

3.—REPORT OF DISTRIBUTION OF FISH AND EGGS BY THE U. S. FISH COMMISSION FROM JULY 1, 1887, TO JUNE 30, 1888.

The aggregate number of fish and eggs distributed by the U. S. Fish Commission, as collated from the reports of stations, in the period comprised between July 1, 1887, and June 30, 1888, was 238,986,117, an increase of more than twenty-eight millions over the distribution during the eighteen months preceding this period. The distribution by species is shown in the following summary, from which it will be seen that the species receiving most attention, named in the order of their importance, are the shad, the whitefish, the cod, and the salmon.

Summary of distribution for the year ending June 30, 1888.

Species.	No. of eggs.	No. of fish.	Total.
Atlantic salmon (<i>Salmo salar</i>)	924, 000	450, 200	1, 383, 000
Landlocked salmon (<i>Salmo salar</i> subsp. <i>sebago</i>)	345, 000	45, 400	390, 400
Brook trout (<i>Salvelinus fontinalis</i>)	215, 000	31, 286	246, 286
Rainbow trout (<i>Salmo irideus</i>)	341, 000	155, 856	496, 856
Brown trout (<i>Salmo fario</i>)	5, 000	55, 010	60, 010
Loch Loven trout (<i>Salmo levenensis</i>)	50, 000	.....	50, 000
Lake trout (<i>Salvelinus namaycush</i>)	547, 000	105, 760	652, 700
Sälbling (<i>Salvelinus alpinus</i>)	7, 417	.....	7, 417
Whitefish (<i>Coregonus clupeiformis</i>)	32, 412, 000	19, 300, 000	51, 712, 000
Shad (<i>Alosa sapidissima</i>)	39, 005, 000	134, 631, 000	173, 726, 000
Codfish (<i>Gadus morrhua</i>)	189, 432	9, 470, 640	9, 660, 072
Lobster (<i>Homarus americanus</i>)	106, 000	614	106, 614
Flounders (<i>Paralichthys dentatus</i>) .....	.....	220, 000	220, 000
Carp (<i>Cyprinus carpio</i>) .....	.....	175, 410	175, 410
Goldfish (<i>Carassius auratus</i>) .....	.....	5, 437	5, 437
Red-eye perch (<i>Ambloplites rupestris</i>) .....	.....	3, 105	3, 105
Black bass (<i>Micropterus dolomieu</i>)		550	550
Total	74, 320, 849	104, 659, 268	238, 986, 117

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Summary of production and distribution of shad and shad eggs, season of 1888.

	Fort Wash- ington Sta- tion.	Central Station.	Battery Station.	Steamer Fish Hawk.	Total.
Eggs collected.....	81, 177, 000	.....	105,315, 000	48, 607, 000	235, 099, 000
Eggs received by transfer.....	.....	63, 137, 000	.....	.....	.....
Total.....	81, 177, 000	63, 137, 000	105, 315, 000	48, 607, 000	235, 099, 000
Fish deposited in local waters.....	1, 475, 000	.....	16, 709, 000	14, 840, 000	33, 024, 000
Fish shipped to other waters.....	.....	39, 664, 000	45, 932, 000	16, 011, 000	101, 607, 000
Eggs transferred to other hatcheries.....	63, 137, 000	.....	.....	.....	.....
Eggs shipped to State commissions.....	.....	.....	3, 000, 000	6, 197, 000	9, 197, 000
Eggs delivered to car No. 2.....	.....	5, 665, 000	5, 402, 000	2, 139, 000	13, 206, 000
Eggs delivered to car No. 3.....	.....	7, 680, 000	9, 006, 000	.....	16, 686, 000
Fish lost in hatching.....	.....	.....	360, 000	.....	360, 000
Eggs lost in shrinkage en route from Fort Washington to Central Station.....	7, 112, 000	.....	.....	.....	7, 112, 000
Eggs lost in transit from Fort Washington.....	.....	4, 886, 000	.....	.....	4, 886, 000
Eggs lost in incubation.....	9, 453, 000	5, 236, 000	24, 900, 000	9, 420, 000	49, 009, 000
Total.....	81, 177, 000	62, 137, 000	105, 315, 000	48, 607, 000	235, 099, 000
Gross output.....	1, 475, 000	53, 015, 000	80, 049, 000	39, 187, 000	173, 726, 000

Distribution for the year from the various stations, arranged by species.

WHITEFISH (*Coregonus clupeiformis*).

	Eggs.	Fry.
From Northville Station:		
Forwarded to State commissions to be hatched and deposited in public waters.....	25, 000, 000	.....
Forwarded to other United States stations.....	5, 000, 000	.....
From Alpena Station:		
Deposited in Lake Huron.....	.....	15, 000, 000
Deposited in Lake Michigan.....	.....	1, 000, 000
Deposited in Long Lake.....	.....	2, 000, 000
From Cold Spring Harbor:		
From eggs received from Northville there were hatched and deposited in Long Island lakes.....	.....	800, 000
From Central Station:		
From eggs received from Northville there were hatched and delivered to car No. 2 for deposit in Lake Ontario.....	.....	500, 000
Also for hatching in transit and deposit in same lake.....	2, 412, 000	.....
Total.....	32, 412, 000	19, 300, 000

ATLANTIC SALMON (*Salmo salar*).

From Bucksport Station:		
Forwarded to Cold Spring Harbor Station.....	500, 000	.....
Forwarded to the commissioners of Maine, New Hampshire, Vermont, Mas- sachusetts, and Rhode Island.....	424, 000	.....
From Cold Spring Harbor Station:		
From eggs received from Bucksport there were hatched and deposited in Hudson River and tributaries of Long Island Sound.....	.....	459, 200
Total.....	924, 000	459, 200

Distribution for the year from the various stations, etc.—Continued.

LANDLOCKED SALMON (*Salmo salar* subsp. *sebagus*).

	Eggs.	Fry.
From Grand Lake Stream Station:		
Forwarded to State commissions	205, 000	.....
Transferred to other United States stations	80, 000	.....
Forwarded to foreign countries (in exchange)	60, 000	.....
From Wytheville Station:		
From eggs received from Grand Lake Stream there were hatched and deposited in public waters		11, 400
From Cold Spring Harbor Station:		
From eggs received from Grand Lake Stream there were hatched and deposited in the public waters of New York and New Jersey		34, 000
Total	345, 000	45, 400

RAINBOW TROUT (*Salmo irideus*).

From Baird Station:		
Hatched and planted in McCloud River and tributaries		* 85, 000
Forwarded to applicants and eastern United States stations	218, 000	.....
Forwarded to foreign countries (in exchange)	33, 000	.....
From Wytheville Station:		
Transferred to Central Station		† 5, 200
Forwarded to applicants		† 1, 535
Hatched and planted in public waters		† 12, 035
Forwarded to State commissions	35, 000	.....
Forwarded to foreign countries (in exchange)	45, 000	.....
From Northville Station:		
Forwarded to applicants	10, 000	‡ 390
Hatched and planted in public waters		† 8, 198
From Central Station:		
From eggs received from Baird Station there were hatched and planted in public waters in Pennsylvania		‡ 20, 000
From Cold Spring Harbor Station:		
From eggs received from Baird Station there were hatched and forwarded to applicants		§ 23, 500
Total	341, 000	155, 856

* Of this number 2,000 were breeding fish and 5,000 yearlings. ‡ Two years old. § Fry. † Yearlings.

LAKE TROUT (*Salvelinus namaycush*).

From Northville Station:		
Forwarded to State commissions and applicants	372, 000	.....
Forwarded to United States stations	130, 000	.....
Deposited in Long Lake, Michigan		* 560
Forwarded to National Fish Cultural Association, London, England	45, 000	.....
From Cold Spring Harbor Station:		
From eggs received from Nashville Station there were hatched and deposited in public waters		† 85, 200
From Central Station:		
From eggs received from Northville Station there were hatched and transferred to Wytheville Station		† 20, 000
Total	547, 000	105, 760

* Two years old.

† Fry.

Distribution for the year from the various stations, etc.—Continued.

BROOK TROUT (*Salvelinus fontinalis*).

	Eggs.	Fry.
From Wytheville Station:		
Forwarded to applicants.....		* 1,010
Deposited in public waters.....		* 7,225
Transferred to Central Station, Washington, D. C.....		* 3,000
From Northville Station:		
Forwarded to applicants.....	40,000	*45
Transferred to Central Station, Washington, D. C.....	40,000	
Forwarded to State commissions ;.....	135,000	
Forwarded to National Fish Cultural Association, London.....	10,000	
From Central Station:		
From eggs received from Northville there were hatched and transferred to Wytheville Station.....		§ 20,000
Total	225,000	31,286

* Yearlings. † Two years old. ‡ Iowa 50,000, Minnesota 60,000, Michigan 25,000. § Fry.

BROWN TROUT (*Salmo fario*).

From Cold Spring Harbor Station:		
Produced from eggs received from Germany this season and distributed to applicants.....		*14,000
From eggs taken from brood fish raised at the station and distributed to applicants.....		*40,000
From Northville Station:		
From eggs taken from brood fish raised at the station and forwarded to State commissions.....	5,000	‡500
Deposited in public waters.....		‡500
Transferred to Central Station for aquaria exhibit.....		‡10
Total	5,000	55,010

* Fry.

† Yearlings.

‡ Two years old.

LOCH LEVEN TROUT (*Salmo leuvenensis*).

From Northville Station:	Eggs.
Forwarded to State commissions.....	50,000
Michigan.....	15,000
Minnesota.....	10,000
New Hampshire.....	10,000
Wisconsin.....	15,000
Total	50,000

SÄLBLING (*Salvelinus alpinus*).

Forwarded from Cold Spring Harbor to applicants in New York, New Hampshire, and Michigan.....	7,417
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CARP (*Cyprinus carpio*).

Summary of carp distributed to private applicants from October 8, 1887, to January 31, 1888, arranged by States.

Date.	State or Territory.	Point of distribution.	No. of counties.	No. of applicants.	No. of fish.
1887.					
Dec. 8	Alabama	Birmingham	31	68	1,380
5	Arizona	El Paso, Tex.	8	43	2,090
Nov. 28	Arkansas	St. Louis, Mo.	37	115	5,430
Dec. 5	California	Albuquerque, N. Mex.	6	5	100
Nov. 6	Connecticut	Boston, Mass.	7	29	506
Oct. 12	Dakota	Fargo	37	70	2,660
Nov. 1	Delaware	Washington, D.C., and New York.	2	4	2,580
Oct. 14	District of Columbia	Washington, D. C.	1	3	60
Nov. 22	Florida	Jacksonville	16	39	1,380
17	Georgia	Atlanta	61	132	2,720
Oct. 22	Idaho	Boise City, Idaho	8	41	820
Nov. 15	Illinois	Chicago	51	105	14,800
12	Indiana	Indianapolis	63	136	6,950
28	Indian Territory	St. Louis, Mo.	4	15	580
27	Iowa	Des Moines	67	177	6,430
Oct. 8	Kansas	Kansas City, Mo.	69	250	5,100
Dec. 6	Kentucky	Lexington	34	74	2,030
12	Louisiana	Jackson, Miss.	19	44	1,720
Nov. 6	Maine	Boston, Mass.	7	8	160
Oct. 12	Maryland	Washington, D. C.	11	35	740
Nov. 6	Massachusetts	Boston	9	16	370
2	Michigan	Chicago, Ill.	32	53	1,060
21	Minnesota	St. Paul	18	62	7,240
Dec. 12	Mississippi	Jackson	44	147	3,100
Nov. 28	Missouri	Indianapolis, Ind.	16	20	500
Oct. 15	Montana	Helena	11	40	920
13	Nebraska	Kansas City, Mo.	30	53	1,140
28	Nevada	Salt Lake City	2	4	80
Nov. 6	New Hampshire	Boston	1	1	20
Nov. and Dec.	New Jersey	New York City	8	16	340
Dec. 6	New Mexico	El Paso, Tex.	10	31	700
Nov. and Dec.	New York	New York City	42	96	4,300
Oct. 12	North Carolina	Raleigh	63	240	5,070
Nov. 11	Ohio	Columbus	53	129	4,160
Oct. 26	Oregon	Portland	15	39	710
14	Pennsylvania	Washington, D. C.	55	194	9,430
Nov. 6	Rhode Island	Boston, Mass.	1	1	20
14	South Carolina	Columbia	25	91	1,930
Dec. 7	Tennessee	Chattanooga	37	124	3,602
Nov. 30	Texas	Dallas	79	293	6,170
Oct. 27	Utah	Salt Lake	29	656	14,320
Nov. 6	Vermont	Boston, Mass.	7	18	620
12	Virginia	District of Columbia and Wytheville.	63	232	2,855
Oct. 18	Washington	Tacoma and Portland	20	63	2,240
12	West Virginia	Washington, D. C.	20	32	1,640
31	Wisconsin	St. Paul, Minn.	26	39	780
Nov. 4	Wyoming	Cheyenne	5	7	300
Dec. 14	Mexico	City of Mexico		1	5,000
	Total		1,259	4,09	136,913

Summary of carp distribution to private applicants, etc.—Continued.

SUMMARY.

States supplied	38	Counties supplied	1,259
Territories supplied	10	Applicants supplied	4,00
Foreign countries supplied	1	Total number of fish	136,913

Number of carp planted in public waters of the United States from October 9, 1887, to January, 1888.

Date.	State.	Place of deposit.	Waters stocked.	No. of fish.
1887.				
Nov. 23	Florida	Live Oak	Suwannee River	400
24	do	Tallahassee	Oclocknee River	300
16	Georgia	Near Resaca	Chattahoochee River	1,600
16	do	do	Etowah River	1,000
16	do	do	Oostanaula River	1,000
18	do	West Point	Chattahoochee River	500
18	do	Madison	Yellow River	500
18	do	do	Oconee River	500
18	do	Augusta	Savannah River	2,200
19	do	Jesup	Oconee River	1,000
19	do	do	Ogeechee River	1,500
19	do	Macon	Ocmulgee River	1,000
19	do	Jesup	Flint River	500
19	do	Blackshear	Satolla River	500
19	do	Jesup	Altamaha River	800
24	do	Chattahoochee	Chattahoochee River	200
14	Illinois	Springfield	Lake Vance	1,000
15	do	Kankakee	Kankakee River	5,000
16	do	Centralia	Crooked Creek	250
16	do	do	Clear River	250
16	do	do	Little Wabash River	250
16	do	do	Big Muddy River	250
16	do	do	Okaw River	250
16	do	Decatur	Sangamon River	1,000
17	do	Galesburgh	Railroad reservoir	750
17	do	Dixon	Rock River	1,000
17	do	Mendota	Lake Mendota	1,000
17	do	Aurora	Fox River	2,000
17	do	Naperville	Des Page River	500
17	do	Rockford	Rock River	500
Oct. 14	Kansas	Kansas City	Kansas River	2,585
9	Maryland	Pierce's Mills	Rock Creek	1,000
Dec. 7	Michigan	East Saginaw	Mud Lake	500
Oct. 10	North Carolina	Raleigh	Crab Tree Creek	300
Nov. 10	Ohio	McConnelsville	Muskingum River	1,000
Oct. 26	Pennsylvania	Minersville	Lizard Creek	500
27	do	Easton	Bushkill Creek	500
Dec. 12	Tennessee	Near Rives	Obion River	1,000
12	do	Trenton	North Fork Deer River	1,000
12	do	Humboldt	do	862
1	Texas	Fort Worth	Ponds of Texas Pacific Railroad	250
1	do	Baird	do	200
1	do	Big Spring	do	150
Sept. 21	Virginia	Staunton	Christian Creek	450
Nov. 16	do	Buckland	Broad Run	500
	Total			38,497

GOLDFISH (*Carassius auratus*).

Number of goldfish distributed by the U. S. Fish Commission during the season of 1887 and 1888.

State.	No. of applica- tions.	No. of fish.	State.	No. of applica- tions.	No. of fish.
Alabama	10	85	Mississippi	3	31
Arizona	1	6	Montana	1	4
Connecticut	3	16	New Hampshire	1	3
Dakota	4	56	New Jersey	4	24
Delaware	4	41	New York	8	66
District of Columbia	484	2,904	North Carolina	17	127
Florida	9	55	Ohio	24	162
Georgia	10	66	Oregon	3	13
Idaho	1	6	Pennsylvania	27	190
Illinois	5	140	South Carolina	4	30
Indiana	18	90	Tennessee	1	4
Iowa	3	212	Texas	7	42
Kansas	2	60	Utah	5	126
Kentucky	1	6	Virginia	28	1435
Louisiana	5	30	West Virginia	2	12
Maryland	20	190	Washington	1	6
Massachusetts	7	40	Wyoming	1	4
Michigan	2	10	Total	648	5,437
Minnesota	3	120			
Missouri	4	*22			

* 10 of these were Golden Ides, special.

† 300 of these sent to the Wytheville hatchery for distribution.

REDEYE PERCH (*Ambloplites rupestris*).

From Wytheville Station:	Fish.
Forwarded to applicants	610
Deposited in public waters	1,000
Transferred to Central Station for distribution to applicants	1,495
Total	3,105

BLACK BASS (*Micropterus dolomieu*).

From Wytheville Station:	1 year old.
Forwarded to applicants	300
Deposited in public waters	200
Transferred to Central Station	50
Total	550

CODFISH (*Gadus morhua*).

	Eggs.	Fry.
From Wood's Holl Station:		
Deposited off the coast of Massachusetts		8,843,600
From Gloucester Station:		
Deposited off the coast of Massachusetts		627,040
Transferred to Wood's Holl Station	139,432	
Total	139,432	9,470,640

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FLOUNDER (*Pseudopleuronectes americanus*).

From Wood's Holl Station : Fry.
Deposited off the coast of Massachusetts..... 220,000

LOBSTER (*Homarus americanus*).

	Eggs.	Breeders.
From Wood's Holl Station :		
Transferred to car No.3 for deposit in the Pacific Ocean off the coast of California.....	196,000	614
Total	196,000	614

92,000 eggs and 282 breeders were lost in transit; the remainder were successfully deposited in the Pacific Ocean near San Francisco and Monterey, California.