



WESTERN  
NATIVE TROUT  
INITIATIVE



# *A Plan for Strategic Action*



*January 2008*

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1. Western Native Trout - Status, Concerns and Opportunities (WNTI, 2007)
2. Multi-state Grant Application - WY-M-6-P, Western Association of Fish and Wildlife Agencies, 2005
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# Executive Summary

With few exceptions, native trout populations have declined across the West, usually due to two general factors: habitat alteration and introduced non-native fish. Remaining native trout populations are often isolated from one another and exposed to increased predation, competition, and hybridization. The 15 native trout addressed in this strategic plan have long been considered as biologically, recreationally and culturally important. While local conservation actions have occurred, overall range-wide recovery and management of western native trout generally was addressed in a fragmented approach until the development of the State Comprehensive Wildlife Conservation plans. Actions associated with conservation are often costly and remain inadequately funded. Progress has been mixed. Continued human population growth, coupled with potential habitat damage from a warming climate, has increased the urgency of securing and improving the status of western native trout.

***WNTI provides a new perspective and impetus to improve the return on investment of the time, money and manpower dedicated to native trout conservation over the next decade***

The Western Native Trout Initiative (WNTI) provides a new perspective and impetus to improve the return on investment of the time, money and manpower dedicated to native trout conservation over the next decade. WNTI is a collaborative, multi-state approach.

WNTI builds on the conservation needs described in the State Comprehensive Wildlife Conservation Plans through a native-trout specific Mission, Vision, and Strategies, and seeks investment of partners in this effort to halt and reverse native trout declines and expand existing populations of native trout.

## Mission

The mission of WNTI is to serve as a key catalyst for the implementation of conservation or management actions, through partnerships and cooperative efforts that result in improved species status, improved aquatic habitats, and improved recreational opportunities for native trout anglers.

WNTI is a Western Association of Fish and Wildlife Agencies (WAFWA) supported effort to applying a collaborative approach to doing things more efficiently through dedicated efforts and secured increases in funding. WNTI is reaching out to traditional and new partners, and providing forums where all interested can participate in the conservation of the native trout legacy.

## Goals, objectives and strategic actions

To address trout habitat degradation, non-native species impacts, and emerging range-wide concerns of climate change, energy development, and urbanization, WNTI uses several approaches:

1. Capitalize on opportunities for conservation of western native trout based on cooperative planning; successful past actions; scientific assessment; and inspired public partnerships in order to de-list or prevent future listing of native trout species.



**Bonneville  
Cutthroat Trout**  
*Oncorhynchus  
clarkii utah*





2. Participate as a partner in the National Fish Habitat Action Plan (NFHAP).
3. Capitalize on growing public and private interest to acquire additional funding to support conservation actions.

Through an intensive planning effort supported by WAFWA partners, the initiative has ascribed the following goals designed to achieve success by building upon existing strengths of ongoing efforts:

1. Protect, enhance, or restore western native trout populations and measure success in improving the status of western native trout.

This goal will address the underlying concerns for maintaining the integrity – both physical and genetic - of native trout populations at a watershed level. Continual identification and characterization of populations of western native trout is a major objective of the Western Native Trout Initiative. Monitoring of populations is required to effectively measure the impact and success of conservation actions. Developing a common language for describing the status and opportunity for improving the status of native trout will allow the determination of priorities and consistent communication of needs and progress at all levels of the initiative.

2. Protect intact watersheds, and enhance or restore habitats that have been impacted by human activities or catastrophic natural events.

This goal will address the underlying problems of native trout habitat at a watershed level. Successful accomplishment will depend upon agencies, organizations, industry, and private individuals working together to implement actions on a local level, guided by the overall approach of the WNTI Strategic Plan. Healthy watersheds are the keystone for WNTI success.

3. Develop collaborative approaches and partnerships among agencies and stakeholders that emphasize cooperation and shared effort, and increase funding to implement high priority projects for the protection, conservation and enhancement of western native trout.

This goal will address implementing a diverse array of western native trout conservation actions based on public, private, tribal, and private partnerships. These efforts can be formed around distinct watersheds, species, or geographic areas. Collaborative development and publication of realistic conservation strategies with priorities at the local and regional level has been cited as a critical component to jump-start the conservation of a particular species. Improving the status of western native trout and providing additional recreational opportunities will require the involvement of partners at all levels. Support for future funding and on-the-ground projects absolutely requires partnerships.

4. Develop and implement effective communication, education and outreach programs as a tool to increase public awareness and encourage partnerships that benefit western native trout.

This goal will guide more consistent communications and coordination between the Initiative, the fish conservation community, and groups that can play roles in education and outreach such as school teachers, universities and recreation and tourism interests. There is a need to develop, implement,



**Colorado River  
Cutthroat Trout**

*Oncorhynchus  
clarkii pleuriticus*





and manage comprehensive communication and outreach efforts to engage, inform, and inspire the public and agency program managers about conservation and management of western native trout. A more informed citizenry can lead to development of strong partnerships between states and federal agencies, non-government organizations, and citizens.

## The initiative's vision is to create...

1. An increase in healthy, fishable western native trout populations resulting from sharper focus and commitment to action on common conservation needs of western native trout.
2. Enhanced public benefit resulting from multiple partners working together, sharing resources, and speaking with a united voice about the conservation and value of western native trout.
3. Increased funding to accomplish strategic actions as a result of greater community and financial support from initiative partners and collaborators.

## WNTI organization and operations

The organizational and operational structure of WNTI will be based on a memorandum of agreement through which WAFWA member states and appropriate federal agencies and conservation organizations agree to the purpose and value of implementing the initiative. The MOA will confirm the intent of state and federal fishery resource agencies, tribes or tribal organizations, and other interested parties, to participate in and support a WAFWA partnership that focuses on conserving western native trout and their habitats.

WNTI will operate as a function of the WAFWA Inland and Marine Fisheries Committee, with guidance from the WAFWA Directors, reporting accomplishments annually to partners and the public.

WNTI will leverage the efforts of partners with increases in funding as it becomes available to fulfill the initiative's objectives.

***“Our rods and lines were most primitive, consisting of two clumsy cedars (the only trees within reach), about six feet of string tied to one and a piece of catgut to the other, with preposterous hooks; yet the trout were so ravenous that we caught them at the rate of about one a minute; and they formed another welcome change in our camp fare.”***

— Teddy Roosevelt, *Hunting Trips of a Ranchman*, 1885



**Gila Trout**  
*Oncorhynchus*  
*gilae gilae*



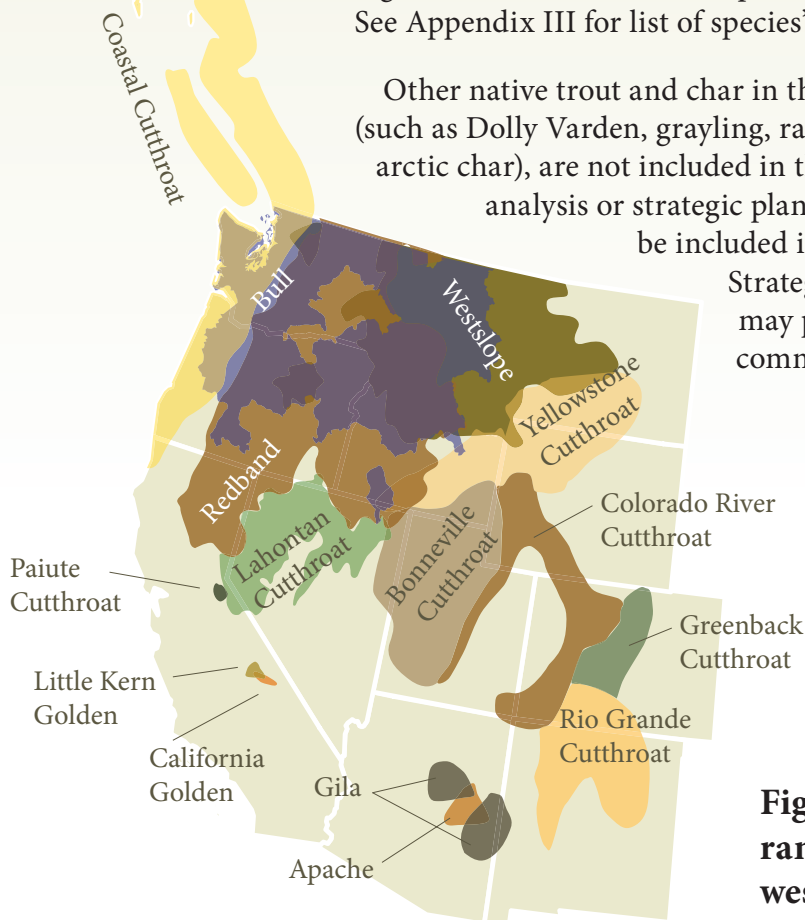
## Western native trout species and their general distribution patterns

WNTI's target native trout species include:

- Apache trout
- Bonneville cutthroat trout
- Bull trout
- California trout
- Coastal cutthroat trout
- Colorado River cutthroat trout
- Gila trout
- Greenback cutthroat trout
- Lahontan cutthroat trout
- Little Kern golden trout
- Paiute cutthroat trout
- Redband trout
- Rio Grande cutthroat trout
- Westslope cutthroat trout
- Yellowstone cutthroat trout

Figure 1 (left) illustrates the species' general distribution. See Appendix III for list of species' scientific names.

Other native trout and char in the western states and Alaska (such as Dolly Varden, grayling, rainbow trout, lake trout, and arctic char), are not included in the initial western native trout analysis or strategic plan. These additional species may be included in future revisions of the WNTI Strategic Plan, or concerned partners may petition the WNTI steering committee to add specific species.



**Figure 1. General range distribution of western native trout**

# WNTI's Strategic Approach

## Mission

The mission of WNTI is to serve as a key catalyst for the implementation of conservation or management actions, through partnerships and cooperative efforts that result in improved species status, improved aquatic habitats, and improved recreational opportunities for native trout anglers.

## Vision

The vision of the Western Native Trout Initiative is three-fold:

1. To have healthy, fishable western native trout populations. This will result from increased commitment to action on common conservation, management and communication goals through partnerships and joint venture conservation strategies.
2. To inspire greater public involvement in the conservation of native trout through multiple partners working together, sharing resources, and speaking with a united voice about the conservation and value of western native trout.
3. To increase funding for strategic actions through increased community and financial support from initiative partners and collaborators.

## Approach

The Western Native Trout Initiative is a partnership comprised of agencies, organizations, tribes and others committed to smarter, better, faster and more well-funded conservation efforts for native trout.

In the past 10 years, progress has been made in developing programs and actions that mesh protection of healthy populations with opportunities for recreational angling. Progress has also been made in protecting healthy populations from degradation, and in communicating future needs. However, recovery and management of western native trout has generally been addressed in a fragmented approach through various recovery plans, conservation agreements, state management plans, or other documents. Actions associated with conservation are often costly and remain inadequately funded, and few agencies have sufficient staff to meet the needs of native trout.

The Western Native Trout Initiative represents the first time relevant agencies, organizations, and private interests have come together to express common concern over the status of western native trout. WNTI makes a unified commitment to improving the effectiveness of management actions and increasing public awareness of and support for the conservation needs of these imperiled species. WNTI provides the opportunity to gain significant new resources to address a common theme – revitalizing native trout resources across the western United States. The investment of WAFWA partners in the development of WNTI has already yielded benefits. More than \$2.145 million has been specifically directed to WNTI-related conservation actions, and the interest in expanding beyond that is growing.



**Greenback  
Cutthroat Trout**  
*Oncorhynchus  
clarkii stomias*





## Opportunities for strategic actions

To describe the need for greater levels of cooperation and action, WNTI completed a native trout assessment in 2007 (Western Native Trout Status, Concerns, and Opportunities, 2007). This assessment confirmed that, with few exceptions, native trout populations have declined across the West as a result of two major factors – habitat alteration and non-native species introductions.

**Native trout populations have declined across the West as a result of two major factors – habitat alteration and non-native species introductions**

## Habitat alterations

The quantity and quality of trout habitat has diminished across the West and Alaska due to alteration of watersheds for agriculture, urban development, population growth, flood control, irrigation, petroleum, mineral and forest product extraction, energy developments, and commercial recreational developments. A warming climate and energy development contribute to the urgency of securing and improving the status of western native trout. Recent efforts have focused on development of up-to-date status assessments and implementation of limited habitat improvement projects. There has been a greater emphasis on protecting those populations in stable condition, and on coordinated range-wide planning and assessments.

## Non-native fish interactions

Since the mid-1970s, as knowledge has increased about the interactions between native and non-native species, both state and federal fishery managers have placed greater emphasis on managing and conserving western native trout. Managers have worked to increase public awareness of the ecological and economic benefits of managing for native fish.

Negative impacts by non-native trout vary from contamination of native genetics to competitive and predacious interactions that de-stabilize or eliminate native populations. Native trout species provide considerable sport angling opportunities. Non-native trout are also popular with anglers and contribute substantially to regional and local recreation economies. The challenge is to balance the need to restore, protect, and enhance native trout fisheries while continuing to maintain and manage important recreational non-native trout fisheries. Recreational fisheries management programs that depend upon non-native trout are focal points of administrative priorities for many state and tribal agencies. Integration of those programs is critical to attainment of WNTI goals.

To address habitat alteration and non-native species issues, as well as others identified in the WNTI assessment, the initiative has several approaches:

1. Capitalize on opportunities for conservation of western native trout based on cooperative planning; successful past actions; scientific assessment; and inspired public partnerships in order to de-list or prevent future listing of native trout species.



**Lahontan  
Cutthroat Trout**  
*Oncorhynchus  
clarkii henshawi*



2. Participate as a partner in the National Fish Habitat Action Plan.
3. Capitalize on growing public and private interest to acquire additional funding to support conservation actions.

One key feature of WNTI's approach is the reliance on the existing native trout efforts across the West and national partnership through the National Fish Habitat Action Plan. For example, in the interior West a detailed protocol for assessing the status of populations has been refined and applied to six WNTI species. Expanding this effort to other western native trout species would provide a common "currency" to focus efforts and document success. Another example is the close collaboration among WNTI, the Pacific States Marine Fisheries Commission (PSMFC), and FWS Coastal Cutthroat Trout Executive Committee that is leading a range-wide effort to gather data about that species. Through this collaboration, WNTI has stimulated interest and avoided duplicating efforts.

## Goals, objectives and key strategic actions

WNTI's strategic goals, objectives and actions demonstrate the strength of the approach – increased coordination, action, and accountability. These strategies represent what will be done to conserve, protect and enhance western native trout.

### Goal 1 – Protect, enhance, or restore western native trout populations and measure success in improving the status of western native trout

Objectives:

#### A. Identify and characterize all conservation populations by 2012.

- Develop common characterization of populations and habitats by completing comprehensive, standardized species assessments utilizing GIS-based protocols, such as the Intermountain Cutthroat Protocol (IMP) (May, et.al. 2005) or other similar methodologies. Update these no less than every five years. Encourage sub-species groups that have not adopted IMP to adopt and use (or use other developed protocols with similar scientific rigor and that can be adapted to a common database).
- Annually gather information, establish baselines, and complete overall monitoring of species status.
- Utilize the WNTI geographic working groups as needed to serve as a forum to focus on particular species problems or needs, and/or recommend actions to the Steering Committee for consideration and funding.

***WNTI's strategic goals, objectives and actions demonstrate the strength of the approach – increased coordination, action, and accountability***

- B. Utilize assessment data to secure, enhance or restore important native trout populations through focused actions.
- Use standard population manipulations to protect and restore native trout. Maintain and expand genetically pure populations, as well as pure populations with distinct migratory life-history requirements.
  - Protect the best strongholds and maintain genetic integrity of populations from degradation.
  - Utilize the WNTI geographical sub-groups to recommend and prioritize projects for WNTI directed funding.
  - Annually conduct research on habitats, population distribution, genetics, and species ecology to increase knowledge of native trout life stage requirements and to evaluate the success of conservation actions.
- C. Integrate the use of non-native salmonids with conservation needs of western native trout species in a manner that recognizes the biological, cultural and economic importance of each.
- By 2012 define and maintain core conservation areas for native trout to avoid conflicts between native trout conservation and non-native trout species management.
- D. By 2010, develop a western native trout database with common data fields.
- In cooperation with the National Fish Habitat Action Plan, use scientifically rigorous and standardized methodology to monitor and report changes in the status of native trout populations.
  - Share data on western native trout populations (and habitats) with guidelines established by a science and data sub-committee.

Objectives A to D address the underlying concerns for maintaining the integrity – both physical and genetic – of native trout populations at a watershed level. Continual identification and characterization of watersheds and populations of western native trout are major objectives of the Western Native Trout Initiative. Monitoring of populations is required to effectively measure the impact and success of conservation actions. Developing a common language for describing the status of species will prioritize communication needs and describe progress at all levels of the initiative.

**Benefits:**

The effective characterization of native trout populations will serve as the basis for the various conservation and recovery teams to focus attention on specific actions that will contribute to improving the status of the species. Identification of key watersheds in each species range will provide opportunities for local partners to become involved in species conservation. Sharing data and updating



**Little Kern  
Golden Trout**  
*Oncorhynchus  
mykiss whitei*





range-wide databases with data from a well-designed field monitoring program will allow for monitoring of native trout status over time. Maintenance and expansion of the recreational angling opportunities for native trout will maintain and increase public support for the actions of WNTI.

## Goal 2 – Protect intact watersheds, and enhance or restore habitats that have been impacted by human activities or catastrophic natural events.

### Objectives:

- A. Utilize habitat assessment data to identify, protect and restore existing native trout strongholds.
- By 2012 characterize key western native trout habitats for all species not already characterized using GIS-based protocols (i.e. Intermountain cutthroat protocol) or similar techniques.
  - Support habitat actions at the local and species-levels that protect and enhance stronghold populations and the life history and migratory needs of the species.
- B. By 2015, enhance 10-15 percent of degraded watersheds for western native trout while protecting and maintaining current strongholds and high-value watersheds.
- Secure and enhance watershed conditions through standard habitat manipulations (e.g., barrier placement or removal, in-stream structure, flow enhancement, habitat connectivity).
  - Implement, evaluate, and monitor best management practices that include but are not limited to: modifying grazing practices, fencing riparian areas, closing and obliterating roads in the riparian areas, and ameliorating road, timber and mining disturbances.
  - Restore and enhance water flow, water quality, natural sediment regimes, and physical integrity of channels where feasible by replacement of culverts to allow fish passage (where passage is desirable). Screen water diversions to prevent entrainment, modify diversions to allow fish passage, and restore and improve altered channel and riparian habitat and flow conditions.
- C. Encourage new research on native trout related to climate change, energy development, invasive species, and human encroachment or development in native trout habitats.
- Seek funding for new research on impacts of new and developing habitat concerns such as climate change, habitat loss from energy development and population growth and increased catastrophic habitat losses from fires, etc.



**Paiute  
Cutthroat Trout**  
*Oncorhynchus  
clarkii seleniris*



D. Support local and regional recommendations for western native trout habitat restoration and enhancement actions and seek additional funding from WNTI partners.

- Become a recognized partner under the National Fish Habitat Action Plan.

Objectives A to D are intended to address the underlying problems of native trout habitat at a watershed level. A combination of protecting current habitat strongholds and rehabilitating potential or degraded habitats through a variety of means is necessary. Successful accomplishment will require agencies, organizations, industry, and private individuals working together to implement actions on a local level, guided by the overall approach of the WNTI Strategic Plan. Healthy watersheds are the keystone for WNTI success.

#### Benefits:

Healthy watersheds constitute the foundation for improving and protecting native trout populations. Prioritized habitat actions will address habitat needs for life stages and life forms of native trout. Specific improvement projects at a local level energize partners to participate in the shared objectives of WNTI.

### Goal 3 – Develop collaborative approaches and partnerships among agencies and stakeholders that emphasize cooperation and shared effort, and increase funding to implement high-priority projects for the protection, conservation and enhancement of western native trout.

#### Objectives:

- A. By 2012, complete conservation agreements or recovery plans for all western native trout based on collaborative development and publication of realistic conservation strategies with priorities at the local and regional level.
- Stimulate and inspire – through funding and meeting frameworks – the initiation of planning efforts for those native trout species that do not currently have a multi-state, multi-agency conservation plan or strategy.
  - Encourage updates, on a 3- to 5-year basis, of the cooperative management agreements among states, agencies and partners that revise and refine the priorities for action to protect, conserve, and enhance western native trout species.
- B. Foster and support a diverse array of western native trout conservation actions based on public, private, and conservation organization



**Redband Trout**  
*Oncorhynchus mykiss spp.*



partnerships. These efforts should be formed around distinct watersheds, species, or geographic areas, based on collaborative conservation or recovery plans.

- Use the WNTI operational structure to seek and promote public/private partnerships for on-the-ground actions.
- Develop a prospectus to inspire new partners to contribute financially to western native trout actions.

C. Promote and foster new partnerships at all levels to increase funding and public support for identified needs.

- Identify and communicate the need for funds with potential public/private conservation partners to encourage involvement in the Western Native Trout Initiative. This will broaden the scope of support for improving the status of the native trout species.
- Develop a WNTI Partners Council and invite entities to participate, provide financial assistance, and share ideas for improving the status of western native trout.
- Work with current funding partners – states, federal agencies, the National Fish Habitat Action Plan, Trout Unlimited, the National Fish and Wildlife Foundation and others – to focus on implementing on-the-ground improvement actions.
- Provide a forum for the discussion of large-scale issues that impact western native trout (i.e. continued human population growth coupled with potential impacts from a warming climate and increased emphasis on extractive energy development, mining and increased water use).

D. Recognize and recommend projects for funding.

- Establish a WNTI steering committee within WAFWA by July 2008.
- Develop online functionality for project application submission, project review/selection, and project reporting.

Objectives A to D are designed to foster and support a diverse array of western native trout conservation actions based on public, private, tribal, and private partnerships. These efforts can be formed around distinct watersheds, species, or geographic areas. Collaborative development and dissemination of realistic conservation strategies at the local and regional level has been cited as a critical component to jump-start the conservation of a particular species. Improving the status of western native trout and providing additional recreational opportunities will require the involvement of partners at all levels. Support for future funding and on-the-ground projects absolutely requires partnerships.



**Rio Grande  
Cutthroat**

*Oncorhynchus  
clarkii virginalis*





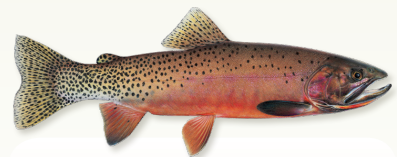
**Benefits:**

One of the key features of WNTI's strategy is the reliance on the existing strengths of ongoing efforts for native trout in the West. Cooperative development, publication and update of conservation strategies with priorities at the local and regional level is a critical component to unite the efforts for improving the status native trout. Increasing local efforts and providing additional recreational opportunities will require the involvement of partners at all levels. Support for future funding and on-the-ground projects absolutely requires partnerships and joint ventures that build upon existing local and regional efforts. In order to effectively utilize scientific data, and make good management decisions, there must be effective sharing of information between and among agencies and their partners.

## **Goal 4 – Develop and implement effective communication, education and outreach programs as a tool to increase public awareness and encourage partnerships that benefit western native trout.**

**Objectives:**

- A. Complete a communications and outreach plan for WNTI by July 2008.
  - Establish a communications sub-committee that consists of professionals from several WNTI partner agencies and organizations to complete the plan.
  - Develop the communications plan in a manner that inspires partners to contribute and support the success of WNTI financially.
- B. Annually develop communication products for WNTI partners, anglers and others.
  - Survey partners, fish conservation community, and other western native trout interests to initiate communication, to understand their communication and outreach needs, and to determine the most effective means of information dissemination.
  - Identify elements of success in other campaigns that have promoted recreational use of western nonnative trout and incorporate successful elements in to the WNTI.
  - One product per year will be developed and made available to WNTI partners to promote and encourage involvement.
- C. Use the WNTI Web site as a comprehensive source of information on western native trout species.

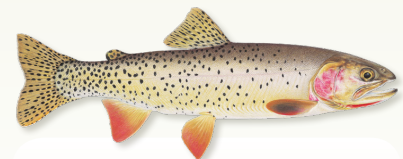


**Westslope  
Cutthroat Trout**  
*Oncorhynchus  
clarkii lewisi*



- Maintain the WNTI Web site as a comprehensive source of information on all 15 western native trout species and include information on their status, biology, distribution, conservation needs and impediments, and conservation actions. Include links to official recovery plans, conservation strategies and conservation agreements. Develop the website as a repository for WNTI-related planning, news releases, informational brochures and other related items.
  - Develop enhanced communication to anglers about angling opportunities, such as the Wyoming Cutt-Slam or California Heritage Trout Challenge, and the benefits of conservation and management of western native trout to recreational angling opportunities.
- D. Serve as a clearinghouse and source of information about how to obtain funding for native trout projects recommended through the WNTI regional sub-committees.
- Develop outreach products that describe opportunities for partnerships and the funding that is available. Gather, catalog and make available a list of financial resources that are available to implementers for funding native trout projects.
  - Link to existing project funding sources resources such as NFHAP, National Fish and Wildlife Foundation (NFWF) and Trout Unlimited (TU) and gather, catalog and make available other site links for different target groups.
  - Develop convenient and efficient means of distributing these tools using WNTI.
- E. Develop educational materials about western native trout for use in schools and community-based events.
- Work with Project WILD, Recreational Boating and Fishing Foundation, and Aquatic Resource Education Association personnel to develop specific educational materials dealing with western native trout conservation.
  - Work with Project WILD to develop a series of interactive educational tools designed to illustrate the interrelationships of trout and aquatic habitats, and to demonstrate the cultural, biological, recreational, and economic importance of native trout ecosystems.
  - Evaluate the feasibility of initiating efforts in individual states to include trout ecology, or Trout Unlimited’s “Trout in the Classroom” into the primary or secondary school curriculums.
  - Develop materials that celebrate the unique nature of the western native trout habitats.

Objectives A to E and related actions will guide more consistent communications and coordination among the initiative, the fish conservation community, and groups that can play roles in education and outreach such as school teachers, universities and recreation and tourism interests. There is a need to develop, implement, and manage comprehensive communication and outreach efforts to engage, inform, and



**Yellowstone  
Cutthroat**

*Oncorhynchus  
clarkii bouvieri*



inspire the public and agency program managers about conservation and management of western native trout. A more engaged citizenry can lead to development of strong partnerships between states and federal agencies, conservation organizations, and citizens.

**Benefits:**

It is essential to keep local governments, tribes, landowners and public land managers informed about native trout conservation and techniques that can be used to achieve conservation goals. This will ensure more routine and consistent communication and coordination between the initiative and the fish conservation community. It also will generate public and private funding and support for WNTI and fish habitat conservation, and support for continued recreational opportunities for western state anglers.

## **Western Native Trout Initiative accomplishment reporting**

WNTI will support the development of monitoring programs that assess the effectiveness of native trout conservation projects and measure progress toward WNTI's goals and objectives. Monitoring programs will assess trends and changes in the status of the individual western trout species and their habitats over time. Accomplishment reporting will be conducted on an annual basis and provided to partners and others interested in the initiative.

**Objectives:**

- A. Update the WNTI strategic plan and Western Native Trout Status Report every five years to provide new recommendations for conservation actions.
- B. Develop and maintain a catalog of local, state, and range-wide success stories that can be shared among groups and disseminated to the public.
- C. Develop progress and accomplishment reporting guidelines and annual reports to WAFWA, partner agencies and tribes, and other stakeholders on the status of western native trout.
- D. Develop accomplishment reporting guidelines by July 2008 that measure expected progress in improving the status of western native trout and meeting the needs of funding partners.

Objectives A to C will keep WNTI and WNTI-related planning and assessment up to date and help provide useful information to those seeking to improve WNTI's funding base. Revisions and updates of the strategic plan and species assessment report on a five-year basis will describe changes in the overall status of western native trout.



# Management and operation under the auspices of WAFWA

Moving the WNTI strategic plan from theory to implementation will require an administrative structure, operational guidelines, and partnership and project funding mechanisms. Appropriate mechanisms must be in place to allow WNTI to seek and accept funding from both public and private sources.

## *Management and operations objectives*

WNTI organizational structure and operations will be set up and guided by a steering committee established through a memorandum of agreement between WAFWA-member states and appropriate federal agencies and conservation organizations. The steering committee will provide guidance for WNTI operations to support specific goals, objectives and actions of the WNTI strategic plan. The steering committee will operate through, and as a function of, the Inland and Marine Fisheries Committee (IMFC) of WAFWA, under the guidance of the committee's director-chair.

- A. WAFWA member states and agency partners agree to the WNTI Memorandum of Agreement concerning WNTI organization and operations.
- By July 2008, WAFWA member states and agencies sign a memorandum of agreement describing WNTI's purpose, conservation goals, operations, administration, and formal statement of working relationships and commitments to action between WAFWA and partner agencies and interests.
  - At the July 2008 annual WAFWA meeting, WNTI formalizes the roles, responsibilities, and members of the WNTI steering committee with the directors of member states and agencies.

## *Proposed roles and responsibilities of the WNTI steering committee*

The WNTI steering committee will promote and facilitate implementation of the actions described in the strategic plan. These include, but are not limited to:

- Supporting the development, implementation, monitoring, and evaluation of western native trout conservation actions at range-wide, regional and local scales
- Promoting planning efforts among partners and stakeholders
- Supporting and recommending WNTI projects for funding
- Providing direction and input to any WNTI special work groups, and creating WNTI ad-hoc task groups as needed
- Supporting the partnerships and projects of WNTI with financial and/or staff resources as available per agreement of the WAFWA directors
- Participating in marketing efforts/information campaigns to garner additional resources to meet WNTI objectives (within agency/organization guidelines)
- Reporting to partners and stakeholders on the status and accomplishments of WNTI

The WNTI Steering Committee will not exceed 11 members with the following representation:

- One chairperson – appointed by Inland and Marine Fisheries Committee Chair
- Four state agencies - one from each of the four WNTI geographical groupings (WAFWA IMFC members)
- Three federal agencies – selected from WAFWA member federal agencies (FWS, FS, BLM)
- One conservation organization representative
- One tribal nation or organizational representative
- One Canadian provincial representative
- Support staff - WNTI coordinator

## Regional/Geographic or Ad Hoc Working Groups

Because the WNTI encompasses a 12-state geographic area, including Alaska, and because most species populations overlap multiple states, there is occasionally a need for regional and local level planning and coordination. To meet this need, WNTI will continue to use the regional working groups – developed during the species assessment phase of WNTI – or ad hoc working groups on an as-needed basis. The species-based geographic groupings are:

**Northwest:** Alaska, California, Idaho, Montana, Nevada, Oregon, and Washington

**Middle and Northern Rockies:** Colorado, Idaho, Montana, Nevada, Utah and Wyoming

**Great Basin:** California, Nevada, Idaho and Oregon

**Southwest:** Colorado, New Mexico and Arizona

## WNTI Partners Council

WNTI will invite entities who want to participate in the partnership or provide assistance to participate as members of the Partners Council. This council will assist in achieving goals and implementing actions. This group will also assist in information exchange and communication between WNTI and partners, and provide feedback to the WNTI coordinator and steering committee for consideration. The Partners Council will convene periodically as needed.

## Operational memorandum of agreement

A memorandum of agreement will confirm the intent of state and federal fishery resource agencies, tribes and others to participate in and support a WAFWA partnership that focuses on conserving western native trout.

Through the agreement, signatories will confirm that the conservation of western native trout will be accomplished by application of resources – time, money and manpower – to conserving and protecting intact native trout populations and habitats. Partners will encourage management agencies and stakeholders to seek solutions to issues such as regional environmental and ecological threats. They also will develop and implement outreach and educational programs to ensure public awareness of the challenges that face native trout populations. Partners also will develop support for implementation of programs that perpetuate and restore western native trout throughout their historic ranges.

## WNTI coordinator

Currently, the WNTI coordinator is operating under the guidance of the original multi-state grant that funded initiative activities. As future funding becomes available, a part- or full-time coordinator for the WNTI will be sustained. The coordinator will provide primary staff support to the WNTI steering committee and will be responsible for disseminating information, coordinating and facilitating steering committee activities, coordinating outreach activities, and pursuing funding and grant opportunities that focus on WNTI objectives.

***The identification of funding sources is critical for the successful implementation and completion of conservation actions for western native trout and their habitats***

## Funding objectives

The identification of funding sources is critical for the successful implementation and completion of conservation actions for western native trout and their habitats, as well as for the continuation of WNTI beyond the end of the three-year multi-state grant funding.

A. Identify and secure short-term and long-term funding options for implementation of the WNTI Strategic Plan.

- Continue operations under the three-year multi-state grant and fully expend the funds available.
- As a National Fish Habitat Action Plan partner, secure funding as available through NFHAP.
- Investigate and seek other funds as appropriate with future partners and collaborators.

## Short-term funding

WNTI operates under a Sportfish Restoration Fund Multistate Grant administered by the U.S. Fish and Wildlife Service and the Association of Fish and Wildlife Agencies (AFWA) with an annual budget of \$188,000 per year. Under current funding with an extension, operations can continue through June 30, 2009. WAFWA's return on investment for this effort has been significant. In WNTI's first two years, more than \$2.14 million has been applied to western trout species habitat and research projects as a result of collaboration with FWS, The National Fish Habitat Action Plan, and the National Fish and Wildlife Foundation.

### WNTI multi-state grant funds available for management, operations and implementation:

Expense	2007	2008	2009	2010
Administrative	\$92K	\$92K	\$46K	\$0
Projects – MSG	\$0K	\$184K	\$100K	\$0

### WNTI partner project funds available for project implementation:

Habitat Project Funding	2007	2008	2009	2010
NFHAP – FWS Habitat	\$190K	\$444K	Unknown	Unknown
FWS –Terminal Lakes Fund	\$140K	\$140K	Unknown	Unknown
NFWF – 3 funding sources	\$1,239K	Unknown	Unknown	Unknown

## Long-term WNTI operational funding options

Following approval of the WNTI Strategic Plan and operating guidelines, the development of public partnerships is expected to begin in earnest, and the need for a long-term funding and operational structure will take precedence.

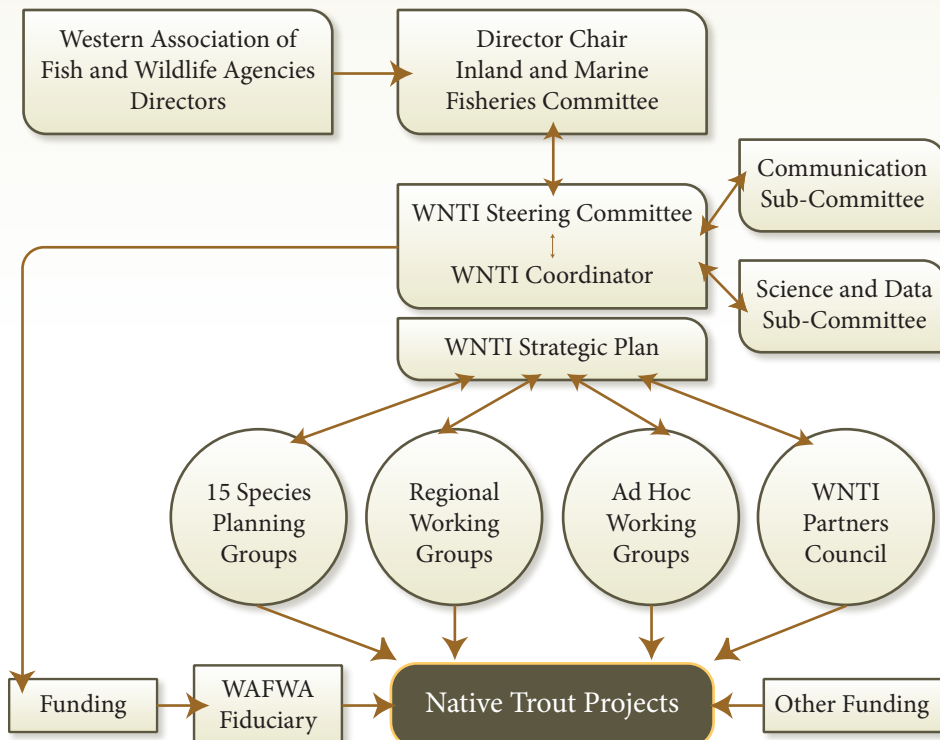
### Option 1 – WAFWA partner-supported operations

When the specific WNTI memorandums of agreement are formally approved by WAFWA member states, agencies and participating partners, there will be an opportunity for signatories to provide a modest amount of financial support for WNTI operations and the staff coordinator position. Other operational and project implementation funds would be sought through small administrative fees applied to grant programs, donations, gifts and other funding sources that become available.

### Option 2 – National Fish Habitat Action Plan funding and/or congressional budget authorizations for NFHAP partnership operations

Dependent upon the success of the National Fish Habitat Action Plan effort gaining spending authority through a “Fish Habitat Act,” WNTI operations and project funding may be funded through NFHAP partnership. WNTI will have to compete for the project funds through the National Fish Habitat Board project selection process. WNTI efforts also will be supported by funding within the member states from the current state and federally funded programs.

## WNTI organizational structure



**Figure 2. WNTI Operations and Organizational Structure**

*Subject to change pending the decisions of the Western Association of Fish and Wildlife Agencies directors*



# Results of assessment

## Species assessment process and identification of common concerns and obstacles to improve the status of the western native trout

In order to develop a strategic plan for WNTI, it was necessary to complete a range-wide status assessment of western native trout. The process to achieve this was:

1. Complete a review of existing plans and agreements
2. Identify information gaps or management needs
3. Identify and categorize common conservation strategies that could be applied to western native trout conservation at a broad scale
4. Identify obstacles that may preclude or impede implementation of proposed actions

Assessment teams were established to complete these tasks. A two-phased approach was used to accomplish the species assessments. First, following the combining of species into four geographically-based areas, individual species status reports were prepared for the 15 taxa considered in the Western Native Trout Initiative. Second, assessment team individuals were then assigned to one of the four geographical teams in order to prepare the summary report. Each geographical team was responsible for three to five species and tasked with identifying those obstacles, concerns, and threats that might be common among the species, as well as identifying common approaches to improving status of the species.

The four broad species groupings included:

**Southwest Trout Assessment Group** - Apache trout, Gila trout and Rio Grande cutthroat trout. This encompasses the states of Arizona, Colorado and New Mexico.

**Middle and Northern Rockies Trout Assessment Group** – Bonneville cutthroat trout, Colorado River cutthroat trout, Greenback cutthroat trout, and Yellowstone cutthroat trout. This encompasses the states of Colorado, Idaho, Montana, Nevada, Utah and Wyoming.

**The Great Basin Trout Assessment Group** – California golden trout, Little Kern golden trout, Lahontan cutthroat trout, and Paiute cutthroat trout. This encompasses the states of California, Nevada and Oregon.

**Northwest Trout Assessment Group** – Bull trout, coastal cutthroat trout, Redband trout, and Westslope cutthroat trout. This encompasses the states of Alaska, California, Nevada, Idaho, Montana, Oregon, Washington, and Canadian provinces.

This effort resulted in the WNTI report, “*Western Native Trout - Status, Concerns and Opportunities*” (WNTI, 2007). It provides the basis of information for the WNTI strategic plan. This summary report describes the current information on the species that are the



**California  
Golden Trout**  
*Oncorhynchus  
mykiss aguabonita*



focus of the initiative, identifies current issues – obstacles, concerns, threats – to the species, and identifies important potential actions that should be accomplished in the next five to 10 years to ensure survival of each taxon. The complete set of individual species status reviews can be found in the summary reports' appendices A through O.

These reports will stand in the future, in addition to the summary report, as detailed references on specific needs for each species, and will be updated as needed to reflect changes in species status and management.

## Summary of common obstacles, concerns, and threats to viability of western native trout that are addressed in the WNTI strategic plan

Not unexpectedly, the obstacles and threats to improving the status and protecting populations of western native trout are fairly similar across the wide geographic range considered. Opportunities and potential actions for achieving the WNTI objectives are likewise relatively similar across geographic areas, but vary in design and emphasis to reflect the specific needs of each taxon (*see Table 1 on next page*).

Maintaining and increasing the geographical distribution of healthy populations of all western native trout is basic to improving their status. Concerns common to all species assessments include habitat loss and degradation and impacts of non-native salmonids. Other concerns include sustaining current genetic diversity, maintaining and using protective land use regulations, buffering against climate change, improving conservation planning and cooperation among agencies, and providing additional information to the public. Other obstacles and concerns frequently identified, but not common to all species, include impacts of invasive and aquatic nuisance species, data shortfalls, and energy development.

Species-specific concerns, obstacles and opportunities for future projects are detailed in the summary report, as well as in individual native trout assessments. These reports are available on the Western Native Trout Initiative web site, [westernnativetrout.org](http://westernnativetrout.org).



### Coastal Cutthroat Trout

*Oncorhynchus  
clarkii clarkii*



**Table 1. Relative level of concern of obstacles preventing improvement in status**

Species	Concerns 3 = high 2 = med. 1 = low						
	Health of populations (genetically, physically)	Degraded or isolated habitats	Available comprehensive range-wide conservation plans	Data shortfalls	Lack of public awareness of species needs	Aquatic nuisance species or disease	Non-native species impacts
Apache trout	2	2	1	2	2	1	2
Bonneville cutthroat trout	2	3	1	2	2	2	3
Bull trout	2	3	3	2	2	2	3
California golden trout	3	1	1	1	2	1	3
Coastal cutthroat trout	3	3	3	3	2	1	2
Colorado River cutthroat trout	2	2	1	2	1	3	2
Gila trout	1	2	1	1	2	1	1
Greenback cutthroat trout	3	2	2	1	1	3	2
Lahontan cutthroat trout	2	3	2	2	2	1	3
Little Kern golden trout	3	1	2	1	1	1	2
Paiute cutthroat trout	1	3	1	1	2	1	3
Redband trout	3	3	3	3	2	1	3
Rio Grande cutthroat trout	2	2	1	2	1	2	2
Westslope cutthroat trout	1	2	2	2	2	1	3
Yellowstone cutthroat trout	3	2	2	2	1	3	3

# Background

## Origins of the Western Native Trout Initiative

In concert with changes in policy about inland native trout management during the past three decades, the states of Colorado, New Mexico, Idaho, Montana, Nevada, Utah, Wyoming, the U.S. Fish and Wildlife Service and the U.S. Forest Service increased coordination of conservation efforts through range-wide assessments. They also coordinated conservation strategies and a cutthroat genetics protocol. The idea for a Western Native Trout Initiative was spawned by the recognition that some of the species existed in relative obscurity in the West, where the focus for funding was on anadromous salmon and steelhead.

**The end result will be improved species status, improved habitats, and improved recreational opportunities for anglers across western states**

Thus, the foundation for WNTI was the on-going planning efforts, cooperative recovery efforts, and the recent development of state comprehensive wildlife conservation plans that helped to clarify the growing need for coordinated activity and additional fiscal resource needs. Those efforts detailed many critical actions that are without funding.

## Western Association of Fish and Wildlife Agency WNTI planning group

Because past approaches were fragmented, a group of state western fishery managers and federal fishery managers held several meetings to discuss development of a new approach to native trout management.

Their vision was a joint-venture style approach that focused on common conservation, management, and information needs of western trout. They envisioned addressing those through a collaborative strategy involving federal, state, tribal and local governments, conservation and recreational organizations, private landowners, and individual citizens. The end result will be improved species status, improved habitats, and improved recreational opportunities for anglers across western states.

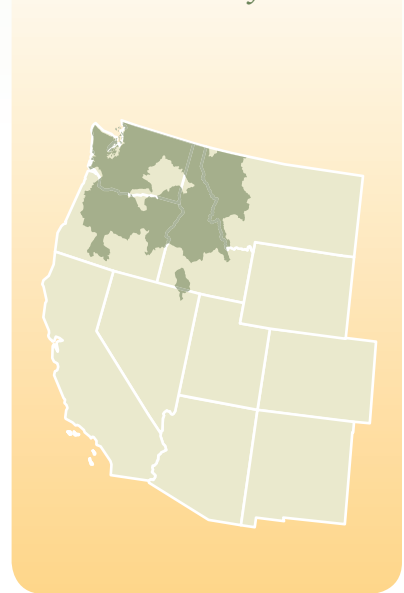
Following approval by the Inland and Marine Fisheries Committee of the Western Association of Fish and Wildlife Agencies, a multi-state conservation grant application (WAFWA, 2005) to create WNTI was submitted to AFWA. In January 2006, final approval from the U.S. Fish and Wildlife Service to move forward under the multi-state grant was received. Work on the initiative began in July, 2006 after a contractor was hired.

## Active partners in the development of the Western Native Trout Initiative

WNTI includes 12 western states - Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming; five federal agencies – U.S. Fish and



**Bull Trout**  
*Salvelinus confluentus*





Wildlife Service, U.S. Geological Survey, U.S. Forest Service, Bureau of Land Management, and National Park Service; tribal representation; and several industry and non-governmental organizations including Trout Unlimited and the National Fish and Wildlife Foundation.

The development of the WNTI Strategic Plan is the result of many individuals from diverse agencies, tribes and organizations working towards accomplishing a common objective of restoring western native trout. This effort reflects and recognizes the merit of collaboration and cooperation among WAFWA partners.



**Apache Trout**  
*Oncorhynchus gilae apache*



### State and federal listing status of the native trout in WNTI

The specific federal or state listing status, type of management plan, and state or tribal involvement in management of the individual species are provided in Table 2. This list is dynamic, as the status of any of these species may be changed as a consequence of formal tribal, state or federal listings, down-listings, or de-listing under appropriate tribal, state, or federal (Endangered Species Act) provisions.

The current recovery or conservation management planning documentation for the individual species is also provided. Such documentation ranges from completed species recovery plans to no plan. Plans, like listings, are dynamic and change with species status, management attention, and funding availability.

**Table 2. Federal and state planning and listing status for western native trout**

- SCN = Species of conservation need
- RP = Recovery plan
- CAS = Conservation agreement and strategies
- CA = Conservation agreement
- DCA = Developing a conservation agreement or conservation agreement and strategies

Species	Federal status	State status	Plan	Partners
Apache trout	Threatened	SCN	RP	AZ, WMAT, FWS, FS, BLM, TU, AU, FFF, SCAT
Bonneville cutthroat trout	Not listed	SCN	CAS	UT, NV, ID, WY, FWS, FS, BLM
Bull trout	Threatened	SCN	RP	OR, WA, ID, MT, NV, FWS, FS, BLM
California golden trout	Not listed	SCN	CAS	CA, FWS, FS

Species	Federal status	State status	Plan	Partners
Coastal cutthroat trout	Not listed	SCN	DCA	AK, CA, OR, WA, FWS, PSMFC, FS, BLM
Colorado River cutthroat trout	Not listed	SCN	CAS	CO, WY, UT, FWS, FS, BLM
Gila trout	Threatened	SCN	RP	AZ, NM, WMAT, FS, FWS, BLM
Greenback cutthroat trout	Threatened	SCN	RP	CO, FWS, NPS, FS
Lahontan cutthroat trout	Threatened	SCN	RP	NV, CA, OR, FWS, BLM, FS, PLF
Little Kern golden trout	Threatened	SCN	RP	CA, FS, FWS
Paiute cutthroat trout	Threatened	SCN	RP	CA, FWS, FS
Redband trout	Not listed	SCN	DCA	CA, ID, NV, MT, OR, WA, FWS, FS, BLM
Rio Grande cutthroat trout	Not listed	SCN	CAS	CO, NM, FWS, FS, NPS, BLM
Westslope cutthroat trout	Not listed	SCN	DCA	ID, MT, WA, OR, FWS, FS, NPS, BLM
Yellowstone cutthroat trout	Not listed	SCN	CAS	ID, NV, MT, WY, FWS, FS, NPS, BLM



**Figure 3. Geographic scope of states within the Western Native Trout Initiative.**

### ***Geographic scope of the western native trout initiative***

The WNTI is defined by state boundaries: Montana, Wyoming, Colorado, and New Mexico on the east, west to the Pacific coast, and Alaska. The 12 states within WNTI encompass about 1.8 million square miles, of which Alaska makes up more than one-third. The range of the western trout species, however, is discontinuous within and across national and state borders.

The distribution of native trout varies from a few streams in a single watershed, such as the Paiute trout, to multiple

watersheds that cross state and national boundaries, i.e. bull trout or coastal cutthroat trout. WNTI recognizes that the historic range of some native trout species are located in several Canadian provinces and that the various provincial agencies will be important partners in assisting WNTI accomplish its objectives.



## Appendix I - Acknowledgements

The WNTI strategic plan was accomplished through the hard work of a large number of individuals from state and federal agencies, conservation organizations, and several private groups. The initiative would like to recognize and thank the following individuals for their hard work and dedication to finding a better way to conserve western native trout.

### *Strategic Planning Working Group*

Alaska	Roger Harding	US Forest Service R 1	Kate Walker
Alaska	Christopher Estes	US Forest Service R 3	Amy Unthank
Arizona	Kirk Young	US Forest Service R 4	Dan Duffield
Arizona	Julie Meka	US Forest Service R 6	Dave Heller
Arizona	Larry Riley	US Forest Service R 7	Travis Coley
California	Dave Lentz	US Forest Service WO	David Schmid
Idaho	Scott Grunder	US Geological Survey	Kitty Griswold
Idaho	Steve Yundt	US Geological Survey	Bob Gresswell
Montana	Chris Hunter	US NRCS	Kathryn Boyer
Montana	Travis Horton	Trout Unlimited	Helen Neville
Nevada	John Elliott	NFWF	Krystyna Wolniakowski
New Mexico	Kirk Patten	Montana Water Center	Kristin Keith
New Mexico	David Propst	Pyramid Lake Fisheries	Daniel Fairbank
Oregon	Charlie Corrarino	American Sportfishing Association	Ross Tuckwiller
Oregon	Steve Jacobs		
Utah	Roger Wilson		
Washington	James Uehara		
Wyoming	Mike Stone		
Wyoming	Dirk Miller		
US Fish and Wildlife R1	Vicki Finn		
US Fish and Wildlife R2	Jim Brooks		
US Fish and Wildlife R6	Morgan Elmer		
US Fish and Wildlife R8	Lisa Heki		
US Bureau of Land Mgmt.	Tom Mendenhall		
US Bureau of Land Mgmt.	Karl Stein		

## Appendix II – Abbreviations

AFWA	Association of Fish and Wildlife Agencies
AREA	Aquatic Resource Education Association
AU	Anglers United
BLM	Bureau of Land Management
FFF	Federation of Fly Fishers
FWS	United States Fish and Wildlife Service
IMP	Intermountain Cutthroat Protocol
IMFC	Inland and Marine Fisheries Committee
MOA	Memorandum of agreement
MSG	Multi-state grant
NFHAP	National Fish Habitat Action Plan
NFWF	National Fish and Wildlife Foundation
PLF	Pyramid Lake Fisheries
PSMFC	Pacific States Marine Fisheries Commission
RBFF	Recreational Boating and Fishing Foundation
SCAT	San Carlos Apache Tribe
TU	Trout Unlimited
WAFWA	Western Association of Fish and Wildlife Agencies
WMAT	White Mountain Apache Tribe
WNTI	Western Native Trout Initiative

## Appendix III - Scientific names of western trout

Scientific names are taken from the American Fisheries Society Special Publication 29 – *Common and Scientific Names of Fishes from the United States, Canada, and Mexico*, Sixth Edition, 2004); and from *Trout and Salmon of North America*, R.J. Behnke, 2002.

### GENUS *Oncorhynchus* – Cutthroat Trout

- Bonneville cutthroat trout (*Oncorhynchus clarkii utah*)
- Coastal cutthroat trout (*Oncorhynchus clarkii clarkii*)
- Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*)
- Greenback cutthroat trout (*Oncorhynchus clarkii stomias*)
- Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*)
- Paiute cutthroat trout (*Oncorhynchus clarkii seleniris*)
- Rio Grande cutthroat trout (*Oncorhynchus clarkii virginalis*)
- Westslope cutthroat trout (*Oncorhynchus clarkii lewisi*)
- Yellowstone cutthroat trout (*Oncorhynchus clarkii bouvieri*)



## **GENUS *Oncorhynchus* – Redband / Rainbow Trout**

- California golden trout (*Oncorhynchus mykiss aguabonita*)
- Little Kern golden trout (*Oncorhynchus mykiss whitei*)
- Redband subspecies – (*Oncorhynchus mykiss* spp.)

## **GENUS *Oncorhynchus* – Gila Trout**

- Apache trout (*Oncorhynchus gilae apache*)
- Gila trout (*Oncorhynchus gilae gilae*)

## **GENUS *Salvelinus* – Chars**

- Bull trout (*Salvelinus confluentus*)

Other native trout and char in the western states and Alaska (such as Dolly Varden, grayling, rainbow trout, lake trout, and arctic char), are not included in the initial western native trout analysis or strategic plan. These additional species may be included in future revisions of the WNTI Strategic Plan, or concerned partners may petition the WNTI steering committee to add specific species.

# **Appendix IV – Project needs for western native trout by species**

Summary of the individual species opportunities for improving the status (*Western Native Trout – Concerns, Obstacles, and Opportunities*. WNTI, 2007)

## ***Species specific approaches and needs***

### **Apache trout**

- Renovate Stinky Creek, South Fork Little Colorado River, lower East Fork Little Colorado River, Conklin Creek, and lower Bear Wallow Creek.
- Restore Apache trout to South Fork Little Colorado River, lower East Fork Little Colorado River, Conklin Creek, lower Bear Wallow Creek, Snake Creek, West Fork Little Colorado River, and West Fork Black River.
- Revise Apache trout recovery plan and five-year status review.
- Finalize Apache trout conservation strategy MOA among agencies and user groups.
- Develop proposed delisting rule and post-delisting management plan.
- Remove brown trout from recovery streams on the Fort Apache Indian Reservation.

## Gila trout

- Renovate upper West Fork Gila River drainage and stock Gila trout following drainage specific restoration strategy.
- Genetically and demographically assess status of all extant Gila trout populations within 2 years.
- Initiate and complete NEPA and ESA compliance for renovation of West Fork Mogollon and Rain creeks.
- Renovate West Fork Mogollon and Rain creeks.
- Initiate and complete NEPA and ESA compliance for renovation of Mineral Creek.
- Renovate Mineral Creek.
- Restore wildfire damaged aquatic habitats on uppermost West Fork Gila River.
- Construct barrier on Little Creek at NM 15 crossing.
- Evaluate effects of sportfishing on Gila trout populations that have recently been opened to angling.
- Obtain fish from Spruce Creek to augment populations in Dude and Raspberry creeks. Establish a hatchery broodstock of Spruce Creek lineage.
- Initiate and complete NEPA and ESA compliance for Blue River drainage renovations and restoration of Gila trout.
- Initiate and complete NEPA and ESA compliance for renovation and restoration of Gila trout to West Fork Oak Creek.
- Repair and enhance constructed waterfall barrier on Black Canyon.

## Rio Grande cutthroat trout

- Monitor genetic status of extant RGCT “Conservation” populations.
- Complete Rio Grande cutthroat genetics analysis to determine phylogenetic origins and relationships of Rio Grande, Colorado River, greenback, and yellowfin cutthroat trout.
- Develop and maintain RGCT GIS database.
- Construct barriers on Alamitos Creek, Rio Hondo tributaries, Luna Creek, and Vermejo River.
- Restore RGCT to suitable habitat in historical range by nonnative trout removal.
- Establish RGCT populations in suitable habitat on Pueblo lands.
- Restore and enhance habitats on selected streams.
- Complete renovation and restoration of RGCT to Rio Costilla watershed.

## Greenback Cutthroat Trout

- Complete genetics work on relatedness of Colorado River, Greenback and Rio Grande cutthroat trout.
- Establish additional stable populations in the Arkansas and South Platte River basins.
- Prepare and sign a cooperative long-term conservation and management plan and agreement among state, federal and private interests to guide management of the greenback cutthroat after de-listing.
- Maintain and update the range-wide data system. This will require finding an entity with sufficient technical capacity and interest in the project to assume responsibility. It will require a consistent funding stream to provide support for the system. This could be done for all the species/subspecies using the inland cutthroat data protocol.

## Bonneville Cutthroat Trout

- Complete initial surveys and monitoring.
- Establish a brood source for Bear River Bonneville BVCT.
- Brood stock maintenance and disease certification at Manning Meadow, Little Dell Reservoir, Douglas Ranch (UT), Goshute Tribal Lands, and Hidden Canyon Ranch (NV) for supplemental stocking and reintroduction of BVCT.
- Monitor oil and gas exploration, timber harvest, grazing, and recreation activities on the Wasatch-Cache National Forest.
- Accomplish non-native fish eradication (rainbow trout) in Swan Creek and re-introduce BVCT.
- Mechanically remove rainbow trout (electrofishing techniques) from St. Charles Creek. Continue to promote harvest of non-native brook trout through liberal limits and bait fishing.
- Monitor the effectiveness of fish passage projects and reconnect tributaries on the Thomas Fork.
- Accomplish Chalk Creek BVCT Fish Passage Improvement Project (Phase II). The BVCT population in Chalk Creek constitutes the largest metapopulations within the Bonneville Basin.
- Monitor and evaluate habitat/water quality conditions due to drought, groundwater extraction, and fire in Deep Creek Range (UT), North and South Snake Range (NV), Cherry Creek Range (NV), and Quinn Range (NV).

## Colorado River Cutthroat Trout

- Complete brood source development for Lower Colorado and Lower Green River GMUs.
- Complete restoration project on Muddy Creek in the Little Snake River drainage.
- Secure barrier placement on West Fork Duchesne to protect conservation population used as brood source.

- Complete barrier renovation project on North Fork Little Snake River to protect the upstream populations.
- Complete barrier renovation on LaBarge Creek to protect 58 stream miles above the barrier from non-native trout re-colonization.
- Complete genetic assessment of North Slope Uinta brood source.
- Restoration activities on Range Creek and Ferron Creek (non-native removal and re-establishment of cutthroat).
- Complete genetics work on relatedness of Colorado River, Greenback and Rio Grande cutthroat trout.
- Complete removal of existing fish barriers on Littlefield Creek in the Little Snake River drainage as needed to enhance the movement of native fish in the system.
- Complete restoration of East and West Coal Creek.

## **Yellowstone Cutthroat Trout**

- Continue lake trout removal in Yellowstone Lake.
- Protect and enhance spring spawning streams on the Snake River.
- Complete inventory of Wood and Greybull River drainages and begin restoration work where feasible.

### **Bighorn River Basin GMU**

- Work with private landowners and public land management agencies to identify, protect, and improve habitat for YCT. Investigate and initiate, where feasible, habitat improvement projects in Soldier, Marquette, Bear Creek, and Mill Creek.
- Gather biological and physical information to file for instream flow water rights to protect YCT water sources. File for five instream flow segments within the Wind River and continue to monitor existing filings on 15 other segments within the Bighorn GMU.
- Investigate fish passage issues throughout the Bighorn GMU. Identify barriers to fish movement, develop plan to remove or modify structures to allow unrestricted movement by YCT and other aquatic organisms. Install barriers to fish movement where necessary to eliminate/isolate competing and hybridizing non-native fish species from pure YCT populations. Install one structure on Lodge Grass Creek if necessary, a permanent structure on Elkhorn Creek and one on Crooked Creek.

### **Lower Snake River GMU**

- Remove non-native salmonids from key YCT watersheds.
- More accurately determine the distribution, abundance, and connectivity of populations.

- Assess genetic purity and/or introgression of populations.

### **Upper Snake River GMU**

- Remove non-native salmonids from key YCT watersheds.
- More accurately determine the distribution, abundance, and connectivity of populations.
- Assess genetic purity and/or introgression of populations.

### **Yellowstone River GMU**

- Remove non-native salmonids from key YCT watersheds.
- More accurately determine the distribution, abundance, and connectivity of populations.
- Enhance habitat conditions as the highest priority by working with state and federal agencies, NGOs, and private landowners.

## **Paiute Cutthroat Trout**

- Remove all nonnative salmonids from Silver King Creek and its tributaries down-stream of Llewellyn Falls to fish barriers in Silver King Canyon. Re-establish and maintain Paiute cutthroat trout in the reclaimed reaches.
- Maintain Paiute cutthroat trout habitat in all occupied streams.
- Maintain as refugia the populations in Corral and Coyote Creeks, Silver King Creek and tributaries above Llewellyn Falls, as well as out-of-basin populations that are secured from the introduction of other salmonid species.
- Develop a long-term conservation plan and conservation agreement which will be the guiding management documents once Paiute cutthroat trout are de-listed.

## **Lahontan Cutthroat Trout**

### **Western Lahontan basin comprised of the Truckee, Carson, and Walker river sub-basins:**

- Explore the potential of re-establishing self-sustaining lake populations of LCT in the Lake Tahoe basin, and Walker and Pyramid Lakes through re-establishment of connectivity to main-stem rivers or tributaries to the extent practicable. Reintroductions of LCT populations into these historic lake habitats where they were extirpated in the 1940's will require reliance on broodstocks and hatchery propagation.
- Through state, federal, and tribal hatchery sources of LCT eggs, fry and fingerlings, catchable trout will be used to expand wild populations and provide recreational angling.
- Investigate management and research actions to determine the most effective strategies for reestablishing wild lake populations.
- Continue to raise LCT at state, tribal and federal hatcheries for recovery actions and continue to



evaluate the feasibility of using LCT to replace nonnative trout for recreational fishing purposes. Evaluate the performance of the Pilot Peak strain in the Truckee/Tahoe and Walker basins.

- Evaluate the feasibility of recreating the native networked populations within the Lake Tahoe-Truckee River and Walker River watersheds in the Western basin DPS.
- Continue cooperation among partners to identify and address upstream barriers and entrainment in each of the three basins, as well as cooperative funding efforts.
- Secure and improve riparian and in-stream habitat for the restoration of LCT fluvial populations.
- Identify critical stream and riparian zone habitats for stream treatments and Lahontan cutthroat trout reintroductions to expand and secure metapopulations and priority isolated streams in headwater populations.
- Restore and enhance water flow, including restoring the natural hydrograph, not necessarily historic volumes, in key habitats.

#### **Northwestern Lahontan basin comprised of Quinn River, Black Rock Desert, and Coyote Lake sub-basins**

- Continue expansion of Lahontan cutthroat trout distribution for improved networked populations through the Interagency DPS Teams.
- Complete barrier development and treatment in high priority sub-basins to enhance networked populations in high priority sub-basins.
- Monitor population genetics over the long-term to determine hybridization, population genetic structure changes resulting from increases in habitat quantity and quality, and evaluate potential loss of genetic diversity.
- Monitor angler use of occupied streams.

#### **Humboldt River basin**

- Continue stream treatments and reintroductions to expand and secure networked populations, and also within priority isolated streams where appropriate.
- Continue to improve riparian and aquatic habitats and increase essential habitat acquisitions to improve fish passage and enhance stream connectivity in order to facilitate emergence of the historic population dynamics in these watersheds.
- Continue evaluation of genetics at regular intervals to determine hybridization and phylogenetic analysis, and to evaluate the potential loss of genetic diversity. In addition, continue to monitor angler use of occupied streams.

#### **Little Kern Golden Trout**

- Complete the genetic analysis of trout samples collected from tributary streams to the Little Kern River and Coyote Creek. Use the results of genetic analyses to develop a genetics management plan. Monitor the genetic integrity of these populations on a regular basis.

- Monitor fish populations (numbers, size, condition) and continue enforcement of fish and game regulations, including efforts to prevent trout transplantation.
- Continue public outreach efforts, including the consequences of illegal fish transplantation, and produce an annual (or as needed) backcountry user's brochure explaining the program and management action that may be occurring.
- Monitor effectiveness and integrity of the barriers to upstream fish movement. All barriers need to be evaluated and effectiveness improved as needed.
- Coordinate management activities at least annually with land management agencies (U. S. Forest Service, National Park Service) and stakeholders.

## California Golden Trout

- Develop a CGT genetics management plan that may include a baseline genetic analysis with monitoring being implemented on a regular basis, measuring the degree of hybridization, and identifying other potential source populations.
- Monitor stream and meadow habitat and bioassessment of species in two rested grazing allotments. Compare these results to the two allotments that continue to be grazed.
- Monitor fish populations (numbers, size, condition) and continue enforcement of fish and game regulations, including efforts to prevent illegal trout transplantation.
- Monitor integrity and effectiveness of fish barriers and consider the need for additional downstream barriers in remote locations.
- Review and update implementation plan (work plan) annually.
- Continue public outreach efforts, including the consequences of illegal fish transplantation, and continue to coordinate and use volunteers to accomplish some of the field work.
- Remove source of introgressed trout in headwater lakes, downstream reaches as appropriate, and resolve the non-native trout stocking issues.
- Establish refuges within and outside the native range for CGT based on criteria to be developed.

## Bull Trout

- The FWS and states, with key partners, need to conclude the five-year status review and develop a bull trout memorandum of agreement that describes the key components of the recovery plan that need to be addressed over the next five years.
- Management teams should be formed for the four GMUs with the goal of continuing to prioritize the key actions that need to be accomplished to improve the status of bull trout. The teams should also seek funding through the various partnerships being developed.
- Protect and maintain key functioning bull trout core habitats and populations.
- Improve the connectivity and genetic integrity of bull trout populations where needed.

## **Redband Trout**

### **Upper Great Basin GMU**

- Reduce losses to entrainment and improve passage at upstream barriers.
- Increase streamflow to improve connectivity.
- Develop and apply a monitoring and assessment program for Great Basin redband trout. Derived data will be used to assess status relative to state and federal management goals.
- Develop habitat projects to improve the status of the Great Basin redband trout.

### **Sacramento River Basin GMU**

- Conservation measures needed for the McCloud redband focus on the following objectives: (A) establish a McCloud redband refugium, (B) enhance and/or maintain habitat, and maintain genetic integrity.
- Utilize information developed by the University of California-Davis study to determine which of the inland stocks are genetically distinct from coastal rainbow, and develop appropriate management actions.

### **Upper Snake GMU**

- Protect and maintain existing habitat and populations.
- Reduce losses to entrainment and improve passage at upstream barriers.
- Increase streamflow to improve connectivity.
- Develop and apply a monitoring and assessment program for Upper Snake redband trout. Derived data will be used to assess status relative to state and federal management goals.
- Develop habitat projects to improve the status of the Upper Snake redband trout.
- Conduct non-native trout removal projects.
- Monitor angler use trends.

### **Upper Columbia River GMU**

- Conduct standardized surveys to assess status and trend and genetic analyses to define population structure and identify introgression from other fish.
- Restore and improve altered channel and riparian zone habitat.

## Westslope Trout

- Develop a state/federal memorandum of agreement for the conservation of Westslope cutthroat trout with appropriate partners. Seek funding through the various partnerships being developed.
- The states, with key partners, will update, describe and prioritize the key components of the conservation plan that need to be addressed over the next five years.
- Enforce existing fishing regulations and promulgate new regulations if necessary to protect Westslope cutthroat trout population.
- Manage hatchery broodstocks and use of stocked fish to maintain genetic diversity and appropriate fish stocking protocols.

## Coastal cutthroat trout

- Continue the coordinated effort among tribal, state, federal, provincial agencies that identifies the priority research and management needs for CCT for the purpose of developing a range-wide conservation plan. This plan would include:
  - Develop a monitoring framework for CCT that allows for the assessment of status, (i.e., define what constitutes a “healthy” population of CCT including stream health).
  - Identify (GMU’s) throughout the distributional range of CCT.
  - Establish or enhance outreach with angling and NGO groups.
  - Determine genetic affinities of CCT, especially in Columbia River and southwest Washington CCT populations, among “resident” and migratory populations, and between CCT and *O. mykiss*.
- Complete distribution and abundance surveys to examine the following:
  - Continuation, expansion, and/or establishment of spawner or proxy surveys of CCT escapement/recruitment.
  - Establishment of population and stock status assessment programs for CCT.
- Fund research that aids management agencies in their efforts to identify the important linkages among life history type.
- Assess and remediate fish passage barriers.
- Assess and restore stream water, channel and habitat quality.
- Assess and restore estuarine and near-shore water and habitat quality.

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