

**A U G M E N T E D   F I S H   H E A L T H   M O N I T O R I N G**

**A N N U A L   R E P O R T**

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Project 87-119

Funded by Ron Morinaka, Project Manager  
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## ABSTRACT

Augmented Fish Health Monitoring Contract DE-AI79-87BP35585 was implemented on July 20, 1987. First year highlights included remodeling of the Olympia (WA) Fish Health Center to provide laboratory space for histopathological support services to participating state agencies, acquisition of gas monitoring equipment for hatchery water systems, expanded disease detection work for bacterial kidney disease and erythrocytic inclusion body syndrome in fish stocks at 13 Columbia River Basin National Fish Hatcheries and advancements in computerized case history data storage and analysis. This report summarizes the health status of fish reared at Service facilities in the Columbia River basin, briefly describes work being done to meet contract requirements for fish disease surveillance at those hatcheries and provides a summary of case history data for calendar years 1984, 1985, 1986 and 1987.

## INTRODUCTION

The production of healthy hatchery smolts is an essential element of fishery management and efforts to mitigate the losses caused by hydroelectric power generation. Reliable and comparable fish health data, derived by similar techniques and degrees of surveillance is of great importance to the evaluation of fishery management and mitigation strategies as well as research studies. With BPA guidance, an interagency technical steering committee was formed to determine required levels of fish health monitoring needed to provide data essential for fish disease control in Columbia River basin hatcheries.

This report covers the first year of activity by the U. S. Fish and Wildlife Service at the 13 Columbia River basin National Fish Hatcheries (NFH's).

## MATERIALS ANDMETHODS

The Service operates three fully equipped Fish Health Centers (FHC's) to provide fish disease diagnostic and inspection services to the 13 Columbia River basin NFH's listed in Table 1. These centers are located at Olympia, Washington, the Dworshak NFH near Orofino, Idaho, and at the Spring Creek NFH on the Washington side of the Columbia River across from Hood River, Oregon. Each FHC provides viral, bacterial, parasitic and non-infectious disease diagnostic and fish health monitoring services to the facilities in their geographical area. In addition, laboratory facilities are provided at the Olympia FHC for histopathological services available to the four state agencies participating in the BPA-sponsored Augmented Fish Health Monitoring program. Each FHC has access to computers for data storage and analysis. The Service's Regional Fish Health Manager, located in the Portland, Oregon Regional Office serves as Technical Representative. Data summaries, periodic reports and other

submissions required by the contract are prepared from the computer database and written reports from the fish health centers and provided to BPA by the Technical Representative.

Service fish disease diagnostic and monitoring activities already met most of the requirements set forth under the performance guidelines developed by the steering committee for the BPA-sponsored Augmented Fish Health Monitoring program. The Service identified incremental increases in the frequency of diagnostic visits to hatcheries, sampling for the prevalence of bacterial kidney disease (BKD) in production fish, and in the level of surveillance for erythrocytic inclusion body syndrome (EIBS). Other requirements for monitoring infectious fish diseases already were met by the existing Service program.

Complete fish health monitoring was carried out on adults and juveniles at each of the 13 NFH's. Sampling and laboratory procedures used were those listed in the Fish Health Section - American Fisheries Society "Bluebook" of diagnostic techniques (Amos, 1985), those required by the Service's fish health protection program, or those required to meet requirements set forth for the contract by the interagency technical committee. The results of this work have been reported in the Service's Fishery Evaluation Database and summarized in quarterly reports already submitted.

#### RESULTS AND DISCUSSION

Early in the year major activities focused on preparing the three fish health centers to carry out contract requirements. Significant items included remodeling of lab facilities at Olympia to house the histopathology section,

adjustment of station diagnostic visit schedules, acquisition of additional

supplies and equipment and development of a database input and reporting system.

Histological support already is providing new discoveries. John Morrison furnished the following summary:

During October and November of 1987 small yeast-like or sporozoan-like organisms were found in Gram stained kidney imprints from moribund fall chinook salmon from the Wells Salmon Hatchery (WDF) on the Columbia River near Pateros, WA. Disease signs included anemia, swollen kidneys, splenomegaly, and occasionally, exophthalmus and intestinal swelling.

Histologic examination revealed a lymphocytic type of inflammatory reaction. Hyperplastic cells contained abnormal nuclear inclusions. Under light microscopy these inclusions appeared opaque and non-descript. Electron microscopy, however, revealed them to be organisms with well defined nuclei and organelles suggestive of a microsporean parasite. The parasite infects hematopoietic cells in the kidney that give rise to lymphocytes inducing lymphocytosis. Consultation with Dr. Ralph Elston confirmed that the organism was identical to one he had discovered in adult chinook salmon held in salt water net pens in Puget Sound. Elston, et al, published their findings in a 1987 article entitled "An Intranuclear Microsporidium Associated with Acute Anemia in the Chinook Salmon, Oncorhynchus tshawytscha" which appeared in the Journal of Protozoology, 34(3), p. 274-277.

Accurate and timely data on the health status of spawning adult salmon and steelhead facilitates decision-making regarding the destiny and transfer of eggs. Frequent diagnostic visits to all hatcheries provides greater awareness of fish health status among Service personnel at all levels and can make the

treatment of developing disease problems more effective. This work also enables the Service to better coordinate disease control measures with cooperating agencies because all agencies are on the **same** footing with regard to disease surveillance. Table 1. summarizes the health status of all stocks of fish reared at Service facilities in the Columbia River basin during the past year.

In addition to meeting contract requirements for disease diagnosis and monitoring, organosomatic analyses were performed on summer steelhead smolts at Dworshak NFH and on tule fall chinook smolts at Spring Creek NFH. Greater use of this assessment tool **may** be forthcoming as a result of this initial work.

Dissolved gas monitoring began during the third quarter at each of the 13 Columbia River NFH's. Early work has focused on debugging the equipment and developing a record-keeping **system**. During the next fiscal year of this contract, efforts will be directed to database development and trouble shooting of environmental problems in fish culture.

#### PROJECT STATUS BY OBJECTIVE AND TASK

The Statement of Work in Augmented Fish Health Monitoring contains six objectives. At the end of the first year of this project the accomplishment status of each objective and the tasks listed therein is as follows:

Objective 1 .O: Complete Start-up Phase

Tasks 1.1, 1.2, and 1.3. . . . .	Completed
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Objective 2.0: Serve on the Project Technical Steering Committee

Task 2.1 Attend Technical Steering Committee meetings. . . . .	On-going
Task 2.2 Submit technology transfer plan (Completed) . . . . .	02/15/88



Task 5.3 Submit quarterly data summaries (Data through end of second quarter was submitted 06/01/88) . . . . . On-going  
Task 5.4 Coordinate databases with other agencies (Awaiting guidance). . . . . . . . . . . . . . . . . . . On-going

Objective 6.0: Estimate the Project's Benefits

Task 6.1 Report Table 2.3 data for all Table 2.2 facilities for three years prior to start of contract (Summary report attached. Complete case histories on file) . 07/15/88

Tasks 6.1.1 through 6.1.5 Existing data required for these sub-tasks is scattered in several different files and forms in hatchery records and in Regional Office files. Available data will be provided as soon as possible . . . . . On-going

CONCLUSIONS

Participation by the Fish and Wildlife Service in this interagency project has been productive since the outset. Improved fish disease surveillance (see Table 1.) enhanced interagency coordination and the development of parity in diagnostic services in the field are immediate benefits. In addition, shared technology and methodology has helped all participants improve efficiency and the sensitivity of laboratory procedures.

The patient support by Ron Morinaka is appreciated. He has worked effectively to clarify contract obligations, convene and moderate Technical Steering Committee meetings and facilitated Service efforts to meet requirements.

LITERATURE CITED

Amos, K. H., Editor, 1985. Procedures for the detection and identification of certain fish pathogens. 3rd Edition. Fish Health Section, American Fisheries Society, Corvallis, Oregon. 114 p.

Table 1. Summary of Current Fish Health Status at Service Facilities

FACILITY	FISH STOCK	HEALTH STATUS
Abernathy Salmon Culture Technical Center	Tule fall chinook salmon	BKD forced early release of some fish in Hay
Carson National Fish Hatchery	Spring chinook salmon	IRN losses light in fingerlings
Dworshak Uational Fish Eatchery	Summer steelhead trout Spring chinook salmon	IHN losses exceeded 70 percent in 1988 BKD low prevalence for 3rd consecutive year
Eagle Creek Uatioual Fish Eatchery	Coho salmon Winter steelhead trout	Coldwater disease under control IENV 9.71 in adults; no disease in progeny
Entiat Uatioual Pish Eatchery	Spring chinook salmon	BKD 8.3% prevalence; <u>Hyxobolus</u> spores in brains
Hagerman National Fish Hatchery	Summer steelhead trout	Healthy fish
Kooskia Natinal Pish Eatchery	Spring chinook salmon Suuer steelhead trout	BKD very low; Ich and gill disease required therapy Ich, columnaris and gill disease required therapy
Leavenworth Uatioual Pish Eatchery	Spring chinook salmon Summer steelhead trout	BKD 1.7 % prevalence; healthy fish Ealthy fish
Little White Salmon Uatioual Pish Eatchery	Spring chinook salmon Bright fall chinook salmon Cohosalmon	BKD causing losses; prevalence 9% IENV prev. @50% in 1987 adults; no IHN in progeny Coldwater disease moderate
Spring Creek Rational Pish Eatchery	Tule fall chinook salmon	IRMlight; no Ich; BKD prev. 8.3% in April release
Warm Springs Uatioual Fish Hatchery	Spring chinook salmon Rainbow trout	BKD light; Ich required treatment IHN killed one lot; replacements from ODF&W healthy
Willard Uational Fish Eatchery	Cohosalmon	Coldwater disease moderate to severe annually
Winthrop Uational Fish Eatchery	Spring chinook salmon Lahontan cutthroat trout Brook trout	BKD prevalence at 11.7% light mortality Ealthy fish Purunculosis controlled by Romet - 30 therapy

Table 2. List of Columbia River Basin National Fish Hatcheries

Abernathy Salmon Culture Technical Center 1440 Abernathy Road Longview, WA 98632	Tule fall chinook salmon
David A. Leith, Director	
Carson National Fish Hatchery Carson, WA 98610	Spring chinook salmon
Don L. Zirjacks, Manager	
Dworshak National Fish Hatchery P. O. Box 18 Ahsahka, ID 83520	Summer steelhead trout Spring chinook salmon
Wayne H. Olson, Complex Manager	
Eagle Creek National Fish Hatchery 34288 S. E. Rainbow Road Estacada, OR 97023	Coho salmon Winter steelhead trout
Douglas Dysart, Manager	
Entiat National Fish Hatchery Entiat River Road 6970 Hatchery Drive Entiat, WA 98822	Spring chinook salmon
William Thorson, Manager	
Hager-man National Fish Hatchery 3059-D National Fish Hatchery Road Hager-man, ID 83332	Summer steelhead trout
David S. Bruhn, Manager	
Kooskia National Fish Hatchery Route 1, Box 98-A Kooskia, ID 53539	Spring chinook salmon Summer steelhead trout
Bruce M. McLeod, Manager	

Table 2. (Continued)

Leavenworth National Fish Hatchery  
P. O. Box 549  
Leavenworth, WA 98826

Gregory A. Pratschner, Complex Manager

Spring chinook salmon  
Summer steelhead trout

Little White Salmon National Fish Hatchery  
P. O. Box 17  
Cook, WA 98605

Jack Bodle, Complex Manager

Spring chinook salmon  
Bright fall chinook salmon  
Coho salmon

Spring Creek National Fish Hatchery  
Underwood, WA 98651

Ed LaMotte, Manager

Tule fall chinook salmon

Warm Springs National Fish Hatchery  
P. O. Box 790  
Warm Springs, OR 97761

Gary R. White, Manager

Spring chinook salmon  
Rainbow trout

Willard National Fish Hatchery  
P. O. Box 17  
Cook, WA 98605

Jack Bodle, Complex Manager

Coho salmon

Winthrop National Fish Hatchery  
P. O. Box 429  
Winthrop, WA 98862

William L. Wallien, Manager

Spring chinook salmon  
Lahontan cutthroat trout  
Brook trout

SUMMARY OF ANNUAL EXPENDITURES AND PROPERTY PURCHASES

Summary of Expenditures 1/

Salaries . . . . .	\$ 45,508	
Non-Expendable Equipment . . . . .	121,976	
Expendable Supplies. . . . .	13,342	
Travel . . . . .	8,500	
	Sub-Total . . . . .	\$189,326
Administrative Overhead @ 29.88% . . . . .	56,571	
	Total . . . . .	\$245,897

1/ Data for first 10 months only.

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Summary of Non-Expendable Property Purchases

1. Microcomputer. . . . .	\$ 3,793	
2. Histopathology Equipment Consisting of:		
Autotechnicon. . . . .	3,312	
Tissue Tek Embedding System. . . . .	4,720	
Oven . . . . .	702	
Research Microscope. . . . .	19,520	
Microtome Knife Sharpener. . . . .	2.888	
3. Fluorescence Microscope. . . . .	7,606	
4. Dissolved Gas Meters (14 units at \$4,880 each) .	68,320	
5. Omni Datalogger Systems (3 systems at \$3,705 ea) .	11,115	
	Total . . . . .	\$121,976

FOUR YEAR CASE HISTORY SUMMARYCOLUMBIA RIVER BASIN NATIONAL, FISH HATCHERIES

1984 - 1987

In compliance with the requirements of an interagency agreement (DE-AI79-87BP35585) on "Augmented Fish Health Monitoring, between the U. S. Fish and Wildlife Service (Service) and the Bonneville Power Administration (BPA), the Service has collected and recorded fish health case history information in a computerized data base. Data from monthly diagnostic visits and other fish disease monitoring work is entered into the Service's Fishery Resources Evaluation Database (FRED).

The attached tables were prepared as a first step in gathering recent historical case history data as required in contract Task 6.1. Data for calendar years 1984, 1985, 1986, and the first half of 1987 display the accomplishments of Service fish pathologists during pre-contract years when all work was completed without BPA support.

At first glance the attached tables are somewhat cryptic. A complete set of definitions is appears at the end of this report as Appendix II. Most items in the ten column report are self-explanatory. These items and a brief explanation are as follows:

1. Date - self-explanatory
2. Location - Derived from interagency locator systems.

Idaho: 16 + Idaho hatchery 95 = 1695 + DWOR = 1695DWOR (Dworshak NFH)

Oregon: 43 + Oregon hatchery 98 = 4398 + WMSP = 4398WMSP (Warm Springs NFH)

Washington: 53 + Washington hatchery 99 = 5399 + CRSN = 5399CRSN

(Carson NFH

3. SPE - Species of fish. A three-letter code that is usually self-explanatory. URB = Upriver bright fall chinook. WST = Winter steelhead trout. SST = Summer steelhead trout.
4. FISH/LB - Number of fish per pound.
5. AGE - A letter code indicating age of fish. E = Eggs; S = Sac fry (hatched fry usually > 1,000 per pound); F = Fingerling (usually <= 1,000 per pound and > 25 per pound; Y = Yearlings (usually hatchery juveniles <= 25 per pound; B = All spawning adults.
6. DEN-IND - Density index calculated as directed by Piper, et al (1982).
7. FLOW-IND - Flow index calculated as directed by Piper, et al (1982).
8. TEMP - Water temperature in degrees Fahrenheit.
9. DIS - Disease or pathogens detected. See Appendix II for full listing.

Codes for bacterial diseases begin with the letter "B"; Most names of external parasites begin with the letter "P"; Most viral diseases begin with "V"; Sporozoans begin with "S".

Therefore:

BK = Bacterial kidney disease

BW = Coldwater disease

PICH = Ichthyophthirius

PCOS = Costia (now Ichtyobodo)

SW = Myxobolus cerebralis

SP = Proliferative kidney disease

VH = Infectious hematopoietic necrosis

VN = Erythrocytic inclusion body syndrome
10. LOSS/MO - Projected percentage loss per month for case reported.

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
02/02/84	5399ABER	FCS	807.00	F	0.20	1.47	43.0	SP	1.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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01/15/85	5399ABER	FCS	600.00	F	0.15	0.47	48.2	BA	0.10
04/17/85	5399ABER	FCS	60.00	F	0.26	0.48	46.4	OF	0.20
07/05/85	5399ABER	SCS	48.00	F	0.11	0.32	53.6	BR	0.00
08/28/85	5399ABER	SCS	22.00	Y	0.07	0.39	53.6	EG	0.00
11/08/85	5399ABER	FCS	0.05	B	0.00	0.00	0.0	BF	0.00
12/19/85	5399ABER	SCS	500.00	F	0.03	1.12	52.0	OF	2.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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02/21/86	5399ABER	FCS	140.00	F	0.31	0.66	41.0	BW	5.00
09/29/86	5399ABER	SCS	32.00	F	0.00	0.78	53.6	BA	0.50

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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03/04/87	5399ABER	FCS	0.00	B	0.00	0.00	0.0	BF	0.00
03/23/87	5399ABER	FCS	45.00	F	0.00	0.00	56.0	PCOS	1.00
05/18/87	5399ABER	FCS	16.30	Y	0.45	1.31	52.3	BF	0.50
12/07/87	5399ABER	FCS	1000.00	S	0.18	0.58	51.8	BU	3.00
11/30/87	5399ABER	FCS	0.00	B	0.00	0.00	0.0	BF	0.00
12/07/87	5399ABER	FCS	1000.00	S	0.18	0.56	51.8	BA	0.50

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/05/84	5399CRSN	SCS	22.00	Y	0.33	4.84	43.0	BK	0.50
02/29/84	5399CRSN	SCS	700.00	F	0.62	2.29	44.0	FP	0.40
04/02/84	5399CRSN	SCS	20.00	Y	0.15	0.91	44.0	NC	0.00
06/12/84	5399CRSN	SCS	100.00	F	0.14	0.57	44.0	xx	0.10
10/30/84	5399CRSN	SCS	28.00	F	0.27	0.92	44.0	DS	0.50
10/30/84	5399CRSN	SCS	28.00	F	0.27	0.92	44.0	OF	0.50

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/11/85	5399CRSN	SCS	1050.00	S	0.42	1.18	44.1	xx	0.00
01/14/85	5399CRSN	SCS	27.00	F	0.33	0.40	44.0	VN	7.10
01/14/85	5399CRSN	SCS	27.00	F	0.33	0.40	44.0	BK	7.10
01/25/85	5399CRSN	SCS	1090.00	S	0.89	0.27	44.1	xx	1.00
01/25/85	5399CRSN	SCS	30.50	F	0.07	1.33	44.0	VN	2.00
01/25/85	5399CRSN	SCS	30.50	F	0.07	1.33	44.0	BK	2.00
01/25/85	5399CRSN	SCS	30.50	F	0.07	1.33	44.0	PEP1	2.00
01/25/85	5399CRSN	SCS	30.50	F	0.07	1.33	44.0	PSCY	2.00
03/12/85	5399CRSN	SCS	22.20	Y	0.29	0.93	44.0	BK	0.30
03/12/85	5399CRSN	SCS	22.20	Y	0.29	0.93	44.0	BK	0.30
06/11/85	5399CRSN	SCS	105.00	F	0.35	1.11	44.0	DS	0.40
07/29/85	5399CRSN	SCS	65.00	F	0.19	0.63	48.0	DS	0.00
08/12/85	5399CRSN	FCS	52.00	F	0.28	1.69	51.0	ES	0.30
09/09/85	5399CRSN	SCS	0.00	B	0.00	0.00	51.0	BF	0.00
09/09/85	5399CRSN	SCS	0.00	B	0.00	0.00	0.0	SC	0.00
09/24/85	5399CRSN	SCS	40.00	F	0.28	0.90	46.0	FS	0.20
09/24/85	5399CRSN	SCS	40.00	F	0.28	0.90	46.0	BK	0.20
09/10/85	5399CRSN	SCS	0.00	B	0.00	0.00	46.0	SC	0.00
09/10/85	5399CRSN	SCS	0.00	B	0.00	0.00	46.0	BF	0.00
09/10/85	5399CRSN	SCS	0.00	B	0.00	0.00	46.0	VN	0.00
09/10/85	5399CRSN	SCS	0.00	B	0.00	0.00	46.0	BK	0.00
11/01/85	5399CRSN	SCS	33.00	F	0.25	1.03	44.0	BK	0.20
00/01/85	5399CRSN	SCS	33.00	F	0.25	1.03	44.0	DS	0.20
11/01/85	5399CRSN	SCS	33.00	F	0.25	1.03	44.0	FS	0.20
12/26/85	5399CRSN	SCS	29.00	F	0.33	1.10	42.0	BK	0.40

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/10/86	5399CRSN	SCS	28.50	F	0.05	0.97	43.0	VN	0.80
02/10/86	5399CRSN	SCS	28.50	F	0.05	0.97	43.0	BK	0.80
03/13/86	5399CRSN	SCS	23.50	Y	0.39	1.26	43.0	PCOS	0.30
03/13/86	5399CRSN	SCS	23.50	Y	0.39	1.26	43.0	BK	0.30
07/18/86	5399CRSN	SCS	80.00	F	0.15	0.53	45.0	FP	0.30
09/29/86	5399CRSN	SCS	0.00	B	0.00	0.00	44.0	VN	0.00
09/29/86	5399CRSN	SCS	0.00	B	0.00	0.00	44.0	BK	0 .00
09/29/86	5399CRSN	SCS	0.00	B	0.00	0.00	44.0	BF	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/25/87	5399CRSN	SCS	23.00	Y	0.45	1.46	43.0	PTRC	0.10
02/25/87	5399CRSN	SCS	23.00	Y	0.45	1.46	43.0	PCOS	0.10
02/25/87	5399CRSN	SCS	23.00	Y	0.45	1.46	43.0	BW	0.10
04/19/87	5399CRSN	SCS	290.00	F	0.64	1.72	44.0	DD	0.00
06/11/87	5399CRSN	SCS	0.00	B	0.00	0.00	0.0	cs	0.00
06/11/87	5399CRSN	SCS	0.00		0.00	0.00	0.0	BK	0.00
06/17/87	5399CRSN	SCS	84.00	F	0.28	0.91	44.0	FP	0.20
08/06/87	5399CRSN	SCS	60.00	F	0.17	0.56	45.0	BK	0.20
08/06/87	5399CRSN	SCS	60.00	F	0.17	0.56	45.0	ES	0.20
08/31/87	5399CRSN	SCS	0.06	B	0.00	0.00	0.0	BK	0.00
08/31/87	5399CRSN	SCS	0.06	B	0.00	0.00	0.0	VH	0.00
11/30/87	5399CRSN	SCS	0.00	B	0.00	0.00	0.0	SH	0.00
11/30/87	5399CRSN	SCS	0.00	B	0.00	0.00	0.0	VH	0.00
11/30/87	5399CRSN	SCS	0.00	B	0.00	0.00	0.0	BK	0.00
11/30/87	5399CRSN	SCS	0.00	B	0.00	0.00	0.0	BF	0.00
11/30/87	5399CRSN	SCS	0.00	B	0.00	0.00	0.0	SC	0.00
09/21/87	5399CRSN	SCS	39.00	F	0.24	0.78	44.0	BK	0.40

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

07/02/84	1695DWOR	RBT	50.00	F	0.08	0.22	47.5	PSCY	0.00
07/02/84	1695DWOR	SST	195.00	F	0.05	0.31	49.5	PSCY	0.00
07/02/84	1695DWOR	SST	23.50	Y	0.06	0.37	49.5	PEP1	0.00
07/02/84	1695DWOR	SST	23.50	Y	0.06	0.37	49.5	PSCY	0.00
07/09/84	1695DWOR	SST	0.00	F	0.00	0.00	49.0	PTRC	0.00
07/09/84	1695DWOR	SST	0.00	F	0.00	0.00	49.0	UE	0.00
07/30/84	1695DWOR	SST	0.00	F	0.00	0.00	0.0	VH	0.00
08/09/84	1695DWOR	SST	210.00	F	0.00	0.00	0.0	PEP1	0.00
08/09/84	1695DWOR	SST	210.00	F	0.00	0.00	0.0	PSCY	0.00
08/09/84	1695DWOR	SST	88.30	F	0.09	0.54	48.8	PEP1	0.00
08/24/84	1695DWOR	SST	77.50	F	0.10	0.58	48.7	PICH	0.00
08/24/84	1695DWOR	SST	77.50	F	0.10	0.58	48.7	PEP1	0.00
08/29/84	1695DWOR	SST	0.00	F	0.00	0.00	0.0	PTRC	0.00
09/06/84	1695DWOR	SST	103.40	F	0.08	0.51	48.7	PEP1	0.00
09/07/84	1695DWOR	SST	0.00	F	0.00	0.00	0.0	PTRC	0.00
09/07/84	1695DWOR	SST	0.00	F	0.00	0.00	0.0	PICH	0.00
09/07/84	1695DWOR	SST	50.18	F	0.13	0.80	48.9	PEP1	0.00
09/17/84	1695DWOR	SST	77.50	F	0.10	0.58	49.0	PEP1	0.00
10/09/84	1695DWOR	SST	30.00	F	0.15	0.92	49.9	VH	0.00
10/09/84	1695DWOR	SST	27.70	F	0.09	0.48	49.9	PTRC	0.00
10/15/84	1695DWOR	SST	30.00	F	0.17	0.93	49.9	PEP1	0.00
11/01/84	1695DWOR	SST	57.60	F	0.10	0.54	49.9	E'EP1	0.00
11/01/84	1695DWOR	SST	57.60	F	0.10	0.54	49.9	PTRC	0.00
11/07/84	1695DWOR	SST	30.00	F	0.09	0.55	49.9	VH	0.00
11/07/84	1695DWOR	SST	30.00	F	0.09	0.55	49.9	PEP1	0.00
11/14/84	1695DWOR	SST	20.50	Y	0.11	0.64	48.0	TG	0.00
11/14/84	1695DWOR	SST	20.50	Y	0.11	0.64	48.0	PEP1	0.00
11/14/84	1695DWOR	SST	20.50	Y	0.11	0.64	48.0	PICH	0.00
12/05/84	1695DWOR	SST	21.66	Y	0.07	0.40	53.4	PCOS	0.00
12/05/84	1695DWOR	SST	21.66	Y	0.07	0.40	53.4	TG	0.00
12/07/84	1695DWOR	SST	29.80	F	0.07	0.34	52.8	TG	0.00
12/07/84	1695DWOR	SST	29.80	F	0.07	0.34	52.8	PICH	0.00
12/07/84	1695DWOR	SST	29.90	F	0.07	0.34	52.8	PEP1	0.00
12/13/84	1695DWOR	SST	14.48	Y	0.15	1.00	51.3	TG	0.00
12/13/84	1695DWOR	SST	14.48	Y	0.15	1.00	51.3	PEP1	0.00

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DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/02/85	1695DWOR	SST	14.47	Y	0.14	0.98	51.3	TG	0.00
01/02/85	1695DWOR	SST	14.47	Y	0.14	0.98	51.3	PTRC	0.00
01/03/85	1695DWOR	SST	35.70	F	0.06	0.31	52.8	PICH	0.00
01/03/85	1695DWOR	SCS	0.00	F	0.00	0.00	0.0	UE	0.00
01/07/85	1695DWOR	SST	21.70	Y	0.07	0.45	53.4	PICH	0.00
02/01/85	1695DWOR	SST	13.60	Y	0.09	0.46	52.9	PEP1	0.00
02/01/85	1695DWOR	SST	13.60	Y	0.09	0.52	52.3	PEP1	0.00
02/01/85	1695DWOR	SST	13.60	Y	0.09	0.52	52.3	TG	0.00
02/01/85	1695DWOR	SST	11.70	Y	0.17	1.14	48.6	PTRC	0.00
02/07/85	1695DWOR	SCS	0.00	F	0.00	0.00	0.0	VH	0.00
03/07/85	1695DWOR	SST	10.76	Y	0.09	0.50	52.5	PEP1	0.00
03/07/85	1695DWOR	SST	10.76	Y	0.11	0.53	51.7	VH	0.00
03/07/85	1695DWOR	SST	9.82	Y	0.19	1.32	44.9	PTRC	0.00
03/07/85	1695DWOR	SST	9.82	Y	0.19	1.32	44.9	PCOS	0.00
03/07/85	1695DWOR	SST	9.82	Y	0.19	1.32	44.9	TG	0.00
07/02/85	1695DWOR	SST	0.00	F	0.00	0.00	0.0	UE	0.00
07/08/85	1695DWOR	SCS	0.00	F	0.00	0.00	0.0	PCOS	0.00
07/08/85	1695DWOR	SCS	0.00	F	0.00	0.00	0.0	UE	0.00
07/17/85	1695DWOR	SST	0.00	F	0.00	0.00	0.0	UE	0.00
07/17/85	1695DWOR	SST	38.91	F	0.08	0.00	54.6	PEP1	0.00
07/18/85	1695DWOR	SCS	82.20	F	0.13	0.00	0.0	UE	0.00
07/23/85	1695DWOR	SST	56.06	F	0.11	0.00	0.0	PEP1	0.00
07/29/85	1695DWOR	SCS	0.00		0.00	0.00	0.0	UE	0.00
07/29/85	1695DWOR	SCS	0.00		0.00	0.00	0.0	PICH	0.00
08/05/85	1695DWOR	SCS	82.20	F	0.13	0.00	54.5	UE	0.00
08/14/85	1695DWOR	SST	96.45	F	0.08	0.00	54.6	PEP1	0.00
08/30/85	1695DWOR	SST	96.40	F	0.09	0.00	0.0	VH	0.00
09/09/85	1695DWOR	SST	63.60	F	0.12	0.00	54.6	PEP1	0.00
09/09/85	1695DWOR	SST	63.60	F	0.12	0.00	54.6	TS	0.00
09/09/85	1695DWOR	SST	40.84	F	0.07	0.00	54.6	PCOS	0.00
09/09/85	1695DWOR	SST	40.84	F	0.07	0.00	54.6	PEP1	0.00
09/09/85	1695DWOR	SST	40.84	F	0.07	0.00	54.6	PTRY	0.00
09/09/85	1695DWOR	SST	40.84	F	0.07	0.00	54.6	TS	0.00
09/10/85	1695DWOR	SST	74.28	F	0.08	0.00	54.6	PCOS	0.00
09/10/85	1695DWOR	SST	74.28	F	0.08	0.00	54.6	PTRY	0.00
09/10/85	1695DWOR	SST	74.28	F	0.08	0.00	54.6	UE	0.00
09/10/85	1695DWOR	SST	74.28	F	0.08	0.00	54.6	PEP1	0.00
09/17/85	1695DWOR	SCS	50.00	F	0.08	0.22	47.5	UE	0.00
09/17/85	1695DWOR	SCS	50.00	F	0.08	0.22	47.5	PEP1	0.00
09/30/85	1695DWOR	SCS	41.34	F	0.13	0.00	54.6	UE	0.00
09/30/85	1695DWOR	SCS	41.34	F	0.13	0.00	54.6	PEP1	0.00
09/30/85	1695DWOR	SCS	41.34	F	0.13	0.00	54.6	PSCY	0.00
09/30/85	1695DWOR	SCS	41.34	F	0.13	0.00	54.6	TS	0.00
10/07/85	1695DWOR	SST	47.80	F	0.07	0.00	54.6	PEP1	0.00
10/22/85	1695DWOR	SST	35.47	F	0.08	0.63	54.6	PEPI	0.00
10/22/85	1695DWOR	SST	35.47	F	0.08	0.63	54.6	TG	0.00
10/24/85	1695DWOR	SCS	46.58	F	0.12	0.41	54.6	UE	0.00
10/24/85	1695DWOR	SCS	46.58	F	0.12	0.41	54.6	PSCY	0.00
10/24/85	1695DWOR	SCS	45.58	F	0.12	0.41	54.6	PEP1	0.00
10/24/85	1695DWOR	SCS	45.58	F	0.12	0.41	54.6	TS	0.00

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DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

10/28/85	1695DWOR	RBT	0.00	F	0.00	0.00	0.0	PCOS	0.00
10/30/85	1695DWOR	SST	28.91	F	0.09	0.57	54.6	TG	0.00
10/30/85	1695DWOR	SST	28.91	F	0.09	0.57	54.6	PEP1	0.00
11/12/85	1695DWOR	SST	21.57	Y	0.11	0.73	51.6	TG	0.00
11/25/85	1695DWOR	SST	19.61	Y	0.12	0.76	51.6	PTRY	0.00
11/25/85	1695DWOR	SST	19.61	Y	0.12	0.76	51.6	PEP1	0.00
11/25/85	1695DWOR	SST	19.61	Y	0.12	0.76	51.6	TG	0.00
11/26/85	1695DWOR	SST	16.36	Y	0.10	0.49	51.6	TG	0.00
11/27/85	1695DWOR	SCS	28.76	F	0.00	0.49	0.0	UE	0.00
11/27/85	1695DWOR	SCS	28.76	F	0.00	0.49	0.0	PTRC	0.00
11/27/85	1695DWOR	SCS	28.76	F	0.00	0.49	0.0	PEP1	0.00
11/27/85	1695DWOR	SCS	28.76	F	0.00	0.49	0.0	PSCY	0.00
12/03/85	1695DWOR	SST	8.87	Y	0.22	1.48	52.6	PTRY	0.00
12/03/85	1695DWOR	SST	8.87	Y	0.22	1.48	52.6	TG	0.00
12/24/85	1695DWOR	RBT	0.00	F	0.00	0.00	0.0	PTRC	0.00
12/26/85	1695DWOR	SST	8.87	Y	0.22	1.19	52.6	TS	0.00
12/26/85	1695DWOR	SST	10.14	Y	0.13	0.67	52.7	TG	0.00
12/26/85	1695DWOR	SST	10.14	Y	0.13	0.67	52.7	PEP1	0.00
12/26/85	1695DWOR	SST	11.84	Y	0.19	1.11	40.3	PTRC	0.00
12/26/85	1695DWOR	SST	11.84	Y	0.19	1.11	40.3	TG	0.00
12/30/85	1695DWOR	SCS	26.64	F	0.14	0.46	40.3	PSCY	0.00
12/30/85	1695DWOR	SCS	26.64	F	0.14	0.46	40.3	UE	0.00
12/30/85	1695DWOR	SCS	26.64	F	0.14	0.46	40.3	PEP1	0.00
12/30/85	1695DWOR	SCS	26.64	F	0.14	0.46	40.3	PTRC	0.00
12/30/85	1695DWOR	SCS	31.20	F	0.16	0.52	40.2	PTRY	0.00
12/30/85	1695DWOR	SCS	31.20	F	0.16	0.52	40.2	PEP1	0.00
12/30/85	1695DWOR	SCS	31.20	F	0.16	0.52	40.2	UE	0.00
12/30/85	1695DWOR	SCS	21.11	Y	0.09	0.29	40.3	PSCY	0.00
12/30/85	1695DWOR	SCS	21.11	Y	0.09	0.29	40.3	UE	0.00
12/30/85	1695DWOR	SCS	21.11	Y	0.09	0.29	40.3	TS	0.00
12/30/85	1695DWOR	SCS	21.11	Y	0.09	0.29	40.3	PTRY	0.00
12/30/85	1695DWOR	SCS	21.11	Y	0.09	0.29	40.3	PTRC	0.00
12/30/85	1695DWOR	SCS	21.11	Y	0.09	0.29	40.3	PEPI	0.00
12/30/85	1695DWOR	SCS	25.77	F	0.09	0.46	40.3	PCOS	0.00
12/30/85	1695DWOR	SCS	25.77	F	0.09	0.46	40.3	UE	0.00
12/30/85	1695DWOR	SCS	25.77	F	0.09	0.46	40.3	PSCY	0.00
12/30/85	1695DWOR	SCS	25.77	F	0.09	0.46	40.3	UE	0.00
12/30/85	1695DWOR	SCS	20.80	Y	0.09	0.46	40.3	UE	0.00
12/30/85	1695DWOR	SCS	20.80	Y	0.09	0.46	40.3	UE	0.00
12/30/85	1695DWOR	SCS	20.80	Y	0.09	0.46	40.3	TS	0.00
12/30/85	1695DWOR	RBT	0.00		0.00	0.00	0.0	PTRC	0.00
12/31/85	1695DWOR	RBT	0.00		0.00	0.00	0.0	UE	0.00
12/31/85	1695DWOR	RBT	0.00	F	0.00	0.00	0.0	PCOS	0.00

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DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/05/86	1695DWOR	SCS	24.41	Y	0.26	0.92	43.6	UE	0.11
01/05/86	1695DWOR	SCS	24.41	Y	0.26	0.92	43.6	PTRY	0.11
01/05/86	1695DWOR	SCS	24.41	Y	0.26	0.92	43.6	PSCY	0.11
01/05/86	1695DWOR	SCS	24.41	Y	0.26	0.92	43.6	PEP1	0.11
01/05/86	1695DWOR	SCS	24.41	Y	0.26	0.92	43.6	UE	0.11
01/05/86	1695DWOR	SCS	24.41	Y	0.26	0.92	43.6	BK	0.11
02/06/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PSCY	0.00
02/06/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	TG	0.00
02/06/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PTRC	0.00
02/06/86	1695DWOR	SST	6.62	Y	0.16	0.04	52.6	PSCY	0.00
02/06/86	1695DWOR	SST	7.07	Y	0.25	0.05	39.8	PSCY	0.00
02/06/86	1695DWOR	SST	7.07	Y	0.25	0.05	39.8	VH	0.00
02/11/86	1695DWOR	SST	6.62	Y	0.16	0.04	52.6	PEP1	0.00
02/11/86	1695DWOR	SST	6.62	Y	0.16	0.04	52.6	PSCY	0.00
02/11/86	1695DWOR	SST	6.62	Y	0.16	0.04	52.6	TG	0.00
02/20/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PEP1	0.00
02/20/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	TG	0.00
02/20/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PTRC	0.00
02/20/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PSCY	0.00
02/26/86	1695DWOR	SST	12.18	Y	0.15	0.03	37.9	PTRY	0.00
02/26/86	1695DWOR	SST	12.18	Y	0.15	0.03	37.9	PSCY	0.00
02/26/86	1695DWOR	SST	12.18	Y	0.15	0.03	37.9	PEP1	0.00
02/26/86	1695DWOR	SST	12.18	Y	0.15	0.03	37.9	TG	0.00
02/26/86	1695DWOR	SST	12.18	Y	0.15	0.03	37.9	PTRC	0.00
02/26/86	1695DWOR	SST	12.18	Y	0.15	0.03	37.9	PSCY	0.00
02/27/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PEP1	0.00
02/27/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PSCY	0.00
02/27/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PTRC	0.00
02/27/86	1695DWOR	SST	10.74	Y	0.18	0.04	37.9	PTRY	0.00
03/06/86	1695DWOR	SST	9.26	Y	0.20	0.04	39.2	PTRC	0.00
03/06/86	1695DWOR	SST	9.26	Y	0.20	0.04	39.2	TG	0.00
03/07/86	1695DWOR	SCS	738.20	F	0.00	0.00	37.9	UE	0.00
03/13/86	1695DWOR	SST	9.26	Y	0.20	0.04	39.2	PTRC	0.00
03/13/86	1695DWOR	SST	9.26	Y	0.20	0.04	39.2	PSCY	0.00
03/13/86	1695DWOR	SST	9.26	Y	0.20	0.04	39.2	PEP1	0.00
03/13/86	1695DWOR	SST	9.26	Y	0.20	0.04	39.2	PTRY	0.00
03/14/86	1695DWOR	SST	8.30	Y	0.17	0.04	46.1	TG	0.00
03/27/86	1695DWOR	SST	9.26	Y	0.20	0.04	39.0	PTRC	0.00
04/03/86	1695DWOR	SST	8.45	Y	0.20	0.04	40.2	PTRC	0.00
04/03/86	1695DWOR	SST	8.45	Y	0.20	0.04	40.2	PTRY	0.00
04/14/86	1695DWOR	SST	7.14	Y	0.28	0.06	41.4	PTRC	0.00
04/14/86	1695DWOR	SST	7.17	Y	0.28	0.06	41.4	PEP1	0.00
04/14/86	1695DWOR	SST	7.17	Y	0.28	0.06	41.4	TG	0.00
04/17/86	1695DWOR	SST	8.00	Y	0.25	0.05	40.2	PTRC	0.00
04/17/86	1695DWOR	SST	8.00	Y	0.25	0.05	40.2	TG	0.00
04/17/86	1695DWOR	SST	8.00	Y	0.25	0.05	40.2	PTRY	0.00
04/24/86	1695DWOR	SST	0.00	B	0.00	0.00	0.0	PEPI	0.00
04/24/86	1695DWOR	SST	0.00	B	0.00	0.00	0.0	PTRC	0.00
04/24/86	1695DWOR	SST	0.00	B	0.00	0.00	0.0	TG	0.00
04/24/86	1695DWOR	SST	5.47	Y	0.29	0.06	41.4	PTRC	0.00

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FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
04/24/86	1695DWOR	SST	5.47	Y	0.29	0.06	41.4	PEP1	0.00
04/24/86	1695DWOR	SST	5.47	Y	0.29	0.06	41.4	TG	0.00
04/24/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	UE	0.00
05/30/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	UE	0.00
06/09/86	1695DWOR	SST	0.00		0.00	0.00	0.0	VH	0.00
06/09/86	1695DWOR	SST	0.00		0.00	0.00	0.0	VH	0.00
06/09/86	1695DWOR	SST	0.00		0.00	0.00	0.0	VH	0.00
06/25/86	1695DWOR	SST	0.00		0.00	0.00	0.0	PTRC	0.00
06/30/86	1695DWOR	SST	0.00		0.00	0.00	0.0	VH	0.00
07/07/86	1695DWOR	SST	0.00		0.00	0.00	0.0	PTRC	0.00
07/09/86	1695DWOR	SCS	87.62	F	0.12	0.01	53.7	UE	0.00
07/21/86	1695DWOR	SST	52.67	F	0.09	0.04	53.7	VH	0.00
07/21/86	1695DWOR	SST	52.67	F	0.09	0.04	53.7	TG	0.00
07/21/86	1695DWOR	SST	52.67	F	0.09	0.04	53.7	PTRC	0.00
07/21/86	1695DWOR	SST	61.39	F	0.08	0.03	53.7	VH	0.00
07/21/86	1695DWOR	SST	61.39	F	0.08	0.03	53.7	PTRC	0.00
07/21/86	1695DWOR	SST	61.39	F	0.08	0.03	53.7	TG	0.00
07/21/86	1695DWOR	SST	0.00		0.00	0.00	53.7	PTRC	0.00
07/21/86	1695DWOR	SST	0.00	F	0.00	0.00	53.7	VH	0.00
07/24/86	1695DWOR	SST	52.67	F	0.09	0.04	53.7	VH	0.00
07/29/86	1695DWOR	SCS	85.68	F	0.00	0.02	53.7	UE	0.00
07/29/86	1695DWOR	SCS	85.68	F	0.00	0.00	53.7	BK	0.00
07/30/86	1695DWOR	SST	52.67	F	0.11	0.05	53.7	VH	0.00
07/31/86	1695DWOR	SST	35.05	F	0.07	0.05	53.7	PEP1	0.00
07/31/86	1695DWOR	SST	35.05	F	0.07	0.05	53.7	VH	0.00
07/31/86	1695DWOR	SST	35.05	F	0.07	0.05	53.7	TG	0.00
07/31/86	1695DWOR	SCS	83.73	F	0.12	0.01	53.7	UE	0.00
07/31/86	1695DWOR	SCS	83.73	F	0.12	0.01	53.7	BK	0.00
07/31/86	1695DWOR	SST	0.00		0.00	0.00	0.0	VH	0.00
07/31/86	1695DWOR	SST	0.00		0.00	0.00	0.0	PTRC	0.00
08/01/86	1695DWOR	SST	59.93	F	0.11	0.05	53.7	VH	0.00
08/04/86	1695DWOR	SCS	63.82	F	0.14	0.00	53.7	BK	0.00
08/04/86	1695DWOR	SCS	63.82	F	0.14	0.02	53.7	UE	0.00
08/07/86	1695DWOR	SST	37.13	F	0.14	0.00	53.7	PTRC	0.00
08/07/86	1695DWOR	SST	37.13	F	0.14	0.11	53.7	TG	0.00
08/07/86	1695DWOR	SST	37.13	F	0.14	0.00	53.7	VH	0.00
08/07/86	1695DWOR	SST	0.00		0.00	0.00	0.0	VH	0.00
08/11/86	1695DWOR	SST	35.67	F	0.14	0.00	53.8	PTRC	0.00
08/11/86	1695DWOR	SST	35.67	F	0.14	0.12	53.8	TG	0.00
08/11/86	1695DWOR	SST	35.67	F	0.14	0.00	53.8	VH	0.00
08/11/86	1695DWOR	SST	35.30	F	0.12	0.12	53.7	VH	0.00
08/11/86	1695DWOR	SST	86.51	F	0.04	0.01	53.7	VH	0.00
08/12/86	1695DWOR	SCS	68.19	F	0.14	0.00	53.7	UE	0.00
08/12/86	1695DWOR	SCS	68.19	F	0.14	0.02	53.7	BK	0.00
09/03/86	1695DWOR	SCS	63.19	F	0.12	0.00	53.7	BK	0.00
09/03/86	1695DWOR	SCS	63.19	F	0.12	0.02	53.7	UE	0.00
09/03/86	1695DWOR	SCS	68.19	F	0.14	0.02	53.7	UE	0.00
09/10/86	1695DWOR	SST	28.65	F	0.13	0.11	53.7	VH	0.00
09/10/86	1695DWOR	SST	28.65	F	0.13	0.11	53.7	TG	0.00
09/10/86	1695DWOR	RBT	0.00	F	0.00	0.00	0.0	VH	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

09/10/86	1695DWOR	RBT	0 .00	0.00	0.00	0.0	TG	0.00	
09/15/86	1695DWOR	SST	29.66	F	0.13	0.10	53.7	VH	0.00
09/24/86	1695DWOR	SCS	63.00	F	0.28	0.02	53.7	UE	0.00
09/24/86	1695DWOR	SCS	63.00	F	0.28	0.02	53.7	PEP1	0.00
09/24/86	1695DWOR	SCS	63.00	F	0.28	0.02	53.7	PSCY	0.00
09/29/86	1695DWOR	SCS	43.72	F	0.19	0.05	53.7	UE	0.00
09/29/86	1695DWOR	SCS	43.72	F	0.19	0.05	53.7	PEP1	0.00
09/29/86	1695DWOR	SCS	43.72	F	0.19	0.05	53.7	PTRC	0.00
09/29/86	1695DWOR	SCS	43.72	F	0.19	0.05	53.7	BK	0.00
09/30/86	1695DWOR	SCS	42.60	F	0.19	0.05	53.7	BK	0.00
09/30/86	1695DWOR	SCS	42.60	F	0.19	0.05	53.7	PTRY	0.00
09/30/86	1695DWOR	SCS	42.60	F	0.19	0.05	53.7	UE	0.00
09/30/86	1695DWOR	SCS	68.19	F	0.14	0.00	53.7	BK	0.00
10/02/86	1695DWOR	SST	14.07	Y	0.11	0.25	53.2	VH	0.78
10/06/86	1695DWOR	SST	33.27	F	0.08	0.06	53.2	VH	13.75
10/08/86	1695DWOR	SST	22.04	Y	0.23	0.25	53.2	VH	2.28
10/08/86	1695DWOR	SST	45.78	F	0.06	0.03	53.2	PTRY	0.80
10/08/86	1695DWOR	SST	45.78	F	0.06	0.03	53.2	PEP1	0.80
10/08/86	1695DWOR	SST	45.78	F	0.06	0.03	53.2	PSCY	0.80
10/15/86	1695DWOR	SST	40.46	F	0.06	0.03	53.2	V-H	22.76
10/15/86	1695DWOR	SST	16.40	Y	0.09	0.14	53.2	PSCY	7.80
10/15/86	1695DWOR	SST	16.40	Y	0.09	0.14	53.2	PEP1	7.80
10/15/86	1695DWOR	SST	16.40	Y	0.09	0.14	53.2	PICH	7.80
10/16/86	1695DWOR	SCS	40.41	F	0.21	0.05	53.2	PEP1	0.07
10/16/86	1695DWOR	SCS	40.41	F	0.21	0.05	53.2	BK	0.07
10/16/86	1695DWOR	SCS	40.41	F	0.21	0.05	53.2	UE	0.07
10/16/86	1695DWOR	SCS	40.41	F	0.21	0.05	53.2	PTRY	0.07
10/22/86	1695DWOR	SCS	33.27	F	0.01	0.02	53.2	BK	0.36
10/22/86	1695DWOR	SCS	33.27	F	0.22	0.07	53.2	UE	0.43
10/22/86	1695DWOR	SCS	33.27	F	0.22	0.07	53.2	PTRY	0.43
10/22/86	1695DWOR	SCS	33.27	F	0.22	0.07	53.2	BK	0.43
10/22/86	1695DWOR	SCS	33.27	F	0.22	0.07	53.2	PEP1	0.43
10/22/86	1695DWOR	SCS	33.27	F	0.22	0.07	53.2	UE	0.37
10/22/86	1695DWOR	SCS	33.27	F	0.22	0.07	53.2	PEP1	0.37
10/22/86	1695DWOR	SCS	33.27	F	0.22	0.07	53.2	PSCY	0.37
10/22/86	1695DWOR	SCS	33.27	F	0.22	0.07	53.2	BK	0.37
10/27/86	1695DWOR	SST	40.77	F	0.06	0.03	53.2	PEP1	3.61
10/27/86	1695DWOR	SST	40.77	F	0.06	0.03	53.2	VH	3.61
10/27/86	1695DWOR	SST	40.77	F	0.06	0.03	53.2	PSCY	3.61
10/27/86	1695DWOR	SST	40.77	F	0.06	0.03	53.2	TG	3.61
10/27/86	1695DWOR	SST	18.82	Y	0.08	0.12	53.2	TG	0.79
10/27/86	1695DWOR	SST	18.82	Y	0.08	0.12	53.2	PEP1	0.79
10/27/86	1695DWOR	SST	18.82	Y	0.08	0.12	53.2	PSCY	0.79
10/27/86	1695DWOR	SST	18.82	Y	0.08	0.12	53.2	VH	0.79
10/29/86	1695DWOR	SST	18.82	Y	0.08	0.12	53.2	VH	0.79
10/29/86	1695DWOR	SST	18.82	Y	0.08	0.12	53.2	TG	0.79
10/29/86	1695DWOR	SST	40.77	F	0.04	0.03	53.2	PEPI	0.82
10/29/86	1695DWOR	SST	40.77	F	0.04	0.03	53.2	VH	0.82
10/29/86	1695DWOR	SST	40.77	F	0.04	0.02	53.2	TG	0.82
10/29/86	1695DWOR	SCS	0.00		0.00	0.00	53.2	PSCY	0.00

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FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

10/29/86	1695DWOR	SCS	0.00	0.00	0.00	53.2	PTRY	0.00	
10/29/86	1695DWOR	SCS	0.00	0.00	0.00	53.2	VH	0.00	
10/29/86	1695DWOR	SCS	0.00	0.00	0.00	53.2	PEP1	0.00	
10/29/86	1695DWOR	SCS	0.00	0.00	0.00	53.2	UE	0.00	
10/30/86	1695DWOR	SCS	33.09	F	0.23	0.07	53.2	UE	0.13
10/30/86	1695DWOR	SCS	33.09	F	0.23	0.07	53.2	PTRY	0.13
10/30/86	1695DWOR	SCS	33.09	F	0.23	0.07	53.2	BK	0.13
10/30/86	1695DWOR	SCS	33.09	F	0.23	0.07	53.2	PSCY	0.13
10/30/86	1695DWOR	SCS	33.09	F	0.23	0.07	53.2	PEP1	0.13
10/30/86	1695DWOR	SCS	35.26	F	0.22	0.07	53.2	UE	0.06
10/30/86	1695DWOR	SCS	35.26	F	0.22	0.07	53.2	PTRY	0.06
10/30/86	1695DWOR	SCS	35.26	F	0.22	0.07	53.2	BK	0.06
10/30/86	1695DWOR	SCS	35.26	F	0.22	0.07	53.2	PICH	0.06
10/30/86	1695DWOR	SCS	31.51	F	0.24	0.08	53.2	PEP1	0.12
10/30/86	1695DWOR	SCS	31.51	F	0.24	0.08	53.2	UE	0.12
10/30/86	1695DWOR	SCS	31.51	F	0.24	0.08	53.2	BK	0.12
10/30/86	1695DWOR	SCS	31.51	F	0.24	0.08	53.2	PTRY	0.12
10/30/86	1695DWOR	SCS	31.51	F	0.24	0.08	53.2	PSCY	0.12
10/30/86	1695DWOR	SCS	34.37	F	0.23	0.07	53.2	BK	0.02
10/30/86	1695DWOR	SCS	34.37	F	0.23	0.07	53.2	PTRY	0.02
10/30/86	1695DWOR	SCS	34.37	F	0.23	0.07	53.2	PICH	0.02
10/30/86	1695DWOR	SCS	34.37	F	0.23	0.07	53.2	UE	0.02
10/30/86	1695DWOR	SCS	34.37	F	0.23	0.07	53.2	PEP1	0.02
10/30/86	1695DWOR	SCS	34.37	F	0.23	0.07	53.2	PSCY	0.02
10/30/86	1695DWOR	SCS	32.86	F	0.23	0.07	53.2	PSCY	0.08
10/30/86	1695DWOR	SCS	32.86	F	0.23	0.07	53.2	BK	0.08
10/30/86	1695DWOR	SCS	32.86	F	0.23	0.07	53.2	PEP1	0.08
10/30/86	1695DWOR	SCS	32.86	F	0.23	0.07	53.2	UE	0.08
10/30/86	1695DWOR	SCS	32.86	F	0.23	0.07	53.2	PTRY	0.08
10/30/86	1695DWOR	SCS	32.53	F	0.23	0.07	53.2	UE	0.12
10/30/86	1695DWOR	SCS	32.53	F	0.23	0.07	53.2	PICH	0.12
10/30/86	1695DWOR	SCS	32.53	F	0.23	0.07	53.2	BK	0.12
10/30/86	1695DWOR	SCS	36.51	F	0.20	0.06	53.2	BK	0.15
10/30/86	1695DWOR	SCS	36.51	F	0.20	0.06	53.2	PCOS	0.15
10/30/86	1695DWOR	SCS	36.51	F	0.20	0.06	53.2	UE	0.15
11/04/86	1695DWOR	SST	13.30	Y	0.11	0.05	48.9	PTRY	0.23
11/04/86	1695DWOR	SST	11.45	Y	0.12	0.07	50.5	PICH	2.14
11/10/86	1695DWOR	SST	23.98	Y	0.08	0.07	50.5	TG	62.50
11/10/86	1695DWOR	SST	23.98	Y	0.08	0.07	50.5	PICH	62.50
11/10/86	1695DWOR	SST	23.98	Y	0.08	0.07	50.5	PTRY	62.50
11/10/86	1695DWOR	SST	23.98	Y	0.08	0.07	50.5	BK	62.50
11/19/86	1695DWOR	SST	13.30	Y	0.11	0.05	48.9	TG	0.26
11/19/86	1695DWOR	SST	13.30	Y	0.11	0.05	48.9	PTRY	0.26
11/19/86	1695DWOR	SST	13.30	Y	0.11	0.05	48.9	PEP1	0.26
11/19/86	1695DWOR	SST	13.30	Y	0.11	0.05	48.9	PSCY	0.26
11/20/86	1695DWOR	RBT	0.00		0.00	0.00	0.0	PTRC	0.00
11/24/86	1695DWOR	SST	14.84	Y	0.14	0.05	48.9	PEP1	0.36
11/24/86	1695DWOR	SST	14.84	Y	0.14	0.05	48.9	PTRY	0.36
11/24/86	1695DWOR	SST	14.84	Y	0.14	0.05	48.9	VH	0.36
12/01/86	1695DWOR	SCS	25.14	F	0.27	0.03	48.9	UE	0.17

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FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

12/01/86	1695DWOR	SCS	25.14	F	0.27	0.03	48.9	PTRY	0.17
12/01/86	1695DWOR	SCS	25.14	F	0.27	0.03	48.9	PEP1	0.17
12/01/86	1695DWOR	SCS	27.77	F	0.26	0.03	48.9	PEP1	0.02
12/01/86	1695DWOR	SCS	27.77	F	0.26	0.03	48.9	UE	0.02
12/01/86	1695DWOR	SCS	27.77	F	0.26	0.03	48.9	UE	0.02
12/01/86	1695DWOR	SCS	27.77	F	0.26	0.03	48.9	PSCY	0.02
12/01/86	1695DWOR	SCS	27.77	F	0.26	0.03	48.9	PTRY	0.02
12/01/86	1695DWOR	SCS	26.97	F	0.26	0.03	48.9	UE	0.10
12/01/86	1695DWOR	SCS	26.97	F	0.26	0.03	48.9	PEP1	0.10
12/01/86	1695DWOR	SCS	26.90	F	0.26	0.03	48.9	PSCY	0.10
12/01/86	1695DWOR	SCS	26.90	F	0.26	0.03	48.9	UE	0.10
12/01/86	1695DWOR	SCS	26.90	F	0.26	0.03	48.9	PTRY	0.10
12/01/86	1695DWOR	SCS	30.98	F	0.25	0.03	48.9	PTRY	0.06
12/01/86	1695DWOR	SCS	30.98	F	0.25	0.03	48.9	UE	0.06
12/01/86	1695DWOR	SCS	30.98	F	0.25	0.03	48.9	PSCY	0.06
12/01/86	1695DWOR	SCS	25.96	F	0.27	0.03	48.9	UE	0.08
12/01/86	1695DWOR	SCS	25.96	F	0.27	0.03	48.9	PEP1	0.08
12/01/86	1695DWOR	SCS	25.96	F	0.27	0.03	48.9	PSCY	0.08
12/01/86	1695DWOR	SCS	25.96	F	0.27	0.03	48.9	PTRY	0.08
12/01/86	1695DWOR	SCS	25.96	F	0.27	0.03	48.9	UE	0.08
12/01/86	1695DWOR	SCS	24.99	Y	0.28	0.03	48.9	PTRY	0.01
12/01/86	1695DWOR	SCS	24.99	Y	0.28	0.03	48.9	UE	0.01
12/01/86	1695DWOR	SCS	24.99	Y	0.28	0.03	48.9	PEP1	0.01
12/01/86	1695DWOR	SCS	32.24	F	0.22	0.02	48.9	BK	0.10
12/01/86	1695DWOR	SCS	32.24	F	0.22	0.02	48.9	UE	0.10
12/01/86	1695DWOR	SCS	32.24	F	0.22	0.02	48.9	PEP1	0.10
12/01/86	1695DWOR	SCS	32.24	F	0.22	0.02	48.9	PTRY	0.10
12/01/86	1695DWOR	SCS	26.28	F	0.27	0.03	48.9	PTRY	1.13
12/01/86	1695DWOR	SCS	26.28	F	0.27	0.03	48.9	UE	1.13
12/01/86	1695DWOR	SCS	26.28	F	0.27	0.03	48.9	PEPI	1.13
12/01/86	1695DWOR	SCS	26.28	F	0.27	0.03	48.9	PICH	1.13
12/03/86	1695DWOR	SST	8.00	Y	0.15	0.00	51.2	PSCY	1.76
12/03/86	1695DWOR	SST	8.00	Y	0.15	0.00	51.2	PEP1	1.76
12/03/86	1695DWOR	SST	8.00	Y	0.15	0.00	51.2	PTRY	1.76
12/03/86	1695DWOR	SST	7.73	Y	0.23	0.00	51.2	PEP1	1.60
12/03/86	1695DWOR	SST	7.73	Y	0.23	0.00	51.2	TG	1.60
12/03/86	1695DWOR	SCS	29.11	F	0.20	0.52	43.6	UE	0.11
12/03/86	1695DWOR	SCS	29.11	F	0.20	0.52	43.6	PEP1	0.11
12/03/86	1695DWOR	SCS	29.11	F	0.20	0.52	43.6	PSCY	0.11
12/03/86	1695DWOR	SCS	29.11	F	0.20	0.52	43.6	PTRY	0.11
12/04/86	1695DWOR	SST	9.70	Y	0.14	0.80	50.0	PTRY	0.30
12/04/86	1695DWOR	SST	9.70	Y	0.14	0.80	50.0	PEP1	0.30
12/04/86	1695DWOR	SST	9.70	Y	0.14	0.80	50.0	PSCY	0.30
12/04/86	1695DWOR	SST	9.44	Y	0.19	0.83	50.2	PEP1	0.53
12/04/86	1695DWOR	SST	9.44	Y	0.19	0.83	50.2	PSCY	0.53
12/04/86	1695DWOR	SST	9.44	Y	0.19	0.83	50.2	PCOS	0.53
12/08/86	1695DWOR	SST	11.12	Y	0.15	0.64	50.2	PICH	2.96
12/08/86	1695DWOR	SST	11.12	Y	0.15	0.64	50.2	PEP1	2.96
12/08/86	1695DWOR	SST	9.70	Y	0.14	0.91	50.0	PTRC	2.91
12/08/86	1695DWOR	SST	9.70	Y	0.14	0.91	50.0	UE	2.91

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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12/08/86	1695DWOR	SST	9.70	Y	0.14	0.91	50.0	TG	2.91
12/11/86	1695DWOR	SST	9.70	Y	0.14	0.88	50.0	PEP1	0.30
12/11/86	1695DWOR	SST	9.70	Y	0.14	0.88	50.0	PTRY	0.30
12/11/86	1695DWOR	SST	7.28	Y	0.16	0.87	51.2	PTRC	0.49
12/11/86	1695DWOR	SST	7.28	Y	0.16	0.87	51.2	TG	0.49
12/11/86	1695DWOR	SST	9.44	Y	0.19	0.83	50.2	PTRC	0.53
12/11/86	1695DWOR	SST	9.44	Y	0.19	0.83	50.2	PTRY	0.53
12/11/86	1695DWOR	SST	9.69	Y	0.10	0.56	51.2	PEP1	2.80
12/11/86	1695DWOR	SST	9.69	Y	0.10	0.56	51.2	TG	2.80
12/11/86	1695DWOR	SST	8.00	Y	0.12	0.69	51.2	PTRY	2.31
12/11/86	1695DWOR	SST	8.00	Y	0.12	0.69	51.2	PEP1	2.31
12/11/86	1695DWOR	SST	8.00	Y	0.12	0.69	51.2	TG	2.31
12/11/86	1695DWOR	SST	14.65	Y	0.10	0.91	51.2	G	1.78
12/11/86	1695DWOR	SST	14.65	Y	0.10	0.91	51.2	PCOS	1.78
12/11/86	1695DWOR	SST	14.65	Y	0.10	0.91	51.2	PEP1	1.78
12/16/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	UE	0.00
12/16/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	BK	0.00
12/18/86	1695DWOR	SST	7.28	Y	0.16	0.91	51.2	PEP1	0.49
12/18/86	1695DWOR	SST	7.28	Y	0.16	0.91	51.2	PSCY	0.49
12/18/86	1695DWOR	SST	9.44	Y	0.19	0.83	50.2	PEP1	0.53
12/18/86	1695DWOR	SST	9.44	Y	0.19	0.83	50.2	PSCY	0.53
12/18/86	1695DWOR	SST	9.44	Y	0.19	0.83	50.2	PTRC	0.53
12/18/86	1695DWOR	SST	9.70	Y	0.14	0.80	50.0	TG	0.30
12/18/86	1695DWOR	SST	9.70	Y	0.14	0.80	50.0	PTRC	0.30
12/18/86	1695DWOR	SST	9.70	Y	0.14	0.80	50.0	PSCY	0.30
12/18/86	1695DWOR	SST	9.70	Y	0.14	0.80	50.0	PEP1	0.30
12/18/86	1695DWOR	SST	9.70	Y	0.14	0.80	50.0	PTRY	0.30
12/23/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	BK	0.00
12/23/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	BU	0.00
12/23/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	UE	0.00
12/23/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	UE	0.00
12/23/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	BU	0.00
12/23/86	1695DWOR	SCS	0.00		0.00	0.00	0.0	BK	0.00
12/29/86	1695DWOR	SST	9.44	Y	0.19	0.65	50.2	PSCY	53 .00
12/29/86	1695DWOR	SST	9.44	Y	0.19	0.65	50.2	PTRC	53 .00
12/30/86	1695DWOR	SST	7.28	Y	0.16	0.91	51.2	PEP1	0.49
12/30/86	1695DWOR	SST	7.28	Y	0.16	0.91	51.2	PSCY	0.49
12/30/86	1695DWOR	SST	0 .00		0.00	0.00	0.0	BK	0 .00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/05/87	1695DWOR	SCS	23.71	Y	0.27	0.92	43.6	PTRY	0.16
01/05/87	1695DWOR	SCS	23.71	Y	0.27	0.92	43.6	UE	0.16
01/05/87	1695DWOR	SCS	23.71	Y	0.27	0.92	43.6	BK	0.16
01/05/87	1695DWOR	SCS	23.06	Y	0.27	0.92	43.6	UE	0.02
01/05/87	1695DWOR	SCS	23.06	Y	0.27	0.92	43.6	PEP1	0.02
01/05/87	1695DWOR	SCS	23.06	Y	0.27	0.92	43.6	PSCY	0.02
01/05/87	1695DWOR	SCS	23.06	Y	0.27	0.92	43.6	BK	0.02
01/05/87	1695DWOR	SCS	24.92	Y	0.26	0.92	43.6	BK	0.09
01/05/87	1695DWOR	SCS	24.92	Y	0.26	0.92	43.6	UE	0.09
01/05/87	1695DWOR	SCS	24.92	Y	0.26	0.92	43.6	PEP1	0.09
01/05/87	1695DWOR	SCS	26.58	F	0.25	0.92	43.6	BK	0.08
01/05/87	1695DWOR	SCS	26.58	F	0.25	0.92	43.6	UE	0.08
01/05/87	1695DWOR	SCS	26.58	F	0.25	0.92	43.6	PTRY	0.08
01/05/87	1695DWOR	SCS	26.58	F	0.25	0.92	43.6	PEP1	0.08
01/05/87	1695DWOR	SCS	23.95	Y	0.26	0.92	43.6	UE	0.19
01/05/87	1695DWOR	SCS	23.95	Y	0.26	0.92	43.6	PEP1	0.19
01/05/87	1695DWOR	SCS	23.95	Y	0.26	0.92	43.6	PTRC	0.19
01/05/87	1695DWOR	SCS	23.95	Y	0.26	0.92	43.6	BK	0.19
01/05/87	1695DWOR	SCS	29.18	F	0.22	0.92	43.6	UE	0.09
01/05/87	1695DWOR	SCS	29.18	F	0.22	0.92	43.6	PEP1	0.09
01/05/87	1695DWOR	SCS	29.18	F	0.22	0.92	43.6	PSCY	0.09
01/05/87	1695DWOR	SCS	29.18	F	0.22	0.92	43.6	PTRY	0.09
01/05/87	1695DWOR	SCS	29.18	F	0.22	0.92	43.6	BK	0.09
01/07/87	1695DWOR	SST	6.80	Y	0.17	1.25	53.3	TG	0.20
01/07/87	1695DWOR	SST	8.18	Y	0.20	1.08	53.9	PEP1	0.62
01/12/87	1695DWOR	SCS	29.94	F	0.24	0.95	0.0	PEP1	0.14
01/12/87	1695DWOR	SCS	29.94	F	0.24	0.95	41.2	PSCY	0.14
01/12/87	1695DWOR	SCS	29.94	F	0.24	0.95	41.2	UE	0.14
01/12/87	1695DWOR	SCS	29.94	F	0.24	0.95	41.2	PTRY	0.14
01/12/87	1695DWOR	SCS	29.94	F	0.21	0.95	41.2	PCOS	0.10
01/12/87	1695DWOR	SCS	29.94	F	0.21	0.95	41.2	PTRY	0.10
01/12/87	1695DWOR	SCS	29.94	F	0.21	0.95	41.2	UE	0.10
01/12/87	1695DWOR	SCS	29.94	F	0.21	0.95	41.2	PSCY	0.10
01/12/87	1695DWOR	SCS	29.94	F	0.21	0.95	41.2	PEP1	0.10
01/13/87	1695DWOR	RBT	0.00		0.00	0.00	0.0	BK	0.00
01/15/87	1695DWOR	SST	7.31	Y	0.18	1.01	53.3	BK	0.26
01/15/87	1695DWOR	SST	8.18	Y	0.20	1.08	53.9	BK	0.62
01/15/87	1695DWOR	SST	8.26	Y	0.10	1.08	53.9	PEP1	0.86
01/15/87	1695DWOR	SST	8.26	Y	0.10	1.08	53.9	PSCY	0.86
01/15/87	1695DWOR	SST	5.84	Y	0.18	0.92	53.7	PSCY	0.36
01/21/87	1695DWOR	SCS	1200.00	S	0.00	0.00	0.0	UE	0.78
01/29/87	1695DWOR	SCS	21.90	Y	0.26	0.95	41.2	UE	0.25
01/29/87	1695DWOR	SCS	21.90	Y	0.26	0.95	41.2	PEP1	0.25
01/29/87	1695DWOR	SCS	21.90	Y	0.26	0.95	41.2	BK	0.25
01/29/87	1695DWOR	SCS	29.85	F	0.24	0.95	41.2	UE	0.11
01/29/87	1695DWOR	SCS	29.85	F	0.24	0.95	41.2	PEP1	0.11
01/29/87	1695DWOR	SCS	30.02	F	0.23	0.95	41.2	PEP1	0.00
01/29/87	1695DWOR	SCS	30.02	F	0.23	0.95	41.2	UE	0.00
01/29/87	1695DWOR	SCS	30.02	F	0.23	0.95	41.2	BK	0.00
01/29/87	1695DWOR	SCS	21.61	Y	0.27	0.95	41.2	UE	0.18

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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01/29/87	1695DWOR	SCS	21.61	Y	0.27	0.95	41.2	PEP1	0.18
01/29/87	1695DWOR	SCS	21.61	Y	0.27	0.95	41.2	PSCY	0.18
01/29/87	1695DWOR	SCS	21.61	Y	0.27	0.95	41.2	UE	0.18
01/29/87	1695DWOR	SCS	21.61	Y	0.27	0.95	41.2	BK	0.18
01/29/87	1695DWOR	SCS	21.52	Y	0.26	0.95	41.2	UE	0.10
01/29/87	1695DWOR	SCS	21.52	Y	0.26	0.95	41.2	PEP1	0.10
01/29/87	1695DWOR	SCS	21.52	Y	0.26	0.95	41.2	PSCY	0.10
01/29/87	1695DWOR	SCS	21.52	Y	0.26	0.95	41.2	UE	0.10
01/29/87	1695DWOR	SCS	21.52	Y	0.26	0.95	41.2	BK	0.10
02/25/87	1695DWOR	SST	6.20	Y	0.27	0.99	54.1	VH	0 .00
02/25/87	1695DWOR	SST	6.20	Y	0.27	0.99	54.1	BR	0.00
02/26/87	1695DWOR	SCS	26.82	F	0.25	0.89	40.2	TG	0.42
02/26/87	1695DWOR	SCS	26.39	F	2.40	0.89	40.2	UE	0.63
02/26/87	1695DWOR	SCS	26.39	F	2.40	0.89	40.2	PEP1	0.63
02/26/87	1695DWOR	SCS	26.39	F	2.40	0.89	41.2	BK	0.63
02/27/87	1695DWOR	SCS	23.03	Y	0.29	0.89	40.2	BK	0.09
02/27/87	1695DWOR	SCS	23.03	Y	0.29	0.89	40.2	UE	0.09
02/27/87	1695DWOR	SCS	23.03	Y	0.29	0.89	40.2	UE	0.09
02/27/87	1695DWOR	SCS	20.54	Y	0.26	0.89	40.2	PTRC	0.00
02/27/87	1695DWOR	SCS	20.54	Y	0.26	0.89	40.2	PEP1	0.00
02/27/87	1695DWOR	SCS	20.54	Y	0.26	0.89	40.2	UE	0.00
02/27/87	1695DWOR	SCS	20.26	Y	0.26	0.89	40.2	UE	0.09
02/27/87	1695DWOR	SCS	20.26	Y	0.26	0.89	40.2	PTRC	0.09
02/27/87	1695DWOR	SCS	20.26	Y	0.26	0.89	40.2	PSCY	0.09
02/27/87	1695DWOR	SCS	20.26	Y	0.26	0.89	40.2	PEP1	0.09
02/27/87	1695DWOR	SCS	21.26	Y	0.25	0.89	40.2	UE	0.15
02/27/87	1695DWOR	SCS	21.26	Y	0.25	0.89	40.2	PEP1	0.15
02/27/87	1695DWOR	SCS	19.90	Y	0.28	0.89	40.2	UE	0.15
02/27/87	1695DWOR	SCS	19.90	Y	0.28	0.89	40.2	PEP1	0.15
02/27/87	1695DWOR	SCS	19.90	Y	0.28	0.89	40.2	UE	0.15
02/27/87	1695DWOR	SCS	20.32	Y	0.27	0.89	40.2	UE	0.15
03/11/87	1695DWOR	SCS	472.58	F	0.29	0.00	40.5	UE	0.12
03/19/87	1695DWOR	SST	8.11	Y	0.12	0.56	45.9	PEP1	0.50
03/30/87	1695DWOR	SCS	17.87	Y	0.29	0.21	40.5	BK	0.20
03/30/87	1695DWOR	SCS	17.87	Y	0.29	0.21	40.5	UE	0.20
03/30/87	1695DWOR	SCS	17.75	Y	0.26	0.21	40.5	BK	0.24
03/30/87	1695DWOR	SCS	17.75	Y	0.26	0.21	40.5	UE	0.24
03/30/87	1695DWOR	SCS	19.01	Y	0.33	0.22	40.5	UE	0.09
03/30/87	1695DWOR	SCS	19.01	Y	0.33	0.22	40.5	PCOS	0.09
03/30/87	1695DWOR	SCS	19.01	Y	0.33	0.22	40.5	PTRC	0.09
03/30/87	1695DWOR	SCS	19.01	Y	0.33	0.22	40.5	BK	0.09
03/30/87	1695DWOR	SCS	17.98	Y	0.29	0.20	40.5	BK	0.15
03/30/87	1695DWOR	SCS	17.98	Y	0.29	0.20	40.5	UE	0.15
03/30/87	1695DWOR	SCS	17.98	Y	0.29	0.20	40.5	PEP1	0.15
03/30/87	1695DWOR	SCS	17.98	Y	0.29	0.20	40.5	PTRC	0.15
03/30/87	1695DWOR	SCS	17.21	Y	0.31	0.23	40.5	UE	0.28
03/30/87	1695DWOR	SCS	17.21	Y	0.31	0.23	40.5	PEP1	0.28
03/30/87	1695DWOR	SCS	17.21	Y	0.31	0.23	40.5	BK	0.28
03/30/87	1635DWOR	SCS	17.68	Y	0.31	0.22	40.5	UE	0.06
03/30/87	1695DWOR	SCS	17.68	Y	0.31	0.22	40.5	PEP1	0.06

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

03/30/87	1695DWOR	SCS	17.68	Y	0.31	0.22	40.5	BK	0.06
04/02/87	1695DWOR	SST	4.31	Y	0.22	2.34	45.8	PEP1	0.23
04/02/87	1695DWOR	SST	4.31	Y	0.22	2.34	45.8	PSCY	0.23
04/02/87	1695DWOR	SST	5.62	Y	0.26	1.82	44.2	XXXX	0.44
04/02/87	1695DWOR	SST	4.31	Y	0.22	2.34	45.8	PEP1	0.23
04/02/87	1695DWOR	SST	4.31	Y	0.22	2.34	45.8	PSCY	0.23
04/02/87	1695DWOR	SST	4.31	Y	0.22	2.34	45.8	VH	0.23
04/02/87	1695DWOR	SST	4.31	Y	0.22	2.34	45.8	PSCY	0.23
04/06/87	1695DWOR	RBT	0.00	s	0.00	0.00	40.5	PTRC	0.00
04/17/87	1695DWOR	SCS	472.60	F	0.29	0.00	40.5	UE	0.12
06/11/87	1695DWOR	SCS	70.00	F	0.00	0.00	60.0	PEP1	0.10
06/11/87	1695DWOR	SCS	70.00	F	0.00	0.00	60.0	UE	0.10
06/24/87	1695DWOR	SST	212.00	F	0.05	0.16	44.9	VH	0.17
08/04/87	1695DWOR	SST	81.00	F	0.05	0.00	52.4	PICH	0.00
08/04/87	1695DWOR	SST	109.00	F	0.07	0.00	52.4	PICH	0.00
08/04/87	1695DWOR	SST	57.00	F	0.12	0.69	53.4	VH	0.70
08/04/87	1695DWOR	SST	57.00	F	0.12	0.17	53.7	PEP1	0.70
08/05/87	1695DWOR	SST	81.00	F	0.00	0.00	52.4	PICH	0.01
08/05/87	1695DWOR	SST	47.00	F	0.04	0.35	53.7	PICH	36.52
08/05/87	1695DWOR	SST	112.00	F	0.09	0.20	53.7	NONE	0.44
08/05/87	1695DWOR	SST	58.00	F	0.07	0.17	53.7	PICH	0.28
08/06/87	1695DWOR	SST	48.00	F	0.05	0.35	53.7	PICH	17.08
08/07/87	1695DWOR	SST	49.00	F	0.07	0.35	53.7	PICH	0.18
08/10/87	1695DWOR	SCS	83.30	F	0.11	0.00	53.8	PSCY	0.39
08/10/87	1695DWOR	SCS	83.30	F	0.11	0.40	53.8	PICH	0.39
08/10/87	1695DWOR	SCS	83.30	F	0.11	0.40	53.8	PEP1	0.39
08/10/87	1695DWOR	SST	62.00	F	0.12	0.17	53.7	VH	0.34
08/10/87	1695DWOR	SST	62.00	F	0.03	0.35	53.7	PICH	40.46
08/10/87	1695DWOR	SST	62.00	F	0.03	0.35	53.7	PTRY	40.46
08/14/87	1695DWOR	SST	47.00	F	0.04	0.35	53.7	PICH	0.00
08/19/87	1695DWOR	SST	112.00	F	0.09	0.20	53.7	PICH	0.44
08/19/87	1695DWOR	SST	58.00	F	0.07	0.17	53.7	VH	0.00
08/19/87	1695DWOR	SST	58.00	F	0.07	0.17	53.7	TG	0.00
08/19/87	1695DWOR	SST	58.00	F	0.07	0.17	53.7	PTRY	0.00
08/19/87	1695DWOR	SST	59.00	F	0.07	0.17	53.7	PEP1	0.00
08/19/87	1695DWOR	SST	59.00	F	0.07	0.17	53.7	VH	0.00
08/19/87	1695DWOR	SST	49.00	F	0.07	0.35	53.7	PICH	0.18
08/19/87	1695DWOR	SST	49.00	F	0.07	0.35	53.7	PTRC	0.18
08/19/87	1695DWOR	SST	0.00		0.00	0.00	0.0	TG	0.00
08/19/87	1695DWOR	SST	0.00		0.00	0.00	0.0	PEP1	0.00
08/19/87	1695DWOR	SST	0.00		0.00	0.00	0.0	UE	0.00
08/19/87	1695DWOR	SST	0.00		0.00	0.00	0.0	UE	0.00
08/19/87	1695DWOR	SST	0.00		0.00	0.00	0.0	PEP1	0.00
08/19/87	1695DWOR	SST	107.00	F	0.00	0.20	53.7	VH	0.25
08/21/87	1695DWOR	SST	0.00		0.00	0.00	0.0	VH	0.00
08/21/87	1695DWOR	SST	62.00	F	0.12	0.17	53.7	BK	0.22
08/21/87	1695DWOR	SST	62.00	F	0.12	0.17	53.7	UE	0.22
08/21/87	1695DWOR	SST	62.00	F	0.12	0.17	53.7	PICH	0.22
08/21/87	1695DWOR	SST	0.00		0.00	0.00	0.0	VH	0.00
08/21/87	1695DWOR	SST	0.00		0.00	0.00	0.0	PICH	0.00

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FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

08/28/87	1695DWOR SST	53.00	F	0.04	0.35	53.7	PICH	24.43
08/28/87	1695DWOR SST	112.00	F	0.09	0.20	53.7	PICH	0.44
08/28/87	1695DWOR SST	62.00	F	0.12	0.17	53.7	UE	0.22
08/28/87	1695DWOR SST	62.00	F	0.12	0.17	53.7	PICH	0.22
09/02/87	1695DWOR SST	24.00	Y	0.10	0.69	53.4	PEP1	2.65
09/02/87	1695DWOR SST	24.00	Y	0.10	0.69	53.4	PTRC	2.65
09/02/87	1695DWOR SST	24.00	Y	0.10	0.69	53.4	PICH	2.65
09/02/87	1695DWOR SST	30.00	F	0.07	0.56	53.4	PEP1	0.13
09/03/87	1695DWOR SST	23.00	Y	0.14	0.55	53.4	PICH	0.13
09/03/87	1695DWOR SST	23.00	Y	0.14	0.55	53.4	PEP1	0.13
09/08/87	1695DWOR SST	40.00	F	0.06	0.55	53.4	VH	34.27
09/08/87	1695DWOR SST	40.00	F	0.06	0.55	53.4	PICH	34.27
09/08/87	1695DWOR SST	26.00	F	0.11	0.55	53.4	PEP1	0.00
09/08/87	1695DWOR SST	26.00	F	0.11	0.55	53.4	PICH	0.00
09/08/87	1695DWOR SST	26.00	F	0.11	0.55	53.4	VH	0.00
09/16/87	1695DWOR SST	0.00		0.00	0.00	0.0	VH	0.00
09/21/87	1695DWOR SST	20.00	Y	0.08	0.69	53.4	PSCY	0.84
09/21/87	1695DWOR SST	20.00	Y	0.08	0.69	53.4	PEPI	0.84
09/21/87	1695DWOR SST	21.00	Y	0.13	0.55	53.4	PEP1	0.05
09/21/87	1695DWOR SST	21.00	Y	0.13	0.55	53.4	PICH	0.05
09/22/87	1695DWOR SST	51.00	F	0.06	0.56	53.4	PEPI	0.14
09/22/87	1695DWOR SST	51.00	F	0.06	0.56	53.4	PICH	0.14
09/22/87	1695DWOR SST	45.00	F	0.09	0.56	53.4	PEP1	0.44
09/22/87	1695DWOR SST	65.00	F	0.11	0.56	53.4	PEP1	0.49
09/22/87	1695DWOR SST	65.00	F	0.11	0.56	53.4	TG	0.49
09/22/87	1695DWOR SST	65.00	F	0.11	0.56	53.4	PICH	0.49
09/22/87	1695DWOR SST	65.00	F	0.11	0.56	53.4	PTRC	0.49
09/28/87	1695DWOR SST	18.00	Y	0.10	0.69	53.4	NONE	0.66
09/28/87	1695DWOR SCS	0.00		0.00	0.00	0.0	UE	0.00
09/28/87	1695DWOR SCS	42.20	F	0.18	0.40	53.4	UE	0.02
09/28/87	1695DWOR SST	33.00	F	0.09	0.56	53.4	PEP1	0.06
09/28/87	1695DWOR SCS	36.40	F	0.38	0.40	53.4	UE	0.09
09/28/87	1695DWOR SCS	29.10	F	0.21	0.40	53.4	PEP1	0.08
09/28/87	1695DWOR SCS	29.10	F	0.21	0.40	53.4	UE	0.08
09/28/87	1695DWOR SCS	38.40	F	0.41	0.40	53.4	UE	0.02
09/28/87	1695DWOR SCS	35.60	F	0.40	0.40	53.4	UE	0.02
09/28/87	1695DWOR SCS	26.80	F	0.19	0.40	53.4	UE	0.01
09/28/87	1695DWOR SCS	37.00	F	0.17	0.40	53.4	UE	0.05
09/28/87	1695DWOR SCS	31.50	F	0.18	0.40	53.4	UE	0.04
09/28/87	1695DWOR SCS	31.50	F	0.18	0.40	53.4	PICH	0.04
09/28/87	1695DWOR SCS	31.50	F	0.18	0.40	53.4	PTRY	0.04
09/28/87	1695DWOR SCS	43.70	F	0.20	0.40	53.4	UE	0.03
09/28/87	1695DWOR SCS	41.70	F	0.20	0.40	53.4	UE	0.02
09/28/87	1695DWOR SST	40.00	F	0.07	0.69	53.4	PICH	1.44
09/28/87	1695DWOR SST	40.00	F	0.07	0.69	53.4	TG	1.44
09/28/87	1695DWOR SST	40.00	F	0.07	0.69	53.4	PEP1	1.44
10/09/87	1695DWOR SST	49.00	F	0.06	0.66	53.0	VH	16.68
10/09/87	1695DWOR SST	49.00	F	0.06	0.66	53.0	PICH	16.68
10/09/87	1695DWOR SST	22.00	Y	0.09	0.79	53.0	VH	5.12
10/13/87	1695DWOR SCS	12.00	Y	0.14	0.79	53.0	VH	1.27

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

10/14/87	1695DWOR	SCS	29.40	F	0.17	0.40	53.4	UE	0.01
10/14/87	1695DWOR	SCS	29.40	F	0.17	0.40	53.4	PEP1	0.01
10/20/87	1695DWOR	SST	18.00	Y	0.12	0.68	53.0	PEP1	0.05
10/20/87	1695DWOR	SST	46.00	F	0.11	0.68	53.0	PEP1	2.08
10/20/87	1695DWOR	SST	46.00	F	0.11	0.68	53.0	TG	2.08
10/20/87	1695DWOR	SST	46.00	F	0.11	0.68	53.0	PTRY	2.08
10/20/87	1695DWOR	SST	13.00	Y	0.18	0.76	53.0	PSCY	0.13
10/21/87	1695DWOR	SST	22.00	Y	0.08	0.76	53.0	VH	0.76
10/21/87	1695DWOR	SST	22.00	Y	0.08	0.76	53.0	PEP1	0.76
10/21/87	1695DWOR	SST	22.00	Y	0.08	0.76	53.0	PICH	0.76
10/21/87	1695DWOR	SST	22.00	Y	0.08	0.76	53.0	PSCY	0.76
10/23/87	1695DWOR	SCS	31.90	F	0.20	0.40	53.0	UE	0.07
10/23/87	1695DWOR	SCS	31.90	F	0.20	0.40	53.0	BK	0.07
10/23/87	1695DWOR	SCS	31.80	F	0.19	0.40	53.0	UE	0.11
10/23/87	1695DWOR	SCS	33.30	F	0.19	0.40	53.0	UE	0.16
10/26/87	1695DWOR	SST	22.00	Y	0.11	0.76	53.0	VH	1.82
10/28/87	1695DWOR	SST	11.00	Y	0.12	0.79	53.0	PSCY	1.98
10/28/87	1695DWOR	SST	11.00	Y	0.12	79.00	53.0	PEP1	1.98
10/28/87	1695DWOR	SST	13.00	Y	0.18	0.76	53.0	PEP1	0.13
10/29/87	1695DWOR	SCS	33.60	F	0.23	0.40	53.0	UE	0.07
10/29/87	1695DWOR	SCS	31.50	F	0.24	0.40	53.0	UE	0.03
10/29/87	1695DWOR	SCS	30.90	F	0.22	0.40	53.0	UE	0.05
10/29/87	1695DWOR	SCS	32.40	F	0.18	0.40	53.0	UE	0.09
10/29/87	1695DWOR	SCS	31.50	F	0.23	0.40	53.0	UE	0.04
11/02/87	1695DWOR	SST	22.00	Y	0.12	0.77	52.5	PICH	0.33
11/02/87	1695DWOR	SST	22.00	Y	0.12	0.77	52.5	PICH	0.33
11/04/87	1695DWOR	SST	9.00	Y	0.14	0.94	48.6	PEP1	0.73
11/04/87	1695DWOR	SST	9.00	Y	0.14	0.94	48.6	PTRY	0.73
11/06/87	1695DWOR	SST	9.00	Y	0.25	1.01	48.6	PTRY	0.25
11/06/87	1695DWOR	SST	9.00	Y	0.25	1.01	48.6	PEP1	0.25
11/06/87	1695DWOR	SST	9.00	Y	0.25	1.01	48.6	PSCY	0.25
11/10/87	1695DWOR	SCS	0.00		0.00	0.00	0.0	UE	0.00
11/19/87	1695DWOR	SST	9.00	Y	0.14	0.94	48.6	PSCY	0.73
11/19/87	1695DWOR	SST	9.00	Y	0.14	0.94	48.6	PEP1	0.73
11/19/87	1695DWOR	SST	22.00	Y	0.20	0.77	52.5	PEP1	8.37
11/19/87	1695DWOR	SST	22.00	Y	0.20	0.77	52.5	TG	8.37
11/19/87	1695DWOR	SST	9.00	Y	0.25	1.01	48.6	XX	0.25
11/25/87	1695DWOR	SCS	0.00		0.00	0.00	0.0	UE	0.00
11/30/87	1695DWOR	SCS	28.60	F	0.22	0.50	48.6	PSCY	0.03
11/30/87	1695DWOR	SCS	28.60	F	0.22	0.50	48.6	UE	0.03
11/30/87	1695DWOR	SCS	28.60	F	0.22	0.50	48.6	PEP1	0.03
11/30/87	1695DWOR	SCS	28.00	F	0.19	0.50	48.6	UE	0.14
11/30/87	1695DWOR	SCS	28.00	F	0.19	0.50	48.6	PEP1	0.14
11/30/87	1695DWOR	SCS	28.00	F	0.19	0.50	48.6	PSCY	0.14
11/30/87	1695DWOR	SCS	28.00	F	0.19	0.50	48.6	PTRC	0.14
11/30/87	1695DWOR	SCS	28.00	F	0.21	0.50	48.6	PSCY	0.12
11/30/87	1695DWOR	SCS	28.00	F	0.21	0.50	48.6	UE	0.12
11/30/87	1695DWOR	SCS	28.00	F	0.21	0.50	48.6	PEP1	0.12
11/30/87	1695DWOR	SCS	30.40	F	0.24	0.50	48.6	UE	0.06
11/30/87	1695DWOR	SCS	30.40	F	0.24	0.50	48.6	PEP1	0.06

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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11/30/87	1695DWOR	SCS	29.50	F	0.22	0.50	48.6	BK	0.06
11/30/87	1695DWOR	SCS	29.50	F	0.22	0.50	48.6	UE	0.06
11/30/87	1695DWOR	SCS	29.50	F	0.22	0.50	48.6	PTRY	0.06
11/30/87	1695DWOR	SCS	28.00	F	0.21	0.50	48.6	UE	0.04
11/30/87	1695DWOR	SCS	28.00	F	0.21	0.50	48.6	PTRY	0.04
11/30/87	1695DWOR	SCS	28.00	F	0.24	0.50	48.6	UE	0.08
11/30/87	1695DWOR	SCS	28.00	F	0.24	0.50	48.6	PEP1	0.08
11/30/87	1695DWOR	SCS	27.10	F	0.24	0.50	48.6	XX	0.06
11/30/87	1695DWOR	SST	16.00	Y	0.12	0.94	48.6	TG	0.07
11/30/87	1695DWOR	SST	16.00	Y	0.12	0.94	48.6	PEP1	0.07
12/02/87	1695DWOR	SST	9.00	Y	0.14	0.93	42.8	VH	0.00
12/02/87	1695DWOR	SST	9.00	Y	0.21	0.90	54.5	PSCY	0.00
12/02/87	1695DWOR	SST	26.00	F	0.17	0.90	54.5	PEP1	0.00
12/02/87	1695DWOR	SST	26.00	F	0.17	0.90	54.5	TG	0.00
12/02/87	1695DWOR	SST	26.00	F	0.17	0.90	54.5	PSCY	0.00
12/02/87	1695DWOR	SST	26.00	F	0.17	0.90	54.5	VH	0.00
12/03/87	1695DWOR	SST	20.00	Y	0.08	0.93	42.8	VH	0.00
12/07/87	1695DWOR	SCS	1200.00	S	0.00	0.00	0.0	BU	1.12
12/10/87	1695DWOR	SST	9.00	Y	0.14	0.93	42.8	PTRC	0.00
12/10/87	1695DWOR	SST	9.00	Y	0.14	0.93	42.8	PTRY	0.00
12/10/87	1695DWOR	SST	9.00	Y	0.14	0.93	42.8	PSCY	0.00
12/10/87	1695DWOR	SST	9.00	Y	0.14	0.93	42.8	PEP1	0.00
12/10/87	1695DWOR	SST	9.00	Y	0.14	0.93	42.8	TG	0.00
12/10/87	1695DWOR	SST	8.00	Y	0.24	0.90	51.8	PEPI	0.00
12/10/87	1695DWOR	SST	8.00	Y	0.24	0.90	51.8	PSCY	0.00
12/14/87	1695DWOR	SST	11.00	Y	0.15	0.93	42.8	PEP1	0.00
12/14/87	1695DWOR	SST	11.00	Y	0.15	0.93	42.8	TG	0.00
12/14/87	1695DWOR	SST	9.00	Y	0.20	0.93	42.8	PEP1	0.00
12/14/87	1695DWOR	SST	9.00	Y	0.20	0.93	42.8	PTRC	0.00
12/14/87	1695DWOR	SST	9.00	Y	0.20	0.93	42.8	TG	0.00
12/14/87	1695DWOR	SST	12.00	Y	0.17	0.90	54.5	PEPI	0.00
12/16/87	1695DWOR	SST	17.00	Y	0.12	0.90	54.5	PSCY	0.00
12/16/87	1695DWOR	SST	17.00	Y	0.12	0.90	54.5	PEP1	0.00
12/17/87	1695DWOR	SST	10.00	Y	0.23	0.90	51.8	PEP1	0.00
12/17/87	1695DWOR	SST	8.00	Y	0.21	0.90	51.8	TG	0.00
12/17/87	1695DWOR	SST	8.00	Y	0.21	0.90	51.8	PEP1	0.00
12/17/87	1695DWOR	SST	9.00	Y	0.18	0.90	51.8	TG	0.00
12/17/87	1695DWOR	SST	9.00	Y	0.18	0.90	51.8	PEP1	0.00
12/17/87	1695DWOR	SST	9.00	Y	0.24	0.90	51.8	PEP1	0.00
12/22/87	1695DWOR	SCS	0.00	F	0.00	0.00	42.8	UE	0.00
12/22/87	1695DWOR	SCS	0.00	F	0.00	0.00	42.8	UE	0.00
12/22/87	1695DWOR	SCS	0.00	F	0.00	0.00	42.8	SW	0.00
12/28/87	1695DWOR	SCS	26.00	F	0.23	0.50	42.8	UE	0.05
12/28/87	1695DWOR	SCS	26.00	F	0.23	0.50	42.8	PEP1	0.05
12/28/87	1695DWOR	SCS	26.00	F	0.23	0.50	42.8	PSCY	0.05
12/28/87	1695DWOR	SCS	26.00	F	0.23	0.50	42.8	BK	0.05
12/28/87	1695DWOR	SCS	28.10	F	0.25	0.50	42.8	UE	0.03
12/28/87	1695DWOR	SCS	28.10	F	0.25	0.50	42.8	BK	0.03
12/28/87	1695DWOR	SST	33.00	F	0.07	0.50	42.8	TG	2.01
12/28/87	1695DWOR	SST	15.00	Y	0.12	0.50	42.8	PEP1	0.26

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

12/28/87	1695DWOR	SCS	25.20	F	0.23	0.50	42.8	UE	0.09
12/28/87	1695DWOR	SCS	25.20	F	0.23	0.50	42.8	PEP1	0.09
12/28/87	1695DWOR	SCS	25.20	F	0.23	0.50	42.8	PTRC	0.09
12/28/87	1695DWOR	SCS	25.20	F	0.23	0.50	42.8	BK	0.09
12/28/87	1695DWOR	SCS	25.50	F	0.20	0.50	42.8	UE	0.09
12/28/87	1695DWOR	SCS	25.20	F	0.20	0.50	42.8	PEP1	0.09
12/28/87	1695DWOR	SCS	25.20	F	0.20	0.50	42.8	BK	0.09
12/28/87	1695DWOR	SCS	26.10	F	0.22	0.50	42.8	UE	0.05
12/28/87	1695DWOR	SCS	26.10	F	0.22	0.50	42.8	PEP1	0.05
12/28/87	1695DWOR	SCS	26.10	F	0.22	0.50	42.8	BK	0.05
12/28/87	1695DWOR	SCS	26.40	F	0.24	0.50	42.8	UE	0.07
12/28/87	1695DWOR	SCS	26.40	F	0.24	0.50	42.8	BK	0.07
12/28/87	1695DWOR	SCS	25.70	F	0.26	0.50	42.8	UE	0.04
12/28/87	1695DWOR	SCS	25.70	F	0.26	0.50	42.8	BK	0.04
12/28/87	1695DWOR	SCS	25.90	F	0.25	0.50	42.8	BK	0.03
12/28/87	1695DWOR	SCS	25.90	F	0.25	0.50	42.8	PEP1	0.03
12/28/87	1695DWOR	SCS	25.90	F	0.25	0.50	42.8	UE	0.03
12/29/87	1695DWOR	SST	12.00	Y	0.17	0.90	54.5	TG	5.51
12/39/86	1695DWOR	SST	9.44	Y	0.19	0.65	50.2	PEP1	53 .00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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01/30/84	4398EGCK	SCS	1100.00	S	0.31	0.90	50.0	BW	<b>0.00</b>
02/06/84	4398EGCK		11.60	Y	0.13	0.29	40.0	BK	1.50
02/07/84	4398EGCK	SCS	600.00	F	0.49	1.69	50.0	UW	0.00
02/07/84	4398EGCK	SCS	600.00	F	0.49	1.69	50.0	BW	0.00
<b>02107184</b>	4398EGCK	SCS	600.00	F	0.49	1.69	50.0	FP	0.00
02/14/84	4398EGCK	SCS	11.00	Y	0.21	0.49	41.0	BK	7.00
02/15/84	4398EGCK	COS	11.00	Y	0.29	0.78	41.0	BK	0.10
<b>02123184</b>	4398EGCK	SCS	1100.00	S	0.17	0.58	50.0	OF	1.50
03/07/84	4398EGCK	SCS	900.00	F	0.18	0.64	50.0	PCOS	0.50
03/14/84	4398EGCK	SCS	690.00	F	0.22	0.76	50.0	OF	1.00
04/04/84	4398EGCK	WST	21.80	Y	0.13	0.35	41.0	BW	0.50
04/04/84	4398EGCK	WST	21.80	Y	0.13	0.35	41.0	PTRC	0.50
04/09/84	4398EGCK	SCS	351.00	F	0.27	0.95	49.0	BG	2.50
04/16/84	4398EGCK	SCS	350.00	F	0.33	1.13	50.0	DD	1.00
04/16/84	4398EGCK	SCS	350.00	F	0.33	1.13	50.0	OF	1.00
06/07/84	4398EGCK	COS	180.00	F	0.19	0.50	45.0	BW	0.00
06/27/84	4398EGCK	STT	850.00	F	0.48	1.49	52.0	OF	10.00
06/27/84	4398EGCK	WST	850.00	F	0.48	1.49	52.0	UW	10 .00
07/16/84	4398EGCK	COS	155.00	F	0.10	0.24	60.0	BW	2.50
12/03/84	4398EGCK	COS	0.00	B	0.00	0.00	52.0	SC	0.00
12/03/84	4398EGCK	COS	0.00	B	0.00	0.00	52.0	PSCY	0.00
12/03/84	4398EGCK	COS	0.00	B	0.00	0.00	52.0	BF	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/08/85	4398EGCK	SCS	950.00	F	<b>0.37</b>	1.24	44.0	BA	<b>3.00</b>
04/04/85	4398EGCK	SCS	11.59	Y	<b>0.27</b>	0.69	41.0	PTRC	0.10
04/16/85	4398EGCK	SCS	360.00	F	<b>0.38</b>	<b>0.72</b>	<b>43.0</b>	FP	<b>0.50</b>
<b>05130185</b>	4398EGCK	SCS	170.00	F	0.09	<b>0.28</b>	<b>43.0</b>	PCOS	1.00
<b>07108185</b>	4398EGCK	WST	353.00	F	0.09	0.21	62.0	BC	<b>0.50</b>
07/08/85	4398EGCK	WST	353.00	F	0.09	0.21	62.0	PAMB	<b>0.50</b>
07/31/85	4398EGCK	COS	128.00	F	0.12	<b>0.33</b>	<b>62.0</b>	PAMB	1.00
07/31/85	4398EGCK	COS	128.00	F	0.12	<b>0.33</b>	<b>62.0</b>	BC	1.00
07/31/85	4398EGCK	SCS	<b>46.00</b>	F	<b>0.22</b>	<b>0.48</b>	<b>62.0</b>	PAMB	6.00
07/31/85	4398EGCK	SCS	<b>46.00</b>	F	<b>0.22</b>	0.49	<b>62.0</b>	BC	6.00
09/19/85	4398EGCK	COS	<b>36.50</b>	F	<b>0.28</b>	<b>0.73</b>	49.0	BW	0.20
09/19/85	4398EGCK	SCS	<b>20.00</b>	Y	<b>0.39</b>	<b>0.83</b>	49.0	BK	0.50
<b>10102185</b>	4398EGCK	SCS	<b>0.06</b>	B	0.00	0.00	0.0	SC	0.00
10/02/85	4398EGCK	SCS	<b>0.06</b>	B	0.00	0.00	0.0	BF	0.00
10/24/85	4398EGCK	COS	<b>23.00</b>	Y	0.39	1.39	47.0	BW	<b>0.20</b>
10/24/85	4398EGCK	WST	<b>25.00</b>	Y	0.19	<b>0.83</b>	<b>47.0</b>	BK	<b>0.30</b>
10/24/85	4398EGCK	WST	<b>25.00</b>	Y	0.19	0.83	47.0	PEP1	<b>0.30</b>
10/24/85	4398EGCK	SCS	10.50	Y	0.17	<b>0.75</b>	<b>47.0</b>	PCOS	<b>0.50</b>
10/24/85	4398EGCK	SCS	10.50	Y	0.17	0.75	47.0	PEP1	<b>0.50</b>
10/24/85	4398EGCK	SCS	10.50	Y	0.17	<b>0.75</b>	<b>47.0</b>	PSCY	<b>0.50</b>
10/24/85	4398EGCK	SCS	<b>14.50</b>	Y	<b>0.32</b>	1.37	47.0	BK	<b>0.50</b>
10/24/85	4398EGCK	SCS	14.50	Y	<b>0.32</b>	1.37	47.0	PCOS	<b>0.50</b>
11/04/85	4398EGCK	SCS	<b>0.06</b>	B	0.00	0.00	0.0	SC	0.00
11/04/85	4398EGCK	SCS	<b>0.06</b>	B	0.00	0.00	<b>46.0</b>	BF	0.00
11/15/85	4398EGCK	COS	0.09	B	0.00	0.00	<b>48.0</b>	SC	0.00
11/15/85	4398EGCK	COS	0.09	B	0.00	0.00	<b>48.0</b>	BK	0.00
11/22/85	4398EGCK	COS	<b>0.08</b>	B	0.00	0.00	<b>45.0</b>	SC	0.00
12/09/85	4398EGCK	COS	0.00	B	0.00	0.00	<b>36.0</b>	OB	0.00
12/18/85	4398EGCK	SCS	12.50	Y	<b>0.20</b>	<b>0.53</b>	<b>37.0</b>	BK	<b>0.30</b>

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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01/10/86	4398EGCK	SCS	11.90	Y	0.19	0.50	40.0	PEP1	0.50
01/10/86	4398EGCK	SCS	11.90	Y	0.19	0.50	40.0	PSCY	0.50
01/10/86	4398EGCK	SCS	11.90	Y	0.19	0.50	40.0	BK	0.50
01/10/86	4398EGCK	SCS	11.90	Y	0.19	0.50	40.0	PCOS	0.50
01/10/86	4398EGCK	SCS	11.90	Y	0.19	0.50	40.0	PTRC	0.50
01/10/86	4398EGCK	COS	20.40	Y	0.21	0.57	40.0	BW	0.10
03/10/86	4398EGCK	SCS	11.00	Y	0.21	0.57	46.0	BK	1.00
03/10/86	4398EGCK	SCS	11.00	Y	0.21	0.57	46.0	PTRC	1.00
04/11/86	4398EGCK	SCS	8.40	Y	0.23	0.83	48.0	BK	11.00
05/01/86	4398EGCK	SCS	7.80	Y	0.25	0.89	43.0	PTRC	15.00
05/01/86	4398EGCK	SCS	7.80	Y	0.25	0.89	43.0	BK	15.00
05/09/86	4398EGCK	COS	600.00	F	0.14	0.46	43.0	BW	2.00
05/09/86	4398EGCK	COS	600.00	F	0.14	0.46	43.0	BG	2.00
05/16/86	4398EGCK	COS	273.00	F	0.21	0.56	44.0	BW	2.00
06/10/86	4398EGCK	COS	200.00	F	0.17	0.52	52.0	BG	0.00
06/19/86	4398EGCK	COS	180.00	F	0.17	0.52	52.0	DG	2.00
06/19/86	4398EGCK	COS	180.00	F	0.17	0.52	52.0	PAMB	2.00
07/17/86	4398EGCK	WST	160.00	F	0.15	0.48	54.0	BU	6.00
07/17/86	4398EGCK	WST	160.00	F	0.15	0.48	54.0	BF	6.00
08/07/86	4398EGCK	COS	78.00	F	0.15	0.49	59.0	BW	0.20
08/15/86	4398EGCK	SCS	15.00	Y	0.28	0.73	59.0	PCOS	0.50
08/15/86	4398EGCK	SCS	15.00	Y	0.28	0.73	59.0	BK	0.50
09/16/86	4398EGCK	COS	44.00	F	0.21	0.68	50.0	BW	0.30
09/16/86	4398EGCK	SCS	9.50	Y	0.37	0.96	50.0	BC	2.00
09/16/86	4398EGCK	SCS	9.50	Y	0.37	0.96	50.0	PICH	2.00
09/16/86	4398EGCK	SCS	9.50	Y	0.37	0.96	50.0	BK	2.00
09/16/86	4398EGCK	SCS	9.50	Y	0.37	0.96	50.0	BF	2.00
09/16/86	4398EGCK	WST	46.00	F	0.17	0.45	50.0	PICH	0.30
11/25/86	4398EGCK	COS	20.00	Y	0.18	0.48	44.0	BW	0.10
11/29/86	4398EGCK	COS	0.00	B	0.00	0.00	0.0	BF	0.00
11/29/86	4398EGCK	COS	0.00	B	0.00	0.00	0.0	SC	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

<b>03125187</b>	4398EGCK	COS	17.00	Y	<b>0.20</b>	0.53	44.6	BW	<b>0.20</b>
03/25/87	4398EGCK	SCS	9.00	Y	<b>0.28</b>	0.75	44.6	UB	<b>0.70</b>
<b>03125187</b>	4398EGCK	SCS	9.00	Y	<b>0.28</b>	0.75	44.6	BK	<b>0.70</b>
<b>03125187</b>	4398EGCK	SCS	9.00	Y	<b>0.28</b>	0.75	44.6	PSCY	<b>0.70</b>
04/17/87	4398EGCK	SCS	9.30	Y	<b>0.27</b>	0.73	43.0	BK	<b>0.50</b>
04/17/87	4398EGCK	SCS	9.30	Y	<b>0.27</b>	0.73	43.0	UB	<b>0.50</b>
04/17/87	4398EGCK	COS	<b>500.00</b>	F	0.12	0.38	43.0	BW	1.00
04/28/87	4398EGCK	COS	500.00	F	0.11	0.37	52.0	BW	5.00
05/02/87	4398EGCK	STT	2100.00	S	0.15	0.33	0.0	uw	0.50
05/15/87	4398EGCK	COS	350.00	F	<b>0.24</b>	0.79	55.0	BW	6.00
06/08/87	4398EGCK	COS	270.00	F	0.10	0.32	51.0	DP	8.00
06/08/87	4398EGCK	COS	270.00	F	0.10	<b>0.32</b>	51.0	BW	8.00
07/01/87	4398EGCK	STT	250.00	F	0.00	0.00	62.0	PCOS	0.20
07/01/87	4398EGCK	COS	170.00	F	0.18	0.44	62.0	PCOS	1.00
07/01/87	4398EGCK	COS	170.00	F	0.18	0.44	62.0	BW	1.00
07/15/87	4398EGCK	COS	125.00	F	<b>0.20</b>	<b>0.60</b>	<b>58.0</b>	CWD	1.00
07/15/87	4398EGCK	STT	200.00	F	0.14	<b>0.43</b>	<b>58.0</b>	PCOS	0.50
08/03/87	4398EGCK	COS	82.00	F	0.26	<b>0.79</b>	<b>56.0</b>	BW	1.00
08/14/87	4398EGCK	COS	<b>75.00</b>	F	0.27	0.83	60.0	BF	1.00
09/03/87	4398EGCK	COS	49.00	F	<b>0.38</b>	1.22	59.0	BW	0.85
10/08/87	4398EGCK	STT	<b>27.00</b>	F	0.23	0.68	55.0	PEP1	0.05
10/08/87	4398EGCK	WST	<b>27.00</b>	F	0.23	0.68	55.0	PSCY	0.05
11/30/87	4398EGCK	WST	13.50	Y	0.17	0.49	39.0	BK	<b>0.00</b>
11/30/87	4398EGCK	COS	22.00	Y	0.40	1.19	<b>39.0</b>	BK	<b>0.00</b>
11/30/87	4398EGCK	COS	0.00	B	<b>0.00</b>	0.00	0.0	BF	<b>0.00</b>
11/30/87	4398EGCK	COS	0.00	B	<b>0.00</b>	0.00	0.0	SC	<b>0.00</b>
11/30/87	4398EGCK	COS	0.00	B	<b>0.00</b>	0.00	0.0	BK	<b>0.00</b>

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
01/12/84	5399ENT	SCS	975.00	F	0.30	1.10	48.0	BK	0.00
01/12/84	5399ENT	scs	24.00	Y	0.16	0.80	40.0	BK	3.37
01/12/84	5399ENT	scs	41.00	F	0.12	0.60	40.0	BK	0.80
02/22/84	5399ENT	scs	30.00	F	0.13	0.68	42.0	BK	1.60
02/22/84	5399ENT	SCS	761.00	F	0.25	1.30	44.0	PEP1	0.90
04/18/84	5399ENT	scs	22.80	Y	0.17	0.79	52.0	BK	4.30
04/18/84	5399ENT	scs	18.90	Y	0.18	0.90	52.0	BK	0.00
04/18/84	5399ENT	scs	18.90	Y	0.17	0.84	52.0	BK	7.30
07/11/84	5399ENT	scs	136.00	F	0.07	0.33	58.0	BK	2.30
08/13/84	5399ENT	scs	75.20	F	0.07	0.36	60.0	BK	13.00
08/13/84	5399ENT	scs	45.00	F	0.13	<b>0.64</b>	<b>60.0</b>	BK	0.30
11/29/84	5399ENT	scs	27.20	F	0.15	0.78	39.8	BK	0.70

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
01/31/85	5399ENT	scs	25.40	F	0.20	1.00	35.0	BK	0.60
01/31/85	5399ENT	SCS	470.00	F	0.30	0.50	45.0	FP	0.40
01/31/85	5399ENT	SCS	470.00	F	0.30	0.50	45.0	uw	0.40
06/06/85	5399ENT	scs	82.80	F	0.06	0.41	47.0	BK	0.20
06/06/85	5399ENT	scs	82.80	F	0.07	0.45	-1.0	BK	0.30
07/24/85	5399ENT	scs	45.00	F	0.11	0.86	52.0	DS	0.30
07/24/85	5399ENT	scs	45.00	F	0.11	0.86	52.0	FS	0.30
07/24/85	5399ENT	scs	45.00	F	0.11	0.86	52.0	BK	0.30
07/24/85	5399ENT	scs	45.00	F	0.11	0.86	54.0	DS	1.20
07/24/85	5399ENT	scs	45.00	F	0.11	0.86	52.0	FS	1.20
07/24/85	5399ENT	scs	45.00	F	0.11	0.86	52.0	BK	1.20
10/18/85	5399ENT	scs	35.00	F	0.13	0.62	49.0	BK	0.40
10/18/85	5399ENT	scs	35.00	F	0.13	0.62	49.0	ES	0.40
10/18/85	5399ENT	scs	35.00	F	0.13	0.62	49.0	OF	0.40
10/18/85	5399ENT	scs	33.60	F	0.12	0.57	49.0	OF	0.05
10/18/85	5399ENT	scs	33.60	F	0.12	0.57	49.0	BK	0.05
10/18/85	5399ENT	scs	33.60	F	0.12	0.57	49.0	ES	0.05
10/18/85	5399ENT	scs	27.00	F	0.14	<b>0.66</b>	<b>47.0</b>	BK	1.90
10/18/85	5399ENT	scs	27.00	F	0.14	<b>0.66</b>	<b>47.0</b>	ES	1.90
10/18/85	5399ENT	scs	27.00	F	0.14	0.66	47.0	OF	1.90
11/14/85	5399ENT	scs	24.70	Y	0.17	0.89	41.0	BK	0.35

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/28/86	5399ENT	scs	24.00	Y	0.17	1.09	36.0	PTRC	0.40
01/28/86	5399ENT	SCS	507.00	F	0.47	1.38	46.0	EG	0.10
01/28/86	5399ENT	SCS	507.00	F	0.47	1.38	46.0	PTRC	0.10
02/27/86	5399ENT	scs	24.00	Y	0.16	1.11	36.9	BK	0.60
03/20/86	5399ENT	SCS	195.00	F	0.39	1.08	45.0	UW	0.10
03/20/86	5399ENT	SCS	195.00	F	0.39	1.08	45.0	PCOS	0.10
03/20/86	5399ENT	SCS	180.00	F	0.36	1.10	45.0	PCOS	0.10
03/20/86	5399ENT	SCS	180.00	F	0.36	1.10	45.0	uw	0.10
03/20/86	5399ENT	scs	24.00	Y	0.17	0.87	41.0	BK	0.60
03/20/86	5399ENT	scs	24.00	Y	0.17	0.87	41.0	PCOS	0.60
03/20/86	5399ENT	scs	24.00	Y	0.17	0.87	41.0	ES	0.60
04/18/86	5399ENT	SCS	130.00	F	0.40	1.10	44.6	PCOS	0.15
04/18/86	5399ENT	SCS	145.00	F	0.42	1.14	44.6	PCOS	0.18
04/18/86	5399ENT	scs	19.50	Y	0.18	0.94	44.6	ES	2.60
04/18/86	5399ENT	scs	19.50	Y	0.18	0.94	44.6	PCOS	2.60
06/03/86	5399ENT	scs	0.00	F	0.50	0.75	48.0	BK	0.26
06/03/86	5399ENT	scs	0.00	F	0.08	0.75	48.0	BK	0.12
08/13/86	5399ENT	scs	35.90	F	0.13	0.90	53.0	BK	0.10
10/30/86	5399ENT	scs	23.60	Y	0.21	1.01	46.0	BK	0.00
10/30/86	5399ENT	scs	25.10	F	0.17	0.87	46.0	BK	0.10
12/09/86	5399ENT	SCS	975.60	F	0.23	1.02	47.0	uw	0.00
12/09/86	5399ENT	SCS	975.60	F	0.23	1.02	47.0	BG	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/26/87	5399ENT	SCS	348.00	F	0.15	0.96	46.0	XX	0.30
02/26/87	5399ENT	SCS	23.80	Y	0.20	1.00	33.0	BK	0.60
02/26/87	5399ENT	SCS	23.80	Y	0.20	1.00	33.0	BA	0.60
04/07/87	5399ENT	SCS	17.10	Y	0.93	0.24	38.0	BAGD	1.90
04/07/87	5399ENT	SCS	18.10	Y	0.20	1.60	38.0	BK	0.00
05/27/87	5399ENT	SCS	85.00	F	0.07	0.32	49.0	XX	0.16
06/10/87	5399ENT	SCS	67.00	F	0.08	0.36	46.0	BK	1.00
08/13/87	5399ENT	SCS	37.00	F	0.12	0.74	57.0	OF	0.30
09/01/87	5399ENT	SCS	30.00	F	0.13	0.80	0.0	FS	2.10
09/01/87	5399ENT	SST	450.00	F	0.11	0.58	0.0	BC	2.10
09/01/87	5399ENT	SST	450.00	F	0.11	0.58	0.0	PCOS	2.10
09/01/87	5399ENT	COS	100.00	F	0.00	0.00	0.0	BAGD	0.00
09/01/87	5399ENT	COS	100.00	F	0.00	0.00	0.0	SM	0.00
10/27/87	5399ENT	SCS	26.00	F	0.18	0.76	44.0	PICH	1.10
10/27/87	5399ENT	SCS	26.00	F	0.18	0.77	44.0	PICH	1.10
10/27/87	5399ENT	SST	65.00	F	0.11	0.56	44.0	PCOS	0.00
10/27/87	5399ENT	SST	65.00	F	0.11	0.56	44.0	BAGD	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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04/30/84	1695HGMMN	SCS	0.00		0.00	0.00	58.0	VH	0.00
05/31/84	1695HGMMN	SCS	0.00		0.00	0.00	58.0	UE	0.00
06/06/84	1695HGMMN	FCS	0.00		0.00	0.00	58.0	VH	0.00
06/06/84	1695HGMMN	FCS	0.00		0.00	0.00	58.0	BK	0.00
06/06/84	1695HGMMN	FCS	0.00		0.00	0.00	58.0	UE	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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01/15/85	1695HGMMN	SST	7.91	Y	0.00	0.00	58.0	PCOS	0.00
01/16/85	1695HGMMN	SST	8.28	Y	0.00	0.00	58.0	TS	0.00
01/16/85	1695HGMMN	SST	8.28	Y	0.00	0.00	58.0	PCOS	0.00
01/17/85	1695HGMMN	SST	13.10	Y	0.00	0.00	58.0	PCOS	0.00
01/17/85	1695HGMMN	SST	13.10	Y	0.00	0.00	58.0	UE	0.00
01/17/85	1695HGMMN	SST	13.10	Y	0.00	0.00	58.0	TG	0.00
01/17/85	1695HGMMN	SST	13.10	Y	0.00	0.00	58.0	VH	0.00
01/17/85	1695HGMMN	SST	10.80	Y	0.00	0.00	58.0	VH	0.00
01/17/85	1695HGMMN	SST	8.22	Y	0.00	0.00	58.0	VH	0.00
01/17/85	1695HGMMN	SST	9.13	Y	0.00	0.00	58.0	TG	0.00
01/17/85	1695HGMMN	SST	9.13	Y	0.00	0.00	58.0	VH	0.00
01/17/85	1695HGMMN	SST	9.13	Y	0.00	0.00	58.0	PCOS	0.00
02/26/85	1695HGMMN	RBT	24.36	Y	0.00	0.00	58.0	PCOS	0.00
02/26/85	1695HGMMN	RBT	24.36	Y	0.00	0.00	58.0	VH	0.00
02/27/85	1695HGMMN	FCS	838.71	F	0.00	0.00	58.0	VH	0.00
02/27/85	1695HGMMN	FCS	838.71	F	0.00	0.00	58.0	UE	0.00
02/27/85	1695HGMMN	SST	6.80	Y	0.00	0.00	58.0	TG	0.00
03/28/85	1695HGMMN	SST	0.00	Y	0.00	0.00	58.0	UE	0.00
03/28/85	1695HGMMN	SST	0.00	Y	0.00	0.00	58.0	UE	0.00
03/28/85	1695HGMMN	RBT	0.00	F	0.00	0.00	58.0	PCOS	0.00
03/28/85	1695HGMMN	FCS	0.00	F	0.00	0.00	58.0	BK	0.00
03/28/85	1695HGMMN	FCS	0.00	F	0.00	0.00	58.0	UE	0.00
03/28/85	1695HGMMN	FCS	0.00	F	0.00	0.00	58.0	VH	0.00
07/03/85	1695HGMMN	SST	0.00	F	0.00	0.00	58.0	VH	0.00
07/03/85	1695HGMMN	SST	0.00	F	0.00	0.00	58.0	BR	0.00
07/03/85	1695HGMMN	SST	0.00	F	0.00	0.00	58.0	UE	0.00
07/03/85	1695HGMMN	SST	0.00	F	0.00	0.00	58.0	VH	0.00
08/22/85	1695HGMMN	SST	0.00	F	0.00	0.00	58.0	UE	0.00
08/22/85	1695HGMMN	SST	0.00	F	0.00	0.00	58.0	BG	0.00
08/22/85	1695HGMMN	SST	0.00	F	0.00	0.00	58.0	BR	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/28/86	1695HGMN	SST	0.00	0.00	0.00	58.0	VH	0.00
01/28/86	1695HGMN	SST	0.00	0.00	0.00	58.0	PEP1	0.00
01/28/86	1695HGMN	SST	0.00	0.00	0.00	0.0	TG	0.00
01/28/86	1695HGMN	SST	0 .00	0.00	0.00	58.0	TG	0.00
01/28/86	1695HGMN	SST	0.00	0.00	0.00	58.0	VH	0.00
01/28/86	1695HGMN	SST	0.00	0.00	0.00	58.0	BR	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

03/05/87	1695HGMN	SST	6.50	Y	0.00	0.00	58.0	TS	0.00
03/05/87	1695HGMN	SST	8.70	Y	0.00	0.00	58.0	TG	0.00
11/19/87	1695HGMN	SST	20.00	Y	0.09	1.34	58.0	XX	0.05
11/19/87	1695HGMN	SST	20.00	Y	0.09	0.00	58.0	XX	0.05

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
06/20/84	1695KOOS	SST	0.00	F	0.00	0.00	55.0	PEP1	0.00
06/20/84	1695KOOS	SST	0.00	F	0.00	0.00	55.0	PSCY	0.00
12/13/84	1695KOOS	RBT	0.00	F	0.00	0.00	0.0	UE	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
01/07/85	1695KOOS	RBT	83.00	F	0.00	0.00	52.0	VH	0.00
02/14/85	1695KOOS	SCS	0 .00		0.00	0.00	0.0	VH	0.00
03/04/85	1695KOOS	SCS	0.00		0.00	0.00	0.0	BK	0.00
05/09/85	1695KOOS	SCS	0.00		0.00	0.00	0.0	UE	0.00
06/11/85	1695KOOS	SCS	0.00		0.00	0.00	0.0	UE	0.00
08/02/85	1695KOOS	SCS	0.00	F	0.00	0.00	0.0	PICH	0.00
08/02/85	1695KOOS	SCS	0.00	F	0.00	0.00	0.0	UE	0.00
09104185	1695KOOS	SCS	0.00		0.00	0.00	0.0	UE	0.00
09/04/85	1695KOOS	SCS	0.00		0.00	0.00	0.0	PEP1	0.00
10/21/85	1695KOOS	SCS	0.00		0.00	0.00	0.0	PEP1	0.00
10/21/85	1695KOOS	SCS	0.00		0.00	0.00	0.0	UE	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
03/17/86	1695KOOS	SCS	0.00		0.00	0.00	0.0	UE	0.00
08/21/86	1695KOOS	SCS	0.00		0.00	0.00	0.0	BK	0.00
08/21/86	1695KOOS	SCS	0.00		0.00	0.00	0.0	UE	0.00
08/27/86	1695KOOS	SCS	0.00		0.00	0.00	0.0	UE	0.00
08/27/86	1695KOOS	SCS	0.00		0.00	0.00	0.0	PICH	0.00
08/27/86	1695KOOS	SCS	0.00		0.00	0.00	0.0	BK	0.00
09/19/86	1695KOOS	SCS	0.00		0.00	0.00	0.0	BK	0.00
09/19/86	1695KOOS	SCS	0.00		0.00	0.00	0.0	UE	0.00
10/16/86	1695KOOS	SCS	0.00		0.00	0.00	53.2	PEP1	0.00
10/16/86	1695KOOS	SCS	0.00		0.00	0.00	53.2	UE	0.00
10/16/86	1695KOOS	SCS	0.00		0.00	0.00	53.2	UE	0.00
10/16/86	1695KOOS	SCS	0.00		0.00	0.00	53.2	BK	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	BK	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
01/06/87	1695KOoS	scs	0.00		0.00	0.00	0.0	PEP1	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	BK	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	PEP1	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	PEP1	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	PSCY	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
01/06/87	1695KOOS	scs	0.00		0.00	0.00	0.0	PEP1	0.00
03/24/87	1695KOOS	scs	0.00		0.00	0.00	0.0	BK	0.00
06/11/87	1695KOOS	scs	70.00	F	0.00	0.00	60.0	PEP1	0.27
06/11/87	1695KOOS	scs	70.00	F	0.00	0.00	60.0	UE	0.27
06/11/87	1695KOOS	scs	70.00	F	0.00	0.00	60.0	PSCY	0.27
06/11/87	1695KOOS	scs	0.00		0.00	0.00	0.0	PICH	0.00
06/11/87	1695KOOS	scs	0.00		0.00	0.00	0.0	PEP1	0.00
07/14/87	1695KOOS	scs	60.00	F	0.00	0.00	53.0	PICH	0.00
10/14/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
10/14/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
10/14/87	1695KOoS	scs	0.00		0.00	0.00	0.0	xx	0.00
11/05/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
11/05/87	1695KOOS	scs	0.00		0.00	0.00	0.0	PSCY	0.00
11/05/87	1695KOOS	scs	0.00		0.00	0.00	0.0	UE	0.00
11/05/87	1695KOOS	scs	0.00		0.00	0.00	0.0	PEPI	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS LOSS/MO
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01/13/84	5399LVNW	SCS	20.00	Y	0.20	0.84	38.0	BK	0.10
01/13/84	5399LVNW	SCS	19.00	Y	0.10	2.30	38.0	PSCY	0.10
02/24/84	5399LVNW	SCS	19.00	Y	0.11	2.40	38.0	BK	0.10
03/13/84	5399LVNW	SCS	20.00	Y	0.12	2.50	41.0	BK	0.10
03/13/84	5399LVNW	SCS	0.00	Y	0.00	0.00	0.0	BK	0.00
04/18/84	5399LVNW	SCS	15.00	Y	0.12	2.45	41.0	BK	0.03
07/10/84	5399LVNW	SCS	45.00	F	0.21	0.90	54.0	DS	0.00
08/16/84	5399LVNW	SCS	28.00	F	0.09	2.29	64.0	BG	0.10
11/30/84	5399LVNW	SCS	21.00	Y	0.01	2.10	38.0	BK	0.10

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS LOSS/MO
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01/29/85	5399LVNW	SCS	20.00	Y	0.11	2.40	35.0	BK	0.10
01/29/85	5399LVNW	SST	13.00	Y	0.13	2.60	35.0	BK	0.10
07/22/85	5399LVNW	SCS	50.00	F	0.06	1.31	60.0	BK	0.10
07/22/85	5399LVNW	SCS	50.00	F	0.11	0.69	60.0	BK	0.10
10/16/85	5399LVNW	SST	25.00	Y	0.11	0.21	41.0	PCOS	0.01
11/15/85	5399LVNW	SCS	21.00	Y	5.70	1.53	39.0	BK	0.05

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS LOSS/MO
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01/29/86	5399LVNW	SCS	20.00	Y	0.29	0.94	36.0	BK	0.10
03/19/86	5399LVNW	SST	11.00	Y	0.00	0.00	39.0	BK	0.10
03/19/86	5399LVNW	SCS	18.00	Y	0.00	0.00	39.0	BK	0.10
03/19/86	5399LVNW	SCS	18.00	Y	0.00	0.00	39.0	BK	0.10
06/02/86	5399LVNW	SST	<b>80.00</b>	F	0.32	1.30	46.0	BK	-1 .00
10/20/86	5399LVNW	SCS	21.00	Y	0.01	2.00	46.0	BK	0.10
10/30/86	5399LVNW	SST	8.30	Y	0.01	2.10	45.0	PSCY	0.10
10/30/86	5399LVNW	SST	8.30	Y	0.01	2.10	45.0	PTRC	0.10

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/10/87	5399LVNW	SCS	18.30	Y	<b>0. 05</b>	<b>0. 36</b>	<b>35. 2</b>	FP	<b>0. 02</b>
02/10/87	5399LVNW	SCS	18.30	Y	<b>0. 05</b>	<b>0. 36</b>	<b>35. 2</b>	BK	<b>0. 02</b>
02/10/87	5399LVNW	SCS	18.30	Y	<b>0. 05</b>	<b>0. 25</b>	<b>35. 2</b>	BK	<b>0. 02</b>
02/26/87	5399LVNW	SCS	18.10	Y	<b>0. 20</b>	1.60	34.0	BK	0.01
02/26/87	5399LVNW	SCS	18.10	Y	<b>0. 20</b>	1.60	34.0	PEP1	0.01
02/26/87	5399LVNW	SCS	18.10	Y	<b>0. 20</b>	1.60	34.0	BA	0.01
02/26/87	5399LVNW	SCS	248.00	F	<b>0. 08</b>	<b>0. 37</b>	<b>44. 0</b>	xx	<b>0. 03</b>
02/26/87	5399LVNW	SST	7.70	Y	0.10	1.90	34.0	xx	<b>0. 02</b>
04/06/87	5399LVNW	SCS	16.80	Y	0.18	1.04	45.5	BK	<b>0. 25</b>
05/06/87	5399LVNW	SCS	96.40	F	0.21	1.30	45.5	BK	0.10
05/28/87	5399LVNW	SST	20.00	Y	<b>0. 05</b>	<b>0. 28</b>	<b>48. 0</b>	TG	0.10
05/28/87	5399LVNW	SST	20.00	Y	<b>0. 05</b>	0.28	48.0	PTRC	0.10
05/28/87	5399LVNW	SCS	<b>75. 00</b>	F	<b>0. 06</b>	<b>0. 05</b>	<b>48. 0</b>	BK	<b>0. 25</b>
06/11/87	5399LVNW	SCS	69.60	F	<b>0. 08</b>	<b>0. 40</b>	<b>44. 6</b>	BK	-1.00
06/11/87	5399LVNW	SCS	248.00	F	<b>0. 08</b>	<b>0. 37</b>	<b>44. 6</b>	FP	0.00
06/11/87	5399LVNW	SCS	69.60	F	<b>0. 05</b>	1.08	44.6	BK	-1.00
07/30/87	5399LVNW	SCS	<b>26. 00</b>	F	0.12	1.50	56.0	BK	<b>0. 47</b>
10/27/87	5399LVNW	SCS	19.60	Y	<b>0. 08</b>	0.19	46.0	BK	<b>0. 20</b>
10/27/87	5399LVNW	SCS	<b>20. 00</b>	Y	<b>0. 08</b>	<b>2. 26</b>	<b>46. 0</b>	BK	<b>0. 20</b>
10/27/87	5399LVNW	SCS	<b>20. 00</b>	Y	0.17	<b>70. 00</b>	<b>46. 0</b>	BK	<b>0. 20</b>

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/09/84	5399LWS	scs	1050.00	s	0.36	1.48	45.3	PCOS	15.00
01/10/84	5399LWS	scs	15.60	y	0.17	0.65	40.0	BK	0.30
01/10/84	5399LWS	scs	15.60	y	0.17	0.65	40.0	VN	0.30
01/16/84	5399LWS	SCS	487.50	F	0.29	1.20	45.3	xx	1 .00
01/16/84	5399LWS	FCS	773.00	F	0.41	1.70	45.3	PCOS	20 .00
01/25/84	5399LWS	FCS	600.00	F	0.46	1.90	46.4	BW	0.00
02/21/84	5399LWS	FCS	600.00	F	0.28	1.51	51.0	xx	0.00
04/16/84	5399LWS	FCS	175.00	F	0.49	1.78	43.9	SM	0.38
04/23/84	5399LWS	scs	80.00	F	0.49	2.03	42.8	BK	0.30
05/07/84	5399LWS	scs	65.00	F	0.37	1.55	44.0	xx	0.50
06/22/84	5399LWS	SCS	130.00	F	0.38	0.88	48.0	BR	0.00
12/05/84	5399LWS	scs	15.50	y	0.30	0.12	40.0	BK	1.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/21/85	5399LWS	COS	1320.00	S	0.76	2.37	42.8	BW	30.00
02/21/85	5399LWS	COS	1320.00	S	0.76	2.37	42.8	P	30 .00
02/21/85	5399LWS	COS	1320.00	S	0.76	2.37	42.8	FS	30.00
02/21/85	5399LWS	COS	1320.00	S	0.76	2.37	42.8	BG	30 .00
02/22/85	5399LWS	SCS	214.00	F	0.38	1.58	42.8	XX	0.10
03/05/85	5399LWS	COS	1210.00	S	0.27	1.42	42.8	BW	9.00
03/05/85	5399LWS	COS	1210.00	S	0.27	1.42	42.8	BB	9.00
03/08/85	5399Lws	scs	190.00	F	0.22	0.91	42.8	PCOS	0.50
03/14/85	5399LWS	scs	231.00	F	0.23	0.94	41.0	FP	0.10
04/09/85	5399Lws	FCS	16.00	Y	0.22	0.58	42.0	VN	0.50
07/18/85	5399LWS	cos	60.00	F	0.33	1.80	46.4	BW	0.00
08/15/85	5399LWS	cos	39.00	F	0.29	1.59	48.6	BW	0.50
08/28/85	5399LWS	scs	0.06	B	0.00	0.00	47.0	VN	0 .00
08/28/85	5399LWS	scs	0.06	B	0.00	0.00	47.0	BK	0 .00
08/28/85	5399LWS	scs	0.06	B	0.00	0.00	47.0	SC	0 .00
09/09/85	5399LWS	cos	26.00	F	0.40	2.14	45.0	BW	0.00
09/09/85	5399LWS	cos	26.00	F	0.40	2.14	45.0	BK	0.00
09/16/85	5399LWS	scs	17.60	Y	0.24	0.95	49.0	BK	0.10
09/17/85	5399LWS	FCS	32.50	F	0.26	0.93	48.0	ES	0.90
09/17/85	5399LWS	FCS	32.50	F	0.26	0.93	48.0	BK	0.90
10/10/85	5399Lws	FCS	27.00	F	0.29	0.95	43.0	BK	0.20
11/06/85	5399LWS	scs	15.00	Y	0.46	1.80	42.0	BK	0.30
11/08/85	5399LWS	FCS	0.05	B	0.00	0.00	42.0	BF	0.00
11/12/85	5399Lws	cos	19.00	Y	0.47	1.42	38.0	BK	0.20
11/12/85	5399Lws	cos	19.00	Y	0.47	1.42	38.0	BW	0.20
11/12/85	5399LWS	FCS	22.00	Y	0.33	1.00	38.0	BK	0.60
12/04/85	5399LWS	FCS	0.05	B	0.00	0.00	46.4	VH	0.00
12/10/85	5399LWS	cos	0.00	E	0.00	0.00	47.0	OR	0.00
12/16/85	5399LWS	scs	13.00	Y	0.30	1.15	37.0	BK	0.30
12/16/85	5399LWS	cos	21.50	Y	0.46	1.38	37.0	BW	0.20
12/16/85	5399LWS	cos	21.50	Y	0.46	1.38	37.0	BK	0.20

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/22/86	5399LWS	scs	<b>1100.00</b>	s	0.94	3.03	44.6	UW	2.00
01/28/86	53VVLWS	FCS	23.00	Y	0.31	1.77	41.0	VN	0.50
02/26/86	5399LWS	FCS	20.00	Y	0.34	1.10	46.4	BK	0.50
02/26/86	5399LWS	FCS	20.00	Y	0.34	1.10	46.4	BW	0.50
02/26/86	5399LWS	FCS	20.00	Y	0.34	1.10	46.4	PSCY	0.50
03/06/86	5399LWS	cos	19.00	Y	0.47	1.51	41.0	BK	0.50
03/06/86	5399LWS	cos	19.00	Y	0.47	1.51	41.0	BW	0.50
03/11/86	5399LWS	SCS	190.00	F	0.41	1.20	46.4	BW	0.00
03/13/86	5399LWS	FCS	19.00	Y	0.34	1.12	46.4	BK	5.00
03/21/86	5399LWS	FCS	19.00	Y	0.33	1.91	45.0	BK	5.00
03/21/86	5399LWS	FCS	19.00	Y	0.33	1.91	45.0	BU	5.00
04/25/86	5399LWS	COS	208.00	F	0.18	0.78	44.0	BW	0.50
06/03/86	5399LWS	COS	107.00	F	0.36	1.94	49.1	BW	1.00
09/28/86	5399LWS	scs	0.00	B	0.00	0.00	0.0	BK	0.00
09/28/86	5399LWS	scs	0.00	B	0.00	0.00	0.0	SC	0.00
09/28/86	5399LWS	scs	0.00	B	0.00	0.00	0.0	VN	0.00
12/16/86	5399LWS	URB	26.00	F	0.28	0.90	41.0	PTRC	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/23/87	5399LWS	URB	22.00	Y	0.61	1.98	42.4	PTRC	0.00
02/23/87	5399LWS	URB	22.00	Y	0.61	1.98	42.4	VN	0.00
03/04/87	539VLWS	URB	0.00	B	0.00	0.00	0.0	VH	0.00
03/04/87	5399LWS	URB	0.00	B	0.00	0.00	0.0	VN	0.00
03/04/87	5399LWS	URB	0.00	B	0.00	0.00	0.0	SC	0.00
03/04/87	5399LWS	cos	0.00	F	0.00	0.00	0.0	VN	3.00
03/30/87	5399LWS	URB	19.20	Y	0.33	1.07	42.8	BK	3.00
03/30/87	5399LWS	URB	19.20	Y	0.33	1.07	42.8	PTRC	3.00
03/30/87	5399LWS	URB	19.20	Y	0.33	1.07	42.8	PEP1	3.00
03/30/87	5399LWS	URB	19.20	Y	0.33	1.07	42.8	PSCY	3.00
03/30/87	5399LWS	URB	19.20	Y	0.33	1.07	42.8	VN	3.00
04/10/87	5399LWS	scs	15.00	Y	0.29	1.22	44.0	BK	0.20
04/22/87	5399LWS	FCS	360.00	F	0.41	1.34	45.0	BW	0.50
04/27/87	5399LWS	URB	310.00	F	0.47	1.45	45.9	VH	0.00
05/28/87	5399LWS	scs	45.00	F	1.96	8.63	45.5	BK	0.00
06/04/87	5399LWS	scs	43.00	F	0.33	1.38	45.5	BK	0.00
06/25/87	5399LWS	scs	43.00	F	0.33	1.38	46.0	BK	0.20
06/25/87	5399LWS	scs	43.00	F	0.33	1.38	46.8	OF	0.20
08/31/87	5399LWS	scs	0.06	B	0.00	0.00	0.0	BF	0.00
08/31/87	5399LWS	scs	0.06	B	0.00	0.00	0.0	SC	0.00
08/31/87	5399LWS	scs	<b>0.06</b>	B	0.00	0.00	0.0	VH	0.00
08/31/87	5399LWS	scs	0.06	B	0.00	0.00	0.0	BK	0.00
11/30/87	5399LWS	scs	19.00	Y	0.30	1.23	42.8	BK	0.00
11/30/87	5399LWS	FCS	0.00	B	0.00	0.00	0.0	VH	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
01/06/84	5399SPCK	FCS	699.00	F	0.08	0.75	50.0	uw	0.80
01/27/84	5399SPCK	FCS	2.50	Y	0.15	0.80	50.0	BR	0.00
03/01/84	5399SPCK	FCS	500.00	F	0.40	3.00	48.0	BR	0.00
03/08/84	5399SPCK	FCS	141.00	F	0.28	1.79	42.0	BR	0.00
03/08/84	5399SPCK	SCS	17.98	Y	0.29	0.20	42.0	BW	0.00
03/27/84	5399SPCK	URB	300.00	F	0.40	2.14	48.0	BR	0.00
04/05/84	5399SPCK	FCS	122.00	F	0.44	1.99	44.0	BW	0.60
05/07/84	5399SPCK	FCS	260.00	F	0.14	0.76	49.0	BR	1.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
01/15/85	5399SPCK	FCS	490.00	F	0.14	1.03	49.0	BU	0.80
01/30/85	5399SPCK	FCS	350.00	F	0.17	1.20	51.8	FS	0.00
01/30/85	5399SPCK	FCS	350.00	F	0.17	1.28	51.8	BR	0.80
02/04/85	5399SPCK	FCS	0.00	F	0.00	0.00	52.7	EG	0.00
02/19/85	5399SPCK	FCS	900.00	F	0.11	1.44	51.0	BG	1 .00
02/25/85	5399SPCK	FCS	170.00	F	0.22	1.38	46.0	BR	0.20
02/25/85	5399SPCK	FCS	170.00	F	0.22	1.38	46.0	BG	60.00
03/16/85	5399SPCK	URB	0.00	F	0.00	0.00	47.0	xx	0.00
03/20/85	5399SPCK	FCS	826.00	F	0.04	0.42	50.0	XX	1.00
10/17/85	5399SPCK	FCS	1100.00	S	0.00	0.00	50.0	OS	0.00
10/22/85	5399SPCK	FCS	0.05	B	0.00	0.00	48.0	BR	0.00
10/22/85	5399SPCK	FCS	0.05	B	0.00	0.00	48.0	BF	0.00
11/08/85	5399SPCK	FCS	0.05	B	0 .oo	0.00	0.0	BR	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/03/86	5399SPCK	FCS	530.00	F	0.10	0.72	49.0	FS	1.00
01/03/86	5399SPCK	FCS	530.00	F	0.10	0.72	49.0	BW	1.00
01/27/86	5399SPCK	FCS	280.00	F	0.16	1.16	47.0	BR	1.00
02/16/86	5399SPCK	FCS	230.00	F	0.18	0.98	47.0	BR	1.00
02/19/86	5399SPCK	FCS	177.00	F	0.21	1.24	47.0	BR	1.00
02/19/86	5399SPCK	FCS	1025.00	S	0.07	0.81	47.0	PAMB	0.00
02/19/86	5399SPCK	FCS	1025.00	S	0.07	0.81	47.0	UW	0.00
03/14/86	5399SPCK	FCS	600.00	F	0.10	0.77	49.0	PICH	1.00
03/14/86	5399SPCK	FCS	600.00	F	0.10	0.77	49.0	BR	1 .00
03/14/86	5399SPCK	FCS	600.00	F	0.10	0.77	49.0	BW	1.00
03/14/86	5399SPCK	FCS	110.00	F	0.30	1.63	49.0	PICH	2.00
03/14/86	5399SPCK	FCS	110.00	F	0.30	1.63	49.0	BR	2.00
03/14/86	5399SPCK	FCS	110.00	F	0.30	1.63	49.0	BW	2.00
03/21/86	5399SPCK	FCS	480.00	F	0.11	0.91	48.0	PICH	0.70
03/21/86	5399SPCK	FCS	95.00	F	0.33	1.77	48.0	PICH	0.70
03/31/86	5399SPCK	URB	90.00	F	0.21	1.15	49.0	PICH	0.80
03/31/86	5399SPCK	URB	90.00	F	0.21	1.15	49.0	BW	0.80
04/11/86	5399SPCK	FCS	66.00	F	0.27	1.47	49.0	PICH	0.50
04/11/86	5399SPCK	URB	304.00	F	0.15	0.82	49.0	PICH	0.50
05/01/86	5399SPCK	FCS	178.00	F	0.16	0.88	48.0	PICH	0.50
05/01/86	5399SPCK	FCS	178.00	F	0.16	0.88	48.0	BR	0.50
05/01/86	5399SPCK	FCS	178.00	F	0.16	0.88	48.0	PICH	0.50
05/01/86	5399SPCK	FCS	178.00	F	0.16	0.88	48.0	BR	0.50
11/10/86	5399SPCK	FCS	0.00	B	0.00	0.00	0.0	BR	0.00
12/23/86	5399SPCK	FCS	1000.00	S	0.06	0.47	51.0	PTRC	0.70
12/23/86	5399SPCK	FCS	1000.00	S	0.06	0.47	51.0	PICH	0.70

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/25/87	5399SPCK	FCS	159.00	F	0.19	1.06	46.6	PICH	0.00
03/04/87	5399SPCK	FCS	123.00	F	0.22	1.25	48.2	BR	0.00
04/21/87	5399SPCK	FCS	75.00	F	0.18	1.00	50.0	PICH	0.30

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FISH AND WILDLIFE SERVICE  
FISHDISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
01/10/84	4398WMSP	SCS	25.00	Y	0.35	1.34	36.0	BK	0.00
03/14/84	4398WMSP	SCS	23.00	Y	0.40	1.53	40.0	BK	1.70
04/13/84	4398WMSP	SCS	0.00	F	0.00	0.00	45.0	BK	1.00
05/30/84	4398WMSP	SCS	75.00	F	0.04	0.14	50.0	FS	10 .oo
07/06/84	4398WMSP	SCS	30.00	F	0.11	0.42	60.0	ES	0.00
07/06/84	4398WMSP	SCS	30.00	F	0.11	0.42	60.0	DS	0.00
11/03/84	4398WMSP	SCS	6.60	Y	0.20	0.96	38.0	PEP1	0.44

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
02/19/85	4398WMSP	SCS	21.90	Y	0.25	0.96	34.0	BK	0.31
04/09/85	4398WMSP	SCS	20.00	Y	0.00	1.14	50.0	BK	2.00
06/25/85	4398WMSP	SCS	40.00	F	0.19	0.73	56.0	TS	2.40
06/25/85	4398WMSP	SCS	40.00	F	0.19	0.73	56.0	PTRC	2.40
06/25/85	4398WMSP	SCS	40.00	F	0.19	0.73	56.0	TN	2.40
06/25/85	4398WMSP	SCS	40.00	F	0.19	0.73	56.0	MB	2.40
06/25/85	4398WMSP	RBT	2.40	Y	0.10	0.41	56.0	TN	0.90
06/25/85	4398WMSP	RBT	2.40	Y	0.10	0.41	56.0	BR	0.90
06/25/85	4398WMSP	SCS	40.00	F	0.18	0.69	0.0	TN	0.70
06/25/85	4398WMSP	SCS	40.00	F	0.18	0.69	56.0	TS	0.70
06/25/85	4398WMSP	SCS	40.00	F	0.18	0.69	56.0	MB	0.70
09/24/85	4398WMSP	SCS	0.10	B	0.00	0.00	52.0	BF	0.00
09/24/85	4398WMSP	SCS	0.10	B	0.00	0.00	52.0	BK	0.00
09/24/85	4398WMSP	SCS	0.10	B	0.00	0.00	52.0	VN	0 .oo
09/24/85	4398WMSP	SCS	0.10	B	0.00	0.00	52.0	BR	0.00
10/28/85	4398WMSP	SCS	0.10	B	0.00	0.00	50.0	BR	4.00
10/28/85	4398WMSP	SCS	0.10	B	0.00	0.00	50.0	SC	4.00
10/28/85	4398WMSP	SCS	0.10	B	0.00	0.00	50.0	VN	4.00
10/28/85	4398WMSP	SCS	0.10	B	0.00	0.00	50.0	BK	4.00
10/28/85	4398WMSP	SCS	0.10	B	0.00	0.00	50.0	BF	4.00
11/18/85	4398WMSP	SCS	25.00	Y	0.41	1.57	32.0	BK	0.40

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/11/86	4398WMSP	SCS	24.00	Y	2.06	7.91	41.0	PCOL	0.50
03/07/86	4398WMSP	SCS	23.00	Y	0.43	1.65	45.0	PICH	0.20
03/07/86	4398WMSP	SCS	23.00	Y	0.43	1.65	45.0	PEP1	0.20
03/07/86	4398WMSP	SCS	23.00	Y	0.43	1.65	45.0	PSCY	0.20
03/07/86	4398WMSP	SCS	23.00	Y	0.43	1.65	45.0	PBOD	0.20
03/07/86	4398WMSP	RBT	3.99	Y	0.21	0.83	41.0	PTRC	1.00
03/07/86	4398WMSP	RBT	3.99	Y	0.21	0.83	41.0	PEP1	1.00
03/07/86	4398WMSP	RBT	3.99	Y	0.21	0.83	41.0	PSCY	1.00
03/07/86	4398WMSP	SCS	500.00	F	0.37	1.47	0.0	BR	0.00
03/14/86	4398WMSP	SCS	250.00	F	0.90	2.27	48.0	BR	0.00
04/10/86	4398WMSP	SCS	200.00	F	0.16	3.97	48.0	BR	0.60
04/16/86	4398WMSP	RBT	2500.00	S	0.00	0.00	43.0	BR	20.00
04/16/86	4398WMSP	RBT	2500.00	S	0.00	0.00	43.0	FS	20.00
05/28/86	4398WMSP	RBT	4.00	Y	0.12	0.47	0.0	MB	0.10
08/14/86	4398WMSP	RBT	20.00	Y	0.09	0.60	62.0	BF	0.50
10/20/86	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	VN	0.00
10/20/86	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	BK	0.00
10/20/86	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	BF	0.00
10/20/86	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	BR	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE	LOCATION	SPE	FISH/LB	AGE	DEN-IND	FLOW-IND	TEMP	DIS	LOSS/MO
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06/10/87	4398WMSP	SCS	120.00	F	0.08	0.33	56.0	TN	2.00
06/10/87	4398WMSP	SCS	120.00	F	0.08	0.33	56.0	PU	2.00
06/10/87	4398WMSP	SCS	120.00	F	0.10	0.41	56.0	TN	1.30
06/10/87	4398WMSP	SCS	120.00	F	0.10	0.41	56.0	PU	1.30
06/10/87	4398WMSP	RBT	2.60	Y	0.23	0.88	56.0	MB	1.60
06/10/87	4398WMSP	RBT	2.60	Y	0.23	0.88	56.0	TN	1.60
06/10/87	4398WMSP	SCS	130.00	F	0.03	0.11	56.0	TN	0.20
06/10/87	4398WMSP	RBT	130.00	F	0.03	0.00	0.0	MB	0.20
06/17/87	4398WMSP	WST	0.00		0.00	0.00	0.0	SW	0.00
07/02/87	4398WMSP	SCS	33.00	F	0.20	0.77	68.0	PU	0.10
07/02/87	4398WMSP	SCS	33.00	F	0.20	0.77	68.0	TN	0.10
07/02/87	4398WMSP	RBT	3.00	Y	0.15	0.61	68.0	MB	2.00
07/02/87	4398WMSP	RBT	3.00	Y	0.15	0.61	68.0	BF	2.00
07/02/87	4398WMSP	RBT	3.00	Y	0.15	0.61	68.0	TN	2.00
07/02/87	4398WMSP	RBT	3.00	Y	0.15	0.61	68.0	TS	2.00
07/02/87	4398WMSP	RBT	42.00	F	0.06	0.24	68.0	BK	0.80
07/02/87	4398WMSP	RBT	42.00	F	0.06	0.24	68.0	TN	0.80
07/02/87	4398WMSP	RBT	42.00	F	0.06	0.24	68.0	TS	0.80
08/11/87	4398WMSP	SCS	0.10	B	0.00	0.00	50.0	PICH	1.00
08/12/87	4398WMSP	SCS	22.00	Y	0.24	0.94	60.0	TS	0.10
08/12/87	4398WMSP	SCS	22.00	Y	0.24	0.94	60.0	PICH	0.10
08/12/87	4398WMSP	SCS	22.00	Y	0.24	0.94	60.0	TN	0.10
10/16/87	4398WMSP	SCS	23.00	Y	0.17	0.64	48.0	TC	0.05
10/16/87	4398WMSP	SCS	23.00	Y	0.17	0.64	48.0	TN	0.05
10/16/87	4398WMSP	FCS	0.00	B	0.00	0.00	48.0	TC	0.30
10/16/87	4398WMSP	SCS	23.00	Y	0.26	1.01	48.0	TN	0.30
10/16/87	4398WMSP	RBT	11.00	Y	0.15	0.57	48.0	PEP1	0.05
10/16/87	4398WMSP	RBT	11.00	Y	0.15	0.57	48.0	TG	0.05
11/19/87	4398WMSP	SCS	23.00	Y	0.29	1.10	36.0	TN	0.30
11/19/87	4398WMSP	SCS	23.00	Y	0.29	1.10	36.0	TC	0.30
11/30/87	4398WMSP	SCS	0.00	B	0 .00	0.00	0.0	TN	0.00
11/30/87	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	VH	0.00
11/30/87	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	SH	0.00
11/30/87	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	SC	0.00
11/30/87	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	BF	0.00
11/30/87	4398WMSP	SCS	0.00	B	0 .00	0.00	0.0	VN	0.00
11/30/87	4398WMSP	SCS	0.00	B	0.00	0.00	0.0	BK	0.00
12/14/87	4398WMSP	SCS	22.00	Y	0.17	0.66	32.0	TN	0.20
12/14/87	4398WMSP	RBT	10.50	Y	0.15	0.59	32.0	SW	0.07

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/13/84	5399WILL	SCS	800.00	F	0.43	1.16	41.9	BW	2.00
02/06/84	5399WILL	SCS	550.00	F	0.55	1.59	41.7	xx	2.50
03/05/84	5399WILL	SCS	441.00	F	0.59	1.70	39.2	BW	2.50
03/09/84	5399WILL	COS	27.00	F	0.43	2.78	42.0	BK	1.50
03/19/84	5399WILL	SCS	310.00	F	0.70	1.99	43.0	BW	3.00
03/19/84	5399WILL	SCS	310.00	F	0.70	1.99	43.0	DD	3.00
03/19/84	5399WILL	COS	790.00	F	0.40	1.17	43.0	FP	1.00
04/12/84	5399WILL	COS	451.00	F	0.62	1.80	41.0	FP	1.00
04/12/84	5399WILL	SCS	228.00	F	0.91	2.63	41.0	BW	3.17
04/17/84	5399WILL	COS	18.00	Y	0.47	1.46	42.0	BK	1 .00
04/17/84	5399WILL	SCS	185.00	F	1.04	3.01	42.0	XX	3.00
06/06/84	5399WILL	COS	18.70	Y	0.49	3.15	45.0	BK	10 .00
06/06/84	5399WILL	COS	18.70	Y	0.49	3.15	45.0	BW	10.00
06/08/84	5399WILL	SCS	0.00	F	0.00	0.00	0.0	xx	0.00
07/10/84	5399WILL	SCS	0.00	F	0.19	0.57	45.0	DS	0.00
07/24/84	5399WILL	COS	62.00	F	0.15	0.48	43.3	BW	0.50
09/25/84	5399WILL	COS	38.00	F	0.21	0.67	55.0	DS	0.20
09/25/84	5399WILL	COS	38.00	F	0.21	0.67	55.0	BW	0.20
09/25/84	5399WILL	SCS	32.00	F	0.17	0.53	41.9	BK	1.50
09/25/84	5399WILL	SCS	32.00	F	0.17	0.53	41.9	DS	1.50
10/07/84	5399WILL	COS	34.00	F	0.33	1.02	39.0	BK	0.76
10/07/84	5399WILL	COS	34.00	F	0.33	1.02	39.0	BW	0.76
11/08/84	5399WILL	SCS	28.50	F	0.18	0.56	41.0	BK	0.70
11/08/84	5399WILL	SCS	28.50	F	0.18	0.56	41.0	BW	0.70
11/08/84	5399WILL	SCS	28.50	F	0.18	0.56	41.0	DS	0.70
12/04/84	5399WILL	COS	32.30	F	0.24	0.74	38.3	BW	0.02
12/04/84	5399WILL	COS	32.20	F	0.24	0.74	38.3	BK	0.02

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

04/10/85	5399WILL	COS	450.00	F	0.83	2.61	41.0	VN	1.00
04/10/85	5399WILL	COS	450.00	F	0.83	2.61	41.0	BG	1 .00
04/16/85	5399WILL	COS	370.00	F	0.99	3.12	42.8	BW	0.50
04/16/85	5399WILL	COS	370.00	F	0.99	3.12	42.0	BG	0.50
05/15/85	5399WILL	COS	210.00	F	0.88	2.58	42.8	BW	0.50
05/17/85	5399WILL	SCS	23.00	Y	0.36	1.10	40.1	VN	0.40
08/09/85	5399WILL	COS	45.00	F	0.25	0.77	44.6	DS	1.00
08/09/85	5399WILL	COS	45.00	F	0.25	0.77	44.6	BW	1 .00
09/09/85	5399WILL	COS	30.00	F	0.33	1.04	44.0	BW	0.40
11/18/85	5399WILL	COS	25.00	Y	0.39	1.19	39.2	BW	0.80

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/07/86	5399WILL	COS	1200.00	S	0.39	1.25	39.2	BW	0.00
02/07/86	5399WILL	COS	1200.00	S	0.39	1.25	39.2	UW	0.00
03/11/86	5399WILL	COS	830.00	F	0.59	1.85	40.1	BW	10.00
04/28/86	5399WILL	COS	16.50	Y	0.47	1.46	43.0	DS	0.80
04/28/86	5399WILL	COS	16.50	Y	0.47	1.46	43.0	BW	0.80
04/28/86	5399WILL	COS	275.00	F	0.98	3.09	41.0	BW	0.50
05/19/86	5399WILL	COS	182.00	F	0.68	2.11	42.8	BW	0.50
07/01/86	5399WILL	COS	47.00	F	0.23	0.73	44.6	DS	1.00
07/01/86	5399WILL	COS	47.00	F	0.23	0.73	44.6	BW	1.00
08/08/86	5399WILL	COS	43.00	F	0.26	0.82	46.4	BW	1.00
08/08/86	5399WILL	COS	43.00	F	0.26	0.82	46.4	DS	1.00
11/24/86	5399WILL	COS	26.00	F	0.32	0.99	45.0	BK	3.00
11/24/86	5399WILL	COS	26.00	F	0.32	0.99	45.0	BW	3.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/07/87	5399WILL	COS	25.30	F	0.33	1.04	39.4	BK	0.80
01/07/87	5399WILL	COS	25.30	F	0.33	1.04	39.4	BW	0.80
02/04/87	5399WILL	COS	25.30	F	0.32	1.01	41.0	BK	0.50
02/06/87	5399WILL	COS	1500.00	S	0.39	1.03	41.0	BW	1.00
03/12/87	5399WILL	COS	800.00	F	0.56	1.50	41.9	BW	0.50
04/02/87	5399WILL	COS	16.00	Y	0.46	1.43	43.0	BK	0.00
04/02/87	5399WILL	COS	16.00	Y	0.46	1.43	43.0	BW	0.00
05/18/87	5399WILL	COS	400.00	F	0.43	1.34	44.6	BW	0.20
07/30/87	5399WILL	COS	65.00	F	0.21	0.67	48.2	BW	0.50
07/30/87	5399WILL	COS	65.00	F	0.21	0.67	48.2	ES	0.50
09/16/87	5399WILL	COS	40.00	F	0.28	0.88	41.9	BK	0.00
09/16/87	5399WILL	COS	40.00	F	0.28	0.88	41.9	BK	0.00
11/24/87	5399WILL	COS	26.00	F	0.37	1.14	42.8	BW	7.00
11/24/87	5399WILL	COS	26.00	F	0.37	1.14	42.8	BK	7.00
11/30/87	5399WILL	COS	0.00	B	0.00	0.00	0.0	VN	0.00
11/30/87	5399WILL	COS	0.00	B	0.00	0.00	0.0	BK	0.00

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/11/84	5399WNRP	SCS	680.00	F	1.03	3.40	48.0	UW	6.00
01/11/84	5399WNRP	SCS	18.60	Y	0.25	0.74	36.0	BK	0.20
01/11/84	5399WNRP	SCS	15.00	Y	0.22	0.66	36.0	BK	0.40
01/11/84	5399WNRP	SCS	17.00	Y	0.26	0.76	36.0	BK	1.70
02/23/84	5399WNRP	SCS	18.00	Y	0.24	0.75	42.0	BK	0.05
02/23/84	5399WNRP	RBT	522.00	F	1.00	1.20	48.0	PCOS	2.00
03/14/84	5399WNRP	SCS	240.00	F	0.00	0.00	49.0	PCOS	0.10
03/14/84	5399WNRP	SCS	18.00	Y	0.00	0.00	0.0	BK	0.30
04/17/84	5399WNRP	SCS	17.00	Y	0.20	0.57	44.0	BK	0.20
07/12/84	5399WNRP	SCS	60.00	F	0.17	0.51	50.0	BK	0.00
07/12/84	5399WNRP	BKT	60.00	F	0.11	0.83	48.0	BK	0.00
09/30/84	5399WNRP	SCS	30.00	F	0.18	0.60	48.0	DS	0.04
09/30/84	5399WNRP	SCS	30.00	F	0.18	0.60	48.0	BK	0.04

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

01/27/85	5399WNRP	SCS	19.00	Y	0.21	0.64	39.0	PU	0.00
01/30/85	5399WNRP	CUT	269.00	F	0.64	0.78	49.0	PCOS	0.40
02/26/85	5399WNRP	SCS	18.00	Y	0.19	0.63	39.0	BK	0.04
02/28/85	5399WNRP	RBT	1500.00	S	0.00	0.00	49.0	FS	0.10
02/28/85	5399WNRP	RBT	1500.00	S	0.00	0.00	49.0	BP	0.10
03/12/85	5399WNRP	SCS	20.00	Y	0.06	0.60	40.0	BK	0.10
03/12/85	5399WNRP	SCS	20.00	Y	0.06	0.60	40.0	DS	0.10
03/12/85	5399WNRP	SCS	20.00	Y	0.06	0.60	40.0	BK	0.10
07/23/85	5399WNRP	SCS	45.00	F	0.12	0.35	63.0	DS	0.10
07/23/85	5399WNRP	SCS	45.00	F	0.12	0.35	63.0	DC	0.10
07/23/85	5399WNRP	SCS	50.00	F	0.08	0.53	63.0	DS	5.00
07/23/85	5399WNRP	SCS	50.00	F	0.08	0.53	63.0	DC	5.00
07/23/85	5399WNRP	SCS	50.00	F	0.08	0.53	63.0	OF	5.00
07/24/85	5399WNRP	RBT	40.00	F	0.06	0.51	63.0	PCOS	-1.00
10/17/85	5399WNRP	SCS	23.30	Y	0.14	0.55	46.0	ES	0.01
10/17/85	5399WNRP	SCS	23.30	Y	0.14	0.55	46.0	DS	0.01
10/17/85	5399WNRP	SCS	23.30	Y	0.14	0.55	46.0	FS	0.01
10/17/85	5399WNRP	SCS	25.00	Y	0.13	0.85	46.0	DS	0.01
10/17/85	5399WNRP	SCS	25.00	Y	0.13	0.85	46.0	OF	0.01
10/17/85	5399WNRP	SCS	25.00	Y	0.13	0.85	46.0	BK	0.01

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/26/86	5399WNRP	RBT	2000.00	S	0.32	1.22	49.0	FS	19.00
03/17/86	5399WNRP	SCS	149.00	F	0.32	1.18	48.0	PCOS	0.30
03/17/86	5399WNRP	SCS	149.00	F	0.32	1.18	48.0	BK	0.30
03/17/86	5399WNRP	BKT	300.00	F	0.37	1.24	48.0	PTRC	4.00
03/17/86	5399WNRP	CUT	62.00	F	0.04	0.26	48.0	PCOS	0.04
03/17/86	5399WNRP	CUT	62.00	F	0.04	0.26	48.0	PTRC	0.04
04/17/86	5399WNRP	BKT	450.00	F	1.59	1.08	49.0	PCOS	1.50
04/17/86	5399WNRP	SCS	20.00	Y	0.14	0.41	40.0	ES	0.05
04/17/86	5399WNRP	SCS	20.00	Y	0.14	0.41	40.0	BK	0.05
04/17/86	5399WNRP	SCS	17.80	Y	0.17	1.05	40.0	ES	0.04
04/17/86	5399WNRP	SCS	17.80	Y	0.17	1.05	40.0	BK	0.04
06/04/86	5399WNRP	SCS	88.00	F	0.12	0.38	45.0	BK	0.01
06/04/86	5399WNRP	RBT	130.00	F	0.11	0.78	49.0	BK	0.40
06/04/86	5399WNRP	BKT	160.00	F	0.37	1.81	49.0	BF	0.50
08/14/86	5399WNRP	SCS	36.00	F	0.11	0.70	58.0	BR	10.00
08/14/86	5399WNRP	SCS	36.00	F	0.11	0.70	58.0	BK	10 .00
10/29/86	5399WNRP	SCS	23.00	Y	0.16	0.47	46.0	BK	0.01
10/29/86	5399WNRP	SCS	25.00	Y	0.14	0.90	46.0	BK	0.80
10/29/86	5399WNRP	RBT	18.00	Y	0.08	0.57	49.0	PTRC	0.01
10/29/86	5399WNRP	CUT	500.00	F	0.14	561.00	49.0	PTRC	0.20
12/09/86	5399WNRP	SCS	20.30	Y	0.21	0.63	36.0	BK	0.01
12/09/86	5399WNRP	SCS	167.00	F	0.30	1.52	49.0	BF	0.70

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FISH AND WILDLIFE SERVICE  
FISH DISEASE SUMMARY

DATE LOCATION SPE FISH/LB AGE DEN-IND FLOW-IND TEMP DIS LOSS/MO

02/24/87	5399WNRP	CUT	97.60	F	0.10	0.75	49.0	BF	0.40
02/25/87	5399WNRP	SCS	18.00	Y	0.19	1.19	42.0	BK	0.01
02/25/87	5399WNRP	SCS	18.00	Y	0.19	1.19	42.0	PSCY	0.01
02/25/87	5399WNRP	SCS	19.00	Y	0.24	0.78	42.0	BK	0.10
02/25/87	5399WNRP	SCS	300.00	F	0.11	0.37	42.0	XX	0.40
04/08/87	5399WNRP	RBT	390.00	F	0.24	1.14	48.0	XX	1.00
04/08/87	5399WNRP	SCS	15.00	Y	0.25	0.73	43.0	VN	0.10
04/08/87	5399WNRP	SCS	15.00	Y	0.25	0.73	43.0	BK	0.10
04/08/87	5399WNRP	CUT	97.60	F	0.10	0.75	43.0	VN	0.00
06/10/87	5399WNRP	BKT	90.00	F	0.50	1.17	48.0	BF	3.90
07/28/87	5399WNRP	BKT	40.00	F	0.18	0.99	52.0	PTRC	4.00
07/28/87	5399WNRP	FCS	140.00	F	0.15	3.24	0.0	BF	0.00
07/29/87	5399WNRP	SCS	38.00	F	0.15	0.45	52.0	BK	0.50
07/29/87	5399WNRP	CUT	962.00	F	0.49	0.83	50.0	XX	0.01
07/29/87	5399WNRP	RBT	38.00	F	0.14	1.06	52.0	XX	0.07
08/11/87	5399WNRP	BKT	25.00	Y	0.58	1.30	58.0	BF	12.00
08/24/87	5399WNRP	SCS	30.00	F	0.18	0.54	58.0	BR	0.50
10/28/87	5399WNRP	SCS	24.80	Y	0.23	0.69	44.0	BK	0.01
10/28/87	5399WNRP	CUT	333.30	F	0.15	0.56	48.0	BK	0.03
10/28/87	5399WNRP	SCS	24.80	Y	0.14	1.04	44.0	BK	0.01

## DEFINITIONS/CODING

AGENCY CODE

## Coding-

ADFG = Alaska Dept. of Fish and Game  
ANAD = Anadromous, Inc.  
BCFW = British Columbia Fish and Wildlife  
BHSR = Burnt Hill Salmon Ranch  
CDFG = CA Dept. of Fish and Game  
CEDC = Clatsop Economic Development Committee  
CFSO = Canada Dept. of Fisheries and Oceans - Operations  
CFSR = Canada Dept. of Fisheries and Oceans - Research  
COOP = WA Dept. of Fisheries - Cooperative  
DOMS = Domsea Farms, Inc.  
ELWA = Elwha Indian Tribe  
FRI = Fisheries Research Institute, Univ. of WA  
FWS = U.S. Fish and Wildlife Serv.  
HOH = Hoh Indian Tribe  
IDFG = ID Dept. of Fish and Game  
LUMM = Lummi Indian Tribe  
MIC = Metlakatla Indian Community  
MKTR = Makah Tribe  
MUCK = Muckleshoot  
NISQ = Nisqually Indian Tribe  
NMFS = Natl Marine Fisheries Service  
NPS = National Park Service  
NSRA = Northern SE Regional Aquaculture Assn.  
NYKA = Northern Yukon/Kuskokwim Aquaculture Assn.  
CAF = OR Aqua-Foods, Inc.  
ODFW = OR Dept. of Fish and Wildlife  
PC = Peninsula College  
ODNR = Ouinault Dept. of Natural Res  
OUIT = Ouielute Tribe  
SJ = Sheldon Jackson College  
SKAG = Skagit System Cooperative  
SOF = Silverking Oceanic Farms  
SQAX = Squaxin Tribe  
SSRA = Southern Southeast Regional Aquaculture Assn.  
STIL = Stllaguamish Indian Tribe  
suo = Suquamish Tribe  
TULA = Tulalip Indian Tribe  
uw = College of Fisheries, Univ. of WA  
WDF = WA Dept. of Fisheries  
WDG = WA Dept. of Game  
YAK1 = Yakima Indian Tribe

DISEASE

Definition-Coded value for a disease.

Coding-

XX = No Disease Observed

Bacteria

BR = Yersinia Ruckerl  
BK = R. Salmonlnarum  
BF = A. Salmonlcida  
BG = Bacterial Gill Disease  
BC = Flexibacter Columnaris  
BW = Cytophaga Psychrophila  
BA = Aeromonads  
BT = Mycabacterlum Sp.  
BV = Vibrio Anguillarum  
BS = Salmonella  
BO = Chills Oregon Bleb, Strawberry  
BP = Pseudomonads  
BU = Unidentified Bacteria  
BAGD = Aeromonad Gill Disease

Copepods

cs = Salmincola

Environment

EG = Environmental Bubble Disease  
ES = Environmental Sunburn

Fungal

FP = Phoma Herbarrum  
FS = Saprolegnia

Mussels

MB = Glochidia

Nematodes

NC = Cystidicola

Nutritional

DD = Nutritional Drop Out  
DG = Nutritional Gill Disease  
DS = Nutritional Sunburn  
DN = Malnutrition  
DC = Nutritional Cataract

Ova

OF = Fungus  
OB = Blanks  
OS = Soft Shell

Protozoa

PCOS = Costia  
PTRC = Trichodina  
PICH = Ichthyophthirius  
PAMB = Gill Amoeba  
PEP1 = Epistylus  
PSCY = Scyphidia  
PCOL = Colponema  
PTRY = Trichophyia  
PCRY = Cryptobria  
PBOD = Bodomonads

Sporozoa

SC = Ceratomyxa Shasta  
SW = Myxosoma Cerebralis  
sx = Myxidium Minteri  
SM = Myxobolus Insidiosus  
SH = Henneguya  
SD = Dermocystidium  
SL = Chloromyxum Majori  
SP = PKD

Tremadotoda

TE = Diphyllobothrium Spacthaceum  
TG = Gyrodactylus  
TD = Dactylogyros  
TS = Sanguinicola  
TB = Neascus  
TN = Nanophyetus Salmincola

Undetermined Etiology

UE = *Epitheliocystis*  
us = Strawberry Disease  
USC = Scoliosis  
UB = Bleb  
UC = Chills  
uw = White Spot  
EC = Chills Oregon Bleb,  
Strawberry  
PU = Unidentified Parasite

Viruses

VH = IHN  
VP = IPN  
VE = VHS  
VN = VEN  
VR = Herpes  
vu = Unidentified virus

LOCATION

Definition-Location where work is being accomplished or where fish are being evaluated or released.

Coding- 8-digit code:

First 2 digits, General Area

02 = Alaska marine  
03 = Alaska fresh water  
06 = California marine  
07 = California fresh water  
16 = Idaho  
32 = Nevada  
41 = Oregon marine  
43 = Oregon fresh water  
52 = Washington marine  
53 = Washington fresh water  
68 = Canada  
99 = Other

Second two digits, Local Area

Washington Marine

01-13 = Major statistical areas  
24 = Willapa Bay  
22 = Grays Harbor

Washington Fresh Water

99 = AT THE HATCHERY

If not at the hatchery the first 2 digits of the Water Resources Inventory Area (Table 22.5) are used to identify all other WA recovery areas except the Columbia River which is 25.

27 = Washington lakes

Oregon

30 = Oregon marine  
25 = Oregon fresh water (Columbia system)  
35 = Oregon fresh water (other fresh water areas)  
37 = Oregon lakes  
98 = Oregon hatchery racks

California

62 = California marine  
65 = California fresh water  
97 = California hatchery racks

Alaska

40 = Alaska marine  
45 = Alaska fresh water  
96 = Alaska hatchery racks  
55 = British Columbia

Idaho

25 = Idaho fresh water (Columbia system)  
77 = Idaho lakes  
95 = Idaho hatchery racks

Nevada

00 = Nevada hatcheries

Laet 4 digits, Sub-Area

Washington Marine (01-13)

Coding for Washington commercial marine areas can be as little as a repeat of area codes 1 thru 13 plus sub-area designations (4B, 8A, 9A, etc.) or can be more specific locations such as tribal area designations.

For sport areas, the same codes apply (01-13) although more specific codes may be allowed.

Washington Fresh Water (01-24)

Coding for Washington fresh water areas based on the WDF Water Resource Inventory Areas code designations, The last 4 characters of the WRIA will serve as the sub-area code.

Washington Hatcheries

NOOF = Nooksack WDF  
HOOF = Hoodspor WDF  
SESP = Sea Springs  
ELSN = Elson Creek  
QUIL = Quilcene  
WLCT = Walcott Slough  
QUIN = Quinault  
MAKA = Makah  
ABER = Abernathy  
SPCK = Spring Creek  
WILL = Willard  
LWS = Little White Salmon

Washington Hatcheries (con't.)

CRSN = Carson  
CSDP = Carson Depot Springs  
LVNW = Leavenworth  
ENT = Entiat  
WNRP = Winthrop  
LSCK = Lonesome Creek  
CTCK = Chalaat Creek  
QNLK = Oulnault Lake  
KLCK = Kalama Creek  
LELW = Lower Elwha  
TPCK = Tulallp Creek  
CGCK = Cowling Creek  
AGCK = Armstrong Creek  
SKCK = Skookum Creek  
CHCG = Chambers Creek Game Dept. Hatchery  
ABEG = Aberdeen Game Dept. Hatchery  
SALM = QDNR Salmon River  
GRCK = Grovers Creek  
MNCK = Mission Creek  
LSP = Lummi Sea Ponds  
PUYG = Puyallup Game Dept. Hatchery  
BELG = Bellingham Game Dept. Hatchery  
CHIM = Chimicum School  
DIRU = Diru Creek  
COWL = Cowlitz State Hatchery  
BSRP = Bear Springs Rearing Pond  
GRNF = Green River WDF  
PUYF = Puyallup WDF  
PGB = Port Gamble  
SKAF = Skagit WDF  
DESF = Deschutea WDF  
SOPN = Squaxln Salt Pens  
ISQF = Issaquah WDF  
SKYF = Skykomish WDF  
KECK = Keta Creek  
ENIT = Enetal Creek  
SOLF = Solduc WDF  
WAAT = Waatch Creek  
KALF = Kalama WDF  
SAMF = Samlsh WDF  
TEN = Ten O'clock Creek  
GEOF = George Adams WDF  
BOLD = Boulder Creek  
HOKO = Hoko Rearing Pond  
MRST = Marrowstone  
PGB = Little Boston  
ONRR = Raft River  
SUGP = Gorst Rearing Pond  
SUSP = Agate Pass Sea Ponds  
SUWP = Webster's Pond, Dogfish Cr.

Columbla River System (25)

0000 = Columbia River below Bonneville  
2000 = Columbia River above Bonneville  
0001-0999 = OR tribes below Bonneville  
1001-1999 = WA tribee below Bonneville  
2001-2999 = OR tribes above Bonneville  
3001-3999 = WA tribes above Bonneville  
5000 = Snake River malnstem (WA)  
5001-5999 = Snake River tribes (WA)  
6000 = Snake River mainstem (ID)  
6001-6999 = Snake River tribes (ID)  
7001-7999 = Snake River tribes (OR)

Oreqon Marine (30)

0001 = Astoria = ODFW codes 10.1, 11.1  
001A = Gearhart = ODFW code 10.1A  
001B = Cannon Beach = ODFW code 10.1B  
0002 = Nehalem = ODFW codes 10.2, 11.2  
0003 = Garibaldi = ODFW codes 10.2, 11.3  
0004 = Pacific City = ODFW codes 10.4, 11.4  
0005 = Depoe Bay = ODFW codes 10.5, 11.5  
0006 = Newport = ODFW codes 10.6, 10.6HB, 11.6  
0007 = Siuslaw Bay = ODFW codes 10.7, 11.7  
0008 = Winchester = ODFW codes 10.8, 11.8  
0009 = Coos Bay = ODFW codes 10.9, 11.9  
0010 = Brandon = ODFW codes 10.10, 11.10  
0011 = Port Orford = ODFW codes 10.11, 11.11  
0012 = Gold Beach = ODFW codes 10.12, 11.12  
0013 = Brooklings = ODFW codes 10.13, 11.13

Oregon Fresh Water (30 & 35)

Columbia River (See above)

Other fresh water areas:

0001 = Little Nestucca = ODFW code 24.2  
0015 = Rogue River = ODFW code 18.15  
0016 = Umpqua River = ODFW code 18.16  
0050 = Siletz River = ODFW codes 16.50, 16.51  
0185 = Sluslaw River = ODFW code 18.185

Oreqon Hatchery Racks (98)

WMSP = Warm Springs

EGCK = Eagle Creek

Other to be defined as necessary.

California Marine (62)

CRCT = Crescent City  
EURE = Eureka  
FTBG = Fort Bragg  
SNAF = San Francisco  
MONT = Monterey Bay

California Fresh Water (65)

To be defined as necessary.

California Hatcheria (97)

TECA = Tehama-Colusa

COLE = Coleman

Others to be defined as necessary.

Idaho Fresh Water

See Columbia System, other areas as necessary.

Idaho Hatcheries

DWOR = Dworshak

KOOS = Kooskia

HGMN = Hagerman

Nevada Hatcheries

LAHN = Lahontan

Others to be defined as necessary.

British Columbia Marine (55)

0001 = Northwest Troll = NWTR (Areas 25-27)  
0002 = Southwest Troll = SWTR (Areas 21, 23 & 24)  
0004 = George Strait Troll = GSTR (Areas 13-18, 29A,B,C)  
0005 = Central Troll = CTR (Areas 6-12)  
0006 = Northern Troll = NTR (Areas 1-S)  
0007 = Alaskan Troll - ATR  
0008 = Fraser Gillnet = FGN (Areaa 29A,B,C,D,E)  
0009 = Northern Net = NN (Areas 1-5)  
0010 = Georgia Strait Net = GSN (Areas 14-18)  
0011 = Johnstone Strait Net = JSN (Areas 12 & 13)  
0012 = Central Net = CN (Areas 6-11)  
0013 = Juan de Fuca Net = JFN (Area 20)  
0014 = Juan de Fuca Troll = JFTR (Area 20)  
0015 = CTR & NWTR (Combined Areas)  
0017 = NWTR & SWTR (Combined Areas)  
0018 = NTR & CTR (Combined Areas)  
0019 = OSN & CN (Combined Areas)  
0020 = Northwest Vancouver Island Net = NWVN (Areas 25-27)  
0021 = Southwest Vancouver Island Net = SWVN (Areas 21-24)  
0024 = NWTR, SWTR & CTR (Combined Areas)  
0025 = Northern Sport = NSPT (Areas 1-S)  
0026 = Central Sport = CSPT (Areas 6-12)  
0027 = West Coast Sport = WSPT (Areas 21-27)  
0028 = Georgia Strait Sport = GSPT (Areas 13-19, 20, 28, 29)  
0029 = NWTR & MWVN (Combined Gear)  
0030 = JFN & USJFN (Areas 20 & 53)  
0031 = SWTR & CTR (Combined Areas)

British Columbia Marine (can't.)

0033 = NN & CN (Combined Areas)  
0034 = GSTR & CTR (Combined Areas)  
0035 = JSN & NWVN (Combined Areas)  
0036 = GSTR & JRN (Combined Areas)  
0037 = FGN, JFN & GSN (Combined Areas)  
0038 = CTR & JSN (Combined Areas)  
0039 = SWTR, JFN & JSN (Combined Areas)  
0040 = JFN & JSN (Combined Areas)  
0042 = GSTR & GSN (Combined Areaaa)  
0043 = JFN & SWVN (Combined Areas)  
0044 = Georgia Strait Research Recovery Program = GSRR  
0045 = GSN & JSN (Combined Areas)  
0046 = FGN & GSN (Combined Areas)  
0047 = Alaska Net = AN  
0049 = U.S. Sport  
0050 = FGN, JSN & NN (Combined Areas)  
0051 = FGN & JFN (Combined Areas)  
0052 = JSN & FGN (Combined Areas)  
0053 = GSTR & SNTR (Combined Areas)  
0054 = CTR & NWTR (Combined Areas)  
0055 = SWTR 6 SWVN (Combined Areas)

Alaska Marine (40)

NOUT = Northern Outside = Catch areas 189, 157, 181, 116  
COUT = Central Outside = Catch areas 154, 113  
SOUT = Southern Outside = Catch areas 152, 104, 103  
SIN = Southern Inside = Catch areas 102, 101  
CIN = Central Inside = Catch areas 108, 107, 106  
STEP = Stephens Passage = Catch area 111  
LYNN = Lynn Canal = Catch area 115  
CNTR = Central Intermediate = Catch areas 114, 112  
SNTR = Southern Intermediate = Catch areas 110, 109, 105

Alaska Fresh Water (45)

Defined as necessary.

MARK TYPE

Definition-Identification for type of mark and/or tag found on a particular group of fish.

Coding-

CW = Full length CWT and complete adipose clip  
CN = Full length CWT and no adipose clip  
CA = Full length CWT and partial adipose clip  
HW = Half length CWT and complete adipose clip  
HN = Half length CWT and no adipose clip  
HA = Half length CWT and partial adipose clip  
CC = Color coded tag  
XX = X-ray tag  
RE = Rare earth tag  
FB = Freeze brand

MARK TYPE (Con't.)

TC = Tetracycline  
D = Dorsal fin clip  
PA = Partial adipose clip, no CWT  
AD = Completed adipose clip, no CWT  
AN = Anal fin clip  
LV = Left ventral fin clip  
RV = Right ventral fin clip  
LP = Left pectoral fin clip  
RP = Right pectoral fin clip  
LM = Left maxillary clip  
RM = Right maxillary clip  
CD = Caudal fin clip  
DT = Dart tag  
CG = Full length CWT and complete adipose clip - right ventral  
CH = Full length CWT and complete adipose clip - left ventral  
AG = Adipose clip - no CWT - right ventral  
AH = Adipose clip - no CWT - left ventral  
Multiple marks will be defined as necessary.

METHOD OF COUNTING

Coding-

01 = Retention rate X electronic count of release  
02 = Retention rate X partial electronic count of releases  
03 = Retention rate X (= originally tagged - observed clipped mortalities)  
04 = Retention rate X water displacement  
05 = Retention rate X weight of release  
06 = Retention rate X (= originally tagged - estimated mortalities)  
07 = Retention rate X mark-recapture estimate  
08 = Retention rate X best guess  
09 = Electronic count of tagged release  
10 = Machine counter  
11 = Human counter  
12 = Retention rate X number originally tagged  
13 = Number originally tagged minus mortalities  
14 = Weight sample  
15 = Water displacement  
16 = Electronic count  
17 = Weight sample minus mortality  
18 = Machine count minus mortality  
19 = Number originally counted

SPECIES

Definition-PFMIS species code.

Coding-

CHS = 702 = Chum  
COS = 703 = Coho  
SOS = 721 = Sockeye  
PKS = 723 = Pink  
CUR = 730 = Chinook of unknown race

SPECIES (Con't.)

SUC	=	731	=	Summer Chinook
FCS	=	732	=	Fall Chinook
WCS	=	733	=	Winter Chinook
SCS	=	734	=	Spring Chinook
WST	=	742	=	Winter Steelhead
SST	=	743	=	Summer Steelhead
RBT	=	501	=	Rainbow Trout
CUT	=	511	=	Cutthroat Trout
KOE	=	525	=	Kokaneee Salmon
LAT	=	523	=	Lake Trout
DVT	=	531	=	Dolly Varden
ATS	=	741	=	Atlantic salmon
BKT	=	522	=	Brook trout
BNT	=	521	=	Brown trout
URB	=	735	=	Up river bright FCS
LFC	=	736	=	Late fall chinook