2002 303d update
Reference #28

65

CITY OF
SANTA ROSA

PUBLIC WORKS DEPARTMENT
69 Stony Circle
Santa Rosa, CA 95401
707-543-3800
Fax: 707-543-3801

May 15, 2001

HAND-DELIVERED
Matt St. John
California Regional Water Quality Control Board-
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

SUBMITTAL OF WATER QUALITY INFORMATION

Dear Mr. St. John:

The enclosed package includes the following water quality data gathered by the City of Santa Rosa:

1. Chemical sampling results for Santa Rosa Creek at the confluence with Piner Creek from 1997-2000
2. Bioassay data for 6 Santa Rosa Creeks from 1997-2001
3. Bioassessment data for 6 Santa Rosa Creeks from 1998-2000
4. Pesticide sampling data taken November 7, 1999 from 5 Santa Rosa Creeks

For each of the above data, an electronic version (with the exception of the pesticide data) and 2 hard copies have been provided with this package. If you have any questions about this data, please contact me at 543-3854 or moliveri@ci.santa-rosa.ca.us.

Sincerely,

M. J. Oliveri

MARY JANE OLIVERI
Associate Civil Engineer

MJO/pco [L:\GENERAL CORRESPONDENCE & MEMOS\LTR - MATT STJOHN - RWQCB.WPD]
Enclosures
cc: J. Colleen Ferguson, Supervising Engineer

Environmental Micro Analysis Inc. ELAP Certificate #2211
40 N. East St., Suite B
Woodland, CA 95776
Phone: (530) 666-6890 FAX: (530) 668-2987

Client: Dale Tressler
City of Santa Rosa - Public Works
69 Stony Circle
Santa Rosa, CA 95401
Phone: (707) 543-3873 FAX: (707) 543-3801

Client Sample ID: S.W. Sample No. 0138 EMA #: 99110912-05 Date Received: 11/09/99 Matrix: Water

MATANZAS CREEK @ HOEN FRONTAGE RD.

Organophosphate (OP) Screen/ Organonitrogen (ON) Screen EPA - 8141A	Amount µg/L	MRL µg/L
Acephate*	ND	0.5
Azinphos-methyl, (Guthion)	ND	1.5
Bolstar, (Sulprofos)	ND	0.5
Carbophenothion, (Trithion)*	ND	0.5
Chlorfenvinphos, (Supona)*	ND	0.5
Chlorpyrifos, (Dursban)	ND	0.3
Ciodrin, (Crotophos)*	ND	0.5
Coumaphos, (Co-Ral)	ND	1.5
Demeton, (Systox) O analogue	ND	0.5
Demeton, (Systox) S analogue	ND	0.5
Diazinon	ND	0.5
Dicrotophos, (Bidrin)*	ND	0.5
Dimethoate, (Cygon)	ND	0.5
Dioxathion, (Delnav)*	ND	0.5
Disulfoton, (Disyston)	ND	0.3
EPN	ND	1.0
Ethion*	ND	0.5
Fenamiphos, (Nemacur)*	ND	0.5
Fenitrothion, (Sumithion)*	ND	0.5
Fenthion, (Baytex)	ND	0.5
Fonofos, (Dyfonate)	ND	0.5
Hostathion, (Triazophos)*	ND	0.5
Imidan, (Phosmet)*	ND	0.5
Isofenphos, (Oftanol)*	ND	0.5
Malathion	ND	0.5
Methamidophos*	ND	0.5
Methidathion, (Supracide)*	ND	0.5
Methyl Parathion	ND	0.5
Mevinphos, (Phosdrin)*	ND	0.5
Molinate (Ordram)	ND	0.5
Parathion	ND	0.5
Phorate, (Thimet)	ND	0.5
Phosalone, (Zolone)*	ND	1.5
Phosphamidon, (Dimecron)*	ND	1.0
Profenofos, (Cruacron)*	ND	1.0
Propetamphos, (Safrotin)*	ND	0.5
Ronnel, (Fenchlorfos)	ND	0.5
Tetrachlorvinphos, (Gardona)*	ND	0.5
Thiobencarb (Bolero)	ND	0.5
Thionazin, (Zinophos)*	ND	0.5

Surrogate Information:

EPA 8141A	Surrogate Level	Recovery %
Ethion	2.5 µg/L	122[1]

[1]Surrogate recovery is outside our control limit. Since no target compounds were found, no corrective action was taken

Date Extracted: 11/12/99 Method: EPA 3510
Date Completed: 11/16/99

*Chemicals marked with an asterisk are not found in the EPA methods, but are detectable by EPA and CDFA methodologies and are included for qualitative information purposes only

Date: 11/23/99 Signed: Donald A. Peterson, Laboratory Director

Environmental Micro Analysis Inc. ELAP Certificate #2211
40 N. East St., Suite B
Woodland, CA 95776
Phone: (530) 666-6690 FAX: (530) 666-2987

Client: Dale Tressler
City of Santa Rosa - Public Works
69 Stony Circle
Santa Rosa, CA 95401
Phone: (707) 543-3873 FAX: (707) 543-3801

Client Sample ID: S.W. Sample No. 0139 EMAA #: 99110912-04 Date Received: 11/09/99 Matrix: Water

SANTA ROSA CREEK @ MELITA RD

Organophosphate (OP) Screen/ Organonitrogen (ON) Screen EPA - 8141A	Amount µg/L	MRL µg/L
Acephate*	ND	0.5
Azinphos-methyl, (Guthion)	ND	1.5
Bolstar, (Sulprofos)	ND	0.5
Carbophenothion, (Trithion)*	ND	0.5
Chlorfenvinphos, (Supona)*	ND	0.5
Chlorpyrifos, (Dursban)	ND	0.3
Cladrin, (Crotoxyphos)*	ND	0.5
Coumephos, (Co-Ral)	ND	1.5
Demeton, (Systox) O analogue	ND	0.5
Demeton, (Systox) S analogue	ND	0.5
Diazinon	ND	0.5
Dichlorvos, (Didrin)*	ND	0.5
Dimethoate, (Cygon)	ND	0.5
Dioxathion, (Delnav)*	ND	0.5
Disulfoton, (Disyston)	ND	0.3
EPN	ND	1.0
Ethion*	ND	0.5
Fenamiphos, (Nemacur)*	ND	0.5
Fenitrothion, (Sumithion)*	ND	0.5
Fenthion, (Baytex)	ND	0.5
Fonofos, (Dyfonate)	ND	0.5
Hostathion, (Triazophos)*	ND	0.5
Imidan, (Phosmet)*	ND	0.5
Isofenphos, (Oftanol)*	ND	0.5
Malathion	ND	0.5
Methamidophos*	ND	0.5
Methidathion, (Supracide)*	ND	0.5
Methyl Parathion	ND	0.5
Mevinphos, (Phosdrin)*	ND	0.5
Molinate (Ordram)	ND	0.5
Parathion	ND	0.5
Phorate, (Thimet)	ND	0.5
Phosalone, (Zolone)*	ND	1.5
Phosphamidon (Dimecron)*	ND	1.0
Profenofos, (Cruacron)*	ND	1.0
Propetamphos, (Safrotin)*	ND	0.5
Ronnel, (Fenchlorfos)	ND	0.5
Tetrachlorvinphos, (Gardona)*	ND	0.5
Thiobincard (Bolero)	ND	0.5
Thionazin, (Zinophos)*	ND	0.5

Surrogate Information:

EPA 8141A	Surrogate Level	Recovery %
Ethion	2.5 µg/L	101

Date Extracted: 11/12/99 Method: EPA 3510
Date Completed: 11/16/99

*Chemicals marked with an asterisk are not found in the EPA methods, but are detectable by EPA and CDFA methodologies and are included for qualitative information purposes only

Date 11/23/99 Signed: David A. Rivas, Laboratory Director

Environmental Micro Analysis Inc. ELAP Certificate #2211
40 N. East St., Suite B
Woodland, CA 95776
Phone: (530) 666-8990 FAX: (530) 666-2987

Client: Dale Tressler
City of Santa Rosa - Public Works
69 Stony Circle
Santa Rosa, CA 95401
Phone: (707) 543-3873 FAX: (707) 543-3801

Client Sample ID: S.W. Sample No. 0140 EMA #: 99110912-03 Date Received: 11/09/99 Matrix: Water

PINER CREEK @ MARLOW RD

Organophosphate (OP) Screen/ Organonitrogen (ON) Screen EPA - 8141A	Amount µg/L	MRL µg/L
Acephate*	ND	0.5
Azinphos-methyl, (Guthion)	ND	1.5
Bolstar, (Sulprofos)	ND	0.5
Carbophenothion, (Trithion)*	ND	0.5
Chlorfenvinphos, (Supona)*	ND	0.5
[illegible]	ND	0.3
Clodrin, (Crotophos)*	ND	0.5
Coumaphos, (Co-Ral)	ND	1.5
Demeton, (Systox) O analogue	ND	0.5
Demeton, (Systox) S analogue	ND	0.5
[illegible]	ND	0.5
Dicrotophos, (Didrin)*	ND	0.5
Dimethoate, (Cygon)	ND	0.5
Dioxathion, (Delnav)*	ND	0.5
Disulfoton, (Disyston)	ND	0.3
EPN	ND	1.0
Ethion*	ND	0.5
Fenamiphos, (Nemacur)*	ND	0.5
Fenitrothion, (Sumithion)*	ND	0.5
Fenthion, (Baytex)	ND	0.5
Fonofos, (Dyfonate)	ND	0.5
Hostathion, (Triazophos)*	ND	0.5
Imidan, (Phosmet)*	ND	0.5
Isofenphos, (Oftanol)*	ND	0.5
Malathion	ND	0.5
Methamidophos*	ND	0.5
Methidathion, (Supracide)*	ND	0.5
Methyl Parathion	ND	0.5
Mevinphos, (Phosdrin)*	ND	0.5
Molinate (Ordram)	ND	0.5
Parathion	ND	0.5
Phorate, (Thimet)	ND	0.5
Phosalone, (Zolone)*	ND	1.5
Phosphamidon, (Dimecron)*	ND	1.0
Prolenofos, (Crusacron)*	ND	1.0
Propetamphos, (Safrotin)*	ND	0.5
Ronnel, (Fenchlorfos)	ND	0.5
Tetrachlorvinphos, (Gardona)*	ND	0.5
Thiobencarb (Bolero)	ND	0.5
Thionazin, (Zinophos)*	ND	0.5

Surrogate Information:

EPA 8141A	Surrogate Level	Recovery %
Ethion	2.5 µg/L	100

Date Extracted: 11/12/99 Method: EPA 3510
Date Completed: 11/16/99

*Chemicals marked with an asterisk are not found in the EPA methods, but are detectable by EPA and CDFA methodologies and are included for qualitative information purposes only

Date: 11/25/99 Signed: Donald A. Tillman, Laboratory Director

Environmental Micro Analysis Inc. ELAP Certificate #2211
40 N. East St., Suite B
Woodland, CA 95776
Phone: (530) 666-6890 FAX: (530) 666-2987

Client: Dale Tressler
City of Santa Rosa - Public Works
69 Stony Circle
Santa Rosa, CA 95401
Phone: (707) 543-3879 FAX: (707) 543-3801

Client Sample [redacted] EMA #: 99110912-01 Date Received: [redacted] Matrix: Water

PETERSON CREEK WEST OF FULTON RD

Organophosphate (OP) Screen/ Organonitrogen (ON) Screen EPA - 8141A	Amount µg/L	MRL µg/L
Acephate*	ND	0.5
Azinphos-methyl, (Guthion)	ND	1.5
Bolstar, (Sulprofos)	ND	0.5
Carbophenothion, (Trithion)*	ND	0.5
Chlorfenvinphos, (Supona)*	ND	0.5
[redacted]	ND	0.3
Ciodrin, (Crotophos)*	ND	0.5
Coumaphos, (Co-Ral)	ND	1.5
Demeton, (Systox) O analogue	ND	0.5
Demeton, (Systox) S analogue	ND	0.5
[redacted]	ND	0.5
Dicrotophos, (Bidrin)*	ND	0.5
Dimethoate, (Cygon)	ND	0.5
Dioxathion, (Delnav)*	ND	0.5
Disulfoton, (Disyston)	ND	0.3
EPN	ND	1.0
Ethion*	ND	0.5
Fenamiphos, (Nemacur)*	ND	0.5
Fenitrothion, (Sumithion)*	ND	0.5
Fenthion, (Baytex)	ND	0.5
Fonofos, (Dyfonate)	ND	0.5
Hostathion, (Triazophos)*	ND	0.5
Imidan, (Phosmet)*	ND	0.5
Isofenphos, (Oftanol)*	ND	0.5
Malathion	ND	0.5
Methamidophos*	ND	0.5
Methidathion, (Supracide)*	ND	0.5
Methyl Parathion	ND	0.5
Mevinphos, (Phosdrin)*	ND	0.5
Molinate (Ordram)	ND	0.5
Parathion	ND	0.5
Phorate, (Thimet)	ND	0.5
Phosalone, (Zolone)*	ND	1.5
Phosphamidon, (Dimecron)*	ND	1.0
Profenofos, (Curacron)*	ND	1.0
Propetamphos, (Safrotin)*	ND	0.5
Ronnel, (Fenchlorfos)	ND	0.5
Tetrachlorvinphos, (Gardona)*	ND	0.5
Thiobencarb (Bolero)	ND	0.5
Thionazin, (Zinophos)*	ND	0.5

Surrogate Information:

EPA 8141A	Surrogate Level	Recovery %
Ethion	2.5 µg/L	93.2

Date Extracted: 11/12/99 Method: EPA 3510
Date Completed: 11/16/99

*Chemicals marked with an asterisk are not found in the EPA methods, but are detectable by EPA and CDFA methodologies and are included for qualitative information purposes only.

Date 11/23/99 Signed Donald Erickson, Laboratory Director

Environmental Micro Analysis Inc. ELAP Certificate #2211
40 N. East St., Suite B
Woodland, CA 95776
Phone: (530) 666-6880 FAX: (530) 666-2987

Client: Dale Tressler
City of Santa Rosa - Public Works
69 Stony Circle
Santa Rosa, CA 95401
Phone: (707) 543-3873 FAX: (707) 543-3801

Client Sample ID: S.W. Sample No. 0142 EMA #: 99110912-02 Date Received: 11/09/99 Matrix: Water

BRUSH CREEK SOUTH OF HWY 12

Organophosphate (OP) Screen/ Organonitrogen (ON) Screen EPA - 8141A	Amount µg/L	MRL µg/L
Acephate*	ND	0.5
Azinphos-methyl, (Guthion)	ND	1.5
Bolstar, (Sulprofos)	ND	0.5
Carbophenothion, (Trithion)*	ND	0.5
Chlorfenvinphos, (Supona)*	ND	0.5
Chlorpyrifos, (Dursban)	ND	0.3
Clodrin, (Crotophos)*	ND	0.5
Coumaphos, (Co-Ral)	ND	1.5
Demeton, (Systox) O analogue	ND	0.5
Demeton, (Systox) S analogue	ND	0.5
Diazinon	ND	0.5
Dicrotophos, (Bidrin)*	ND	0.5
Dimethoate, (Cygon)	ND	0.5
Dioxathion, (Delnav)*	ND	0.5
Disulfoton, (Disyston)	ND	0.3
EPN	ND	1.0
Ethion*	ND	0.5
Fenamiphos, (Nemacur)*	ND	0.5
Fenitrothion, (Sumithion)*	ND	0.5
Fenthion, (Baytex)	ND	0.5
Fonofos, (Dyfonate)	ND	0.5
Hostathion, (Triazophos)*	ND	0.5
Imidan, (Phosmet)*	ND	0.5
Isofenphos, (Oftanol)*	ND	0.5
Malathion	ND	0.5
Methamidophos*	ND	0.5
Methidathion, (Supracide)*	ND	0.5
Methyl Parathion	ND	0.5
Mevinphos, (Phosdrin)*	ND	0.5
Molinate (Ordram)	ND	0.5
Parathion	ND	0.5
Phorate, (Thimet)	ND	0.5
Phosalone, (Zolone)*	ND	1.5
Phosphamidon, (Dimecron)*	ND	1.0
Profenofos, (Curacron)*	ND	1.0
Propetamphos, (Safrotin)*	ND	0.5
Ronnel, (Fenchlorfos)	ND	0.5
Tetrachlorvinphos, (Gardona)*	ND	0.5
Thiobincard (Bolero)	ND	0.5
Thionazin, (Zinophos)*	ND	0.5

Surrogate Information:

EPA 8141A	Surrogate Level	Recovery %
Ethion	2.5 µg/L	82.8

Date Extracted: 11/12/99 Method: EPA 3510
Date Completed: 11/16/99

*Chemicals marked with an asterisk are not found in the EPA methods, but are detectable by EPA and CDFA methodologies and are included for qualitative information purposes only

Date: 11/23/99 Signed: _____, Laboratory Director

Environmental Micro Analysis Inc. ELAP Certificate #2211
404 N. East St., Suite B
Woodland, CA 95776
Phone: (530) 666-6880 FAX: (530) 666-2987

Client: Dale Tressler
City of Santa Rosa - Public Works
69 Stony Circle
Santa Rosa, CA 95401
Phone: (707) 543-3873 FAX: (707) 543-3801

Client Sample ID: NA EMA # 99110912-Blank Date Received: 11/09/99 Matrix: Water

Organophosphate (OP) Screen/ Organonitrogen (ON) Screen EPA - 8141A	Amount µg/L	MRL µg/L
Acephate*	ND	0.5
Azinphos-methyl, (Guthion)	ND	1.5
Bolstar, (Sulprofos)	ND	0.5
Carbophenothion, (Trithion)*	ND	0.5
Chlorfenvinphos, (Supona)*	ND	0.5
Chlorpyrifos, (Dursban)	ND	0.3
Ciodrin, (Crotophos)*	ND	0.5
Coumaphos, (Co-Ral)	ND	1.5
Demeton, (Systox) O analogue	ND	0.5
Demeton, (Systox) S analogue	ND	0.5
Diazinon	ND	0.5
Dicrotophos, (Didrin)*	ND	0.5
Dimethoate, (Cygon)	ND	0.5
Dioxathion, (Delnav)*	ND	0.5
Disulfoton, (Disyston)	ND	0.3
EPN	ND	1.0
Ethion*	ND	0.5
Fenamiphos, (Nemacur)*	ND	0.5
Fenitrothion, (Sumithion)*	ND	0.5
Fenthion, (Baytex)	ND	0.5
Fonofos, (Dyfonate)	ND	0.5
Hostathion, (Triazophos)*	ND	0.5
Imidan, (Phosmet)*	ND	0.5
Isofenphos, (Oftanol)*	ND	0.5
Malathion	ND	0.5
Methamidophos*	ND	0.5
Methidathion, (Supracide)*	ND	0.5
Methyl Parathion	ND	0.5
Mevinphos, (Phosdrin)*	ND	0.5
Molinate (Ordram)	ND	0.5
Parathion	ND	0.5
Phorate, (Thimet)	ND	0.5
Phosalone, (Zolone)*	ND	1.5
Phosphamidon, (Dimecron)*	ND	1.0
Profenofos, (Curacron)*	ND	1.0
Propetamphos, (Safrotin)*	ND	0.5
Ronnel, (Fenchlorfos)	ND	0.5
Tetrachlorvinphos, (Gardona)*	ND	0.5
Thiobencarb (Bolero)	ND	0.5
Thionazin, (Zinophos)*	ND	0.5

Surrogate Information:

EPA 8141A	Surrogate Level	Recovery %
Ethion	2.5 µg/L	79.7

Date Extracted: 11/12/99 Method: EPA 3510
Date Completed: 11/16/99

*Chemicals marked with an asterisk are not found in the EPA methods, but are detectable by EPA and CDFA methodologies and are included for qualitative information purposes only.

Date 11/22/99 Signed _____, Laboratory Director

CITY OF SANTA ROSA
CHEMICAL MONITORING RESULTS FOR SANTA ROSA CREEK, WEST OF FULTON ROAD WINTER 1997-2000

CONSTITUENT	UNITS	TEST METHOD	1ST FLUSH 10/1-2/97	STORM I 10/8-9/97	STORM II 12/14/1997	STORM III 4/3/1998	STORM I 10/24/1998	STORM II 1/30/1999	STORM III 3/8/1999	STORM I 10/28/1999	STORM II 1/30/2000	STORM III 4/13/2000	REPORTING LIMITS
TEMPERATURE	C		17.4	17.6	12.7	9.1	--	10.7	11.9				
pH		field	7.99	7.81	7.00	7.70	8.18	7.04	7.04	7.6	7.9	--	0.1
RESIDUAL CHLORINE	mg/l	field	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	ND	ND	ND	0.1
TDS	mg/l	160.1	370	150	110	160	220	86	73	207	166	238	10
TSS	mg/l	160.2	<4	370	180	150	97	90	71	10	5	44	4
BOD	mg/l	5210	<5	7	<5.0	<5.0	9	ND	ND	6	1	6	5
COD	mg/l	410.4	22	990	57	45	7.7	20	27	69	14	9.1	10
NITRATE-NITRITE AS N	mg/l	353.1	<0.03	0.032	0.81	0.42	1.1	0.52	0.37	ND	0.8	ND	0.03
TOTAL KJELDAHL NITROGEN	mg/l	351.2	0.41	3.9	1.6	1.9	1.2	1.3	1.1	--	--	--	0.1
CYANIDE (TOTAL)	mg/l	335.2	<0.02	<0.02	<0.02	<0.005	ND	ND	ND	ND	ND	ND	0.002
OIL AND GREASE	mg/l	5520B	<5	<5	<5	<5	ND	ND	5.3	4	8.3	12	5
PHOSPHORUS	mg/l	365.2	0.027	0.1	0.2	0.26	0.11	ND	ND	ND	ND	ND	0.02
PHOSPHORUS-TOTAL AS P (DIS)	mg/l	65.2/365.4	<0.02	<0.02	<0.02	0.09	0.14	ND	ND	--	ND	ND	0.02
FECAL COLI	mpn/100ml	6x5	--	>1600	--	>1600	>1600	>1600	>1600	--	170	220	
FECAL STREPTOCOCCUS	mpn/100ml	6x5	920	>1600	--	--	--	>1600	>1600	--	110	900	
TOTAL PHENOLS	mg/l	20.1/420.2	<0.04	<0.04	<0.04	<0.001	--	--	--	--	--	--	0.1

CITY OF SANTA ROSA
CHEMICAL MONITORING RESULTS FOR SANTA ROSA CREEK, WEST OF FULTON ROAD WINTER 1997-2000

METHOD 624 - VOLATILES		TEST	1ST FLUSH	STORM I	STORM II	STORM III	STORM I	STORM II	STORM III	STORM I	STORM II	STORM III	REPORTING
CONSTITUENT	UNITS	METHOD	10/1-2/97	10/8-9/97	12/14/1997	4/3/1998	10/24/1998	1/30/1999	3/8/1999	10/28/1999	1/30/2000	4/13/2000	LIMITS
ACROLEIN	ug/l	624	ND	ND	--	--	<0.5	<0.5	<0.5	--	--	--	1000
ACRYLONITRILE	ug/l	624	ND	ND	--	--	<0.5	<0.5	<0.5	--	--	--	1000
DICHLOROBROMOMETHANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	2.2
BROMOFORM	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	4.7
METHYL BROMIDE (BROMOMETHANE)	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	5
CARBON TETRACHLORIDE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	2.8
CHLOROBENZENE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	6
CHLOROETHANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	5
2-CHLOROETHYLVINYL ETHER	ug/l	624	ND	ND	ND	ND	<0.1	<0.1	<0.1	--	--	--	7
CHLOROFORM	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	1.6
METHYL CHLORIDE(CHLOROMETHANE)	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	5
CHLORODIBROMOMETHANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	3.1
1,1-DICHLOROETHANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	4.7
1,2-DICHLOROETHANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	2.8
TRANS-1,2-DICHLOROETHENE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	1.6
1,2-DICHLOROPROPANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	6
TRANS-1,3 DICHLOROPROPENE	ug/l	624	ND	ND	ND	ND	--	--	--	--	--	--	5
METHYLENE CHLORIDE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	5
1,1,2,2-TETRACHLOROETHANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	6.9
TETRACHLOROETHENE	ug/l	624	ND	ND	ND	ND	--	--	--	ND	--	--	4.1
1,1,1-TRICHLOROETHANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	3.8
1,1,2-TRICHLOROETHANE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	5
TRICHLOROETHENE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	1.9
VINYL CHLORIDE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--	5
CIS-1,3 DICHLOROPROPENE	ug/l	624	ND	ND	ND	ND	--	--	--	--	--	--	5
BENZENE	ug/l	624	ND	ND	ND	ND	<0.3	<0.3	<0.3	ND	--	--	4.4
ETHYLBENZENE	ug/l	624	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	7.2
TOLUENE	ug/l	624	ND	ND	ND	ND	<0.3	<0.3	<0.3	ND	--	--	6

CITY OF SANTA ROSA
CHEMICAL MONITORING RESULTS FOR SANTA ROSA CREEK, WEST OF FULTON ROAD WINTER 1997-2000

METALS		TEST	1ST FLUSH	STORM I	STORM II	STORM III	STORM I	STORM II	STORM III	STORM I	STORM II	STORM III	REPORTING
CONSTITUENT	UNITS	METHOD	10/1-2/97	10/8-9/97	12/14/1997	4/3/1998	10/24/1998	1/30/1999	3/8/1999	10/28/1999	1/30/2000	4/13/2000	LIMITS
ANTIMONY (TOTAL)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1
ANTIMONY (DIS)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1
ARSENIC (TOTAL)	mg/l	7060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005
ARSENIC (DIS)	mg/l	7060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005
BERYLLIUM (TOTAL)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
BERYLLIUM (DIS)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
CADMIUM (TOTAL)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
CADMIUM (DIS)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
CHROMIUM (TOTAL)	mg/l	6010	ND	ND	ND	0.0037	ND	0.013	0.01	ND	0.0069	0.0073	0.02
CHROMIUM (DIS)	mg/l	6010	ND	ND	ND	ND	ND	ND	0.0026	ND	0.0024	0.0047	0.02
CHROMIUM 6+ (TOTAL)	mg/l	M-3500-C	ND	ND	ND	--	--	--	--	ND	ND	ND	0.005
CHROMIUM 6+ (DIS)	mg/l	M-3500-C	ND	ND	ND	--	--	--	--	ND	ND	ND	0.005
COPPER (TOTAL)	mg/l	6010	ND	ND	0.011	0.045	0.0063	ND	0.0054	0.0051	0.0029	ND	0.02
COPPER (DIS)	mg/l	6010	ND	ND	ND	0.0075	0.0082	ND	0.0048	0.0036	ND	ND	0.02
LEAD (TOTAL)	mg/l	7421	0.71	0.014	0.01	0.0075	ND	ND	0.0053	0.0039	ND	ND	0.002
LEAD (DIS)	mg/l	7421	ND	ND	ND	ND	ND	ND	ND	0.0028	ND	ND	0.002
MERCURY (TOTAL)	mg/l	7470	ND	ND	ND	ND	0.00021	ND	ND	ND	ND	ND	2E-04
MERCURY (DIS)	mg/l	7470	ND	ND	ND	ND	0.00023	ND	ND	ND	ND	ND	2E-04
NICKEL (TOTAL)	mg/l	6010	ND	ND	0.007	0.0052	0.0056	ND	0.013	0.0051	0.011	0.0023	0.05
NICKEL (DIS)	mg/l	6010	ND	ND	ND	ND	0.0043	ND	ND	0.0047	0.0026	0.007	0.05
SELENIUM (TOTAL)	mg/l	7740	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005
SELENIUM (DIS)	mg/l	7740	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005
SILVER (TOTAL)	mg/l	6010	ND	ND	ND	0.00024	ND	ND	ND	ND	ND	ND	0.02
SILVER (DIS)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
THALLIUM (TOTAL)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
THALLIUM (DIS)	mg/l	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
ZINC (TOTAL)	mg/l	6010	ND	0.065	0.091	0.046	0.016	0.047	0.025	0.023	0.025	0.026	0.05
ZINC (DIS)	mg/l	6010	ND	ND	0.057	ND	ND	0.014	0.018	ND	ND	0.023	0.05

CITY OF SANTA ROSA
CHEMICAL MONITORING RESULTS FOR SANTA ROSA CREEK, WEST OF FULTON ROAD WINTER 1997-2000

METHOD 625 - SEMI-VOLATILES		TEST	1ST FLUSH	STORM I	STORM II	STORM III	STORM I	STORM II	STORM III	STORM I	STORM II	STORM III	REPORTING
CONSTITUENT	UNITS	METHOD	10/1-2/97	10/8-9/97	12/14/1997	4/3/1998	10/24/1998	1/30/1999	3/8/1999	10/28/1999	1/30/2000	4/13/2000	LIMITS
ACENAPHTHENE	ug/l	625	ND	ND	ND	ND	--	<0.2	<0.2	--	--	--	1.9
ACENAPHTHYLENE	ug/l	625	ND	ND	ND	ND	--	<0.2	<0.2	--	--	--	3.5
ANTHRACENE	ug/l	625	ND	ND	ND	ND	<0.3	<0.2	<0.2	--	--	--	1.9
BENZO(a)ANTHRACENE	ug/l	625	ND	ND	ND	ND	<0.5	<0.2	<0.2	--	--	--	7.8
BENZO(a)PYRENE	ug/l	625	ND	ND	ND	ND		<0.2	<0.2	--	--	--	2.5
BENZO(b)FLUORANTHENE	ug/l	625	ND	ND	ND	ND	<0.5	<0.2	<0.2	--	--	--	2.5
BENZO(ghi)PERYLENE	ug/l	625	ND	ND	ND	ND	<0.5	<0.2	<0.2	--	--	--	4.1
BENZO(k)FLOURANTHENE	ug/l	625	ND	ND	ND	ND		<0.2	<0.2	--	--	--	2.5
BENZIDINE	ug/l	625	ND	ND	ND	ND	<0.5	<50	<0.21	--	--	--	44
BIS(2-CHLOROETHOXY)METHANE	ug/l	625	ND	ND	ND	ND	<0.5	<10	<10	--	--	--	5.3
BIS(2-CHLOROETHYL)ETHER	ug/l	625	ND	ND	ND	ND	<0.5	<10	<10	--	--	--	5.7
BIS(2-CHLOROISOPROPYL)ETHER	ug/l	625	ND	ND	ND	ND	--	<10	<10	--	--	--	5.7
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	625	14	11	45	20	<0.5	<10	<10	--	--	--	2.5
BUTYLBENZYL PHTHALATE	ug/l	625	ND	ND	ND	ND	<0.5	<10	<10	--	--	--	2.5
CHRYSENE	ug/l	625	ND	ND	ND	ND	--	<0.2	<0.2	--	--	--	2.5
DI-N-BUTYL PHTHALATE	ug/l	625	ND	ND	ND	ND	<0.5	<10	<10	--	--	--	2.5
DI-N-OCTYL PHTHALATE	ug/l	625	ND	ND	ND	ND	<0.5	<10	<10	--	--	--	2.5
DIBENZO (a,h) ANTHRACENE	ug/l	625	ND	ND	ND	ND	<0.5	<0.2	<0.2	--	--	--	2.5
DIEHYLPHTHALATE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.9
DIMENTYL PHTHALATE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.6
FLUORANTHENE	ug/l	625	ND	ND	ND	ND	<10	<0.2	<0.2	--	--	--	2.2
FLUORENE	ug/l	625	ND	ND	ND	ND	<10	<0.2	<0.2	--	--	--	1.9
HEXACHLOROBENZENE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.9
HEXACHLOROBUTADIENE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	0.9
HEXACHLOROCYCLOPENTADIENE	ug/l	625	ND	--	ND	ND	<10	<50	<50	--	--	--	5
HEXACHLOROETHANE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.6
IDENO(1,2,3-CD)PYRENE	ug/l	625	ND	ND	ND	ND	<10	<0.2	<0.2	--	--	--	3.7
ISOPHORONE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	2.2
N-NITROSODI-N-PROPYLAMINE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	10
N-NITROSODIPHYENLAMINE	ug/l	625	ND	--	ND	ND	--	<10	<10	--	--	--	10
NAPHTHALENE	ug/l	625	ND	ND	ND	ND	<10	<0.2	<0.2	--	--	--	1.6
NITROBENZENE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.9
PHENANTHRENE	ug/l	625	ND	ND	ND	ND	<50	<0.2	<0.2	--	--	--	5.4
PYRENE	ug/l	625	ND	ND	ND	ND	<10	<0.2	<0.2	--	--	--	1.9
1,2,4-TRYCHLOROBENZENE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.9
2-CHLORONAPHTHALENE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.9
4-CHLOROPHENYL PHENYL ETHER	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	4.2
3,3-DICHLOROBENZIDINE	ug/l	625	ND	ND	ND	ND	<20	<20	<20	--	--	--	17
2,4-DINITROTOLUENE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	5.7
2,6-DINITROTOLUENE	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.9
1,2-DIPHENYLHYDRAZINE			no results on this for all samples				--	<10	<10	--	--	--	
4-BROMOPHENYL PHENYL ETHER	ug/l	625	ND	ND	ND	ND	<10	<10	<10	--	--	--	1.9
N-NITROSODIMETHYLAMINE	ug/l	625	ND	--	ND	--	--	<10	<10	--	--	--	10

PHENOL	ug/l	625	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	1.5	
2-CHLOROPHENOL	ug/l	625	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	3.3	
2-NITROPHENOL	ug/l	625	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	3.6	
2,4-DIMENTHYLPHENOL	ug/l	625	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	2.7	
2,4-DICHLOROPHENOL	ug/l	625	ND	ND	ND	ND	<0.5	<0.5	<0.5	ND	--	--	2.7	
P-CHLORO-M-CRESOL	ug/l	625	ND	ND	ND	ND	<0.5	<0.5	<0.5	--	--	--		
2,4,6-TRICHLOROPHENOL	ug/l	625	ND	ND	ND	ND	<0.5	<2.0	<0.5	ND	--	--	2.7	
2,4-DINITROPHENOL	ug/l	625	ND	ND	ND	ND	<13.0	<13.0	<13.0	ND	--	--	42	
4-NITROPHENOL	ug/l	625	ND	ND	ND	ND	<2.90	<2.90	<2.90	ND	--	--	2.4	
4,6-DINITRO-O-CRESOL	ug/l	625	ND	ND	ND	ND	<16	<16	<16	--	--	--		
PENTACHLOROPHENOL	ug/l	625	ND	ND	ND	ND	<7.40	<7.40	<7.40	ND	--	--	3.6	
1,2-DICHLOROBENZENE	ug/l	625	ND	ND	ND	ND	--	--	--	--	--	--	1.9	
1,3-DICHLOROBENZENE	ug/l	625	ND	ND	ND	ND	--	--	--	--	--	--	1.9	
1,4-DICHLOROBENZENE	ug/l	625	ND	ND	ND	ND	--	--	--	--	--	--	4.4	

CITY OF SANTA ROSA
CHEMICAL MONITORING RESULTS FOR SANTA ROSA CREEK, WEST OF FULTON ROAD WINTER 1997-2000

METHOD 608 - PESTICIDES		TEST	1ST FLUSH	STORM I	STORM II	STORM III	STORM I	STORM II	STORM III	STORM I	STORM II	STORM III	REPORTING
CONSTITUENT	UNITS	METHOD	10/1-2/97	10/8-9/97	12/14/1997	4/3/1998	10/24/1998	1/30/1999	3/8/1999	10/28/1999	1/30/2000	4/13/2000	LIMITS
ALDRIN	ug/l	608	ND	ND	ND	ND	<0.05	<0.01	<0.01	ND	--	--	0.02
ALPHA-BHC	ug/l	608	ND	ND	ND	ND	<0.05	<0.01	<0.01	ND	--	--	0.05
BETA-BHC	ug/l	608	ND	ND	ND	ND	<0.25	<0.05	<0.05	ND	--	--	0.05
DELTA-BHC	ug/l	608	ND	ND	ND	ND	<0.25	<0.05	<0.05	ND	--	--	0.02
GAMMA-BHC (LINDANE)	ug/l	608	ND	ND	ND	ND	<0.05	<0.01	<0.01	ND	--	--	0.05
CHLORDANE	ug/l	608	ND	ND	ND	ND	<0.25	<0.05	<0.05	ND	--	--	0.4
4,4-DDD	ug/l	608	ND	ND	ND	ND	<0.1	<0.02	<0.02	ND	--	--	0.05
4,4-DDE	ug/l	608	ND	ND	ND	ND	<0.1	<0.02	<0.02	ND	--	--	0.05
4,4-DDT	ug/l	608	ND	ND	ND	ND	<0.1	<0.02	<0.02	ND	--	--	0.05
DIELDRIN	ug/l	608	ND	ND	ND	ND	<0.25	<0.05	<0.05	ND	--	--	0.05
ALPHA-ENDOSULFAN (ENDOSULFAN I)	ug/l	608	ND	ND	ND	ND	<0.05	<0.01	<0.01	ND	--	--	0.05
BETA-ENDOSULFAN (ENDOSULFAN II)	ug/l	608	ND	ND	ND	ND	<0.1	<0.02	<0.02	ND	--	--	0.05
ENDOSULFAN SULFATE	ug/l	608	ND	ND	ND	ND	<0.25	<0.05	<0.05	ND	--	--	0.05
ENDRIN	ug/l	608	ND	ND	ND	ND	<0.05	<0.01	<0.01	ND	--	--	0.05
ENDRIN ALDEHYDE	ug/l	608	ND	ND	ND	ND	<0.25	<0.05	<0.05	ND	--	--	0.05
HEPTACHLOR	ug/l	608	ND	ND	ND	ND	<0.1	<0.02	<0.02	ND	--	--	0.05
HEPTACHLOR EPOXIDE	ug/l	608	ND	ND	ND	ND	<0.1	<0.02	<0.02	ND	--	--	0.05
TOXAPHENE	ug/l	608	ND	ND	ND	ND	<2.5	<0.5	<0.5	ND	--	--	1
PCB1016	ug/l	608	ND	ND	ND	ND	<1	<0.2	<0.2	ND	--	--	0.5
PCB1221	ug/l	608	ND	ND	ND	ND	<1	<0.2	<0.2	ND	--	--	1
PCB1232	ug/l	608	ND	ND	ND	ND	<1	<0.2	<0.2	ND	--	--	0.5
PCB1242	ug/l	608	ND	ND	ND	ND	<1	<0.2	<0.2	ND	--	--	0.6
PCB1248	ug/l	608	ND	ND	ND	ND	<1	<0.2	<0.2	ND	--	--	0.5
PCB1254	ug/l	608	ND	ND	ND	ND	<1	<0.2	<0.2	ND	--	--	0.5
PCB1260	ug/l	608	ND	ND	ND	ND	<1	<0.2	<0.2	ND	--	--	0.5

1998 High School Sample Data

Sample ID #	98-R-03-01
Watershed	Santa Rosa Basin
Stream	Paulin Crk
Sample Date	4/28/98
Sample Time	9:30
Sample Crew	Ridgway HS
Water Temperature (C)	15
Subsample Date	May-98
Subsample Crew	Ridgway HS
# of Grids Used	2
Partial Grid (Y/N)	Y
ID Date	May-98
ID'er	Ridgway HS
Riffle Length (ft)	7
Transect Mark (ft)	6
Instream Cover	5
Epifaunal Substrate	9
Embeddedness	11
Channel Alteration	13
Sediment Deposition	9
Riffle Frequency	13
Channel Flow	7
Bank Vegetation (L)	1
Bank Vegetation (R)	2
Bank Stability (L)	1
Bank Stability (R)	5
Riparian Zone (L)	3
Riparian Zone (R)	1
TAXA RICHNESS	5
EPT TAXA	1
EPT INDEX	0.2
% DOMINANCE	32.9
TOLERANT TAXA	6.2
RELATIVE ABUNDANCE	1580
% SH	0
% SC	0
% C-G	47.4
% P	33.3
% F-C	19.2
% PI	0
Project Adviser	John Drew
Teacher	Kathy Vyanielo
# jars	1
# invertebrates	79
# unknowns	0
Total habitat score	80

Sample ID #	98-R-02-01
Watershed	Santa Rosa Basin
Stream	Paulin Crk
Sample Date	4/28/98
Sample Time	9:30
Sample Crew	Ridgway HS
Water Temperature (C)	15
Subsample Date	May-98
Subsample Crew	Ridgway HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	May-98
ID'er	Ridgway HS
Riffle Length (ft)	12
Transect Mark (ft)	9
Instream Cover	8
Epifaunal Substrate	17
Embeddedness	15
Channel Alteration	13
Sediment Deposition	8
Riffle Frequency	18
Channel Flow	7
Bank Vegetation (L)	3
Bank Vegetation (R)	1
Bank Stability (L)	4
Bank Stability (R)	4
Riparian Zone (L)	1
Riparian Zone (R)	1
TAXA RICHNESS	5
EPT TAXA	1
EPT INDEX	0.54
% DOMINANCE	53.8
TOLERANT TAXA	5.14
RELATIVE ABUNDANCE	>=1820
% SH	0
% SC	0
% C-G	60.2
% P	21.6
% F-C	18.2
% PI	0
Project Adviser	John Drew
Teacher	Kathy Vyanielo
# jars	1
# invertebrates	91
# unknowns	1
Total habitat score	100

Sample ID #	98-R-01-01
Watershed	Santa Rosa Basin
Stream	Paulin Crk
Sample Date	4/28/98
Sample Time	9:30
Sample Crew	Ridgway HS
Water Temperature (C)	15
Subsample Date	May-98
Subsample Crew	Ridgway HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	May-98
ID'er	Ridgway HS
Riffle Length (ft)	8
Transect Mark (ft)	3
Instream Cover	13
Epifaunal Substrate	11
Embeddedness	8
Channel Alteration	13
Sediment Deposition	12
Riffle Frequency	16
Channel Flow	8
Bank Vegetation (L)	5
Bank Vegetation (R)	1
Bank Stability (L)	9
Bank Stability (R)	7
Riparian Zone (L)	4
Riparian Zone (R)	1
TAXA RICHNESS	3
EPT TAXA	1
EPT INDEX	0.4
% DOMINANCE	58.3
TOLERANT TAXA	5.19
RELATIVE ABUNDANCE	>=1440
% SH	0
% SC	0
% C-G	98.6
% P	0
% F-C	1.4
% PI	0
Project Adviser	John Drew
Teacher	Kathy Vyanielo
# jars	1
# invertebrates	72
# unknowns	0
Total habitat score	108

Sample ID #	98-SR-03-02
Watershed	Santa Rosa Basin
Stream	Piner Crk
Sample Date	4/9/98
Sample Time	10:00
Sample Crew	Santa Rosa HS
Water Temperature (C)	14
Subsample Date	4/28/98
Subsample Crew	Santa Rosa HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	May-98
ID'er	Santa Rosa HS
Riffle Length (ft)	27
Transect Mark (ft)	24
Instream Cover	10
Epifaunal Substrate	13
Embeddedness	6
Channel Alteration	4
Sediment Deposition	4
Riffle Frequency	9
Channel Flow	10
Bank Vegetation (L)	4
Bank Vegetation (R)	3
Bank Stability (L)	7
Bank Stability (R)	6
Riparian Zone (L)	2
Riparian Zone (R)	1
TAXA RICHNESS	4
EPT TAXA	1
EPT INDEX	0.04
% DOMINANCE	82.5
TOLERANT TAXA	6.14
RELATIVE ABUNDANCE	>=1940
% SH	0
% SC	0
% C-G	86.6
% P	11.3
% F-C	2.1
% PI	0
Project Adviser	John Drew
Teacher	Elaine Bechler
# jars	1
# invertebrates	97
# unknowns	0
Total habitat score	79

Sample ID #	98-SR-03-01
Watershed	Santa Rosa Basin
Stream	Piner Crk
Sample Date	4/9/98
Sample Time	10:00
Sample Crew	Santa Rosa HS
Water Temperature (C)	14
Subsample Date	4/30/98
Subsample Crew	Santa Rosa HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	May-98
ID'er	Santa Rosa HS
Riffle Length (ft)	27
Transect Mark (ft)	6
Instream Cover	10
Epifaunal Substrate	13
Embeddedness	6
Channel Alteration	4
Sediment Deposition	4
Riffle Frequency	9
Channel Flow	10
Bank Vegetation (L)	4
Bank Vegetation (R)	3
Bank Stability (L)	7
Bank Stability (R)	6
Riparian Zone (L)	2
Riparian Zone (R)	1
TAXA RICHNESS	4
EPT TAXA	1
EPT INDEX	0.02
% DOMINANCE	95
TOLERANT TAXA	5.84
RELATIVE ABUNDANCE	>=2000
% SH	0
% SC	0
% C-G	97
% P	1
% F-C	2
% PI	0
Project Adviser	John Drew
Teacher	Elaine Bechler
# jars	1
# invertebrates	100
# unknowns	0
Total habitat score	79

Sample ID #	98-SR-02-02
Watershed	Santa Rosa Basin
Stream	Piner Crk
Sample Date	4/9/98
Sample Time	10:00
Sample Crew	Santa Rosa HS
Water Temperature (C)	14
Subsample Date	4/27/98
Subsample Crew	Santa Rosa HS
# of Grids Used	3
Partial Grid (Y/N)	Y
ID Date	5/1/98
ID'er	Santa Rosa HS
Riffle Length (ft)	16
Transect Mark (ft)	6
Instream Cover	11
Epifaunal Substrate	13
Embeddedness	15
Channel Alteration	13
Sediment Deposition	18
Riffle Frequency	16
Channel Flow	13
Bank Vegetation (L)	5
Bank Vegetation (R)	4
Bank Stability (L)	8
Bank Stability (R)	9
Riparian Zone (L)	3
Riparian Zone (R)	2
TAXA RICHNESS	4
EPT TAXA	1
EPT INDEX	0.04
% DOMINANCE	74.8
TOLERANT TAXA	5.89
RELATIVE ABUNDANCE	1260
% SH	0
% SC	0
% C-G	80.2
% P	0
% F-C	19.8
% PI	0
Project Adviser	John Drew
Teacher	Elaine Bechler
# jars	1
# invertebrates	103
# unknowns	2
Total habitat score	130

Sample ID #	98-SR-02-01
Watershed	Santa Rosa Basin
Stream	Piner Crk
Sample Date	4/9/98
Sample Time	10:00
Sample Crew	Santa Rosa HS
Water Temperature (C)	14
Subsample Date	4/28/98
Subsample Crew	Santa Rosa HS
# of Grids Used	2
Partial Grid (Y/N)	Y
ID Date	5/5/98
ID'er	Santa Rosa HS
Riffle Length (ft)	16
Transect Mark (ft)	9
Instream Cover	11
Epifaunal Substrate	13
Embeddedness	15
Channel Alteration	13
Sediment Deposition	18
Riffle Frequency	16
Channel Flow	13
Bank Vegetation (L)	5
Bank Vegetation (R)	4
Bank Stability (L)	9
Bank Stability (R)	8
Riparian Zone (L)	3
Riparian Zone (R)	2
TAXA RICHNESS	6
EPT TAXA	1
EPT INDEX	0.11
% DOMINANCE	53
TOLERANT TAXA	5.92
RELATIVE ABUNDANCE	1460
% SH	0
% SC	1
% C-G	66
% P	25
% F-C	8
% PI	0
Project Adviser	John Drew
Teacher	Elaine Bechler
# jars	2
# invertebrates	100
# unknowns	0
Total habitat score	130

Sample ID #	98-SR-01-03
Watershed	Santa Rosa Basin
Stream	Piner Crk
Sample Date	4/9/98
Sample Time	8:30
Sample Crew	Santa Rosa HS
Water Temperature (C)	14
Subsample Date	4/27/98
Subsample Crew	Santa Rosa HS
# of Grids Used	2
Partial Grid (Y/N)	Y
ID Date	5/7/98
ID'er	Santa Rosa HS
Riffle Length (ft)	49
Transect Mark (ft)	30
Instream Cover	8
Epifaunal Substrate	15
Embeddedness	18
Channel Alteration	13
Sediment Deposition	16
Riffle Frequency	10
Channel Flow	8
Bank Vegetation (L)	3
Bank Vegetation (R)	3
Bank Stability (L)	7
Bank Stability (R)	7
Riparian Zone (L)	3
Riparian Zone (R)	3
TAXA RICHNESS	5
EPT TAXA	1
EPT INDEX	0.02
% DOMINANCE	75.3
TOLERANT TAXA	6.34
RELATIVE ABUNDANCE	920
% SH	0
% SC	0
% C-G	78.5
% P	20.4
% F-C	1.1
% PI	0
Project Adviser	John Drew
Teacher	Elaine Bechler
# jars	1
# invertebrates	93
# unknowns	0
Total habitat score	114

Sample ID #	98-SR-01-02
Watershed	Santa Rosa Basin
Stream	Piner Crk
Sample Date	4/9/98
Sample Time	8:45
Sample Crew	Santa Rosa HS
Water Temperature (C)	13
Subsample Date	4/27/98
Subsample Crew	Santa Rosa HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	5/7/98
ID'er	Santa Rosa HS
Riffle Length (ft)	49
Transect Mark (ft)	36
Instream Cover	8
Epifaunal Substrate	15
Embeddedness	18
Channel Alteration	13
Sediment Deposition	19
Riffle Frequency	10
Channel Flow	8
Bank Vegetation (L)	3
Bank Vegetation (R)	3
Bank Stability (L)	7
Bank Stability (R)	7
Riparian Zone (L)	3
Riparian Zone (R)	3
TAXA RICHNESS	4
EPT TAXA	1
EPT INDEX	0.05
% DOMINANCE	80.6
TOLERANT TAXA	6.13
RELATIVE ABUNDANCE	>=1860
% SH	0
% SC	0
% C-G	87.1
% P	12.9
% F-C	0
% PI	0
Project Adviser	John Drew
Teacher	Elaine Bechler
# jars	1
# invertebrates	93
# unknowns	0
Total habitat score	117

Sample ID #	98-SR-01-01
Watershed	Santa Rosa Basin
Stream	Piner Crk
Sample Date	4/9/98
Sample Time	8:30
Sample Crew	Santa Rosa HS
Water Temperature (C)	14
Subsample Date	4/29/98
Subsample Crew	Santa Rosa HS
# of Grids Used	3
Partial Grid (Y/N)	Y
ID Date	5/6/98
ID'er	Santa Rosa HS
Riffle Length (ft)	49
Transect Mark (ft)	45
Instream Cover	8
Epifaunal Substrate	15
Embeddedness	18
Channel Alteration	13
Sediment Deposition	16
Riffle Frequency	10
Channel Flow	8
Bank Vegetation (L)	3
Bank Vegetation (R)	3
Bank Stability (L)	7
Bank Stability (R)	7
Riparian Zone (L)	3
Riparian Zone (R)	3
TAXA RICHNESS	6
EPT TAXA	1
EPT INDEX	0.01
% DOMINANCE	89.9
TOLERANT TAXA	6.1
RELATIVE ABUNDANCE	700
% SH	0
% SC	0
% C-G	92.9
% P	5.1
% F-C	2
% PI	0
Project Adviser	John Drew
Teacher	Elaine Bechler
# jars	1
# invertebrates	99
# unknowns	1
Total habitat score	114

Sample ID #	98-P-01-03
Watershed	Santa Rosa Basin
Stream	Peterson Crk
Sample Date	4/8/98
Sample Time	13:10
Sample Crew	Piner HS
Water Temperature (C)	15
Subsample Date	5/11/98
Subsample Crew	Piner HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	5/12/98
ID'er	Piner HS
Riffle Length (ft)	18
Transect Mark (ft)	3
Instream Cover	11
Epifaunal Substrate	12
Embeddedness	9
Channel Alteration	16
Sediment Deposition	7
Riffle Frequency	5
Channel Flow	6
Bank Vegetation (L)	9
Bank Vegetation (R)	9
Bank Stability (L)	2
Bank Stability (R)	2
Riparian Zone (L)	8
Riparian Zone (R)	7
TAXA RICHNESS	4
EPT TAXA	0
EPT INDEX	0
% DOMINANCE	64.8
TOLERANT TAXA	7.29
RELATIVE ABUNDANCE	>=2100
% SH	0
% SC	0
% C-G	34.6
% P	65.4
% F-C	0
% PI	0
Project Adviser	John Drew
Teacher	Terry Thane
# jars	1
# invertebrates	105
# unknowns	0
Total habitat score	103

Sample ID #	98-P-01-02
Watershed	Santa Rosa Basin
Stream	Peterson Crk
Sample Date	4/8/98
Sample Time	12:30
Sample Crew	Piner HS
Water Temperature (C)	15
Subsample Date	5/6/98
Subsample Crew	Piner HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	5/13/98
ID'er	Piner HS
Riffle Length (ft)	18
Transect Mark (ft)	9
Instream Cover	10
Epifaunal Substrate	12
Embeddedness	9
Channel Alteration	15
Sediment Deposition	7
Riffle Frequency	4
Channel Flow	6
Bank Vegetation (L)	9
Bank Vegetation (R)	9
Bank Stability (L)	2
Bank Stability (R)	2
Riparian Zone (L)	8
Riparian Zone (R)	7
TAXA RICHNESS	2
EPT TAXA	0
EPT INDEX	0
% DOMINANCE	75.4
TOLERANT TAXA	7.51
RELATIVE ABUNDANCE	>=2280
% SH	0
% SC	0
% C-G	24.6
% P	75.4
% F-C	0
% PI	0
Project Adviser	John Drew
Teacher	Terry Thane
# jars	1
# invertebrates	114
# unknowns	0
Total habitat score	100

Sample ID #	98-P-01-01
Watershed	Santa Rosa Basin
Stream	Peterson Crk
Sample Date	4/8/98
Sample Time	12:30
Sample Crew	Piner HS
Water Temperature (C)	15
Subsample Date	5/6/98
Subsample Crew	Piner HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	5/13/98
ID'er	Piner HS
Riffle Length (ft)	18
Transect Mark (ft)	15
Instream Cover	11
Epifaunal Substrate	12
Embeddedness	9
Channel Alteration	15
Sediment Deposition	7
Riffle Frequency	5
Channel Flow	6
Bank Vegetation (L)	9
Bank Vegetation (R)	9
Bank Stability (L)	2
Bank Stability (R)	2
Riparian Zone (L)	8
Riparian Zone (R)	7
TAXA RICHNESS	3
EPT TAXA	0
EPT INDEX	0
% DOMINANCE	59.6
TOLERANT TAXA	7.2
RELATIVE ABUNDANCE	>= 2080
% SH	0
% SC	0
% C-G	39.8
% P	60.2
% F-C	0
% PI	0
Project Adviser	John Drew
Teacher	Terry Thane
# jars	1
# invertebrates	104
# unknowns	0
Total habitat score	102

Sample ID #	98-EA-03-02
Watershed	Santa Rosa Basin
Stream	Colgan Crk
Sample Date	4/7/98
Sample Time	11:00
Sample Crew	Elsie Allen HS
Water Temperature (C)	14
Subsample Date	5/5/98
Subsample Crew	Elsie Allen HS
# of Grids Used	2
Partial Grid (Y/N)	Y
ID Date	5/12/98
ID'er	Elsie Allen HS
Riffle Length (ft)	19
Transect Mark (ft)	18
Instream Cover	5
Epifaunal Substrate	12
Embeddedness	11
Channel Alteration	3
Sediment Deposition	8
Riffle Frequency	1
Channel Flow	3
Bank Vegetation (L)	4
Bank Vegetation (R)	4
Bank Stability (L)	3
Bank Stability (R)	3
Riparian Zone (L)	2
Riparian Zone (R)	2
TAXA RICHNESS	6
EPT TAXA	2
EPT INDEX	0.05
% DOMINANCE	66.3
TOLERANT TAXA	6.29
RELATIVE ABUNDANCE	1000
% SH	0
% SC	1.1
% C-G	73.7
% P	24.2
% F-C	0
% PI	0
Project Adviser	John Drew
Teacher	Brenda Brown
# jars	1
# invertebrates	95
# unknowns	0
Total habitat score	61

Sample ID #	98-EA-03-01
Watershed	Santa Rosa Basin
Stream	Colgan Crk
Sample Date	4/7/98
Sample Time	11:00
Sample Crew	Elsie Allen HS
Water Temperature (C)	14
Subsample Date	5/5/98
Subsample Crew	Elsie Allen HS
# of Grids Used	2
Partial Grid (Y/N)	Y
ID Date	5/12/98
ID'er	Elsie Allen HS
Riffle Length (ft)	19
Transect Mark (ft)	6
Instream Cover	5
Epifaunal Substrate	11
Embeddedness	11
Channel Alteration	3
Sediment Deposition	8
Riffle Frequency	1
Channel Flow	3
Bank Vegetation (L)	4
Bank Vegetation (R)	4
Bank Stability (L)	3
Bank Stability (R)	3
Riparian Zone (L)	2
Riparian Zone (R)	2
TAXA RICHNESS	4
EPT TAXA	0
EPT INDEX	0
% DOMINANCE	53%
TOLERANT TAXA	6.82
RELATIVE ABUNDANCE	1500
% SH	0
% SC	0
% C-G	55.6
% P	44.4
% F-C	0
% PI	0
Project Adviser	John Drew
Teacher	Brenda Brown
# jars	1
# invertebrates	90
# unknowns	0
Total habitat score	60

Sample ID #	98-EA-02-02
Watershed	Santa Rosa Basin
Stream	Colgan Crk
Sample Date	4/7/98
Sample Time	11:00
Sample Crew	Elsie Allen HS
Water Temperature (C)	14
Subsample Date	5/5/98
Subsample Crew	Elsie Allen HS
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	5/12/98
ID'er	Elsie Allen HS
Riffle Length (ft)	14
Transect Mark (ft)	9
Instream Cover	6
Epifaunal Substrate	13
Embeddedness	9
Channel Alteration	11
Sediment Deposition	4
Riffle Frequency	2
Channel Flow	5
Bank Vegetation (L)	5
Bank Vegetation (R)	5
Bank Stability (L)	4
Bank Stability (R)	4
Riparian Zone (L)	5
Riparian Zone (R)	5
TAXA RICHNESS	5
EPT TAXA	1
EPT INDEX	0.2
% DOMINANCE	37%
TOLERANT TAXA	6.31
RELATIVE ABUNDANCE	1880
% SH	0
% SC	1
% C-G	54.3
% P	37.2
% F-C	8.5
% PI	0
Project Adviser	John Drew
Teacher	Brenda Brown
# jars	1
# invertebrates	94
# unknowns	0
Total habitat score	78

Sample ID #	98-EA-02-01
Watershed	Santa Rosa Basin
Stream	Colgan Crk
Sample Date	4/7/98
Sample Time	11:00
Sample Crew	Elsie Allen HS
Water Temperature (C)	14
Subsample Date	5/5/98
Subsample Crew	Elsie Allen HS
# of Grids Used	3
Partial Grid (Y/N)	Y
ID Date	5/12/98
ID'er	Elsie Allen HS
Riffle Length (ft)	14
Transect Mark (ft)	3
Instream Cover	6
Epifaunal Substrate	13
Embeddedness	9
Channel Alteration	11
Sediment Deposition	4
Riffle Frequency	2
Channel Flow	5
Bank Vegetation (L)	5
Bank Vegetation (R)	5
Bank Stability (L)	4
Bank Stability (R)	4
Riparian Zone (L)	5
Riparian Zone (R)	5
TAXA RICHNESS	4
EPT TAXA	1
EPT INDEX	0.09
% DOMINANCE	43.6
TOLERANT TAXA	6.45
RELATIVE ABUNDANCE	>=1000
% SH	0
% SC	0
% C-G	60.4
% P	39.6
% F-C	0
% PI	0
Project Adviser	John Drew
Teacher	Brenda Brown
#jars	1
# invertebrates	101
# unknowns	0
Total habitat score	78

Sample ID #	98-EA-01-01
Watershed	Santa Rosa Basin
Stream	Colgan Crk
Sample Date	4/7/98
Sample Time	11:00
Sample Crew	Elsie Allen HS
Water Temperature (C)	14
Subsample Date	
Subsample Crew	
# of Grids Used	
Partial Grid (Y/N)	
ID Date	
ID'er	
Riffle Length (ft)	
Transect Mark (ft)	
Instream Cover	7
Epifaunal Substrate	10
Embeddedness	11
Channel Alteration	3
Sediment Deposition	7
Riffle Frequency	11
Channel Flow	6
Bank Vegetation (L)	6
Bank Vegetation (R)	6
Bank Stability (L)	4
Bank Stability (R)	4
Riparian Zone (L)	3
Riparian Zone (R)	3
TAXA RICHNESS	
EPT TAXA	
EPT INDEX	
% DOMINANCE	
TOLERANT TAXA	
RELATIVE ABUNDANCE	
% SH	
% SC	
% C-G	
% P	
% F-C	
% PI	
Project Adviser	John Drew
Teacher	Brenda Brown
# jars	3
# invertebrates	
# unknowns	
Total habitat score	81

Sample ID #	98-MC-03-02
Watershed	Santa Rosa Basin
Stream	Brush Crk
Sample Date	4/6/98
Sample Time	8:45
Sample Crew	Maria Carrillo HS
Water Temperature (C)	11
Subsample Date	5/11/98
Subsample Crew	Maria Carrillo HS
# of Grids Used	11
Partial Grid (Y/N)	
ID Date	5/18/98
ID'er	Maria Carrillo HS
Riffle Length (ft)	53
Transect Mark (ft)	12
Instream Cover	16
Epifaunal Substrate	9
Embeddedness	10
Channel Alteration	10
Sediment Deposition	11
Riffle Frequency	15
Channel Flow	13
Bank Vegetation (L)	10
Bank Vegetation (R)	10
Bank Stability (L)	7
Bank Stability (R)	7
Riparian Zone (L)	4
Riparian Zone (R)	4
TAXA RICHNESS	6
EPT TAXA	3
EPT INDEX	0.21
% DOMINANCE	61.7
TOLERANT TAXA	5.53
RELATIVE ABUNDANCE	180
% SH	0
% SC	1.3
% C-G	83.3
% P	1.3
% F-C	12.8
% PI	1.3
Project Adviser	John Drew
Teacher	Dennis Lang
# jars	3
# invertebrates	81
# unknowns	3
Total habitat score	126

Sample ID #	98-MC-03-01
Watershed	Santa Rosa Basin
Stream	Brush Crk
Sample Date	4/6/98
Sample Time	8:45
Sample Crew	Maria Carrillo HS
Water Temperature (C)	11
Subsample Date	5/11/98
Subsample Crew	Maria Carrillo HS
# of Grids Used	12
Partial Grid (Y/N)	N
ID Date	5/18/98
ID'er	Maria Carrillo HS
Riffle Length (ft)	53
Transect Mark (ft)	15
Instream Cover	16
Epifaunal Substrate	8
Embeddedness	10
Channel Alteration	12
Sediment Deposition	11
Riffle Frequency	15
Channel Flow	14
Bank Vegetation (L)	10
Bank Vegetation (R)	10
Bank Stability (L)	6
Bank Stability (R)	6
Riparian Zone (L)	4
Riparian Zone (R)	4
TAXA RICHNESS	10
EPT TAXA	2
EPT INDEX	0.11
% DOMINANCE	52.40%
TOLERANT TAXA	5.9
RELATIVE ABUNDANCE	105
% SH	1.6
% SC	0
% C-G	33.3
% P	11.1
% F-C	52.4
% PI	1.6
Project Adviser	John Drew
Teacher	Dennis Lang
# jars	1
# invertebrates	63
# unknowns	0
Total habitat score	126

Sample ID #	98-MC-02-02
Watershed	Santa Rosa Basin
Stream	Brush Crk
Sample Date	4/6/98
Sample Time	8:45
Sample Crew	Maria Carrillo HS
Water Temperature (C)	11
Subsample Date	4/28/98
Subsample Crew	Maria Carrillo HS
# of Grids Used	4
Partial Grid (Y/N)	
ID Date	5/11/98
ID'er	Maria Carrillo HS
Riffle Length (ft)	52
Transect Mark (ft)	17
Instream Cover	9
Epifaunal Substrate	10
Embeddedness	10
Channel Alteration	9
Sediment Deposition	15
Riffle Frequency	13
Channel Flow	16
Bank Vegetation (L)	9
Bank Vegetation (R)	10
Bank Stability (L)	8
Bank Stability (R)	7
Riparian Zone (L)	4
Riparian Zone (R)	2
TAXA RICHNESS	5
EPT TAXA	2
EPT INDEX	0.28
% DOMINANCE	33.70%
TOLERANT TAXA	5.52
RELATIVE ABUNDANCE	1200
% SH	0
% SC	1.1
% C-G	58.5
% P	6.4
% F-C	34
% PI	0
Project Adviser	John Drew
Teacher	Dennis Lang
# jars	2
# invertebrates	95
# unknowns	1
Total habitat score	122

Sample ID #	98-MC-02-01
Watershed	Santa Rosa Basin
Stream	Brush Crk
Sample Date	4/6/98
Sample Time	8:45
Sample Crew	Maria Carrillo HS
Water Temperature (C)	11
Subsample Date	5/11/98
Subsample Crew	Maria Carrillo HS
# of Grids Used	4
Partial Grid (Y/N)	Y
ID Date	5/18/98
ID'er	Maria Carrillo HS
Riffle Length (ft)	52
Transect Mark (ft)	27
Instream Cover	9
Epifaunal Substrate	10
Embeddedness	10
Channel Alteration	8
Sediment Deposition	15
Riffle Frequency	13
Channel Flow	19
Bank Vegetation (L)	9
Bank Vegetation (R)	10
Bank Stability (L)	5
Bank Stability (R)	4
Riparian Zone (L)	4
Riparian Zone (R)	2
TAXA RICHNESS	7
EPT TAXA	2
EPT INDEX	0.23
% DOMINANCE	43.4
TOLERANT TAXA	6.16
RELATIVE ABUNDANCE	470
% SH	0
% SC	0
% C-G	67.1
% P	26.8
% F-C	6.1
% PI	0
Project Adviser	John Drew
Teacher	Dennis Lang
# jars	2
# invertebrates	83
# unknowns	1
Total habitat score	118

Sample ID #	98-MC-01-02
Watershed	Santa Rosa Basin
Stream	Brush Crk
Sample Date	4/6/98
Sample Time	8:45
Sample Crew	Maria Carrillo HS
Water Temperature (C)	11
Subsample Date	4/27/98
Subsample Crew	Maria Carrillo HS
# of Grids Used	5
Partial Grid (Y/N)	Y
ID Date	5/18/98
ID'er	Maria Carrillo HS
Riffle Length (ft)	41
Transect Mark (ft)	
Instream Cover	15
Epifaunal Substrate	11
Embeddedness	13
Channel Alteration	15
Sediment Deposition	15
Riffle Frequency	20
Channel Flow	17
Bank Vegetation (L)	5
Bank Vegetation (R)	2
Bank Stability (L)	8
Bank Stability (R)	8
Riparian Zone (L)	10
Riparian Zone (R)	4
TAXA RICHNESS	4
EPT TAXA	1
EPT INDEX	0.18
% DOMINANCE	40.2
TOLERANT TAXA	6.3
RELATIVE ABUNDANCE	475
% SH	0
% SC	0
% C-G	60
% P	33.8
% F-C	6.2
% PI	0
Project Adviser	John Drew
Teacher	Dennis Lang
# jars	1
# invertebrates	82
# unknowns	2
Total habitat score	143

Sample ID #	98-MC-01-01
Watershed	Santa Rosa Basin
Stream	Brush Crk
Sample Date	4/6/98
Sample Time	8:45
Sample Crew	Maria Carrillo HS
Water Temperature (C)	11
Subsample Date	4/27/98
Subsample Crew	Maria Carrillo HS
# of Grids Used	3
Partial Grid (Y/N)	Y
ID Date	May-98
ID'er	Maria Carrillo HS
Riffle Length (ft)	18
Transect Mark (ft)	
Instream Cover	11
Epifaunal Substrate	8
Embeddedness	7
Channel Alteration	11
Sediment Deposition	9
Riffle Frequency	8
Channel Flow	17
Bank Vegetation (L)	5
Bank Vegetation (R)	5
Bank Stability (L)	7
Bank Stability (R)	8
Riparian Zone (L)	9
Riparian Zone (R)	9
TAXA RICHNESS	5
EPT TAXA	1
EPT INDEX	0.28
% DOMINANCE	40.00%
TOLERANT TAXA	5.63
RELATIVE ABUNDANCE	430
% SH	0
% SC	0
% C-G	70.8
% P	10.4
% F-C	18.8
% PI	0
Project Adviser	John Drew
Teacher	Dennis Lang
# jars	2
# invertebrates	50
# unknowns	2
Total habitat score	114

Sample ID #	98-M-01-02
Watershed	Santa Rosa Basin
Stream	Matanzas Crk
Sample Date	4/2/98
Sample Time	1030
Sample Crew	Montgomery HS
Water Temperature (C)	12
Subsample Date	5/4/98
Subsample Crew	Montgomery HS
# of Grids Used	3
Partial Grid (Y/N)	Y
ID Date	5/18/98
ID'er	Montgomery HS
Riffle Length (ft)	13
Transect Mark (ft)	9
Instream Cover	8
Epifaunal Substrate	10
Embeddedness	18
Channel Alteration	12
Sediment Deposition	11
Riffle Frequency	10
Channel Flow	10
Bank Vegetation (L)	6
Bank Vegetation (R)	2
Bank Stability (L)	5
Bank Stability (R)	10
Riparian Zone (L)	6
Riparian Zone (R)	3
TAXA RICHNESS	6
EPT TAXA	3
EPT INDEX	0.73
% DOMINANCE	42%
TOLERANT TAXA	3.26
RELATIVE ABUNDANCE	640
% SH	0
% SC	44.2
% C-G	37.7
% P	2.6
% F-C	15.6
% PI	0
Project Adviser	John Drew
Teacher	D. Tinkelenberg
# jars	1
# invertebrates	79
# unknowns	2
Total habitat score	111

Sample ID #	98-M-01-01
Watershed	SANTA ROSA BASIN
Stream	MATANZAS CRK
Sample Date	4/2/98
Sample Time	1030
Sample Crew	MONTGOMERY HS
Water Temperature (C)	12
Subsample Date	5/4/98
Subsample Crew	MONTGOMERY HS
# of Grids Used	3
Partial Grid (Y/N)	Y
ID Date	5/11/98
ID'er	MONTGOMERY HS
Riffle Length (ft)	13
Transect Mark (ft)	11
Instream Cover	10
Epifaunal Substrate	10
Embeddedness	18
Channel Alteration	12
Sediment Deposition	11
Riffle Frequency	10
Channel Flow	9
Bank Vegetation (L)	6
Bank Vegetation (R)	2
Bank Stability (L)	5
Bank Stability (R)	10
Riparian Zone (L)	6
Riparian Zone (R)	3
TAXA RICHNESS	8
EPT TAXA	5
EPT INDEX	0.89
% DOMINANCE	59%
TOLERANT TAXA	3.49
RELATIVE ABUNDANCE	610
% SH	0
% SC	28.4
% C-G	62.4
% P	2.8
% F-C	6.4
% PI	0
Project Adviser	John Drew
Teacher	D. Tinkelenberg
# jars	1
# invertebrates	109
# unknowns	0
Total habitat score	112

Sample ID #	95-SCWA-04
Watershed	SANTA ROSA BASIN
Stream	SNATA ROSA CRK
Sample Date	10/11/95
Sample Time	
Sample Crew	SCWA
Water Temperature (C)	
Subsample Date	1/13/97
Subsample Crew	COSENTINO
# of Grids Used	2
Partial Grid (Y/N)	Y
ID Date	3/30/97
ID'er	COSENTINO
Riffle Length (ft)	
Transect Mark (ft)	
Instream Cover	6
Epifaunal Substrate	19
Embeddedness	9
Channel Alteration	16
Sediment Deposition	17
Riffle Frequency	9
Channel Flow	13
Bank Vegetation (L)	9.5
Bank Vegetation (R)	9.5
Bank Stability (L)	7
Bank Stability (R)	7
Riparian Zone (L)	6.5
Riparian Zone (R)	6.5
TAXA RICHNESS	16
EPT TAXA	7
EPT INDEX	0.53
% DOMINANCE	31.3%
TOLERANT TAXA	4.38
RELATIVE ABUNDANCE	5640
% SH	8.0
% SC	0.0
% C-G	54.8
% P	5.4
% F-C	31.8
% PI	0.0
Project Adviser	
Teacher	
# jars	
# invertebrates	304
# unknowns	0
Total habitat score	135

Sample ID #	95-SCWA-05
Watershed	SANTA ROSA BASIN
Stream	SNATA ROSA CRK
Sample Date	10/11/95
Sample Time	
Sample Crew	SCWA
Water Temperature (C)	
Subsample Date	1/13/97
Subsample Crew	COSENTINO
# of Grids Used	1
Partial Grid (Y/N)	Y
ID Date	3/30/97
ID'er	COSENTINO
Riffle Length (ft)	
Transect Mark (ft)	
Instream Cover	6
Epifaunal Substrate	12
Embeddedness	8
Channel Alteration	16
Sediment Deposition	14
Riffle Frequency	16
Channel Flow	13
Bank Vegetation (L)	9
Bank Vegetation (R)	9
Bank Stability (L)	8.5
Bank Stability (R)	8.5
Riparian Zone (L)	7
Riparian Zone (R)	7
TAXA RICHNESS	13
EPT TAXA	8
EPT INDEX	0.73
% DOMINANCE	50.9%
TOLERANT TAXA	3.94
RELATIVE ABUNDANCE	7680
% SH	11.5
% SC	0.0
% C-G	32.9
% P	3.0
% F-C	52.7
% PI	0.0
Project Adviser	
Teacher	
# jars	
# invertebrates	306
# unknowns	0
Total habitat score	134

Sample ID #	95-SCWA-06
Watershed	SANTA ROSA BASIN
Stream	SNATA ROSA CRK
Sample Date	10/11/95
Sample Time	
Sample Crew	SCWA
Water Temperature (C)	
Subsample Date	1/16/97
Subsample Crew	COSENTINO
# of Grids Used	2
Partial Grid (Y/N)	Y
ID Date	3/30/97
ID'er	COSENTINO
Riffle Length (ft)	
Transect Mark (ft)	
Instream Cover	2
Epifaunal Substrate	16
Embeddedness	6
Channel Alteration	16
Sediment Deposition	12
Riffle Frequency	10
Channel Flow	18
Bank Vegetation (L)	7
Bank Vegetation (R)	7
Bank Stability (L)	8
Bank Stability (R)	8
Riparian Zone (L)	7
Riparian Zone (R)	7
TAXA RICHNESS	13
EPT TAXA	7
EPT INDEX	0.69
% DOMINANCE	49.7%
TOLERANT TAXA	4.18
RELATIVE ABUNDANCE	5880
% SH	4.0
% SC	0.0
% C-G	35.8
% P	8.4
% F-C	51.3
% PI	0.0
Project Adviser	
Teacher	
# jars	
# invertebrates	302
# unknowns	0
Total habitat score	124

1999 High School Sample Data

	Matanzas Creek			MHS Data	
Metrics:	99MHS0101	0102	0103	Avg.	Std. Dev.
TAXA RICHNESS	12	11	11	11.3	0.6
EPT TAXA	8	7	8	7.7	0.6
EPT INDEX	0.56	0.66	0.77	0.66	0.10
% DOMINANCE	25	39	22	28.7	9.1
TOLERANT TAXA	5.65	3.27	3.64	4.19	1.3
REL. ABUNDANCE	1820	1880	2040	1913	114
%SH:	0	0	0	0.0	0.00
%SC	15	59	61	45.0	26.00
%CG *	57	31	32	40.0	14.73
%P	0	0	2	0.7	1.15
%FC	23	2.1	0	8.4	12.72

*Note: All Piercers were added to the Collector-Gatherer category, for consistency and comparison with professional results. The Piercers found (1 in 0101, 1 in 0102) were the Caddisfly Hydroptilidae.

Habitat Assessment:	0101	0102	0103	Avg.	Stdev.
Instream cover	5	3	4	4	1.0
Embeddedness	14	13	12	13	1.0
Velocity/depth	14	14	14	14	0.0
sediment depos.	15	15	15	15	0.0
channel flow	8	7	7	7	0.6
channel alter.	5	8	6	6	1.5
freq. Riffles	12	11	13	12	1.0
Bank stab. L	5	5	4	5	0.6
Bank stab. R	10	10	10	10	0.0
Vegetat. Prot. L	6	6	7	6	0.6
Vegetat. Prot. R	0	0	0	0	0.0
Riparian width L	4	4	4	4	0.0
Riparian width R	0	1	0	0	0.6
Total Habitat Score:				97	

Matanzas Creek Sampling Data

Sample ID #	**99-MHS-0101**	**99-MHS-0102**	**99-MHS-0103**
Watershed	Santa Rosa Basin	Santa Rosa Basin	Santa Rosa Basin
Stream	Matanzas Creek	Matanzas Creek	Matanzas Creek
Sample Date	4/19/99	4/19/99	4/19/99
Sample Time	8:30	9:30	11:00
Sample Crew	Montgomery HS	Montgomery HS	Montgomery HS
Water Temp. (C)	15	16	14
pH	7.7	7.7	8.1
Subsample Date	4/19/99	4/19/99	Apr-99
Subsample Crew	Montgomery HS	Montgomery HS	Ridgeway HS
# of Grids Used	1	1	2
Partial Grid (Y/N)	N	n	y
ID Date	May-99	May-99	May-99
ID'er	Montgomery HS	Montgomery HS	Ridgeway HS
Riffle Length (ft)	31.5	31.5	24
Transect Mark (ft)	27	15	9
Project Adviser	Lynell Garfield	Lynell Garfield	Lynell Garfield
Teacher	Paula Fogarty	Paula Fogarty	Paula Fogarty
# jars	2	1	1
# invertebrates	91	94	108
# unknowns	0	0	Lost data

Paulin Creek

RHS Sample Data

Samples:	0101/0102	201	AVG.	STDEV
Metrics:				
TAXA RICHNESS	9.5	11	**10.3**	1.06
EPT TAXA	1	5	**3.0**	2.83
EPT INDEX	0.03	0.12	**0.1**	0.06
% DOMINANCE	38	4	**21.0**	24.04
TOLERANT TAXA	5.7	3.5	**4.6**	1.56
REL. ABUNDANCE	1141.5	1090	**1115.8**	36.42
%SH:	28.5	0	**14.3**	20.15
%SC	3.1	4.6	**3.9**	1.06
%CG	1	52	**26.5**	36.06
%P	2.6	0.9	**1.8**	1.20
%FC	61.5	39.5	**50.5**	15.56

*Note: Project Advisor used a FC feeding group designation for Nematoda in these samples. This is not published by CDFG.

	0101/0102	0201	avg.	Stdev.
Instream cover	4	8	**6**	2.8
Embeddedness	13	14	**14**	0.7
Velocity/depth	10	13	**12**	2.1
sediment depos.	15	18	**17**	2.1
channel flow	13	6	**10**	4.9
channel alter.	0	0	**0**	0.0
freq. Riffles	14	8	**11**	4.2
Bank stab. L	9	10	**10**	0.7
Bank stab. R	3	9	**6**	4.2
Vegetat. Prot. L	2	5	**4**	2.1
Vegetat. Prot. R	0	1	**1**	0.7
Riparian width L	0	1	**1**	0.7
Riparian width R	0	1	**1**	0.7
Total Habitat Score:			**89**	

Note: Sample 99RHS0301 and 0302 were not analyzed due to time and class constraints.

Paulin Creek Sampling Data

Sample ID #	**99-RHS-0101**	**99-RHS-0102**	**99-RHS-0201**
Watershed	Santa Rosa Basin	Santa Rosa Basin	Santa Rosa Basin
Stream	Paulin Creek	Paulin Creek	Paulin Creek
Sample Date	4/20/99	4/20/99	4/20/99
Sample Time	10:00	10:00	11:30
Sample Crew	Ridgeway HS	Ridgeway HS	Ridgeway HS
Water Temp. (C)	14	14	14
PH	8.1	8.1	8.1
Subsample Date	Apr-99	Apr-99	Apr-99
Subsample Crew	Ridgeway HS	Ridgeway HS	Ridgeway HS
# of Grids Used	2	2	2
Partial Grid (Y/N)	N	Y	N
ID Date	May-99	May-99	May-99
ID'er	Ridgeway HS	Ridgeway HS	Ridgeway HS
Riffle Length (ft)	17	17	24
Transect Mark (ft)	15	6	21
Project Adviser	Lynell Garfield	Lynell Garfield	Lynell Garfield
Teacher	Kathy Vyanielo	Kathy Vyanielo	Kathy Vyanielo
# jars	1	1	2
# invertebrates	100	95	109
# unknowns	23	0	59

Note: Samples # 99RHS0301 and 0302 were not analyzed due to time and class constraints.

Peterson Creek
Sample Data

Metrics:	**99-PHS-0101**	**99-PHS-0103**	**Avg.**	**Std. Dev.**
TAXA RICHNESS	5	5	5.0	0.0
EPT TAXA	1	1	1.0	0.0
EPT INDEX	0.02	0.01	0.02	0.01
% DOMINANCE	58	79	68.5	14.8
TOLERANT TAXA	8.53	7.56	8.05	0.7
REL. ABUNDANCE	1840	2120	1980	198
%SH	0	0	0.0	0.0
%SC	0	1	0.5	0.7
%CG	14	97	55.5	58.7
%P	0	0	0.0	0.0
%FC	86	2	44.0	59.4

Habitat Assessment:	**101**	**103**	**Avg.**	**Stdev.**
Instream cover	16	16	16	0.0
Embeddedness	7	7	7	0.0
Velocity/depth	19	19	19	0.0
sediment depos.	14	14	14	0.0
channel flow	15	15	15	0.0
channel alter.	18	18	18	0.0
freq. Riffles	7	7	7	0.0
Bank stab. L	7	7	7	0.0
Bank stab. R	3	3	3	0.0
Vegetat. Prot. L	7	7	7	0.0
Vegetat. Prot. R	3	5	4	1.4
Riparian width L	4	3	4	0.7
Riparian width R	8	8	8	0.0
Total Habitat Score:			129	

Note: Sample # 99-PHS-0102 was not analyzed due to time and class size constraints.

Peterson Creek **Sampling Data**

Sample ID #	**99-PHS-0101**	**99-PHS-0103**
Watershed	Santa Rosa Basin	Santa Rosa Basin
Stream	Peterson Creek	Peterson Creek
Sample Date	4/14/99	4/14/99
Sample Time	12:45	13:45
Sample Crew	Piner HS Crew	Piner HS Crew
Water Temp. (C)	18	18
Subsample Date	Apr-99	Apr-99
Subsample Crew	Piner HS Crew	Piner HS Crew
# of Grids Used	1	1
Partial Grid (Y/N)	n	n
ID Date	May-99	May-99
ID'er	Piner HS Crew	Piner HS Crew
Riffle Length (ft)	42	42
Transect Mark (ft)	15	6
Project Adviser	Lynell Garfield	Lynell Garfield
Teacher	Terry Thane	Terry Thane
# jars	2	2
# invertebrates	92	100
# unknowns	0	6

Note: Sample 99PHS0102 was not analyzed due to time and class size constraints.

Colgan Creek	Sample Data	Sample ID # Sampling Data	99-EAHS-0202
Metrics:	**99-EAHS-0202**	Watershed	Santa Rosa Basin
TAXA RICHNESS	4	Stream	Colgan Creek
EPT TAXA	1	Sample Date	4/27/99
EPT INDEX	0.009	Sample Time	11:45
% DOMINANCE	52	Sample Crew	Elsie Allen HS
TOLERANT TAXA	7.5 *	Water Temp. (C)	18
REL. ABUNDANCE	3980	Subsample Date	May-99
%SH:	0.9	Subsample Crew	Elsie Allen HS
%SC	0	# of Grids Used	1
%CG	47	Partial Grid (Y/N)	n
%P	0	ID Date	May-99
%FC	52*	ID'er	Elsie Allen HS
		Riffle Length (ft)	42
		Transect Mark (ft)	6
Habitat Assessment:		Project Adviser	Lynell Garfield
Instream cover	3	Teacher	Brenda Brown
Embeddedness	2	# jars	1
Velocity/depth	8	# invertebrates	108
sediment depos.	13	# unknowns	91
channel flow	8		
channel alter.	4		
freq. Riffles	15		
Bank stab. L	6		
Bank stab. R	2		
Vegetat. Prot. L	6		
Vegetat. Prot. R	2		
Riparian width L	3		
Riparian width R	1		
Total Habitat Score:	73		

Note: Samples # 99EAHS0101, 0102, 0201 were not analyzed due to class and time constraints.

** In calculating metrics with Elsie Allen students, the assumption was made by students and Project Advisor that the Phylum Nematoda had a tolerance value of 9, and was a Filterer-Collector. This information was not available in the CDFG keys.*

Piner Creek **Sample Data**

Metrics:	**99SRHS0101**	**0102**	**0201**	**avg**	**stdev**
TAXA RICHNESS	7	3	9	6.3	3.1
EPT TAXA	1	0	3	1.3	1.5
EPT INDEX	0.06	0.00	0.07	0.04	0.04
% DOMINANCE	43	50	56	50	6.5
TOLERANT TAXA	5.6	8.8	6.8	7.1	1.6
REL. ABUNDANCE	2420	3760	2480	2887	757
%SH:	0	0	0	**0.0**	0.00
%SC	8	6	2	**5.3**	3.06
%CG	67	50	59	**58.7**	8.50
%P	4	0	1	**1.7**	2.08
%FC	21	44	37	**34.0**	11.79

Habitat Assessment:

	101	**102**	**201**	**Avg.**	**Stdev.**
Instream cover	6	6	5	**6**	0.6
Embeddedness	16	17	8	**14**	4.9
Velocity/depth	9	9	10	**9**	0.6
sediment depos.	18	18	16	**17**	1.2
channel flow	17	19	9	**15**	5.3
channel alter.	7	8	3	**6**	2.6
freq. Riffles	15	16	6	**12**	5.5
Bank stab. L	6	7	6	**6**	0.6
Bank stab. R	4	3	8	**5**	2.6
Vegetat. Prot. L	6	6	4	**5**	1.2
Vegetat. Prot. R	2	1	4	**2**	1.5
Riparian width L	2	2	1	**2**	0.6
Riparian width R	1	2	1	**1**	0.6
Total Habitat Score:				**101**	

Piner Creek **Sampling Data**

Sample ID #	99-SRHS-0101	99-SRHS-0102	99-SRHS-0201
Watershed	Santa Rosa Basin	Santa Rosa Basin	Santa Rosa Basin
Stream	Piner Creek	Piner Creek	Piner Creek
Sample Date	4/16/99	4/16/99	4/16/99
Sample Time	10:00	11:15	12:30
Sample Crew	Santa Rosa HS	Santa Rosa HS	Santa Rosa HS
Water Temp. (C)	12	12	12
pH	8.1	8.4	8.6
Subsample Date	May-99	May-99	May-99
Subsample Crew	SRHS Group 1	SRHS Group 2	SRHS Group 3
# of Grids Used	1	1	1
Partial Grid (Y/N)	n	N	y
ID Date	May-99	May-99	May-99
ID'er	SRHS Group 1	SRHS Group 2	SRHS Group 3
Riffle Length (ft)	17	17	15
Transect Mark (ft)	15	10	9
Project Adviser	Lynell Garfield	Lynell Garfield	Lynell Garfield
Teacher	Elaine Bechler	Elaine Bechler	Elaine Bechler
# jars	1	1	2
# invertebrates	100	100	100
# unknowns	21	88	24

Brush Creek Sample Data

Metrics:	**99MCHS0101**	**0102a**	**0102b**	**0103**	**0301**	**Avg.**	**Std. Dev.**
TAXA RICHNESS	3	3	3	1	2	**2.4**	0.9
EPT TAXA	0	0	1	0	1	**0.4**	0.5
EPT INDEX	0.000	0.000	0.010	0.000	0.010	**0.004**	0.005
% DOMINANCE	97	55	98	100	99	**89.8**	19.5
TOLERANT TAXA	8.88	9.34	8.86	9.00	8.95	**9.01**	0.19
REL. ABUNDANCE	3120	2700	2040	2000	4000	**2772**	832
%SH:	0	0	0	0	0	**0.0**	0.0
%SC	0	0	1	0	1	**0.4**	0.5
%CG	0	36	0	0	0	**7.2**	16.1
%P	0	0	0	0	0	**0.0**	0.0
%FC	100	64	98	100	99	**92.2**	15.8

Habitat Assessment :

Streams:	**101**	**0102A**	**0102b**	**103**	**301**	**avg.**	**stdev.**
Instream cover	13	8	10	4	14	**10**	4.0
Embeddedness	15	18	8	15	14	**14**	3.7
Velocity/depth	13	9	7	9	10	**10**	2.2
sediment depos.	12	12	13	18	18	**15**	3.1
channel flow	8	3	9	6	14	**8**	4.1
channel alter.	18	19	18	19	12	**17**	2.9
freq. Riffles	13	13	13	18	20	**15**	3.4
Bank stab. L	7	7	6	6	8	**7**	0.8
Bank stab. R	9	9	9	8	5	**8**	1.7
Vegetat. Prot. L	8	8	7	6	5	**7**	1.3
Vegetat. Prot. R	9	8	9	8	3	**7**	2.5
Riparian width L	10	9	9	9	10	**9**	0.5
Riparian width R	6	4	4	2	3	**4**	1.5
Total Habitat Score:						**131**	

Note: Sample # 99-MCHS-0201 was analyzed but not reported due to failing the QC step.

Brush Creek

Sampling Data

Sample ID #	99-MCHS-0101	99-MCHS-0102a	99-MCHS-0102b	99-MCHS-0103	99-MCHS-0301
Watershed	SR Basin	SR Basin	SR Basin	SR Basin	SR Basin
Stream	Brush Creek	Brush Creek	Brush Creek	Brush Creek	Brush Creek
Sample Date	4/22/99	4/22/99	4/22/99	4/23/99	4/23/99
Sample Time	9:00	9:00	10:30	10:30	11:00
Sample Crew	MCHS	MCHS	MCHS	MCHS	MCHS
Water Temp. (C)	12.4	12.4	12.4	12.9	12.7
Dissolved Oxygen (ppm)	2	2	2	2.05	2.05
pH	8	8	8	8	8
Subsample Date	May-99	May-99	May-99	May-99	May-99
Subsample Crew	MCHS 1st per.	MCHS 1st per.	MCHS 1st per.	MCHS 4th per.	MCHS 4th per.
# of Grids Used	1	1	1	1	1
Partial Grid (Y/N)	y	y	N	y	y
ID Date	May-99	May-99	May-99	May-99	May-99
ID'er	MCHS	MCHS	MCHS	MCHS	MCHS
Riffle Length (ft)	111	111	111	111	12
Transect Mark (ft)	85	60	60	6	9
Project Adviser	L. Garfield	L. Garfield	L. Garfield	L. Garfield	Lynell Garfield
Teacher	Robin Arnold	Robin Arnold	Robin Arnold	Robin Arnold	Robin Arnold
# jars	1	1	2	1	1
# invertebrates	96	100	102	100	100
# unknowns	65	35	0	0	50

Note: Sample # 99-MCHS-0201 was analyzed but not reported due to failing the QC step.

2000 High School Data

Brush Creek			Brush Creek	
Metrics:	00MC0101	Sample ID #	00MC0101	00mc0102
TAXA RICHNESS	20	Watershed	Santa Rosa Basin	
EPT TAXA	7	Stream	Brush Creek	
EPT INDEX	5.160	Sample Date	5/3/00	
% DOMINANCE	25.8	Sample Time	9:00	
TOLERANT TAXA	5.08	Sample Crew	Maria Carrillo Biology	
REL. ABUNDANCE	1860	Water Temp. (C)	17.67	
%SH:	4	pH	7.8	
%SC	26	DO (mg/L)	7	
%CG	34	Turbidity (ntu)	0	
%P	12	Specific Conductivity (mS)	0.4628	
%FC	7.5	Velocity (f/s)	1.1	2.4
%PI	0	Average Depth (ft)	0.33	0.155
		Area (ft2)		
Habitat Assessment	**00mc0101**	Subsample Date	May-00	
Instream cover	7	Subsample Crew	mchs students	
Embeddedness	18	# of Grids Used	1	
Velocity/depth	9	Partial Grid (Y/N)	no	
sediment depos.	13	ID Date	Jun-00	
channel flow	9	ID'er	mchs students	
channel alter.	14	Riffle Length (ft)	100	
freq. Riffles	7	Transect Mark (ft)	18	63
Bank stab. L	8	Project Adviser	Lynell Garfield	
Bank stab. R	9	Teacher	Robin Arnold	
Vegetat. Prot. L	8	# jars	2	
Vegetat. Prot. R	6	# invertebrates	93	
Riparian width L	10	# unknowns	0	
Riparian width R	3			
Total Habitat Score:	**121**			

Piner Creek			Piner Creek
Metrics:	00SRHS0101	Sample ID #	00SRHS0101
TAXA RICHNESS	11	Watershed	Santa Rosa Basin
EPT TAXA	5	Stream	Piner Creek
EPT INDEX	0.250	Sample Date	5/5/00
% DOMINANCE	53	Sample Time	0:00
TOLERANT TAXA	4.64	Sample Crew	Santa Rosa HS
REL. ABUNDANCE	27980	Water Temp. (C)	15.76
%SH:	0	pH	7.7
%SC	11	DO (mg/L)	8.18
%CG	60	Turbidity (ntu)	0
%P	9.6	Specific Conductivity (mS)	0.6307
%FC	9	Velocity (f/s)	1.2
%PI	0	Average Depth (ft)	3.4
		Area (ft2)	126.14
Habitat Assessment	**101**	Subsample Date	May-00
Instream cover	7	Subsample Crew	SRHS Group 1
Embeddedness	9	# of Grids Used	1
Velocity/depth	8	Partial Grid (Y/N)	y due to high abund
sediment depos.	13	ID Date	Jun-00
channel flow	15	ID'er	SRHS Group 1
channel alter.	7	Riffle Length (ft)	14
freq. Riffles	8	Transect Mark (ft)	6
Bank stab. L	7	Project Adviser	Lynell Garfield
Bank stab. R	7	Teacher	Elaine Bechler
Vegetat. Prot. L	8	# jars	2
Vegetat. Prot. R	8	# invertebrates	100
Riparian width L	3	# unknowns	21
Riparian width R	3		
Total Habitat Score:	**103**		

Colgan Creek			Colgan Creek
Metrics:	00EAHS0101	Sample ID #	00EAHS0101
TAXA RICHNESS	8	Watershed	Santa Rosa Basin
EPT TAXA	2	Stream	Colgan Creek
EPT INDEX	16	Sample Date	5/2/00
% DOMINANCE	39	Sample Time	9:00
TOLERANT TAXA	5.5	Sample Crew	Community Development
REL. ABUNDANCE	1840	Water Temp. (C)	62.9 deg F
%SH:	0	pH	7.8
%SC	8.7	DO (mg/L)	8
%CG	75	Turbidity (ntu)	0
%P	0	Specific Conductivity (mS)	0.7225
%FC	13	Velocity (f/s)	
%PI	0	Average Depth (ft)	
		Average Width (ft)	9.25
		Area (ft2)	

Habitat Assessment	**00EAHS0101**	Subsample Date	May-00
Instream cover	10	Subsample Crew	Bailey's students
Embeddedness	17	# of Grids Used	1
Velocity/depth	6	Partial Grid (Y/N)	yes
sediment depos.	7	ID Date	May 00 and June 00
channel flow	6	ID'er	Bailey's students
channel alter.	13	Riffle Length (ft)	26.33
freq. Riffles	2	Transect Mark (ft)	6
Bank stab. L	8	Project Adviser	Lynell Garfield
Bank stab. R	9	Teacher	Rob Bailey
Vegetat. Prot. L	6	# jars	2
Vegetat. Prot. R	6	# invertebrates	92
Riparian width L	2	# unknowns	0
Riparian width R	2		
Total Habitat Score:	**94**		

2000	Matanzas Creek
Metrics:	101
TAXA RICHNESS	11
EPT TAXA	3
EPT INDEX	0.210
% DOMINANCE	48.9
TOLERANT TAXA	5.5
REL. ABUNDANCE	6040
%SH:	0
%SC	8
%CG	63
%P	6
%FC	21
%PI	0
Habitat Assessment:	**124**
Instream cover	6
Embeddedness	14
Velocity/depth	14
sediment depos.	19
channel flow	11
channel alter.	11
freq. Riffles	13
Bank stab. L	7
Bank stab. R	10
Vegetat. Prot. L	9
Vegetat. Prot. R	1
Riparian width L	5
Riparian width R	4
Total Habitat Score:	124

Matanzas Creek	
Sample ID #	**99-MHS-0101**
Watershed	Santa Rosa Basin
Stream	Matanzas Creek
Sample Date	5/8/00
Sample Time	0:00
Sample Crew	Montgomery HS
Water Temp. (C)	14.16
pH	7.7
DO (mg/L)	8.57
Specif. Conductivity (mS)	0.311
Subsample Date	5/18/00
Subsample Crew	Honors Challenge students
# of Grids Used	1
Partial Grid (Y/N)	n
ID Date	May-00
ID'er	BG, SS, AS, JD, DS
Riffle Length (ft)	42
Transect Mark (ft)	27
Project Adviser	Lynell Garfield
Teacher	Paula Fogarty
# jars	1
# invertebrates	92
# unknowns	0

Paulin Creek	
Sample ID #	**00RHS0101**
Watershed	Santa Rosa Basin
Stream	Paulin Creek
Sample Date	5/9/00
Sample Time	10:00
Sample Crew	Ridgeway HS
Subsample Date	May-00
Subsample Crew	RHS Science students
# of Grids Used	whole pan
Partial Grid (Y/N)	yes
ID Date	May-00
ID'er	Ridgeway HS
Riffle Length (ft)	16.58
Transect Mark (ft)	0
Project Adviser	Lynell Garfield
Teacher	Kathy Vyanielo
# jars	*n/a, used alt. Protocol*
# invertebrates	82
# unknowns	0

	Paulin Creek
Metrics:	**00RHS0101**
Habitat Features	
Habitat types:	riffles, runs, pools
Particle sizes covering bottom	mostly sand, some silt/clay and gravel, none/ little cobble or boulders.
Leaf or wood debris in streams	abundant leaves, occasional woody debris
Water appearance:	clear
Water Temperature (deg.C):	14.3
Flow	moderate
Streamside cover	common overhanging trees & erosion
Veg Present:	bushes, shrubs, boulder/cobble, gravel/sand
Streambank Angle	LB: steeply sloping. RB: vertical to undercut.
Channel Size Range:	Avg. Depth = 3.8 ", Avg. Width : 7.5"
Aquatic Plants in Stream	none/few
Algae in stream:	none/few
Type of Algae:	slime film and filaments
pH	7.63
DO (mg/L)	8.78
Turbidity (NTU)	0
Velocity (ft/sec)	1.05
Spec. Conductivity (mS)	0.222
Biological Index of Water Quality	23
Water Quality Rating	Good
Comparison to Reference Biological Index	RBI = 19 with 8 categories. Doesn't work well here.
Total # Taxa Counted	9
SCI (sequential comparison index for n=50 pairs)	

Peterson Creek			Peterson Creek
Metrics:	00PHS0101	Sample ID #	00PHS0101
TAXA RICHNESS	10	Watershed	Santa Rosa Basin
EPT TAXA	0	Stream	Peterson Creek
EPT INDEX	0	Sample Date	5/11/00
% DOMINANCE	54.3	Sample Time	9:00
TOLERANT TAXA	6.25	Sample Crew	Environmental Biology Class
REL. ABUNDANCE	2120	Water Temp. (C)	13.14
%SH:	1	pH	7.38
%SC	5.7	DO (mg/L)	6.5
%CG	32.1	Turbidity (ntu)	0
%P	5.7	Specific Conductivity (mS)	0.4314
%FC	53.8	Velocity (f/s)	1.4
%PI	0	Average Depth (ft)	0.235
		Area (ft2)	
Habitat Assessment	**00PHS0101**	Subsample Date	May-00
Instream cover	10	Subsample Crew	Thane's students
Embeddedness	4	# of Grids Used	1
Velocity/depth	13	Partial Grid (Y/N)	yes
sediment depos.	16	ID Date	May 00 and June 00
channel flow	16	ID'er	Thane's students
channel alter.	19	Riffle Length (ft)	18
freq. Riffles	3	Transect Mark (ft)	Long. Sampling: 0, 3, 6 feet
Bank stab. L	7	Project Adviser	Lynell Garfield
Bank stab. R	9	Teacher	Terry Thane
Vegetat. Prot. L	8	# jars	2
Vegetat. Prot. R	9	# invertebrates	106
Riparian width L	5	# unknowns	1
Riparian width R	10		
Total Habitat Score:	**129**		

1. BIOASSAY RESULTS

The bioassay test measured the total toxicity of the sample by exposing 20 baby rainbow trout to 100% sample water for 96 hours under controlled conditions. The results are expressed as the percent that survive.

Two bioassay samples were collected during the rainy season 2000-2001. The first set of samples was collected during the first storm of the season on October 25, 2000. The second set of samples was collected on February 17, 2001, in coordination with the third chemical sampling event.

Each set of samples consisted of eight water samples collected from seven sites, two samples were collected from one site, the latter being a duplicate for quality assurance. Six of the sampling locations are the same sites used for the benthic macroinvertebrate bioassessment component of the monitoring plan. The seventh site was the upstream chemical monitoring site where Santa Rosa Creek crosses Melita Road. Each sample consisted of five gallons of creek water and was either dipped or bucketed from the creeks into a plastic five gallon container or (2) two and one half gallon containers. The samples were transported to the laboratory located in the Laguna Treatment Plant at 4300 Llano Road for the test. Twenty acclimated rainbow trout were placed in five gallons of undiluted sample water for each 96 hour survival test.

This season's bioassay results reflect high water quality at all sites except for Colgan Creek. The first flush sampling at Colgan Creek had the least fish survival of any creek under this monitoring program. It was later discovered that a restaurant was discharging oil, grease and cleaning products into the drainage system upstream of the sampling site. The drainage system was cleaned on January 3, 2001 and the results from the second sampling showed a great improvement in water quality, doubling the survival rate.

At Piner Creek there is an unexplainable discrepancy between the original sample and the duplicate sample collected during the first flush. The duplicate sample was collected at the same location and within two minutes of the original sample and but returned different results. 80% survived, or four fish died, in the original sample but all survived in the duplicate. The lab technicians who ran the test could not attribute the difference as a quality control problem but believes there was a difference in the samples. The second sampling event results had a 100% survival rate .

The locations where each sample was collected and a comparison with previous years test results are listed in **Appendix E**.

See **Appendix F** for a description of the storms associated with each sampling event.

BIOASSAY RESULTS

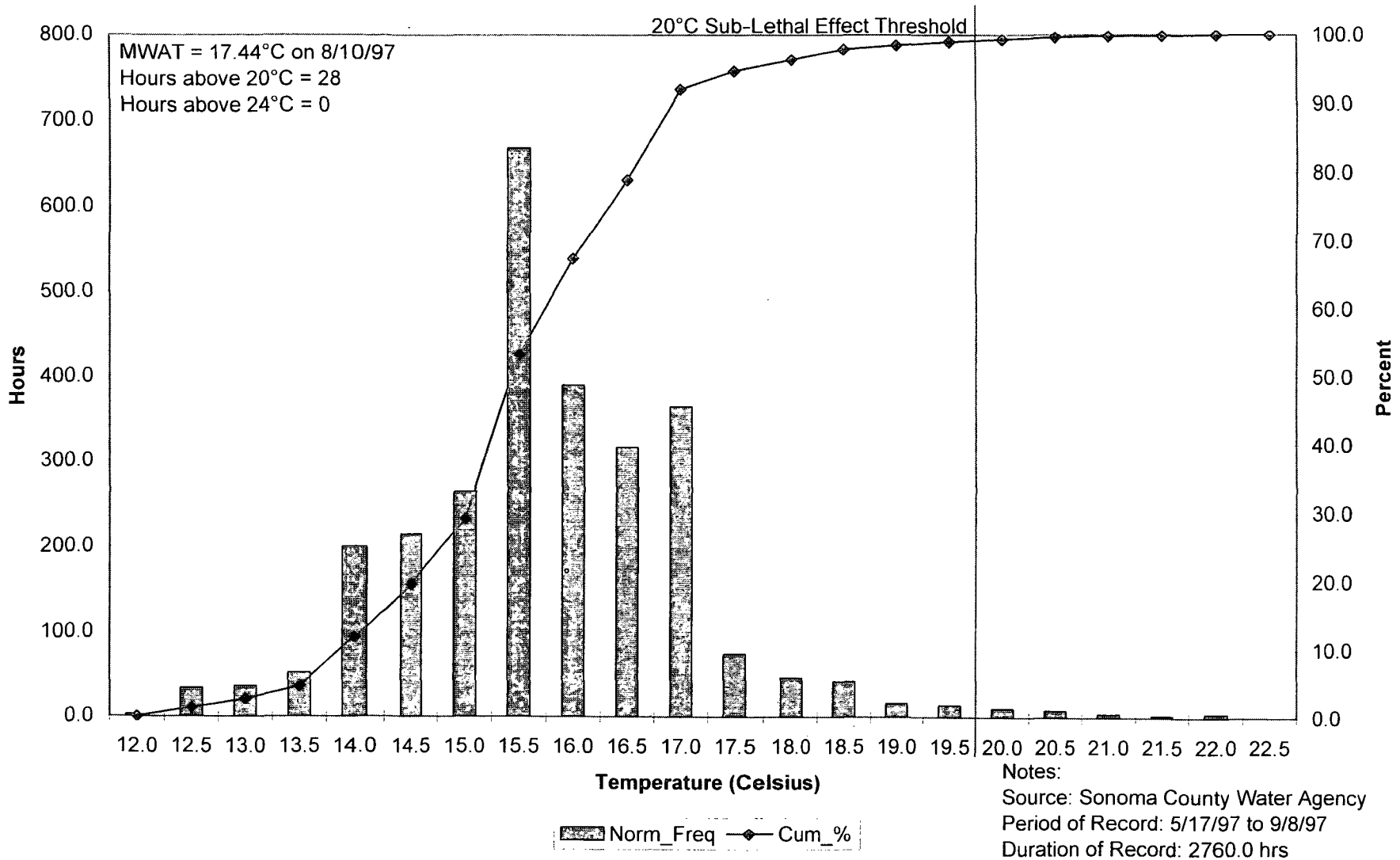
20 RAINBOW TROUT EXPOSED FOR 96 HOURS IN 5 GALLONS OF 100% SAMPLE WATER

	1997-1998				1998-1999			
	Oct. 1, 1997		Dec. 14, 1997		Oct. 24, 1998		Mar. 8, 1999	
Location	(first flush)				(first flush)			
	% survived	dup	% survived	dup	% survived	dup	% survived	dup.
Peterson Creek @ Fulton Road	80%		100%		95%		100%	
Matanzas Creek @ Hoen Frontage Rd	100%		100%		95%		100%	
Paulin Creek @ Mendocino Avenue	100%		100%	100%	100%	100%	100%	
Brush Creek @ Hwy 12	100%	100%	95%		95%		100%	
Colgan Creek @ Bellevue Ave	100%		100%		100%		100%	
Piner Creek @ Marlow Road	100%		95%		90%		100%	100%
Santa Rosa Creek @ Melita Road	100%		100%		95%		100%	

	1999-2000				2000-2001			
	Oct. 27, 1999		Apr. 13, 2000		Oct. 25, 2000		Feb. 17, 2001	
	(first flush)				(first flush)			
	% survived	dup.	% survived	dup	% survived	dup	% survived	dup
Peterson Creek @ Fulton Road	100%		100%		100%		100%	
Matanzas Creek @ Hoen Frontage Rd	100%		100%		100%		100%	
Paulin Creek @ Mendocino Avenue	100%		100%	100%	100%		100%	100%
Brush Creek @ Hwy 12	100%		100%		100%		100%	
Colgan Creek @ Bellevue Ave	90%		100%		45%		90%	
Piner Creek @ Marlow Road	100%	100%	100%		80%	100%	100%	
Santa Rosa Creek @ Melita Road	100%		100%		100%		100%	

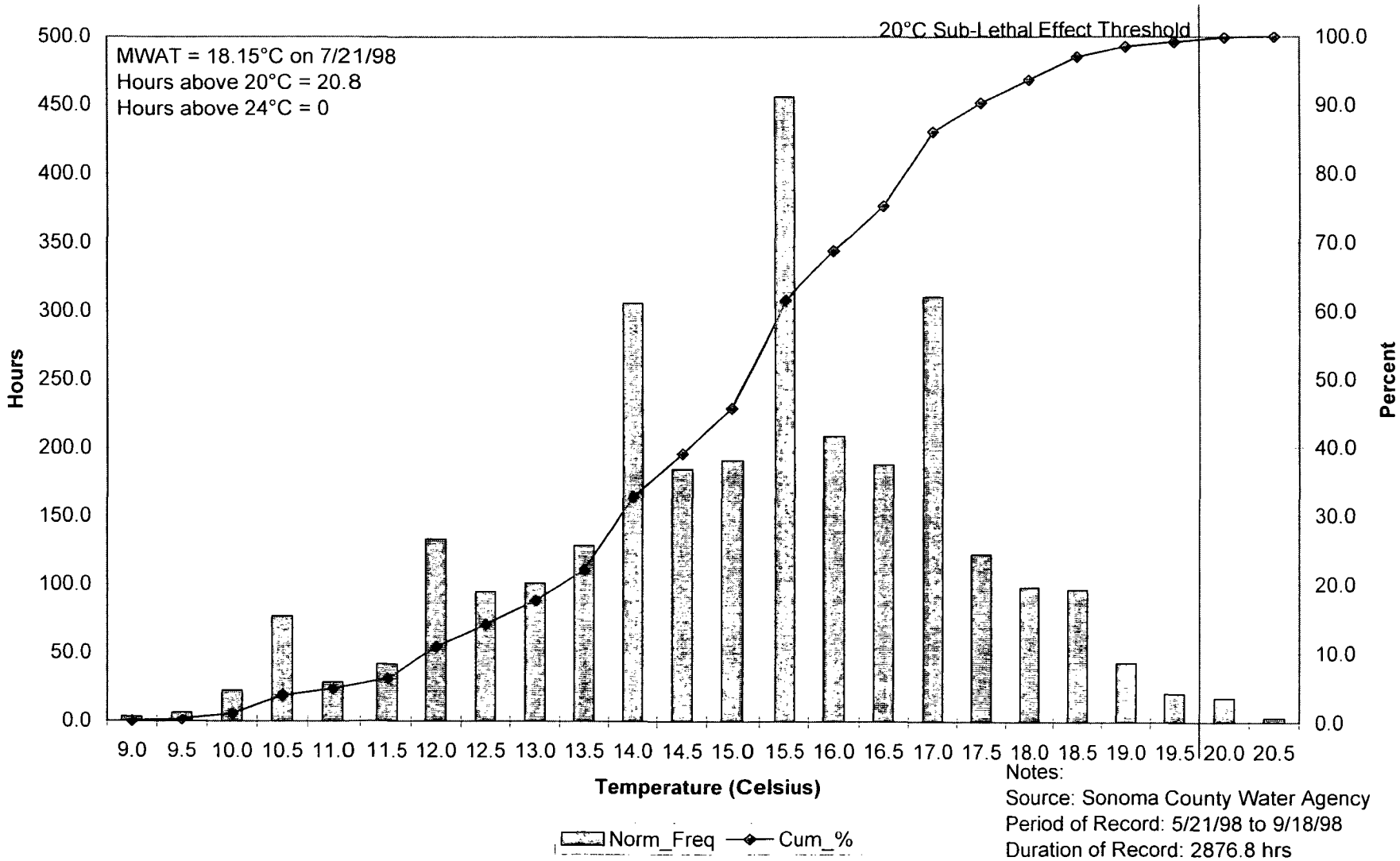
dup = duplicate, laboratory quality control measure

Cumulative Temperature Distribution: Humbug Creek (1997)



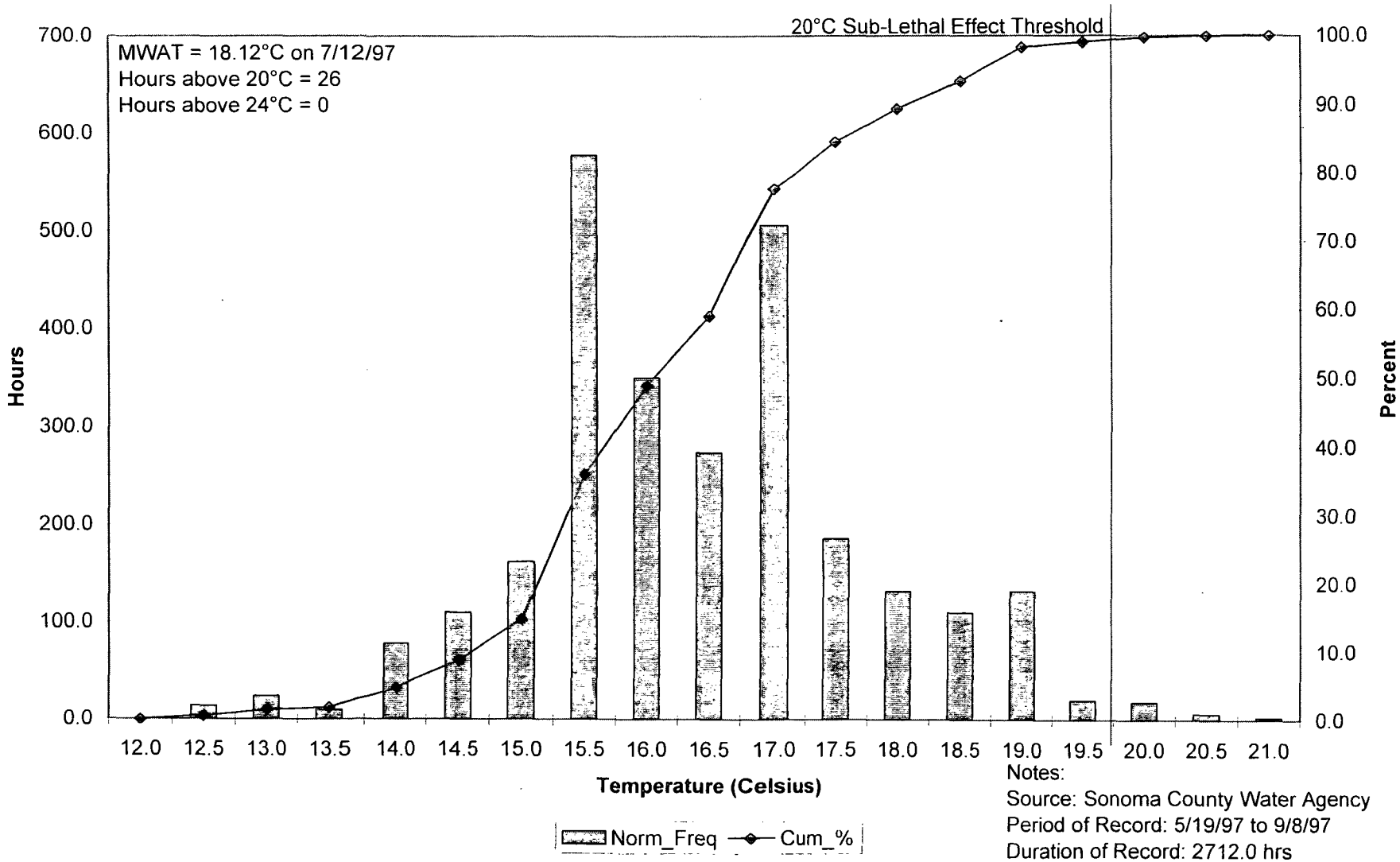
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/17/97 to 9/8/97
Duration of Record: 2760.0 hrs

Cumulative Temperature Distribution: Humbug Creek (1998)



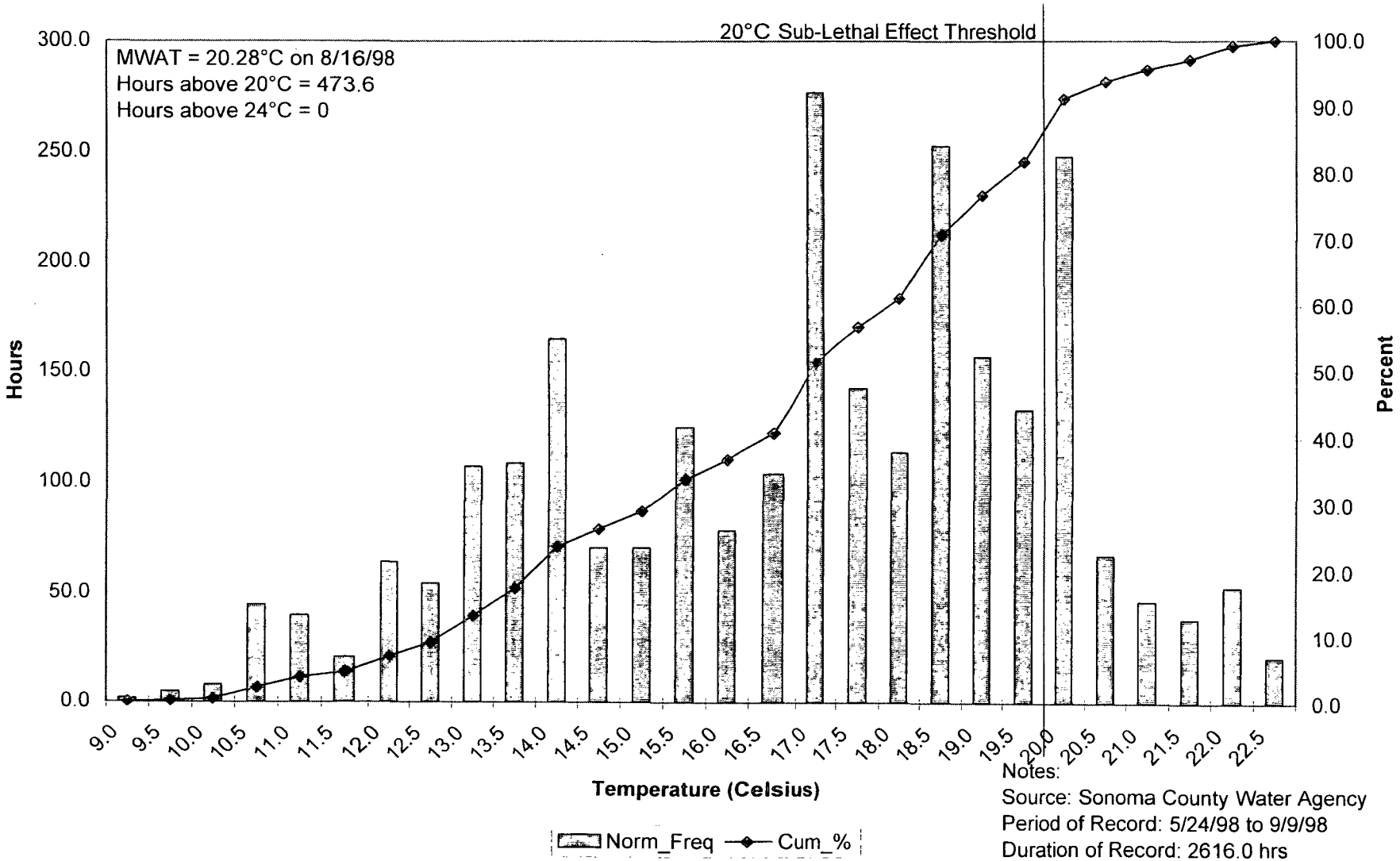
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/21/98 to 9/18/98
Duration of Record: 2876.8 hrs

Cumulative Temperature Distribution:
Porter Creek (1997) [2]



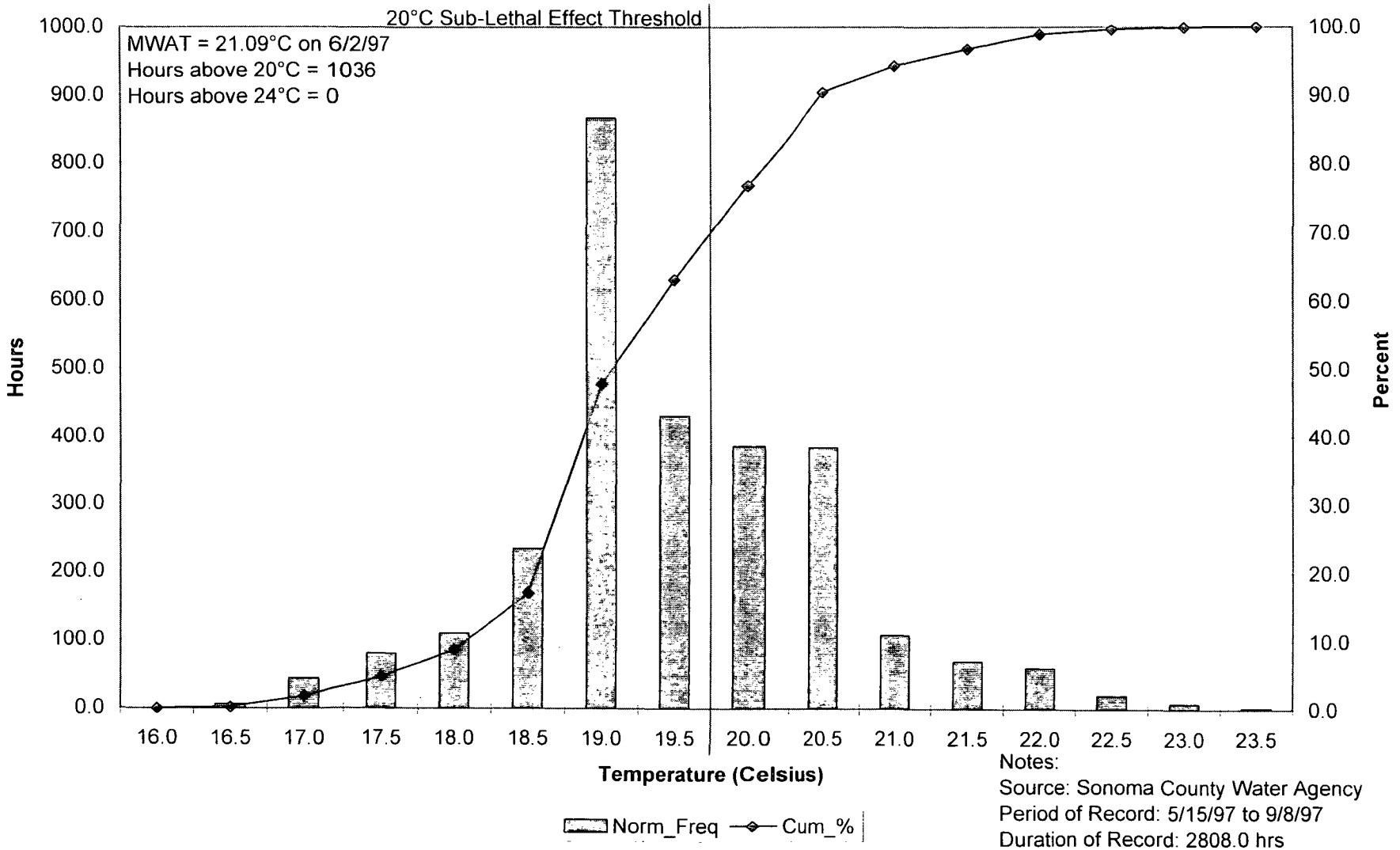
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/19/97 to 9/8/97
Duration of Record: 2712.0 hrs

Cumulative Temperature Distribution: Porter Creek (1998) [2]



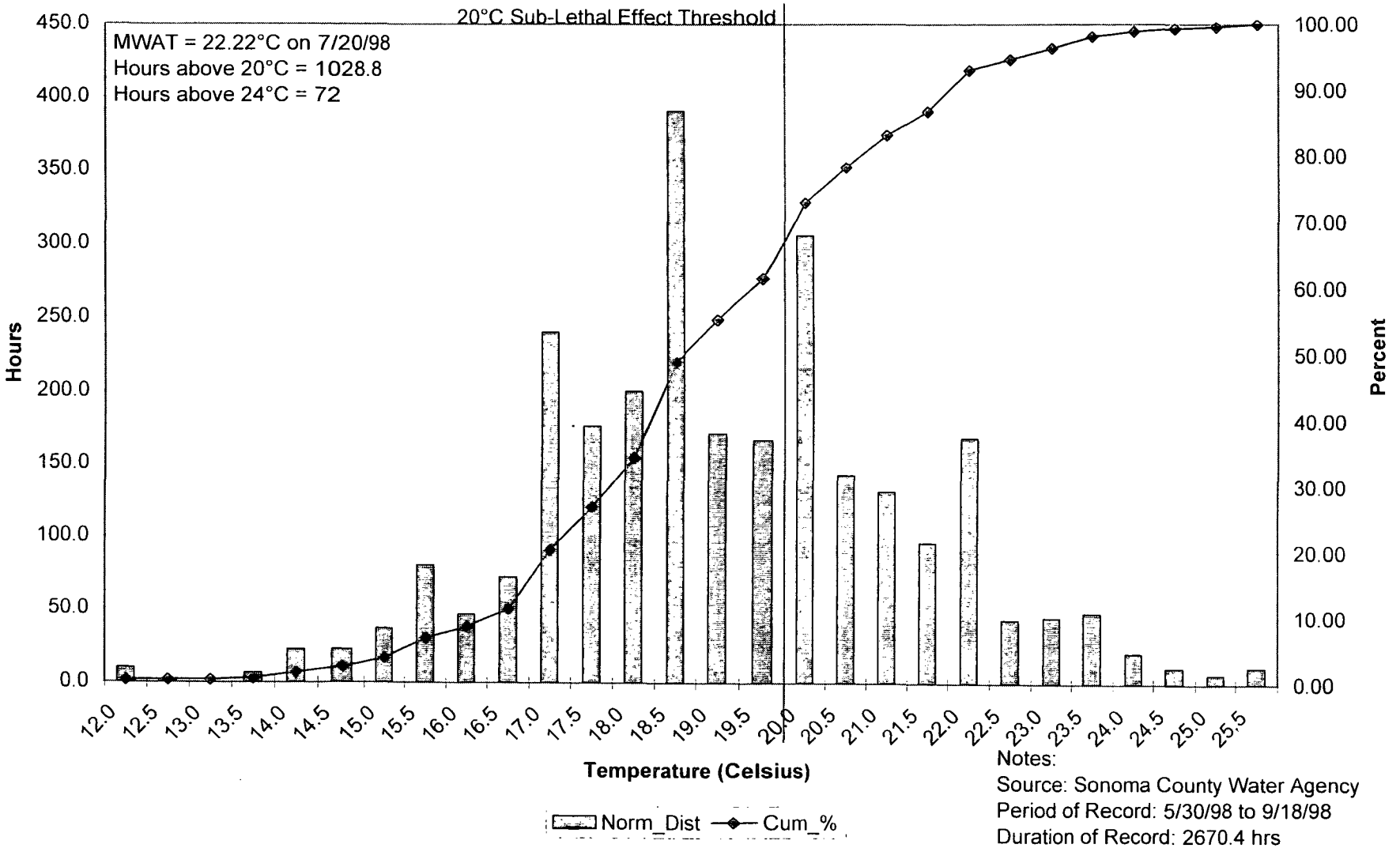
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/24/98 to 9/9/98
Duration of Record: 2616.0 hrs

Cumulative Temperature Distribution:
Mark West Creek (1997) [1]



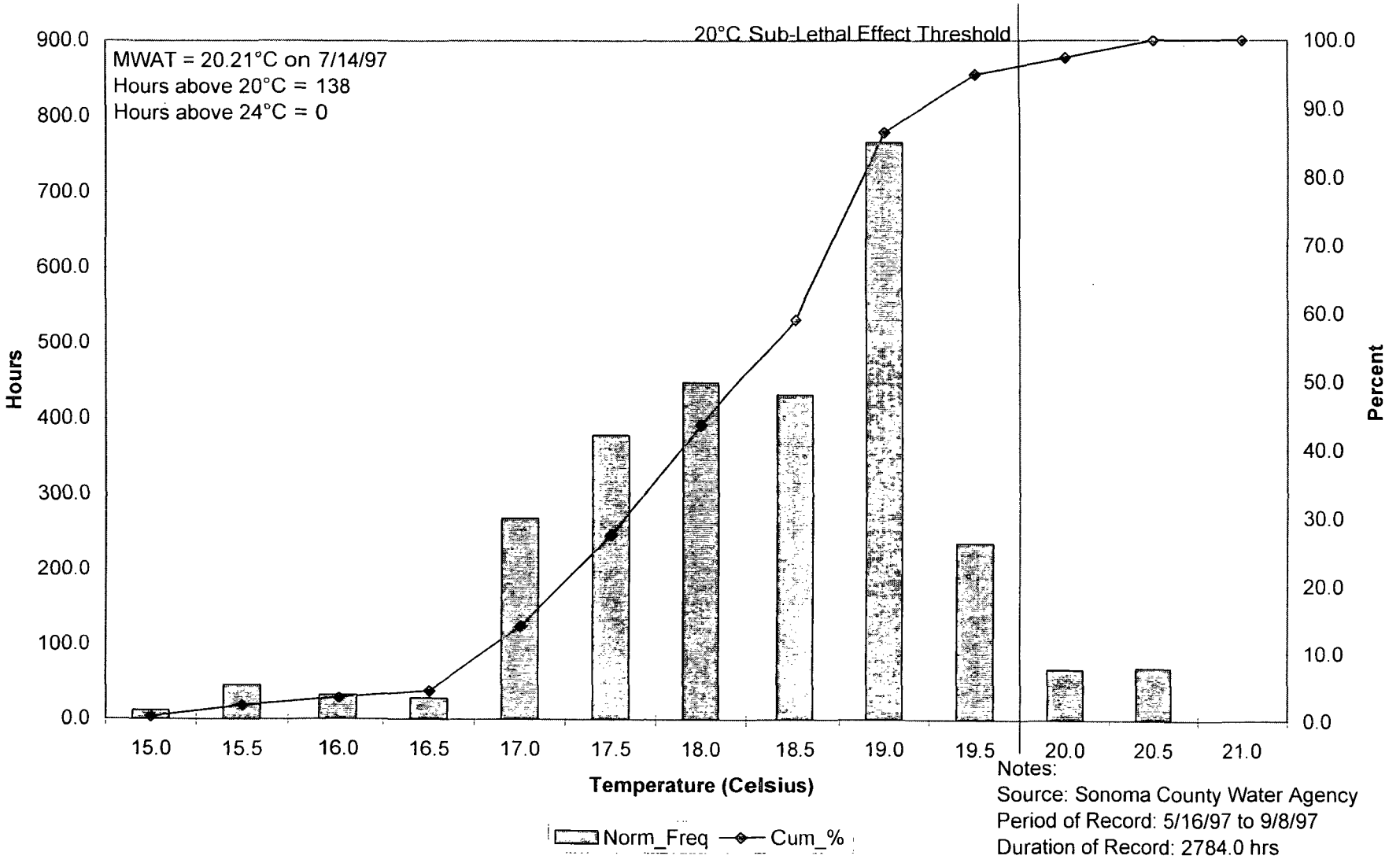
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/15/97 to 9/8/97
Duration of Record: 2808.0 hrs

Cumulative Temperature Distribution:
Mark West Creek (1998) [1]



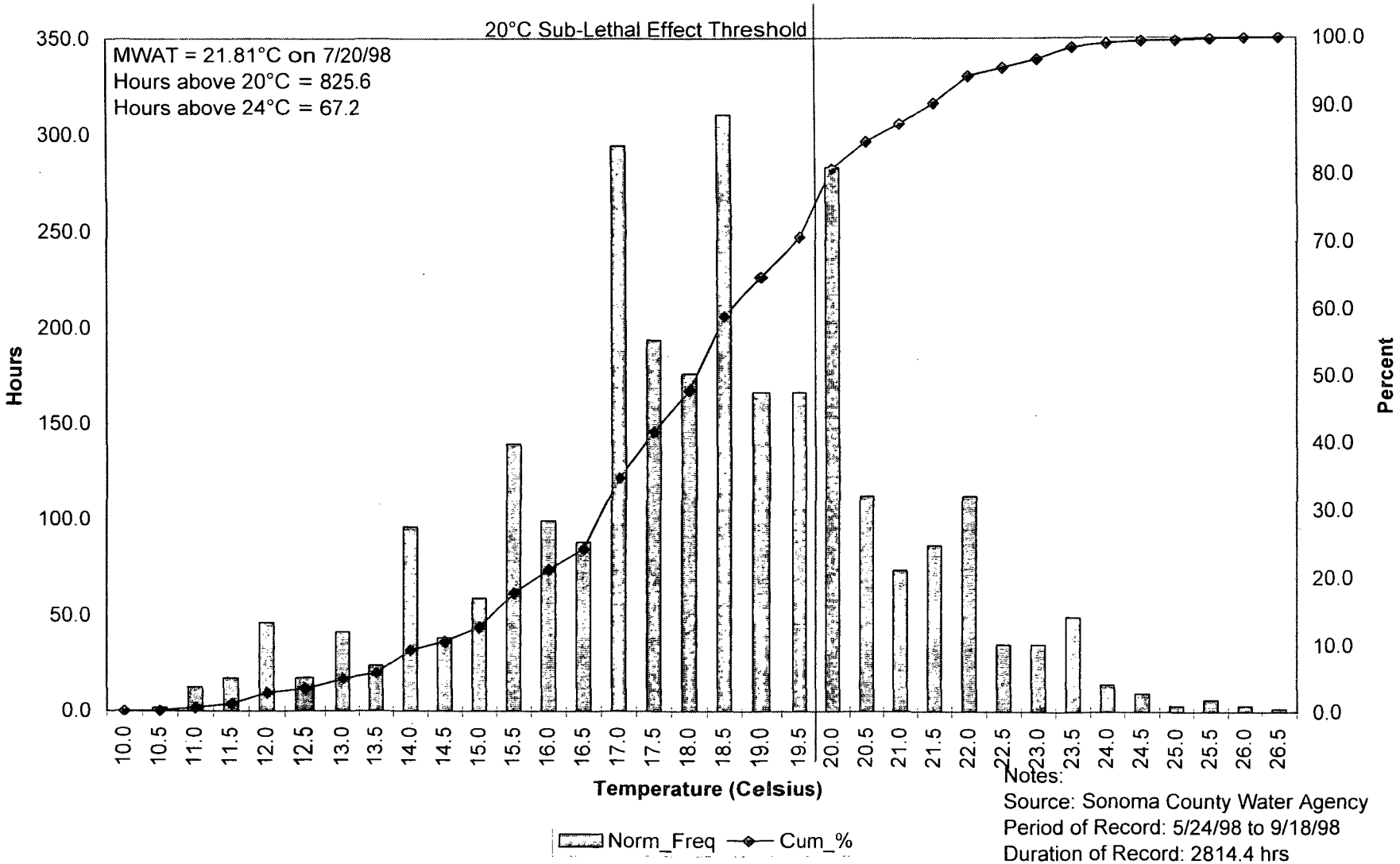
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/30/98 to 9/18/98
Duration of Record: 2670.4 hrs

Cumulative Temperature Distribution: Mark West Creek (1997) [4]



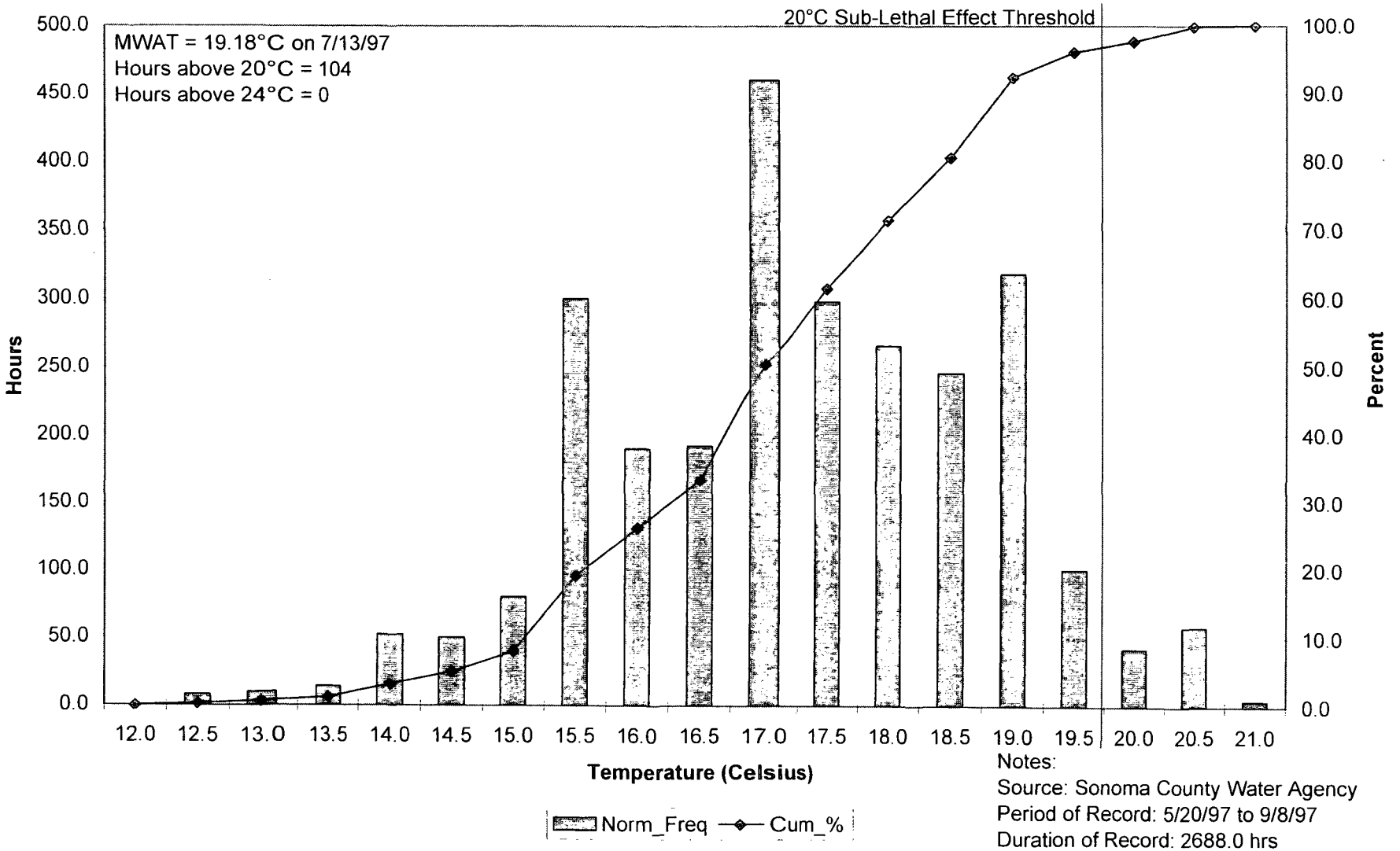
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/16/97 to 9/8/97
Duration of Record: 2784.0 hrs

Cumulative Temperature Distribution:
Mark West Creek (1998) [4]



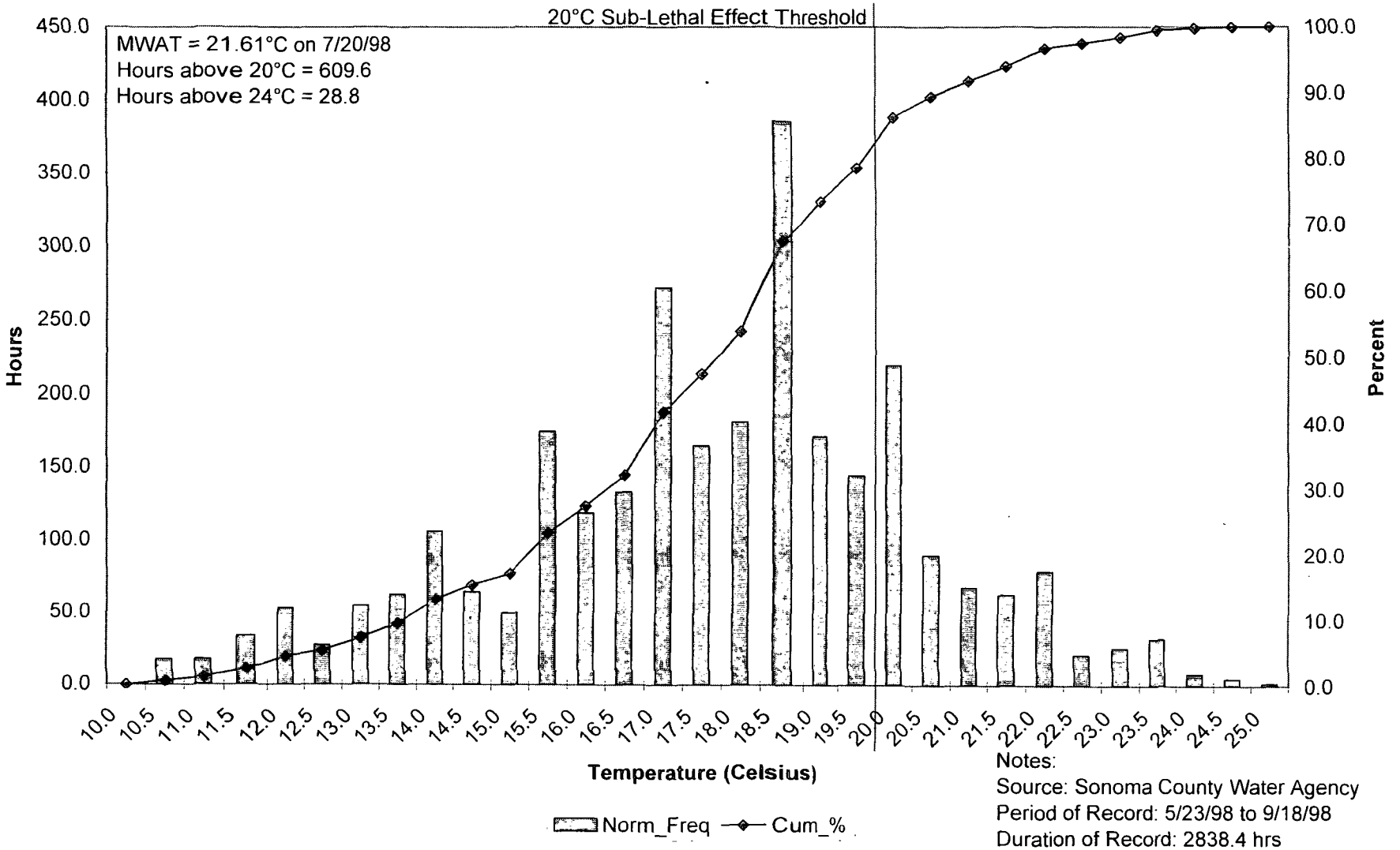
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/24/98 to 9/18/98
Duration of Record: 2814.4 hrs

Cumulative Temperature Distribution:
Mark West Creek (1997) [6]



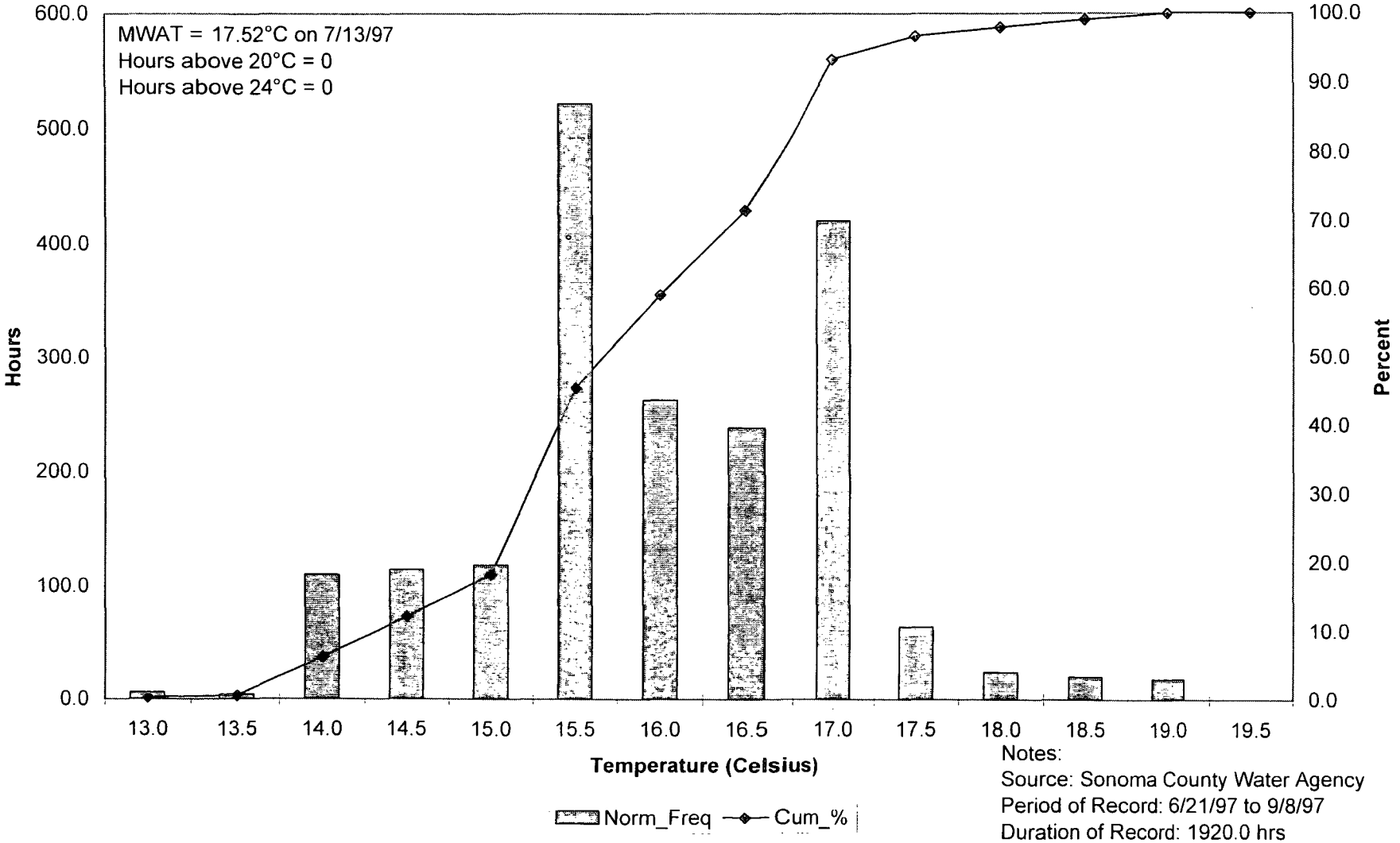
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/20/97 to 9/8/97
Duration of Record: 2688.0 hrs

Cumulative Temperature Distribution:
Mark West Creek (1998) [6]



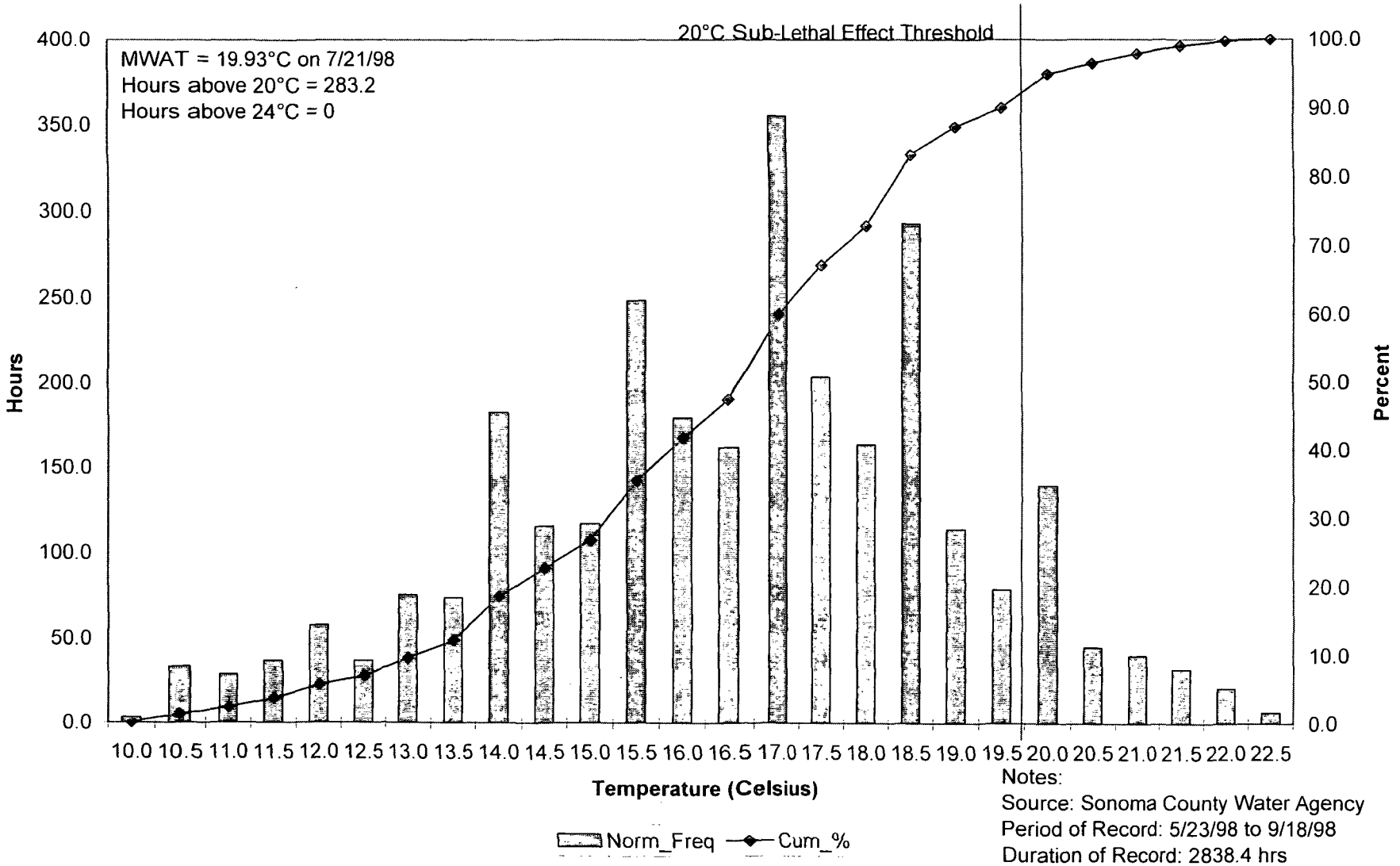
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/23/98 to 9/18/98
Duration of Record: 2838.4 hrs

Cumulative Temperature Distribution:
Mark West Creek (1997) [7]



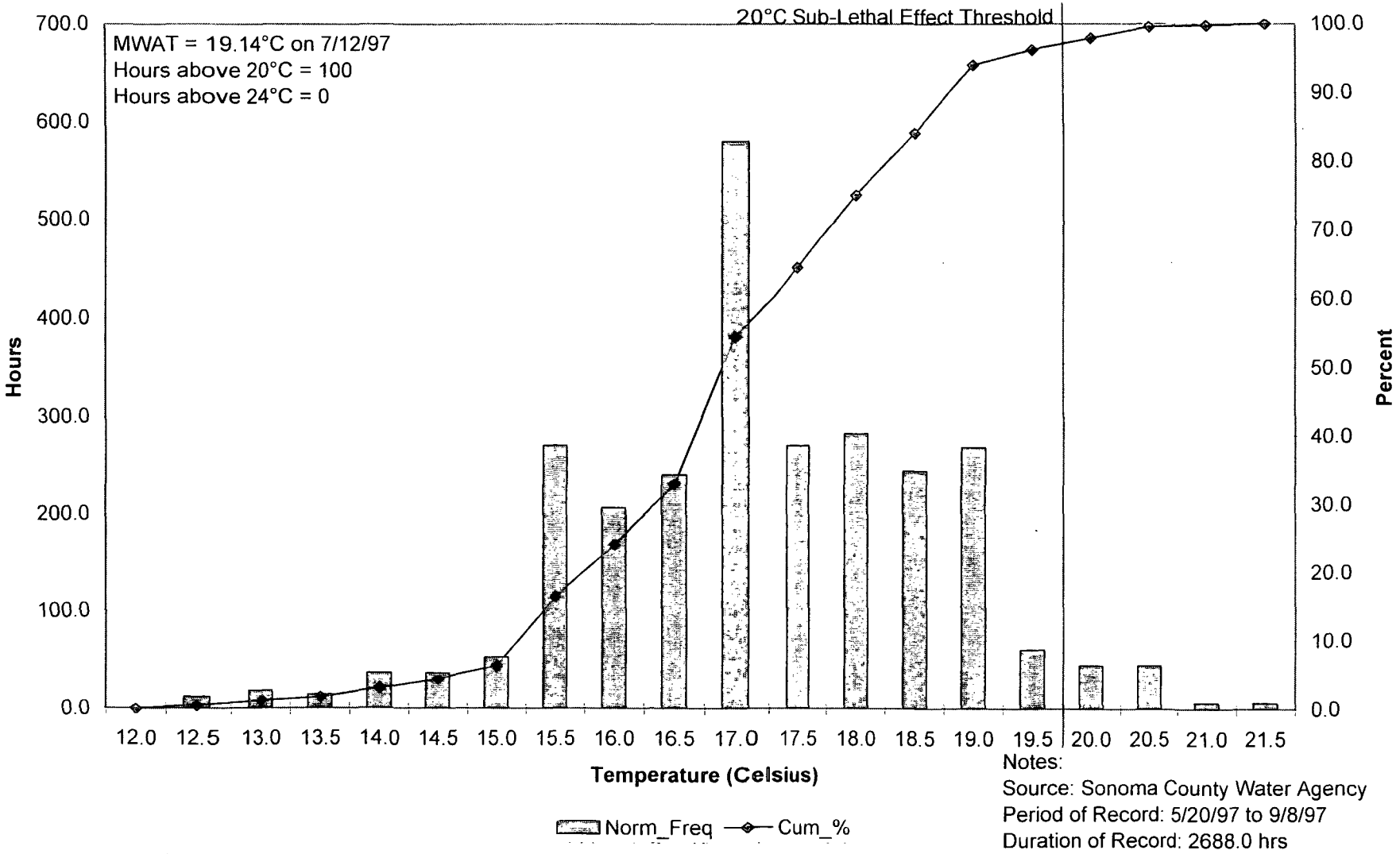
Notes:
Source: Sonoma County Water Agency
Period of Record: 6/21/97 to 9/8/97
Duration of Record: 1920.0 hrs

Cumulative Temperature Distribution: Mark West Creek (1998) [7]



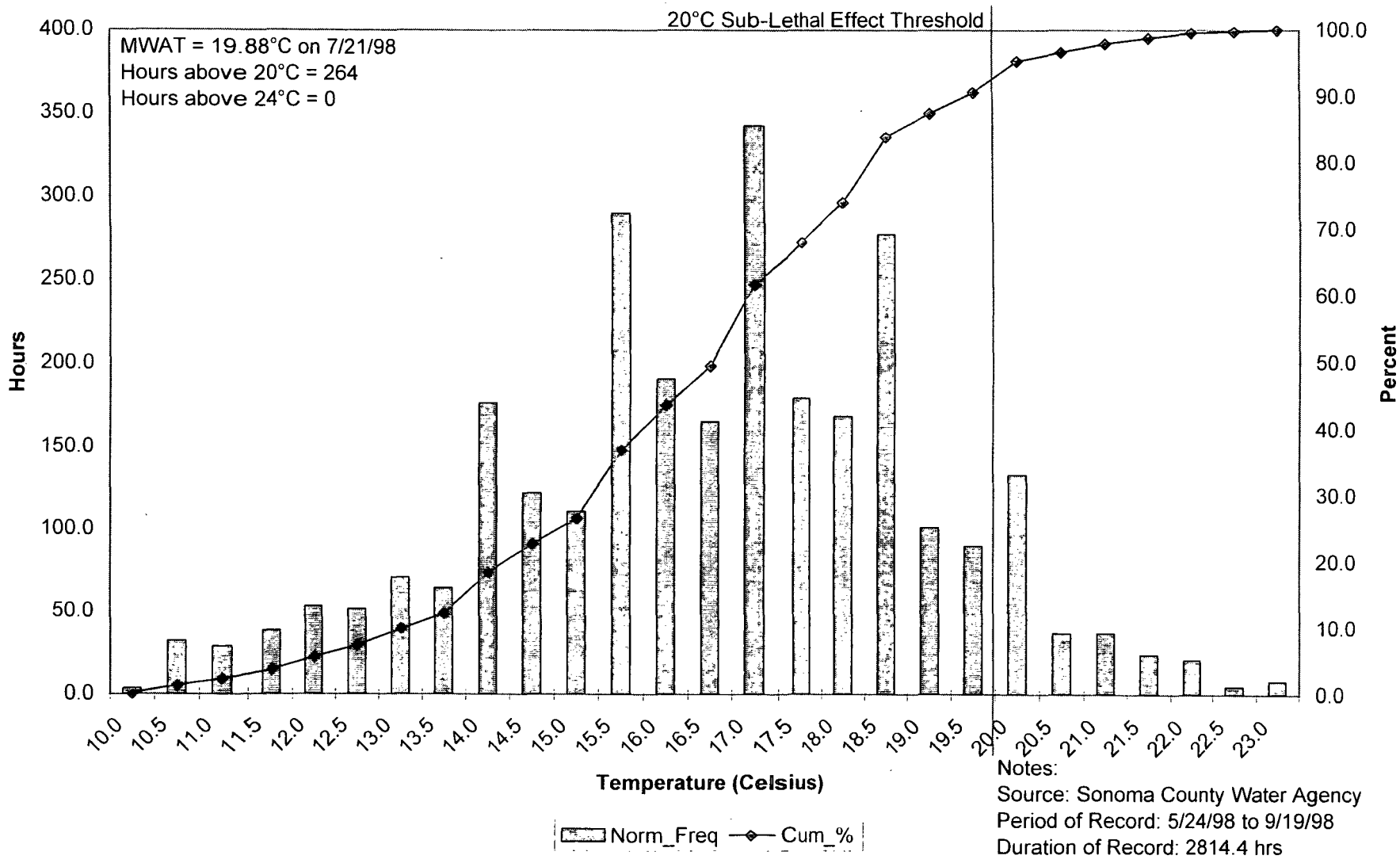
Notes:
Source: Sonoma County Water Agency
Period of Record: 5/23/98 to 9/18/98
Duration of Record: 2838.4 hrs

Cumulative Temperature Distribution:
Mark West Creek (1997) [8]



Notes:
Source: Sonoma County Water Agency
Period of Record: 5/20/97 to 9/8/97
Duration of Record: 2688.0 hrs

Cumulative Temperature Distribution:
Mark West Creek (1998) [8]



Notes:
Source: Sonoma County Water Agency
Period of Record: 5/24/98 to 9/19/98
Duration of Record: 2814.4 hrs