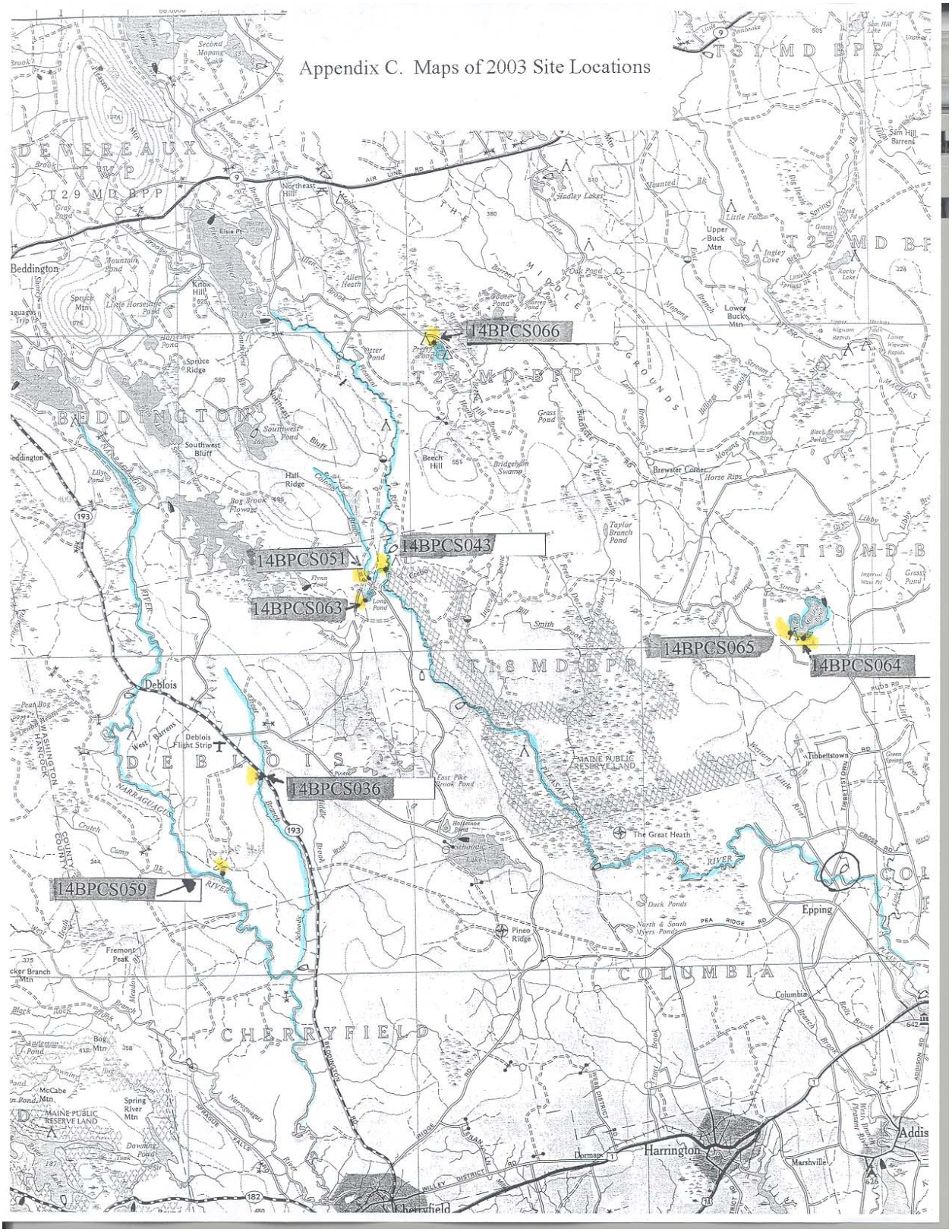


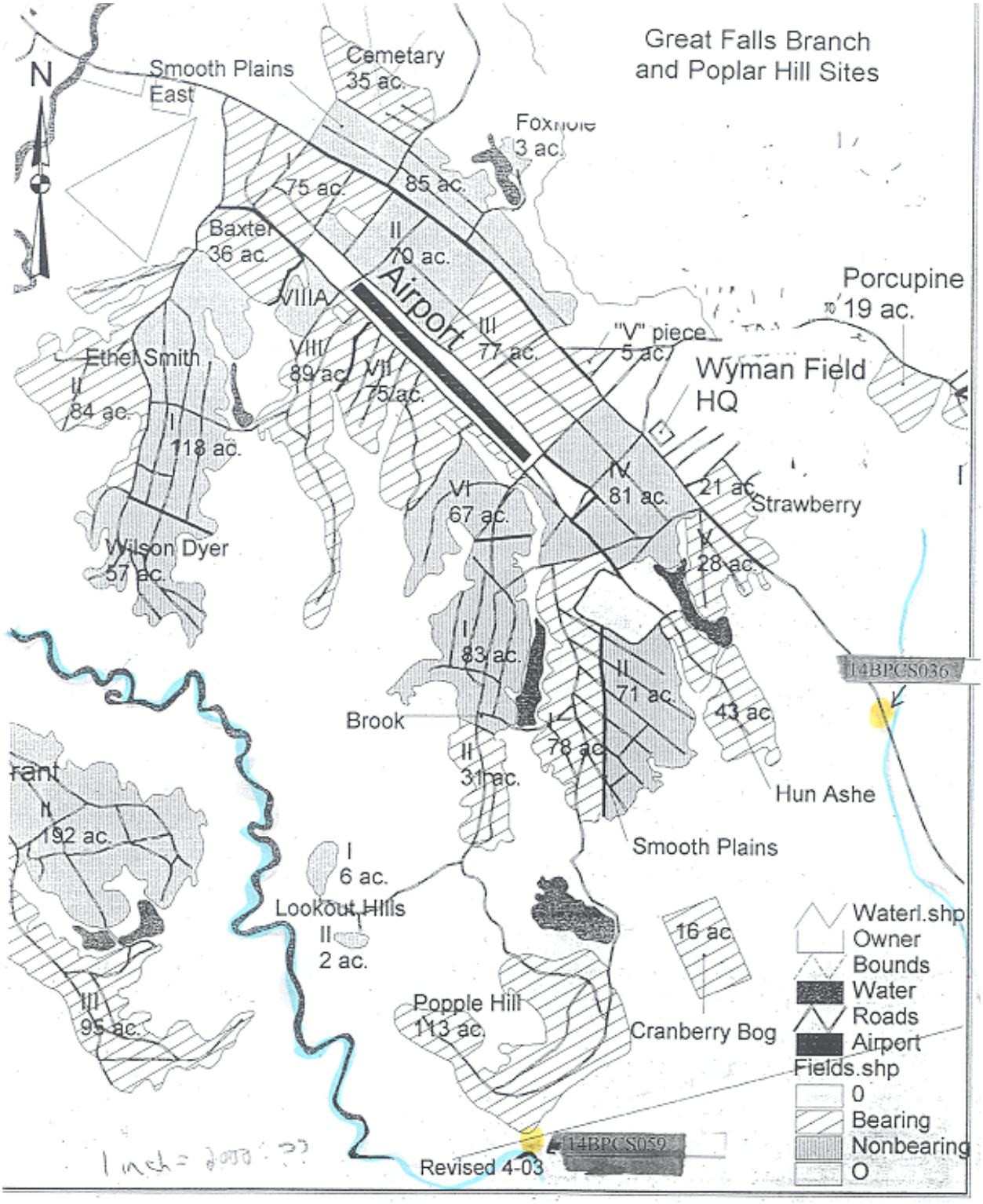
Figure 6. Montegail Pond, South West site. All three drift cards visible. Three drift cards were placed due to the varied canopy above, and all had low level detections of phosmet.

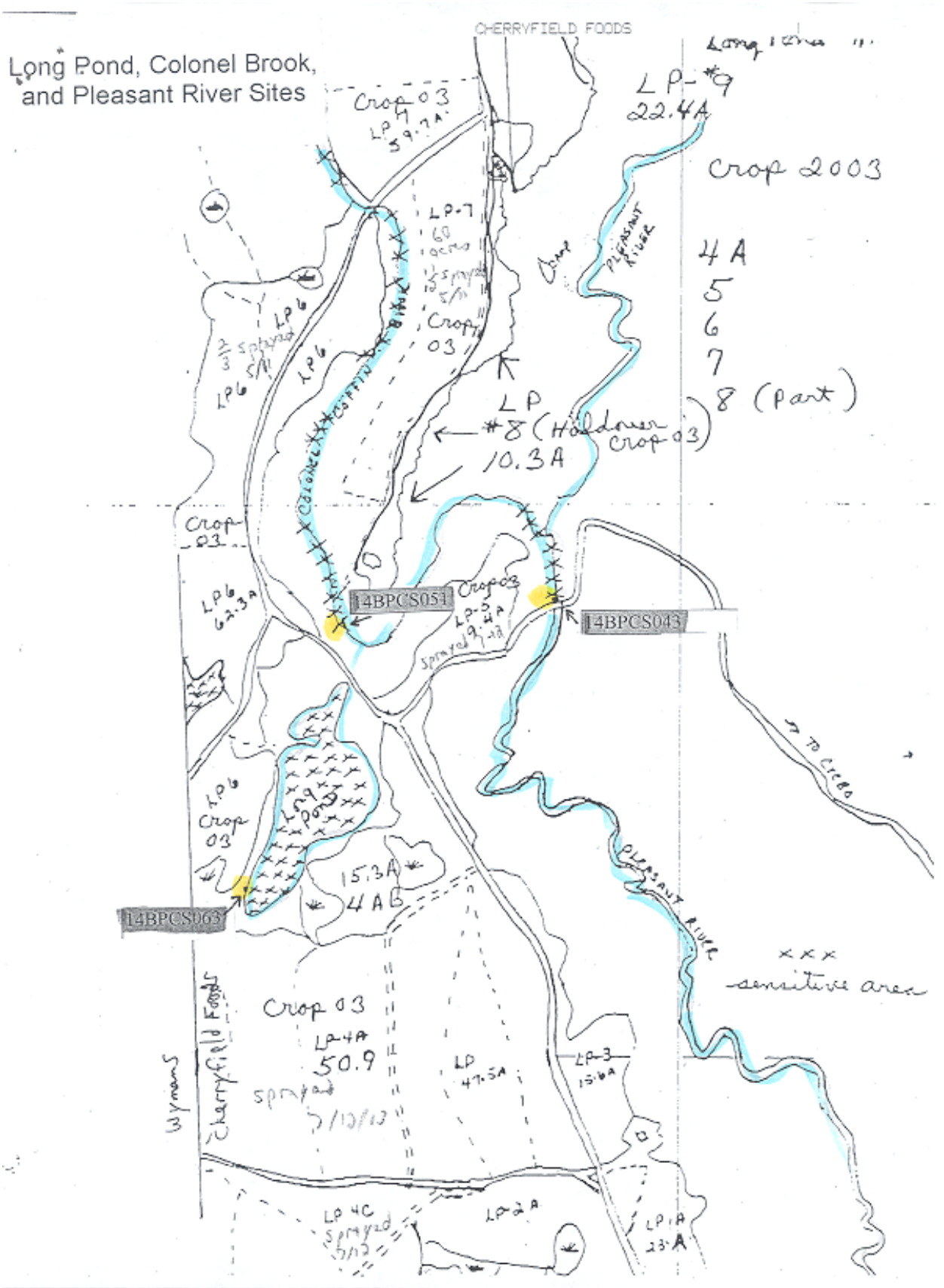
Figure 7. Montegail Pond, South West site – looking west

Figure 8. Montegail Pond, South West site – looking north

Appendix C. Maps of 2003 Site Locations




Great Falls Branch
and Poplar Hill Sites
N
Smooth Plains
East
Cemetary
35 ac.
Foxhole
3 ac.
I
75 ac.
85 ac.
Baxter
36 ac.
II
79 ac.
Airport
VIIIA
III
77 ac.
"V" piece
5 ac.
Porcupine
19 ac.
Wyman Field
HQ
Ethel Smith
II
84 ac.
I
118 ac.
VIII
89 ac.
VII
75 ac.
IV
81 ac.
21 ac.
Strawberry
VI
67 ac.
V
28 ac.
Wilson Dyer
57 ac.
I
83 ac.
II
71 ac.
14BPCS036
43 ac.
Brook
II
31 ac.
78 ac.
Hun Ashe
II
192 ac.
Smooth Plains
I
6 ac.
Lookout Hills
II
2 ac.
16 ac.
III
95 ac.
Popple Hill
113 ac.
Cranberry Bog
Waterl.shp
Owner
Bounds
Water
Roads
Airport
Fields.shp
0
Bearing
Nonbearing
O
14BPCS059
Revised 4-03


Long Pond, Colonel Brook, and Pleasant River Sites
CHERRYFIELD FOODS
LP #9
22.4A
Crop 2003
4A
5
6
7
8 (part)
LP #8 (Holdover Crop 03)
10.3A
Crop 03
LP-7
60 acres
LP6
LP 6
62.3A
14BPCS054
14BPCS043
14BPCS063
LP-5
9.4A
LP-4A
50.9
15.3A
4AB
LP-3
15.6A
LP 47.5A
LP 4C
LP 2A
LP 1A
23.4A
Wymans
Cherryfield Foods
PLEASANT RIVER
xxx sensitive area


CHERRYFIELD FOODS
Montegail Pond Sites
396 acres treated 7/13/03 with Imidan
SM-15 9.1A
Not sprayed
NM-8 55.6A
NM-14 24.7A
Not sprayed
NM-5A 31.0A
Sprayed 7/13
NM-5B 21.6A
Crop 03
SM-6B 98A
Not sprayed
SM-7A 23.2A
Crop 03
14BPCS065
NM-5C 43.5A
Not Sprayed
Sprayed 7/13
SM-7B 59.5A
Sprayed 7/13
SM-6A 50.8A
7B
Crop 03
Crop 03
14BPCS064
Nature's Bridge
Crop 2003
SM- 5B
6A
7A
7B
SM 4C 38 acres was sprayed 7/13/03
XXX - Sensitive Area
South of 6A 1/2 of 3/4 mile