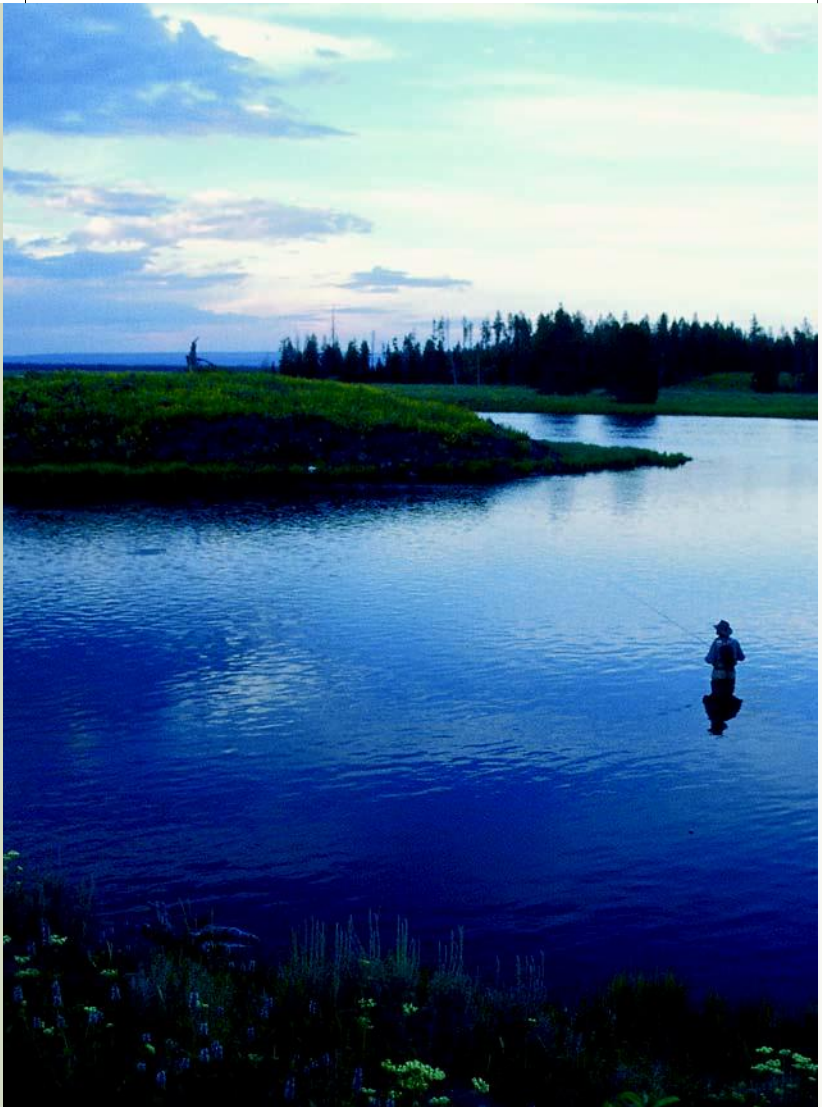
HENRY'S FORK FOUNDATION

Caldera Project


Island Park Reservoir
Island Park Dam
Buffalo River
Buffalo River Dam
Box Canyon
Antelope Park Creek
Blue Springs Creek
Big Bend Creek
Last Chance
Last Chance Canal
Thurmon Creek
Harriman State Park—river boundaries
Silver Lake
Fish Creek
Pinehaven
Henry's Fork
HWY 20
Riverside Campground
Upper Mesa Falls—9 miles



The Henry's Fork *of the* Snake River

as it flows through Harriman State Park—"the Ranch" *to* generations *of* anglers—*is one of the* world's finest *and* best-loved trout streams.

Immortalized in the 1970s and 80s by legendary authors such as Charles Brooks and Ernest Schwiebert, the Ranch's fame rests on its reputation for big, selective trout, prolific hatches, and extraordinary natural surroundings. This nine mile stretch of the Henry's Fork is an icon in the world of American fly fishing.

The reputation and popularity of the Ranch have led to it being the focus of more than two decades' worth of scientific inquiry. The dozens of studies that have been completed in and around the Ranch have created a wealth of knowledge about the fishery, and led to significant efforts aimed at its improvement. But, like many great trout fisheries in the western United States, the Ranch is the product of a complex set of natural and manmade influences, and the quality of angling has fluctuated widely over the years. Now, by the accounts of many anglers, the Ranch fishery has been declining for several years, that decline measured in terms of fewer trout, less robust hatches, and loss of habitat.

With this in mind, the Henry's Fork Foundation (HFF) has begun the Caldera Project, named for the 28 mile section of river from Island Park Dam to Mesa Falls that includes the Ranch. The HFF will assess what we know about this great fishery and evaluate resource management in light of that knowledge. We will also identify what we do not know, and determine if, and if so how, we could better manage these waters.

The purpose of this brochure is to answer, based on a synopsis of the research that has been completed in the Caldera, some of the recurring questions that many anglers and other river lovers consistently have, as well as suggesting potential options for further inquiry. Please take a few minutes to acquaint yourself with the extraordinary portrait of a river that has been painstakingly painted by dozens of researchers over many years. Their work has brought into focus not only the life and inner workings of the Caldera section of the Henry's Fork, but also our path forward as we contemplate the future of this priceless resource.

Cover photo: Susan Steinman
Photo left: Brad Schwarm

Timeline

A Brief History *of* Managing *the* Caldera Section

Late 1800s: Rainbow trout introduced into the Henry's Fork watershed.

1936: Dam and hydroelectric project constructed on the Buffalo River.

1939: Island Park Dam completed.

1939-1972: Winter flows completely cut off below Island Park Dam for 30 to 90+ days in 76% of these years.

1972: Reservoir storage season lengthened, increasing winter flow flexibility.

1973: Idaho Department of Fish and Game (IDFG) stocks 31,400 "catchable" rainbow trout into Caldera section; this number is likely a typical stocking figure for the two decades between the late 1950s and the late 1970s.

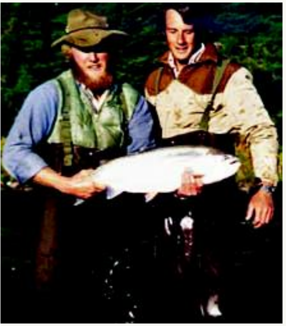


Photo: Mike Lawson

1975: Ernest Schwiebert article "The Best Dry Fly Stream in the West" appears in *Sports Afield*.

1977, 1979, 1981, 1984: Island Park Reservoir drawdowns to 12% or less of capacity; presumed passage of large numbers of reservoir fish through dam outlet into Caldera section (see photo at left).

1978: IDFG ceases fish stocking in Caldera section. 7,000+ trout-per-mile in the Box Canyon; estimate likely enhanced by reservoir fish and previous IDFG stocking.

1981: IDFG survey records high angler satisfaction on the Ranch.

1982: Harriman State Park opens.

1984: Henry's Fork Foundation (HFF) incorporated.

1986: Charles Brooks publishes *The Henry's Fork*. HFF initiates research and restoration program; successfully lobbies Congress to permanently protect from hydropower development 50 miles of river from Island Park Dam to Ashton Reservoir; leads effort to install cattle fencing from Last Chance to Pinehaven.

1987: Catch-and-release management policy adopted by IDFG for Caldera section. 5,841 trout-per-mile in the Box Canyon.

1990-1992: HFF surveys record low angler satisfaction on the Ranch.

1992: Island Park Reservoir drained, major sediment deposition into Caldera section. Large numbers of reservoir fish pass through dam outlet into Caldera section.

1993: HFF survey records high angler satisfaction on the Ranch.

1994: Island Park Dam hydropower retrofit goes online with state-of-the-art water quality monitoring systems and a fish-screened dam intake that becomes primary connection between reservoir and Caldera section at reservoir levels of 28,000 acre feet (21% of capacity) or greater. At reservoir levels below 21% of capacity water passes through old, unscreened intake.

1996: Fish ladder installed at Buffalo Dam. 1,829 trout-per-mile in the Box Canyon.

Photo: Brad Schwarm

1998: Trout Unlimited members vote the Henry's Fork the best trout stream in America. 3,846 trout-per-mile in the Box Canyon.

1999: Research documents late-winter flows below Island Park Dam as primary limiting factor in wild trout abundance.

2001: IDFG cuts Island Park Reservoir rainbow trout stocking quota from 750,000 to 250,000.

2001, 2002, 2003, 2007: Island Park Reservoir drawdowns to 12% or less of capacity; presumed passage of large numbers of reservoir fish through dam outlet into Caldera section.

2003: 1,638 trout-per-mile in the Box Canyon, the lowest estimate on record. Fremont-Madison Conveyance Act passed by Congress, mandating Henry's Fork drought management planning process advocated by the HFF and Trout Unlimited. Flows cut off below Island Park Dam from late October through Christmas to enable dam repairs; HFF/IDFG lead major fish rescue operation below dam.

2003 forward: Annual drought management planning process results in winter flows to protect wild trout below Island Park Dam.

2005: Buffalo Dam fish ladder improved to allow upstream passage of all age classes of wild trout.

2007: 3,717 trout-per-mile in the Box Canyon. IDFG raises Island Park Reservoir rainbow trout stocking quota from 250,000 to 750,000.

2008: HFF initiates Caldera Project to evaluate the status of research, management, and angler satisfaction in the Caldera section.

Background

In 1978 the IDFG ceased its stocking program and began to manage the Henry's Fork below Island Park Dam as a wild trout fishery.

Photo: Brad Schwarm

The headwaters of the Henry's Fork lie within the western edge of Yellowstone National Park and along the Continental Divide on the Idaho-Montana border. The sources of the river are largely springwater. One of its major tributaries, the Buffalo River, flows into the main river high on the Island Park Caldera, a large basin shaped volcanic formation drained by the Henry's Fork. Harriman State Park and the community of Last Chance are at the heart of the Caldera area.

In 1939, Island Park Dam was completed on the Henry's Fork just upstream of the Ranch, creating an irrigation storage reservoir and giving water managers the ability to control the river's flow. For more than 30 years guaranteeing irrigation water storage and delivery was the sole water management consideration, and in many winter storage seasons the river's flow was completely cut off at the dam for periods of 30 to 90 or more days. The Idaho Department of Fish and Game (IDFG) stocked the river in the Caldera section with tens of thousands of trout annually, mitigating in part the inevitable fisheries impacts of the prevailing water management.

In the 1970s, water management began to be more conducive to maintaining wild trout populations, and in 1978 the IDFG ceased its stocking program and began to manage the Henry's Fork in the Caldera section as a wild trout fishery. However, large numbers of fish periodically continued to be introduced into this section of the river from Island Park Reservoir through the dam outlet in the years that the reservoir was drawn down dramatically. This phenomenon continues today, although the introduction of reservoir fish was probably reduced in 1994 when the dam was retrofitted for hydropower generation, creating an alternative, fish-screened dam outlet.

In the mid-1980s the HFF, resource management agencies, and others initiated an era of intensive research on the Henry's Fork below the dam. One of the most significant findings was that the primary limiting factor in the wild trout population below the dam is the ability of juvenile trout to survive the winter, dictated by the amount of water in the river. This discovery provided the impetus for the creation of the Henry's Fork Drought Management Plan, a federally-mandated process to ensure that the needs of both irrigation and

...the primary limiting factor in the wild trout population below Island Park Dam is the ability of juvenile trout to survive the winter, dictated by the amount of water in the river. Photo: HFF

the wild trout population are taken into consideration in winter flow management at Island Park Dam.

The Caldera section of the Henry's Fork discussed in this pamphlet is defined as the section of river flowing from Island Park Dam downstream through the Box Canyon, Last Chance, Harriman State Park, Pinehaven, and thence into Cardiac Canyon to Mesa Falls (see map on the inside front cover page). This section was selected because Island Park Dam and Mesa Falls are barriers to upstream fish passage, and therefore create a relatively discreet segment of the Henry's Fork. The Caldera Project section also includes all tributaries flowing into the river between the dam and Mesa Falls.

Since 2003 winter flows below Island Park Dam have had both the timing and the volume to protect juvenile wild trout through the critical mid to late winter months.

Photo: Ernest Keeley

Why is it so hard to maintain "fish-friendly" flows below Island Park Dam?

Irrigation water stored in Island Park Reservoir is allocated to users according to water rights issued by the state of Idaho. Some of this water is allocated for irrigation purposes in the Henry's Fork watershed, while the remainder is for use downstream in the Snake River plain. In a year of average precipitation, there is no "extra," or un-allocated, water in the Henry's Fork; every drop is spoken for. Water rights priority is based on the date of issue; the older the right, the higher the priority, and in eastern Idaho the downstream water rights tend to be older than those held by Henry's Fork watershed irrigators. For this reason, in the winter storage season (1 November to 1 April) water managers want to store as much water as possible, and to store it as long as possible, in order to ensure that all water rights are filled in the following irrigation season. Any water sent downstream too early to be used locally is "lost" to irrigators in the Henry's Fork; thus, there is considerable pressure to keep winter flows below Island Park Dam low, at the very time that juvenile wild trout need that water most. Regulated (i.e., dam-controlled) flows in the Caldera section of the Henry's Fork are, on average, 25% lower (considerably less in drought years) than they would naturally be from October to May; conversely, during the summer irrigation season, regulated flows are about twice as high as they would naturally be.

According to Idaho water law, water rights must be put to a beneficial use; leaving water instream for ecological or conservation reasons (assuming that one or more water users might be willing to do so) is not, under the current rules, a beneficial use, and any "unused" water left instream becomes available to the next senior downstream water rights holder. In 1981 a minimum flow requirement of 300 cubic feet per second (cfs) was established for the Henry's Fork below Island Park Dam. This requirement has a very junior water right priority date (1981), however, meaning that it has no legal standing until every more senior (i.e., older) water right has been allocated. Thus, the Henry's Fork minimum flow rule is virtually meaningless in water management terms.

For decades, winter flows below Island Park Dam were often cut off completely for one to three or more months. Water management today has improved dramatically, although the dam was shut off for repairs as recently as 2003 (above), necessitating a major fish rescue operation. Photo: HFF

The best opportunity to date for improving winter flows came when the local Fremont-Madison Irrigation District (FMID) requested that ownership of a number of federal Bureau of Reclamation (BOR) irrigation projects be transferred from the BOR to FMID. When the title transfer took place, the federal legislation authorizing the transfer included, at the urging of the HFF and Trout Unlimited, the stipulation that the needs of both irrigation and the wild trout fishery be taken into account in flow management below Island Park Dam, and that a drought management planning process be instituted for the Henry's Fork. Since the bill passed Congress in 2003, winter flows below Island Park Dam have had both the timing and the volume to protect juvenile wild trout through the critical mid to late winter months, despite several below-average water years and the confining limits imposed by Idaho water law. This collaborative process is the best option currently available for ensuring "fish friendly" flows.

One habitat improvement that can provide population level benefits to the wild trout population is providing adequate water to juvenile trout at critical times.

Habitat

Would instream habitat improvements help to protect and enhance trout populations in the Caldera?

Several attempts have been made over the years to improve trout habitat below Island Park Dam, including placing cobble, boulders, conifers, and PVC structures instream and modifications to the Last Chance Canal. All of these projects undoubtedly provided trout habitat for a time, but none provided a lasting solution. Instream projects of this nature are, due to logistics and cost, limited in nature, and thus cannot provide habitat for a sufficient number of trout to have a population-level impact. One improvement that can provide population-level benefits to the wild trout population is providing adequate water to juvenile trout at critical times. Water is habitat, and larger volumes of water create additional instream habitat, particularly along the margins of the river where juvenile trout typically spend the winter.

Is it possible to provide overwintering habitat for juvenile trout in tributary streams?

The Buffalo River has the potential to provide abundant trout habitat. A hydroelectric dam constructed in 1936 just upstream of the Buffalo's confluence with the Henry's Fork blocked upstream fish passage until 1996, (a fish ladder reportedly existed in the early years, but became inoperable at some point). In 2005, that ladder and the turbine intake screen were improved, providing passage for fish of all ages and species. Starting in 2008, the HFF, US Forest Service (USFS), and Fall River Rural Electric Cooperative will monitor fish migrating downstream back to the Henry's Fork to determine the effectiveness of the recent fish passage improvements, and ultimately evaluate the Buffalo River's contribution towards enhancing the trout population in the Caldera section.

The new Buffalo River fish ladder was constructed in 2005. The objective of the ladder is to provide upstream fish passage and a connection to overwintering habitat. Photo: HFF

There are also five small tributaries (Blue Springs Creek, Antelope Park Creek, Big Bend Creek, Thurmon Creek, and Fish Creek) that have the potential to provide habitat for Henry's Fork fish. This potential has not been systematically evaluated. Two of the streams (Thurmon and Fish) are dammed, two (Antelope Park and Big Bend) have minimal flow, and a fifth (Blue Springs) is significantly degraded by silt; however, an assessment of these five streams should be conducted, including an evaluation of the potential impacts of creating fish passage at Thurmon Creek, and possibly on Fish Creek.

Beaver dams and other fish cover in the Last Chance Canal are periodically removed to facilitate the flow of water, limiting the canal's potential to provide meaningful habitat.

Spawning habitat and trout fry production are not limiting factors in the Caldera section.

How much sediment comes through Island Park Dam, and has been deposited in the Ranch? Does it harm the river? Could a "flushing flow" clean accumulated sediment out of the Ranch?

Island Park Reservoir acts as a sediment trap, but under certain conditions accumulated sediment can move downstream, especially during reservoir drawdowns. In 1992, the reservoir was reduced to a pool of 270 acre feet (full capacity is 135,000 acre feet), and an estimated 50,000 to 100,000 tons of sediment were released into the Caldera section of the Henry's Fork. The reservoir has been drawn down under 10,000 acre feet on two other occasions, in 1979 (430 acre feet) and 1966 (5,500 acre feet), presumably with corresponding sediment events; however, water managers try to avoid reducing the reservoir to these levels.

Angler reports of "off-color" water suggest that some material does come through the dam at higher reservoir levels than 10,000 feet. Whether this sediment is organic (and therefore subject to decomposition) or inorganic, and at what reservoir levels this mobilization occurs, are not fully understood.

Photo: TroutHunter

Sediment transport through the Caldera section was evaluated in 1994 and again in 1997, and flushing flows were made over a four day period in 1995. The sediment transport studies indicate that the river moves sediment well under favorable (i.e., high) flow conditions, but that typical (i.e. normal) flow scenarios may result in a net gain of sediment in low-gradient reaches of the Caldera section. The flushing flows of 1995 probably moved considerable amounts of sediment, but how much and how far are unknown. These studies unfortunately lack the larger context necessary to definitively increase our understanding of how sediment is transported in the Caldera.

In fish habitat terms, sediment concerns generally fall into either of two categories: loss of spawning habitat, and loss of pool and/or overwintering habitat. Some spawning gravels in the Caldera section may have been filled in with fine sediment in 1992 and other years; however, research shows that so many juvenile trout are

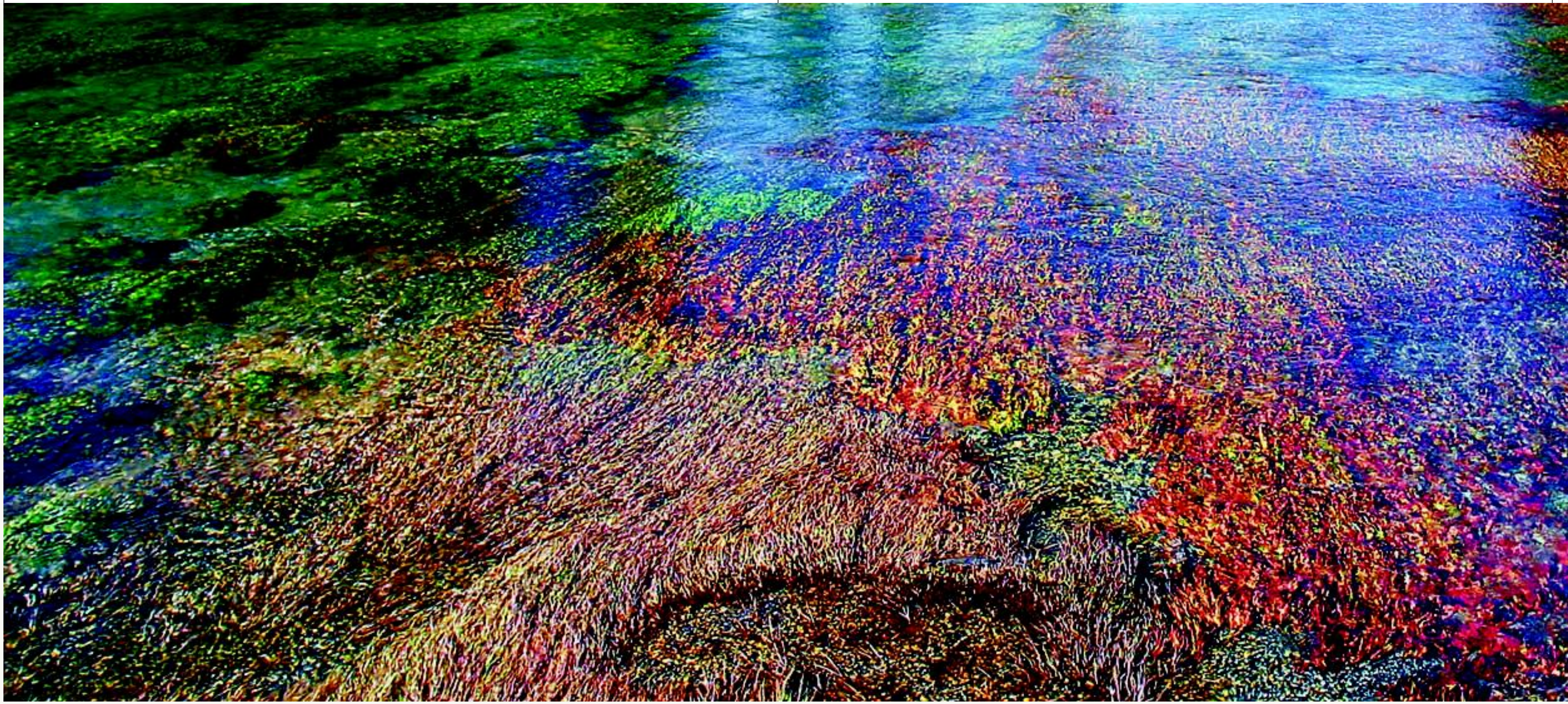


Photo: Susan Quinn

produced in both the Box Canyon and at Last Chance that there has been no effect on the overall trout population. Spawning habitat and trout fry production are not limiting factors in the Caldera section.

Sediment deposition can alter both the pool habitat favored by trout of all ages and the areas along the stream's margins vital to juvenile trout survival. The extent to which this has occurred in the Caldera, and its effect on the trout population, are difficult to gauge in the absence of historic data, and because other factors, in particular changes in aquatic vegetation types and densities (see below), may play an equal or greater role.

Has aquatic vegetation changed on the Ranch over the years?

Studies conducted in the Caldera section between 1958 and 1996 demonstrate that aquatic vegetation has changed dramatically in this period. Vegetation is classified into two general types: Group 1 are tall, robust, erect plant species thriving in slow currents with high silt and nutrient content, while Group 2 are shorter plants tolerant of higher water velocity and more intense light, capable of thriving in disturbed habitat.

Early surveys describe both plant groups being well-represented in the Caldera section, but by the early 1980s greater than 95% of the aquatic vegetation consisted of Group 1 species. This period was typified by prolific beds of vegetation that often grew to the water's surface. By 1986, however, the aquatic vegetation biomass (i.e., volume or abundance) had declined to about 50% of its 1979 level, and in 1988 Group 2 species were more abundant than Group 1. In the early 1990s instances of extreme to almost complete aquatic vegetation loss were recorded in winter months, although plants did recover to varying extents in summer months. By 1996, however, aquatic vegetation had recovered substantially, although not to the levels recorded in the late 1970s. Group 1 species were not present in their former abundance.

These changes occurred, most likely, for several reasons. Evolving flow management at Island Park Dam (itself the product of many factors) resulted in changing patterns of winter icing and spring scour. A burgeoning waterfowl population grazed the aquatic vegetation heavily in winter months in the late 1980s and 1990s (due in part to changes in flow management), and the 1992 sediment release stunted or buried some vegetation for several years. These conditions tend to favor Group 2 species, and the resulting reduction in aquatic vegetation biomass can alter river ecology at many levels, including channel roughness, water velocity and depth, sediment erosion and deposition, fish and insect habitat availability, and food supply for waterfowl and other species.

The best option to recover aquatic vegetation, and a healthy balance of Group 1 and Group 2 species, is the maintenance of sufficient and stable winter flows below Island Park Dam. In addition, reduced winter waterfowl grazing would likely also help; in 2004 the fishing season on the Ranch was extended to November 30 to prolong a human presence in the area and, by extension, to encourage waterfowl to migrate elsewhere.

Photo: Brad Schwarm

Have aquatic insect populations changed on the Ranch over the years?

Very little historic scientific data is available regarding insect populations in the Caldera section. The HFF has established standardized sampling sites and repeatable collection protocols, and the four years of analyzed data show aquatic insect densities to be about 4,000 individuals per square meter, with about 60% of those individuals being mayflies, stoneflies, or caddis. How density and species composition have changed from past years is unknown, but it is certainly possible that given changes in water management, aquatic vegetation species and abundance, and water quality over the past several decades insect populations may have also changed considerably. Anecdotal evidence suggests that this has been the case.

> ...unknown numbers of rainbow trout have moved out of Island Park Reservoir and through the dam outlet into the Henry's Fork over the years.

What is the history of rainbow trout in the Caldera?

Rainbow trout were introduced into the Henry's Fork watershed in the late 1800s. Over the years, successive introductions of rainbow trout gradually replaced the river's native trout, the Yellowstone cutthroat, in the Caldera section. Fish eradication efforts targeting suckers and other non-game fish in Island Park Reservoir (most recently in 1992), and two treatments (1958 and 1966) of the mainstem Henry's Fork above Mesa Falls and the mainstem and tributaries above Island Park Dam (targeting whitefish) failed to eliminate their intended species but did probably remove virtually all of the "original" introduced rainbow trout stocks, which were subsequently replaced by planted rainbow trout from various sources. There is no evidence to suggest that the source of either the original stocked Henry's Fork rainbow trout or those introduced after the 1966 eradication was the famous McCloud River strain from California.

The IDFG has managed the Caldera section as a wild trout (i.e., no stocking) fishery since 1978. However, unknown numbers of rainbow trout have moved out of Island Park Reservoir and through the dam outlet into the Henry's Fork over the years. In 1994, Island Park Dam was retrofitted with a hydropower facility that included a fish-screened dam intake. This intake is the primary connection between the reservoir and the river at reservoir levels of 28,000 acre feet (21% of capacity) or greater. At reservoir levels below 21% of capacity water passes through the old, unscreened intake; it is at these low lake levels that fish are most concentrated and, presumably, most likely to move through the dam. Rainbow trout thus continue to be introduced into the river from the reservoir.

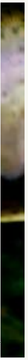
Photo: Brad Schwarm

What factors limit the wild trout population in the Caldera?

Studies have demonstrated that wild trout spawn very successfully in the Caldera section, particularly in the Box Canyon but also in Last Chance and certain places in the Ranch as well. The river is fully seeded; what limits the population is the ability of juvenile trout to survive their first winter. Survival is a function of habitat availability, which in turn is dictated by water. Adequate flows make a variety of habitat, in particular along the river's margins, available to young-of-the-year wild trout. Insufficient winter flows limit juvenile trout habitat, dramatically increasing mortality rates.

Other factors, such as water quality, temperatures, or the availability of food are not limiting factors on the Henry's Fork; indeed, trout grow faster in the Caldera section than they do in any other documented stream reach in the state of Idaho. HFF radio-telemetry fish tracking has demonstrated that adult rainbow trout survive the winter well, even under adverse flow conditions.

How are the Box Canyon, Last Chance, the Ranch, and Pinehaven related in fish distribution terms?



The Box Canyon is currently the driver of fish numbers throughout the Caldera section. The relationships among the fish numbers observed in various river sections within the Caldera has not been thoroughly evaluated, however. The great majority of the Caldera's spawning and juvenile rearing habitat is in the Box Canyon. Studies have demonstrated that juvenile trout do not survive their first winter in the Ranch, either dying or migrating – or both – due to the lack of sufficient year-round habitat. Relatively little is known about spawning and overwintering success below Pinehaven, but the research that has been conducted suggests that it is not as productive (in either sense) as the Box Canyon.

The Ranch's wide, slow flows are not conducive to traditional fish sampling, so little hard data exists regarding estimates of fish numbers below the Box Canyon. In the absence of better information, the reasonable assumption is that if large numbers of juvenile trout

Given the extremely high mortality rates recorded in hatchery fish introduced into the wild, however, this would be a temporary measure that would need to be repeated annually to have a sustained effect.

survive the winter in the Box Canyon then a correspondingly high number of these fish should be available to populate the Caldera section downstream from the Box Canyon; conversely, the lower the population in the Box Canyon, the lower the number of fish available to populate the Ranch.

The final piece of the fish distribution puzzle is the contribution of Island Park Reservoir (see above), but how many of these fish enter the Caldera section, and where they go when they do, is unknown.

Would supplementing the Caldera fish population with stocked fish improve angling?

Stocking catchable trout in large numbers could, presumably, increase catch rates in the Caldera section, particularly below the Box Canyon, where fish densities are lower. Given the extremely high mortality rates recorded in hatchery fish introduced into the wild, however, this would be a temporary measure that would need to be repeated annually to have a sustained effect. Alternately, stocking fingerling trout, with the idea that those trout will grow to catchable size, would subject those fish to the same juvenile survival challenges that wild trout experience in the Henry's Fork, and ignores the fact that the Caldera section is not limited in its ability to produce wild juvenile trout. "Fingerling" hatchery trout that have been held over for their first winter in the hatchery, on the other hand, are generally almost catchable size by the following spring, and therefore would likely be subject to the same mortality rates as catchable stocked trout.

A stocking program in the Caldera reach would carry with it a management change from a catch-and-release fishery to a harvest-oriented fishery, potentially dramatically altering the overall angling experience for which this section of the river is so famous.

Most importantly, however, if fish habitat has declined on the Ranch then stocking trout will not recreate the Ranch angling experience that predated these adverse habitat alterations.

Conclusion

Where do we go from here?

Some of the critical research and management actions necessary for the improvement of the fishery on the Ranch, and in the larger Caldera section, are already underway. Winter flow management below Island Park Dam, not only to sustain the wild trout population but also to manage most effectively for aquatic vegetation, waterfowl, and other elements of the watershed, continues to be the focus of the drought management planning process.

Continued monitoring of fish passage at the Buffalo Dam will provide an assessment of the interaction between a tributary and the main river. A variety of other research and restoration actions, such as the HFF's annual documentation of aquatic insect densities, riparian fencing, and angler surveys are ongoing.

The brochure also, however, highlights some research needs to further our understanding of the Caldera aquatic ecosystem, including:

- An up-to-date assessment of the current, and potential future, state of aquatic vegetation and its role in shaping aquatic habitat.
- A better understanding of current channel morphology and dynamics (including riparian vegetation and sediment), and potential alteration from past conditions and the implications of that alteration for aquatic habitat.
- An assessment of the potential that the smaller tributaries have to provide overwintering habitat for juvenile wild trout.
- Continued expansion of our understanding of trout distribution throughout the Caldera section.

Photo: TroutHunter

For more information about the Caldera Project, and to read the full 2008 Caldera assessment on which this brochure is based, please visit www.henrysfork.org.

Acknowledgements:

The information provided by this brochure relies on years of scientific endeavor. Our gratitude goes to every researcher who has opened our eyes to how the Caldera aquatic ecosystem works, and above all to Jim Gregory (Gregory Aquatics) for his Caldera assessment (see above).

This brochure was funded through the generosity of the Ishiyama Foundation.

Henry's Fork Foundation

P.O. Box 550 Ashton, ID 83420 Ph: (208) 652-3567 Fax: (208) 652-3568

www.henrysfork.org