U. S. Fish and Wildlife Service
U. S. Geological Survey

National Fish Strain Registry - Trout

Species Tables of Reported Strains and Broodstocks

USGS

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1. Introduction

Prior to 1980, useful information on genetic traits, performance characteristics, and habitat preferences of fish populations was unavailable to fisheries managers to support decisions on the strains to be used in each production or management situation. Managers had little choice but to use the broodstock sources available to them for the fish needed to stock fisheries within their jurisdiction. Until recently, fish strains were shipped throughout the country and stocked in disparate fisheries before managers understood the potential long term detrimental implications for resident natural fish populations. The need for detailed information on managed fish populations increased dramatically as managers became aware of the genetic consequences of mixing adapted and non-adapted strains. In the late 1970's, the U.S. Fish and Wildlife Service undertook development of the **Trout Strain Registry (TSR),** a database of genetic, performance, and management information on trout strains used by natural resource management agencies and aquaculture organizations throughout the United States. The initial TSR was distributed to fisheries agencies and contributors in 1981. Information was limited to the five inland trout species: brook trout *(Salvelinus fontinalis),* brown trout *(Salmo trutta),* cutthroat trout *(Oncorhynchus clarki),* lake trout *(Salvelinus namaycush),* and rainbow trout (*Oncorhynchus mykiss*). Three types of information are needed by fisheries managers to effectively identify the strains best suited for a given target fishery: (1) performance characteristics of candidate strains, (2) habitat characteristics of the target fishery, and (3) management objectives for that fishery. The goal of the TSR was to provide fisheries managers the strain characterization information, i.e., life history, genetic, reproductive, and behavioral characteristics, needed to make informed management choices for each fishery. The TSR was updated in 1994 and redistributed to management agencies and survey contributors as the **National Trout Strain Registry (NTSR).**

The concept of cataloging fish strain and broodstock information into a single database that is made available to fisheries managers, fish producers, and researchers, was expanded in 1994 to include most managed fish species in the United States. The database was renamed the **National Fish Strain Registry (NFSR)** and component databases (sub-registries) added for different generic families of managed fishes. Current NFSR sub-registries and the generic fish families in each, are: (1) inland trout (*Salmonidae*), (2) catfish (*Ictaluridae*), (3) sturgeon (*Acipenseridae*) and paddlefish (*Polyodontidae*), and (4) perch (*Percidae*) and pikes (*Esocidae*). Sub-registries are identified as the National Fish Strain Registry with the family common name added as an extension. The new name for the inland trout sub-registry is, the National Fish Strain Registry - Trout, identified with the acronym NFSR-T. The NFSR-T was expanded to include all managed fresh water species of the family Salmonidae, except the Pacific salmons (Table 1). The NFSR is a dynamic dataset that is updated and expanded continuously as new information becomes available. The NFSR data repository strives to collect, analyze, and interpret the diversity of strain information needed by managers and aquaculturists (i.e., breeding history, life history, disease tolerance, stress tolerance, habitat preference, hatchery performance, and field performance) on broodstocks and strains of each managed and cultured species. The NFSR provides fisheries personnel the information needed to more effectively identify the most suitable broodstock sources for each production and management program. Commercial producers use the NFSR to identify broodstocks that effectively meet their production objectives. The NFSR is a

joint project of the U. S. Geological Survey, Northern Appalachian Research Laboratory and the U.S. Fish and Wildlife Service, Division of Fish Hatcheries.

The NFSR-T was designed in cooperation with the Inland Trout Strain Advisory Committee, a panel of fisheries experts from the U.S. Fish and Wildlife Service, state fish and game agencies, and commercial aquaculture organizations. The committee identified the suite of traits (believed to be) most important to broodstock managers, culturists, field biologists, commercial aquaculturists and research scientists trying to match the performance characteristics of individual strains with production and management objectives. Traits include: broodstock origin, breeding history, life history, reproduction, behavior, disease resistance, stress tolerance, cultural performance, post-stocking performance, and current management applications. A national survey questionnaire was developed to request standardized data on managed broodstocks, domestic or wild, throughout the United States (Appendix A). Surveys were distributed nationally to federal and state fisheries agencies, fisheries research facilities and commercial producers. Survey information was compiled in the NFSR-T for all reported species (Table 1). Responses to questions requiring subjective ratings were coded to facilitate summarization and reporting (see Table 2 for code definitions). Information for the seven (7) primary species is reported by species (Table sections 3 - 9), with minor species combined and reported in Table section 10. Each table sections for each species consists of 5 sub-tables numbered 1 to 5.

2. NFSR-T structure

Broodstock information was reported using the survey form, "National Survey of Inland Trout Strains" (see survey form in Appendix A). The survey was designed in four sections to develop data on different categories of broodstock characteristics, as described below.

A. Broodstock Identification Section - Information is identified to uniquely identify the broodstock and collect four types of data relationship:

1) Species, strain, and broodstock names - These names are used in combination to assign a unique identification number for each broodstock. This number allows multiple reports to be entered for a broodstock and used later by the program to compile information from all appropriate records into a single broodstock summary report, when requested.

2) Contact person - A specific contact person is identified for each broodstock with name, title, address, and telephone information. This person can be contacted for additional information when needed. (The broodstock manager is designated as the contact person for most broodstocks).

3) Publications - A list of publications and "in-house" reports (with title, author, and publisher/issuer) is requested for all strains/broodstock.

4) Additional information sources – A list of 1 – 3 other persons or agencies that could provide information on the reported broodstock.

B. Broodstock Section - Information to describe broodstock origin, genetic history, life history, reproduction, behavior, and performance characteristics is provided by the broodstock manager

C. Hatchery/Captive Production Section – Information includes: disease status, stress tolerance, culture performance, and description of hatchery rearing conditions during the culture period. Hatchery managers for one or more hatcheries where fish from this broodstock have been cultured provide this information.

D. Field Performance Section - Information includes: type of fishery stocked, post-stocking growth and survival, angling susceptibility, and stocking program relative success. One or more field biologists who have worked with fish from this broodstock planted or stocked into different management situations provide this information.

3. Basis for "relative ratings"

The advisory committee recognized the impossibility of obtaining standardized trial data for many important hatchery and field performance traits due to diverse, uncontrolled variability in environmental parameters (temperature, water quality, elevation, location, etc.) among production situations (wild fish, hatchery raceways, farm ponds, etc.) and management situations (restoration, enhancement, recreational, food fish, etc.). As a result, we use a subjective rating system that is based on the past experience of broodstock managers, hatchery managers, and field biologists. Traits such as handling stress, disease resistance, and post-stocking performance were scored using a five-level rating scale (see Table 2 for rating systems and interpretations) based on their experience working with the given strain or broodstock relative to other strains or broodstocks in the same situation. Respondants were given the option of a "0" rating, if they had no experience with other strains in the same situation or had not experienced a particular disease in their facilities. Data based on subjective rating systems are identified as "relative ratings".

4. Description of tabled information

Tables in this manual have been extracted from the NFSR-T to provide cooperators and contributing agencies a complete set of information on the most commonly requested broodstock traits. This manual is organized in a series of Species Sections, presented alphabetically by species common name. Species with eight or more reported broodstocks are presented in separate sections (Tables 3 to 9), while species with seven or less reported broodstocks have been pooled into one species section (Table 10 - titled "Other Salmonid Species"). Three types of tabular information are provided: Introductory Tables, Species Section Tables, and Appendices.

A. Introductory Tables - Information is provided to guide users in interpreting the data found in the Species Section Tables. These include:

Table 1. List of salmonid species (scientific and common names) included in the NFSR-T with broodstock information.

Table 2. List of codes used throughout the NFSR-T to identify individual traits and to rate trait performance.

B. Species Section Tables - The eight species sections, numbered Tables 3 to 10, are organized alphabetically by species common name. Each species section consists of five component tables. Tables are organized alphabetically by strain name and broodstock name within strain when multiple broodstocks were reported. Information in component tables for each species section include:

Table (Section Number) - 1. Reported strains and broodstocks of the species are listed with the name of contact person. Contact address, telephone number and FAX number are listed to facilitate follow-up information requests.

Table (Section Number) - 2. Selected broodstock, hatchery, and field performance characteristics are listed for reported broodstocks.

Table (Section Number) - 3. Selected reproductive performance and culture traits are listed for reported broodstocks.

Table (Section Number) - 4. Selected disease resistance ratings are listed for reported broodstocks.

Table (Section Number) - 5. Selected post-stocking field performance traits are listed for reported broodstocks.

C. Appendices - Copies of NFSR-T forms for fisheries personnel when submitting information for inclusion in the NFSR-T

Appendix A - National Survey of Inland Trout Strains - NFSR-T survey questionnaire used by federal and state agencies, universities, and private growers to submit information for inclusion in the NFSR-T. The blank form provided may be copied and used to submit additional information on currently reported broodstocks or information on new broodstocks to be added to the NFSR-T.

Appendix B - National Survey of Inland Trout Strains - Strain/Broodstock Recommendation Form – An instruction sheet and form is provided for NFSR-T users, cooperators, and clients to identify and recommend additional new strains/broodstocks for inclusion in the National Fish Strain Registry - Trout

5. Definition of traits and terms used in tables

Traits used to characterize strains/broodstocks in this manual are described and defined in the following discussion. Where the trait values were calculated, formulas and calculation procedures are described.

Agency - The type of agency holding the broodstock: F = Federal, S = State, U = University, T = Tribal, C = Commercial or private.

Angling susceptibility (relative rating) - Measured using a five-step scale to describe broodstock performance relative to other broodstocks (strains) with which the reporter has worked. (see Table 2 for definitions).

Availability - The reported availability (as eggs, fingerlings, or adults) to other agencies or individuals when the broodstock information was submitted or last updated.

Broodstock name - Name used by the broodstock facility to identify the broodstock. These names typically contain the strain name or hatchery name where the broodstock is maintained. When a particular broodstock name is used at more than one location, the state abbreviation where the hatchery is located is appended to the broodstock name for state agencies and the abbreviation of the hatchery name for federal facilities.

Broodstock type - Broodstocks were classified into three types: Domestic = broodstock has been held in culture for two or more generations; Wild = broodstock is free ranging or natural fish, Captive = broodstock is progeny of wild broodstock reared to maturity in a cultured or hatchery situation.

Contact person - Person identified for each NFSR-T broodstock who can provide additional detailed information on that broodstock; usually the individual who reported the broodstock information or the broodstock station manager. In cases where the named individual is no longer at the broodstock location, the current facility manager is the designated contact person.

Disease classification - The disease classification or status reported for the broodstock or facility where the broodstock is cultured. Disease classification codes are those developed by the USFWS and accepted by the American Fisheries Society, Fish Health Section. If there is interest in obtaining fish from a particular broodstock, the contact person can verify current fish health status (see Table 2 for definition of individual diseases).

Disease resistance rating (relative rating) - Disease resistance was scored for nine diseases: furunculosis (FRK), bacterial kidney disease (BKD), enteric redmouth (ERM), ceratomyxa shasta (CS), infectious pancreatic necrosis (IPN), viral hemorrhagic septicemia (VHS), infectious hematopoietic necrosis (IHN), bacterial gill disease (BGD), and cold water disease (CWD) using a subjective five step scale to describe the performance of the particular strain relative to other strains the reporter had worked with in the past. (see Table 2 for definition of individual ratings).

Effective population size (N_e) - Calculated effective population size is based on the reported number of parents used to initiate the original broodstock generation.

$$N_e = 4(N_m + N_f) / (N_m N_f)$$

(N_e = Effective Population Size, N_m = Number of male parents, and N_f = Number of female parents).

Genetic analysis - Broodstocks are subjected to genetic analysis for a variety of reasons including determination of underlying genetic variability, genetic constitution, and stock structure determination. Types of genetic analysis reported are: allozyme, mitochondrial DNA, nuclear DNA, and microsatellite analysis. A blank in this column indicates the broodstock has not been characterized or the broodstock manager did not know.

Handling stress (relative rating) - Tolerance to handling stress is the ability of management to work with and handle the fish at different life stages with minimum mortality and setback in growth rate. Handling stress was measured using a five-step scale to describe the performance of the particular strain relative to other strains the respondent had worked with in the past. (see Table 2 for definition of individual ratings).

Hatch percent - The mean percent hatch of egg lots over the entire spawning season. Percentages were measured from eyed egg stage through hatching using the formula: % hatch = (number hatched fry / number eyed eggs) X 100.

Management applications - Managers were asked to identify management situations where fish from this broodstock were stocked and if they were well adapted or were used successfully. Management applications in riverine and lacustrine situations include: fingerling stocking, catchable stocking, supplementation stocking, and restoration stocking. Management applications in culture situations include: raceway culture and tank culture.

Origin of broodstock - The reported original source (hatchery or body of water) from which the current broodstock was developed.

Post - stocking growth (relative rating) - Growth rate after stocking was measured using a five step scale to describe the performance of the particular strain relative to other strains the reporter had worked with in the past (see Table 2 for definition of individual ratings).

Post - stocking survival (relative rating) - Fish survival after stocking was measured after 90 days and after one winter using a five-step scale to describe the performance of the particular strain relative to other strains the respondent had worked with in the past (see Table 2 for definition of individual ratings).

Spawning period - The earliest and latest months and day of the month when males and females of the broodstock "normally" spawn each year.

Strain - Fish strain is "usually" the earliest known name of the hatchery or body of water (river, lake, drainage, etc.) where the broodstock originated. In some cases, managers did not know the origin of a broodstock or the broodstock had been retained in that facility for an extended period of time. In these situations, the hatchery name was assigned as the strain name until additional information becomes available. Broodstocks originating from wild sources are always assigned the name of the originating body of water, irrespective of past introductions from other sources.

Survival percentage - Percent of fish surviving to 90 days of age. Survival was measured as the number of fish on hand at 90 days post-hatch divided by the number of fish hatched, multiplied by 100.

Tendency to migrate (relative rating) - Tendency to move (migrate) out of the fishery where stocked. Tendency to migrate was measured using a five-step scale to describe the performance of the particular strain relative to other strains the reporter had worked with in the past (see Table 2 for definition of individual ratings).

Tolerance to acidity, pH < 5.0 (relative rating) - Tolerance to pH levels less than 5.0 was measured using a five-step scale to describe the performance of the particular strain relative to other strains the reporter had worked with in the past (see Table 2 for definition of individual ratings).

Tolerance to catch and release fishing (relative rating) - Ability of fish to survive after capture on hook and line and released was measured using a five-step scale to describe the performance of the particular strain relative to other strains the reporter had worked with in the past (see Table 2 for definition of individual ratings).

Tolerance to crowding (relative rating) - Crowding tolerance, the ability to survive and grow at higher fish densities than other strains, was measured using a five-step scale to describe the performance of the particular strain relative to other strains the reporter had worked with in the past (see Table 2 for definition of individual ratings).

Tolerance to high temperatures (relative rating) - Tolerance to higher temperatures (>70^0 F) was measured using a five-step scale to describe the performance of the particular strain relative to other strains the reporter had worked with in the past (see Table 2 for definition of individual ratings).

Tolerance to transportation (relative rating) - Transportation stress is tolerance to a composite of stressors including: crowding, handling, and the reduced oxygen and elevated nitrogen levels associated with moving fish from one location to another. Tolerance to transportation stress was measured using a five-step scale to describe the performance of the particular strain relative to other strains the reporter had worked with in the past (see Table 2 for definition of individual ratings).

Weight - The mean weight of fish at 90-days post-hatch and 1-year post-hatch was measured in units of "number of fish" per pound.

6. Using the NFSR-T tables

The tables in this document are organized into sections, a separate section for each species with more than eight reported broodstocks. Species sections are listed in alphabetic order. Species with seven or less reported broodstocks are combined into the "Other Salmonid Species" section with species listed in alphabetic order in each table of the section. Each species section consists of five tables (see section 4.B for description).

These tables may be used to: (1) find information on a single strain or broodstock or (2) identify strains or broodstocks with specific desired traits. All table are organized alphabetically by strain, then by broodstock within strain.

A. Use tables to find information on a specific strain or broodstock.

1) Go to the appropriate Species Section.
2) Determine the strain and broodstock name.
3) Determine the table of interest based on the category of information sought i.e., broodstock status, disease resistance, hatchery, or post-stocking performance.
4) Find the strain or broodstock in the appropriate table.
5) If additional information is desired, go to Table 1 (of the same Species Section) to identify the contact person who can provide first hand information.

B. Use tables to identify strains or broodstocks with specific desired traits among the reported strains/broodstocks

1) Go to the appropriate Species Section.
2) Determine the trait or traits of interest.
3) Determine the level of performance desired for each selected trait.
4) Determine the table where each trait is located.
5) Scan table values for each trait and record broodstocks that meet the desired performance level.
6) Identify 1 - 5 broodstocks that "best" meet all selection criteria.
7) Go to Table 1 (of the same Species Section) to identify the contact person for the selected broodstock(s). Contact that person to obtain more detailed information and current broodstock availability information.

7. Procedure for updating the NFSR-T information

A mechanism for updating broodstock information was built into the NFSR-T by the national survey format. Collectively, contact persons identified in the survey process form a network of individuals and organizations managing and culturing fish broodstocks that can provide new and updated broodstock information on an annual basis. This network of contact persons can also provide copies of new publications and agency reports to confirm initial subjective or incomplete data.

Fisheries managers may submit data on the strains/broodstocks they culture or manage using the blank form "National survey of inland trout strains" (Appendix A). Completed surveys are mailed to the address provided on the form. Managers may also wish to recommend other specific strains or broodstocks for inclusion in the NFSR-T. A strain/broodstock recommendation form is provided in Appendix B for this purpose. To recommend strains/broodstocks for inclusion in the NFSR-T, enter the requested information and mail to the address provided in the instructions. When the recommendation form is received, the needed information will be requested from the broodstock manager and the strain/broodstock added to the NFSR-T.

8. NFSR-T distribution

The NFSR-T application program is written using the software, R-Base 2000 and Tango 2000 by R:Base Technologies, Inc. (** No endorsement of this product by the U.S. Government is given or implied). The NFSR-T was designed, developed, and documented by Harold L. Kincaid and Leslie J. Mengel, USGS, Northern Appalachian Research Laboratory. NFSR-T information is available to all segments of the fisheries industry -- federal and state management agencies, universities, private producers/growers and aquaculturists -- seeking information on individual fish strains or broodstocks. The NFSR-T is available on the internet at the address: http://nfsr.er.usgs.gov. Additional information about the National Fish Strain Registry may be obtained by writing to:

U. S. Geological Survey
Leetown Science Center
Northern Appalachian Research Laboratory
ATTN: NFSR-T, Library
R.D. 4, Box 63
Wellsboro, PA 16901

Table 1. Inland trout species (Family: Salmonidae - trout) in the National Fish Strain Registry-Trout.

Scientific name	Common name
Oncorhynchus aguabonita	Golden trout
Oncorhynchus apache	Apache trout
Oncorhynchus clarki	Cutthroat trout
Oncorhynchus gilae	Gila trout
Oncorhynchus mykiss	Rainbow trout
Oncorhynchus mykiss	Steelhead trout
Oncorhynchus nerka	Kokanee (landlocked form)
Salmo salar	Atlantic salmon
Salmo trutta	Brown trout
Salvelinus alpinus	Arctic char
Salvelinus confluentus	Bull trout
Salvelinus fontinalis	Brook trout
Salvelinus malma	Dolly varden
Salvelinus namaycush	Lake trout
Thymallus arcticus	Arctic grayling

Table 2. Codes used to classify reported traits of salmonid species.

Category	Code	Code Interpretation
Broodstock Availability	Y (YES)	Broodstock is available (contact broodstock manager).
	N (NO)	Broodstock is not available.
	L (Limited)	Broodstock may be available in certain situations (contact broodstock manager).
	U	Unknown.
Agency/ Organization Type	F	Agency of federal government
	S	Agency of state government
	T	Indian tribe
	U	University
	C	Private organization or commercial producer
Stress Resistance Relative Rating	0	Unknown
	1	Resistance to specified stress is "Poor"
	2	Resistance to specified stress is "Below average"
	3	Resistance to specified stress is "Average"
	4	Resistance to specified stress is "Above average"
	5	Resistance to specified stress is "Superior"
Disease Resistance Relative Rating	0	Unknown
	1	Resistance to specified disease is "Very Susceptible"
	2	Resistance to specified disease is "Susceptible "
	3	Resistance to specified disease is "Average"
	4	Resistance to specified disease is "Resistant"
	5	Resistance to specified disease is "Very Resistant"
Disease Codes	FRK	Furunculosis (*Aeromonas salmonicida*)
	BKD	Bacterial Kidney Disease (*Renibacterium salmonarum*)
	ERM	Enteric Redmouth (*Yerinia ruckeri*)
	CS	*Ceratomyxa shasta*
	IPN	infectious Pancreatic Necrosis
	VHS	Viral Hemorrhagic Septicemia
	IHN	infectious Hematopoietic Necrosis
	BGD	Bacterial Gill Disease
	CWD	Cold Water Disease
Relative Rating Post-stocking Performance Traits	0	Unknown
	1	Trait performance is "Poor"
	2	Trait performance is "Below average"
	3	Trait performance is "Average"
	4	Trait performance is "Above average"
	5	Trait performance is "Superior"

Table 3-1. Atlantic salmon - Broodstocks reported to the National Fish Strain Registry - Trout (NFSR-T) with person to contact for additional information.

Strain	Broodstock	Contact	Address	Phone / Fax
Big Squam Lake	Grande Lake Stream (ME)	Donald Miller	NHF&G, Region 2, P. O. Box 417, New Hampton, NH 03256	**Ph.** 603-744-5470 **Fax** 603-744-6302
Connecticut	Connecticut - D	David Summer	Quinebaug SFH, 151 Trout Hatchery Road, P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Connecticut	Connecticut - SR	Mickey Novak	Richard Cronin NSS, 51 E. Plumtree Road, Sunderland, MA 01375	**Ph.** 413-548-9010 **Fax** 413-548-9010
Merrimack	Merrimack	Victor Segarich	USFWS, Nashua NFH, 151 Broad Street, Nashua, NH 03063	**Ph.** 603-595-0891 **Fax** 603-595-0892
Penobscot	Penobscot - W	Tom King	Craig Brook NFH, East Orland, P.O. Box A, East Orland, ME 04431	**Ph.** 207-469-2803 **Fax** 207-469-6847
Sebago	Little Clear	Lance Durfey	NYDEC, P.O. Box 296, Route 86, Ray Brook, NY 12977	**Ph.** 518-897-1333 **Fax**
Sebago	Sebago - W	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
West Grand	Grand Lake Stream	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
West Grand	West Grand - D	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
West Grand	West Grand LL - W	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395

Table 3-2. Atlantic salmon - Selected broodstock, hatchery, and field performance characteristics for reported broodstocks.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Big Squam Lake	Grande Lake Stream (ME)	L	S	----	Grande Lake stream (ME)	Wild	----	----	6,10
Connecticut	Connecticut - D	Y	S	----	Penobscot strain from Connecticut River	Wild	----	----	9,10
Connecticut	Connecticut - SR	L	F	YR, AS	Fish returning to Penobscot River	Unknown	----	1,2	9
Merrimack	Merrimack	L	F	A	Penobscot River, Tadossal, St. Johns, and Union River	Wild	158	----	----
Penobscot	Penobscot - W	N	F	----	-----	Wild	----	----	----
Sebago	Little Clear	Y	S	----	Sebago Lake, West Grande Lake, and Gullspang	Unknown	1600	1	4
Sebago	Sebago - W	N	S	----	Wild brood fish	Wild	----	----	3,4,9
West Grand	Grand Lake Stream	N	S	----	West Grand Lake, ME	Wild	----	----	----
West Grand	West Grand - D	Y	S	A	West Grand Lake	Wild	240	2	4,8
West Grand	West Grand LL - W	N	S	----	West Grand Lake, Maine	Wild	----	----	3,4,9

[1/] Availability codes: Y = Yes - Broodstock is available, N = No – Broodstock is not available, and L = Broodstock available on a limited basis.
[2/] Type of facility codes: F = Federal, S = State, U = University, T = Tribes, and P = Private producer.
[3/] Disease classification codes: A - No listed pathogens detected; AS - Aeromonas salmonicida (Furunculosis); RD - Renibacterium salmonarum, (Bacterial Kidney Disease); B-SC - *Ceratomyxa shasta*; IPNV - *Infectious Pancreatic Necrosis* virus; VHSV - *Viral Hemorrhagic Septicemia*; IHNV - *Infectious Hematopoietic Necrosis* Virus; OMV - *Oncorhynchus masou* virus; YR - *Yersinia ruckeri* (Enteric Redmouth); B-SW - M*yxobolus cerebralis* (Whirling disease); B-SP - Proliferative Kidney Disease agent; B-VL - EED virus; ( ) - pathogen not found, but is suspect; C - Broodstock not inspected or no information provided.
[4/] Effective population number (N_e) was estimated based on the formula $N_e = 4(N_m + N_f) / (N_m N_f)$. N_m = Number male parents and N_f = Number female parents.
[5/] Genetic analysis type codes: 1 = Allozyme: 2 = Nuclear DNA; 3 = Mitochondrial DNA; 4 = Microsatellite; 5 = Meristics
[6/] Management recommendation codes: 1 = Raceway culture, 2 = Tank culture, 3 = Fingerling stocking (rivers), 4 = Fingerling stocking (Lakes), 5 = Catchable stocking (Rivers), 6 = Catchable stocking (Lakes), 7 = Stock natural Rivers, 8 = Stock natural lakes, 9 = Restoration stocking (Rivers), and 10 = Restoration stocking (Lakes).

Table 3-3. Atlantic Salmon - Selected reproductive performance and cultural trait information for reported broodstocks.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Big Squam Lake	Grande Lake Stream (ME)	1015	1210	Mean	95	130.00	8.00	98	3.0	3.0	1.0	—
				No.	1	1	1	1	1	1	1	0
Connecticut	Connecticut - D	1001	1130	Mean	89	550.00	7.100	95	5.0	5.0	—	5.0
				No.	1	1	1	1	1	1	0	1
Merrimack	Merrimack	1001	1231	Mean	92	339.00	8.05	84	2.5	3.5	3.0	3.5
				No.	2	2	2	2	2	2	2	2
Sebago	Little Clear	1101	1130	Mean	90	180.00	10.00	90	3.0	3.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Sebago	Sebago - W	----	—	Mean	95	40.00	4.20	98	3.0	3.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
West Grand	West Grand - D	1001	1130	Mean	90	25.00	7.00	95	5.0	5.0	3.0	4.0
				No.	1	1	1	1	1	1	1	1
West Grand	West Grand LL - W	----	—	Mean	93	87.00	8.50	98	3.0	3.0	4.0	3.0
				No.	2	2	2	2	2	2	2	2

[1/] Traits were measured with relative ratings (See Table 2). Tabled values are an arithmetic average of subjective ratings provided by broodstock managers and field biologists completing surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 3-4. Atlantic Salmon – Disease resistance rating (relative ratings[1/]) of reported broodstocks for nine common salmonid diseases.

			Salmonid diseases[2/]								
Strain	**Broodstock**		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Big Squam Lake	Grande Lake Stream (ME)	Mean	2.0	----	----	----	5.0	----	----	3.0	3.0
		No.	1	0	0	0	1	0	0	1	1
Connecticut	Connecticut - D	Mean	4.0	----	4.0	----	----	----	----	4.5	----
		No.	1	0	1	0	0	0	0	2	0
Connecticut	Connecticut - SR	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Merrimack	Merrimack	Mean	2.5	----	2.0	----	----	----	----	1.0	3.0
		No.	2	0	1	0	0	0	0	1	1
Penobscot	Penobscot - W	Mean	3.0	2.0	3.0	2.0	2.0	2.0	3.0	5.0	----
		No.	1	1	1	1	1	1	1	1	0
Sebago	Little Clear	Mean	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	----
		No.	1	1	1	1	1	1	1	1	0
Sebago	Sebago - W	Mean	4.0	----	----	----	----	----	----	4.0	----
		No.	1	0	0	0	0	0	0	1	0
West Grand	Grand Lake Stream	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
West Grand	West Grand - D	Mean	3.0	4.0	3.0	----	----	----	----	3.0	2.0
		No.	1	1	1	0	0	0	0	1	1
West Grand	West Grand LL - W	Mean	4.0	----	----	----	----	----	----	4.0	----
		No.	1	0	0	0	0	0	0	1	0

Table 3-4. Atlantic Salmon – Continued.

Strain	Broodstock	Salmonid diseases[2/]								
		1	2	3	4	5	6	7	8	9

[1/] Disease Resistance Relative Rating (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each disease provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, and 5 = very resistant. Only rating values of 1 to 5 were used to calculate the mean values reported above.

[2/] Disease Codes 1 = Furunculosis (*Aeromonas salmonicida*), 2 = Bacterial Kidney Disease (*Renibacterium salmonarum*), 3 = Enteric Redmouth (*Yerinia ruckeri*), 4 = *Ceratomyxa shasta*, 5 = infectious Pancreatic Necrosis, 6 = Viral Hemorrhagic Septicemia, 7 = infectious Hematopoietic Necrosis, 8 = Bacterial Gill Disease, and 9 = Cold Water Disease.

Table 3-5. Atlantic Salmon – Eight selected post- stocking field performance traits (relative ratings[1/]) for reported broodstocks in riverine and lacustrine habitats.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth RL	Growth R	Angling susceptibility L	Angling susceptibility R	Tendency to migrate L	Tendency to migrate R	Tolerance to: Temperature > 70 °C L	Temperature > 70 °C R	pH < 5.0 L	pH < 5.0 R	Catch & release L
Big Squam Lake	Grande Lake Stream (ME)	Mean	----	3.0	----	4.0	----	4.0	----	3.0	----	3.0	----	1.0	----	3.0	----	3.0
		No.	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
Connecticut	Connecticut - D	Mean	3.0	----	----	----	3.0	----	----	----	----	----	----	----	----	----	----	----
		No.	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Penobscot	Penobscot - W	Mean	1.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sebago	Little Clear	Mean	3.0	----	3.0	----	4.0	----	3.0	----	3.0	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Sebago	Sebago - W	Mean	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0
West Grand	West Grand LL - W	Mean	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0

[1/] Trait Relative Ratings (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each trait provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 4-1. Brook trout - Broodstocks reported to the National Fish Strain Registry - Trout (NFSR-T) with person to contact for additional information.

Strain	Broodstock	Contact	Address	Phone / Fax
Armstrong	ARM BKT	Kyle Briggs	NC WRC, Armstrong Fish Hatchery, 3336 Armstrong Creek Road, Marion, NC 28752	**Ph.** 828-756-4179 **Fax** 828-756-0066
Assinica	Assinica (ME)	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
Assinica	Assinica (MI)	John Driver	MI DNR, Marquette SFH, 488 Cherry Creek Road, Marquette, MI 49855	**Ph.** 906-249-1611 **Fax** 906-249-3190
Beitey	Beitey (WA)	Gerald Beitey	Beitey Enterprises, 3502 Beitey Road, Valley, WA 99181	**Ph.** 509-935-6100 **Fax**
Bellefonte	Oswego (GA)	Bill Couch	GA WRD, Buford SFH, 3204 Trout Place, Cumming, GA 30041	**Ph.** 770-781-6888 **Fax** 770-781-6889
Bellefonte	Oswego (PA)	John Fritzman	Oswayo FCS, R.D.2, Box 84, Coudersport, PA 16915	**Ph.** 814-698-2102 **Fax** 814-698-2508
Coaster - Tobin Harbor	WST(HIF)	Faber Bland	USFWS, Pendills Creek/Hiawatha Forest NFH, 21200 West Hatchery Road, Brimley, MI 49715	**Ph.** 906-437-5231 **Fax** 906-437-5393
Coolridge Creek	Coolridge Creek - W	John Huber	MN DNR-Fisheries, Crystal Springs SFH, RR #2, Box 481, Altura, MN 55910	**Ph.** 507-796-6691 **Fax** 507-932-5483
Edray	Edray (WV)	John Murry	Pisgah Forest SFH, PO Box 728, Pisgah Forest, NC 28768	**Ph.** 704-877-3121 **Fax**
Fernwood	Fernwood - D	Thomas Field	Fernwood-Limne, Inc., 77 Saratoga Road, Route 9, Gansevoort, NY 12831-1034	**Ph.** 518-793-1282 **Fax**
Gilbert	Gilbert (NH)	Wayne Pachal	NHF&G, Berlin SFH, RR 3, Box 378d, Berlin, NH 03570	**Ph.** 603-449-3412 **Fax**
Greenspring	Strohm	Charles Finui	Green Springs Trout Farm, 1129 Shaffer Run Road, Somerset, PA 15501	**Ph.** 814-445-5427 **Fax**

Table 4-1. Brook trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Hackettstown	Reed Creek	David Alt	Reeds Creed SFH, RT 1, Box 78-A, Franklin, WV 26807	**Ph.** 304-358-2595 **Fax**
Henrys Lake	Henrys Lake (ID)	Thomas Frew	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-334-3791 **Fax** 208-334-2114
Horn Lake	Horn Lake (W)	William Miller	NYS DEC, Bureau fisheries Region 5, P.O. Box 220, 232 Hudson St., Warrensburg, NY 12885	**Ph.** 518-623-3671 **Fax**
Iron River	Iron River (MI)	John Driver	MI DNR, Marquette SFH, 488 Cherry Creek Road, Marquette, MI 49855	**Ph.** 906-249-1611 **Fax** 906-249-3190
Kennebago	Phillips-Kennebago (ME)	Christopher Short	ME DIF&W, Phillips SFH, R.R #1, Box 910, Phillips, ME 04966-9724	**Ph.** 207-639-2081 **Fax**
Kettle Morain	Kettle Morain (WI)	Robert Wickel	Silver Moor Springs, N10638 E. Isle of Pines, Elcho, WI 54428	**Ph.** 715-275-3671 **Fax**
Laurel Hill	Laurel Hill (PA)	Jim Blasko	Laurel Hill Trout Farm, RD 1 Box 135, Osterburg, PA 16667	**Ph.** 814-276-3993 **Fax**
Little Tupper Lake	Little Tupper Lake - W	William Miller	NYS DEC, Bureau fisheries Region 5, P.O. Box 220, 232 Hudson St., Warrensburg, NY 12885	**Ph.** 518-623-3671 **Fax**
Marlette	Marlette (NV)	Dave Sanger	NV Division of Wildlife, 1100 Valley Road, Reno, NV 89512	**Ph.** 775-688-1536 **Fax** 775-688-1595
Nashua	Nashua (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road; P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Nashua	Paint Bank	Charles Stephens	Paint Bank FCS, Route 1, Box 12, Paint Bank, VA 24131-9702	**Ph.** 540-897-5401 **Fax** 540-897-5402
Nashua	Pequest	Kurt Powers	NJDF&W, Pequest SFH, 605 Pequest Road, Oxford, NJ 07863	**Ph.** 908-637-4173 **Fax** 908-637-6735

Table 4-1. Brook trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Nipigon Lake	Nipigon Lake - D	Gregory Fischer	Red Cliff Fish Hatchery, Red Cliff Band of Lake Superior, P.O. Box 529, Bayfield, WI 54814	Ph. 715-779-3729 Fax 715-779-3719
Nipigon Lake	Nipigon Lake (CAN)	Peter Richard	Dorion FCS, RR 1, Dorion, Ontario, Dorion, ON POT 1KO	Ph. 807-857-2322 Fax
Oswayo	Reynoldsdale (PA)	Patrick Ferko	PA F&B Commission, Reynoldsdale FCS, 162 Fish Hatchery Road, New Paris, PA 15554	Ph. 814-839-2211 Fax 814-839-4911
Owhi	BKOW	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	Ph. 435-425-3547 Fax 435-425-3547
Owhi	Ford	John Kerwin	WA Dept. of Fish & Wildlife Administrator, 600 Capitol Way N, Olympia, WA 98501	Ph. 360-753-5713 Fax
Owhi	Owhi (NV)	Dave Sanger	NV Division of Wildlife, 1100 Valley Road, Reno, NV 89512	Ph. 775-688-1536 Fax 775-688-1595
Paint Bank	St. Croix Falls	Jeff Tabat	WDNR, St. Croix Falls SFH, P.O. Box 397, St. Croix Falls, WI 54024	Ph. 715-483-3535 Fax
Paradise	Maine - Dry Mills	John Veader	ME DIF&W, Dry Mills SFH, 158 Weymouth Road, Gray, ME 04039	Ph. 207-657-4962 Fax
Paradise	Maine - Phillips	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	Ph. 207-287-5261 Fax 207-287-6395
Pisgah	Pisgah (NC)	John Murry	Pisgah Forest SFH, PO Box 728, Pisgah Forest, NC 28768	Ph. 704-877-3121 Fax
Rome	Rome (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road; P.O. Box 441, Center Village, CT 06332	Ph. 860-564-7542 Fax 860-564-6621
Rome	Rome (NH)	Jay Hendee	NH Fish & Game Dept., Region 2, PO Box 417, New Hampton, NH 03256	Ph. 603-744-5470 Fax 603-744-6302

Table 4-1. Brook trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Rome	Salisbury	Jay Hendee	NH Fish & Game Dept., Region 2, PO Box 417, New Hampton, NH 03256	**Ph.** 603-744-5470 **Fax** 603-744-6302
Sandwich	Sandwich (MA)	Ken Simmons	MA Division Fish & Wildlife, Field Building, Westoboro, MA 01581	**Ph.** 508-792-7270 **Fax**
Shy Beaver	Fernwood	Thomas Field	Fernwood-Limne, Inc., 77 Saratoga Road, Route 9, Gansevoort, NY 12831-1034	**Ph.** 518-793-1282 **Fax**
Soda Lake	Soda Lake (WY)	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Sourdnahunk	Phillips Sourdnahunk (ME)	Christopher Short	ME DIF&W, Phillips SFH, R.R #1, Box 910, Phillips, ME 04966-9724	**Ph.** 207-639-2081 **Fax**
Spring Creek	Spring Creek (MT)	Anthony Nowak	Spring Creek Trout Hatchery, Route # 1, Box 1600, Lewistown, MT 59457	**Ph.** 406-538-3538 **Fax** 406-538-2401
Spring Creek	Spring Creek (MT2)	Anthony Nowak	Spring Creek Trout Hatchery, Route # 1, Box 1600, Lewistown, MT 59457	**Ph.** 406-538-3538 **Fax** 406-538-2401
St. Croix Falls	St. Croix Falls (IA)	David Marolf	Manchester SFH, 22693 205th Avenue, Manchester, IA 52057	**Ph.** 319-927-3276 **Fax** 319-927-5736
St. Croix Falls	St. Croix Falls (MN)	Gary Mattson	Spire Valley SFM, 1852 State 6 NE, Remer, MN 56672	**Ph.** 218-792-5164 **Fax** 218-792-5164
Temiscamie	Temiscamie (MI)	John Driver	MI DNR, Marquette SFH, 488 Cherry Creek Road, Marquette, MI 49855	**Ph.** 906-249-1611 **Fax** 906-249-3190
Temiscamie	Temiscamie (NY)	Jonathan Fieroh	Brandon Fisheries, HCR 1, Box 69, Paul Smiths, NY 12970	**Ph.** 518-327-3508 **Fax** 518-327-3508
West Virginia	San Joaquin (CA)	Roger Ellis	CA DF&G, 4234 East Shaw Avenue, Fresno, CA 93710	**Ph.** 559-243-4005 **Fax** 559-243-4025

Table 4-1. Brook trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
West Virginia	West Virginia (H)	Bryan Plemmons	Casta Line Trout Farms, 97 Golden Brook Lane, Goshen, VA 24439	**Ph.** 540-997-5461 **Fax**
White Sulfur Springs	Owhi	Tom Dumont	Salisbury FCS, RD 1, Box 218, Salisbury, VT 05769	**Ph.** 802-352-4371 **Fax**
Whitney	Crystal Lake (CA)	Shane Overton	CA Dept. F&G, Crystal Lake Hatchery, 40158 Baum Lake Road, Cassel, CA 96016	**Ph.** 530-335-4111 **Fax** 530-335-3031
Windfall	Windfall (NY)	William Miller	NYS DEC, Bureau fisheries Region 5, P.O. Box 220, 232 Hudson St., Warrensburg, NY 12885	**Ph.** 518-623-3671 **Fax**

Table 4-2. Brook trout - Selected broodstock, hatchery, and field performance characteristics for reported broodstocks.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Armstrong	ARM BKT	L	S	----	Rome SFH x Wild, NC	Domestic	----	2	5,6
Assinica	Assinica (ME)	Y	S	A	Brandon Park, NY via James Bay Area Quebec	Captive	----	----	3,4,10
Assinica	Assinica (MI)	Y	S	A	Phillips SFH	Domestic	647	3	1,2,3,4,5,6
Beitey	Beitey (WA)	U	P	----	Unknown	Domestic	----	----	----
Bellefonte	Oswego (GA)	L	S	----	Oswego NFH	Domestic	500	----	5,6
Bellefonte	Oswego (PA)	N	P	----	PL Mount & Benner Springs	Domestic	----	----	5,6
Coaster - Tobin Harbor	WST(HIF)	L	F	----	Lake Superior, Isle Royal, and Tobin Harbor	Wild	46	4	----
Coolridge Creek	Coolridge Creek - W	Y	S	B-BR	Coolridge Creek and Spring Brook Creek (MN)	Wild	124	----	7,9
Edray	Edray (WV)	L	S	----	Edray, WV	Unknown	600	----	5
Fernwood	Fernwood - D	N	P	----	Fernwood Trout Hatchery	Domestic	----	----	5,6
Gilbert	Gilbert (NH)	Y	S	IPNV	Gilbert CFH, Plymouth, MA	Domestic	----	----	4,5
Greenspring	Strohm	L	P	----	Green Spring (Thomas 1946)	Domestic	80	----	3,4,
Hackettstown	Reed Creek	Y	S	----	----	Unknown	----	----	5,6
Henrys Lake	Henrys Lake (ID)	L	S	----	Henry's Lake SFH	Domestic	400	----	4,7,8,9,10

Table 4-2. Brook trout - Continued.

Strain	Broodstock endation[6/]	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type N_e[4/]	Estim-ated ation[6/]	Genetic analysis[5/]	Management recommend-
Horn Lake	Horn Lake (W)	L	S	----	----	Wild	----	----	3,4,7,8,9,10
Iron River	Iron River (MI)	Y	S	A	Iron River, Iron Co., Michigan	Wild	----	----	3,4
Kennebago	Phillips-Kennebago (ME)	L	S	A	Kennebago Lakes	Wild	192	3	4,6,8,9
Kettle Morain	Kettle Morain (WI)	Y	P	----	Kettle Morain Hatchery	Domestic	----	----	----
Laurel Hill	Laurel Hill (PA)	Y	P	----	Various commerical hatcheries	Domestic	----	----	----
Little Tupper Lake	Little Tupper Lake - W	L	S	----	Little Tupper Lake (New York)	Wild	40	----	3,4,7,8,9,10
Marlette	Marlette (NV)	N	S	----	Marlette Lake , CA	Wild	----	----	----
Nashua	Nashua (CT)	Y	S	B-BF	----	Unknown	----	----	1,5,6,9
Nashua	Paint Bank	L	S	A	North Attleboro	Unknown	34	----	5,6
Nashua	Pequest	L	S	A	Attleboro NHF	Domestic	2500	----	1,2,5,
Nipigon Lake	Nipigon Lake (CAN)	N	C	----	Nipigon Lake, Canada	Wild	----	----	----
Nipigon Lake	Nipigon Lake - D	Y	T	RS	Dorian Fish Culture Station, ONT	Wild	----	----	All
Oswayo	Reynoldsdale (PA)	N	S	----	----	Domestic	----	----	3,4,5,6,9
Owhi	BKOW	L	S	----	Crawford NFH, Crawford, NE	Domestic	----	----	1,5,6.9
Owhi	Ford	L	S	----	Owhi Lake - Colville Indian Reservation. Washington St.	Wild	3000	----	3,4,5,6

Table 4-2. Brook trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Owhi	Owhi (NV)	N	S	----	Eagan Hatchery-Utah	Wild	----	----	3,4
Paint Bank	St. Croix Falls	L	S	A	Nashua, New Hampshire (Paint Bank Strain)	Domestic	----	----	4,5,6
Paradise	Maine - Dry Mills	Y	S	A	PA Fish and Boat Commission (Paradise Valley, PA) via Phillips SFH	Domestic	----	----	1,5,6
Paradise	Maine - Phillips	N	S	A	Paradise PA	Domestic	189	----	5,6
Pisgah	Pisgah (NC)	L	S	----	Davidson River, NC	Wild	----	1	5,6
Rome	Rome (CT)	Y	S	B-BF	White Sulfur Springs NFH	Unknown	----	----	----
Rome	Rome (NH)	Y	S	IPNV	Rome SFH	Domestic	----	----	5
Rome	Salisbury	----	S	----	Salisbury SFH (VT)	Domestic	----	----	----
Sandwich	Sandwich (MA)	L	S	----	Montague MA & various Field sites	Unknown	----	----	----
Shy Beaver	Fernwood	Y	P	----	Shy Beaver Trout hatchery	Domestic	200	----	3,6
Soda Lake	Soda Lake (WY)	Y	S	AS	Shoshone Lake, WY	Wild	----	1	1,3,4,6
Sourdnahunk	Phillips Sourdnahunk (ME)	N	S	A	Sourdnahunk Lake	Wild	220	3	4,6,8,9
Spring Creek	Spring Creek (MT)	L	P	----	Augusta Maine, Dept. of Interior	Domestic	666	----	----
Spring Creek	Spring Creek (MT2)	----	P	----	Artesian Well Water	Unknown	----	----	----

Table 4-2. Brook trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
St. Croix Falls	St. Croix Falls (IA)	L	S	----	St. Croix Falls , Wisconsin	Domestic	----	----	1,2,3,5,8,10
St. Croix Falls	St. Croix Falls (MN)	L	S	----	St. Croix Falls SFH (WI IDNR)	Domestic	----	----	2,3,5
Temiscamie	Temiscamie (MI)	Y	S	A	Brandon Enterprises, NY	Captive	55	3	----
Temiscamie	Temiscamie (NY)	L	P	----	Temiscamie River	Wild	----	----	3,4,5,6,7,8,9
West Virginia	San Joaquin (CA)	Y	S	----	Edray Trout Hatchery, WV	Unknown	----	----	1
West Virginia	West Virginia (H)	Y	P	----	Sugar Grove Trout Farm,	Domestic	----	----	----
White Sulfur Springs	Owhi	Y	S	AS	Roxbury SFH	Domestic	1256	----	4
Whitney	Crystal Lake (CA)	N	S	----	Crystal Lake SFH (Cassel, CA)	Domestic	----	----	5,6
Windfall	Windfall (NY)	----	S	----	Windfall - Wild stock	Wild	----	----	----

[1/] Availability codes: Y = Yes - Broodstock is available, N = No – Broodstock is not available, and L = Broodstock available on a limited basis.
[2/] Type of facility codes: F = Federal, S = State, U = University, T = Tribes, and P = Private producer.
[3/] Disease classification codes: A - No listed pathogens detected; AS - Aeromonas salmonicida (Furunculosis); RD - Renibacterium salmonarum, (Bacterial Kidney Disease); B-SC - *Ceratomyxa shasta*; IPNV - *Infectious Pancreatic Necrosis* virus; VHSV - *Viral Hemorrhagic Septicemia*; IHNV - *Infectious Hematopoietic Necrosis* Virus; OMV - *Oncorhynchus masou* virus; YR - *Yersinia ruckeri* (Enteric Redmouth); B-SW - M*yxobolus cerebralis* (Whirling disease); B-SP - Proliferative Kidney Disease agent; B-VL - EED virus; ( ) - pathogen not found, but is suspect; C - Broodstock not inspected or no information provided.
[4/] Effective population number (N_e) was estimated based on the formula $N_e = 4(N_m + N_f) / (N_m N_f)$. N_m = Number male parents and N_f = Number female parents.
[5/] Genetic analysis type codes: 1 = Allozyme: 2 = Nuclear DNA; 3 = Mitochondrial DNA; 4 = Microsatellite; 5 = Meristics
[6/] Management recommendation codes: 1 = Raceway culture, 2 = Tank culture, 3 = Fingerling stocking (rivers), 4 = Fingerling stocking (Lakes), 5 = Catchable stocking (Rivers), 6 = Catchable stocking (Lakes), 7 = Stock natural Rivers, 8 = Stock natural lakes, 9 = Restoration stocking (Rivers), and 10 = Restoration stocking (Lakes).

Table 4-3. Brook trout - Selected reproductive performance and cultural trait information for reported broodstocks.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd -ing	Transp-ortation
Armstrong	ARM BKT	1001	1130	Mean	89	323.00	6.00	87	3.0	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Assinica	Assinica (ME)	1101	1231	Mean	89	1273.00	7.95	94	3.0	3.5	3.5	3.5
				No.	2	2	2	2	2	2	2	2
Assinica	Assinica (MI)	1001	1031	Mean	89	431.50	18.15	89	3.5	3.0	2.5	3.0
				No.	2	2	2	2	2	2	2	2
Bellefonte	Oswego (GA)	1001	113	Mean 0	50	300.00	12.00	50	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Bellefonte	Oswego (PA)	901	1031	Mean	63	----	4.00	----	3.0	3.0	4.0	3.0
				No.	1	0	1	0	1	1	1	1
Coaster - Tobin Harbor	WST(HIF)	1001	1215	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Coolridge Creek	Coolridge Creek - W	1120	110	Mean	----	600.00	6.00	----	3.0	3.0	3.0	----
				No.	0	1	1	0	0	1	1	0
Edray	Edray (WV)	1001	1130	Mean	49	599.00	3.20	79	4.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Gilbert	Gilbert (NH)	1001	1130	Mean	92	545.00	12.00	95	5.0	5.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Greenspring	Strohm	901	1031	Mean	85	----	----	90	4.0	5.0	5.0	5.0
				No.	1	0	0	1	1	1	1	1
Hackettstown	Reed Creek	1001	1031	Mean	96	161.00	3.20	98	3.0	2.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1

Table 4-3. Brook trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility (%)	Weight		Survival 90 d. (%)	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)			90 d (No/lb)	365 d (No/lb)		Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Henrys Lake	Henrys Lake (ID)	1001	1031	Mean	75	149.00	----	75	4.0	4.0	4.0	4.0
				No.	1	1	0	1	1	1	1	1
Horn Lake	Horn Lake (W)	1101	----	Mean	64	339.00	15.10	61	3.0	3.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Iron River	Iron River (MI)	1201	131	Mean	95	420.00	20.00	95	4.0	4.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Kennebago	Phillips-Kennebago (ME)	1001	1031	Mean	99	407.00	13.60	99	5.0	4.0	----	----
				No.	1	1	1	1	1	1	0	0
Kettle Morain	Kettle Morain (WI)	1001	1031	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Laurel Hill	Laurel Hill (PA)	1001	1130	Mean	----	----	----	----	4.0	4.0	5.0	5.0
				No.	0	0	0	0	1	1	1	1
Little Tupper Lake	Little Tupper Lake - W	1030	1115	Mean	64	515.00	15.10	51	3.0	3.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Nashua	Nashua (CT)	815	1115	Mean	90	239.00	7.80	85	3.0	3.0	3.0	----
				No.	1	1	1	1	1	1	1	0
Nashua	Paint Bank	901	1031	Mean	92	200.00	3.50	90	3.0	3.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Nashua	Pequest	901	1031	Mean	50	414.00	3.70	60	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Nipigon Lake	Nipigon Lake - D	1001	115	Mean	60	----	30.00	85	3.0	3.0	1.0	3.0
				No.	1	0	1	1	1	1	1	1

Table 4-3. Brook trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Oswayo	Reynoldsdale (PA)	801	1031	Mean	74	156.00	5.00	96	4.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Owhi	BKOW	1001	131	Mean	84	166.33	8.00	90	3.3	3.0	3.0	2.6
				No.	3	3	2	3	3	3	3	3
Owhi	Ford	1001	1130	Mean	98	285.00	15.00	98	2.0	2.0	3.0	2.0
				No.	1	1	1	1	1	1	1	1
Owhi	Owhi (NV)	1101	1231	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Paint Bank	St. Croix Falls	901	1031	Mean	95	1550.00	10.00	97	3.0	4.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Paradise	Maine - Dry Mills	1027	1201	Mean	78	330.00	4.20	88	4.0	4.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Paradise	Maine - Phillips	1101	1130	Mean	90	313.00	4.40	90	4.0	4.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Pisgah	Pisgah (NC)	1001	1130	Mean	79	319.50	4.75	88	3.5	3.5	2.5	3.0
				No.	2	2	2	2	2	2	2	2
Rome	Rome (NH)	1001	1231	Mean	93	400.00	4.00	93	5.0	5.0	3.0	4.0
				No.	1	1	1	1	1	1	1	1
Rome	Rome (NY)	----	----	Mean	80	154.00	4.50	80	2.0	1.0	3.0	2.0
				No.	1	1	1	1	1	1	1	1
Shy Beaver	Fernwood	1001	1130	Mean	----	300.00	12.00	----	5.0	5.0	5.0	5.0
				No.	0	1	1	0	1	1	1	1

Table 4-3. Brook trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Soda Lake	Soda Lake (WY)	1001	1130	Mean	91	186.00	10.00	90	3.5	3.5	4.0	3.5
				No.	2	2	1	2	2	2	2	2
Sourdnahunk	Phillips Sourdnahunk (ME)	1101	1130	Mean	97	944.00	44.00	99	5.0	4.0	----	----
				No.	1	1	1	1	1	1	0	0
Spring Creek	Spring Creek (MT)	1001	1231	Mean	90	----	----	85	5.0	----	5.0	5.0
				No.	1	0	0	1	1	0	1	1
St. Croix Falls	St. Croix Falls (IA)	1001	1028	Mean	78	160.00	2.00	77	4.0	4.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
St. Croix Falls	St. Croix Falls (MN)	1020	1231	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Temiscamie	Temiscamie (MI)	1001	1231	Mean	75	280.00	20.00	95	3.0	3.0	2.0	3.0
				No.	1	1	1	1	1	1	1	1
Temiscamie	Temiscamie (NY)	1001	1130	Mean	99	900.00	----	99	3.0	1.0	4.0	2.0
				No.	1	1	0	1	1	1	1	1
West Virginia	San Joaquin (CA)	1001	1215	Mean	----	----	1.60	----	3.0	3.0	2.0	3.0
				No.	0	0	1	0	1	1	1	1
West Virginia	West Virginia (H)	1001	1130	Mean	95	90.00	1.00	95	5.0	5.0	5.0	4.0
				No.	1	1	1	1	1	1	1	1
White Sulfur Springs	Owhi	1101	1130	Mean	80	----	----	93	3.0	3.0	3.0	3.0
				No.	1	0	0	1	1	1	1	1

Table 4-3. Brook trout - Continued.

Strain	Broodstock	Spawning Period		Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
								Handling			
		Start (Mo-dd)	End (Mo-dd)	(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation

[1/] Traits were measured with relative ratings (See Table 2). Tabled values are an arithmetic average of subjective ratings provided by broodstock managers and field biologists completing surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 4-4. Brook trout – Disease resistance rating (relative ratings[1/]) of reported broodstocks for nine common salmonid diseases.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Armstrong	ARM BKT	Mean	3.0	----	3.0	----	3.0	----	----	3.0	----
		No.	2	0	2	0	2	0	0	2	0
Assinica	Assinica (ME)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Assinica	Assinica (MI)	Mean	4.0	----	----	----	----	----	----	1.0	----
		No.	1	0	0	0	0	0	0	1	0
Beitey	Beitey (WA)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Bellefonte	Oswego (GA)	Mean	3.0	3.5	3.0	----	3.5	----	----	----	2.0
		No.	2	2	2	0	2	0	0	0	1
Bellefonte	Oswego (PA)	Mean	4.0	2.5	----	----	2.5	----	----	3.0	----
		No.	2	2	0	0	2	0	0	2	0
Coaster - Tobin Harbor	WST(HIF)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Coolridge Creek	Coolridge Creek - W	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Edray	Edray (WV)	Mean	5.0	----	2.0	----	5.0	----	----	3.0	----
		No.	1	0	1	0	1	0	0	1	0
Fernwood	Fernwood - D	Mean	4.0	----	----	----	5.0	----	----	2.0	----
		No.	1	0	0	0	1	0	0	1	0
Gilbert	Gilbert (NH)	Mean	2.0	3.0	----	----	5.0	----	----	4.0	3.0
		No.	1	1	0	0	1	0	0	1	1

Table 4-4. Brook trout – Continued.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Greenspring	Strohm	Mean	3.0	----	----	----	4.0	----	----	3.0	3.0
		No.	1	0	0	0	1	0	0	1	1
Hackettstown	Reed Creek	Mean	2.0	----	----	----	3.0	----	----	2.0	----
		No.	1	0	0	0	1	0	0	1	0
Henrys Lake	Henrys Lake (ID)	Mean	2.0	2.0	2.0	2.0	2.0	----	3.0	2.5	2.5
		No.	1	1	1	1	1	0	2	2	2
Horn Lake	Horn Lake (W)	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Iron River	Iron River (MI)	Mean	4.0	----	----	----	----	----	----	4.0	----
		No.	1	0	0	0	0	0	0	1	0
Kennebago	Phillips-Kennebago (ME)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Laurel Hill	Laurel Hill (PA)	Mean	3.0	3.0	----	----	----	----	----	3.0	3.0
		No.	1	1	0	0	0	0	0	1	1
Little Tupper Lake	Little Tupper Lake - W	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Marlette	Marlette (NV)	Mean	----	4.0	----	----	----	----	----	3.0	----
		No.	0	1	0	0	0	0	0	1	0
Nashua	Nashua (CT)	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Nashua	Paint Bank	Mean	----	----	----	----	----	----	----	3.0	3.0
		No.	0	0	0	0	0	0	0	2	1

Table 4-4. Brook trout – Continued.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Nashua	Pequest	Mean	----	----	----	----	----	----	----	3.0	3.0
		No.	0	0	0	0	0	0	0	1	1
Nipigon Lake	Nipigon Lake (CAN)	Mean	----	----	----	----	----	----	----	4.0	----
		No.	0	0	0	0	0	0	0	1	0
Nipigon Lake	Nipigon Lake - D	Mean	3.0	----	----	----	----	----	----	2.0	3.0
		No.	1	0	0	0	0	0	0	1	1
Oswayo	Reynoldsdale (PA)	Mean	3.0	3.5	5.0	5.0	2.5	5.0	5.0	2.0	4.0
		No.	2	2	1	1	2	1	1	2	1
Owhi	BKOW	Mean	3.6	3.2	3.0	----	3.0	3.0	3.0	3.3	----
		No.	5	4	3	0	3	3	3	8	0
Owhi	Ford	Mean	3.5	3.0	3.5	----	2.0	----	3.0	3.5	----
		No.	2	2	2	0	1	0	1	2	0
Owhi	Owhi (NV)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Paint Bank	St. Croix Falls	Mean	2.1	3.0	3.0	----	2.0	----	----	2.8	4.0
		No.	6	1	3	0	1	0	0	7	1
Paradise	Maine - Dry Mills	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Paradise	Maine - Phillips	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Pisgah	Pisgah (NC)	Mean	3.5	----	3.0	----	3.0	----	----	3.0	----
		No.	2	0	2	0	2	0	0	1	0

Table 4-4. Brook trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Rome	Rome (CT)	Mean	—	—	—	—	—	—	—	—	—
		No.	0	0	0	0	0	0	0	0	0
Rome	Rome (NH)	Mean	5.0	1.0	—	—	5.0	—	—	4.0	4.0
		No.	1	1	0	0	1	0	0	1	1
Rome	Rome (NY)	Mean	1.0	4.0	—	—	3.0	—	—	5.0	—
		No.	1	1	0	0	1	0	0	1	0
Sandwich	Sandwich (MA)	Mean	2.0	—	—	—	—	—	—	—	—
		No.	1	0	0	0	0	0	0	0	0
Shy Beaver	Fernwood	Mean	4.0	5.0	—	—	2.0	—	—	2.0	5.0
		No.	1	1	0	0	1	0	0	1	1
Soda Lake	Soda Lake (WY)	Mean	3.5	5.0	—	—	—	—	—	3.0	—
		No.	2	1	0	0	0	0	0	2	0
Sourdnahunk	Phillips Sourdnahunk (ME)	Mean	—	—	—	—	—	—	—	—	2.0
		No.	0	0	0	0	0	0	0	0	1
Spring Creek	Spring Creek (MT)	Mean	—	—	4.0	—	—	—	—	5.0	—
		No.	0	0	1	0	0	0	0	1	0
St. Croix Falls	St. Croix Falls (IA)	Mean	2.0	—	—	—	—	—	—	3.0	—
		No.	1	0	0	0	0	0	0	1	0
St. Croix Falls	St. Croix Falls (MN)	Mean	2.0	—	—	—	—	—	—	—	—
		No.	1	0	0	0	0	0	0	0	0
Temiscamie	Temiscamie	Mean	5.0	—	—	—	—	—	—	4.0	—
		No.	1	0	0	0	0	0	0	1	0

Table 4-4. Brook trout - Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Temiscamie	Temiscamie (MI)	Mean	2.0	2.0	----	----	----	----	----	1.0	----
		No.	1	1	0	0	0	0	0	1	0
Temiscamie	Temiscamie (NY)	Mean	4.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	1	0
West Virginia	San Joaquin (CA)	Mean	1.0	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	0	0	0
West Virginia	West Virginia (H)	Mean	3.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	1	0
White Sulfur Springs	Owhi	Mean	1.0	----	----	----	----	----	----	3.0	3.0
		No.	1	0	0	0	0	0	0	1	1
Whitney	Crystal Lake (CA)	Mean	2.0	2.5	2.0	3.5	----	----	----	3.3	3.0
		No.	1	2	1	2	0	0	0	3	1

[1/] Disease Resistance Relative Rating (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each disease provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, and 5 = very resistant. Only rating values of 1 to 5 were used to calculate the mean values reported above.

[2/] Disease Codes 1 = Furunculosis (*Aeromonas salmonicida*), 2 = Bacterial Kidney Disease (*Renibacterium salmonarum*), 3 = Enteric Redmouth (*Yerinia ruckeri*), 4 = *Ceratomyxa shasta*, 5 = infectious Pancreatic Necrosis, 6 = Viral Hemorrhagic Septicemia, 7 = infectious Hematopoietic Necrosis, 8 = Bacterial Gill Disease, and 9 = Cold Water Disease.

Table 4-5. Brook trout – Eight selected post-stocking field performance traits (relative ratings[1/]) for reported broodstocks in riverine and lacustrine habitats.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Survival: Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Armstrong	ARM BKT	Mean	3.0	----	2.0	----	3.0	----	4.5	----	3.0	----	4.0	----	3.5	----	4.0	----
		No.	2	0	1	0	1	0	2	0	2	0	2	0	2	0	1	0
Assinica	Assinica (MI)	Mean	3.5	----	2.5	----	3.0	----	3.0	----	3.0	----	3.5	----	3.5	----	----	----
		No.	2	0	2	0	2	0	2	0	2	0	2	0	2	0	0	0
Bellefonte	Oswego (GA)	Mean	3.0	----	2.0	----	2.5	----	3.5	----	3.0	----	2.0	----	----	----	----	----
		No.	2	0	1	0	2	0	2	0	1	0	1	0	0	0	0	0
Bellefonte	Oswego (PA)	Mean	4.0	----	1.0	----	2.0	----	4.0	----	----	----	1.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Edray	Edray (WV)	Mean	1.0	----	----	----	1.0	----	4.0	----	4.0	----	3.0	----	3.0	----	----	----
		No.	1	0	0	0	1	0	1	0	1	0	1	0	1	0	0	0
Fernwood	Fernwood - D	Mean	----	----	2.0	----	----	----	4.0	----	----	----	1.0	----	4.0	----	----	----
		No.	0	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0
Gilbert	Gilbert (NH)	Mean	----	----	2.0	----	----	----	4.0	----	----	----	----	----	----	----	----	----
		No.	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Greenspring	Strohm	Mean	5.0	----	5.0	----	4.0	----	5.0	----	3.0	----	3.0	----	3.0	----	5.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Hackettstown	Reed Creek	Mean	----	----	----	----	----	----	5.0	----	----	----	1.0	----	3.0	----	3.0	----
		No.	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0

Table 4-5. Brook trout – Continued.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Henrys Lake	Henrys Lake (ID)	Mean	3.0	4.0	3.5	4.0	3.5	4.0	3.0	4.0	3.0	4.0	4.0	4.0	3.0	3.0	4.0	4.0
		No.	2	1	2	1	2	1	2	1	2	1	2	1	1	1	1	1
Horn Lake	Horn Lake (W)	Mean	5.0	----	4.0	----	4.0	----	3.0	----	4.0	----	3.0	----	3.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Iron River	Iron River (MI)	Mean	4.0	----	2.0	----	4.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Little Tupper Lake	Little Tupper Lake - W	Mean	5.0	----	5.0	----	5.0	----	5.0	----	4.0	----	3.0	----	3.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Nashua	Nashua (CT)	Mean	3.0	----	----	----	----	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Nashua	Paint Bank	Mean	4.0	----	1.0	----	----	----	4.5	----	----	----	1.0	----	----	----	----	----
		No.	2	0	2	0	0	0	2	0	0	0	2	0	0	0	0	0
Nashua	Pequest	Mean	----	----	----	----	----	----	4.0	----	----	----	3.0	----	4.0	----	----	----
		No.	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0
Nipigon Lake	Nipigon Lake - D	Mean	----	----	4.0	4.0	----	----	4.0	4.0	----	----	1.0	1.0	----	----	----	----
		No.	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0	0
Owhi	BKOW	Mean	4.0	----	4.0	----	4.0	----	3.0	----	4.0	----	2.0	----	----	----	3.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	1	0
Owhi	Ford	Mean	3.0	----	3.0	----	3.0	----	4.0	----	3.0	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0

Table 4-5. Brook trout – Continued.

Strain	Broodstock		Post stocking						Angling susceptibility		Tendency to migrate		Tolerance to					
			Survival				Growth						Temperature > 70 °C		pH < 5.0		Catch & release	
			90 days		Over-winter													
			R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Owhi	Owhi (NV)	Mean	3.0	----	4.0	----	3.0	----	3.0	----	3.0	----	3.0	----	----	----	----	----
		No.	2	0	2	0	2	0	2	0	1	0	1	0	0	0	0	0
Paradise	Maine - Dry Mills	Mean	----	----	1.0	1.0	----	----	----	----	----	----	----	----	----	----	----	----
		No.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Paradise	Maine - Phillips	Mean	----	----	1.0	1.0	----	----	----	----	----	----	----	----	----	----	----	----
		No.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Pisgah	Pisgah (NC)	Mean	----	----	1.0	----	2.0	----	4.0	----	4.0	----	3.0	----	3.0	----	----	----
		No.	0	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Rome	Rome (NY)	Mean	3.0	----	1.0	----	3.0	----	3.0	----	3.0	----	3.0	----	2.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Shy Beaver	Fernwood	Mean	4.0	----	1.0	----	----	----	----	----	4.0	----	1.0	----	----	----	5.0	----
		No.	1	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0
Soda Lake	Soda Lake (WY)	Mean	2.3	----	2.3	----	2.3	----	3.0	----	3.0	----	----	----	----	----	3.0	----
		No.	3	0	3	0	3	0	3	0	3	0	0	0	0	0	1	0
Temiscamie	Temiscamie	Mean	3.0	----	3.0	----	4.0	----	3.0	----	4.0	----	3.0	----	4.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Temiscamie	Temiscamie (NY)	Mean	4.0	4.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0	4.0	2.0	2.0	4.0	5.0	5.0	5.0
		No.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
White Sulfur Springs	Owhi	Mean	1.0	----	3.0	----	----	----	2.0	2.0	----	----	----	----	----	----	----	----
		No.	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0

Table 4-5. Brook trout – Continued.

Strain	Broodstock		Post stocking										Tolerance to					
			Survival				Growth		Angling susceptibility		Tendency to migrate		Temperature > 70 °C		pH < 5.0		Catch & release	
			90 days		Over-winter													
			R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Whitney	Crystal Lake (CA)	Mean	1.0	----	3.0	----	3.0	----	3.0	----	----	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0

[1/] Trait Relative Ratings (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each trait provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 5-1. Brown trout - Broodstocks reported to the National Fish Strain Registry - Trout (NFSR-T) with person to contact for additional information.

Strain	Broodstock	Contact	Address	Phone / Fax
Armstrong	Armstrong (NC)	Kyle Briggs	NC WRC, Armstrong Fish Hatchery, 3336 Armstrong Creek Road, Marion, NC 28752	**Ph.** 828-756-4179 **Fax** 828-756-0066
Bellefonte / Rome	Reynoldsdale (PA)	Patrick Ferko	PA F&B Commission, Reynoldsdale FCS, 162 Fish Hatchery Road, New Paris, PA 15554	**Ph.** 814-839-2211 **Fax** 814-839-4911
Bitterroot	Bitterroot (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road, P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Cortland	Cortland (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road; P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Crawford	Paint Bank	Charles Stephens	Paint Bank FCS, Route 1, Box 12, Paint Bank, VA 24131-9702	**Ph.** 540-897-5401 **Fax** 540-897-5402
Crystal Lake	New Gloucester (ME)	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
Delaney Butte	Delaney Butte (CO)	Tom Mandis	Bellevue Fish Research Hatchery, Box 96, Bellvue, CO 80512	**Ph.** 970-482-1141 **Fax** 970-224-0366
Europe	St. Croix	Jeff Tabat	WDNR, St. Croix Falls SFH, P.O. Box 397, St. Croix Falls, WI 54024	**Ph.** 715-483-3535 **Fax**
Gilchrist Creek	Gilchrist	Edward Eisch	MI DNR, Oden SFH, P. O. Box 337, Oden, MI 49764	**Ph.** 231-347-4689 **Fax** 231-347-8421
Green Spring	Green Lake	Charles Finui	Green Springs Trout Farm, 1129 Shaffer Run Road, Somerset, PA 15501	**Ph.** 814-445-5427 **Fax**
Hybrid	Walhalla X Plymouth Rock	David Marolf	Manchester SFH, 22693 205th Avenue, Manchester, IA 52057	**Ph.** 319-927-3276 **Fax** 319-927-5736
Laurel Hill	Laural Hill (PA)	Jim Blasko	Laurel Hill Trout Farm, RD 1 Box 135, Osterburg, PA 16667	**Ph.** 814-276-3993 **Fax**

Table 5-1. Brown trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Leetown	Reeds Creek	David Alt	Reeds Creed SFH, RT 1, Box 78-A, Franklin, WV 26807	**Ph.** 304-358-2595 **Fax**
Lock Leven	Green Spring (PA)	Charles Finui	Green Springs Trout Farm, 1129 Shaffer Run Road, Somerset, PA 15501	**Ph.** 814-445-5427 **Fax**
Nashua	Pequest	Kurt Powers	NJDF&W, Pequest SFH, 605 Pequest Road, Oxford, NJ 07863	**Ph.** 908-637-4173 **Fax** 908-637-6735
Plymouth Rock	Plymouth Rock (IA)	David Marolf	Manchester SFH, 22693 205th Avenue, Manchester, IA 52057	**Ph.** 319-927-3276 **Fax** 319-927-5736
Plymouth Rock	Plymouth Rock (MI)	Edward Eisch	MI DNR, Oden SFH, P. O. Box 337, Oden, MI 49764	**Ph.** 231-347-4689 **Fax** 231-347-8421
Plymouth Rock	Plymouth Rock (NH)	Todd Turner	Genoa NFH, Route 6, Box 186 or Rt.1 **(please correct),** Genoa, WI 54632	**Ph.** 608-689-2605 **Fax** 608-689-2644
Plymouth Rock	Plymouth Rock (NY)	Edwin Stork	MN DNR, Lanesboro SFH, Route 2, Box 85, Lanesboro, MN 55949	**Ph.** 507-467-3771 **Fax** 507-467-3416
Plymouth Rock	Plymouth Rock (WSS)	Dean Rhine	USFWS, White Sulfur Springs NFH, 400 E. Maine Street, White Sulphur, WV 24986	**Ph.** 304-536-1361 **Fax** 304-536-4634
Plymouth Rock	Saratoga - PLR	Ed Stege	USFWS, Saratoga NFH, P.O. Box 665, Saratoga, WY 82331-0665	**Ph.** 307-326-5662 **Fax** 307-326-9869
Rome	Rome (CT)	George Stack	Paradise Brook Trout Co., Rd 1 box 353, Henryville, PA 18332	**Ph.** 717-629-0422 **Fax**
Rome	Rome (MD)	Ray Richardson	Lewistown SFH, 1093 Putman Road, Thurmont, MD 21788	**Ph.** 301-898-3691 **Fax**
Rome	Rome (NH)	Jay Hendee	NH Fish & Game Dept., Region 2, PO Box 417, New Hampton, NH 03256	**Ph.** 603-744-5470 **Fax** 603-744-6302

Table 5-1. Brown trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Rome	Rome (PA) 1	Kenneth Slogaski	Tylersville FCS, RD 2, Box 173, Loganton, PA 17747	**Ph.** 717-725-3965 **Fax**
Rome	Rome (PA) 1	Kenneth Slogaski	Tylersville FCS, RD 2, Box 173, Loganton, PA 17747	**Ph.** 717-725-3965 **Fax**
Rome	Rome (PA) 2	Paul Drumm	Huntsdale FCS, 195 Lebo Road, Carlisle, PA 17013	**Ph.** 717-486-3419 **Fax** 717-486-4040
Rome	Rome (VT)	Tom Dumont	Salisbury FCS, RD 1, Box 218, Salisbury, VT 05769	**Ph.** 802-352-4371 **Fax**
Rome	Walhalla - Ro	Andrew Allgood	SCDNR, Walhalla SFH, 198 Fish Hatchery Road, Mountain Rest, SC 29664-9003	**Ph.** 864-638-2866 **Fax** 864-638-2154
Sandwich	Sandwich (MA)	Ken Simmons	MA Division Fish & Wildlife, Field Building, Westoboro, MA 01581	**Ph.** 508-792-7270 **Fax**
Seeforellen	Seeforellen (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road; P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Seeforellen	Seeforellen (MI)	Edward Eisch	MI DNR, Oden SFH, P. O. Box 337, Oden, MI 49764	**Ph.** 231-347-4689 **Fax** 231-347-8421
Seeforellen	Seeforellen (NY)	Alan Mack	Caledonia SFH, 16 North Street, Caledonia, NY 14423-1033	**Ph.** 716-538-6300 **Fax** 716-538-9293
Shasta	Ford (WA)	John Kerwin	WA Dept. of Fish & Wildlife Administrator, 600 Capitol Way N, Olympia, WA 98501	**Ph.** 360-753-5713 **Fax**
Shasta	Shasta (CA)	Dennis Redfern	CA Dept Fish and Game, American River SFH, 2101 Nimbus Road, Rancho Cordova, CA 95670	**Ph.** 916-358-2865 **Fax** 916-358-1435
Sheep Creek	BNSC	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	**Ph.** 435-425-3547 **Fax** 435-425-3547

Table 5-1. Brown trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Sheep Creek	Lake Taneycomo	James Cilello	MO DOC, Shepard of the Hills SFH, 633 Hatchery Road, Branson, MO 65616	**Ph.** 417-348-1305 **Fax** 417-334-4996
Sheep Creek	Sheep Creek (NV)	Wayne Pachal	NHF&G, Berlin SFH, RR 3, Box 378d, Berlin, NH 03570	**Ph.** 603-449-3412 **Fax**
Soda Lake	Soda Lake (WY)	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Spring Creek	Little Red River	John Stark	AR State Trout, 457 Surrey Lane, Lakeview, AR 72642	**Ph.** 501-424-5924 **Fax** 501-424-5924
Spring Creek	Spring Creek (MT)	Anthony Nowak	Spring Creek Trout Hatchery, Route # 1, Box 1600, Lewistown, MT 59457	**Ph.** 406-538-3538 **Fax** 406-538-2401
Star Valley Trout Ranch	Brown	Robert Little	Durango SFH, 151 East 16th St., Durango, CO 81301	**Ph.** 970-247-4755 **Fax**
Walhalla	Pisgah (NC)	John Murry	Pisgah Forest SFH, PO Box 728, Pisgah Forest, NC 28768	**Ph.** 704-877-3121 **Fax**
Walhalla	Walhalla (GA)	Bill Couch	GA WRD, Buford SFH, 3204 Trout Place, Cumming, GA 30041	**Ph.** 770-781-6888 **Fax** 770-781-6889
White River	White River (AR)	John Stark	AR State Trout, 457 Surrey Lane, Lakeview, AR 72642	**Ph.** 501-424-5924 **Fax** 501-424-5924
Wild Rose	Wild Rose (MI) 1	James Johnson	MI MNR, Alpena Fisheries Station, 160 E. Fletcher, Alpena, MI 49707-2344	**Ph.** 989-356-3232 **Fax** 989-356-1951
Wild Rose	Wild Rose (MI) 1	Edward Eisch	MI DNR, Oden SFH, P. O. Box 337, Oden, MI 49764	**Ph.** 231-347-4689 **Fax** 231-347-8421

Table 5-2. Brown trout - Selected broodstock, hatchery, and field performance characteristics for reported broodstocks.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Armstrong	Armstrong (NC)	N	S	----	Walhalla NFH	Domestic	----	1	5,6
Bellefont / Rome	Reynoldsdale (PA)	N	S	----	----	Domestic	----	----	3,4,5,6
Bitterroot	Bitterroot (CT)	Y	S	IPNV	Quinebaug Valley Trout Hatchery	Domestic	30	----	3,4
Cortland	Cortland (CT)	Y	S	B-BF	Cortland NFH	Unknown	----	----	1,5,6
Crawford	Paint Bank	L	S	A	Soda Lake, Wyoming	Unknown	25	----	3,4,5,6,7,8,9,10
Crystal Lake	New Gloucester (ME)	Y	S	A	Crystal, Sabbathary, and Hancock Lakes	Wild	12	----	4,6
Delaney Butte	Delaney Butte (CO)	N	S	----	Delaney Butte, CO	Wild	----	----	3,5
Europe	St. Croix	L	S	A	Europe late 1800's to Nevin hatchery WI, to Wild Rose Hatchery	Domestic	----	----	1,4,5,6
Gilchrist Creek	Gilchrist	L	S	----	Gilcrist Creek	Wild	180	----	----
Green Spring	Green Lake	N	P	----	Green Springs Trout Farms (Thomas 1946)	Domestic	80	----	3,4,5,6
Hybrid	Walhalla X Plymouth Rock	L	S	----	S. Carolina and Nebraska	Domestic	----	----	5,6
Laurel Hill	Laural Hill (PA)	Y	P	----	Various commercial Hatcheries	Domestic	----	----	----
Leetown	Reeds Creek	Y	S	----	----	Unknown	----	----	5,6
Lock Leven	Green Spring (PA)	N	P	----	Green Spring Thomas - 1946)	Domestic	40	----	3,4,5,6

Table 5-2. Brown trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Nashua	Pequest	L	S	A	Attleboro NFH	Domestic	2500	—	1,2,4,10
Plymouth Rock	Plymouth Rock (IA)	N	S	—	Saratoga NFH	Unknown	—	—	—
Plymouth Rock	Plymouth Rock (MI)	N	S	—	—	Unknown	—	—	4
Plymouth Rock	Plymouth Rock (NH)	Y	F	—	Saratoga NFH	Domestic	—	—	5,6
Plymouth Rock	Plymouth Rock (NY)	L	S	RS	Peterson SFH	Domestic	814	—	3,4,10
Plymouth Rock	Plymouth Rock (WSS)	N	F	—	White Sulphur Springs NFH	Domestic	—	—	3,4,5,6,9
Plymouth Rock	Saratoga - PLR	Y	F	A	Domestic Crawford NFH, From Soda Lake	Domestic	276	1	3,4,5,10
Rome	Rome (CT)	Y	P	—	Rome, New York	Domestic	—	—	2,5,6
Rome	Rome (MD)	N	S	—	—	Unknown	—	—	5,6
Rome	Rome (NH)	Y	S	IPNV	Rome SFH	Domestic	—	—	4
Rome	Rome (PA) 1	Y	S	—	Rome, NY	Unknown	—	—	1,2,5,6
Rome	Rome (PA) 2	Y	S	—	Rome SFH	Domestic	—	—	—
Rome	Rome (VT)	Y	S	AS	Rome SFH	Domestic	1000	—	3,4
Rome	Walhalla - Ro	L	S	IPNV	Rome SFH	Domestic	—	—	5
Sandwich	Sandwich (MA)	L	S	—	Germany (details unknown)	Unknown	—	—	5

Table 5-2. Brown trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Seeforellen	Seeforellen (CT)	Y	S	AS	Oden SFH; Saugatuck Reservoir, CT; East Twin Lake, CT; Burlington SFH was obtained from Catskill SFH.	Domestic	130	----	----
Seeforellen	Seeforellen (MI)	Y	S	A	Caledonia NY	Domestic	781	----	4
Seeforellen	Seeforellen (NY)	L	S	AS	Germany (Walchensee Lake) eggs imported 1984, 85, & 86	Wild	14	----	4
Shasta	Ford (WA)	L	S	----	Mt. Shasta SFH	Domestic	----	----	3,4,5,6
Shasta	Shasta (CA)	N	S	----	Mt Shasta SFH (Mt Shasta, CA)	Domestic	----	----	5,6
Sheep Creek	BNSC	L	S	----	Sheep Creek, Flaming Gorge Reservoir (Utah)	Wild	----	----	3,5,7
Sheep Creek	Lake Taneycomo	L	S	RS, AS	Flaming Gorge Reservoir, Egan Hatchery Bicknel, UT	Domestic	----	----	5
Sheep Creek	Sheep Creek (NV)	N	S	----	J. Perry Eagan SFH	Domestic	----	----	3,4
Soda Lake	Soda Lake (WY)	Y	S	AS	Big Sandy Reservoir	Wild	----	1	1,3,4,5
Spring Creek	Little Red River	L	S	----	Spring Creek Hatchery - Lewistown, MT	Captive	----	----	7,9
Spring Creek	Spring Creek (MT)	Y	P	----	Unknown	Domestic	400	----	5,6
Star Valley Trout Ranch	Brown	L	S	----	Star Valley	Domestic	90	----	3,4
Walhalla	Pisgah (NC)	N	S	----	Pisgah Forest	Domestic	200	1	3,4,5,6

Table 5-2. Brown trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Walhalla	Walhalla (GA)	L	S	----	Walhalla NFH	Domestic	500	----	3,5
White River	White River (AR)	L	S	----	----	Unknown	----	----	7,9
Wild Rose	Wild Rose (MI) 1	Y	S	A	Wild Rose, WI	Domestic	1150	----	----
Wild Rose	Wild Rose (MI) 1	N	S	----	Hunt Creek Research Station	Unknown	----	----	3,4,5,6

[1/] Availability codes: Y = Yes - Broodstock is available, N = No – Broodstock is not available, and L = Broodstock available on a limited basis.
[2/] Type of facility codes: F = Federal, S = State, U = University, T = Tribes, and P = Private producer.
[3/] Disease classification codes: A - No listed pathogens detected; AS - Aeromonas salmonicida (Furunculosis); RD - Renibacterium salmonarum, (Bacterial Kidney Disease); B-SC - *Ceratomyxa shasta*; IPNV - *Infectious Pancreatic Necrosis* virus; VHSV - *Viral Hemorrhagic Septicemia*; IHNV - *Infectious Hematopoietic Necrosis* Virus; OMV - *Oncorhynchus masou* virus; YR - *Yersinia ruckeri* (Enteric Redmouth); B-SW - M*yxobolus cerebralis* (Whirling disease); B-SP - Proliferative Kidney Disease agent; B-VL - EED virus; ( ) - pathogen not found, but is suspect; C - Broodstock not inspected or no information provided.
[4/] Effective population number (N_e) was estimated based on the formula $N_e = 4(N_m + N_f) / (N_m N_f)$. N_m = Number male parents and N_f = Number female parents.
[5/] Genetic analysis type codes: 1 = Allozyme: 2 = Nuclear DNA; 3 = Mitochondrial DNA; 4 = Microsatellite; 5 = Meristics
[6/] Management recommendation codes: 1 = Raceway culture, 2 = Tank culture, 3 = Fingerling stocking (rivers), 4 = Fingerling stocking (Lakes), 5 = Catchable stocking (Rivers), 6 = Catchable stocking (Lakes), 7 = Stock natural Rivers, 8 = Stock natural lakes, 9 = Restoration stocking (Rivers), and 10 = Restoration stocking (Lakes).

Table 5-3. Brown trout - Selected reproductive performance and cultural trait information for reported broodstocks.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Armstrong	Armstrong (NC)	1001	1130	Mean	91	133.00	4.70	82	3.0	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Bellefont / Rome	Reynoldsdale (PA)	801	1031	Mean	74	156.00	6.00	96	4.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Bitterroot	Bitterroot (CT)	1101	131	Mean	90	455.00	20.00	90	5.0	5.0	5.0	4.0
				No.	1	1	1	1	1	1	1	1
Cortland	Cortland (CT)	815	1015	Mean	90	252.00	7.20	85	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Crawford	Paint Bank	901	1031	Mean	93	194.00	4.33	92	2.6	2.6	3.0	3.0
				No.	3	3	3	3	3	3	3	3
Crystal Lake	New Gloucester (ME)	1001	1031	Mean	94	346.00	7.80	97	3.0	3.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Europe	St. Croix	901	1031	Mean	95	727.00	9.40	97	3.0	4.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Gilchrist Creek	Gilchrist	1101	131	Mean	98	631.00	13.80	80	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Green Spring	Green Lake	801	1031	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Hybrid	Walhalla X Plymouth Rock	1001	1231	Mean	67	----	----	62	3.0	3.0	4.0	4.0
				No.	1	0	0	1	1	1	1	1
Laurel Hill	Laural Hill (PA)	1001	1130	Mean	----	----	----	----	4.0	4.0	4.0	4.0
				No.	0	0	0	0	1	1	1	1

Table 5-3. Brown trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility (%)	Weight		Survival 90 d. (%)	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)			90 d (No/lb)	365 d (No/lb)		Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Leetown	Reeds Creek	1001	1031	Mean	96	229.00	4.20	98	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Lock Leven	Green Spring (PA)	901	1031	Mean	90	200.00	1.00	90	3.0	4.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Nashua	Pequest	901	1031	Mean	50	295.00	3.70	80	3.0	3.0	2.0	2.0
				No.	1	1	1	1	1	1	1	1
Plymouth Rock	Plymouth Rock (NH)	1001	1130	Mean	50	300.00	4.00	75	2.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Plymouth Rock	Plymouth Rock (NY)	1001	1231	Mean	79	554.00	12.50	----	5.0	5.0	3.0	3.0
				No.	1	1	1	0	1	1	1	1
Plymouth Rock	Plymouth Rock (WSS)	----	----	Mean	86	232.25	6.23	87	3.0	3.0	3.7	3.5
				No.	4	4	4	4	4	4	4	4
Plymouth Rock	Saratoga - PLR	901	1031	Mean	95	287.00	6.13	96	3.0	3.0	3.3	3.3
				No.	3	3	3	3	3	3	3	3
Rome	Rome (CT)	801	1001	Mean	80	900.00	5.00	80	3.0	3.0	2.0	3.0
				No.	1	1	1	1	1	1	1	1
Rome	Rome (MD)	----	----	Mean	90	500.00	3.00	90	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Rome	Rome (NH)	1001	1130	Mean	93	600.00	4.50	93	5.0	4.0	3.0	4.0
				No.	1	1	1	1	1	1	1	1
Rome	Rome (NY)	----	----	Mean	95	100.00	4.00	90	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1

Table 5-3. Brown trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility (%)	Weight		Survival 90 d. (%)	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)			90 d (No/lb)	365 d (No/lb)		swim-up	1-year	Crowd-ing	Transp-ortation
Rome	Rome (PA) 1	1001	1130	Mean	87	477.00	1.90	85	3.0	3.0	2.5	3.5
				No.	2	2	2	2	2	2	2	2
Rome	Rome (PA) 2	901	1130	Mean	75	----	4.00	75	3.0	2.0	3.0	4.0
				No.	1	0	1	1	1	1	1	1
Rome	Rome (VT)	1101	1231	Mean	85	262.00	6.10	89	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Rome	Walhalla - Ro	1001	1130	Mean	5	400.00	8.80	80	----	4.0	4.0	4.0
				No.	1	1	1	1	0	1	1	1
Seeforellen	Seeforellen (CT)	1101	1231	Mean	95	850.00	3.90	88	5.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Seeforellen	Seeforellen (MI)	1101	131	Mean	95	334.00	13.00	97	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Seeforellen	Seeforellen (NY)	1201	131	Mean	90	1711.50	9.35	92	2.0	2.5	3.0	3.5
				No.	2	2	2	2	2	2	2	2
Shasta	Ford (WA)	1001	1130	Mean	96	275.00	13.00	98	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Sheep Creek	BNSC	1101	131	Mean	86	203.66	5.76	90	3.0	3.0	3.3	3.0
				No.	3	3	3	3	3	3	3	3
Sheep Creek	Lake Taneycomo	1001	1231	Mean	90	----	----	85	3.0	4.0	3.0	3.0
				No.	1	0	0	1	1	1	1	1
Sheep Creek	Sheep Creek (NV)	1001	1130	Mean	79	284.00	12.10	98	3.0	3.0	3.5	3.5
				No.	2	1	2	1	2	2	2	2

Table 5-3. Brown trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd -ing	Transp-ortation
Soda Lake	Soda Lake (WY)	1001	1031	Mean	83	237.00	11.80	78	2.3	2.6	1.6	2.6
				No.	3	3	3	3	3	3	3	3
Spring Creek	Little Red River	901	1231	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Spring Creek	Spring Creek (MT)	901	1031	Mean	90	----	----	85	4.0	5.0	3.0	4.0
				No.	1	0	0	1	1	1	1	1
Star Valley Trout Ranch	Brown	1101	1231	Mean	90	304.00	6.00	90	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Walhalla	Pisgah (NC)	1001	1031	Mean	64	250.00	2.45	82	3.5	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Walhalla	Walhalla (GA)	1101	1231	Mean	60	300.00	12.00	70	3.0	3.0	3.0	4.0
				No.	1	1	1	1	1	1	1	1
White River	White River (AR)	1101	1231	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Wild Rose	Wild Rose (MI) 1	1001	1031	Mean	87	413.00	7.20	92	2.5	2.0	2.0	2.0
				No.	2	1	1	2	2	2	2	2

[1/] Traits were measured with relative ratings (See Table 2). Tabled values are an arithmetic average of subjective ratings provided by broodstock managers and field biologists completing surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 5-4. Brown trout – Disease resistance rating (relative ratings[1/]) of reported broodstocks for nine common salmonid diseases.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Armstrong	Armstrong (NC)	Mean	3.0	----	3.0	----	3.0	----	----	3.0	----
		No.	2	0	2	0	2	0	0	2	0
Bellefont / Rome	Reynoldsdale (PA)	Mean	3.5	3.5	5.0	5.0	3.0	5.0	5.0	2.0	4.0
		No.	2	2	1	1	2	1	1	2	1
Bitterroot	Bitterroot (CT)	Mean	----	----	----	----	----	----	----	3.5	----
		No.	0	0	0	0	0	0	0	2	0
Cortland	Cortland (CT)	Mean	----	----	3.0	----	----	----	----	3.0	----
		No.	0	0	1	0	0	0	0	1	0
Crawford	Paint Bank	Mean	----	----	----	----	----	----	----	3.0	3.0
		No.	0	0	0	0	0	0	0	1	1
Crystal Lake	New Gloucester (ME)	Mean	3.0	3.0	3.0	3.0	2.5	3.0	3.0	3.0	3.0
		No.	1	2	1	1	2	1	1	1	1
Delaney Butte	Delaney Butte (CO)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Europe	St. Croix	Mean	2.0	2.0	3.0	----	----	----	----	4.0	2.0
		No.	1	1	1	0	0	0	0	1	1
Gilchrist Creek	Gilchrist	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Hybrid	Walhalla X Plymouth Rock	Mean	3.0	3.0	----	----	----	----	----	3.0	----
		No.	1	1	0	0	0	0	0	1	0
Laurel Hill	Laural Hill (PA)	Mean	2.0	3.0	----	----	----	----	----	3.0	3.0
		No.	1	1	0	0	0	0	0	1	1

Table 5-4. Brown trout – Continued.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Leetown	Reeds Creek	Mean	----	----	----	----	3.0	----	----	3.0	----
		No.	0	0	0	0	1	0	0	1	0
Lock Leven	Green Spring (PA)	Mean	3.0	----	----	----	----	----	----	3.0	3.0
		No.	1	0	0	0	0	0	0	1	1
Nashua	Pequest	Mean	----	----	----	----	----	----	----	4.0	----
		No.	0	0	0	0	0	0	0	1	0
Plymouth Rock	Plymouth Rock (NH)	Mean	3.0	4.0	----	----	----	----	----	3.0	3.0
		No.	1	1	0	0	0	0	0	1	1
Plymouth Rock	Plymouth Rock (NY)	Mean	----	3.0	4.0	----	----	----	----	3.0	3.0
		No.	0	1	1	0	0	0	0	1	1
Plymouth Rock	Plymouth Rock (WSS)	Mean	3.0	3.0	2.0	----	3.5	----	----	4.0	----
		No.	4	2	1	0	4	0	0	5	0
Plymouth Rock	Saratoga - PLR	Mean	3.0	4.0	4.0	----	----	----	----	3.4	4.0
		No.	4	2	1	0	0	0	0	7	2
Rome	Rome (CT)	Mean	5.0	----	----	----	----	----	----	3.0	3.0
		No.	1	0	0	0	0	0	0	1	1
Rome	Rome (MD)	Mean	2.5	----	----	----	----	----	----	2.0	----
		No.	2	0	0	0	0	0	0	1	0
Rome	Rome (NH)	Mean	5.0	3.0	----	----	5.0	----	----	4.0	5.0
		No.	1	1	0	0	1	0	0	1	1
Rome	Rome (NY)	Mean	2.6	2.5	----	----	3.0	----	----	2.6	----
		No.	3	2	0	0	1	0	0	3	0

Table 5-4. Brown trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Rome	Rome (PA) 1	Mean	2.5	4.0	1.0	----	3.3	----	5.0	3.5	4.0
		No.	4	2	1	0	3	0	1	4	1
Rome	Rome (PA) 2	Mean	2.5	3.5	5.0	----	3.0	4.0	----	3.5	----
		No.	2	2	1	0	2	1	0	2	0
Rome	Rome (VT)	Mean	4.0	----	----	----	----	----	----	3.0	3.0
		No.	1	0	0	0	0	0	0	1	1
Rome	Walhalla - Ro	Mean	3.5	----	1.0	----	2.5	----	----	----	----
		No.	2	0	1	0	2	0	0	0	0
Sandwich	Sandwich (MA)	Mean	2.0	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	0	0	0
Seeforellen	Seeforellen (CT)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Seeforellen	Seeforellen (MI)	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Seeforellen	Seeforellen (NY)	Mean	2.6	2.0	----	----	----	----	----	3.0	----
		No.	3	1	0	0	0	0	0	2	0
Seeforellen	Seeforellen (PA)	Mean	4.0	----	----	----	----	----	----	4.0	----
		No.	1	0	0	0	0	0	0	1	0
Shasta	Ford (WA)	Mean	4.0	2.0	----	----	----	----	----	3.0	2.0
		No.	1	1	0	0	0	0	0	2	1
Shasta	Shasta (CA)	Mean	4.0	----	----	----	----	----	----	4.0	----
		No.	1	0	0	0	0	0	0	3	0

Table 5-4. Brown trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Sheep Creek	BNSC	Mean	2.6	2.0	2.0	1.0	2.0	2.0	2.0	3.0	----
		No.	3	2	2	1	2	2	2	4	0
Sheep Creek	Lake Taneycomo	Mean	3.0	3.0	----	----	----	----	----	3.0	4.0
		No.	2	2	0	0	0	0	0	2	1
Sheep Creek	Sheep Creek (NV)	Mean	----	----	----	----	----	----	----	3.0	3.0
		No.	0	0	0	0	0	0	0	2	1
Soda Lake	Soda Lake (WY)	Mean	3.3	4.0	----	----	----	----	----	2.6	4.0
		No.	3	1	0	0	0	0	0	3	1
Spring Creek	Spring Creek (MT)	Mean	----	----	4.0	----	----	----	----	3.0	----
		No.	0	0	1	0	0	0	0	1	0
Star Valley Trout Ranch	Brown	Mean	2.0	4.0	4.0	----	----	----	----	3.0	2.0
		No.	1	1	1	0	0	0	0	1	1
Walhalla	Pisgah (NC)	Mean	3.0	----	3.5	----	4.0	----	----	3.0	----
		No.	2	0	2	0	2	0	0	1	0
Walhalla	Walhalla (GA)	Mean	3.0	3.0	3.0	----	3.5	----	----	----	2.0
		No.	2	2	2	0	2	0	0	0	1
Wild Rose	Wild Rose (MI) 1	Mean	2.5	2.0	----	----	----	----	----	2.6	----
		No.	2	2	0	0	0	0	0	3	0

[1/] Disease Resistance Relative Rating (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each disease provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, and 5 = very resistant. Only rating values of 1 to 5 were used to calculate the mean values reported above.

[2/] Disease Codes 1 = Furunculosis (*Aeromonas salmonicida*), 2 = Bacterial Kidney Disease (*Renibacterium salmonarum*), 3 = Enteric Redmouth (*Yerinia ruckeri*), 4 = *Ceratomyxa shasta*, 5 = infectious Pancreatic Necrosis, 6 = Viral Hemorrhagic Septicemia, 7 = infectious Hematopoietic Necrosis, 8 = Bacterial Gill Disease, and 9 = Cold Water Disease.

Table 5-5. Brown trout – Eight selected post- stocking field performance traits (relative ratings[1/]) for reported broodstocks in riverine and lacustrine habitats.

Strain	Broodstock		Post stocking								Tolerance to					
			Survival				Growth		Angling susceptibility		Tendency to migrate		Temperature > 70 °C		pH < 5.0		Catch & release	
			90 days		Over-winter													
			R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Armstrong	Armstrong (NC)	Mean	3.0	----	4.0	----	4.0	----	2.0	----	3.0	----	3.0	----	3.0	----	3.0	----
		No.	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	0
Bitterroot	Bitterroot (CT)	Mean	4.0	----	4.0	----	3.5	----	3.0	----	----	----	3.0	----	----	----	----	----
		No.	2	0	2	0	2	0	2	0	0	0	1	0	0	0	0	0
Cortland	Cortland (CT)	Mean	3.0	----	3.0	----	3.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Crawford	Paint Bank	Mean	3.6	----	3.0	----	3.2	----	2.8	----	2.0	----	2.5	----	1.0	----	----	----
		No.	5	0	5	0	4	0	5	0	1	0	4	0	1	0	0	0
Crystal Lake	New Gloucester (ME)	Mean	3.5	4.0	2.0	4.0	3.5	4.0	3.0	3.0	2.5	3.0	3.0	3.0	----	----	----	----
		No.	2	1	2	1	2	1	2	1	2	1	2	1	0	0	0	0
Delaney Butte	Delaney Butte (CO)	Mean	4.0	----	5.0	----	4.0	----	3.0	----	4.0	----	4.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Green Spring	Green Lake	Mean	3.0	----	2.0	----	----	----	3.0	----	2.0	----	4.0	----	----	----	----	----
		No.	1	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0
Hybrid	Walhalla X Plymouth Rock	Mean	4.0	----	3.0	----	3.0	----	3.0	----	----	----	4.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Leetown	Reeds Creek	Mean	----	----	----	----	----	----	5.0	----	----	----	1.0	----	3.0	----	3.0	----
		No.	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0

Table 5-5. Brown trout – Continued

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Nashua	Pequest	Mean	----	4.0	----	4.0	----	4.0	3.0	2.0	----	----	----	3.0	----	----	3.0	3.0
		No.	0	1	0	1	0	1	1	1	0	0	0	1	0	0	1	1
Plymouth Rock	Plymouth Rock (MI)	Mean	3.0	3.0	3.0	1.0	3.0	2.0	3.0	3.0	----	3.0	----	----	----	----	----	----
		No.	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0
Plymouth Rock	Plymouth Rock (NH)	Mean	3.0	----	2.0	----	3.0	----	----	----	----	----	3.0	----	----	----	3.0	----
		No.	1	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0
Plymouth Rock	Plymouth Rock (NY)	Mean	5.0	----	4.0	----	5.0	----	4.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Plymouth Rock	Plymouth Rock (WSS)	Mean	4.0	----	4.0	----	3.0	----	3.0	----	1.0	----	----	----	----	----	----	----
		No.	1	0	1	0	2	0	2	0	1	0	0	0	0	0	0	0
Plymouth Rock	Saratoga - PLR	Mean	----	----	2.0	----	3.0	3.0	2.0	3.0	3.0	3.0	3.0	----	----	----	----	----
		No.	0	0	1	0	1	1	1	1	1	1	1	0	0	0	0	0
Rome	Rome (MD)	Mean	3.0	----	1.0	----	3.0	----	2.0	----	3.0	----	3.0	----	4.0	----	4.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Rome	Rome (NY)	Mean	3.0	----	3.0	----	3.0	----	3.0	----	2.0	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Rome	Rome (VT)	Mean	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	----	----	----	----	----	----	----	----
		No.	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Rome	Saratoga - Ro	Mean	4.0	----	----	----	3.0	----	----	----	----	----	1.0	----	1.0	----	----	----
		No.	1	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0

Table 5-5. Brown trout – Continued

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Rome	Walhalla - Ro	Mean	4.0	----	2.0	----	3.0	----	4.0	----	2.0	----	2.0	----	3.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Seeforellen	Seeforellen (MI)	Mean	----	4.0	----	3.0	----	5.0	----	5.0	----	----	----	3.0	----	4.0	----	----
		No.	0	1	0	1	0	1	0	1	0	0	0	1	0	1	0	0
Seeforellen	Seeforellen (NY)	Mean	3.5	2.0	----	3.0	4.0	4.0	3.5	2.0	----	3.0	----	----	----	----	----	----
		No.	2	1	0	1	2	1	2	1	0	1	0	0	0	0	0	0
Shasta	Ford (WA)	Mean	3.0	----	4.0	----	4.0	----	3.0	----	3.0	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Shasta	Shasta (CA)	Mean	2.5	----	2.0	----	3.0	----	2.0	----	3.0	----	4.0	----	----	----	----	----
		No.	2	0	2	0	1	0	2	0	1	0	1	0	0	0	0	0
Sheep Creek	BNSC	Mean	3.0	----	4.0	----	3.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Sheep Creek	Lake Taneycomo	Mean	----	----	3.0	----	3.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Sheep Creek	Sheep Creek (NV)	Mean	3.0	4.0	4.0	3.0	3.0	3.0	4.0	4.0	----	----	3.0	----	----	----	----	3.0
		No.	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	1
Soda Lake	Soda Lake (WY)	Mean	3.0	3.0	3.5	4.0	3.0	2.0	1.6	2.0	2.3	2.0	3.5	4.0	----	----	3.0	3.0
		No.	2	1	2	1	2	1	3	1	3	1	2	1	0	0	1	1
Spring Creek	Little Red River	Mean	----	----	4.0	----	----	----	3.0	----	4.0	----	3.0	----	2.0	----	3.0	----
		No.	0	0	1	0	0	0	1	0	1	0	1	0	1	0	1	0

Table 5-5. Brown trout – Continued

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Spring Creek	Spring Creek (MT)	Mean	----	----	----	----	3.0	----	----	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Star Valley Trout Ranch	Brown	Mean	3.0	----	3.0	----	3.0	----	3.0	----	----	----	4.0	----	----	----	2.0	--
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0
Walhalla	Pisgah (NC)	Mean	3.0	----	4.0	----	3.5	----	2.0	----	3.5	----	3.0	----	3.0	----	3.0	----
		No.	2	0	2	0	2	0	2	0	2	0	2	0	2	0	1	0
Walhalla	Walhalla (GA)	Mean	4.0	----	4.0	----	3.5	----	3.5	----	2.0	----	3.0	----	----	----	----	----
		No.	2	0	2	0	2	0	2	0	1	0	1	0	0	0	0	0
White River	White River (AR)	Mean	----	----	4.0	----	4.0	----	2.0	----	3.0	----	3.0	----	2.0	----	4.0	----
		No.	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Wild Rose	Wild Rose (MI) 1	Mean	3.5	4.0	3.0	4.0	3.5	3.5	3.0	4.0	----	----	3.0	3.0	----	4.0	----	4.0
		No.	2	2	1	2	2	2	2	2	0	0	1	1	0	1	0	1

[1/] Trait Relative Ratings (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each trait provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 6-1. Cutthroat trout - Broodstocks reported to the National Fish Strain Registry - Trout (NFSR-T) with person to contact for additional information.

Strain	Broodstock	Contact	Address	Phone / Fax
Bear Lake	Bear Lake (UT)	Ron Roubidoux	Mantua Hatchery, 555 E. Fish Hatchery Road, Mantua, UT 84324	**Ph.** 801-723-6579 **Fax**
Bear River	Bear River (WY)	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Beitey	Beitey (WA)	Gerald Beitey	Beitey Enterprises, 3502 Beitey Road, Valley, WA 99181	**Ph.** 509-935-6100 **Fax**
Catnip	Catnip	Dave Sanger	NV Division of Wildlife, 1100 Valley Road, Reno, NV 89512	**Ph.** 775-688-1536 **Fax** 775-688-1595
Colorado River	Colorado River (WY)	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Colorado River	Glenwood Spring	Rich Kolicki	Glenwood Springs SFH, P.O. Box 578, Glenwood Springs, CO 81602	**Ph.** 970-945-5293 **Fax** 970-945-4729
Colorado River	Lake Nanita, CRI	John Riger	Crystal River SFH, 2957 Hwy. 133, Carbondale, CO 81623	**Ph.** 970-963-2665 **Fax** 970-963-1004
Greenback	Cascade Creek	Ed Stege	USFWS, Saratoga NFH, P.O. Box 665, Saratoga, WY 82331-0665	**Ph.** 307-326-5662 **Fax** 307-326-9869
Greenback	Hunter Creek (Natives)	Tom Mandis	Bellvue Fish Research Hatchery, Box 96, Bellvue, CO 80512	**Ph.** 970-482-1141 **Fax** 970-224-0366
Greenback	South Platte	Pat Dwyer	US FWS Fish Technology Center, 4050 Bridger Canyon Road, Bozeman, MT 59715	**Ph.** 406-587-9265 **Fax** 406-586-5942
Henry's Lake	Henry's Lake (ID)	Thomas Frew	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-334-3791 **Fax** 208-334-2114
Lahontan	Heenah-Summit & Walker	John Kerwin	WA Dept. of Fish & Wildlife Administrator, 600 Capitol Way N, Olympia, WA 98501	**Ph.** 360-753-5713 **Fax**

Table 6-1. Cutthroat trout – Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Lahontan	Independence Lake	Dennis Redfern	CA Dept Fish and Game, American River SFH, 2101 Nimbus Road, Rancho Cordova, CA 95670	Ph. 916-358-2865 Fax 916-358-1435
Lahontan	Morrison Creek (NV)	Larry Marchant	Lahontan/Marble Bluff NFH, 710 Hwy. 395, Gardnerville, NV 89410	Ph. 702-265-2425 Fax 702-265-3004
Lahontan	Pilot Peak (UT)	Paul Thompson	Utah Wildlife Resources, 515 Ea 5300 South, Ogden, UT 74405	Ph. 801-476-2771 Fax 801-479-4010
Lahontan	Pyramid Lake (NV)	Larry Marchant	Lahontan/Marble Bluff NFH, 710 Highway 395, Gardnerville, NV 89410	Ph. 702-265-2425 Fax 702-265-3004
Lake Whatcom	Tokul Creek (WA)	Manager	Tokul Creek SFH, 37501 SE Fall City/Snoqualmie Road, Fall City, WA 98024	Ph. 206-222-5464 Fax 206-222-7924
Pike's Peak	Colorado Springs (CO)	James Melby	Box 367, Rye, CO 81069	Ph. 719-676-4036 Fax
Rio Grande	Haypress Lake	Tom Mandis	Bellvue Fish Research Hatchery, Box 96, Bellvue, CO 80512	Ph. 970-482-1141 Fax 970-224-0366
Snake River	Auburn (WY)	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	Ph. 307-473-3416 Fax 307-473-3433
Snake River	BarBC (WY) 1	Kerry Grande	Jackson NFH, 1500 Fish Hatchery Road, Jackson, WY 83001	Ph. 307-733-2510 Fax 307-733-8616
Snake River	BarBC (WY) 2	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	Ph. 307-473-3416 Fax 307-473-3433
Snake River	Snake River (NM)	Calvin Brandon	Seven Springs SFH, Mountain Road, Box 6, Jemez Springs, NM 87025	Ph. 509-829-3740 Fax
Snake River	Snake River (WY)	Alan Gettings	Dubois SFH, PO Box 704, Dubois, WY 82513	Ph. 307-683-2431 Fax

Table 6-1. Cutthroat trout – Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Twin Lakes	Twin Lakes (WA)	John Kerwin	WA Dept. of Fish & Wildlife Administrator, 600 Capitol Way N, Olympia, WA 98501	**Ph.** 360-753-5713 **Fax**
Westslope	Clarks Fork Hatchery	Thomas Frew	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-334-3791 **Fax** 208-334-2114
Westslope	Fish Lake	Gene McPherson	McCall SFH, PO Box 1021, McCall, ID 83638	**Ph.** 208-634-2690 **Fax** 208-634-3492
Westslope	Kings Lake (WA)	John Kerwin	WA Dept. of Fish & Wildlife Administrator, 600 Capitol Way N, Olympia, WA 98501	**Ph.** 360-753-5713 **Fax**
Westslope	Priest Lake	Thomas Frew	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-334-3791 **Fax** 208-334-2114
Westslope	Sandpoint	Thomas Frew	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-334-3791 **Fax** 208-334-2114
Westslope	Washoe Park	Mark Sweeney	MT FW&P, Washoe Park SFH, 600 W. Pennsylvania Street, Anaconda, MT 59711	**Ph.** 406-563-2531 **Fax** 406-563-2531
Yellowstone	LaHardy Rapids	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Yellowstone	McBride (MT)	Daryl Hodges	Yellowstone River SFH, PO Box 508, Big Timber, MT 59011	**Ph.** 406-932-4434 **Fax** 404-932-4481

Table 6-2. Cutthroat trout - Selected broodstock, hatchery, and field performance characteristics for reported broodstocks.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Bear Lake	Bear Lake (UT)	L	S	----	Bear Lake	Wild	32	----	----
Bear River	Bear River (WY)	L	S	A	Raymond, Contag and Giraffe Creeks	Wild	----	1	1,3,4,5,6,7,8,9,10
Beitey	Beitey (WA)	U	P	----	Unknown	Domestic	----	----	----
Catnip	Catnip	----	S	----	Big Springs Reservoir -	Wild	----	----	----
Colorado River	Colorado River (WY)	L	S	A	North Beaver Creek; tributary to South Piney Creek.	Wild	160	1	3,4,5,6,7,8,9,10
Colorado River	Glenwood Spring	N	S	A	Nanita Lake- Rocky Mountain National Park	Wild	70	1	----
Colorado River	Lake Nanita, CRI	Y	S	A	Lake Nanita	Wild	60	1,2,3	7,8
Greenback	Cascade Creek	L	F	A	Arkansas River Drainage	Unknown	16	1,5	----
Greenback	Hunter Creek (Natives)		N	S	---- the Poodre River	Hunter Creek - South Fork of			Wild
Greenback	South Platte	N	F	RS	Como Creek, Poudre R., CO	Wild	30	----	----
Henry's Lake	Henry's Lake (ID)	L	S	BRD	Henry's Lake	Wild	----	4,5	3,5,7,9
Lahontan	Heenah-Summit & Walker		Y	S	----	Heenan-Summit & Walker Lakes			Wild
Lahontan	Independence Lake	L	S	----	Independence Lake	Unknown	----	----	4
Lahontan	Morrison Creek (NV)	N	F	----	Doudy Ponds, Pilot Mountain	Wild	30	----	2
Lahontan	Pilot Peak (UT)	N	S	----	Morrison Creek Pilot Mt.	Wild	40	1	

Table 6-2. Cutthroat trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Lahontan	Pyramid Lake (NV)	N	F	RS	Pyramid Lake, NV - Free ranging	Wild	----	1	All
Lake Whatcom	Tokul Creek (WA)	N	S	----	Tributaries to lake Whatcom, WA	Wild	294	----	4
Pike's Peak	Colorado Springs (CO)		L	S	----	----	Unknown	----	----
Rio Grande	Haypress Lake	N	S	RS	Haypress Lake	Wild	----	----	----
Snake River	Auburn (WY)	Y	S	SPF	Flat Creek (tributaru to the Snake River)	Wild	----	1	1,3,4,5,6
Snake River	BarBC (WY) 1	L	F	A	BarBC Spring, Teton Co, WY	Wild	174	----	----
Snake River	BarBC (WY) 2	Y	S	A	BarBC Spring, Teton Co, WY	Wild	414	1	1,3,4,5,6
Snake River	Snake River (NM)	N	S	----	Snake River, Wyoming	Domestic	----	----	3,4
Snake River	Snake River (WY)	N	S	----	----	Unknown	----	----	5,6
Twin Lakes	Twin Lakes (WA)	U	S	----	Lake Chelan	Wild	----	----	3,4
Westslope	Clarks Fork Hatchery	Y	S	----	Arlee Hatchery, MT - probably from Kings Lake, WA - source upper Priest Lake, ID	Unknown	----	----	----
Westslope	Fish Lake	N	S	----	----	Unknown	----	----	4,8
Westslope	Kings Lake (WA)	L	S	----	Granite Creek & Kalispell Creek, Washington	Wild	----	----	4,6
Westslope	Priest Lake	L	S	RS	Priest Lake, ID	Wild	80	2	3,4
Westslope	Sandpoint	L	S	----	Washoe Park State Fish Hatchery, MT	Domestic	----	----	----

Table 6-2. Cutthroat trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Westslope	Washoe Park	L	S	A	Composite from 12 tributaries to North Fork of Flathead & 2 tributaries of Clarks Fork	Wild	3100	3	7,8,9,10
Yellowstone	LaHardy Rapids	L	S	A	LeHardy Rapids, Yellowstone River, Yellowstone Nat'l Park	Wild	244	1	1,3,4,5,6
Yellowstone	McBride (MT)	L	S	----	McBride River	Wild	30	1	1,2,3,4,8,9,10

[1/] Availability codes: Y = Yes - Broodstock is available, N = No – Broodstock is not available, and L = Broodstock available on a limited basis.
[2/] Type of facility codes: F = Federal, S = State, U = University, T = Tribes, and P = Private producer.
[3/] Disease classification codes: A - No listed pathogens detected; AS - Aeromonas salmonicida (Furunculosis); RD - Renibacterium salmonarum, (Bacterial Kidney Disease); B-SC - *Ceratomyxa shasta*; IPNV - *Infectious Pancreatic Necrosis* virus; VHSV - *Viral Hemorrhagic Septicemia*; IHNV - *Infectious Hematopoietic Necrosis* Virus; OMV - *Oncorhynchus masou* virus; YR - *Yersinia ruckeri* (Enteric Redmouth); B-SW - M*yxobolus cerebralis* (Whirling disease); B-SP - Proliferative Kidney Disease agent; B-VL - EED virus; ( ) - pathogen not found, but is suspect; C - Broodstock not inspected or no information provided.
[4/] Effective population number (N_e) was estimated based on the formula $N_e = 4(N_m + N_f) / (N_m N_f)$. N_m = Number male parents and N_f = Number female parents.
[5/] Genetic analysis type codes: 1 = Allozyme: 2 = Nuclear DNA; 3 = Mitochondrial DNA; 4 = Microsatellite; 5 = Meristics
[6/] Management recommendation codes: 1 = Raceway culture, 2 = Tank culture, 3 = Fingerling stocking (rivers), 4 = Fingerling stocking (Lakes), 5 = Catchable stocking (Rivers), 6 = Catchable stocking (Lakes), 7 = Stock natural Rivers, 8 = Stock natural lakes, 9 = Restoration stocking (Rivers), and 10 = Restoration stocking (Lakes).

Table 6-3. Cutthroat Trout - Selected reproductive performance and cultural trait information for reported broodstocks.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Bear Lake	Bear Lake (UT)	301	630	Mean	94	136.00	4.50	96	2.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Bear River	Bear River (WY)	401	531	Mean	75	384.33	10.93	87	3.0	3.3	3.0	3.0
				No.	3	3	3	3	3	3	3	3
Colorado River	Colorado River (WY)	601	731	Mean	73	400.00	7.60	78	1.0	2.0	2.0	2.0
				No.	1	1	1	1	1	1	1	1
Colorado River	Glenwood Spring	401	630	Mean	90	545.00	10.00	70	3.0	3.0	2.0	4.0
				No.	1	1	1	1	1	1	1	1
Colorado River	Lake Nanita, CRI	501	630	Mean	90	1750.00	200.00	80	3.0	2.0	2.0	3.0
				No.	1	1	1	1	1	1	1	1
Colorado River	Trappers Lake	----	----	Mean	84	251.00	6.20	95	3.0	3.0	2.5	3.0
				No.	2	2	2	2	2	2	2	2
Greenback	Hunter Creek (Natives)	----	----	Mean	80	523.00	1.00	80	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Henry's Lake	Henry's Lake (ID)	501	531	Mean	90	300.00	----	86	5.0	----	3.0	5.0
				No.	1	1	0	1	1	0	1	1
Lahontan	Heenah-Summit & Walker	401	531	Mean	77	132.00	----	95	2.0	3.0	4.0	3.0
				No.	1	1	0	1	1	1	1	1
Lahontan	Morrison Creek (NV)	401	430	Mean	41	125.00	0.29	70	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Lahontan	Pilot Peak (UT)	401	531	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0

Table 6-3. Cutthroat Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility (%)	Weight		Survival 90 d. (%)	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)			90 d (No/lb)	365 d (No/lb)		Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Lahontan	Pyramid Lake (NV)	401	630	Mean	95	136.33	4.800	95	3.6	3.6	3.3	3.3
				No.	3	3	3	3	3	3	3	3
Lake Whatcom	Tokul Creek (WA)	1201	228	Mean	92	432.00	12.50	95	4.5	4.0	4.5	4.5
				No.	2	2	2	2	2	2	2	2
Rio Grande	Haypress Lake	----	----	Mean	85	614.00	1.00	90	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Snake River	Auburn (WY)	1110	115	Mean	88	150.00	3.250	91	4.0	4.5	4.5	4.5
				No.	2	2	2	2	2	2	2	2
Snake River	BarBC (WY) 1	301	731	Mean	84	440.00	11.20	86	4.0	4.0	2.0	3.0
				No.	1	1	1	1	1	1	1	1
Snake River	BarBC (WY) 2	501	731	Mean	89	103.00	7.00	92	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Snake River	Snake River (NM)	401	531	Mean	70	----	5.20	80	1.0	1.0	1.0	3.0
				No.	1	0	1	1	1	1	1	1
Snake River	Snake River (WY)	----	----	Mean	82	144.50	5.95	85	3.5	3.0	3.5	3.0
				No.	2	2	2	2	2	2	2	2
Twin Lakes	Twin Lakes (WA)	501	630	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Westslope	Clarks Fork Hatchery	401	531	Mean	80	350.00	18.10	90	1.0	2.0	2.0	2.0
				No.	1	1	1	1	1	1	1	1
Westslope	Kings Lake (WA)	401	630	Mean	95	25.00	3.50	95	2.5	3.0	2.5	3.0
				No.	2	1	1	2	2	2	2	2

Table 6-3. Cutthroat Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Westslope	Priest Lake	401	731	Mean	85	522.00	----	85	5.0	5.0	5.0	4.0
				No.	1	1	0	1	1	1	1	1
Westslope	Sandpoint	501	731	Mean	80	----	----	60	2.0	2.0	2.0	----
				No.	1	0	0	1	1	1	1	0
Westslope	Washoe Park	501	631	Mean	50	----	----	----	2.0	3.0	1.0	2.0
				No.	1	0	0	0	1	1	1	1
Yellowstone	LaHardy Rapids	401	531	Mean	97	30.00	5.40	98	2.0	3.0	2.0	2.0
				No.	1	1	1	1	1	1	1	1
Yellowstone	McBride (MT)	301	531	Mean	90	350.00	----	90	3.0	3.0	4.0	3.0
				No.	1	1	0	1	1	1	1	1

[1/] Traits were measured with relative ratings (See Table 2). Tabled values are an arithmetic average of subjective ratings provided by broodstock managers and field biologists completing surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 6-4. Cutthroat trout – Disease resistance rating (relative ratings[1/]) of reported broodstocks for nine common salmonid diseases.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Bear Lake	Bear Lake (UT)	Mean	2.0	2.0	2.0	----	2.0	2.0	2.0	2.7	1.0
		No.	2	2	2	0	2	2	2	4	1
Bear River	Bear River (WY)	Mean	----	----	----	----	----	----	----	3.0	2.0
		No.	0	0	0	0	0	0	0	3	1
Beitey	Beitey (WA)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Colorado River	Colorado River (WY)	Mean	----	----	----	----	----	----	----	2.0	3.0
		No.	0	0	0	0	0	0	0	1	1
Colorado River	Glenwood Spring	Mean	----	----	----	----	----	----	----	2.0	----
		No.	0	0	0	0	0	0	0	1	0
Colorado River	Lake Nanita, CRI	Mean	----	----	5.0	----	----	----	----	1.0	1.0
		No.	0	0	1	0	0	0	0	1	1
Colorado River	Little Snake River	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Colorado River	Trappers Lake	Mean	3.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	2	0
Greenback	Hunter Creek (Natives)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Greenback	South Platte	Mean	----	4.0	----	----	4.0	----	----	3.0	----
		No.	0	1	0	0	1	0	0	1	0
Henry's Lake	Henry's Lake (ID)	Mean	----	----	----	----	----	----	----	3.5	----
		No.	0	0	0	0	0	0	0	2	0

Table 6-4. Cutthroat trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Henry's Lake	Henry's Lake (ID) - W	Mean	----	4.0	----	----	----	----	----	----	----
		No.	0	1	0	0	0	0	0	0	0
Lahontan	Heenah-Summit & Walker	Mean	----	----	----	----	----	----	----	1.0	----
		No.	0	0	0	0	0	0	0	1	0
Lahontan	Morrison Creek (NV)	Mean	3.0	4.0	----	----	----	----	----	2.0	----
		No.	1	1	0	0	0	0	0	1	0
Lahontan	Pilot Peak (UT)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Lahontan	Pyramid Lake (NV)	Mean	3.0	3.3	----	----	----	----	----	3.3	----
		No.	3	3	0	0	0	0	0	3	0
Lake Whatcom	Tokul Creek (WA)	Mean	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0
		No.	1	1	1	1	1	1	1	1	1
Pike's Peak	Colorado Springs (CO)	Mean	2.0	2.0	3.0	----	----	----	----	4.0	4.0
		No.	1	1	1	0	0	0	0	1	1
Rio Grande	Haypress Lake	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Snake River	Auburn (WY)	Mean	3.5	4.0	4.0	----	4.0	----	----	3.6	3.5
		No.	4	1	2	0	1	0	0	5	2
Snake River	BarBC (WY) 1	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Snake River	BarBC (WY) 2	Mean	2.0	----	----	----	----	----	----	2.5	----
		No.	1	0	0	0	0	0	0	2	0

Table 6-4. Cutthroat trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Snake River	Snake River (NM)	Mean	3.0	----	2.5	----	----	----	----	2.5	3.0
		No.	1	0	2	0	0	0	0	2	1
Snake River	Snake River (WY)	Mean	----	----	----	----	----	----	----	4.0	4.0
		No.	0	0	0	0	0	0	0	2	1
Twin Lakes	Twin Lakes (WA)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Westslope	Clarks Fork Hatchery	Mean	----	5.0	----	----	4.0	----	----	4.0	4.0
		No.	0	1	0	0	1	0	0	1	1
Westslope	Fish Lake	Mean	----	----	----	----	----	----	----	4.0	4.0
		No.	0	0	0	0	0	0	0	1	1
Westslope	Kings Lake (WA)	Mean	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	----
		No.	1	1	1	1	1	1	1	1	0
Westslope	Priest Lake	Mean	----	----	----	----	----	----	----	4.0	----
		No.	0	0	0	0	0	0	0	1	0
Westslope	Sandpoint	Mean	----	----	----	----	----	----	----	2.0	----
		No.	0	0	0	0	0	0	0	1	0
Westslope	Washoe Park	Mean	----	----	----	----	----	----	----	2.0	1.0
		No.	0	0	0	0	0	0	0	1	1
Yellowstone	LaHardy Rapids	Mean	----	----	----	----	----	----	----	2.0	----
		No.	0	0	0	0	0	0	0	1	0
Yellowstone	McBride (MT)	Mean	----	----	----	----	----	----	----	3.5	4.0
		No.	0	0	0	0	0	0	0	2	1

Table 6-4. Cutthroat trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Yellowstone	Pikes Peak	Mean	5.0	----	3.0	----	----	----	----	2.0	----
		No.	1	0	1	0	0	0	0	1	0

[1/] Disease Resistance Relative Rating (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each disease provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, and 5 = very resistant. Only rating values of 1 to 5 were used to calculate the mean values reported above.

[2/] Disease Codes 1 = Furunculosis (*Aeromonas salmonicida*), 2 = Bacterial Kidney Disease (*Renibacterium salmonarum*), 3 = Enteric Redmouth (*Yerinia ruckeri*), 4 = *Ceratomyxa shasta*, 5 = infectious Pancreatic Necrosis, 6 = Viral Hemorrhagic Septicemia, 7 = infectious Hematopoietic Necrosis, 8 = Bacterial Gill Disease, and 9 = Cold Water Disease.

Table 6-5. Cutthroat trout – Eight selected post- stocking field performance traits (relative ratings[1/]) for reported broodstocks in riverine and lacustrine habitats.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Bear Lake	Bear Lake (UT)	Mean	3.0	3.0	3.0	5.0	3.0	2.0	4.0	5.0	----	----	----	----	----	----	----	4.0
		No.	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1
Bear River	Bear River (WY)	Mean	2.3	----	2.3	----	2.6	----	3.5	----	3.0	----	4.0	----	----	----	----	----
		No.	3	0	3	0	3	0	2	0	2	0	2	0	0	0	0	0
Colorado River	Colorado River (WY)	Mean	3.0	----	3.0	----	5.0	----	5.0	----	3.0	----	2.0	----	4.0	----	----	----
		No.	2	0	2	0	1	0	2	0	1	0	1	0	1	0	0	0
Colorado River	Trappers Lake	Mean	2.0	----	2.0	----	3.0	----	4.5	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0
Henry's Lake	Henry's Lake (ID)	Mean	1.0	4.0	----	4.0	1.0	4.0	----	5.0	----	2.0	----	2.0	----	----	----	4.0
		No.	1	1	0	1	1	1	0	1	0	1	0	1	0	0	0	1
Henry's Lake	Henry's Lake (ID) - W	Mean	3.0	----	4.0	----	5.0	----	4.0	----	3.0	----	4.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Lahontan	Independence Lake	Mean	4.0	----	4.0	----	4.0	----	4.0	----	----	----	4.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Lahontan	Pyramid Lake (NV)	Mean	2.0	----	3.0	3.0	5.0	----	2.3	3.0	3.0	3.0	3.3	3.0	----	----	----	----
		No.	2	0	3	1	2	0	3	1	1	1	3	1	0	0	0	0
Lake Whatcom	Tokul Creek (WA)	Mean	3.0	----	4.0	----	2.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0

Table 6-5. Cutthroat trout – Continued

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Snake River	Auburn (WY)	Mean	2.7	----	3.0	----	3.2	----	4.0	----	2.7	----	3.3	3.0	----	----	3.0	3.0
		No.	4	0	4	0	4	0	5	0	4	0	3	1	0	0	2	1
Snake River	BarBC (WY) 2	Mean	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	3.5	3.0	3.5	4.0	----	----	----	----
		No.	2	1	2	1	2	1	2	1	2	1	2	1	0	0	0	0
Snake River	Snake River (NM)	Mean	----	----	----	----	----	----	----	----	----	----	3.0	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Snake River	Snake River (WY)	Mean	4.0	----	4.0	----	4.0	----	2.0	----	----	----	4.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Westslope	Fish Lake	Mean	3.0	----	4.0	----	3.0	----	5.0	----	3.0	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Westslope	Kings Lake (WA)	Mean	4.0	----	3.0	3.0	4.0	----	4.0	----	2.0	3.0	2.0	3.0	2.0	3.0	----	3.0
		No.	1	0	1	1	1	0	1	0	1	1	1	1	1	1	0	1
Westslope	Washoe Park	Mean	----	----	4.0	----	2.0	----	4.0	----	----	----	1.0	----	----	----	----	----
		No.	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Yellowstone	McBride (MT)	Mean	3.3	4.5	3.6	4.5	3.3	3.5	4.0	4.0	2.5	3.5	2.0	3.0	2.5	----	----	3.0
		No.	3	2	3	2	3	2	3	2	2	2	2	2	2	0	0	1
Yellowstone	Pikes Peak	Mean	3.0	----	4.0	----	4.0	----	4.0	----	3.0	----	1.0	----	1.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0

[1/] Trait Relative Ratings (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each trait provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 7-1. Lake trout - Broodstocks reported to the National Fish Strain Registry - Trout (NFSR-T) with person to contact for additional information.

Strain	Broodstock	Contact	Address	Phone / Fax
Apostle/Gull Island	SAD (IRR)	Dale Bast	Iron River NFH, HC 62, Box 44, Iron River, WI 54847	**Ph.** 715-372-8510 **Fax** 715-372-8410
Apostle/Gull Island	SAW (HIF)	Faber Bland	USFWS, Pendills Creek/Hiawatha Forest NFH, 21200 West Hatchery Road, Brimley, MI 49715	**Ph.** 906-437-5231 **Fax** 906-437-5393
Champlain	Champlain (VT)	Tom Dumont	Salisbury FCS, RD 1, Box 218, Salisbury, VT 05769	**Ph.** 802-352-4371 **Fax**
Gillis Lake	Gillis Lake (MN)	Lee Peterson	MN DNR, Peterson SFH, Rt. 1 Box 85A, Peterson, MN 55962	**Ph.** 507-875-2625 **Fax** 507-875-2625
Granby Reservoir	Granby Reservoir (CO)	Gerald Bennett	Box 545, Granby, CO 80446	**Ph.** 970-887-3654 **Fax**
Green Lake	GLW (HIF)	Faber Bland	USFWS, Pendills Creek/Hiawatha Forest NFH, 21200 West Hatchery Road, Brimley, MI 49715	**Ph.** 906-437-5231 **Fax** 906-437-5393
Green Lake	GLW99	Frederick Griffiths	USFWS, Allegheny NFH, R.D.#1, Box 1050, Warren, PA 16365	**Ph.** 814-726-0890 **Fax** 814-726-9519
Green Lake	Green Lake (IRR)	Dale Bast	Iron River NFH, HC 62, Box 44, Iron River, WI 54847	**Ph.** 715-372-8510 **Fax** 715-372-8410
Isle Royale	Isle Royale (IRR)	John Huber	MN DNR-Fisheries, Crystal Springs SFH, RR #2, Box 481, Altura, MN 55910	**Ph.** 507-796-6691 **Fax** 507-932-5483
Isle Royale	Isle Royale (MN)	John Huber	MN DNR-Fisheries, Crystal Springs SFH, RR #2, Box 481, Altura, MN 55910	**Ph.** 507-796-6691 **Fax** 507-932-5483
Jenny Lake	Jenny Lake (UT)	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	**Ph.** 435-425-3547 **Fax** 435-425-3547
Jenny Lake	Jenny Lake (WY)	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433

Table 7-1. Lake trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Klondike Reef	SKW (HIF)	Faber Bland	USFWS, Pendills Creek/Hiawatha Forest NFH, 21200 West Hatchery Road, Brimley, MI 49715	**Ph.** 906-437-5231 **Fax** 906-437-5393
Lewis Lake	LLW (HIF)	Faber Bland	USFWS, Pendills Creek/Hiawatha Forest NFH, 21200 West Hatchery Road, Brimley, MI 49715	**Ph.** 906-437-5231 **Fax** 906-437-5393
Lewis Lake	Saratoga - LLD	Ed Stege	USFWS, Saratoga NFH, P.O. Box 665, Saratoga, WY 82331-0665	**Ph.** 307-326-5662 **Fax** 307-326-9869
Lewis Lake	Story Hatchery	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Manitoba	Clearwater Lake	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
Marquette	SMD (HIF)	Faber Bland	USFWS, Pendills Creek/Hiawatha Forest NFH, 21200 West Hatchery Road, Brimley, MI 49715	**Ph.** 906-437-5231 **Fax** 906-437-5393
Ontario	Ontario (ALL)	Frederick Griffiths	USFWS, Allegheny NFH, R.D.#1, Box 1050, Warren, PA 16365	**Ph.** 814-726-0890 **Fax** 814-726-9519
Seneca	Finger Lakes (ME)	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
Seneca	Seneca (ALL)	Frederick Griffiths	USFWS, Allegheny NFH, R.D.#1, Box 1050, Warren, PA 16365	**Ph.** 814-726-0890 **Fax** 814-726-9519
Seneca	SLW (HIF)	Faber Bland	USFWS, Pendills Creek/Hiawatha Forest NFH, 21200 West Hatchery Road, Brimley, MI 49715	**Ph.** 906-437-5231 **Fax** 906-437-5393
Superior	Iron River - Su	Dale Bast	Iron River NFH, HC 62, Box 44, Iron River, WI 54847	**Ph.** 715-372-8510 **Fax** 715-372-8410
Superior	Jordan River (ALL)	Frederick Griffiths	USFWS, Allegheny NFH, R.D.#1, Box 1050, Warren, PA 16365	**Ph.** 814-726-0890 **Fax** 814-726-9519

Table 7-1. Lake trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Superior	Pendills Creek (ALL)	Frederick Griffiths	USFWS, Allegheny NFH, R.D.#1, Box 1050, Warren, PA 16365	**Ph.** 814-726-0890 **Fax** 814-726-9519
Superior	Superior-Marquette (ALL)	Frederick Griffiths	USFWS, Allegheny NFH, R.D.#1, Box 1050, Warren, PA 16365	**Ph.** 814-726-0890 **Fax** 814-726-9519
Traverse Island	STW (HIF)	Faber Bland	USFWS, Pendills Creek/Hiawatha Forest NFH, 21200 West Hatchery Road, Brimley, MI 49715	**Ph.** 906-437-5231 **Fax** 906-437-5393

Table 7-2. Lake trout - Selected broodstock, hatchery, and field performance characteristics for reported broodstocks.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Apostle/Gull Island	SAD (IRR)	Y	F	A	Lake Superior	Wild	400	1	10
Apostle/Gull Island	SAW (HIF)	L	F	A	State of Michigan	Wild	----	5	All
Champlain	Champlain (VT)	Y	S	AS	Lake Champlain	Captive	60	----	4
Gillis Lake	Gillis Lake (MN)	L	S	A	Gillis Lake, Minnesota	Wild	220	----	3,4,7,8,9,10
Granby Reservoir	Granby Reservoir (CO)	N	S	----	Montana	Unknown	----	----	3,4,10
Green Lake	GLW (HIF)	L	F	A	Black Can Reef (Lake Michigan)	Captive	----	5	all
Green Lake	GLW99	----	F	----	Hiawatha Forest NFH (MI)	Domestic	----	----	----
Green Lake	Green Lake (IRR)	Y	F	A	Lake Michigan wild population held at Charlevoix SFH (MI)	Wild	102	1	10
Isle Royale	Isle Royale (IRR)	Y	S	A	Crystal Springs SFH	Domestic	147	----	4,6,8,10
Isle Royale	Isle Royale (MN)	Y	S	----	Spawning shoals off Isle Royale	Wild	375	----	8,10
Jenny Lake	Jenny Lake (UT)	L	S	----	Fish Lake (Utah))	Wild	19	----	----
Jenny Lake	Jenny Lake (WY)	L	S	A	Jenny Lake, Teton NP, Wyoming	Unknown	----	----	1,4,6,10
Klondike Reef	SKW (HIF)	L	F	----	Keweenaw Bay Tribal Hatchery	Wild	22	----	----
Lewis Lake	LLW (HIF)	L	F	A	Lewis Lake, Yellowstone NP	Captive	136	4	all
Lewis Lake	Saratoga - LLD	L	F	A	Lewis Lake, Yellowstone NP	Wild	521	1	1,2,3,4,5,6,7,8,10

Table 7-2. Lake trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Lewis Lake	Story Hatchery	Y	S	A	Jackson NFH	Wild	----	15	3,4
Manitoba	Clearwater Lake	N	S	----	Egg shipment from Clearwater Lake in Manitoba	Wild	----	----	3,4
Marquette	SMD (HIF)	L	F	A	Marquette SFH	Domestic	----	4	all
Ontario	Ontario (ALL)	Y	F	----	Feral Lake Ontario fish	Unknown	229	----	----
Seneca	Finger Lakes (ME)	N	S	----	egg shipment from Lake Seneca, NY	Wild	----	----	4,10
Seneca	Seneca (ALL)	L	F	A	Seneca Lake, NY	Wild	280	----	4,10
Seneca	SLW (HIF)	L	F	A	Seneca Lake, NY	Captive	125	4	all
Superior	Iron River - Su	Y	F	A	Marquette SFH	Domestic	----	----	1,6,10
Superior	Jordan River (ALL)	N	F	----	Jordon River NFH	Unknown	180	----	----
Superior	Pendills Creek (ALL)	L	F	A	Pendills Creek NFH	Domestic	500	----	----
Superior	Superior-Marquette (ALL)	L	F	A	Marquette SFH	Domestic	80	----	all
Traverse Island	STW (HIF)	L	F	----	Keweenaw Bay Tribal Hatchery	Wild	78	----	----

Table 7-2. Lake trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]

[1/] Availability codes: Y = Yes - Broodstock is available, N = No – Broodstock is not available, and L = Broodstock available on a limited basis.
[2/] Type of facility codes: F = Federal, S = State, U = University, T = Tribes, and P = Private producer.
[3/] Disease classification codes: A - No listed pathogens detected; AS - Aeromonas salmonicida (Furunculosis); RD - Renibacterium salmonarum, (Bacterial Kidney Disease); B-SC - *Ceratomyxa shasta*; IPNV - *Infectious Pancreatic Necrosis* virus; VHSV - *Viral Hemorrhagic Septicemia*; IHNV - *Infectious Hematopoietic Necrosis* Virus; OMV - *Oncorhynchus masou* virus; YR - *Yersinia ruckeri* (Enteric Redmouth); B-SW - M*yxobolus cerebralis* (Whirling disease); B-SP - Proliferative Kidney Disease agent; B-VL - EED virus; ( ) - pathogen not found, but is suspect; C - Broodstock not inspected or no information provided.
[4/] Effective population number (N_e) was estimated based on the formula $N_e = 4(N_m + N_f) / (N_m N_f)$. N_m = Number male parents and N_f = Number female parents.
[5/] Genetic analysis type codes: 1 = Allozyme: 2 = Nuclear DNA; 3 = Mitochondrial DNA; 4 = Microsatellite; 5 = Meristics
[6/] Management recommendation codes: 1 = Raceway culture, 2 = Tank culture, 3 = Fingerling stocking (rivers), 4 = Fingerling stocking (Lakes), 5 = Catchable stocking (Rivers), 6 = Catchable stocking (Lakes), 7 = Stock natural Rivers, 8 = Stock natural lakes, 9 = Restoration stocking (Rivers), and 10 = Restoration stocking (Lakes).

Table 7-3. Lake Trout - Selected reproductive performance and cultural trait information for reported broodstocks.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd -ing	Transp-ortation
Apostle/Gull Island	SAD (IRR)	1001	1130	Mean	78	389.33	22.60	79	2.0	2.3	2.6	2.3
				No.	3	3	3	3	3	3	3	3
Apostle/Gull Island	SAW (HIF)	1001	1031	Mean	----	----	----	----	----	----	----	----
				0	0	0	0	0	0	0	0	0
Champlain	Champlain (VT)	901	1130	Mean	76	277.00	7.20	96	3.0	5.0	5.0	4.0
				No.	1	1	1	1	1	1	1	1
Gillis Lake	Gillis Lake (MN)	1001	1130	Mean	64	291.00	9.50	86	3.5	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Granby Reservoir	Granby Reservoir (CO)	1001	1031	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Green Lake	GLW (HIF)	1001	1031	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Green Lake	Green Lake (IRR)	1001	1130	Mean	75	512.00	24.00	98	3.0	5.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Isle Royale	Isle Royale (IRR)	1001	1130	Mean	75	495.00	19.65	94	2.5	1.5	4.0	3.5
				No.	2	2	2	2	2	2	2	2
Isle Royale	Isle Royale (MN)	1001	1130	Mean	75	427.50	20.00	90	3.0	3.0	3.5	2.5
				No.	2	2	2	2	2	2	2	2
Jenny Lake	Jenny Lake (WY)	----	----	Mean	91	437.00	7.85	89	2.5	2.0	3.0	4.5
				No.	2	2	2	2	2	2	2	2
Lewis Lake	LLW (HIF)	901	1031	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0

Table 7-3. Lake Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Lewis Lake	Mackinaw	----	----	Mean	80	390.00	4.70	69	3.0	3.0	3.0	2.0
				No.	1	1	1	1	1	1	1	1
Lewis Lake	Saratoga - LLD	901	1031	Mean	85	47.00	28.10	57	2.0	2.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Lewis Lake	Story Hatchery	901	1031	Mean	94	202.00	6.60	93	3.0	4.0	5.0	3.0
				No.	1	1	1	1	1	1	1	1
Marquette	SMD (HIF)	1001	1031	Mean	62	394.00	12.30	85	4.0	4.0	5.0	4.0
				No.	1	1	1	1	1	1	1	1
Ontario	Ontario (ALL)	----	----	Mean	58	134.00	23.00	53	2.0	2.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Seneca	Finger Lakes (ME)	----	----	Mean	95	311.00	13.00	98	2.0	2.0	1.0	3.0
				No.	1	1	1	1	1	1	1	1
Seneca	Finger Lakes (NY)	----	----	Mean	87	390.00	8.90	67	5.0	3.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Seneca	Seneca (ALL)	1101	1130	Mean	40	318.00	12.00	90	3.0	3.0	4.0	4.0
				No.	2	2	2	2	2	2	2	2
Seneca	Seneca (DaH)	----	----	Mean	60	326.00	25.80	57	2.0	2.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Seneca	SLW (HIF)	1001	1031	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Superior	Iron River - Su	1001	1031	Mean	97	340.00	19.70	99	3.0	3.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1

Table 7-3. Lake Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Superior	Pendills Creek (ALL)	1010	1115	Mean	40	318.00	12.00	90	3.0	3.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Superior	Superior-Marquette (ALL)	1001	1130	Mean	40	318.00	12.00	90	3.0	3.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1

[1/] Traits were measured with relative ratings (See Table 2). Tabled values are an arithmetic average of subjective ratings provided by broodstock managers and field biologists completing surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 7-4. Lake trout – Disease resistance rating (relative ratings[1/]) of reported broodstocks for nine common salmonid diseases.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Apostle/Gull Island	SAD (IRR)	Mean	4.0	3.0	1.0	----	3.0	----	5.0	3.0	----
		No.	2	2	2	0	2	0	1	2	0
Champlain	Champlain (VT)	Mean	3.0	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	0	0	0
Gillis Lake	Gillis Lake (MN)	Mean	----	3.0	----	----	----	----	----	----	2.0
		No.	0	2	0	0	0	0	0	0	1
Granby Reservoir	Granby Reservoir (CO)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Green Lake	GLW (HIF)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Green Lake	Green Lake (IRR)	Mean	4.0	3.0	1.0	----	3.0	----	----	3.0	----
		No.	3	3	3	0	3	0	0	3	0
Isle Royale	Isle Royale (IRR)	Mean	4.0	2.0	1.0	----	3.0	----	----	3.0	----
		No.	1	2	1	0	1	0	0	1	0
Isle Royale	Isle Royale (MN)	Mean	3.0	3.0	4.0	----	----	----	----	3.0	----
		No.	2	2	1	0	0	0	0	2	0
Jenny Lake	Ford	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Jenny Lake	Jenny Lake (UT)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Jenny Lake	Jenny Lake (WY)	Mean	3.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	1	0

Table 7-4. Lake trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Klondike Reef	SKW (HIF)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Lewis Lake	Lewis Lake (MT)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Lewis Lake	Mackinaw	Mean	5.0	5.0	5.0	----	----	----	----	5.0	4.0
		No.	1	1	1	0	0	0	0	1	1
Lewis Lake	Saratoga - LLD	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Lewis Lake	Story Hatchery	Mean	2.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	1	0
Manitoba	Clearwater Lake	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Marquette	SMD (HIF)	Mean	5.0	3.0	4.0	----	3.0	----	----	----	----
		No.	3	3	3	0	1	0	0	0	0
Ontario	Ontario (ALL)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Seneca	Finger Lakes (ME)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Seneca	Finger Lakes (NY)	Mean	5.0	3.0	----	----	----	----	----	5.0	----
		No.	1	1	0	0	0	0	0	1	0
Seneca	Seneca (ALL)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0

Table 7-4. Lake trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Seneca	Seneca (DaH)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Seneca	SLW (HIF)	Mean	5.0	3.0	4.0	----	----	----	----	----	----
		No.	2	2	2	0	0	0	0	0	0
Superior	Iron River - Su	Mean	4.0	3.0	1.0	----	3.0	----	----	3.0	----
		No.	2	2	2	0	2	0	0	2	0
Superior	Jordan River (ALL)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Superior	Pendills Creek (ALL)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Superior	Superior-Marquette (ALL)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Traverse Island	STW (HIF)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0

[1/] Disease Resistance Relative Rating (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each disease provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, and 5 = very resistant. Only rating values of 1 to 5 were used to calculate the mean values reported above.

[2/] Disease Codes 1 = Furunculosis (*Aeromonas salmonicida*), 2 = Bacterial Kidney Disease (*Renibacterium salmonarum*), 3 = Enteric Redmouth (*Yerinia ruckeri*), 4 = *Ceratomyxa shasta*, 5 = infectious Pancreatic Necrosis, 6 = Viral Hemorrhagic Septicemia, 7 = infectious Hematopoietic Necrosis, 8 = Bacterial Gill Disease, and 9 = Cold Water Disease.

Table 7-5. Lake Trout – Eight selected post- stocking field performance traits (Relative ratings[1/]) for reported broodstocks in riverine and lacustrine habitats.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Gillis Lake	Gillis Lake (MN)	Mean	4.0	2.0	3.0	2.0	3.0	3.0	4.0	3.0	----	3.0	----	----	----	3.0	----	----
		No.	1	1	1	1	1	1	1	1	0	1	0	0	0	1	0	0
Granby Reservoir	Granby Reservoir (CO)	Mean	5.0	----	5.0	----	5.0	----	5.0	----	----	----	1.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Isle Royale	Isle Royale (IRR)	Mean	3.0	----	4.0	----	3.0	----	3.0	----	2.0	----	1.0	----	1.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Isle Royale	Isle Royale (MN)	Mean	----	----	----	3.0	----	3.0	----	3.0	----	----	----	----	----	----	----	3.0
		No.	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1
Jenny Lake	Ford	Mean	3.0	----	4.0	----	3.0	----	3.0	----	----	----	2.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Jenny Lake	Jenny Lake (WY)	Mean	3.0	----	3.5	----	3.0	----	3.5	----	3.0	----	1.0	----	1.0	----	----	----
		No.	1	0	2	0	2	0	2	0	2	0	2	0	1	0	0	0
Lewis Lake	Story Hatchery	Mean	----	4.0	----	4.0	----	2.0	----	2.0	----	2.0	----	1.0	----	----	----	2.0
		No.	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	1
Manitoba	Clearwater Lake	Mean	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	1.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Marquette	SMD (HIF)	Mean	3.0	----	----	----	3.0	----	2.3	----	2.0	----	1.0	----	2.0	----	----	----
		No.	3	0	0	0	3	0	3	0	3	0	2	0	2	0	0	0

Table 7-5. Lake Trout – Continued.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Survival: Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	Tolerance to: pH < 5.0 R	pH < 5.0 L	Tolerance to: Catch & release R	Catch & release L
Seneca	Finger Lakes (ME)	Mean	3.0	----	3.0	----	3.0	----	3.0	----	----	----	1.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Seneca	Finger Lakes (NY)	Mean	4.0	----	4.0	----	3.0	----	3.0	----	----	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0

[1/] Trait Relative Ratings (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each trait provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 8-1. Rainbow trout - Broodstocks reported to the National Fish Strain Registry - Trout (NFSR-T) with person to contact for additional information.

Strain	Broodstock	Contact	Address	Phone / Fax
6F2	6F2 (CA)	Roger Ellis	CA DF&G, 4234 East Shaw Avenue, Fresno, CA 93710	**Ph.** 559-243-4005 **Fax** 559-243-4025
Albino	Albino (UT)	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	**Ph.** 435-425-3547 **Fax** 435-425-3547
Arlee	ARD/Arlee - D	Jack Jones	USFWS, Erwin NFH, 520 Federal Hatchery Road, Erwin, TN 37650	**Ph.** 423-743-4712 **Fax** 423-743-9783
Arlee	Arlee (CA)	Roger Ellis	CA DF&G, 4234 East Shaw Avenue, Fresno, CA 93710	**Ph.** 559-243-4005 **Fax** 559-243-4025
Arlee	Arlee (ENN)	Bernie Shrable	Ennis NFH, 180 Fish Hatchery Road, Ennis, MT 59729	**Ph.** 406-682-4847 **Fax** 406-682-7635
Arlee	Ennis (MN)	Edwin Stork	MN DNR, Lanesboro SFH, Route 2, Box 85, Lanesboro, MN 55949	**Ph.** 507-467-3771 **Fax** 507-467-3416
Arlee	Erwin (AR)	John Stark	AR State Trout, 457 Surrey Lane, Lakeview, AR 72642	**Ph.** 501-424-5924 **Fax** 501-424-5924
Arlee	Erwin (ENN)	Bernie Shrable	Ennis NFH, 180 Fish Hatchery Road, Ennis, MT 59729	**Ph.** 406-682-4847 **Fax** 406-682-7635
Arlee	Jocko (MT)	James Crepeau	Jocko River SFH, 206 Hatchery Road, Arlee, MT 59821	**Ph.** 406-726-3344 **Fax**
Arlee	Lost River	Dick Smith	Lost River Trout Hatchery, 5787 West 5000 North, Mackay, ID 83251	**Ph.** 208-588-2866 **Fax** 208-588-2683
Arlee	Missouri Arlee	James Cilello	MO DOC, Shepard of the Hills SFH, 633 Hatchery Road, Branson, MO 65616	**Ph.** 417-348-1305 **Fax** 417-334-4996
Arlee	Shepherd of the Hills (Spring) (MO) 2	Jerry Dean	Roaring River SFH, Rt. 1, Box 2538, Cassville, MO 65625	**Ph.** 417-847-2439 **Fax** 417-847-2430

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Avington	Avington (PA)	Terry Farner	Big Spring FCS, 844 Big Spring Road, Newville, PA 17241	**Ph.** 717-776-3170 **Fax** 717-776-4980
Beitey	Beitey (WA)	Gerald Beitey	Beitey Enterprises, 3502 Beitey Road, Valley, WA 99181	**Ph.** 509-935-6100 **Fax**
Bellaire	Crystal River	John Riger	Crystal River SFH, 2957 Highway, 133, Carbondale, CO 81623	**Ph.** 970-963-2665 **Fax** 970-963-1004
Beulah	Beulah (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road; P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Big Lake	Big Lake (AK)	Gary Wall	Fort Richardson SFH, P.O. Box 5267, Anchorage, AK 99505	**Ph.** 907-428-1348 **Fax**
Big Lake	Big Lake (AK)	Gary Wall	Crystal Lake SFH, P.O. Box 1088, Petersburg, AK 99833	**Ph.** 907-772-4772 **Fax**
Big Spring	Big Spring (PA)	Paul Drumm	Huntsdale FCS, 195 Lebo Road, Carlisle, PA 17013	**Ph.** 717-486-3419 **Fax** 717-486-4040
Big Spring	Oswayo/Big Spring	John Fritzman	Oswayo FCS, R.D. 2 Box 84, Coudersport, PA 16915	**Ph.** 814-698-2102 **Fax** 814-698-2508
Big Springs	Big Springs (NV)	Dave Sanger	NV Division of Wildlife, 1100 Valley Road, Reno, NV 89512	**Ph.** 775-688-1536 **Fax** 775-688-1595
Cape Cod	Goldendale	John Kerwin	WA Dept. of Fish & Wildlife Administrator, 600 Capitol Way N, Olympia, WA 98501	**Ph.** 360-753-5713 **Fax**
Case Western	Warm Water	Jim Blasko	Laurel Hill Trout Farm, RD 1 Box 135, Osterburg, PA 16667	**Ph.** 814-276-3993 **Fax**
Coleman	Coleman (CA)	James Adams	CA DF&G, Fillmore SFH, P.O. Box 666, Fillmore, CA 93016	**Ph.** 805-524-0962 **Fax** 805-524-4911

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Colorado River	Hayspur (ID)	Bob Esselman	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-788-2847 **Fax**
Desmet	Desmet (MT)	Bruce Chaney	Giant Springs SFH, PO Box 2163, Great Falls, MT 59403	**Ph.** 406-454-5734 **Fax**
Dome Rock	McDonald Stream	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Donaldson	Donaldson (ME)	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
Donaldson	Donaldson (NE)	Dale Fattig	Box 111, Brady, NE 69123	**Ph.** 308-584-3451 **Fax**
Donaldson	Donaldson (NH)	Shaun Best	Jolly Farmer Products, RT 10 PO Box 56, East Lempsher, NH 03605	**Ph.** 603-863-2230 **Fax** 603-863-6720
Donaldson	Lost River	Dick Smith	Lost River Trout Hatchery, 5787 West 5000 North, Mackay, ID 83251	**Ph.** 208-588-2866 **Fax** 208-588-2683
Donaldson	Miller	Gary Miller	Miller Ranch, Inc., 37008 NE. Rotschy Road, Yacolt, WA 98675	**Ph.** 360-686-3066 **Fax**
Eagle Lake	Eagle Lake (CA)	Steve Sanders	CA Dept. F&G, Mt. Shasta SFH, # 3 Old Stage Road, Mt. Shasta, CA 96067	**Ph.** 916-926-2215 **Fax** 916-926-4404
Eagle Lake	Eagle Lake (ENN)	Bernie Shrable	Ennis NFH, 180 Fish Hatchery Road, Ennis, MT 59729	**Ph.** 406-682-4847 **Fax** 406-682-7635
Eagle Lake	Eagle Lake (ERW)	Jack Jones	USFWS, Erwin NFH, 520 Federal Hatchery Road, Erwin, TN 37650	**Ph.** 423-743-4712 **Fax** 423-743-9783
Eagle Lake	Tillett	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Eagle Lake	Wigwam	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Emerald Lake	Emerald Lake (CO)	Tom Mandis	Bellvue Fish Research Hatchery, Box 96, Bellvue, CO 80512	**Ph.** 970-482-1141 **Fax** 970-224-0366
Emerson	Crystal Lake	Marvin Emerson	Crystal Lake Fisheries, Route 2, Box 528, Ava, MO 65608	**Ph.** 417-683-2301 **Fax** 417-683-6565
Ennis	McConaughy	Larry Marchant	Lahontan/Marble Bluff NFH, 710 Hwy. 395, Gardnerville, NV 89410	**Ph.** 702-265-2425 **Fax** 702-265-3004
Ennis	Paint Bank	Charles Stephens	Paint Bank FCS, Route 1, Box 12, Paint Bank, VA 24131-9702	**Ph.** 540-897-5401 **Fax** 540-897-5402
Ennis Albino	RTAB	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	**Ph.** 435-425-3547 **Fax** 435-425-3547
Ennis/Erwin	ERD/Erwin (ERW)	Jack Jones	USFWS, Erwin NFH, 520 Federal Hatchery Road, Erwin, TN 37650	**Ph.** 423-743-4712 **Fax** 423-743-9783
Erwin	Erwin (ENN)	Bernie Shrable	Ennis NFH, 180 Fish Hatchery Road, Ennis, MT 59729	**Ph.** 406-682-4847 **Fax** 406-682-7635
Erwin	Erwin (ERW)	Jack Jones	USFWS, Erwin NFH, 520 Federal Hatchery Road, Erwin, TN 37650	**Ph.** 423-743-4712 **Fax** 423-743-9783
Erwin	Erwin (WI)	Lee Haass	WI DNR, Osceola SFH, 2517 93rd Ave, Osceola, WI 54020-4204	**Ph.** 715-294-2525 **Fax**
Erwin	Erwin (WSS)	Dean Rhine	USFWS, White Sulfur Springs NFH, 400 E. Maine Street, White Sulphur, WV 24986	**Ph.** 304-536-1361 **Fax** 304-536-4634
Fish Lake	Fish Lake (ENN)	Bernie Shrable	Ennis NFH, 180 Fish Hatchery Road, Ennis, MT 59729	**Ph.** 406-682-4847 **Fax** 406-682-7635

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Fish Lake/Desmet	RTFD	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	**Ph.** 435-425-3547 **Fax** 435-425-3547
Hayspur	R9 (ID)	Bob Esselman	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-788-2847 **Fax**
Hildebrandt	Lassen	Dick Smith	Lost River Trout Hatchery, 5787 West 5000 North, Mackay, ID 83251	**Ph.** 208-588-2866 **Fax** 208-588-2683
Hot Creek	Boulder Fall	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Hot Creek	Fall Spawn	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Hot Creek	Hot Creek (CA)	Mike Seefeldt	CA DFG, Hot Creek Hatchery, Star Route 1, Box 208, Mammoth Lakes, CA 93546	**Ph.** 760-934-2664 **Fax** 760-934-5123
Hot Creek	RTH (CA) 2	Roger Ellis	CA DF&G, 4234 East Shaw Avenue, Fresno, CA 93710	**Ph.** 559-243-4005 **Fax** 559-243-4025
House Creek	House Creek (ID)	Terry Patterson	College of Southern Idaho, Box 1238, Twin Falls, ID 82065	**Ph.** 208-733-3972 **Fax**
Hybrid	EED/Erwin - Arlee (ERW)	Jack Jones	USFWS, Erwin NFH, 520 Federal Hatchery Road, Erwin, TN 37650	**Ph.** 423-743-4712 **Fax** 423-743-9783
Hybrid	Huntsdale/Bellefonte	Paul Drumm	Huntsdale FCS, 195 Lebo Road, Carlisle, PA 17013	**Ph.** 717-486-3419 **Fax** 717-486-4040
Hybrid	Whitney	James Adams	CA DF&G, Fillmore SFH, P.O. Box 666, Fillmore, CA 93016	**Ph.** 805-524-0962 **Fax** 805-524-4911
Kamloops	Duncan River	Bernie Shrable	Ennis NFH, 180 Fish Hatchery Road, Ennis, MT 59729	**Ph.** 406-682-4847 **Fax** 406-682-7635

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Kamloops	Kamloops (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road; P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Kamloops	Lake Superior	Fred Tureson	French River SFH, 5357 N. Shore Drive, Duluth, MN 55804	**Ph.** 218-723-4881 **Fax** 218-723-4880
Kamloops	Luce Reservoir Kamloops	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Kamloops	RTKJ	Mike Seefeldt	CA DFG, Hot Creek Hatchery, Star Route 1, Box 208, Mammoth Lakes, CA 93546	**Ph.** 760-934-2664 **Fax** 760-934-5123
Kamloops	Skanes / Gloyd Springs	Bob Esselman	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-788-2847 **Fax**
Kamloops	Spring Creek	Anthony Nowak	Spring Creek Trout Hatchery, Route # 1, Box 1600, Lewistown, MT 59457	**Ph.** 406-538-3538 **Fax** 406-538-2401
Kamloops	Trout Lodge	Jack Picconi	Lake Dale Farms, 4313 Roche Harbor Road, Friday Harbor, WA 98250	**Ph.** 360-378-3971 **Fax**
Kamloops	Trout Lodge (CO)	Ken Cline	Cline Trout Farms, 5555 Valmont, Boulder, CO 80301	**Ph.** 303-442-2817 **Fax** 303-443-2484
Kamloops	Trout Lodge (MD)	David Woronecki	Albert Powell SFH, Rt. 1, Box 180, 20901 Fish Hatchery Road, Hagerstown, MD 21740	**Ph.** 301-791-4736 **Fax**
Kamloops	Trout Lodge (NY)	Robert Feyl	Pine Valley Trout, 2412 Sands Rd, Camillus, NY 13031	**Ph.** 315-672-8691 **Fax**
Kamloops	Trout Lodge (WI)	Charles Graham	Star Prairie Trout Farm, 400 Hill Ave., Star Prairie, WI 54026	**Ph.** 715-248-3633 **Fax**
Kettle River	Phalou Lake	John Kerwin	WA Dept. of Fish & Wildlife Administrator, 600 Capitol Way N, Olympia, WA 98501	**Ph.** 360-753-5713 **Fax**

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Lassen	Lassen	Gifford Ewers	Deep Valley Park, 767 Hunter Cover Rd, Allons, TN 38541	**Ph.** 615-823-6053 **Fax**
Laurel Hill	Laurel Hill (PA)	Jim Blasko	Laurel Hill Trout Farm, RD 1 Box 135, Osterburg, PA 16667	**Ph.** 814-276-3993 **Fax**
London	London (IN)	David Welshelmer	Curtis Creek Trout Rearing Station, 4250 E. 410 N., Howe, IN 46746	**Ph.** 219-562-3855 **Fax** 219-562-2836
London	London (OH)	Dale Arnold	London SFH, 2470 Roberts Mill Road S.W., London, OH 43140	**Ph.** 614-852-1412 **Fax** 614-852-1588
Lost River	Lost River	Dick Smith	Lost River Trout Hatchery, 5787 West 5000 North, Mackay, ID 83251	**Ph.** 208-588-2866 **Fax** 208-588-2683
Manchester	Manchester (IA)	David Marolf	Manchester SFH, 22693 205th Avenue, Manchester, IA 52057	**Ph.** 319-927-3276 **Fax** 319-927-5736
McCloud	Cape Cod	John Kerwin	WA Dept. of Fish & Wildlife Administrator, 600 Capitol Way N, Olympia, WA 98501	**Ph.** 360-753-5713 **Fax**
McCloud	Shasta	Dennis Redfern	CA Dept Fish and Game, American River SFH, 2101 Nimbus Road, Rancho Cordova, CA 95670	**Ph.** 916-358-2865 **Fax** 916-358-1435
McCloud	South Tacoma	Manager	Tokul Creek SFH, 37501 SE Fall City/Snoqualmie Road, Fall City, WA 98024	**Ph.** 206-222-5464 **Fax** 206-222-7924
McConaughy	McConaughy (ENN)	Bernie Shrable	Ennis NFH, 180 Fish Hatchery Road, Ennis, MT 59729	**Ph.** 406-682-4847 **Fax** 406-682-7635
McConaughy	McConaughy (SD)	Rick Cordes	Cleghorn Springs SFH, 4725 Rimrock Hwy, Rapid City, SD 57702-4204	**Ph.** 605-394-4100 **Fax**
Missouri	Bennett Spring	Ronald McCullough	MO DOC, Bennett Spring SFH, 26142 Hwy. 64 A, Lebanon, MO 65536	**Ph.** 417-532-4418 **Fax** 417-532-5507

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Missouri	Shepherd of the Hills (Fall)	James Cilello	MO DOC, Shepard of the Hills SFH, 633 Hatchery Road, Branson, MO 65616	**Ph.** 417-348-1305 **Fax** 417-334-4996
Nashua	Nashua (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road; P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Neosho	Shasta (WSS)	Dean Rhine	USFWS, White Sulfur Springs NFH, 400 E. Maine Street, White Sulphur, WV 24986	**Ph.** 304-536-1361 **Fax** 304-536-4634
Nisqually	Nisqually (WA)	Ron Stoker	5780 Martin Way, Lassy, WA 98516	**Ph.** 360-491-7440 **Fax**
Paradise	Golden	Gary Marquard	Box 546, Buhl, ID 83316	**Ph.** 208-326-3100 **Fax** 208-326-5935
Parkview	Parkview (NM)	George Galven	Parkview SFH, PO Box 7, Los Ojos, NM 87551	**Ph.** 505-588-7307 **Fax** 505-588-7082
Pit River	Pit River (CA)	Shane Overton	CA Dept. F&G, Crystal Lake Hatchery, 40158 Baum Lake Road, Cassel, CA 96016	**Ph.** 530-335-4111 **Fax** 530-335-3031
Pleasure Valley	Pleasure Valley (WV)	Paul Richards	RR 1 Box 211, Montrose, WV 26283	**Ph.** 304-823-2228 **Fax**
Reynoldsdale	Reynoldsdale (PA)	Patrick Ferko	PA F&B Commission, Reynoldsdale FCS, 162 Fish Hatchery Road, New Paris, PA 15554	**Ph.** 814-839-2211 **Fax** 814-839-4911
Sacramento River	Coleman	Mike Seefeldt	CA DFG, Hot Creek Hatchery, Star Route 1, Box 208, Mammoth Lakes, CA 93546	**Ph.** 760-934-2664 **Fax** 760-934-5123
Sand Creek	RTSC	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	**Ph.** 435-425-3547 **Fax** 435-425-3547
Shasta	ELT	Steve Sanders	CA Dept. F&G, Mt. Shasta SFH, # 3 Old Stage Road, Mt. Shasta, CA 96067	**Ph.** 916-926-2215 **Fax** 916-926-4404

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Shasta	RTS	Steve Sanders	CA Dept. F&G, Mt. Shasta SFH, # 3 Old Stage Road, Mt. Shasta, CA 96067	**Ph.** 916-926-2215 **Fax** 916-926-4404
Shasta	Shasta (ENN)	Bernie Shrable	Ennis NFH, 180 Fish Hatchery Road, Ennis, MT 59729	**Ph.** 406-682-4847 **Fax** 406-682-7635
Shasta	Shasta (ERW)	Jack Jones	USFWS, Erwin NFH, 520 Federal Hatchery Road, Erwin, TN 37650	**Ph.** 423-743-4712 **Fax** 423-743-9783
Shasta	Shasta (IA)	David Marolf	Manchester SFH, 22693 205th Avenue, Manchester, IA 52057	**Ph.** 319-927-3276 **Fax** 319-927-5736
Shepherd of the Hills	Shepherd of the Hills	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	**Ph.** 435-425-3547 **Fax** 435-425-3547
Strohm	Greensprings (PA)	Charles Finui	Green Springs Trout Farm, 1129 Shaffer Run Road, Somerset, PA 15501	**Ph.** 814-445-5427 **Fax**
Swanson	Swanson (AK)	Gary Wall	Fort Richardson SFH, P.O. Box 5267, Anchorage, AK 99505	**Ph.** 907-428-1348 **Fax**
Swanson	Swanson (AK)	Gary Wall	Crystal Lake SFH, P.O. Box 1088, Petersburg, AK 99833	**Ph.** 907-772-4772 **Fax**
Tahoe	Marlette Lake (NV)	Dave Sanger	NV Division of Wildlife, 1100 Valley Road, Reno, NV 89512	**Ph.** 775-688-1536 **Fax** 775-688-1595
Tasmanian	Glenwood Spring	Rich Kolicki	Glenwood Springs SFH, P.O. Box 578, Glenwood Springs, CO 81602	**Ph.** 970-945-5293 **Fax** 970-945-4729
Tasmanian	Tasmanian (CO)	John Riger	Crystal River SFH, 2957 Highway 133, Carbondale, CO 81623	**Ph.** 970-963-2665 **Fax** 970-963-1004
Tasmanian	Tasmanian (NV)	Wayne Pachal	NHF&G, Berlin SFH, RR 3, Box 378d, Berlin, NH 03570	**Ph.** 603-449-3412 **Fax**

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Ten Sleep	Ten Sleep (UT)	Richard Jensen	J. Perry Egan Hatchery, P.O. Box 85, Bicknell, UT 84715	**Ph.** 435-425-3547 **Fax** 435-425-3547
Trophy Fish Ranch	Sevier Valley	Bobby Williams	3700 E. Glenwood Road, Richfield, UT 84701	**Ph.** 801-896-4922 **Fax** 801-896-8685
Trout Haven	Trout Haven	Lew Drain	Hwy 298 S, PO Box 1063, Big Timber, MT 59011	**Ph.** 406-932-4357 **Fax**
Trout Lodge	Pisgah	John Murry	Pisgah Forest SFH, PO Box 728, Pisgah Forest, NC 28768	**Ph.** 704-877-3121 **Fax**
Trout Lodge	Red-eyed Golden	Bryan Plemmons	Casta Line Trout Farms, 97 Golden Brook Lane, Goshen, VA 24439	**Ph.** 540-997-5461 **Fax**
Trout lodge	Trout lodge	Camilla Timm	Trout Lodge, Inc., Box 1290, Sumner, WA 98516	**Ph.** 253-863-0446 **Fax**
Watson	Watson	Violet Watson	Watson Trout Farms, 4055 Hwy 19E, Elizabethton, TN 37643	**Ph.** 423-543-3223 **Fax**
White Sulfur Springs	White Sulfur Springs (CT)	David Summer	Quinebaug SFH, 151 Trout Hatchery Road; P.O. Box 441, Center Village, CT 06332	**Ph.** 860-564-7542 **Fax** 860-564-6621
Whitney	RTW	Jim Yarbrough	Mt. Whitney SFH, HCR #67, Box 26, Independence, CA 93526	**Ph.** 619-878-2272 **Fax**
Whitney	Whitney (WA)	Manager	Tokul Creek SFH, 37501 SE Fall City/Snoqualmie Road, Fall City, WA 98024	**Ph.** 206-222-5464 **Fax** 206-222-7924
Wilson Pond	Wilson Pond - LB (ME)	Steve Wilson	Governor Hill SFH, 284 State St., Augusta, ME 04333	**Ph.** 207-287-5261 **Fax** 207-287-6395
Winthrop	Winthrop (GA)	Bill Couch	GA WRD, Buford SFH, 3204 Trout Place, Cumming, GA 30041	**Ph.** 770-781-6888 **Fax** 770-781-6889

Table 8-1. Rainbow trout - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
WV State Hatchery	Golden	Bryan Plemmons	Casta Line Trout Farms, 97 Golden Brook Lane, Goshen, VA 24439	**Ph.** 540-997-5461 **Fax**
Wytheville	Domestic (F)	Jonathan Mellon	Randolph SFH, Box 27 Hatchery Road, Randolph, NY 14772	**Ph.** 716-358-4755 **Fax**
Wytheville	Pequest	Kurt Powers	NJDF&W, Pequest SFH, 605 Pequest Road, Oxford, NJ 07863	**Ph.** 908-637-4173 **Fax** 908-637-6735
Wytheville	Petersburg	Stephen Stiles	WV DNR, Petersburg Trout Hatchery, HC 33, Box 187, Petersburg, WV 26847	**Ph.** 304-257-4014 **Fax** 304-257-4014
Wytheville	Pisgah	John Murry	Pisgah Forest SFH, PO Box 728, Pisgah Forest, NC 28768	**Ph.** 704-877-3121 **Fax**
Wytheville	White Sulfur Springs	Tom Dumont	Salisbury FCS, RD 1, Box 218, Salisbury, VT 05769	**Ph.** 802-352-4371 **Fax**
Wytheville	Wytheville (ERW)	Jack Jones	USFWS, Erwin NFH, 520 Federal Hatchery Road, Erwin, TN 37650	**Ph.** 423-743-4712 **Fax** 423-743-9783

Table 8-2. Rainbow trout - Selected broodstock, hatchery, and field performance characteristics for reported broodstocks.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
6F2	6F2 (CA)	L	S	----	Bellview, Colorado and Crystal River SFH, CO.	Domestic	----	----	4,5,6
Albino	Albino (UT)	N	S	----	----	Domestic	----	----	5,6
Arlee	ARD/Arlee - D	Y	F	A	Ennis NFH, from Jocko River SFH	Domestic	480	1	1,3,5,6
Arlee	Arlee (CA)	L	S	----	Belleview Research Hatchery	Unknown	----	----	5,6
Arlee	Arlee (ENN)	L	F	A	Jocko River SFH, Arlee, MT	Domestic	569	1	1,4,5,6,8
Arlee	Ennis (MN)	L	S	RS	Ennis NFH	Domestic	516	----	1,2,3,4,5,6
Arlee	Erwin (AR)	L	S	----	Spring Creek Hatchery, Lewistown MT	Captive	----	----	3,4,5,6
Arlee	Erwin (ENN)	L	F	A	Jocko River SFH, Arlee, MT	Domestic	569	1	all
Arlee	Jocko (MT)	N	S	----	Jocko River Trout Station	Domestic	----	----	4
Arlee	Lost River	Y	P	RS	College of Southern Idaho	Domestic	----	----	----
Arlee	Missouri Arlee	Y	S	RS	Shepherd of the Hills SFH	Domestic	600	----	5,6
Arlee	Shepherd of the Hills (Spring) (MO) 2	L	S	----	Shepherd of the Hills SFH	Domestic	600	----	5,6
Avington	Avington (PA)	L	S	----	Pleasant Gap SFH	Unknown	----	----	1,2,3,4,5,6
Beitey	Beitey (WA)	Y	P	----	Unknown	Domestic	----	----	----
Bellaire	Crystal River	Y	S	A	Wigwam Strain - Wyoming	Domestic	----	1	5,6

Table 8-2. Rainbow trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Beulah	Beulah (CT)	Y	S	B-BF	Beulah NFH	Unknown	----	----	5,6
Big Lake	Big Lake (AK)	N	S	----	----	Unknown	----	----	4,6
Big Lake	Big Lake (AK)	N	S	----	----	Unknown	----	----	----
Big Spring	Big Spring (PA)	Y	S	----	Big Spring Fish Culture Station	Domestic	----	----	1,5,6
Big Spring	Oswayo/Big Spring	N	P	----	Big Spring FCS	Domestic	----	----	----
Big Springs	Big Springs (NV)	----	S	----	Big Springs Reservoir, Nevada	Wild	----	----	----
Cape Cod	Goldendale	N	S	----	McNott/Meader/Cape Cod	Captive	----	----	3,4,5,6
Case Western	Warm Water	Y	P	----	Case Western Reserve University	Domestic	100	----	----
Coleman	Coleman (CA)	N	S	----	Coleman NFH	Domestic	----	----	3,4,5,6
Colorado River	Hayspur (ID)	Y	S	A	Colorado River	Wild	120	----	5,7
Desmet	Desmet (MT)	N	S	----	----	Unknown	----	----	3,7,8,9,10
Dome Rock	McDonald Stream	L	S	A	----	Unknown	----	----	3,5
Donaldson	Donaldson (ME)	N	S	----	----	Domestic	----	----	5,6,10
Donaldson	Donaldson (NE)	Y	P	----	Sweden	Domestic	600	----	----
Donaldson	Donaldson (NH)	Y	P	----	Jolly Farmer Fish Farm	Domestic	186	----	4,5,6,7,8
Donaldson	Lost River	Y	P	RS	Garden of Eden	Domestic	----	----	----
Donaldson	Miller	L	P	----	University of Washington	Domestic	2000	----	2,4

Table 8-2. Rainbow trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Eagle Lake	Eagle Lake (CA)	N	S	----	----	Domestic	----	----	3,4,5,6
Eagle Lake	Eagle Lake (ENN)	L	F	A	Creston NFH, MT	Wild	416	1	all
Eagle Lake	Eagle Lake (ERW)	Y	F	A	Ennis NFH, MT	Domestic	480	1	all
Eagle Lake	Tillett	N	S	----	----	Domestic	----	----	3,4,5,6
Eagle Lake	Wigwam	L	S	A	Eagle Lake, CA	Captive	----	1	1,4,5,6
Emerald Lake	Emerald Lake (CO)	N	S	----	----	Unknown	----	----	3,4,7,8,9,10
Emerson	Crystal Lake	L	P	----	Ennis NFH, MT	Unknown	----	----	1,5,6
Ennis	McConaughy	N	F	----	Ennis NFH, MT	Domestic	----	----	----
Ennis	Paint Bank	L	S	A	Ennis NFH, MT	Domestic	107	1	5,6
Ennis Albino	RTAB	L	S	----	Ennis NFH, MT	Domestic	----	----	----
Ennis/Erwin	ERD/Erwin (ERW)	Y	F	A	Ennis NFH, MT	Domestic	480	1	5,6
Erwin	Erwin (ENN)	L	F	A	Ennis NFH, MT	Domestic	100	1	all
Erwin	Erwin (ERW)	N	F	----	Ennis NFH, MT	Unknown	----	----	----
Erwin	Erwin (WI)	Y	S	A	Ennis NFH, MT	Domestic	1200	1	3
Erwin	Erwin (WSS)	L	F	A	Paint Bank SFH	Domestic	480	----	----
Fish Lake	Fish Lake (ENN)	L	F	----	Erwin NFH, TN	Domestic	2720	1	1,2,3,4,5,6
Fish Lake/	RTFD	L	S	----	Fish Lake.(UT) and	Wild	3000	----	5,6

Table 8-2. Rainbow trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Desmet					Desmet Lake (WY)				
Hayspur	R9 (ID)	Y	S	----	Hayspur Fish Hatchery	Domestic	----	,3	3,4,5
Hildebrandt	Lassen	Y	P	RS	Mt. Lassen Trout Farm	Domestic	----	----	----
Hot Creek	Boulder Fall	Y	S	A	Bothell, WA (Commercial Hatchery)	Domestic	----	1	1,4,5,6
Hot Creek	Fall Spawn	U	S	A	Hot Creek strain, Bothell, Wash.	Unknown	----	----	3,4,5,6
Hot Creek	Hot Creek (CA)	L	S	----	Springville, UT 1933	Domestic	----	----	3,4,5,6
Hot Creek	RTH (CA) 2	L	S	----	Egg shipment to Hot Creek SFH from Ten Sleep SFH (WY) 1955	Unknown	----	----	5,6
House Creek	House Creek (ID)	Y	P	----	Meador Strain & Outcross	Domestic	1100	----	1,3,4,5,6
Hybrid	EED/Erwin - Arlee (ERW)	Y	F	A	Ennis NFH, MT	Domestic	480	1	1,3,5
Hybrid	Huntsdale / Y Bellefonte	S		----	----	Domestic	----	----	5,6
Hybrid	Whitney	N	S	----	----	Domestic	----	----	3,4,5,6
Kamloops	Duncan River	L	F	A	Kootenay Hatchery BC, Canada	Wild	20	1	6
Kamloops	Kamloops (CT)	Y	S	B-BF	Trout Lodge	Unknown	----	----	5
Kamloops	Lake Superior	Y	S	RS	Unknown	Unknown	----	1	3,4
Kamloops	Luce Reservoir L Kamloops	S	A		Kootenay Hatchery, B.C.	Captive	14	1,5	4,5,6

Table 8-2. Rainbow trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Kamloops	RTKJ	N	S	----	----	Unknown	----	----	3,4
Kamloops	Skanes/ Gloyd Springs	Y	S	A	Skanes/Gloyd Springs	Domestic	----	----	4,5,6
Kamloops	Spring Creek	N	P	----	Trout Lodge	Domestic	571	----	----
Kamloops	Trout Lodge	N	P	----	Trout Lodge	Unknown	----	----	----
Kamloops	Trout Lodge (CO)	L	P	----	Trout Lodge	Domestic	----	----	5,6
Kamloops	Trout Lodge (MD)	N	S	----	Trout lodge Inc., Sumner, WA	Unknown	----	----	1,2,5,6
Kamloops	Trout Lodge (NY)	N	P	----	Trout Lodge	Unknown	----	----	1,2,5,6
Kamloops	Trout Lodge (WI)	N	P	----	----	Unknown	----	----	----
Kettle River	Phalou Lake	N	S	----	Kettle River, WA	Wild	150	----	3,4,7,8
Lassen	Lassen	N	P	----	Mt. Lassen Trout Farm	Unknown	----	----	----
Laurel Hill	Laurel Hill (PA)	Y	P	----	Commercial Hatcheries	Domestic	----	----	----
London	London (IN)	L	S	A	London SFH	Domestic	----	----	1,3,4,5,6
London	London (OH)	L	S	----	Shephard of-the-hills & Manchester Bowden	Domestic	150	----	3,4,5,6
Lost River	Lost River	Y	P	RS	Ennis NFH, MT	Domestic	----	----	3,4,5,6,7,8
Manchester	Manchester (IA)	N	S	----	----	Domestic	----	----	----

Table 8-2. Rainbow trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
McCloud	Cape Cod	Y	S	----	Cape Cod Trout Company, Wareham, Mass.	Domestic	84	1	----
McCloud	Shasta	N	S	----	McCloud River	Unknown	----	----	1,3,5
McCloud	South Tacoma	N	S	----	----	Unknown	----	----	5,6
McConaughy	McConaughy (ENN)	L	F	A	Lake McConaughy	Wild	10	1	all
McConaughy	McConaughy (SD)	L	S	A	Lake McConaughy	Domestic		1	1,2,4
Missouri	Bennett Spring	N	S	RS, AS	----	Unknown		----	4,5,6
Missouri	Shepherd of the Hills (Fall)	Y	S	RS	Wytheville NFH, Neosho NFH, Sequiota-Shephard-McCloud Strain	Domestic		1	5,6
Nashua	Nashua (CT)	Y	S	B-BF	Nashua NFH	Unknown		----	5,6
Neosho	Shasta (WSS)	L	F	A	Ennis NFH	Domestic	160	----	3,4
Nisqually	Nisqually (WA)	Y	P	----	----	Domestic	1000	----	3,4
Paradise	Golden	L	P	----	Paradise Hatchery, Utah	Domestic	100	----	----
Parkview	Parkview (NM)	N	S	----	Parkview SFH	Domestic	9600	----	1,3,4,5,6
Pit River	Pit River (CA)	Y	S	----	Pit River	Domestic	----	----	3,4
Pleasure Valley	Pleasure Valley (WV)	N	P	----	Mill Run - Pleasure Valley	Wild	5	----	1,6
Reynoldsdale	Reynoldsdale (PA)	N	S	----	----	Domestic	----	----	3,4,5,6

Table 8-2. Rainbow trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Sacramento River	Coleman	L	S	----	Coleman H. Sacramento River Drainage	Domestic	----	----	5,6
Sand Creek	RTSC	L	S	----	Fish Genetics Lab. Beulah, WY	Domestic	22	----	1,5,6
Shasta	ELT	Y	S	----	Eagle Lake, CA	Wild	12	----	4,8
Shasta	RTS	Y	S	----	Meader's Trout Farm, Pocatello, ID crossed with RTH-Hot Creek strain (CA DF&G)	Domestic	----	----	5,6
Shasta	Shasta (ENN)	L	F	A	Mt. Shasta SFH	Domestic	400	1	All
Shasta	Shasta (ERW)	Y	F	A	Ennis NFH	Domestic	480	1	----
Shasta	Shasta (IA)	L	S	----	Ennis NFH	Domestic	200	3	1,3,5,6,7,9
Shepherd of the Hills	Shepherd of the Hills	L	S		Wigwam SFH (WY)	Domestic	----	4,6	
Strohm	Greensprings (PA)	Y	P	----	Green Spring (Thomas 1946)	Unknown	150	----	3,4,5,6
Swanson	Swanson (AK)	L	S	----	Swanson River, Kenai Peninsula	Wild	300	----	----
Swanson	Swanson (AK)	L	S	----	Swanson River, Kenai Peninsula	Wild	300	----	4,6
Tahoe	Marlette Lake (NV)	L	S	----	Lake Tahoe	Wild	53	----	4,8
Tasmanian	Glenwood Spring	N	S	----	Crystal River Hatchery	Domestic	200	----	----
Tasmanian	Tasmanian (CO)	Y	S	A	Sevrup Fisheries – Bridport, Tasmania	Domestic	----	1	4,5,6

Table 8-2. Rainbow trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Tasmanian	Tasmanian (NV)	N	S	----	Crystal River Hatchery - Colorado	Domestic	----	----	3,4,5,6
Ten Sleep	Ten Sleep (UT)	L	S	A	Wigwam SFH (Ten Sleep, WY)	Domestic	----	----	6
Trophy Fish Ranch	Sevier Valley	Y	P	A	unknown	Unknown	----	----	3,4
Trout Haven	Trout Haven	N	P	----	Trout Haven	Unknown	----	----	----
Trout Lodge	Pisgah	N	S	----	Troutlodge	Domestic	----	----	5,6
Trout Lodge	Red-eyed Golden	Y	P	----	Trout Lodge (WA)	Domestic	15	----	1,2
Trout lodge	Trout lodge	N	P	----	Balck Canyon	Unknown	----	----	3,4,5,6
Watson	Watson	U	P	----	----	Unknown	----	----	----
White Sulfur Springs	White Sulfur Springs (CT)	Y	S	B-BF	White Sulfur Springs NFH	Unknown	----	----	6
Whitney	RTW	N	S	----	Mt. Whitney SFH	Domestic	----	----	3,4,5,6
Whitney	Whitney (WA)	N	S	----	Mt. Whitney Hatchery, CA	Unknown	124	----	3,4,5,6,7,8,9,10
Wilson Pond	Wilson Pond - LB (ME)		L	S	A	Lower Wilson Pond		Wild	
Winthrop	Winthrop (GA)	L	S	----	Walhalla NFH	Domestic	500	----	5,6
WV State Hatchery	Golden	Y	P		Wolverton Trout Farm, Marlinton, WV	Domestic	----	----	
Wytheville	Domestic (F)	N	S	----	Randolph SFH	Domestic	----	----	4,6

Table 8-2. Rainbow trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Wytheville	Pequest	L	S	A	White Sulfur Springs NFH	Domestic	2500	----	1,5,6
Wytheville	Petersburg	N	S	----	Wytheville, VA	Domestic		----	5,6
Wytheville	Pisgah	L	S	----	Wytheville NFH	Unknown	500	----	5,6
Wytheville	White Sulfur Springs	Y	S	AS	White Sulfur Springs NFH	Domestic	2200	----	----
Wytheville	Wytheville (ERW)	N	F	----	Erwin NFH	Unknown	----	----	4,5,6,10

[1/] Availability codes: Y = Yes - Broodstock is available, N = No – Broodstock is not available, and L = Broodstock available on a limited basis.
[2/] Type of facility codes: F = Federal, S = State, U = University, T = Tribes, and P = Private producer.
[3/] Disease classification codes: A - No listed pathogens detected; AS - Aeromonas salmonicida (Furunculosis); RD - Renibacterium salmonarum, (Bacterial Kidney Disease); B-SC - *Ceratomyxa shasta*; IPNV - *Infectious Pancreatic Necrosis* virus; VHSV - *Viral Hemorrhagic Septicemia*; IHNV - *Infectious Hematopoietic Necrosis* Virus; OMV - *Oncorhynchus masou* virus; YR - *Yersinia ruckeri* (Enteric Redmouth); B-SW - M*yxobolus cerebralis* (Whirling disease); B-SP - Proliferative Kidney Disease agent; B-VL - EED virus; ( ) - pathogen not found, but is suspect; C - Broodstock not inspected or no information provided.
[4/] Effective population number (N_e) was estimated based on the formula $N_e = 4(N_m + N_f) / (N_m N_f)$. N_m = Number male parents and N_f = Number female parents.
[5/] Genetic analysis type codes: 1 = Allozyme: 2 = Nuclear DNA; 3 = Mitochondrial DNA; 4 = Microsatellite; 5 = Meristics
[6/] Management recommendation codes: 1 = Raceway culture, 2 = Tank culture, 3 = Fingerling stocking (rivers), 4 = Fingerling stocking (Lakes), 5 = Catchable stocking (Rivers), 6 = Catchable stocking (Lakes), 7 = Stock natural Rivers, 8 = Stock natural lakes, 9 = Restoration stocking (Rivers), and 10 = Restoration stocking (Lakes).

Table 8-3. Rainbow Trout - Selected reproductive performance and cultural trait information for reported broodstocks.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
6F2	6F2 (CA)	915	1015	Mean	----	175.00	----	----	3.0	3.0	4.0	4.0
				No.	0	1	0	0	1	1	1	1
6F2	6F2 (CO)	----	----	Mean	90	91.00	1.00	90	2.0	2.0	1.0	3.0
				No.	1	1	1	1	1	1	1	1
Albino	Albino (UT)	----	----	Mean	80	89.00	3.80	90	3.0	3.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Arlee	ARD/Arlee - D	1001	1231	Mean	94	52.00	0.90	82	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Arlee	Arlee (CA)	815	1015	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Arlee	Arlee (ENN)	1001	----	Mean	91	176.22	5.76	89	3.1	3.3	3.2	2.7
				No.	9	9	9	9	9	9	9	9
Arlee	Ennis (MN)	1001	1231	Mean	73	194.00	5.00	----	2.0	3.0	2.0	4.0
				No.	1	1	1	0	1	1	1	1
Arlee	Erwin (AR)	901	1231	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Arlee	Erwin (ENN)	1001	1231	Mean	90	71.00	3.00	95	5.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Arlee	Lost River	801	1031	Mean	----	336.00	8.50	----	5.0	5.0	5.0	5.0
				No.	0	1	1	0	1	1	1	1

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Arlee	Missouri Arlee	101	331	Mean	80	243.33	6.50	90	3.0	3.0	3.0	3.0
				No.	3	3	3	3	3	3	3	3
Arlee	Shepherd of the Hills (Spring) (MO) 2	101	228	Mean	----	117.00	2.60	51	3.0	4.0	4.0	4.0
				No.	0	1	1	1	1	1	1	1
Avington	Avington (PA)	1101	115	Mean	70	340.00	3.80	80	4.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Bellaire	Crystal River	901	1231	Mean	91	217.00	3.05	85	4.5	5.0	4.5	4.5
				No.	2	2	2	2	2	2	2	2
Beulah	Beulah (CT)	----	----	Mean	92	182.00	7.30	95	4.0	4.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Big Lake	Big Lake (AK)	----	----	Mean	90	91.00	5.10	95	3.0	2.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Big Spring	Big Spring (PA)	801	1130	Mean	75	-----	3.30	75	3.0	4.0	3.0	4.0
				No.	1	0	1	1	1	1	1	1
Big Spring	Oswayo/Big Spring	801	930	Mean	63	----	----	----	3.0	3.0	3.0	3.0
				No.	1	0	0	0	1	1	1	1
Cape Cod	Goldendale	1001	1231	Mean	92	160.00	5.33	96	3.0	3.0	2.6	3.0
				No.	3	3	3	3	3	3	3	3
Case Western	Warm Water	101	228	Mean	----	----	----	----	4.0	4.0	5.0	5.0
				No.	0	0	0	0	1	1	1	1

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility (%)	Weight		Survival 90 d. (%)	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)			90 d (No/lb)	365 d (No/lb)		Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Coleman	Coleman (CA)	1101	131	Mean	93	58.50	1.60	90	3.0	3.5	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Colorado River	Hayspur (ID)	201	331	Mean	78	274.00	23.20	90	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Dome Rock	McDonald Stream	----	----	Mean	81	254.00	47.00	94	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Donaldson	Donaldson (ME)	----	----	Mean	85	232.25	3.43	97	2.2	2.2	2.2	2.0
				No.	4	4	4	4	4	4	4	4
Donaldson	Donaldson (NE)	1101	1231	Mean	95	100.00	2.00	98	4.0	4.0	4.0	5.0
				No.	1	1	1	1	1	1	1	1
Donaldson	Donaldson (NH)	1201	228	Mean	----	----	----	----	5.0	4.0	5.0	5.0
				No.	0	0	0	0	1	1	1	1
Donaldson	Lost River	1101	131	Mean	----	----	1.80	----	----	3.0	1.0	----
				No.	0	0	1	0	0	1	1	0
Donaldson	Miller	1101	320	Mean	50	250.00	2.50	70	5.0	4.0	3.0	3.0
				No.	2	2	2	2	3	3	3	3
Eagle Lake	Eagle Lake (CA)	----	----	Mean	86	265.00	4.27	85	2.6	2.6	3.0	3.0
				No.	3	3	3	3	3	3	3	3
Eagle Lake	Eagle Lake (ENN)	1201	----	Mean	86	150.00	4.13	88	3.1	3.1	3.5	3.1
				No.	6	6	6	6	6	6	6	6

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Eagle Lake	Eagle Lake (ERW)	1101	131	Mean	83	130.00	6.60	72	4.0	4.0	3.5	3.5
				No.	4	4	4	4	4	4	4	4
Eagle Lake	Tillett	----	----	Mean	87	170.00	3.20	74	4.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Eagle Lake	Wigwam	1201	228	Mean	89	183.00	7.00	92	3.0	3.0	2.0	3.0
				No.	1	1	1	1	1	1	1	1
Emerson	Crystal Lake	901	1231	Mean	----	50.00	1.00	----	5.0	5.0	4.0	5.0
				No.	0	1	1	0	1	1	1	1
Ennis	McConaughy	1201	228	Mean	----	----	----	----	----	----	----	----
				No.	0	0	0	0	0	0	0	0
Ennis	Paint Bank	601	831	Mean	78	176.00	4.40	90	3.0	3.0	3.5	3.5
				No.	2	2	2	2	2	2	2	2
Ennis Albino	RTAB	1201	228	Mean	87	102.00	3.45	91	2.5	2.5	3.0	2.5
				No.	2	2	2	2	2	2	2	2
Ennis/Erwin	ERD/Erwin (ERW)	601	831	Mean	85	88.75	3.20	85	3.0	3.7	4.0	3.2
				No.	4	4	4	4	4	4	4	4
Erwin	Erwin (ENN)	501	----	Mean	85	108.50	3.55	88	3.1	3.5	3.5	3.1
				No.	6	6	6	6	6	6	6	6
Erwin	Erwin (ERW)	----	----	Mean	76	246.00	7.30	79	3.0	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd -ing	Transp-ortation
Erwin	Erwin (WI)	801	1031	Mean	91	340.50	8.35	92	2.5	2.5	3.0	2.5
				No.	2	2	2	2	2	2	2	2
Erwin	Erwin (WSS)	601	831	Mean	90	250.00	1.10	95	4.0	5.0	5.0	----
				No.	1	1	1	1	1	1	1	0
Fish Lake	Fish Lake (ENN)	1215	410	Mean	93	67.00	1.10	88	5.0	5.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Fish Lake	Fish Lake (ERW)	----	----	Mean	90	58.00	1.80	82	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Fish Lake/Desmet	Egan (ERW)	----	----	Mean	91	152.50	5.05	92	3.0	3.0	3.5	3.5
				No.	2	2	2	2	2	2	2	2
Fish Lake/Desmet	Fish Lake/Desmet (ERW)	----	----	Mean	87	252.00	12.40	66	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Fish Lake/Desmet	RTFD	101	531	Mean	90	86.60	2.50	90	2.8	2.8	2.8	2.8
				No.	5	5	5	5	5	5	5	5
Hayspur	R9 (ID)	1001	131	Mean	85	163.75	4.63	90	3.7	4.0	3.7	3.7
				No.	4	4	4	4	4	4	4	4
Hildebrandt	Lassen	1101	228	Mean	----	80.00	6.40	----	3.0	3.0	3.0	3.0
				No.	0	1	1	0	1	1	1	1
Hot Creek	Boulder Fall	1001	1231	Mean	96	150.00	3.90	98	5.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Hot Creek	Fall Spawn	----	----	Mean	90	250.00	13.80	98	2.0	2.0	2.0	2.0
				No.	1	1	1	1	1	1	1	1
Hot Creek	Hot Creek (CA)	701	----	Mean	88	307.00	1.45	90	3.0	3.5	3.5	4.0
				No.	2	2	2	1	2	2	2	2
Hot Creek	RTH (CA) 2	1001	1120	Mean	----	----	1.90	----	3.0	3.0	3.0	3.0
				No.	0	0	1	0	1	1	1	1
House Creek	House Creek (ID)	----	----	Mean	95	101.00	0.80	90	5.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Hybrid	EED/Erwin - Arlee (ERW)	701	1031	Mean	80	146.50	12.20	67	3.0	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Hybrid	Huntsdale/Bellefonte	801	930	Mean	76	340.00	13.00	85	4.0	4.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Hybrid	Whitney	----	----	Mean	95	59.50	1.45	90	4.0	3.5	4.0	4.5
				No.	2	2	2	2	2	2	2	2
Kamloops	Duncan River	101	331	Mean	89	149.66	5.33	92	3.0	3.3	3.3	3.3
				No.	3	3	3	3	3	3	3	3
Kamloops	Kamloops (CT)	----	----	Mean	90	189.00	7.10	93	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Kamloops	Lake Superior	401	531	Mean	85	135.00	6.70	97	3.0	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility (%)	Weight		Survival 90 d. (%)	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)			90 d (No/lb)	365 d (No/lb)		Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Kamloops	Luce Reservoir Kamloops	301	430	Mean	80	248.00	----	88	1.0	2.0	1.0	1.0
				No.		1	0	1	1	1	1	1
Kamloops	RTKJ	----	----	Mean	89	295.00	3.00	90	3.0	2.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Kamloops	Skanes/Gloyd Springs	901	131	Mean	87	100.50	3.20	90	3.0	2.5	3.5	3.0
				No.	2	2	2	2	2	2	2	2
Kamloops	Spring Creek	901	1031	Mean	85	----	----	80	4.0	5.0	3.0	4.0
				No.	1	0	0	1	1	1	1	1
Kamloops	Trout Lodge (CO)	1101	228	Mean	----	----	----	----	5.0	5.0	4.0	5.0
				No.	0	0	0	0	1	1	1	1
Kamloops	Trout Lodge (MD)	----	----	Mean	95	100.00	2.50	90	2.5	2.5	2.5	2.5
				No.	2	2	2	2	2	2	2	2
Kettle River	Phalou Lake	401	630	Mean	67	----	----	97	3.0	----	3.0	3.0
				No.	1	0	0	1	1	0	1	1
Lassen	Lassen	----	----	Mean	97	36.00	1.00	84	4.0	4.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Laurel Hill	Laurel Hill (PA)	801	1031	Mean	----	----	----	----	4.0	4.0	5.0	5.0
				No.	0	0	0	0	1	1	1	1
London	London (IN)	1101	1231	Mean	74	137.50	2.60	86	2.5	2.5	3.5	3.5
				No.	2	2	2	2	2	2	2	2

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mc-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd -ing	Transp-ortation
London	London (OH)	1101	1231	Mean	80	350.00	6.00	90	5.0	4.0	3.0	5.0
				No.	1	1	1	1	1	1	1	1
Lost River	Lost River	1001	228	Mean	----	472.00	3.70	----	5.0	5.0	5.0	----
				No.	0	1	1	0	1	1	1	0
McCloud	Cape Cod	1101	131	Mean	97	160.00	6.60	97	3.0	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2
McConaughy	McConaughy (ENN)	1201	----	Mean	94	86.00	2.63	94	3.6	3.6	3.6	4.0
				No.	3	3	3	3	3	3	3	3
McConaughy	McConaughy (SD)	401	531	Mean	93	135.00	6.10	95	3.0	3.0	2.0	3.0
				No.	1	1	1	1	1	1	1	1
Missouri	Bennett Spring	1001	1231	Mean	65	65.00	2.60	75	4.0	5.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Missouri	Shepherd of the Hills (Fall)	1001	1231	Mean	95	227.66	5.00	90	3.0	2.6	3.0	2.6
				No.	3	3	3	3	3	3	3	3
Nashua	Nashua (CT)	801	930	Mean	90	189.00	7.80	95	2.0	2.0	2.0	2.0
				No.	1	1	1	1	1	1	1	1
Neosho	Shasta (WSS)	1201	228	Mean	90	400.00	1.10	95	4.0	4.0	4.0	----
				No.	1	1	1	1	1	1	1	0
Nisqually	Nisqually (WA)	1201	131	Mean	87	318.00	3.00	92	3.0	5.0	4.0	5.0
				No.	1	1	1	1	1	1	1	1

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility (%)	Weight		Survival 90 d. (%)	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)			90 d (No/lb)	365 d (No/lb)		Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Paradise	Golden	1001	331	Mean	50	55.00	0.80	90	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Parkview	Parkview (NM)	1025	415	Mean	---	---	---	---	2.0	3.0	4.0	3.0
				No.	0	0	0	0	1	1	1	1
Pit River	Pit River (CA)	1101	131	Mean	70	---	4.10	95	4.0	4.0	4.0	4.0
				No.	1	0	1	1	1	1	1	1
Pleasure Valley	Pleasure Valley (WV)	801	430	Mean	50	---	---	50	---	---	---	---
				No.	1	0	0	1	0	0	0	0
Reynoldsdale	Reynoldsdale (PA)	801	1031	Mean	74	156.00	6.00	96	4.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Sacramento River	Coleman	1101	131	Mean	94	600.00	1.00	---	4.0	5.0	5.0	5.0
				No.	1	1	1	0	1	1	1	1
Sand Creek	RTSC	901	1231	Mean	87	141.00	---	97	2.3	2.0	2.3	2.3
				No.	3	3	3	3	3	3	3	3
Shasta	ELT	1201	331	Mean	95	200.00	2.00	---	2.0	2.0	3.0	3.0
				No.	1	1	1	0	1	1	1	1
Shasta	RTS	1201	331	Mean	92	57.00	1.80	87	3.0	2.5	2.5	2.5
				No.	2	1	1	2	2	2	2	2
Shasta	Shasta (ENN)	1201		Mean	93	100.00	7.05	92	4.0	3.7	3.5	3.5
				No.	4	4	4	4	4	4	4	4

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Shasta	Shasta (ERW)	1201	131	Mean	80	35.00	1.20	85	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Shasta	Shasta (IA)	1201	228	Mean	90	160.00	2.00	90	4.0	4.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Shepherd of the Hills	RTSH	----	----	Mean	97	73.00	2.30	95	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Shepherd of the Hills	Shepherd of the Hills	1101	228	Mean	98	133.00	2.20	97	3.0	3.0	3.0	4.0
				No.	1	1	1	1	1	1	1	1
Strohm	Greensprings (PA)	801	1031	Mean	----	----	----	----	4.0	4.0	4.0	4.0
				No.	0	0	0	0	1	1	1	1
Swanson	Swanson (AK)	401	430	Mean	92	57.00	4.55	96	3.5	3.0	3.5	3.5
				No.	2	2	2	2	2	2	2	2
Tahoe	Marlette Lake (NV)	601	731	Mean	85	114.00	6.10	----	2.0	3.0	2.0	2.0
				No.	1	1	1	0	1	1	1	1
Tasmanian	Glenwood Spring	----	----	Mean	82	39.00	3.50	88	4.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Tasmanian	Tasmanian (CO)	1101	228	Mean	91	161.50	5.20	90	4.5	4.5	3.0	3.5
				No.	2	2	1	1	2	2	2	2
Tasmanian	Tasmanian (NV)	1201	228	Mean	87	196.00	9.53	94	3.0	2.5	2.2	2.7
				No.	4	4	4	4	4	4	4	4

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility (%)	Weight		Survival 90 d. (%)	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)			90 d (No/lb)	365 d (No/lb)		Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Ten Sleep	Ten Sleep (UT)	1001	131	Mean	95	145.50	3.95	95	2.0	2.0	2.0	2.0
				No.	2	2	2	2	2	2	2	2
Trophy Fish Ranch	Sevier Valley	801	331	Mean	98	69.00	3.00	98	4.0	4.0	4.0	5.0
				No.	1	1	1	1	1	1	1	1
Trout Lodge	Pisgah	1001	1130	Mean	76	179.00	2.65	73	3.5	3.0	4.0	3.0
				No.	2	2	2	2	2	2	2	2
Trout Lodge	Red-eyed Golden	301	430	Mean	92	90.00	1.00	95	5.0	5.0	5.0	5.0
				No.	2	2	2	2	2	2	2	2
Trout lodge	Trout lodge	----	----	Mean	88	210.50	2.15	86	5.0	4.0	4.0	3.5
				No.	2	2	2	2	2	2	2	2
White Sulfur Springs	White Sulfur Springs (CT)	----	----	Mean	90	206.00	7.40	95	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Whitney	RTW	----	----	Mean	94	81.00	2.15	88	2.5	2.0	1.5	1.5
				No.	2	2	2	2	2	2	2	2
Whitney	Whitney (WA)	101	331	Mean	95	346.66	6.75	90	3.3	3.6	4.0	3.6
				No.	3	3	2	3	3	3	3	3
Wilson Pond	Wilson Pond - LB (ME)	901	1031	Mean	52	51.00	24.00	52	4.0	4.0	3.0	4.0
				No.	1	1	1	1	1	1	1	1
Winthrop	Winthrop (GA)	1201	131	Mean	70	300.00	11.50	80	3.0	4.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1

Table 8-3. Rainbow Trout - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
WV State Hatchery	Golden	1101	1231	Mean	95	90.00	1.00	95	5.0	5.0	5.0	4.0
				No.	1	1	1	1	1	1	1	1
Wytheville	Domestic (F)	----	----	Mean	85	200.00	4.30	80	3.0	2.0	3.0	4.0
				No.	1	1	1	1	1	1	1	1
Wytheville	Pequest	901	1031	Mean	74	175.00	4.50	75	3.0	3.0	3.0	3.0
				No.	1	1	1	1	1	1	1	1
Wytheville	Petersburg	801	1031	Mean	90	110.00	3.60	98	3.0	3.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Wytheville	Pisgah	901	1015	Mean	56	406.00	3.60	79	3.0	3.0	3.0	3.0
				No.		1	1	1	1	1	1	1
Wytheville	White Sulfur Springs	901	1031	Mean	77	240.00	2.70	84	3.5	4.5	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Wytheville	Wytheville (ERW)	----	----	Mean	87	190.25	7.98	86	2.7	3.0	3.0	2.7
				No.	4	4	4	4	4	4	4	4

[1/] Traits were measured with relative ratings (See Table 2). Tabled values are an arithmetic average of subjective ratings provided by broodstock managers and field biologists completing surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 8-4. Rainbow trout – Disease resistance rating (relative ratings[1/]) of reported broodstocks for nine common salmonid diseases.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
6F2	6F2 (CA)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
6F2	6F2 (CO)	Mean	1.0	2.0	----	----	----	----	----	4.0	----
		No.	1	1	0	0	0	0	0	1	0
Albino	Albino (UT)	Mean	2.0	2.0	2.0	----	2.0	2.0	2.0	2.0	----
		No.	1	1	1	0	1	1	1	1	0
Arlee	ARD/Arlee - D	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Arlee	Arlee (CA)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Arlee	Arlee (ENN)	Mean	3.0	3.5	3.3	----	3.0	----	----	3.0	3.0
		No.	3	2	3	0	2	0	0	2	1
Arlee	Ennis (MN)	Mean	----	3.0	3.0	----	----	----	----	4.0	4.0
		No.	0	1	1	0	0	0	0	1	1
Arlee	Erwin (ENN)	Mean	----	----	----	----	----	----	----	4.0	4.0
		No.	0	0	0	0	0	0	0	1	1
Arlee	Jocko (MT)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Arlee	Lost River	Mean	----	3.0	----	----	----	----	----	----	----
		No.	0	1	0	0	0	0	0	0	0
Arlee	Missouri Arlee	Mean	2.0	1.0	----	----	----	----	----	4.0	3.0
		No.	3	3	0	0	0	0	0	3	1

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Arlee	Shepherd of the Hills (Spring) (MO) 2	Mean	5.0	5.0	---	---	---	---	---	3.0	4.0
		No.	1	1	0	0	0	0	0	1	1
Avington	Avington (PA)	Mean	---	---	---	---	---	---	---	3.0	3.0
		No.	0	0	0	0	0	0	0	1	1
Beitey	Beitey (WA)	Mean	---	---	---	---	---	---	---	---	---
		No.	0	0	0	0	0	0	0	0	0
Bellaire	Crystal River	Mean	4.0	4.0	5.0	---	4.0	---	2.0	4.5	3.5
		No.	1	1	0	1	0	1	2	2	2
Beulah	Beulah (CT)	Mean	---	---	3.0	---	---	---	---	3.0	---
		No.	0	0	1	0	0	0	0	1	0
Big Lake	Big Lake (AK)	Mean	3.0	3.0	---	---	---	---	---	3.0	---
		No.	1	1	0	0	0	0	0	1	0
Big Spring	Big Spring (PA)	Mean	2.6	3.0	---	---	3.0	---	---	3.0	---
		No.	3	1	0	0	3	0	0	3	0
Big Spring	Oswayo/Big Spring	Mean	4.0	4.0	---	---	3.0	---	---	3.0	---
		No.	1	1	0	0	1	0	0	1	0
Cape Cod	Goldendale	Mean	1.0	2.0	3.0	---	---	---	4.0	3.5	---
		No.	1	1	1	0	0	0	1	2	0
Case Western	Warm Water	Mean	4.0	3.0	---	---	---	---	---	2.0	3.0
		No.	1	1	0	0	0	0	0	1	1
Coleman	Coleman (CA)	Mean	---	---	4.5	5.0	4.0	---	---	3.3	---
		No.	0	0	2	1	1	0	0	6	0

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Colorado River	Hayspur (ID)	Mean	----	3.0	3.0	3.0	----	----	----	2.5	2.5
		No.	0	1	1	1	0	0	0	2	2
Dome Rock	McDonald Stream	Mean	----	----	----	----	----	----	----	3.0	2.0
		No.	0	0	0	0	0	0	0	1	1
Donaldson	Donaldson (ME)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Donaldson	Donaldson (NE)	Mean	----	----	----	----	----	----	----	3.0	4.0
		No.	0	0	0	0	0	0	0	1	1
Donaldson	Donaldson (NH)	Mean	----	----	----	----	----	----	----	4.0	----
		No.	0	0	0	0	0	0	0	1	0
Donaldson	Lost River	Mean	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		No.	1	1	1	1	1	1	1	1	1
Donaldson	Miller	Mean	----	5.0	----	----	----	----	----	----	----
		No.	0	1	0	0	0	0	0	0	0
Eagle Lake	Eagle Lake (CA)	Mean	3.0	2.0	4.2	5.0	----	----	----	3.2	----
		No.	1	4	4	4	0	0	0	5	0
Eagle Lake	Eagle Lake (ENN)	Mean	2.0	2.0	----	----	----	----	----	3.3	2.0
		No.	1	1	0	0	0	0	0	6	2
Eagle Lake	Eagle Lake (ERW)	Mean	3.0	3.0	3.5	4.0	3.0	3.0	3.0	3.0	----
		No.	1	2	2	1	1	1	2	2	0
Eagle Lake	Eagle Lake (MI)	Mean	3.0	3.0	----	----	----	----	----	3.0	----
		No.	1	1	0	0	0	0	0	1	0

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Eagle Lake	Tillett	Mean	----	----	----	----	----	----	----	2.0	----
		No.	0	0	0	0	0	0	0	1	0
Eagle Lake	Wigwam	Mean	3.0	3.0	3.0	----	----	----	----	2.5	----
		No.	1	1	1	0	0	0	0	2	0
Emerald Lake	Emerald Lake (CO)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Emerson	Crystal Lake	Mean	----	----	3.0	----	----	----	----	3.0	----
		No.	0	0	1	0	0	0	0	2	0
Ennis	Paint Bank	Mean	----	----	----	----	----	----	----	3.0	3.0
		No.	0	0	0	0	0	0	0	1	1
Ennis Albino	RTAB	Mean	2.0	2.0	2.0	----	2.0	2.0	2.0	3.0	----
		No.	1	1	1	0	1	1	1	2	0
Ennis/Erwin	ERD/Erwin (ERW)	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	3	0
Erwin	Erwin (ENN)	Mean	3.0	4.0	4.0	----	4.0	----	----	3.3	3.6
		No.	1	1	1	0	1	0	0	8	3
Erwin	Erwin (ERW)	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	4	0
Erwin	Erwin (WI)	Mean	2.0	----	----	----	----	----	----	2.5	----
		No.	1	0	0	0	0	0	0	2	0
Erwin	Erwin (WSS)	Mean	----	----	----	----	----	----	----	----	4.0
		No.	0	0	0	0	0	0	0	0	1

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Fish Lake	Fish Lake (ENN)	Mean	—	—	—	—	—	—	—	—	—
		No.	0	0	0	0	0	0	0	0	0
Fish Lake	Fish Lake (ERW)	Mean	—	—	3.0	—	4.0	—	—	—	—
		No.	0	0	1	0	1	0	0	0	0
Fish Lake/Desmet	Egan (ERW)	Mean	2.5	2.0	2.0	—	3.0	3.0	2.0	2.6	3.5
		No.	1	1	1	0	1	1	1	3	2
Fish Lake/Desmet	Fish Lake/Desmet (ERW)	Mean	4.0	—	4.0	—	4.0	—	—	—	—
		No.	0	0	1	0	1	0	0	0	0
Fish Lake/Desmet	RTFD	Mean	2.0	2.0	2.0	—	2.0	2.0	2.0	2.7	—
		No.	4	4	4	0	4	4	4	7	0
Hayspur	R9 (ID)	Mean	—	2.6	—	—	3.6	—	3.0	3.2	3.0
		No.	0	3	0	0	3	0	2	4	2
Hildebrandt	Lassen	Mean	—	3.0	—	—	—	—	—	—	—
		No.	0	1	0	0	0	0	0	0	0
Hot Creek	Boulder Fall	Mean	5.0	—	—	—	—	—	—	4.0	—
		No.	1	0	0	0	0	0	0	1	0
Hot Creek	Fall Spawn	Mean	—	2.0	—	—	—	—	—	3.0	—
		No.	0	1	0	0	0	0	0	1	0
Hot Creek	Hot Creek (CA)	Mean	—	—	4.0	—	—	—	—	3.5	3.0
		No.	0	0	1	0	0	0	0	8	1
Hot Creek	RTH (CA) 2	Mean	3.0	2.0	3.0	5.0	—	—	—	3.0	—
		No.	1	1	1	1	0	0	0	1	0

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
House Creek	House Creek (ID)	Mean	----	----	----	----	----	----	----	3.0	3.0
		No.	0	0	0	0	0	0	0	1	1
Hybrid	(ARL X ERW) X ER (ENN)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Hybrid	EED/Erwin - Arlee (ERW)	Mean	3.0	----	3.0	3.0	----	----	----	----	----
		No.	0	0	1	1	0	0	0	0	0
Hybrid	Huntsdale/Bellefonte	Mean	4.0	4.0	----	----	5.0	----	----	3.0	----
		No.	1	1	0	0	1	0	0	1	0
Hybrid	Whitney	Mean	----	----	----	----	----	----	----	3.5	----
		No.	0	0	0	0	0	0	0	2	0
Kamloops	Duncan River	Mean	4.0	4.0	----	----	----	----	----	3.5	2.0
		No.	1	1	0	0	0	0	0	4	1
Kamloops	Kamloops (CT)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Kamloops	Kamloops (SD)	Mean	1.0	2.0	2.0	----	----	----	----	4.0	----
		No.	1	1	1	0	0	0	0	1	0
Kamloops	Lake Superior	Mean	3.0	3.0	----	----	----	----	----	3.0	3.0
		No.	2	2	0	0	0	0	0	2	1
Kamloops	Luce Reservoir Kamloops	Mean	----	----	----	----	----	----	----	2.0	----
		No.	0	0	0	0	0	0	0	2	0
Kamloops	RTKJ	Mean	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	----
		No.	1	1	1	1	1	1	1	1	0

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Kamloops	Skanes/Gloyd Springs	Mean	----	3.0	----	----	----	----	3.0	3.0	2.0
		No.	0	1	0	0	0	0	1	2	1
Kamloops	Spring Creek	Mean	----	----	4.0	----	----	----	----	3.0	----
		No.	0	0	1	0	0	0	0	1	0
Kamloops	Trout Lodge	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Kamloops	Trout Lodge (CO)	Mean	4.0	----	3.0	----	----	----	----	3.0	----
		No.	1	0	1	0	0	0	0	1	0
Kamloops	Trout Lodge (MD)	Mean	3.3	5.0	----	----	1.0	1.0	----	3.0	----
		No.	1	1	0	0	1	1	0	4	0
Kamloops	Trout Lodge (NY)	Mean	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
		No.	1	1	1	1	1	1	1	1	1
Kamloops	Trout Lodge (WI)	Mean	----	----	----	----	----	----	----	4.0	----
		No.	0	0	0	0	0	0	0	1	0
Kettle River	Phalou Lake	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Lassen	Lassen	Mean	----	----	4.0	----	----	----	----	4.0	----
		No.	0	0	1	0	0	0	0	2	0
Laurel Hill	Laurel Hill (PA)	Mean	3.0	3.0	----	----	----	----	----	3.0	3.0
		No.	1	1	0	0	0	0	0	1	1
London	London (IN)	Mean	3.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0
		No.	1	1	1	1	1	1	2	1	1

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
London	London (OH)	Mean	4.0	4.0	----	----	----	----	----	3.0	4.0
		No.	1	1	0	0	0	0	0	1	1
Lost River	Lost River	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Manchester	Manchester (IA)	Mean	1.0	3.0	----	----	----	----	----	3.0	----
		No.	1	1	0	0	0	0	0	1	0
McCloud	Cape Cod	Mean	1.0	2.0	----	----	----	----	4.0	4.0	2.0
		No.	2	2	0	0	0	0	2	2	2
McCloud	South Tacoma	Mean	----	2.0	4.0	----	----	----	4.0	2.0	----
		No.	0	1	1	0	0	0	1	1	0
McConaughy	McConaughy (ENN)	Mean	3.0	4.0	----	----	----	----	----	3.2	3.0
		No.	1	1	0	0	0	0	0	5	1
McConaughy	McConaughy (SD)	Mean	----	----	----	----	----	----	----	3.0	3.0
		No.	0	0	0	0	0	0	0	1	1
Missouri	Bennett Spring	Mean	2.5	3.0	----	----	----	----	----	2.5	----
		No.	2	2	0	0	0	0	0	2	0
Missouri	Shepherd of the Hills (Fall)	Mean	2.0	1.0	----	----	----	----	----	3.0	3.0
		No.	3	3	0	0	0	0	0	3	1
Nashua	Nashua (CT)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Neosho	Shasta (WSS)	Mean	----	----	----	----	----	----	----	----	3.0
		No.	0	0	0	0	0	0	0	0	1

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Nisqually	Nisqually (WA)	Mean	----	3.0	3.0	----	----	----	----	3.0	----
		No.	0	1	1	0	0	0	0	1	0
Paradise	Golden	Mean	3.0	3.0	3.0	----	----	----	5.0	3.0	3.0
		No.	1	1	1	0	0	0	1	1	1
Parkview	Parkview (NM)	Mean	4.0	4.0	2.5	----	----	----	----	3.0	3.0
		No.	1	1	2	0	0	0	0	2	1
Pit River	Pit River (CA)	Mean	----	----	3.0	1.0	----	----	----	3.0	----
		No.	0	0	2	2	0	0	0	2	0
Pleasure Valley	Pleasure Valley (WV)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Reynoldsdale	Reynoldsdale (PA)	Mean	3.0	3.0	5.0	5.0	3.0	5.0	5.0	2.5	4.0
		No.	2	2	1	1	2	1	1	2	1
Sacramento River	Coleman	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	2	0
Sand Creek	RTSC	Mean	2.2	2.2	2.2	3.0	2.2	2.2	2.2	3.0	4.0
		No.	5	5	5	1	5	5	5	9	1
Shasta	ELT	Mean	----	----	4.0	5.0	----	----	----	4.0	3.0
		No.	0	0	1	1	0	0	0	1	1
Shasta	RTS	Mean	3.0	2.5	3.3	3.6	----	----	----	3.0	2.0
		No.	1	2	3	3	0	0	0	3	1
Shasta	Shasta (ENN)	Mean	2.5	2.0	5.0	5.0	----	----	----	3.3	3.0
		No.	2	2	1	1	0	0	0	6	1

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Shasta	Shasta (ERW)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Shasta	Shasta (IA)	Mean	3.5	----	----	----	----	----	----	3.0	----
		No.	2	0	0	0	0	0	0	2	0
Shepherd of the Hills	RTSH	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Shepherd of the Hills	Shepherd of the Hills	Mean	2.0	2.0	2.0	----	2.0	2.0	2.0	2.7	4.0
		No.	3	3	3	0	3	3	3	8	1
Strohm	Greensprings (PA)	Mean	----	----	3.0	----	5.0	----	----	3.0	3.0
		No.	0	0	1	0	1	0	0	1	1
Swanson	Swanson (AK)	Mean	3.0	3.0	----	----	----	----	----	3.0	----
		No.	1	1	0	0	0	0	0	1	0
Tahoe	Marlette Lake (NV)	Mean	----	1.0	----	----	----	----	----	1.0	3.0
		No.	0	1	0	0	0	0	0	1	1
Tasmanian	Glenwood Spring	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Tasmanian	Tasmanian (CO)	Mean	4.0	4.0	4.0	----	4.0	----	3.0	4.0	2.5
		No.	1	1	1	0	1	0	1	3	2
Tasmanian	Tasmanian (NV)	Mean	----	----	----	----	----	----	----	2.7	3.0
		No.	0	0	0	0	0	0	0	4	1
Ten Sleep	Ten Sleep (UT)	Mean	2.0	2.0	2.0	----	2.0	2.0	2.0	2.6	4.0
		No.	5	5	5	0	5	5	5	9	2

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Trophy Fish Ranch	Sevier Valley	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Trout Haven	Trout Haven	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Trout Lodge	Pisgah	Mean	3.0	----	3.5	----	4.0	----	----	3.0	----
		No.	2	0	2	0	2	0	0	1	0
Trout Lodge	Red-eyed Golden	Mean	5.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	2	0
Trout lodge	Trout lodge	Mean	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.5	4.5
		No.	2	2	2	2	2	2	2	4	2
Watson	Watson	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
White Sulfur Springs	White Sulfur Springs (CT)	Mean	----	----	3.0	----	----	----	----	3.0	----
		No.	0	0	1	0	0	0	0	1	0
Whitney	RTW	Mean	3.0	2.0	3.5	5.0	4.0	----	----	3.0	3.0
		No.	1	3	2	1	1	0	0	6	2
Whitney	Whitney (WA)	Mean	3.5	5.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0
		No.	2	1	2	1	1	1	1	3	1
Wilson Pond	Wilson Pond - LB (ME)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Winthrop	Winthrop (GA)	Mean	3.0	2.5	3.0	----	3.0	----	----	----	3.0
		No.	2	2	2	0	2	0	0	0	1

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
WV State Hatchery	Golden	Mean	3.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	1	0
Wytheville	Domestic (F)	Mean	1.0	----	----	----	4.0	4.0	----	----	----
		No.	1	0	0	0	1	1	0	0	0
Wytheville	Pequest	Mean	----	----	----	----	----	----	----	3.0	3.0
		No.	0	0	0	0	0	0	0	1	1
Wytheville	Petersburg	Mean	----	----	----	----	3.0	----	----	2.0	----
		No.	0	0	0	0	1	0	0	2	0
Wytheville	Pisgah	Mean	1.0	----	4.0	----	4.0	----	----	3.0	----
		No.	1	0	1	0	1	0	0	1	0
Wytheville	White Sulfur Springs	Mean	5.0	----	----	----	----	----	----	3.5	3.0
		No.	1	0	0	0	0	0	0	2	1
Wytheville	Wytheville (ERW)	Mean	2.6	4.0	3.0	----	4.0	----	----	3.5	----
		No.	3	1	1	0	2	0	0	4	0

[1/] Disease Resistance Relative Rating (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each disease provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, and 5 = very resistant. Only rating values of 1 to 5 were used to calculate the mean values reported above.

[2/] Disease Codes 1 = Furunculosis (*Aeromonas salmonicida*), 2 = Bacterial Kidney Disease (*Renibacterium salmonarum*), 3 = Enteric Redmouth (*Yerinia ruckeri*), 4 = *Ceratomyxa shasta*, 5 = infectious Pancreatic Necrosis, 6 = Viral Hemorrhagic Septicemia, 7 = infectious Hematopoietic Necrosis, 8 = Bacterial Gill Disease, and 9 = Cold Water Disease.

Table 8-5. Rainbow trout – Eight selected post- stocking field performance traits (relative ratings[1/]) for reported broodstocks in riverine and lacustrine habitats.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
6F2	6F2 (CA)	Mean	3.0	----	----	----	----	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
6F2	6F2 (CO)	Mean	3.0	----	3.0	----	4.0	----	4.0	----	----	----	4.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Albino	Albino (UT)	Mean	3.0	----	1.0	----	----	----	4.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Arlee	Arlee (CA)	Mean	----	----	----	----	----	----	4.0	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Arlee	Arlee (ENN)	Mean	2.0	----	----	----	----	----	5.0	----	----	----	2.0	----	----	----	----	----
		No.	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Arlee	Erwin (AR)	Mean	3.0	----	3.0	----	3.5	----	3.5	----	3.0	----	3.0	----	----	----	3.0	----
		No.	2	0	2	0	2	0	2	0	2	0	1	0	0	0	1	0
Arlee	Jocko (MT)	Mean	4.0	----	3.0	----	4.0	----	4.0	----	----	----	1.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Arlee	Missouri Arlee	Mean	4.0	----	3.0	----	4.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Bellaire	Crystal River	Mean	1.0	4.0	1.0	3.0	----	3.0	4.0	3.0	----	----	3.0	----	----	----	3.0	----
		No.	1	1	1	1	0	1	1	1	0	0	1	0	0	0	1	0

Table 8-4. Rainbow trout – Continued.

Strain	Broodstock		Post stocking						Angling susceptibility		Tendency to migrate		Tolerance to					
			Survival				Growth						Temperature > 70 °C		pH < 5.0		Catch & release	
			90 days		Over-winter													
			R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Beulah	Beulah (CT)	Mean	4.0	----	----	----	----	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Big Lake	Big Lake (AK)	Mean	4.0	----	2.0	----	2.0	----	3.0	----	4.0	----	2.0	----	2.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Cape Cod	Goldendale	Mean	3.6	4.0	3.0	3.0	3.6	3.0	3.6	3.0	3.0	3.0	2.0	1.0	----	----	3.0	3.0
		No.	3	1	3	1	3	1	3	1	3	1	3	1	0	0	1	1
Coleman	Coleman (CA)	Mean	3.0	5.0	3.3	4.0	3.2	4.0	3.2	3.0	2.6	----	2.5	3.0	3.0	----	----	----
		No.	4	1	3	1	4	1	4	1	3	0	2	1	1	0	0	0
Colorado River	Hayspur (ID)	Mean	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1.0	1.0	3.0	3.0	3.0	3.0	3.0	3.0
		No.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Desmet	Desmet (MT)	Mean	3.5	----	3.0	----	3.0	----	1.5	----	4.0	----	----	----	----	----	----	----
		No.	2	0	2	0	2	0	2	0	1	0	0	0	0	0	0	0
Dome Rock	McDonald Stream	Mean	4.0	----	4.0	----	3.0	----	----	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Donaldson	Donaldson (ME)	Mean	----	----	2.0	----	3.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Donaldson	Donaldson (NH)	Mean	4.0	----	4.0	----	3.0	----	----	----	3.0	----	4.0	----	----	----	4.0	----
		No.	1	0	1	0	1	0	0	0	1	0	1	0	0	0	1	0
Donaldson	Miller	Mean	----	5.0	----	----	----	5.0	----	----	----	----	1.0	1.0	----	----	1.0	1.0
		No.	0	1	0	0	0	1	0	0	0	0	1	1	0	0	1	1

Table 8-5. Rainbow trout – Continued.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Eagle Lake	Eagle Lake (CA)	Mean	4.0	----	4.0	----	3.0	----	3.0	----	3.0	----	3.0	----	2.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Eagle Lake	Eagle Lake (ENN)	Mean	3.0	----	3.0	----	4.0	----	4.0	----	2.0	----	3.0	----	----	----	4.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	1	0
Eagle Lake	Eagle Lake (MI)	Mean	3.0	----	3.0	----	4.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Eagle Lake	Tillett	Mean	3.0	----	4.0	----	4.0	----	3.0	----	3.0	----	4.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Eagle Lake	Wigwam	Mean	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	----	----	----	----	3.0	3.0
		No.	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1
Emerald Lake	Emerald Lake (CO)	Mean	3.0	----	3.0	----	2.0	----	4.0	----	3.0	----	2.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Emerson	Crystal Lake	Mean	4.2	----	2.7	----	3.7	----	3.2	----	3.0	----	3.2	----	2.5	----	3.0	---
		No.	5	0	4	0	4	0	5	0	3	0	5	0	4	0	1	0
Ennis	Paint Bank	Mean	4.0	----	1.0	----	----	----	4.0	----	----	----	1.0	----	----	----	----	----
		No.	2	0	2	0	0	0	2	0	0	0	2	0	0	0	0	0
Ennis/Erwin	ERD/Erwin (ERW)	Mean	3.0	----	3.0	----	4.0	----	4.0	----	2.0	----	3.0	----	----	----	4.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	1	0
Erwin	Erwin (ENN)	Mean	3.0	----	2.6	----	3.2	----	3.2	----	2.0	----	3.0	----	3.0	----	----	----
		No.	4	0	3	0	4	0	4	0	1	0	1	0	1	0	0	0

Table 8-5. Rainbow trout – Continued.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Erwin	Erwin (WI)	Mean	4.0	----	2.0	----	4.0	----	3.0	----	2.0	----	4.0	----	----	----	3.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	1	0
Fish Lake/Desmet	Egan (ERW)	Mean	2.0	----	----	----	----	----	5.0	----	----	----	2.0	----	----	----	----	----
		No.	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Fish Lake/Desmet	Fish Lake/Desmet (ERW)	Mean	3.0	----	3.0	----	4.0	----	3.0	----	----	----	3.0	----	----	----	3.0	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0
Fish Lake/Desmet	RTFD	Mean	2.5	----	2.0	----	3.0	----	3.0	----	3.0	----	----	----	----	----	----	----
		No.	2	0	2	0	2	0	2	0	1	0	0	0	0	0	0	0
Hayspur	R9 (ID)	Mean	3.6	4.0	3.0	3.5	3.0	3.5	4.3	3.5	3.0	3.0	4.0	3.5	3.0	----	----	----
		No.	3	2	3	2	3	2	3	2	2	1	3	2	1	0	0	0
Hot Creek	Boulder Fall	Mean	3.0	4.0	2.0	3.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	----	----	3.0	3.0
		No.	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1
Hot Creek	Fall Spawn	Mean	3.0	----	3.0	----	3.0	----	4.0	----	4.0	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0
Hot Creek	Hot Creek (CA)	Mean	3.6	4.0	1.6	----	3.6	4.0	4.4	4.0	1.0	----	3.2	----	3.0	----	----	----
		No.	5	1	3	0	5	1	5	1	1	0	4	0	1	0	0	0
Hot Creek	RTH (CA) 2	Mean	3.0	----	2.0	----	3.0	----	3.0	----	----	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	2	0	0	0	1	0	0	0	0	0
House Creek	House Creek (ID)	Mean	----	5.0	----	5.0	----	5.0	----	3.0	----	----	----	----	----	----	----	5.0
		No.	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	1

Table 8-5. Rainbow trout – Continued.

Strain	Broodstock		Post stocking										Tolerance to					
			Survival				Growth		Angling susceptibility		Tendency to migrate		Temperature > 70 °C		pH < 5.0		Catch & release	
			90 days		Over-winter													
			R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Hybrid	Whitney	Mean	3.0	4.0	2.0	3.0	3.0	3.0	4.0	4.0	----	----	1.0	4.0	----	----	1.0	----
		No.	1	1	1	1	1	1	1	1	0	0	1	1	0	0	1	0
Kamloops	Duncan River	Mean	2.0	----	2.0	----	4.0	----	3.0	----	2.0	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0
Kamloops	Kamloops (CT)	Mean	3.0	----	----	----	----	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Kamloops	Lake Superior	Mean	3.0	4.0	3.0	3.0	4.0	4.0	4.0	5.0	4.0	4.0	----	3.0	----	----	----	5.0
		No.	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1
Kamloops	Luce Reservoir Kamloops	Mean	2.5	4.0	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	----	3.0	----	----	3.0	3.0
		No.	2	1	2	1	2	1	2	1	2	1	0	1	0	0	1	1
Kamloops	RTKJ	Mean	4.0	----	4.0	----	3.0	----	3.0	----	----	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0
Kamloops	Skanes / Gloyd Springs	Mean	3.0	4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.0	3.0	3.5	3.0	2.0	2.0	3.0	3.0
		No.	2	1	2	1	2	1	2	1	1	1	2	1	1	1	1	1
Kamloops	Spring Creek	Mean	----	----	----	----	5.0	----	----	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Kamloops	Trout Lodge (CO)	Mean	4.0	----	3.0	----	4.0	----	3.0	----	3.0	----	3.0	----	3.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	
Kamloops	Trout Lodge (MD)	Mean	2.5	4.0	1.0	----	1.0	----	3.0	3.0	3.0	3.0	3.0	5.0	----	----	3.0	----
		No.	2	1	1	0	1	0	2	1	1	1	2	1	0	0	1	0

Table 8-5. Rainbow trout – Continued.

Strain	Broodstock		Post stocking						Angling susceptibility		Tendency to migrate		Tolerance to					
			Survival				Growth						Temperature > 70 °C		pH < 5.0		Catch & release	
			90 days		Over-winter													
			R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Kettle River	Phalou Lake	Mean	4.0	----	3.0	----	3.0	----	3.0	----	2.0	----	3.0	----	----	----	3.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	1	0
London	London (IN)	Mean	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	----	4.0	4.0	----	----	----	----
		No.	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0
London	London (OH)	Mean	----	----	3.0	----	3.0	----	5.0	----	2.0	----	5.0	----	----	----	3.0	----
		No.		0	0	1	0	1	0	1	0	1	0	1	0	0	0	1
Manchester	Manchester (IA)	Mean	4.0	----	4.0	----	4.0	----	4.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
McCloud	Shasta	Mean	----	3.0	----	1.0	----	4.0	----	3.0	----	----	----	----	----	----	----	----
		No.	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0
McCloud	South Tacoma	Mean	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
McConaughy	McConaughy (ENN)	Mean	4.0	----	3.0	----	3.0	----	3.0	----	5.0	----	3.0	----	1.0	----	----	----
		No.	2	0	2	0	2	0	2	0	1	0	1	0	1	0	0	0
McConaughy	McConaughy (SD)	Mean	----	----	----	----	----	3.0	----	3.0	----	5.0	----	4.0	----	----	----	3.0
		No.	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	1
Missouri	Bennett Spring	Mean	4.0	----	3.0	----	3.0	----	4.5	----	3.0	----	3.0	----	----	----	4.0	----
		No.	2	0	1	0	2	0	2	0	1	0	1	0	0	0	1	0
Missouri	Shepherd of the Hills (Fall)	Mean	4.0	----	3.0	----	4.0	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0

Table 8-5. Rainbow trout – Continued.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Nashua	Nashua (CT)	Mean	3.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neosho	Shasta (WSS)	Mean	3.0	----	3.0	----	4.0	----	3.0	----	----	----	3.0	----	----	----	3.0	----
		No.	1	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0
Parkview	Parkview (NM)	Mean	4.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	----	----	3.0	3.0	----	----	4.0	----
		No.	1	1	1	1	1	1	1	1	0	0	1	1	0	0	1	0
Pit River	Pit River (CA)	Mean	3.0	----	4.0	----	3.0	----	2.0	----	2.0	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Sand Creek	RTSC	Mean	3.0	----	3.0	----	3.0	----	3.5	----	3.0	----	----	----	----	----	----	----
		No.	2	0	2	0	2	0	2	0	1	0	0	0	0	0	0	0
Shasta	ELT	Mean	4.0	5.0	----	----	4.0	5.0	4.0	5.0	----	----	----	----	----	----	----	----
		No.	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0
Shasta	RTS	Mean	3.0	----	2.0	----	3.0	----	3.0	----	3.0	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Shasta	Shasta (IA)	Mean	4.0	----	2.0	----	----	----	4.0	----	3.0	----	3.0	----	----	----	----	----
		No.	1	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0
Shepherd of the Hills	RTSH	Mean	----	3.0	----	----	----	3.0	----	3.0	----	3.0	----	----	----	----	----	3.0
		No.	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	1
Shepherd of the Hills	Shepherd of the Hills	Mean	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	----	3.0	----	----	----	----
		No.	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0

Table 8-5. Rainbow trout – Continued.

Strain	Broodstock		Post stocking						Angling susceptibility		Tendency to migrate		Tolerance to					
			Survival				Growth						Temperature > 70 °C		pH < 5.0		Catch & release	
			90 days		Over-winter													
			R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Strohm	Greensprings (PA)	Mean	5.0	----	5.0	----	5.0	----	5.0	----	3.0	----	3.0	----	2.0	----	5.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Swanson	Swanson (AK)	Mean	4.0	4.0	2.0	4.0	2.0	4.0	3.0	3.0	4.0	4.0	2.0	----	2.0	----	----	4.0
		No.	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1
Tahoe	Marlette Lake (NV)	Mean	----	4.0	----	3.0	----	4.0	----	3.0	----	----	----	----	----	----	----	----
		No.	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0
Tasmanian	Tasmanian (CO)	Mean	1.0	3.0	1.0	3.0	3.0	3.0	3.0	3.0	----	----	----	----	----	----	3.0	----
		No.	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0
Tasmanian	Tasmanian (NV)	Mean	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	----	----	1.0	----	1.0	----	----	3.0
		No.	1	1	1	1	1	1	1	1	0	0	1	0	1	0	0	1
Ten Sleep	Ten Sleep (UT)	Mean	4.0	----	3.0	----	4.0	----	3.0	----	3.0	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0
Trophy Fish Ranch	Sevier Valley	Mean	----	5.0	----	----	----	----	----	4.0	----	----	----	4.0	----	----	----	----
		No.	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0
Trout Lodge	Pisgah	Mean	----	----	----	----	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	----	----
		No.	0	0	0	0	1	0	1	0	1	0	1	0	1	0	0	0
Trout Lodge	Red-eyed Golden	Mean	3.0	----	----	----	3.0	----	2.0	----	----	----	3.0	----	3.0	----	----	----
		No.	1	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0
Trout lodge	Trout lodge	Mean	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0

Table 8-5. Rainbow trout – Continued.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
White Sulfur Springs	White Sulfur Springs (CT)	Mean	2.0	----	----	----	----	----	3.0	----	----	----	----	----	----	----	----	----
		No.	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Whitney	RTW	Mean	3.5	4.0	3.0	----	3.2	4.0	4.0	4.5	2.0	----	4.0	----	----	----	----	----
		No.	4	2	2	0	4	2	4	2	2	0	1	0	0	0	0	0
Whitney	Whitney (WA)	Mean	3.5	----	3.0	----	3.5	----	3.5	----	----	----	3.0	----	3.0	----	----	----
		No.	2	0	2	0	2	0	2	0	0	0	2	0	1	0	0	0
Winthrop	Winthrop (GA)	Mean	4.0	----	3.0	----	3.0	----	3.0	----	2.0	----	----	----	----	----	----	----
		No.	2	0	2	0	2	0	2	0	1	0	0	0	0	0	0	0
Wytheville	Domestic (F)	Mean	4.0	----	1.0	----	3.0	----	5.0	----	1.0	----	4.0	----	3.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Wytheville	Pequest	Mean	----	----	----	3.0	----	3.0	4.0	4.0	----	----	4.0	4.0	----	----	----	3.0
		No.	0	0	0	1	0	1	1	1	0	0	1	1	0	0	0	1
Wytheville	Petersburg	Mean	----	----	----	----	----	----	5.0	----	----	----	1.0	----	1.0	----	2.0	----
		No.	0	0	0	0	0	0	2	0	0	0	2	0	2	0	2	0
Wytheville	Pisgah	Mean	3.0	----	2.0	----	3.0	----	3.0	----	3.0	----	3.0	----	3.0	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0
Wytheville	White Sulfur Springs	Mean	3.0	3.0	3.0	2.0	----	3.0	2.0	2.0	----	----	----	----	----	----	----	----
		No.	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0
Wytheville	Wytheville (ERW)	Mean	2.0	----	1.0	----	3.0	----	5.0	----	2.0	----	3.0	----	1.0	----	----	----
		No.	2	0	1	0	2	0	2	0	2	0	2	0	1	0	0	0

Table 8-5. Rainbow trout – Continued.

Strain	Broodstock	Post stocking						Angling susceptibility		Tendency to migrate		Tolerance to					
		Survival				Growth						Temperature > 70 °C		pH < 5.0		Catch & release	
		90 days		Over-winter													
		R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L

[1/] Trait Relative Ratings (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each trait provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 9-1. Steelhead trout - Broodstocks reported to the National Fish Strain Registry - Trout (NFSR-T) with person to contact for additional information.

Strain	Broodstock	Contact	Address	Phone / Fax
Crystal Creek	Crystal Creek (AK)	Gary Wall	Fort Richardson SFH, P.O. Box 5267, Anchorage, AK 99505	**Ph.** 907-428-1348 **Fax**
Crystal Creek	Crystal Creek (AK)	Gary Wall	Crystal Lake SFH, P.O. Box 1088, Petersburg, AK 99833	**Ph.** 907-772-4772 **Fax**
Feather River	Feather River (CA)	Anna Kastner	CA Dept. F&G, Feather River SFH, 5 Table Mountain Blvd., Oroville, CA 95965	**Ph.** 530-538-2222 **Fax** 530-532-0573
Ganaraska	Ganaraska	Randall Link	WI DNR, Kettle Moraine Fish Hatchery, N1929 Trout Spring Road, Adell, WI 53001	**Ph.** 920-528-8825 **Fax** 920-528-8852
Manistee River	Winter Run	Tom Schwartz	Mixsawbah SFH, 5500 S. 675 E., Walkerton, IN 46574	**Ph.** 219-369-9591 **Fax** 219-369-9496
Nimbus	Nimbus (CA)	Jerry West	CA Dept. F&G, Nimbus SFH, 2001 Nimbus Road, Rancho Cordova, CA 95670	**Ph.** 916-358-2820 **Fax** 916-358-1466
Pennsylvania	Lake Erie	Larry Hines	Tionesta FCS, HC2, Box 1, Tionesta, PA 16353	**Ph.** 814-755-3524 **Fax**
Russian	Warm Springs	Royce Gunter, Jr.	Warm Springs SFH, 3246 Skaggs Springs Road, Geyserville, CA 95441-9643	**Ph.** 707-433-6325 **Fax** 707-433-8146
Skamania	Lake Ontario / Beaver Dam Brook	Alan Mack	Caledonia SFH, 16 North Street, Caledonia, NY 14423-1033	**Ph.** 716-538-6300 **Fax** 716-538-9293
Skamania	Skamania (IN)	Brian Breidert	Bodine Fish Hatchery, 13200 East Jefferson Road, Mishawaka, IN 46545	**Ph.** 219-255-4199 **Fax** 219-257-0462
Skamania	Summer Run (IN)	Brian Breidert	Bodine Fish Hatchery, 13200 East Jefferson Road, Mishawaka, IN 46545	**Ph.** 219-255-4199 **Fax** 219-257-0462

Table 9-2. Steelhead trout - Selected broodstock, hatchery, and field performance characteristics for reported broodstocks.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Crystal Creek	Crystal Creek (AK)	N	S	----	Crystal Lake SFH	Wild	----	----	----
Crystal Creek	Crystal Creek (AK)	N	S	----	Crystal Lake SFH	Wild	----	----	----
Feather River	Feather River (CA)	N	S	----	----	Unknown	----	----	7,8,9,10
Ganaraska	Ganaraska	N	S	----	----	Unknown	----	----	7,8
Manistee River	Winter Run	N	S	----	Mixsawbah SFH	Domestic	----	----	1,2,3,4,10
Nimbus	Nimbus (CA)	N	S	----	Nimbus SFH	Wild	----	----	7,8
Pennsylvania	Lake Erie	N	S	----	Tionesta FCS	Unknown	----	----	7,8
Russian	Warm Springs	L	S	----	Russian, Eel and Mad Rivers	Unknown	----	2,3	7,8,9,10
Skamania	Lake Ontario/ Beaver Dam Brook	L	S		Returning fish from Lake Ontario captured in Beaver Dam Brook at Salmon River Fish Hatchery	Wild	15	----	----
Skamania	Skamania (IN)	N	S	----	----	Unknown	----	----	3,4,7,8
Skamania	Summer Run (IN)	L	S	RS	Skamania SFH	Wild	----	1	3,4,7,8,10
Granite Creek	Lake Pend Oreille	N	S	----	----	Wild	----	----	----

Table 9-2. Steelhead trout - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]

[1/] Availability codes: Y = Yes - Broodstock is available, N = No – Broodstock is not available, and L = Broodstock available on a limited basis.
[2/] Type of facility codes: F = Federal, S = State, U = University, T = Tribes, and P = Private producer.
[3/] Disease classification codes: A - No listed pathogens detected; AS - Aeromonas salmonicida (Furunculosis); RD - Renibacterium salmonarum, (Bacterial Kidney Disease); B-SC - *Ceratomyxa shasta*; IPNV - *Infectious Pancreatic Necrosis* virus; VHSV - *Viral Hemorrhagic Septicemia*; IHNV - *Infectious Hematopoietic Necrosis* Virus; OMV - *Oncorhynchus masou* virus; YR - *Yersinia ruckeri* (Enteric Redmouth); B-SW - M*yxobolus cerebralis* (Whirling disease); B-SP - Proliferative Kidney Disease agent; B-VL - EED virus; ( ) - pathogen not found, but is suspect; C - Broodstock not inspected or no information provided.
[4/] Effective population number (N_e) was estimated based on the formula $N_e = 4(N_m + N_f) / (N_m N_f)$. N_m = Number male parents and N_f = Number female parents.
[5/] Genetic analysis type codes: 1 = Allozyme: 2 = Nuclear DNA; 3 = Mitochondrial DNA; 4 = Microsatellite; 5 = Meristics
[6/] Management recommendation codes: 1 = Raceway culture, 2 = Tank culture, 3 = Fingerling stocking (rivers), 4 = Fingerling stocking (Lakes), 5 = Catchable stocking (Rivers), 6 = Catchable stocking (Lakes), 7 = Stock natural Rivers, 8 = Stock natural lakes, 9 = Restoration stocking (Rivers), and 10 = Restoration stocking (Lakes).

Table 9-3. Steelhead Trout - Selected reproductive performance and cultural trait information for reported broodstocks.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd -ing	Transp-ortation
Feather River	Feather River (CA)	110	315	Mean	89	227.00	4.00	85	1.0	2.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Ganaraska	Ganaraska	—	—	Mean	73	178.00	9.60	85	3.0	4.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Nimbus	Nimbus (CA)	—	—	Mean	88	56.00	3.00	97	3.0	3.0	4.0	3.0
				No.	1	1	1	1	1	1	1	1
Pennsylvania	Lake Erie	—	—	Mean	95	500.00	14.20	85	1.0	1.0	1.0	1.0
				No.	1	1	1	1	1	1	1	1
Russian	Warm Springs	1201	430	Mean	98	100.00	4.00	98	5.0	5.0	5.0	5.0
				No.	1	1	1	1	1	1	1	1
Skamania	Lake Ontario/ Beaver Dam Brook	101	228	Mean	85	343.00	12.00	90	3.0	3.0	2.0	2.0
				No.	1	1	1	1	1	1	1	1
Skamania	Skamania (IN)	—	—	Mean	69	290.00	10.60	72	3.0	3.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Skamania	Summer Run (IN)	101	331	Mean	96	124.00	5.80	93	3.5	4.0	3.0	3.0
				No.	2	2	2	2	2	2	2	2

[1/] Traits were measured with relative ratings (See Table 2). Tabled values are an arithmetic average of subjective ratings provided by broodstock managers and field biologists completing surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 9-4. Steelhead Trout– Disease resistance rating (relative rating[1/]) of reported broodstocks for nine common salmonid diseases.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Crystal Creek	Crystal Creek (AK)	Mean	----	4.0	----	----	----	----	3.0	1.0	----
		No.	0	2	0	0	0	0	2	2	0
Feather River	Feather River (CA)	Mean	1.0	1.0	1.0	5.0	3.0	1.0	3.0	3.0	----
		No.	2	2	2	2	2	2	2	2	0
Ganaraska	Ganaraska	Mean	3.0	2.0	----	----	----	----	----	3.0	----
		No.	1	1	0	0	0	0	0	1	0
Manestee River	Lake Sakakawea - W	Mean	2.0	2.0	----	----	----	----	----	3.0	----
		No.	1	1	0	0	0	0	0	1	0
Manistee River	Winter Run	Mean	3.0	3.0	----	----	2.0	----	----	2.0	3.0
		No.	2	2	0	0	1	0	0	2	1
Nimbus	Nimbus (CA)	Mean	----	3.0	3.0	----	----	----	1.0	2.0	----
		No.	0	1	1	0	0	0	1	1	0
Pennsylvania	Lake Erie	Mean	2.0	3.0	3.0	----	3.0	----	----	4.0	----
		No.	1	1	1	0	1	0	0	1	0
Russian	Warm Springs	Mean	3.0	3.0	----	----	----	----	----	3.0	3.0
		No.	2	2	0	0	0	0	0	2	1
Skamania	Lake Ontario/Beaver Dam Brook	Mean	5.0	----	----	----	----	----	----	2.0	4.0
		No.	1	0	0	0	0	0	0	1	1
Skamania	RT-7-0-IN-MI-CD	Mean	2.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	1	0
Skamania	Skamania (IN)	Mean	3.0	2.0	----	----	----	----	----	3.0	----
		No.	1	1	0	0	0	0	0	1	0

Table 9-4. Steelhead Trout– Disease resistance rating (relative ratings[1/]) of reported broodstocks for nine common salmonid diseases.

Strain	Broodstock		Salmonid diseases[2/]								
			1	2	3	4	5	6	7	8	9
Skamania	Summer Run (IN)	Mean	3.6	3.3	3.0	3.0	3.0	----	----	3.0	3.0
		No.	3	3	1	1	1	0	0	3	1

[1/] Disease Resistance Relative Rating (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each disease provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, and 5 = very resistant. Only rating values of 1 to 5 were used to calculate the mean values reported above.

[2/] Disease Codes 1 = Furunculosis (*Aeromonas salmonicida*), 2 = Bacterial Kidney Disease (*Renibacterium salmonarum*), 3 = Enteric Redmouth (*Yerinia ruckeri*), 4 = *Ceratomyxa shasta*, 5 = infectious Pancreatic Necrosis, 6 = Viral Hemorrhagic Septicemia, 7 = infectious Hematopoietic Necrosis, 8 = Bacterial Gill Disease, and 9 = Cold Water Disease.

Table 9-5. Steelhead Trout – Eight selected post- stocking field performance traits (relative ratings[1/]) for reported broodstocks in riverine and lacustrine habitats.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Crystal Creek	Crystal Creek (AK)	Mean	3.0	—	—	—	3.0	—	3.0	—	3.0	—	—	—	—	—	—	—
		No.	2	0	0	0	2	0	2	0	2	0	0	0	0	0	0	0
Feather River	Feather River (CA)	Mean	4.0	—	—	—	—	—	—	—	5.0	—	3.0	—	—	—	—	—
		No.	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
Ganaraska	Ganaraska	Mean	5.0	—	4.0	—	4.0	—	4.0	—	5.0	—	2.0	—	—	—	—	—
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Manistee River	Winter Run	Mean	3.0	—	3.0	—	3.0	—	2.5	—	4.0	—	2.5	—	—	—	4.0	—
		No.	1	0	2	0	2	0	2	0	2	0	2	0	0	0	1	0
Nimbus	Nimbus (CA)	Mean	—	—	—	—	—	—	—	—	3.0	—	—	—	—	—	—	—
		No.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Pennsylvania	Lake Erie	Mean	4.0	—	4.0	—	4.0	—	3.0	—	4.0	—	3.0	—	—	—	—	—
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Russian	Warm Springs	Mean	3.0	—	—	—	3.0	—	2.5	—	4.0	—	3.0	—	—	—	—	—
		No.	1	0	0	0	1	0	2	0	2	0	2	0	0	0	0	0
Skamania	RT-7-0-IN-MI-CD	Mean	4.0	—	4.0	—	4.0	—	4.0	—	4.0	—	4.0	—	—	—	—	—
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Skamania	Skamania (IN)	Mean	5.0	—	4.0	—	4.0	—	4.0	—	5.0	—	3.0	—	—	—	—	—
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0

Table 9-5. Steelhead Trout – Eight selected post-stocking traits (Relative ratings[1/]) for reported broodstocks.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Skamania	Summer Run (IN)	Mean	3.0	----	3.0	3.0	3.3	4.0	3.3	4.0	4.3	5.0	3.0	3.0	----	----	4.0	----
		No.	3	0	2	1	3	1	3	1	3	1	3	1	0	0	1	0

[1/] Trait Relative Ratings (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each trait provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 10-1. Other salmonid species - Broodstocks reported to the National Fish Strain Registry - Trout (NFSR-T) with person to contact for additional information.

Strain	Broodstock	Contact	Address	Phone / Fax
Apache trout				
East Fork	East Fork (WC)	Bob David	USFWS, Alchesay-Williams Creek NFH, P.O. Box 398, Whiteriver, AZ 85941	**Ph.** 520-338-4901 **Fax** 520-338-4977
Profile Creek	Profile Creek	R. Thurow	USFS, Intermountain Research Station, Boise, ID	**Ph.** **Fax**
Arctic grayling				
Big Hole River	Big Hole River (MT)	Pat Dwyer	US FWS Fish Technology Center, 4050 Bridger Canyon Road, Bozeman, MT 59715	**Ph.** 406-587-9265 **Fax** 406-586-5942
Meadow Lake	Meadow Lake (WY)	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Artic char				
Floods Pond	Floods Pond	Frederick Kircheis	ME Atlantic Salmon Commission, 650 State Street, Bangor, ME 04401-5654	**Ph.** 207-941-4457 **Fax**
Sawtooth Lake	Sunapee Lake	Frederick Kircheis	ME Atlantic Salmon Commission, 650 State Street, Bangor, ME 04401-5654	**Ph.** 207-941-4457 **Fax**
Bull trout				
Thutada Lake	Peace River Drainage	James Baxter	Dept. of Zoology, U. of British Columbia, 6270 Univ. Boul., Vancouver, BC V6T 1Z4	**Ph.** **Fax**
Dolly varden				
Mendenhall Lake	Steep Creek	William Smoker	School of Fisheries and Ocean Science, U. of AK, Fairbanks, Juneau, AK 99801	**Ph.** **Fax**
Thutada Lake	Peace River Drainage	James Baxter	Dept. of Zoology, U. of British Columbia, 6270 Univ. Boul., Vancouver, BC V6T 1Z4	**Ph.** **Fax**
Tiekel River	Tiekel River	William Smoker	School of Fisheries and Ocean Science, U. of AK, Fairbanks, Juneau, AK 99801	**Ph.** **Fax**

Table 10-1. Other salmonid species - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Gila trout				
McKnight Creek	Main Diamond	Barbara Giesecke	Mescalero NFH, Box 247, 202 Trout Loop, Mescalero, NM 88230	**Ph.** 505-671-4401 **Fax** 505-671-4562
South Diamond	Magellon Creek	Barbara Giesecke	Mescalero NFH, Box 247, 202 Trout Loop, Mescalero, NM 88230	**Ph.** 505-671-4401 **Fax** 505-671-4562
Golden trout				
Benner Spring	Benner Spring (PA)	Patrick Ferko	PA F&B Commission, Reynoldsdale FCS, 162 Fish Hatchery Road, New Paris, PA 15554	**Ph.** 814-839-2211 **Fax** 814-839-4911
Surprise Lake	Surprise Lake (WY)	Alan Gettings	Dubois SFH, PO Box 704, Dubois, WY 82513	**Ph.** 307-683-2431 **Fax**
Wyoming Gold	Tokul Creek	James Dingwall	Wallace River SFH, 14418 383Road Avenue, Sultan, WA 98294	**Ph.** 206-793-0475 **Fax** 306-793-1382
Kokanee				
Deadwood	Deadwood (ID)	Thomas Frew	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-334-3791 **Fax** 208-334-2114
Flaming Gorge	Lake Run	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Granby	Granby (CO)	Gerald Bennett	Box 545, Granby, CO 80446	**Ph.** 970-887-3654 **Fax**
Granby	Green River	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433
Lake Pend Oreille	Lake Pend Oreille (MT)	John Rankin	IDFG, Panhandle Region, 2750 Kathleen Avenue, Coeur d'Alene, ID 83815	**Ph.** 208-769-1414 **Fax**
New Fork Lake	New Fork Lake (WY)	Jim Barner	Wyoming Game & Fish Department, 3030 Energy Lane, Suite 100, Casper, WY 82604	**Ph.** 307-473-3416 **Fax** 307-473-3433

Table 10-1. Other salmonid species - Continued.

Strain	Broodstock	Contact	Address	Phone / Fax
Untitled				
Granite Creek	Lake Pend Oreille	Chris Downs	ID DF&G, 2750 Kathleen Avenue, Coeur d'Alene, ID 83814	**Ph.** 208-769-1414 **Fax**
Hybrid				
Hybrid	Rainbow/Golden Trout 92	Dale Arnold	London SFH, 2470 Roberts Mill Road S.W., London, OH 43140	**Ph.** 614-852-1412 **Fax** 614-852-1588
Rainbow/Cutthrout	Henry's Lake/Kamloops	Thomas Frew	IDF&G, P. O. Box 25, Boise, ID 83707	**Ph.** 208-334-3791 **Fax** 208-334-2114

Table 10-2. Other salmonid species - Selected broodstock, hatchery, and field performance characteristics for reported broodstocks.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Apache trout									
East Fork	East Fork (WC)	N	F	A	East Fork, White River	Wild	944	1,2,3	3,5,9
Profile Creek	Profile Creek	N	----	----	----	Wild	----	----	----
Arctic grayling									
Big Hole River	Big Hole River (MT)	N	F	----	Big Hole River	Domestic	52	----	1,2,3,4,8,9,10
Meadow Lake	Meadow Lake (WY)	N	S	----	----	Wild	----	----	3,4
Artic char									
Floods Pond	Floods Pond	N	S	----	----	Wild	----	1,2,3	----
Sawtooth Lake	Sunapee Lake	N	S	----	Sunapee Lake in mid 1920's	Wild	----	----	
Bull trout									
Thutada Lake	Peace River Drainage	N	U	----	----	Wild	----	----	----
French River	French River (MN)	L	S	RS	Little Manistee Weir, Lake Michigan	Wild	----	----	3,4,8
Lake Michigan	Lake Oahe (Fall)	L	S	A	Lake Michigan	Wild	----	----	1,2,3,4,7,8,9,10
Salmon River	Salmon River (NY)	L	S	----	Michigan/Washington sources	Unknown	----	----	3,4
Dolly varden									
Mendenhall Lake	Steep Creek	N	U	----	----	Wild	----	----	----
Thutada Lake	Peace River Drainage	N	U	----	----	Wild	----	----	----
Tiekel River	Tiekel River	N	U	----	----	Wild	----	----	----

Table 10-2. Other salmonid species - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
Gila trout									
McKnight Creek	Main Diamond	N	F	A	McKnight Creek, Gila Wilderness	Captive	----	1,3	----
South Diamond	Magellon Creek	N	F	A	Trail Canyon, Magellon Creek	Wild	----	1,3	----
Golden trout									
Benner Spring	Benner Spring (PA)	----	S	----	----	Domestic	----	----	----
Surprise Lake	Surprise Lake (WY)	N	S	----	Surprise lake (Feral brood fish)	Wild	----	----	3,4
Wyoming Gold	Tokul Creek	N	S	----	Tokul Creek (Feral brood fish)	Wild	----	----	3,4
Hybrid									
Hybrid	Rainbow/Golden Trout 92	Y	S	A	Bowden, Shepherd of the Hills & Manchester	Unknown	300	----	4,5
Rainbow/ Cutthroat	Henry's Lake/Kamloops		L	S	RS Henry's Fork Rainbows	Henry's Lake Cutthroats by			Wild
Kokanee									
Deadwood	Deadwood (ID)	L	S	RS	unknown	Wild	----	----	4,8
Flaming Gorge	Lake Run	N	S	----	Feral brood fish from Flaming Gorge	Wild	----	----	3,4
Granby	Granby (CO)	N	S	----	Grandy Reservoir (feral brood fish)	Wild	----	----	4,10
Granby	Green River	N	S	A	Granby Lake, CO or Feral downstream migration	Unknown	----	----	3,4
Lake Pend Oreille	Lake Pend Oreille (MT)	L	S	----	Flathead Lake, Montana	Wild	----	----	4,8

Table 10-2. Other salmonid species - Continued.

Strain	Broodstock	Avail-Ability[1/]	Type of facility[2/]	Disease Status[3/]	Origin	Broodstock type	Estim-ated N_e[4/]	Genetic analysis[5/]	Management recommend-ation[6/]
New Fork Lake	New Fork Lake (WY)	N	S	A	Sheep Creek, Utah	Unknown	----	----	3,4

[1/] Availability codes: Y = Yes - Broodstock is available, N = No – Broodstock is not available, and L = Broodstock available on a limited basis.
[2/] Type of facility codes: F = Federal, S = State, U = University, T = Tribes, and P = Private producer.
[3/] Disease classification codes: A - No listed pathogens detected; AS - Aeromonas salmonicida (Furunculosis); RD - Renibacterium salmonarum, (Bacterial Kidney Disease); B-SC - *Ceratomyxa shasta*; IPNV - *Infectious Pancreatic Necrosis* virus; VHSV - *Viral Hemorrhagic Septicemia*; IHNV - *Infectious Hematopoietic Necrosis* Virus; OMV - *Oncorhynchus masou* virus; YR - *Yersinia ruckeri* (Enteric Redmouth); B-SW - M*yxobolus cerebralis* (Whirling disease); B-SP - Proliferative Kidney Disease agent; B-VL - EED virus; ( ) - pathogen not found, but is suspect; C - Broodstock not inspected or no information provided.
[4/] Effective population number (N_e) was estimated based on the formula $N_e = 4(N_m + N_f) / (N_m N_f)$. N_m = Number male parents and N_f = Number female parents.
[5/] Genetic analysis type codes: 1 = Allozyme: 2 = Nuclear DNA; 3 = Mitochondrial DNA; 4 = Microsatellite; 5 = Meristics
[6/] Management recommendation codes: 1 = Raceway culture, 2 = Tank culture, 3 = Fingerling stocking (rivers), 4 = Fingerling stocking (Lakes), 5 = Catchable stocking (Rivers), 6 = Catchable stocking (Lakes), 7 = Stock natural Rivers, 8 = Stock natural lakes, 9 = Restoration stocking (Rivers), and 10 = Restoration stocking (Lakes).

Table 10-3. Other salmonid Species - Selected reproductive performance and cultural trait information for reported broodstocks.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
									Handling			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	swim-up	1-year	Crowd-ing	Transp-ortation
Apache Trout												
East Fork	East Fork (WC)	101	531	Mean	83	236.00	5.75	87	3.0	2.5	3.0	3.0
				No.	2	2	2	2	2	2	2	2
Arctic Grayling												
Big Hole River	Big Hole River (MT)	401	531	Mean	----	480.00	9.00	----	2.0	3.0	3.0	----
				No.	0	1	1	0	1	1	1	0
Meadow Lake	Meadow Lake (WY)	----	----	Mean	92	156.00	8.80	65	4.0	3.0	2.0	4.0
				No.	1	1	1	1	1	1	1	1
Gila Trout												
McKnight Creek	Main Diamond	201	430	Mean	----	----	----	----	3.0	2.0	3.0	----
				No.	0	0	0	0	1	1	1	0
Golden Trout												
Surprise Lake	Surprise Lake (WY)	----	----	Mean	----	410.00	9.50	77	4.0	4.0	4.0	4.0
				No.	1	1	1	1	1	1	1	1
Hybrid												
Hybrid	Rainbow/Golden Trout 92	----	----	Mean	75	328.00	10.00	68	2.0	2.0	3.0	1.0
				No.	1	1	1	1	1	1	1	1
Rainbow/Cutthrout	Henry's Lake/Kamloops	301	331	Mean	90	149.00	----	95	4.0	4.0	4.0	4.0
				No.	1	1	0	1	1	1	1	1

Table 10-3. Other salmonid Species - Continued.

Strain	Broodstock	Spawning Period			Hatch-bility	Weight		Survival 90 d.	Tolerance to stress[1/]			
		Start (Mo-dd)	End (Mo-dd)		(%)	90 d (No/lb)	365 d (No/lb)	(%)	Handling swim-up	Handling 1-year	Crowd-ing	Transp-ortation
Kookanee												
Deadwood	Deadwood (ID)	801	930	Mean	90	545.00	----	95	5.0	----	4.0	5.0
				No.	1	1	0	1	1	0	1	1
Granby	Green River	----	----	Mean	97	145.00	17.00	94	3.0	3.0	3.0	4.0
				No.	1	1	1	1	1	1	1	1
Lake Pend Oreille	Lake Pend Oreille (MT)	1101	131	Mean	98	2000.00	----	98	4.0	4.0	3.0	3.0
				No.	1	1	0	1	1	1	1	1

[1/] Traits were measured with relative ratings (See Table 2). Tabled values are an arithmetic average of subjective ratings provided by broodstock managers and field biologists completing surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Table 10-4. Other salmonid species – Disease resistance rating (relative ratings[1/]) of reported broodstocks for nine common salmonid diseases.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Apache trout											
East Fork	East Fork (WC)	Mean	----	----	----	----	----	----	----	2.0	----
		No.	0	0	0	0	0	0	0	1	0
Arctic grayling											
Big Hole River	Big Hole River (MT)	Mean	----	2.0	----	----	----	----	----	----	----
		No.	0	1	0	0	0	0	0	0	0
Meadow Lake	Meadow Lake (WY)	Mean	3.0	----	----	----	----	----	----	3.0	----
		No.	1	0	0	0	0	0	0	1	0
Gila trout											
McKnight Creek	Main Diamond	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
South Diamond	Magellon Creek	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Golden trout											
Surprise Lake	Surprise Lake (WY)	Mean	5.0	3.0	3.0	----	----	----	----	4.0	----
		No.	1	1	1	0	0	0	0	1	0
Wyoming Gold	Tokul Creek	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0
Hybrid											
Hybrid	Rainbow/Golden Trout 92	Mean	2.0	2.0	2.0	----	2.0	----	----	3.0	----
		No.	1	1	1	0	1	0	0	1	0
Rainbow/Cutthrout	Henry's Lake/Kamloops	Mean	----	----	----	----	4.0	----	----	4.0	4.0
		No.	0	0	0	0	1	0	0	1	1

Table 10-4. Other salmonid species – Continued.

Strain	Broodstock		Salmonid diseases[2/] 1	2	3	4	5	6	7	8	9
Kokanee											
Deadwood	Deadwood (ID)	Mean	----	----	----	----	----	----	----	4.0	----
		No.	0	0	0	0	0	0	0	1	0
Flaming Gorge	Lake Run	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Granby	Granby (CO)	Mean	----	----	----	----	----	----	----	4.0	----
		No.	0	0	0	0	0	0	0	1	0
Granby	Green River	Mean	----	----	----	----	----	----	----	3.0	----
		No.	0	0	0	0	0	0	0	1	0
Lake Pend Oreille	Lake Pend Oreille (MT)	Mean	----	2.0	----	----	----	----	----	1.0	4.0
		No.	0	1	0	0	0	0	0	1	1
New Fork Lake	New Fork Lake (WY)	Mean	----	----	----	----	----	----	----	----	----
		No.	0	0	0	0	0	0	0	0	0

[1/] Disease Resistance Relative Rating (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each disease provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, and 5 = very resistant. Only rating values of 1 to 5 were used to calculate the mean values reported above.

[2/] Disease Codes 1 = Furunculosis (*Aeromonas salmonicida*), 2 = Bacterial Kidney Disease (*Renibacterium salmonarum*), 3 = Enteric Redmouth (*Yerinia ruckeri*), 4 = *Ceratomyxa shasta*, 5 = infectious Pancreatic Necrosis, 6 = Viral Hemorrhagic Septicemia, 7 = infectious Hematopoietic Necrosis, 8 = Bacterial Gill Disease, and 9 = Cold Water Disease.

Table 10-5. Other salmonid species – Eight selected post-stocking field performance traits (relative ratings[1/]) for reported broodstocks in riverine and lacustrine habitats.

Strain	Broodstock		Post stocking										Tolerance to					
			Survival				Growth		Angling susceptibility		Tendency to migrate		Temperature > 70 °C		pH < 5.0		Catch & release	
			90 days		Over-winter													
			R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L
Arctic grayling																		
Big Hole River	Big Hole River (MT)	Mean	----	----	----	----	3.0	----	4.0	----	5.0	----	3.0	----	----	----	----	----
		No.	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0
Meadow Lake	Meadow Lake (WY)	Mean	3.0	----	3.0	----	2.0	----	4.0	----	3.0	----	1.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Golden Trout																		
Surprise Lake	Surprise Lake (WY)	Mean	3.0	----	3.0	----	3.0	----	2.5	----	4.0	----	1.0	----	----	----	----	----
		No.	2	0	2	0	2	0	2	0	2	0	1	0	0	0	0	0
Wyoming Gold	Tokul Creek	Mean	3.0	----	4.0	----	3.0	----	2.0	----	----	----	----	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Hyrbids																		
Hybrid	Rainbow/ Golden Trout 92	Mean	----	----	3.0	----	3.0	----	5.0	----	2.0	----	5.0	----	----	----	----	----
		No.	0	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Rainbow/Cutthrout	Henry's Lake/ Kamloops	Mean	2.0	4.0	2.0	3.0	2.0	5.0	3.0	3.0	4.0	4.0	3.0	4.0	----	----	3.0	4.0
		No.	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1

Table 10-5. Other salmonid species – Continued.

Strain	Broodstock		Post stocking: Survival: 90 days R	90 days L	Over-winter R	Over-winter L	Growth R	Growth L	Angling susceptibility R	Angling susceptibility L	Tendency to migrate R	Tendency to migrate L	Tolerance to: Temperature > 70 °C R	Temperature > 70 °C L	pH < 5.0 R	pH < 5.0 L	Catch & release R	Catch & release L
Kookanee																		
Deadwood	Deadwood (ID)	Mean	1.0	4.0	1.0	4.0	1.0	4.0	1.0	4.0	----	5.0	3.0	4.0	----	----	----	----
		No.	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0
Flaming Gorge	Lake Run	Mean	3.0	----	----	----	3.0	----	2.0	----	4.0	----	3.0	----	3.0	----	----	----
		No.	1	0	0	0	1	0	1	0	1	0	1	0	1	0	0	0
Granby	Granby (CO)	Mean	5.0	----	5.0	----	5.0	----	5.0	----	4.0	----	3.0	----	----	----	----	----
		No.	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Granby	Green River	Mean	3.0	----	----	----	3.0	----	2.0	----	4.0	----	3.0	----	3.0	----	----	----
		No.	1	0	0	0	1	0	1	0	1	0	1	0	1	0	0	0
Lake Pend Oreille	Lake Pend Oreille (MT)	Mean	----	4.0	----	3.0	----	3.0	----	4.0	----	4.0	----	2.0	----	3.0	----	2.0
		No.	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
New Fork Lake	New Fork Lake (WY)	Mean	3.0	----	----	----	3.0	----	2.0	----	4.0	----	3.0	----	3.0	----	----	----
		No.	1	0	0	0	1	0	1	0	1	0	1	0	1	0	0	0

[1/] Trait Relative Ratings (See Table 2) - Tabled values are an arithmetic average of subjective ratings for each trait provided by broodstock managers and field biologists completing the broodstock surveys. Ratings are: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, and 5 = superior. Only rating values of 1 to 5 were used to calculate the mean values reported above.

Appendix A. National Survey of Inland Trout Strains – The NFSR-T survey form (blank) is provided for database users, cooperators, and clients to submit new information on salmonid strains/broodstocks (wild, captive or domestic) for inclusion in NFSR-T.

FORM NO. _____

NATIONAL SURVEY OF INLAND TROUT STRAINS

SECTION 1 - Broodstock information

1. Species: _____

2. Strain name of broodstock (USUALLY, name of hatchery or water body where fish ORIGINATED) _____

3. Broodstock name (Name used by managing agency to identify this group of fish): _____

4. Designate a contact person from your organization we can contact in the future for additional information about this strain or broodstock and to clarify questions that may arise.

Name: _____ Title: _____ Agency/organization: _____

Address: _____ City:_____ State:_____ Zip code:_____

Phone No. (_____)_____ FAX No. (_____)_____ E-Mail: _____

Type Organization (Circle appropriate response)? **A.** Federal **B.** State **C.** Private **D.** Tribal **E.** University, **F.** Other _____

5. Are there publications or in-house reports describing the origin, breeding history, reproductive characteristics or performance of this broodstock? If there are, please list below and identify a source where copies can be obtained. Identified reports, where available, will be added to the Northern Appalachian Research Laboratory library, Route # 4, Box 63, Wellsboro, PA 16901. All reports collected will be made available to cooperators and clients seeking information on specific broodstocks.

AUTHOR	DATE	TITLE	PUBLISHED BY
a.			
b.			
c			
d.			

6. Identify other individuals who have experience with this strain/broodstock and could provide additional information such as broodstock origin, reproduction, life history, genetic traits, cultural performance, or post-stocking success in different management situation. (NOTE: these individuals will be contacted to provide information similar to that requested here).

A. Name: _____ Title: _____ Agency/organization: _____

Address: _____ City:_____ State:_____ Zip code:_____

Phone No. (_____)_____ FAX No. (_____)_____ E-Mail: _____

B. Name: _____ Title: _____ Agency/organization: _____

Address: _____ City:_____ State:_____ Zip code:_____

Phone No. (_____)_____ FAX No. (_____)_____ E-Mail: _____

C. Name: _____ Title: _____ Agency/organization: _____

Address: _____ City:_____ State:_____ Zip code:_____

Phone No. (_____)_____ FAX No. (_____)_____ E-Mail: _____

NATIONAL SURVEY OF INLAND TROUT STRAINS

SECTION 2 - Broodstock information

7. Current location (Name of hatchery, farm, or water body) of broodstock?
NAME: _____

8. Year when original broodstock was started (YEAR)? ___

9. Source where the original broodstock was obtained (Location name - i.e., hatchery, farm, or water body)?
NAME: _____

10. The original broodstock source was classified as (CIRCLE ONE)?

a. Domestic - Broodstock from parents reared in captivity for one or more generations.
b. Wild - Broodstock from parents that were a natural or free ranging population.
c. Captive - Broodstock from wild parents that were brought into captivity as eggs, larvae, or juveniles. Progeny from captive broodstock (used for broodstock) are domestic broodstock.
d. Unknown

11. How many females and males from the original source population contributed spawns to establish the first broodstock?
a. No. Males _____ b. No. Females _____

Describe the breeding method used to produce replacement broodstock in questions 12-24.

12. Are male and female parents taken from a single year-class? (CIRCLE ONE).

a. Yes b. No c. Unknown

13. What is average age (years) of broodstock when the next broodstock generation is produced?

a. Males _____ years b. Females _____ years

14. How many brood fish (total) are used as parents to produce the next generation broodstock lot?

a. Number males _____ b. Number females _____

15. Males and females are chosen for broodstock based on the following traits? (CIRCLE APPLICABLE RESPONSES)

a. Random (No pairing criteria)

b. Body color c. Body size

d. Body conformation e. Spawning age (years)

f. Spawn early in season g. Spawn late in season

h. Other pairing criteria were --(List trait or traits):

1) _____

2) _____

16. The breeding system used to maintain this broodstock is: (CIRCLE APPLICABLE RESPONSES)

a. Random mating - Males and females mature on a given date are randomly paired for spawning without regard to other traits
b. Family selection - Brood fish are chosen from families with superior performance for one of more traits
c. Index selection - Broodstock are chosen based on a performance index of 2 or more traits
d. Mass selection - Broodstock are chosen based on individual performance for one trait.
e. Pedigree selection - Broodstock are chosen based on relationship to specific ancestors
f. Crossbreeding - Individuals are intentionally mated to individuals of a different broodstock, strain, or population.
g. Other breeding system: _____

h. Describe how the breeding system is applied to this broodstock.

_____

_____

_____

17. Replacement broodstock come from (CIRCLE ONE):

a. Spawns on a single spawning date at or near the peak of the spawning season.
b. Spawns on 2-3 spawning dates near the peak of the spawning season.
c. Spawns taken throughout the spawning season.
d. Wild fish spawns
e. Broodstock are NOT REPLACED.
f. Other methods, DESCRIBE _____

_____

18. Is the broodstock "renewed" periodically by the addition of genetic material from the "original broodstock" source? (CIRCLE ONE)

a. Yes b. No

c. If YES,

1) Broodstock is supplemented with genetic material from the original source every _____ yrs.

2) Describe procedure used to add new genetic material to the broodstock.

_____

_____

_____

_____

NATIONAL SURVEY OF INLAND TROUT STRAINS

SECTION 2 - Broodstock information

19. During spawning season, broodstock are spawn checked

a. Every _____ days.

20. Male to female ratio (M/F) used in the spawning operation (i.e., 1 male per female, 2 males per female, or 3 males per 2 females)?

a. Production lots: No. Males _____ No. Females _____

b. Broodstock lots: No. Males _____ No Females _____

21. Is milt from multiple males pooled prior to fertilization of eggs? (CIRCLE ONE)

a. Yes b. No

c. If YES,
1) Number of males combined per pool? ___ males

2) Method used to pool milt? (DESCRIBE) _____

_____

_____

22. Is natural spawning season artificially modified (accelerate, delay or shorten duration)? (CIRCLE ONE)

a. Yes b. No c. Unknown

d. If YES, describe method used (light control, temperature, etc.)

_____

23. Identify life stages when fish numbers in broodstock lots are reduced. Respond YES or NO for each life stage. If YES, identify procedure used to reduce fish numbers.

Life Stage	YES or No	Procedure based on what trait or trait(s)	Number is reduced: from	to
a. Green eggs	___	_____	_____	_____
b. Eyed eggs	___	_____	_____	_____
c. First feed	___	_____	_____	_____
d. Feeding fry	___	_____	_____	_____
e. Fingerling	___	_____	_____	_____
f. Yearling	___	_____	_____	_____
g. Sub adult	___	_____	_____	_____
h. Adult	___	_____	_____	_____

24 What is current inventory of fish being held for future broodstock needs? List year-classes separately from youngest to oldest. If sex of fish is unknown, record information assuming a 50/50 ratio.

Year spawned (young to old)	Number fish currently on hand Male/Females	Mean fish Weight (pounds) Male/Females	Number of parent of this year-class Male/Females
1. _____	_____/_____	_____/_____	_____/_____
2 _____	_____/_____	_____/_____	_____/_____
3 _____	_____/_____	_____/_____	_____/_____
4 _____	_____/_____	_____/_____	_____/_____

25 Broodstock reproductive characteristics:

Trait	Males	Females
a. Spawning period (month/day).	From ___/___ To ___/___	From ___/___ To ___/___
b. Age (years) when first mature.	_____	_____
c. % fish mature in year when lot was first mature (age in Q 25b above).	_____	_____
d. Eggs per female at first maturity.	_____	_____
e. Mean fish weight (lb/fish) at first maturity.	_____	_____
f. Eggs per female at 2nd maturity.	_____	_____
g. Mean fish weight (lb/fish) at 2nd maturity.	_____	_____
h. Eyed eggs or fry are available for distribution (month/day).	From ___/___ To _____/___	From ___/___ To ____/____

26. Disease classification (FWS classification system) of this broodstock for the past 5 years is:

a. 2002 _____ b. 2001 _____

c. 2000 _____ d. 1999 _____

e. 1998 _____ f. Not classified _____

NATIONAL SURVEY OF INLAND TROUT STRAINS

SECTION 2 - Broodstock information

27. Are fish from this broodstock available to other agencies/organizations within the aquaculture industry (federal, state, and private sectors) to start new broodstocks and to conduct strain evaluations trials? (CIRCLE ONE)

a. Yes b. No c. Limited**
(** i.e., eggs/fish are available under certain conditions)

d. If Yes or Limited, what life stages are available? (CIRCLE APPROPRIATE RESPONSES)

1) Eggs 2) Fry 3) Fingerlings 4) Adults

e. Can fish or eggs from this broodstock be purchased (CIRCLE ONE)?

1) Yes 2) No

28. Has broodstock been genetically characterized? (CIRCLE ONE)

a. Yes b. No c. Unknown

d. If Yes,

1) Characterization type (CIRCLE TYPES APPLIED)

a) Allozyme analysis b) Mitochondrial DNA

c) Nuclear DNA d) Microsatellite

e) Other _____

2) Characterization done by (person or laboratory): __

_____

_____

3) Date characterization done (month/year): ___/___

4) Are copies of report available (CIRCLE ONE):

a) Yes b) No c) Unknown

d) IF yes, address where copies can be obtained:

Name: _____

Address _____

City: _____ State: ____, Zip _____

29. List any information (characteristics, traits, life history, etc.) about this broodstock; you feel would be useful to potential users.

_____

_____

_____

_____

_____

_____

NATIONAL SURVEY OF TROUT STRAINS

SECTION 3, Hatchery/captive production

30. Source of eggs or fish evaluated in this production report (Hatchery, farm, or water body)

Name: _____

31. Production facility where fish were reared:

Name _____

32. Management programs for which fish were produced? (CIRCLE APPLICABLE RESPONSES)

a. Recreational fishery

b. Food fish

c. Supplementation

d. Threatened/endangered

33. Life stage when the fish were stocked or marketed? (CIRCLE APPLICABLE RESPONSES)

a. Eggs b. Fry

c. Fingerlings d. Catchable

e. 3/4 to 1.5 pound f. Adult

g. Other _____.

34. Water source (type) used to rear these fish? (CIRCLE APPLICABLE RESPONSES).

a. Surface b. Well c. Spring

d. Reconditioned/Recirculated

e. Other

_____

NATIONAL SURVEY OF TROUT STRAINS

SECTION 3, Hatchery/captive production

35. Water quality parameters

a. Water Temperature (° F or ° C -- CIRCLE ONE)

January _____ May _____ September ____

February _____ June _____ October _____

March _____ July _____ November _____

April _____ August _____ December _____

Water parameters	Mean	High	Low
b. pH:			
c. Total Hardness ($CaCO_3$):			
d. Alkalinity			
e. Dissolved oxygen (ppm)			
f. Gas supersaturation			

36. Information provided in this report are based on the following production year-classes.

a. If a single production year-class, year was: _____

b. If multiple production year-classes years were :

Beginning year _____ Ending year _____

37. Rearing unit types used to hold production lots during the following life stages (CIRCLE APPROPRIATE RESPONSES)?

	Fry	Fingerling	Sub-adult	Adult
a.	Raceways	Raceways	Raceways	Raceways
b.	Circular tanks	Circular tanks	Circular tanks	Circular tanks
c.	Other tank	Other tank	Other tank	Other tank
d.	Ponds	Ponds	Ponds	Ponds
e.	Other _____	Other _____	Other _____	Other _____

38. Were outside rearing units covered to protect fish from direct sunlight? (CIRCLE ONE)

a. Yes b. No c. Unknown

39. Feed type fed and feeding methods used at each life stage (CIRCLE CHOICES FOR EACH LIFE STAGE):

Life stage	Feed type	Feed method	Feed type (Describe)	Feed Manufacture
a. Fry	Natural	Hand	Granular	Commercial
	Formulated	Automatic	Pelleted	Self-processed
		Self-feeder		
b. Fingerling	Natural	Hand	Granular	Commercial
	Formulated	Automatic	Pelleted	Self-processed
		Self-feeder		
c. Sub-adult	Natural	Hand	Granular	Commercial
	Formulated	Automatic	Pelleted	Self-processed
		Self-feeder		
d. Adult	Natural	Hand	Granular	Commercial
	Formulated	Automatic	Pelleted	Self-processed
		Self-feeder		

40. Fish reaction to presence of cultural personal (CIRCLE ONE):

a. Approach culturist to feed

b. No reaction to culturist

c. Slowly move away from culturist

d. "Wild" flight respons-rapidly move to far side of tank

e. Unknown

41. Do fish require special consideration (beyond that normally used for fish of this species) during handling and transport? (CIRCLE ONE)

a. Yes b. No

c. If yes, what are the special handling requirements?

_____

_____

_____

_____

NATIONAL SURVEY OF TROUT STRAINS

SECTION 3, Hatchery/captive production

42. Growth, survival, and feed conversion during production from hatch to stocking or market. Record mean and range values for each trait..

Traits	Mean	High	Low
a. % eye of egg lots (green egg to eyed egg stage)	_____	_____	_____
b. % hatch (eyed stage to hatch)	_____	_____	_____
c. % fry survival (hatch to first feeding stage).	_____	_____	_____
d. % fry survival (first feeding to 90 d on feed).	_____	_____	_____
e. Mean fish weight (No./lb) at 90 d on feed.	_____	_____	_____
f. Mean fish weight (No./lb) at 1-year-of-age.	_____	_____	_____
g. Feed conversion from 90 d to 1 year. (lb feed/lb weight gain)	_____	_____	_____
h. Frequency of yearling precocious males (%)	_____	_____	_____

43. Tolerance to stress -- Based on your experience with other strains, rate the relative tolerance of these fish to each stress category below using the scale: 0 = unknown, 1 = poor, 2 = below average, 3 = average, 4 = above average, 5 = good.

Type of stress	Relative Stress Tolerance
a. Handling stress -- swim-up to 90 days	_____
b. Handling stress -- 90 days to 1 year	_____
c. Handling stress -- during spawning period	_____
d. Tolerance to crowding	_____
e. Tolerance to temperature fluctuation	_____
f. Tolerance to crowding during transport	_____

44. Disease resistance-- Based on your experience with other strains, rate the relative resistance of these fish to each of the following diseases using the scale: 0 = unknown, 1 = very susceptible, 2 = susceptible, 3 = average, 4 = resistant, 5 = very resistant. ***** If a given disease has not occurred at this facility, enter zero (0) for UNKNOWN.**

Disease	Relative disease resistance
a. Furunculosis	_____
b. Bacterial Kidney Disease (BKD)	_____
c. Enteric Redmouth (ERM).....	_____
d. Ceratomyxa Shasta	_____
e. Infectious Pancreatic Necrosis (IPN)	_____
f. Viral Hemorrhagic Septicemia (VHS).....	_____
g. Infectious Hematopoietic Necrosis (IHN)	_____
h. Bacterial Gill Disease	_____
i. Coldwater disease (Flexibacter psycrophilus)..	_____
l. Other (list): _____	_____
_____	_____

45. Record additional information (characteristics, traits, life history, etc.) about this broodstock, you feel would be useful to potential users.

_____

_____

_____

_____

_____

_____

_____

_____

NATIONAL SURVEY OF TROUT STRAINS

SECTION 4, Field performance information

46. Field performance characteristics: Based on your experience with other strains, rate the relative performance of these fish for each of the following traits using the following scale: : 0 = Unknown, 1 = Poor, 2 = Below average, 3 = Average, 4 = Above average, and 5 = Superior. **(* Mark only combinations where this strain was actually stocked.)**

Trait	Relative rating				
	Stream	River	Pond (<20 acres)	Impoundment (20-500 acres)	Impoundment (>500 acres)
a. Survival after stocking					
b. Growth rate after stocking					
c. Susceptibility to angling					
d. Tolerance to water temperature (>70 F)					
e. Tolerance to low pH levels (<5.0)					
f. Fish survival into 2nd fishing season					
g. Tendency to migrate					
h. Tolerance to catch and release					
i. Other traits measured: (1)_____					
j. Other traits measured: (2)_____					

47. For each combination of fishery type and life stage stocked (listed below), rate the relative performance of this strain using the scale: 0 = Unknown, 1 = Poor, 2 = Below average, 3 = Average, 4 = Above average, and 5 = Superior. **(* Mark only combinations where this strain was actually stocked.)**

	Life stage stocked		
Fishery Type	Fry	Fingerling	Yearling
a. Streams			
b. Rivers			
c. Ponds (< 20 acres)			
d. Impoundments (20-500 acres)			
e. Impoundments (> 500 acres)			
f. Tail waters			
g. 2-Story fisheries			
h. Eutrophic lakes			
i. Oligotrophic lakes			

48. Does this fish strain become a piscivore at some life stage? **(CIRCLE ONE)**

a. Yes b. No c. Unknown

d. If YES, at what stage (identify age, length or weight if know and measurement units)?

_____

_____

49. Does this fish strain have special habitat preference? **(CIRCLE ONE)**

a. Yes b. No c. Unknown

b. If YES, describe: _____

_____

_____

_____

_____

_____

_____

NATIONAL SURVEY OF TROUT STRAINS

SECTION 4, Field performance information

50. Identify management applications for which you feel this broodstock/strain is "well" adapted or "poorly" adapted by placing an "X" in one of the boxes after each management or fisheries situation. Where you are unsure or have limited experience, leave that application blank.

Management Application	"Well" Adapted	"Poorly Adapted
Food production (Aquaculture):		
a. Raceway culture	_____	_____
b. Pond culture	_____	_____
c. Tank culture	_____	_____
d. Cage Culture	_____	_____
e. Intensive culture	_____	_____
f. Extensive culture	_____	_____
g. Broodstock production	_____	_____
h. Fee fishing ponds	_____	_____
i. Other (_____)	_____	_____
Fisheries Management		
j. Fingerling supplementation programs (put/grow/take) in rivers and streams.	_____	_____
k. Fingerling supplementation programs (put/grow/take) in lakes and reservoirs	_____	_____
l. Catchable supplementation programs (put/take) in rivers and streams.	_____	_____
m. Catchable supplementation programs (put/take) in lakes and reservoirs	_____	_____
n. Enhance natural populations (put/grow/spawn) in rivers and streams	_____	_____
o. Enhance natural populations (put/grow/spawn) in lakes and reservoirs	_____	_____
p. Restore natural (reproducing) populations in rivers and streams.	_____	_____
q. Restore natural (reproducing) populations in lakes and reservoirs.	_____	_____
r. Put and take recreational fishery	_____	_____
s. Urban fisheries	_____	_____
t. Trophy fisheries	_____	_____
u. Other (_____)	_____	_____

51. If additional information (behavior characteristics, life history, performance, habitat preference, etc) is available you feel would be useful to other potential users of this strain, please describe below.

NATIONAL SURVEY OF INLAND TROUT STRAINS

---- INSTRUCTIONS ----

This form is designed to collect a standard set of information on known strains/broodstocks (wild and domestic) of the following salmonid species:

Scientific name	Common name	Scientific name	Common name
Oncorhynchus aguabonita	**Golden trout**	***Salmo trutta***	**Brown trout**
Oncorhynchus apache	**Apache trout**	***Salvelinus alpinus***	**Arctic char**
Oncorhynchus clarki	**Cutthroat trout**	***Salvelinus confluentus***	**Bull trout**
Oncorhynchus gilae	**Gila trout**	***Salvelinus fontinalis***	**Brook trout**
Oncorhynchus mykiss	**Rainbow trout**	***Salvelinus malma***	**Dolly varden**
Oncorhynchus nerka	**Kokanee**	***Salvelinus namaycush***	**Lake trout**
Salmo salar	**Atlantic salmon**	***Thymallus arcticus***	**Arctic grayling**

The survey is composed of four sections: Strain identification, Broodstock information, Hatchery/culture performance, and Field performance. Request that each cooperator complete Section one in addition to any other sections for which they have information.

1. If the cooperator does not have broodstock information, enter the source where the eggs or fish were obtained.
2. If the cooperator does not have Hatchery/culture information, enter name of a hatchery where fish were cultured.
3. If the cooperator does not have field performances information, enter name of field biologist or agency that has monitored these fish after stocking.

Please provide name, address and telephone number for additional contact persons for this strain at the bottom of this page. (Where possible, broodstock managers should complete the Strain identification and Broodstocks information sections, hatchery managers the hatchery/culture performance section, and field biologists the Field performance section.)

If you have questions about any of the survey questions, contact one of the following persons:

NAME	PHONE	FAX	E-MAIL
Harold L Kincaid	570-724-3322 ext 232	570-724-2525	hkincaid@usgs.gov
Les Mengel	570-724-3322 ext 236	570-724-2525	ljmengel@usgs.gov

Mail completed forms to: **Dr. Harold L. Kincaid**
USGS, Northern Appalachian Research Laboratory
R.R.4, Box 63
Wellsboro, PA 16901

Your assistance in providing the requested information is essential for us to make future releases as complete as possible. Your assistance is appreciated.

Thank you.

Appendix B. **National Fish Strain Registry - Trout (NFSR-T): New Strain/Broodstock Recommendation Form. --- Recommendation form used by fisheries personnel to identify new salmonid strains/broodstocks (wild, captive, or domestic) for inclusion in the database. This recommendation form may be reproduced locally.**

NATIONAL SURVEY OF INLAND TROUT STRAINS

New strain/broodstock recommendation form

1. Species _____

2. Strain name _____
(Usually name of water body, drainage, of hatchery where fish originated):

3. Broodstock name _____
(Usually the name used by management to identify this group of fish):

4. Contact person who can provide performance information and clarify future questions that may arise.

Name: _____ Title: _____ Agency/organization: _____

Address: _____ City: _____ State: _____ Zip code: _____

Phone No. (_____)_____ FAX No. (_____)_____ E-Mail: _____

Type Organization (Circle appropriate response)? **A.** Federal **B.** State **C.** Private **D.** Tribal **E.** University **F.** Other ____

5. Recommended by:

Name: _____ Title: _____ Agency/organization: _____

Address: _____ City: _____ State: _____ Zip code: _____

Phone No. (_____)_____ FAX No. (_____)_____ E-Mail: _____

***** **INSTRUCTIONS** *****

The National Fish Strain Registry - Trout (NFSR-T) is designed to collect a standard set of information on known strains/broodstocks (wild and domestic) of the following salmonid species:

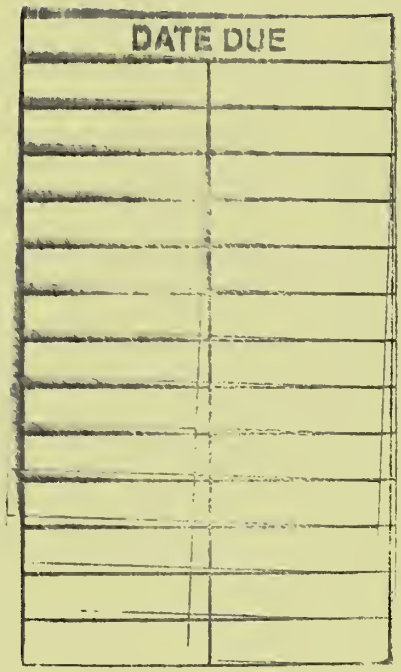
Scientific name	Common name	Scientific name	Common name
Oncorhynchus apache	Apache trout	*Salmo trutta*	Brown trout
Oncorhynchus aguabonita	Golden trout	*Salvelinus alpinus*	Arctic char
Oncorhynchus clarki	Cutthroat trout	*Salvelinus confluentus*	Bull trout
Oncorhynchus gilae	Gila trout	*Salvelinus fontinalis*	Brook trout
Oncorhynchus mykiss	Rainbow trout	*Salvelinus malma*	Dolly varden
Oncorhynchus nerka	Kokanee	*Salvelinus namaycush*	Lake trout
Salmo salar	Atlantic salmon	*Thymallus arcticus*	Arctic grayling

If you are aware of strains or broodstocks of these species not currently in the NFSR-T, please identify those broodstocks using this form. Include the name of one or more person(s) who can provide information on each broodstock identified. We will contact these person(s) to obtain the necessary information on each recommended broodstock and include that broodstock in future NFSR-T releases. A separate form must be used for each broodstock recommended.

Mail completed recommendations to: **Dr. Harold L. Kincaid**
USGS, Northern Appalachian Research Laboratory
R.R.4, Box 63
Wellsboro, PA 16901

Your assistance in providing the requested information is essential for us to make future releases as complete as possible. Your assistance is appreciated.

Thank you


DATE DUE

U.S. Geological Survey
Leetown Science Center
Northern Appalachian Research Laboratory
RD #4, Box 63
Wellsboro, PA 16901