

## 6. Inventory of Existing Programs and Projects

### 6.1 Programmatic Activities

This chapter outlines both recently completed and ongoing projects within the Asotin subbasin and identifies the main programs that are in effect. The intent is to provide a picture of what has been happening within the subbasin that will be useful in guiding decisions about project implementation in the future. The information presented here is a summary of the aquatic and terrestrial permits, management plans, and projects that are described in the Washington Department of Fish and Wildlife (WDFW) and Asotin Inventory Assessment (see Appendix F).

There are a variety of ongoing programmatic activities in the state of Washington that have the potential to improve both aquatic and terrestrial habitat and address limiting factors in the Asotin subbasin. These programmatic activities are summarized in Table 6-1. This is not meant to be a comprehensive list of all existing activities. More details may be found in the WDFW Asotin Inventory Draft (Appendix F) and the Asotin Creek Subbasin Summary (NPPC 2001).

**Table 6-1 Programmatic Activities within the Asotin Subbasin**

Administering Agency	Regulation	Required when...	Intent
The Northwest Power and Conservation Council (NWPCC)	1980 Northwest Electric Power Planning and Conservation Act	charged with developing a 20-year plan to deliver power to the region and a Fish and Wildlife Program funded by the Bonneville Power Administration (BPA)	Protect, mitigate and enhance fish and wildlife of the Columbia River Basin that have been impacted by hydropower dams
USFWS/NOAA	Endangered Species Act (ESA)	An action has the potential to harm or kill an endangered or threatened species	Protect endangered or threatened species
US Army Corps of Engineers	USACE 404 Permits and Section 10 Permits	Locating a structure, excavating, or discharging dredged or fill material in waters of the United States or transporting dredged material for the purpose of dumping it into ocean waters	Protect aquatic life and water resources
Natural Resource Conservation Service (NRCS)	Farm Security and Rural Investment Act of 2002 ("Farm Bill")	Through the Farm Bill programs, NRCS provides technical and financial assistance to landowners and operators to voluntarily apply conservation on their land. Implementing the programs helps landowners and operators reduce soil erosion, protect streams and rivers, restore and establish fish and wildlife habitat, and improve air and water quality.	Provide leadership in a partnership effort to help people conserve, maintain, and improve natural resources and the environment. Promote harmony between people and the land.
Farm Service Agency (FSA)	CRP and other programs	"Grassroots" delivery system of farm programs to Agency customers. FSA's programs	Ensure the well-being of agriculture, the environment and the public through efficient and

Administering Agency	Regulation	Required when...	Intent
		are delivered through an extensive network of field offices. State and County Office elected committees, comprised of farmers in the local area, are responsible for overseeing FSA services delivered to the farming community. This extensive network enables FSA to maintain close relationships with Agency customers and successfully address customer's needs in an effort to continually improve the delivery of FSA programs.	equitable administration of farm commodity programs; emergency and disaster assistance; domestic and international food assistance and international export credit programs.
Washington Department of Ecology (WDOE)	Total Maximum Daily Load (TMDL) Program	Streams are on the 303(d) list for violating state water quality standards	Bring streams into compliance with state water quality standards
WDFW	Hydraulic Code and Hydraulic Code Rules	Constructing hydraulic projects which affect the flow or channel bed of any waters of the state	Protect fish life and habitat areas
Washington Department of Transportation (WADOT)	Road maintenance/ transportation - RCW 77.55.060	Constructing a dam or other feature which obstructs fish passage	Mitigate for fish passage barriers
Cities and counties, with technical assistance from Department of Community, Trade, & Economic Development	Growth Management Act (GMA) – RCW 30.70A	State and local governments are planning for future growth and development	Control growth in natural resource and critical areas for fish and wildlife
Cities and counties, with technical assistance from Dept of Ecology	Shoreline Management Act (SMA) – RCW 90.58	Regulating shoreline development	Protect shoreline environmental resources and uses
Department of Ecology and local planning units (involves collaboration with local government, tribes, and public citizens)	Watershed Planning Act – RCW 90.82	(Voluntary process to produce collaborative watershed management plans)	Integrated protection and management of watersheds; primary focus is on instream flows and water quantity with optional components of water quality and habitat

Source: Appendix F

Table 6-2 presents a variety of USDA programs that deal primarily with protection, restoration, and enhancement of fish and wildlife habitat. For more detailed descriptions concerning the operation of these programs, refer to Appendix F.

**Table 6-2 USDA Programs Targeting Habitat Enhancement**

Program	Purpose	Additional information
Conservation Reserve Program (CRP)	Remove highly erodible land from agricultural production and planting cover crops to increase wildlife habitat	Voluntary program for private landowners involving a 10-year contract and installation and annual payments
Continuous Conservation Reserve Program (CCRP)	Restore riparian habitat and improve water quality	Voluntary program for private landowners involving a 10-15 year contract and installation

<b>Program</b>	<b>Purpose</b>	<b>Additional information</b>
		and annual payments
Conservation Reserve Enhancement Program (CREP)	Protect and restore agricultural land and riparian habitat by removing land from production	Voluntary program for private landowners involving a 10-15 year contract, rent, incentive and maintenance payments, and cost-sharing for installation
Wildlife Habitat Incentive Program (WHIP)	Restore and enhance fish and wildlife habitat on private lands	Voluntary program for private landowners; includes both financial and technical assistance from NRCS
Wetland Reserve Program (WRP)	Restore, create, protect, and enhance wetlands	Voluntary program for private landowners, who may participate in restoration cost-sharing or establish conservation easements on their land
Environmental Quality Incentives Program (EQIP)	Address soil, water, and related natural resource concerns on private lands in an environmentally beneficial and cost-effective manner	Voluntary program targeting farmers and ranchers; technical and financial assistance provided by NRCS, esp. for implementing land management practices such as nutrient management, pest management, and grazing land management
The Public Law 566 Small Watershed Program (PL 566)	Improve watershed conditions	Local organizations can seek funding from NRCS and other federal, state, and local funds

Note: All programs in the above table are implemented through the cooperative efforts of the USDA-Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA) and local Conservation Districts.

Source: Appendix F

In addition to the programmatic activities described above, a wide range of federal, state, tribes and local agencies and other organizations are involved in protecting and restoring habitat within the Asotin subbasin. Table 6-3 summarizes a subset of these organizations that are responsible for managing or implementing programs and projects with the greatest effect on protecting and improving habitat. More detailed discussion of the various responsibilities of these entities can be found in Appendix E and the Asotin Creek Subbasin Summary (Stovall 2001).

It is important to note that the Asotin County Conservation District (ACCD) plays a key role in the subbasin, providing significant support in the planning, design, and implementation of the majority of programs and projects to enhance fish and wildlife habitat. In addition, it is also the primary conduit for funding to local landowners participating in habitat improvement activities.

**Table 6-3 Agencies and Organizations Involved in Habitat Enhancement in the Asotin Subbasin**

<b>Agency</b>	<b>Purpose</b>	<b>Activities</b>
Federal US Forest Service; Pomeroy Ranger District (PMD)	Achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of people	Implementation of a range of management plans and strategies designed to better manage forestlands and improve fish and wildlife habitat. Examples include: Umatilla National Forest Plan, Land and Resource Management Plan, and the Upper Charley Subwatershed Ecosystem Restoration Projects Environmental Impact Statement

<b>Agency</b>		<b>Purpose</b>	<b>Activities</b>
Natural Resource Conservation Service (NRCS)		Provide leadership in a partnership effort to help people conserve, maintain, and improve natural resources and the environment. Promote harmony between people and the land.	Through the Farm Bill programs, NRCS provides technical and financial assistance to landowners and operators to voluntarily apply conservation on their land. Implementing the programs helps landowners and operators reduce soil erosion, protect streams and rivers, restore and establish fish and wildlife habitat, and improve air and water quality.
Farm Service Agency (FSA)		Ensure the well-being of agriculture, the environment and the public through efficient and equitable administration of farm commodity programs; emergency and disaster assistance; domestic and international food assistance and international export credit programs.	“Grassroots” delivery system of farm programs to Agency customers. FSA’s programs are delivered through an extensive network of field offices. State and County Office elected committees, comprised of farmers in the local area, are responsible for overseeing FSA services delivered to the farming community. This extensive network enables FSA to maintain close relationships with Agency customers and successfully address customer’s needs in an effort to continually improve the delivery of FSA programs.
Tribal	Nez Perce Tribe (NPT)	Manage, protect, and enhance treaty fish and wildlife resources for future generations	Restoration and mitigation activities
State	WDFW	Protect and restore fish and wildlife habitat	Support of a range of habitat improvement programs: Habitat Development Program, Upland Restoration Program, and Priority Habitats and Species Program. Manages the Asotin Creek Wildlife Area and provides resources for property acquisition.
	WDOE	Protect, preserve, and enhance Washington’s environment and promote the wise management of air, land, and water for the benefit of current and future generations	Establishment of regulatory standards for water quality; water quality monitoring; management of water resources, instream flow rule development, shoreline, floodplain, wetlands, and watersheds
	Washington State Conservation Commission (WCC)	Protect, conserve and enhance the natural resources of the state; encourage conservation stewardship	Support for conservation districts, funding for natural resource projects, grants to support environmental improvements
	Washington Department of Natural Resources (WDNR)	Manage state land; monitor and enforce logging regulations on private lands	Land acquisition
Local	Asotin County Conservation District	Advocate, educate and assist in responsible land management and agricultural practices that conserve and improve air, soil, and water	Continue private land habitat improvement programs in uplands,

Agency		Purpose	Activities
		quality and fish and wildlife habitat.	riparian and instream areas. Reduction of upland and riparian erosion and sedimentation and riparian and instream enhancements to protect ESA Listed salmonid stocks spawning and rearing habitat. Assist with information and education of voluntary programs to protect and restore critical habitat for steelhead and Chinook specifically. Assist in watershed planning processes and adoption of best management practices designed to improve natural resources.
County Weed Boards (ex. Asotin County Noxious Weed Control Board)		eradicate, contain, and/or control noxious weed infestations which threaten wildlife habitat in Asotin County	Noxious weed control
Asotin County Government		Preserve and protect local streams and riparian areas	Local regulations include: shorelines master program, county zoning ordinance, flood damage prevention ordinance, critical areas ordinance
Agricultural Community		Protect and enhance private lands for long-term sustainability for present and future generations	Ridge-top-Ridge-top "grassroots" activities designed to utilize Best Management Programs for sediment reduction and protection of upland, riparian and instream habitat. Continue education as to the importance of private land ownership and look for opportunities to maintain agricultural designations with long-term conservation easements for continued protection of habitat on private lands.
Other	Rocky Mountain Elk Foundation (RMEF)	Protect and enhance grassland and riparian wetland habitats	Noxious weed control; land acquisition and conservation

Source: Appendix F and (Stovall 2001)

## 6.2 Species Protection, Plans, and Permits

This section reviews specific aquatic and terrestrial programs within the subbasin that affect species and their habitats.

### 6.2.1 Aquatic Species Protection, Plans, and Permits

There are several programs operating within the Asotin Subbasin whose main focus is on the protection of aquatic species and their habitat. The brief descriptions below give the basic background and purpose of each program. This is not a comprehensive list of existing programs, but rather a selection of those that have the greatest potential to influence the status of aquatic species and their ecosystems.

The Snake River Salmon Recovery Plan is currently being developed to protect and restore listed Snake River salmon stocks and improve the overall health of the Snake River ecosystem. The Washington portion of the plan is guided by the Snake River Regional Salmon Recovery Board, which is made up of community, business, government, and tribal representatives (<http://www.snakeriverboard.org/>). The plan aims to restore salmon populations by addressing the “4 Hs:” habitat, hatchery, harvest, and hydropower.

The following description of the Columbia River Anadromous Fish Restoration Plan (Wy-Kan-Ush-Mi Wa-Kish-Wit) was provided by the Nez Perce Tribe.

“The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes, Wy-Kan-Ush-Mi Wa-Kish-Wit, is the culmination of the leadership and wisdom of these tribes fish and wildlife committees and the technical work of the reservation fisheries and the Columbia River Inter-Tribal Fish Commission staffs. This tribal salmon restoration plan outlines the cultural, biological, legal, institutional and economic context within which the region’s salmon restoration efforts are taking place. This long-term plan addresses virtually all causes of salmon decline and roadblocks to salmon restoration for all anadromous fish stocks: Chinook, coho, sockeye, steelhead, chum, eels (Pacific Lamprey) and sturgeon, above Bonneville Dam. This area encompassing about three quarters of the Columbia River Basin, is where most of the tribes’ treaty-reserved fishing places and fish resources are located.”

Water quality is an integral part of maintaining watershed health. Section 303(d) of the Clean Water Act (CWA) established the Total Maximum Daily Load (TMDL) program, which seeks to identify sources of pollution in 303(d) listed streams and develop plans to improve water quality and bring these streams into compliance. There are 303(d) streams in the Asotin subbasin; however, no TMDLs have been approved at this time. For more information about the TMDL program in Washington, refer to the Department of Ecology’s website: <http://www.ecy.wa.gov/programs/wq/tmdl>. Water quality issues continue to be addressed in the Asotin subbasin both through the TMDL process and via the implementation of independent projects implemented by local watershed groups.

Hatchery production of salmon was initiated in the Columbia River Basin in the late 1800s. The original purpose was to maintain commercially harvestable numbers of salmon. More recently, hatcheries have also been used to supplement declining wild populations of salmonids. In 1998 (U.S. Senate Energy and Water Development Appropriation Bill, 1998, Report 105-44), Congress directed the Northwest Power and Conservation Council to conduct a review of all of the artificial production programs within the Columbia basin. These Artificial Production Review and Evaluation (APRE) reports evaluate: the purpose of each hatchery program, success

in meeting established objectives, and the benefits and risks associated with the program. In addition, NOAA is developing hatchery genetic management plans (HGMPs) under the Columbia River Hydropower Biological Opinion. HGMPs are detailed plans specifying how hatcheries are to be managed and operated. There are currently no hatchery programs operating within the Asotin subbasin. However, previous hatchery releases of steelhead occurred in the subbasin during the mid 1980s to late 1990s. In addition, ongoing steelhead and Chinook hatchery adults straying from other nearby subbasins may occur. (see Chapter 3)

Currently harvest regulations in the subbasin are intended to protect steelhead and Chinook species. As noted in WDFW Asotin subbasin Aquatic Assessment (Appendix B), “Descriptions of fisheries and their estimated effects on listed species of fish in the Snake River basin are discussed in the WDFW Fishery Management and Evaluation Plan (FMEP) for the incidental Take of listed species submitted under ESA Section 10/4d (submitted to NOAA-fisheries on Dec. 2, 2002).” The WDFW FMEP may be viewed online at: [http://www.nwr.noaa.gov/1fmep/proposed/SnakeRiverWDFW\\_FMEP.pdf](http://www.nwr.noaa.gov/1fmep/proposed/SnakeRiverWDFW_FMEP.pdf). In addition, state harvest regulations for sport fisheries are listed on WDFW’s website: <https://fortress.wa.gov/dfw/erules/efishrules/index.jsp>.

The Nez Perce tribe also has treaty harvest rights within the subbasin. The following detail regarding tribal harvest rights was provided by the Nez Perce Tribe:

“The Nez Perce Tribe has usual and accustomed fishing locations not only within that portion of the 13,204,000 acres that have been found to been exclusively used and occupied by the Tribe including the major portions of the Snake, Salmon and Clearwater Rivers and their drainages situated in three states-Washington, Oregon, and Idaho (Figure 6-1), but there are many Nez Perce usual and accustomed fishing sites located beyond that aboriginal territory as well. The best example of that is represented by the rights the Nez Perce Tribe to fish pursuant to treaty rights at usual and accustomed fishing areas in the lower Columbia River as determined by the *U.S. v. Oregon* litigation.

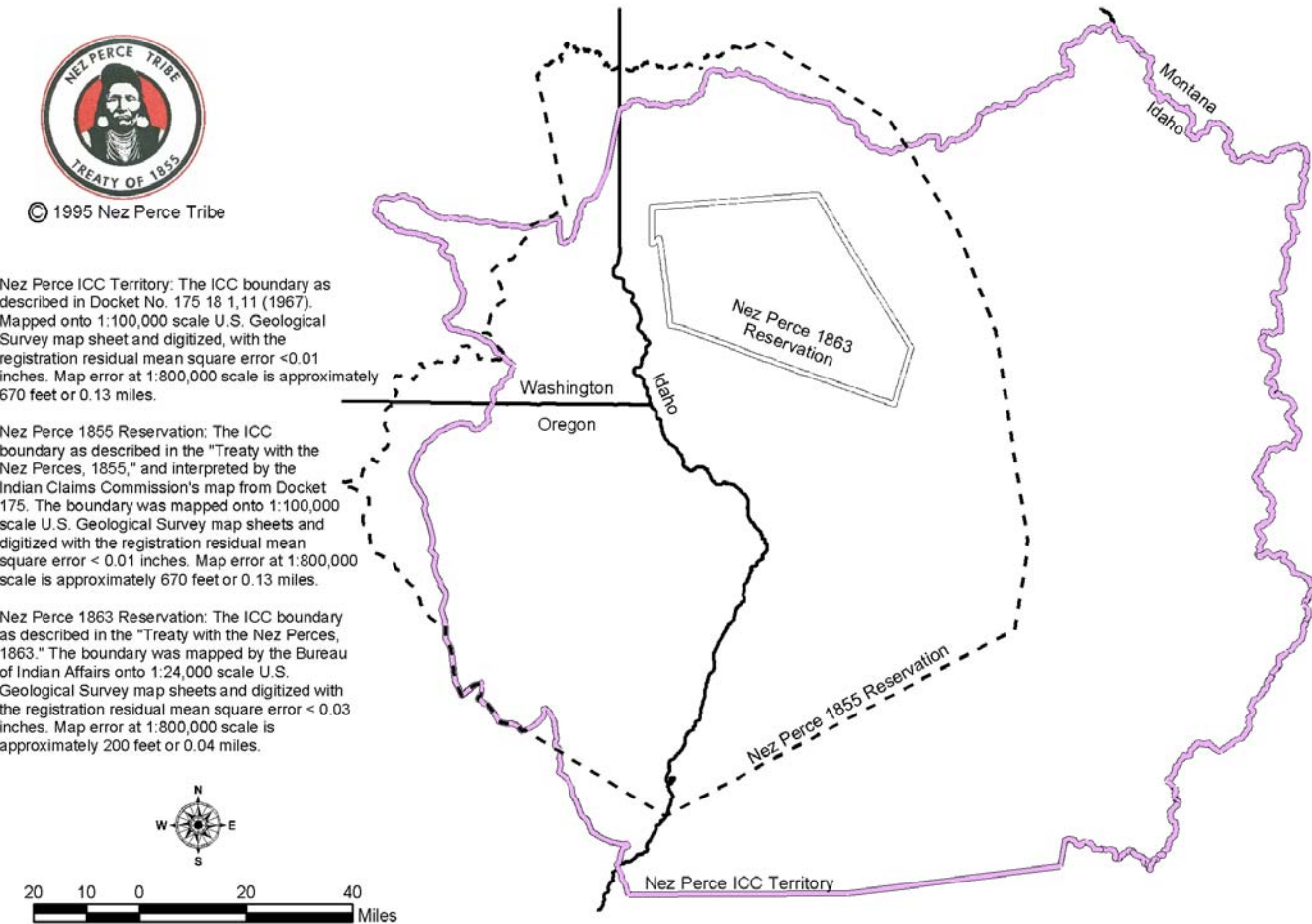
Salmon and other migratory fish species are an invaluable food resource and an integral part of the Nez Perce Tribe’s culture. Anadromous fish have always made up the bulk of the Nez Perce tribal diet and this dependence on salmon was recognized in the treaties made with the Tribe and the United States. In 1855, representatives of the United States government negotiated a treaty with the Nez Perce in which the Tribe expressly reserved:

The exclusive right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places in common with citizens of the Territory; and of erecting temporary buildings for curing, together with the privileges of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land (12 Stats., 957-Article 3). Treaty of 1855.

Thus, the legal, historic, economic, social, cultural, and religious significance of the fish to the Nez Perce Tribe continues to this day, which makes the decline of fish populations in the Snake River Basin a substantial detrimental impact to the Nez Perce way of life.

# Territory of the Nez Perce Tribe

Reproduction of map depicting findings of Indian Claims Commission Docket No. 175



© 1995 Nez Perce Tribe

**Nez Perce ICC Territory:** The ICC boundary as described in Docket No. 175 18 1, 11 (1967). Mapped onto 1:100,000 scale U.S. Geological Survey map sheet and digitized, with the registration residual mean square error <0.01 inches. Map error at 1:800,000 scale is approximately 670 feet or 0.13 miles.

**Nez Perce 1855 Reservation:** The ICC boundary as described in the "Treaty with the Nez Percés, 1855," and interpreted by the Indian Claims Commission's map from Docket 175. The boundary was mapped onto 1:100,000 scale U.S. Geological Survey map sheets and digitized with the registration residual mean square error < 0.01 inches. Map error at 1:800,000 scale is approximately 670 feet or 0.13 miles.

**Nez Perce 1863 Reservation:** The ICC boundary as described in the "Treaty with the Nez Percés, 1863." The boundary was mapped by the Bureau of Indian Affairs onto 1:24,000 scale U.S. Geological Survey map sheets and digitized with the registration residual mean square error < 0.03 inches. Map error at 1:800,000 scale is approximately 200 feet or 0.04 miles.

**Figure 6-1 Nez Perce Ceded Territory and Reservation Land**

Source: Nez Perce Tribe 2004.



The Nez Perce Tribe has what might be deemed near exclusive jurisdiction to regulate tribal members exercising treaty reserved fishing rights at all off reservation, usual and accustomed locations in the Snake River Basin. As a general rule, state jurisdiction within Indian Country is preempted both by federal protection of tribal self-government and by federal treaties and statutes on other subjects relating to Indians, tribes, their property and federal programs.

The Nez Perce Tribe's Department of Fisheries Resource Management has a Harvest program whose purpose is to provide fisheries harvest management plans, evaluations and assessments (e.g. Endangered Species Act Biological Assessments, Tribal Resource Management Plans, co-manager coordination and harvest documentation) necessary to procedurally implement treaty reserved fishing rights. Harvest monitoring activities are enormous in scope, encompassing fishing conducted year-round from the mainstem Columbia River (Zone 6) up to the headwaters of the Clearwater River on the Montana/Idaho border. Within this area, the Tribe has the reserved right to access fully 50 percent of the fish available for harvest. The Snake River Basin fisheries proposed by the Nez Perce Tribe have been grouped into six separate geographic management units within the Treaty of 1855 Reservation boundary where ceremonial, subsistence, and commercial fisheries have historically occurred for the Tribe: 1) Mainstem Snake River (includes Asotin and Lower Snake tributaries); 2) Tucannon River Subbasin; 3) Clearwater River Subbasin; 4) Salmon River Subbasin; 5) Grande Ronde River Subbasin, and 6) Imnaha River Subbasin. The Tribe is responsible for developing the plans necessary to insure that proposed harvest is biologically and legally sound and that it occurs (i.e. take numbers, locations, dates and gear types) in the manner designed."

The Draft Bull Trout Recovery Plan (USFWS 2002) has been developed to provide guidance toward achieving recovery of bull trout populations within the Columbia and Snake River Basins. This plan includes specific goals and strategies to achieve population levels required to allow de-listing of bull trout under the ESA. See Chapter 7 for further discussion regarding integration of the Bull Trout Recovery Plan and this subbasin plan.

## **6.2.2 Terrestrial Species Protection, Plans, and Permits**

There are a few species of interest that are actively managed and monitored by WDFW in the Asotin subbasin. These include the Rocky Mountain elk and mule deer.

According to RCW 77.04.012, WDFW "shall preserve, protect, perpetuate, and manage the wildlife..." and "attempt to maximize the public recreational game fishing and hunting opportunities of all citizens..." WDFW has produced an overall Game Management Plan to outline its process for managing and sustaining species populations (WDFW 2003).

In addition, the Blue Mountains Elk Herd Management Plan was written to provide information and direction to management of elk in southeast Washington. Primary goals of this plan include: "(1) to manage the elk herd for a sustained yield; (2) to manage elk for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography; and (3) to preserve, protect, perpetuate, manage and enhance elk and their habitats to ensure healthy, productive populations." (WDFW 2001). This plan also contains a background and history of elk

population issues, as well as specific objectives and management strategies. There have already been a number of projects aimed at improving elk habitat and resulting from collaboration between various entities such as WDFW, USFS, the Rocky Mountain Elk Foundation, and the Blue Mountain Elk Initiative. These projects are listed in Appendix 7 of that plan (WDFW 2001).

WDFW administers other programs aimed at improving habitat for terrestrial species. The Priority Habitats and Species (PHS) program provides detailed information on priority species and habitats that need to be targeted for management and conservation efforts and where these are located, along with specific management recommendations. This information is used by federal, state, local, and tribal governments, as well as other conservation and resource-oriented organizations in planning and ecosystem management. The PHS is described in detail online at: <http://www.wdfw.wa.gov/hab/phspage.htm>. WDFW's Upland Restoration Program is a voluntary, incentive-based program designed to encourage farmers and private landowners to improve fish and wildlife habitat by implementing water conservation measures, planting vegetation to decrease erosion, and applying other more environmentally sound agricultural practices.

There are several initiatives designed to address declining bird populations. The Partners In Flight (PIF) program began in 1990 and is focused on the conservation of bird species not listed under ESA. This program consists of partnerships among federal, state and local government agencies, NGOs, and private organizations and has laid the foundation for the development of bird conservation plans (BCPs) across the U.S.A more detailed description can be viewed online at: <http://www.partnersinflight.org/>. Another program is the North American Breeding Bird Survey-BBS, a joint initiative between the US Geological Survey and Canadian Wildlife Service to monitor population trends of migratory birds in North America. Each year, thousands of volunteers across the continent collect data, which is then compiled and analyzed by professionals and made available as reports online at: <http://www.mp2-pwrc.usgs.gov/bbs/index.html>.

## **6.3 Restoration and Protection Projects**

This section describes and analyzes specific habitat enhancement projects that have been completed in the subbasin.

### **6.3.1 Aquatic Habitat Restoration and Protection Projects**

During the past several years, many projects focused on enhancing aquatic habitat within the Asotin subbasin have been implemented by federal, state, tribal and local entities. A comprehensive list of these projects was compiled and incorporated into the Asotin Inventory. Information on each project includes (where available): category (e.g. riparian, upland), application description, name, environmental attributes addressed, limiting factors addressed, units completed, completion data, map name and number, township, range, and section, watershed, EDT reach name, and species affected. Since 1996, a total of 581 fish habitat-related projects have been implemented in the Asotin subbasin (5 are incomplete at present). Of this

number, 451 affected habitat directly, while the remainder dealt with administration, public education and information, project evaluation, and equipment (see Appendix F).

These projects focused on several key issues:

- upland issues (60%)
- riparian restoration projects (23.9%)
- instream projects (13.3%)
- monitoring activities (2.7%)

Table 6-4 further breaks down these categories and shows that over 60 percent of recent projects have addressed sedimentation issues, over 25 percent have targeted water quality and/or riparian function, and about 16 percent have concentrated on increasing instream habitat (see Appendix F).

**Table 6-4 General Focus of Projects Implemented in the Asotin Subbasin Since 1996**

General Focus of Project	Proportion of Projects
Geomorphic instability and insufficient instream habitat	16.3%
Sedimentation	32.9%
Sedimentation and agriculture development	21.5%
Water quality	0.5%
Water quality and riparian function	22.9%
Water quality and sedimentation	1.2%
Water quality, agriculture development and sedimentation	2.4%
Water quality, sedimentation, riparian function and agriculture development	2.2%

Expressed in terms of the proportion of the total number of projects with direct habitat impacts.

Source: Table 5, Appendix F

These projects consist of a wide range of activities, including:

- instream habitat construction/bioengineering
- direct seeding
- establishment of permanent grasses/pastures/haylands
- sediment basin construction/ maintenance
- upland multi-purpose pond construction
- terrace construction
- reforestation/tree planting
- spring development
- erosion control (critical area planting, grassed waterways, conservation cover)
- pipeline installation

- water gaps and windbreaks
- riparian fencing and tree planting

For more specific details these activities, refer to the Asotin Inventory Draft (Appendix F).

Although these projects have been located in almost every area within the subbasin, they have largely targeted the geographic areas (GAs) with high restoration potential (see Chapter 3 for more information about these GAs). As noted in Appendix F, “All geographic areas but one – the Upper NF Asotin – have received at least some attention. Over 60 percent of recent projects have targeted the Pintler Creek, lower George Creek and the upper Asotin Creek GAs. This (very approximate) allocation of effort is roughly consistent with the current diagnosis, as Pintler Cr, lower George and the upper Asotin areas are ranked 3, 4 and 1, respectively, on the unscaled list of priority restoration areas. In the future, however, considerably more effort should be directed toward the Charley Creek, Lower NF Asotin and lower SF Asotin GAs.”

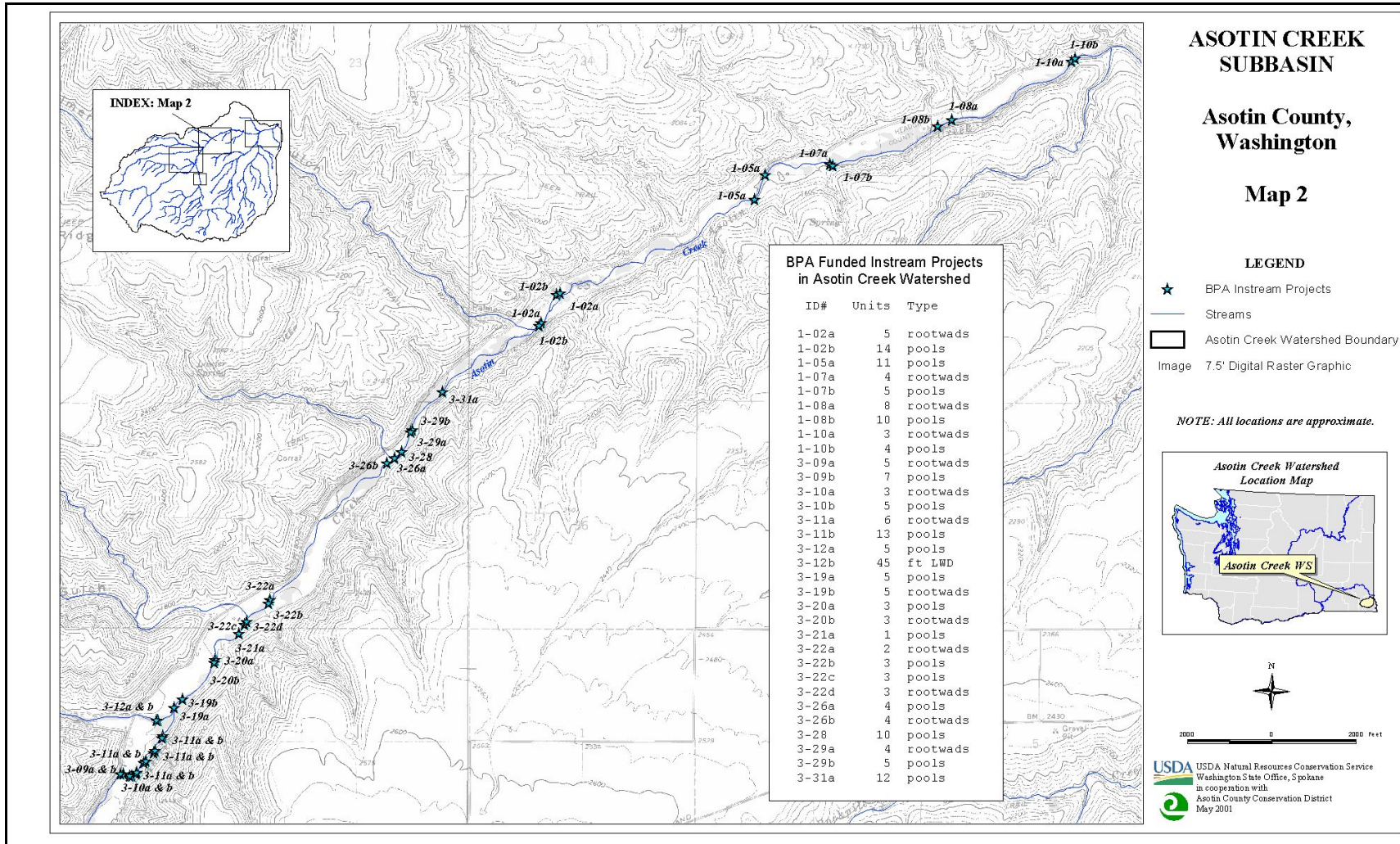
Table 6-5 shows the distribution of projects by GA. The unscaled values mean that the length of the GA has not been taken into account – in other words, the data is not displayed per unit area.

**Table 6-5 Approximate Allocation of Effort by Geographic Area Among Fish Habitat Projects Implemented in Asotin Creek Since 1996.**

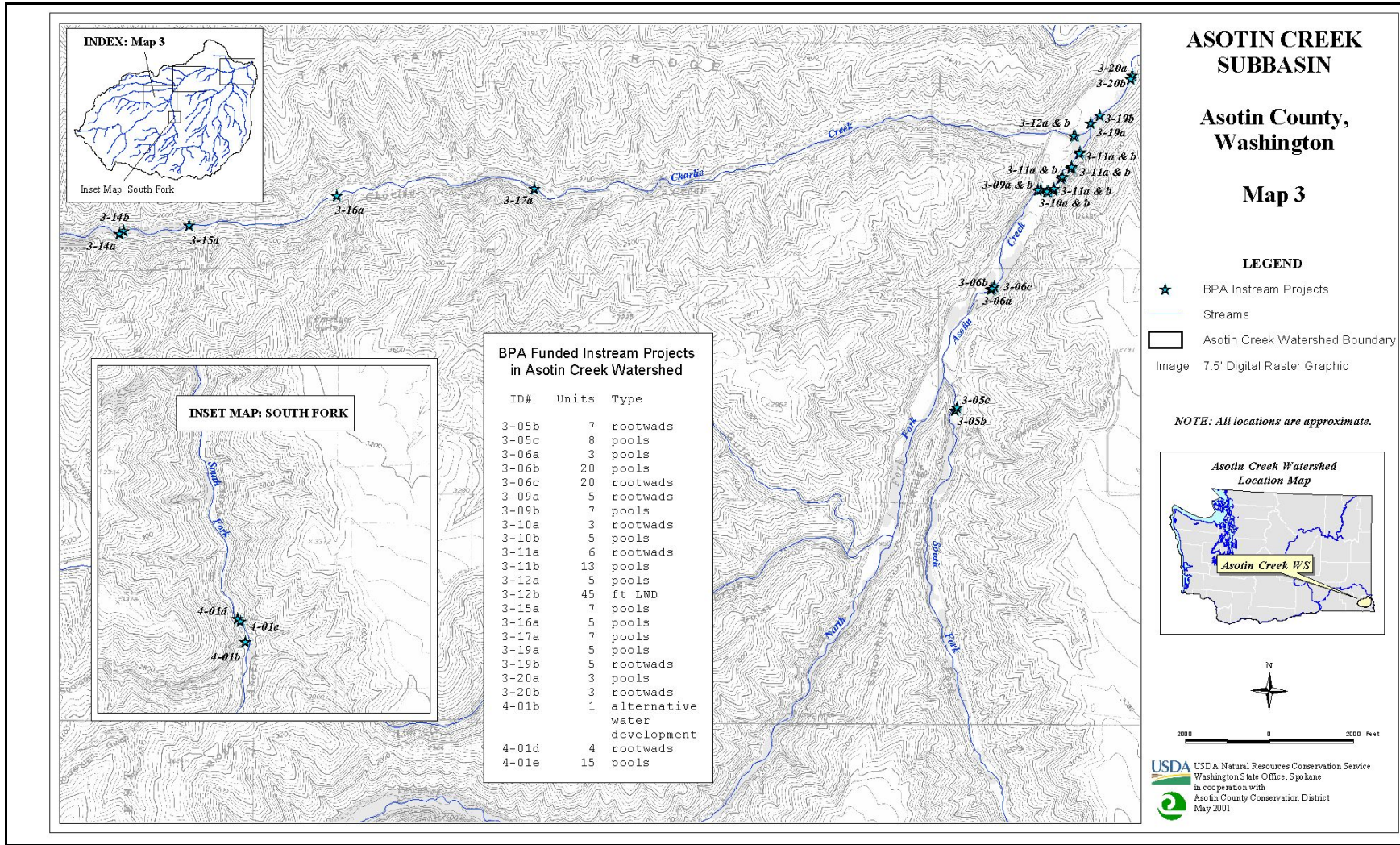
<b>Geographic Area</b>	<b>Unscaled Preservation Value</b>	<b>Unscaled Restoration Potential</b>	<b>Number of Projects</b>	<b>% Total Projects</b>
Pintler (mouth to access limit)	13	3	192	37.2%
Upper Asotin (above Headgate Dam to forks)	3	1	87	16.9%
Lower George (mouth to Wormell)	9	4	77	14.9%
Middle Asotin (George to Headgate Dam incl.)	5	10	44	8.5%
Charley (mouth to access limit)	2	2	36	7.0%
Lower SF (mouth to Alder)	6	7	26	5.0%
Upper George (Wormell to access limit)	12	6	22	4.3%
Lower Asotin (mouth to George)	8	8	21	4.1%
NF Tribs (Lick, SF of NF, Middle Branch)	10	9	4	0.8%
Upper George Tribs (Wormell Heffelfinger Coombs)	11	12	3	0.6%
Lower NF (mouth to SF of NF)	1	5	3	0.6%
Upper SF (Alder to access limit)	4	11	1	0.2%
Upper NF (SF of NF to access limit)	7	13	0	0.0%
<b>Total</b>			<b>516</b>	<b>100.0%</b>

Source: Table 6, Appendix F

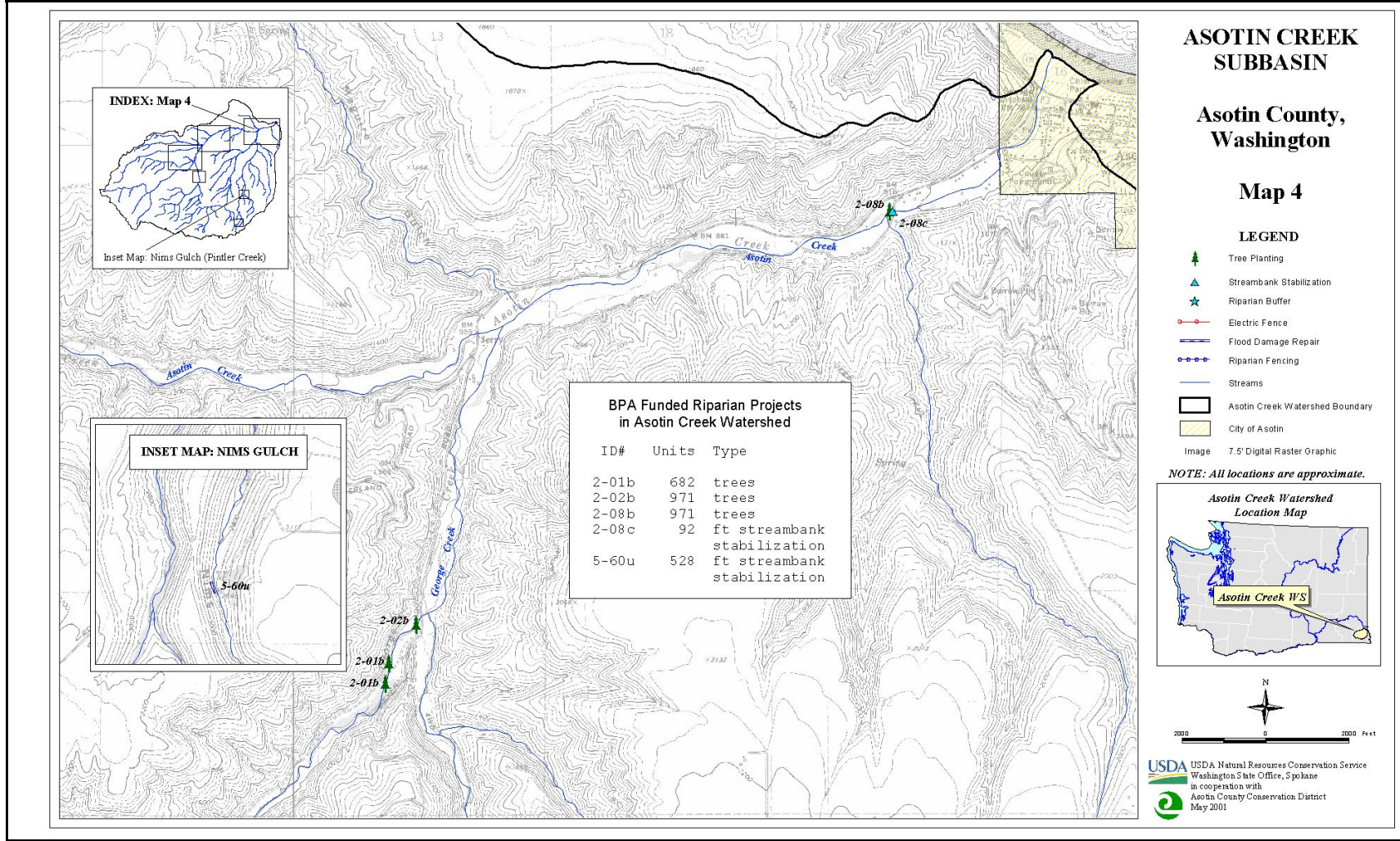
Figures 6-2 to 6-11 maps have been taken from the Asotin Creek Subbasin Summary (Stovall 2001) and illustrate the locations of many BPA and non BPA-funded projects from 1996-2000. Similar maps are unavailable for projects completed after 2000 but have been included in the discussion above. Additional information and detail regarding project implementation from 1996-2000 can be found in the Asotin Creek Subbasin Summary (Stovall 2001)



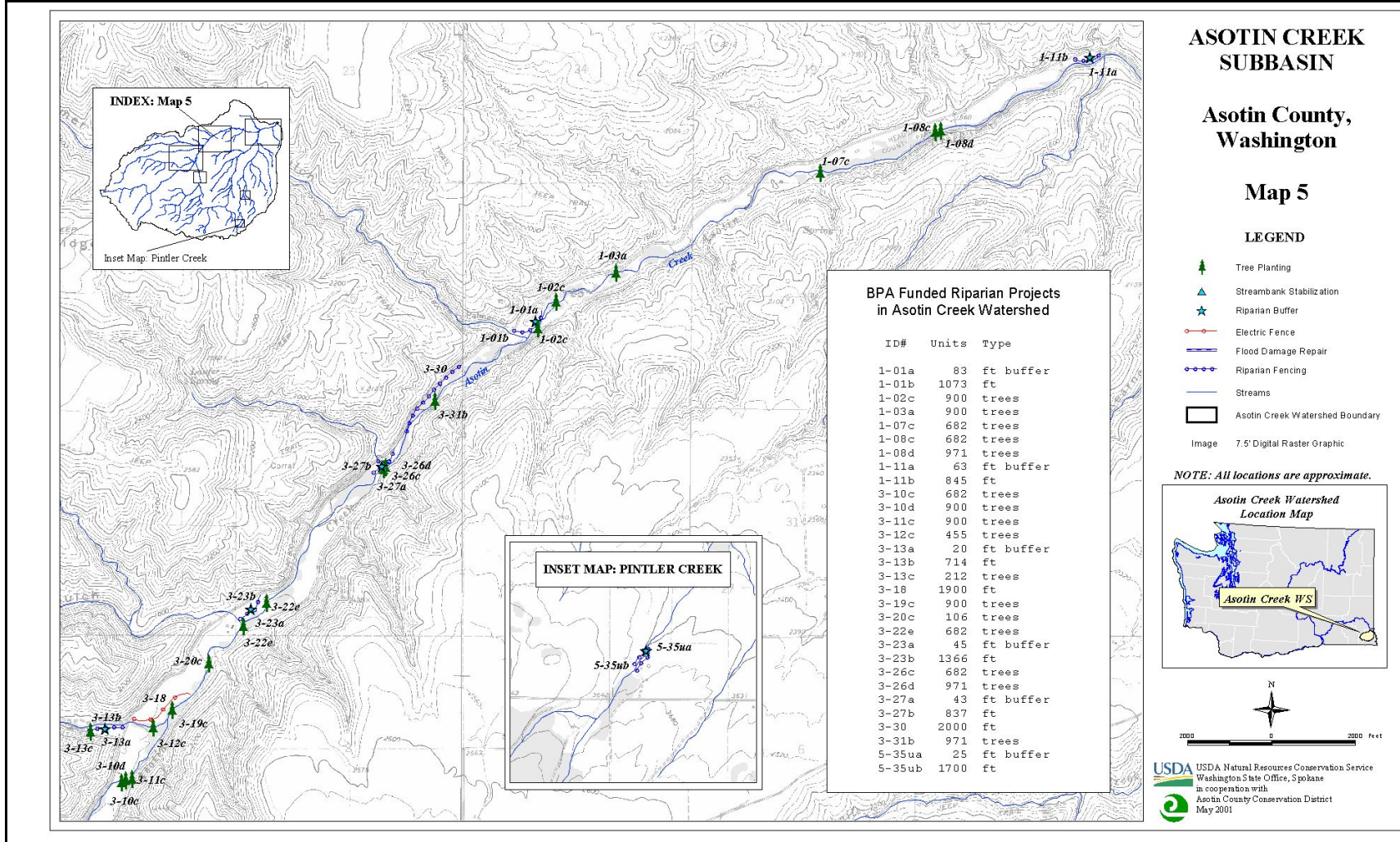
**Figure 6-2 BPA-Funded Instream Projects (1996-2000): Mainstem Asotin Creek**



**Figure 6-3 BPA-Funded Instream Projects (1996-2000): Tributaries and Upper Asotin Creek**



**Figure 6-4 BPA-Funded Riparian Projects (1996-2000): Lower Asotin Creek**



**Figure 6-5 BPA-Funded Riparian Projects (1996-2000): Mainstem Asotin Creek**



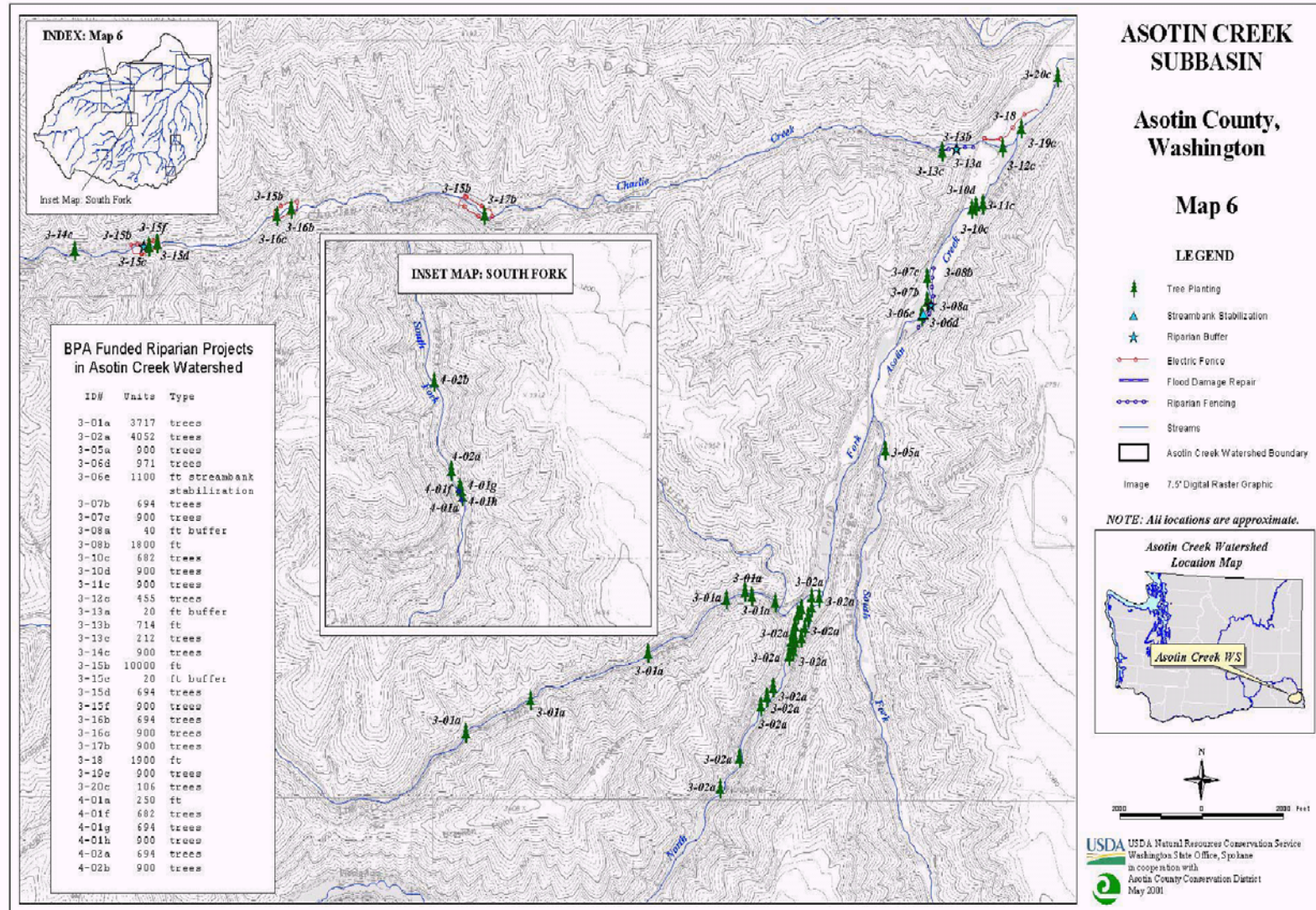


Figure 6-6 BPA-Funded Riparian Projects (1996-2000): Tributaries and Upper Asotin Creek

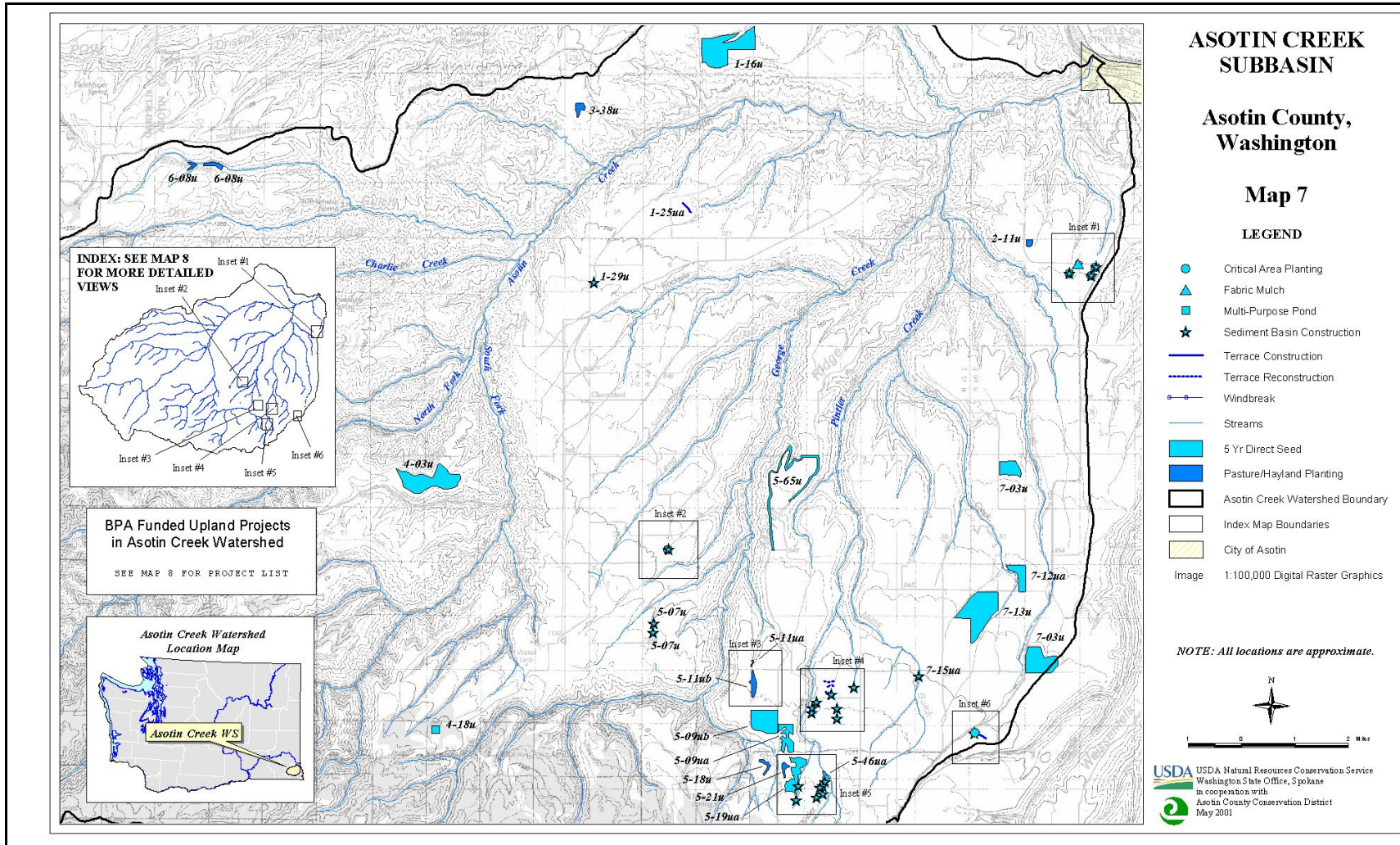
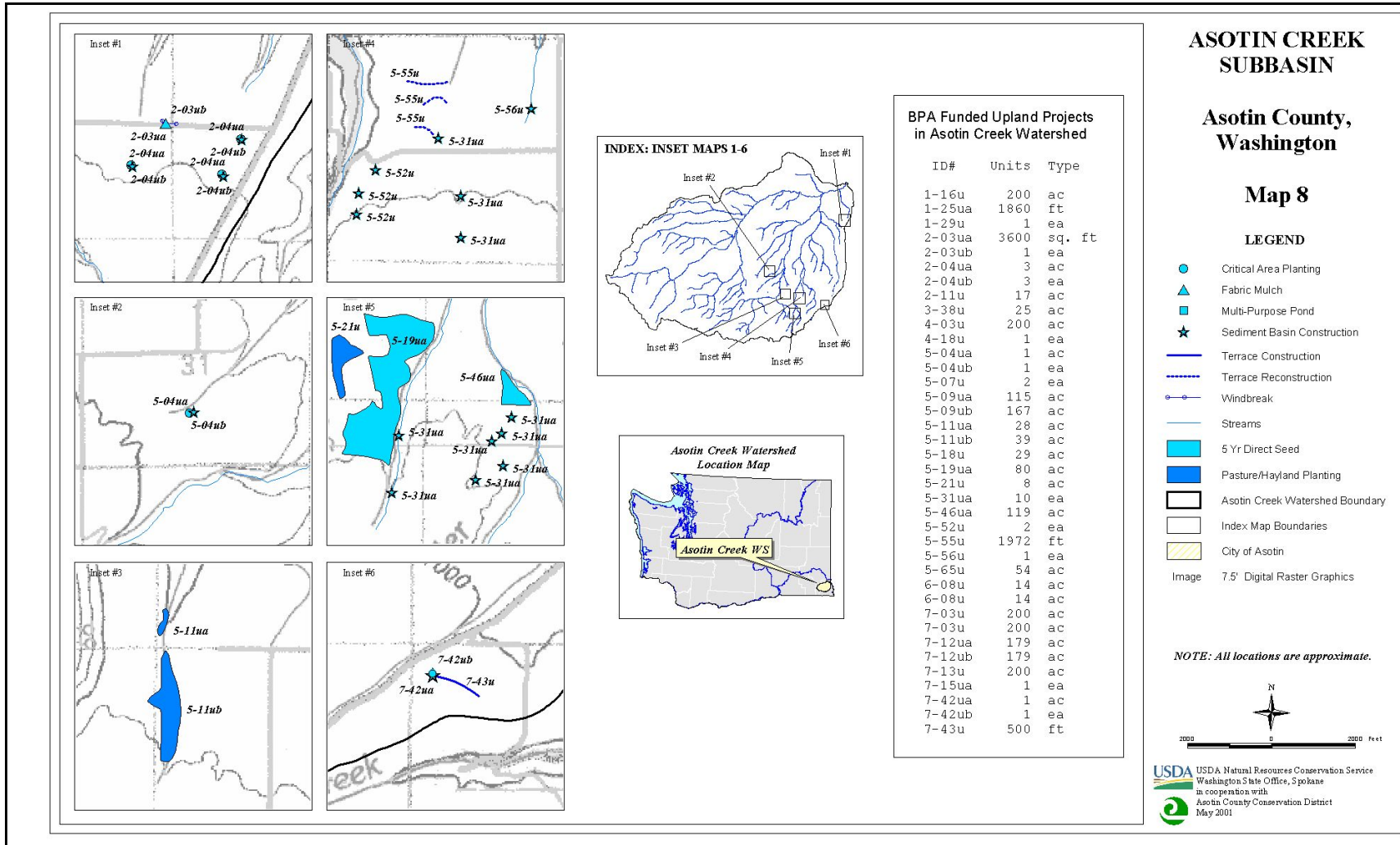


Figure 6-7 BPA-Funded Upland Projects (1996-2000): Lower Asotin Creek Watershed



**Figure 6-8 BPA-Funded Riparian Projects (1996-2000): Upper Asotin Creek Watershed**

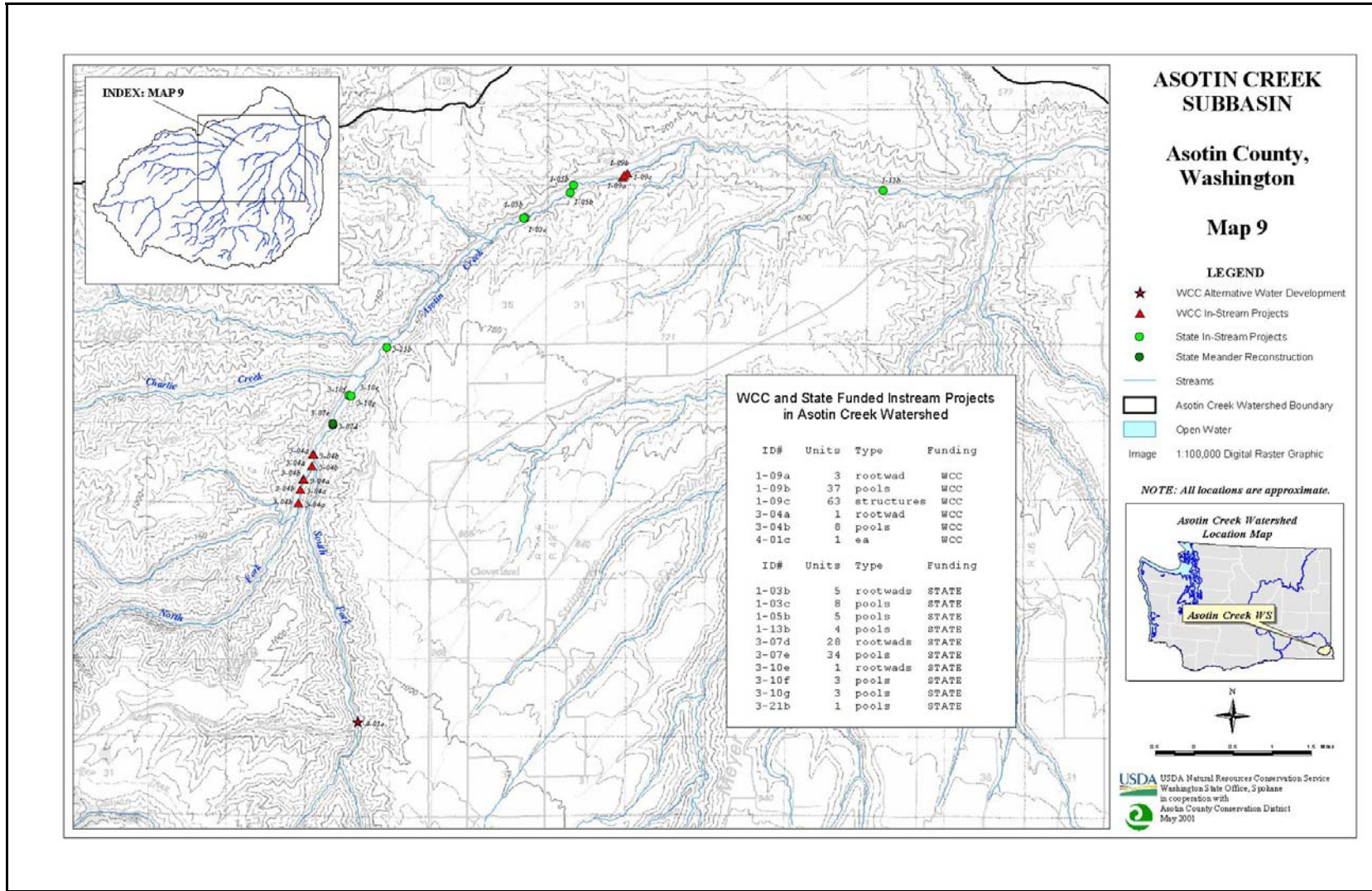


Figure 6-9 Non-BPA Funded Instream Projects (1996-2000): Asotin Creek Watershed



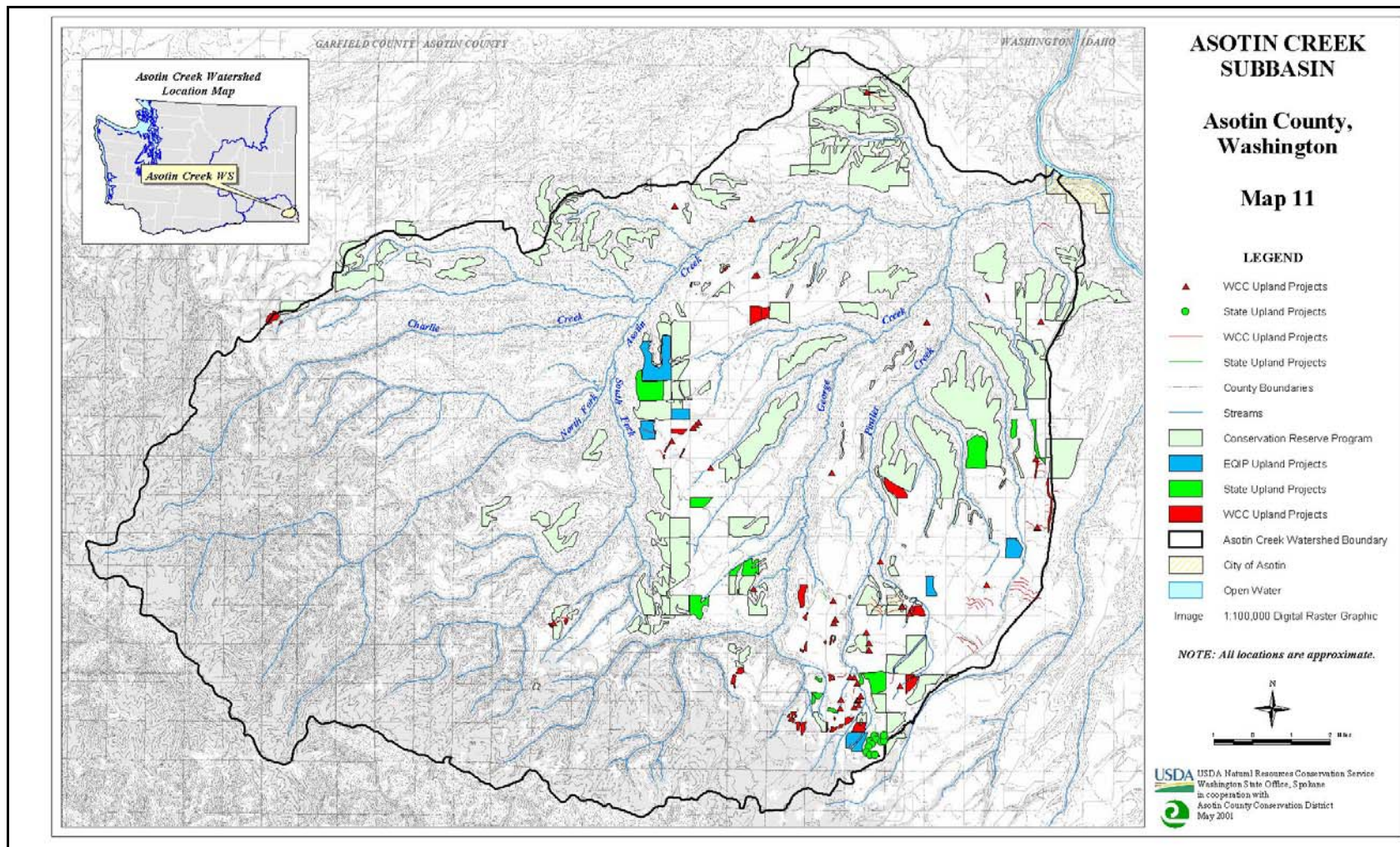


Figure 6-11 Non-BPA Funded Upland Projects (1996-2000): Asotin Creek Watershed

It is important to recognize that while projects may target a particular limiting factor, or problematic area, in actuality, they may have a positive influence on a range of environmental attributes. For example in their project inventory, WDFW notes that a riparian project produces beneficial effects on fine sediment, riparian function, maximum and minimum temperature, turbidity and woody debris. Therefore, although the total number of projects listed in Asotin Creek is 451, the number of individual environmental benefits is presumably much higher. Refer to Section 5.2.2 in Appendix F for a more detailed explanation of this concept.

It is also useful to examine the main environmental attributes addressed by projects implemented within each GA of the subbasin. Table 6-6 provides a list of both quantitative and qualitative habitat factors that were primary targets of projects implemented since 1996.

**Table 6-6 Habitat Restoration Effort By Habitat Element Across Geographic Areas**

Geographic Area	Quantity of Habitat					Quality of Habitat					
	Channel Length	Minimum Channel Width	Primary Pools	Pool Tailouts	Temperature	Bed Scour	Embeddedness	Fine Sediment	Turbidity	Riparian Function	Woody Debris
Charley (mouth to access limit)					X			X	X	X	X
Lower Asotin (mouth to George)							X	X	X		
Lower George (mouth to Wormell)							X	X	X		
Lower NF (mouth to SF of NF)						X	X	X	X	X	
Lower SF (mouth to Alder)					X		X	X	X	X	X
Middle Asotin (George to Headgate Dam incl.)							X	X	X	X	
NF Tribs (Lick, SF of NF, Middle Branch)								X	X	X	
Pintler (mouth to access limit)						X	X	X	X	X	
Upper Asotin (above Headgate Dam to forks)							X	X	X	X	
Upper George (Wormell to access limit)							X	X	X		
Upper George Tribs (Wormell Heffelfinger Coombs)							X	X	X		
Upper NF (SF of NF to access limit)											
Upper SF (Alder to access limit)						X	X	X	X	X	

Source: Table 7 of Appendix F (modified)

Certain types of projects often do not yield measurable benefits until several years to several decades after their implementation. For example, the effects of planting trees and revegetating stream banks to reduce instream water temperature may not be evident until this vegetation matures enough to provide effective shade to the stream. Placing LWD in streams also takes time for sediment build-up to occur and pools to develop. Thus, riparian and LWD placement

projects may provide more extensive benefits than what has been currently noted in the aquatic assessment (see Chapter 3).

### **6.3.2 Wildlife Habitat Restoration and Protection Projects**

The riparian projects identified in the previous section also benefit those terrestrial species relying on riparian habitat. Additional information on specific terrestrial wildlife enhancement projects was not available for this subbasin plan. However, the Blue Mountain Elk Plan mentioned in Section 6.3 contains a list of projects relating to improving elk habitat (Appendix G). The Game Management Plan written by WDFW contains details about current research relating to individual species of interest in the subbasin (WDFW 2003).