

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER RIGHTS

DRAFT DIVISION DECISION

NAVARRO RIVER WATERSHED
MENDOCINO COUNTY

Pending Applications 29711, 29810, 29907,
29910 and 29911

December 15, 1998

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December 15, 1998

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DIVISION OF WATER RIGHTS
DRAFT DIVISION DECISION
NAVARRO RIVER WATERSHED, MENDOCINO COUNTY
APPLICATIONS 29711, 29810, 29907, 29910 AND 29911

1.0 INTRODUCTION

This Division of Water Rights (Division) Draft Decision describes the actions to be taken on five pending water right applications within the Navarro River Watershed in Mendocino County. These applications request the right to divert a total of 195.6 acre-feet of water per annum (afa), primarily for irrigation and frost protection on four existing vineyards. As described in this decision, the Division intends to issue water right permits that would authorize diversion of a total of 130.9 afa, with terms designed to protect coho salmon, steelhead and other public trust resources. The permits will authorize the diversion of the quantities of water requested by the applicants, with the exception of Applications 29910 and 29911 of Savoy. These requested amounts will be reduced by 64.7 afa to a combined total amount of 82.9 afa. The following provides a summary of the pending applications:

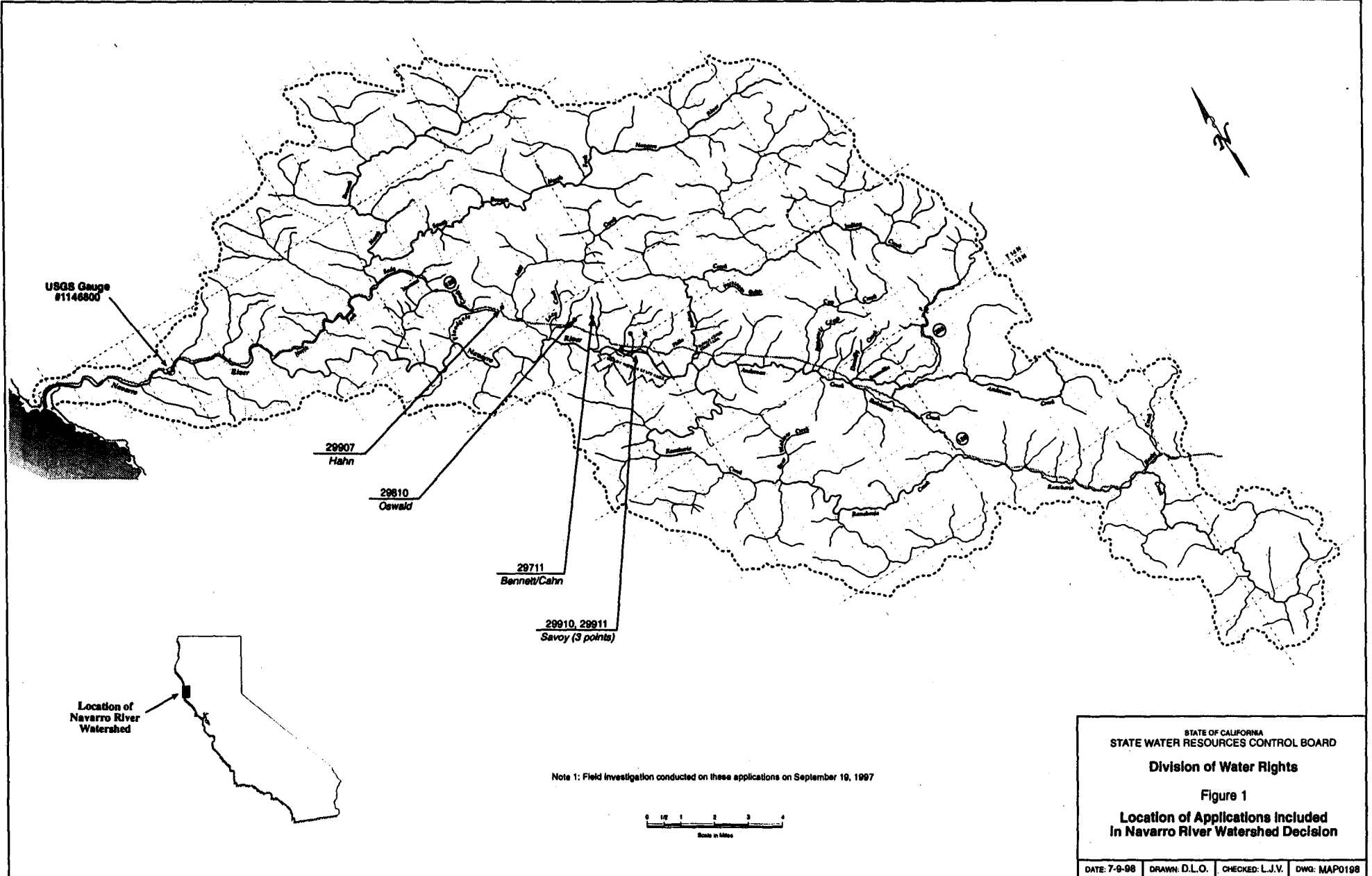
A29711 Edward Bennett and Deborah Cahn request the right to collect to storage 30 acre-feet (af) of water from October 15 to April 30 from an unnamed ephemeral stream tributary to the Navarro River.

A29810 Hugo and Beatrice Oswald request the right to collect to storage 12 af of water from November 15 to April 1 from several sources, including an unnamed stream tributary to Lazy Creek and thence the Navarro River.

A29907 Donald and Maureen Hahn request the right to collect to storage 6 af of water from November 15 to May 15 from an unnamed ephemeral stream tributary to Floodgate Creek and thence the Navarro River.

A29910 and A29911 Richard Savoy requests the right to collect to storage 55.6 af of water from October 1 through April 15, and to directly divert 92 af of water year-round from two unnamed streams and from the Navarro River. The Division intends to issue water right permits that would authorize diversion and use of a total of 82.9 afa.

Figure 1 is a location map that shows the Navarro River watershed, the location of the pending applications and other features in the area. The watershed encompasses 323 square miles, and has an average outflow of approximately 370,000 afa. The Navarro River provides valuable habitat for Central California Coast coho salmon and Northern California steelhead. On October 31, 1996, the National Marine Fisheries Service (NMFS) added the Central California Coast coho salmon to the list of threatened species under provisions of the federal Endangered Species Act (ESA). In March 1998, NMFS determined that steelhead in Northern California do not currently warrant listing



STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

Division of Water Rights

Figure 1
**Location of Applications Included
in Navarro River Watershed Decision**

DATE: 7-9-98	DRAWN: D.L.O.	CHECKED: L.J.V.	DWG: MAP0198
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as threatened, but NMFS will reevaluate the status of this species in this area within the next four years.

The Division has evaluated the hydrology of the Navarro River, analyzed the flow regime needed to protect the fishery resources, and reviewed information submitted by applicants and protestants as part of the field investigation conducted on October 15, 1997, in accordance with Water Code sections 1345-1348. Based on that evaluation, the Division has determined that water right permits should be issued that would authorize storage and direct diversion of a total of 130.9 afa during the peak winter runoff season, but would not authorize direct diversion of 49.1 afa of the 92 afa requested by Savoy (A29910 and A29911) and would limit the total amount under both applications to 82.9 afa. The Division will issue permits that will include the following terms and conditions that are designed to protect coho salmon, steelhead and other public trust resources.

Allowable season of diversion The permits will allow diversion of water from December 15 through March 31.

Minimum bypass flow The permits will require a bypass equal to 60 percent of the estimated average annual unimpaired flow as measured at the point of diversion, or the natural flow, whichever is less. Each of the permits will include a specific bypass flow requirement.

Maximum rate of diversion The permits will limit the diversion to a maximum rate to 2 cubic feet per second (cfs) from the tributaries, and a maximum rate of 3 cfs from the main stem of the Navarro River.

Compliance The applicants will be required to submit a plan, that is acceptable to the Chief of the Division of Water Rights, that will assure compliance with the bypass terms described above.

Riparian right The permits will prohibit diversion of water for use on the place of use authorized by the permits under a claim of riparian right.

Land Management Plan The applicants will be required to submit a land management plan that is acceptable to the Chief of the Division of Water Rights. The land management plan shall incorporate recommendations contained in Navarro Watershed Restoration Plan relating to erosion control, protection of the riparian corridor, stabilization of streambanks and preservation of large woody debris in the stream channel.

If the applicants agree to these terms and conditions, the Division intends to prepare and circulate initial studies and proposed mitigated negative declarations for each application/project.

Based on the determination of water availability made during the course of evaluating these applications, the Division will recommend that the State Water Resources Control Board (SWRCB) add the entire Navarro River watershed to the list of fully appropriated streams for the period from April 1 through December 14.

2.0 BACKGROUND INFORMATION

2.1 Description of the Watershed The Navarro River watershed is the largest coastal watershed in Mendocino County and encompasses a total of 323 square miles. The headwaters of the Navarro River originate near the town of Yorkville. The river flows in a northwesterly direction and then discharges into the Pacific Ocean about 15 miles south of the town of Mendocino. The main stem of the Navarro River is formed near the town of Philo, near the junction of Anderson, Rancheria and Indian Creeks. The Navarro's other main tributary is the North Fork, which joins the main stem approximately 7 miles from its mouth. The topography of the basin varies from sea level to an elevation of about 3,000 feet above sea level along the eastern ridge. Land use within the basin is roughly divided into three categories: forest (70 percent), range land (25 percent) and agriculture (5 percent). No dams exist on the main stem of the Navarro River and no major dams/reservoirs exist within the watershed.

2.2 Pending Applications for Water Right Permits In addition to the five applications covered by this Division decision, as of December 1, 1998, the Division had 20 other pending applications for water right permits for total storage of 692 afa and total direct diversion of 296 afa at a maximum rate of 15 cfs. The Division will distribute notices of these applications to interested parties and allow for submittal of protests against the applications in accordance with Water Code sections 1330-1335. In addition to these pending applications, the Division currently has 5 pending applications to appropriate water under the Small Domestic Use Registration Program which, if approved as submitted, would total approximately 38 afa in diversions. Table 1 provides a summary of all pending water right applications within the Navarro River Watershed.

In 1996 the Division cancelled Application 29685 of Peter Bradford which requested a water right for storage of 1,500 afa. In 1997, the Division issued a water right permit (P20890) to Scharffenberger Cellars that allows for storage of 90 afa. Also in 1997, Nick Alexander Imports voluntarily withdrew water right Application 29753 for storage of 12 afa.

This decision describes the general framework for the evaluation of pending applications within the watershed. Each application will be evaluated on a case-by-case basis, however, it is anticipated that similar terms and conditions will be recommended for all pending applications within the watershed.

2.3 Existing Diversions Review of Division files shows that, as of December 1, 1998, there were a total of 99 recorded water rights within the Navarro River watershed for diversion of a total of 3,439 afa of water from the main stem and its tributaries. Table 2 provides a summary of these recorded rights.¹ The majority of these

¹ This represents an estimate of the total amount diverted under recorded water rights. The actual amount may be different due to 1) under or over reported riparian uses, 2) duplication of recorded rights, 3) unauthorized diversions, and 4) appropriative uses less than authorized amounts.

Table 1
Summary of Pending Water Rights Within the Navarro River Watershed

Application*	Applicant	DD Rate (cfs)	Total DD (AF)	Storage (AF)	Total Use (AF)**	Source	Tributary to
A028711	Bennett			30.0	30.0	Unnamed Stream	Navarro River
A028810	Oswald			12.0	12.0	Unnamed Stream	Navarro River
A029907	Hahn			8.0	8.0	Unnamed Stream	Floodgate Creek
A029910	Savoy	0.5	46.8	55.8	102.4	Navarro River	Pacific Ocean
A029911	Savoy	1.0	45.2		45.2	Unnamed Stream	Navarro River
A030024	Onacrest Properties	6.0	20.0	59.0	79.0	Robinson Creek	Anderson Creek
A030348	Agriperpetua			15.0	15.0	Unnamed Stream	Navarro River
A030448	Jackson			105.0	105.0	Navarro River	Pacific Ocean
A030449	Jackson	2.0	70.0		70.0	Navarro River	Pacific Ocean
A030474	Onacrest Properties	2.0	45.0		45.0	Robinson Creek	Navarro River
A030479	Jones			12.0	12.0	Unnamed Stream	Navarro River
A030492	Wallo			30.0	30.0	Unnamed Stream	Pacific Ocean
A030533	Ferrington			30.0	30.0	Donelly Creek	Navarro River
A030717	Jenks			8.0	8.0	Unnamed Stream	Navarro River
A030718	Elke	2.0	20.0	30.0	30.0	Witherell Creek	Anderson Creek
A030721	Boltz			54.0	54.0	Unnamed Stream	Navarro River
A030722	Donelly Creek Vineyards	1.3	125.0	140.0	170.0	Anderson Creek	Navarro River
A030735	Meyer			6.0	6.0	Unnamed Stream	Navarro River
A030761	Marks	2.0	15.8	37.3	37.3	Unnamed Stream	Navarro River
A030789	Mitchell			60.0	60.0	Rancheria Creek	Navarro River
A030792	Oswald			45.0	45.0	Unnamed Stream	Navarro River
A030793	Gereen			7.0	7.0	Unnamed Stream	Navarro River
A030794	Demuth			25.0	25.0	Unnamed Stream	Navarro River
X002749	Battinich, etc.			23.9	23.9	Unnamed Stream	Navarro River
X002812	Venturi			5.0	5.0	Unnamed Stream	Navarro River
D030773R	Hallomas Inc			10.0	10.0	Unnamed Stream	Navarro River
D030778R	Gundling			10.0	10.0	Unnamed Stream	Navarro River
D030785R	Peterman			10.0	10.0	Unnamed Stream	Navarro River
D030786R	Evenson			4.2	4.2	Unnamed Stream	Navarro River
D030795R	Copper Queen Ranch			4.2	4.2	Unnamed Stream	Rancheria Creek
Totals	30 Water Rights	18.9	387.8	834.2	1091.2		

* A = Application, X = Application not yet accepted, D = Small Domestic Registration

** Total use may not equal the sum of total DD use and total storage amounts

Shaded Applications are part of this Decision

water rights are located within the Anderson Valley and divert water primarily for agricultural irrigation. There are no large storage reservoirs within the watershed.

Table 2
Summary of Recorded Water Rights
within the Navarro River
Watershed (as of 12/1/98)

Type of Water Right	Number	Diversion (afa)
Licensed Applications	40	2,053
Permitted Applications	19	1,045
Stockponds	2	5
Small Domestic Registrations	16	68
Statements of Diversion and Use	22	268
TOTAL	99	3,439

2.4 Complaints Several complaints have been submitted to the Division concerning the Navarro River. In 1992, the Department of Fish and Game (DFG) submitted a complaint expressing concerns regarding potential impacts to fishery resources that could result from existing and proposed diversions, especially for frost protection in the spring months.² In 1993 and 1994, the Division received water right complaints concerning public trust protection of the fishery resources in the Navarro River watershed. Complaints were filed by private individuals, Friends of the Navarro River, and the Earthjustice Legal Defense Fund (then known as Sierra Club Legal Defense Fund). One complaint was signed by about 160 people. The Earthjustice Legal Defense Fund filed a complaint on behalf of Friends of the Navarro Watershed, The Sierra Club, California Sportfishing Protection Alliance, Friends of the River, Pacific Coast Federation of Fisherman's Associations, United Anglers, California Trout Unlimited, and the Mendocino Environmental Center. The complaints contend that:

- Water diversions from the Navarro River and its tributaries have reduced the flow and dewatered the channels, particularly during the summer period, to the detriment of the fishery resources in the watershed. The complaints request that the Division establish instream flow requirements that protect fishery resources.
- The present level of diversions in the watershed is unreasonable. The watershed should be declared fully appropriated (no specific season given).
- Numerous, unauthorized diversions exist within the watershed. The complaints request that the Division identify unauthorized diversions and take enforcement action against those diverters.

The Division's Complaint Unit conducted an investigation relating to these complaints and prepared a staff report with findings and

² Memorandum dated February 3, 1992, from John Turner, DFG, to Ed Dito, SWRCB.

recommendations. The staff report was distributed to interested parties by cover letter dated July 21, 1998.

2.5 Compliance/Enforcement On March 6, 1998, the Division sent a letter to 101 individuals within the Navarro River watershed identifying 121 existing ponds which do not have any recorded basis of right. The letter requested that, within 60 days, the parties file applications with the Division for water right permits or submit information that would document a basis of right. Division staff have estimated that these ponds account for the diversion of approximately 1,200 acre-feet of water. Some of the pending applications for permits and small domestic registrations were submitted as a result of the Division's March 6, 1998, letter.

Diversion and use of water without a valid basis of right is considered a trespass against the state that is subject to the imposition of Administrative Civil Liabilities of up to \$500 per day in accordance with Water Code section 1052.

2.6 Small Domestic Registrations Several applications for Small Domestic Registrations were submitted to the Division in response to the Division's letter dated March 6, 1998. Domestic use is defined in the Water Code as direct diversion of 4500 gallons per day or storage of 10 afa and includes storage for incidental aesthetic, recreational, or fish and wildlife purposes.

The Division processes Small Domestic Registrations in accordance with Water Code section 1228 et seq. Notices of these applications are not distributed to interested parties and protests can not be accepted by the Division. The issuance of a Small Domestic Registration is exempt from California Environmental Quality Act (CEQA). The applicant is required to contact the DFG and comply with any legal requirements imposed by DFG. In most cases, the applicant must obtain a stream alteration permit from DFG. In addition, the applicant must comply with federal ESA requirements.

2.7 Other Programs There are two other on-going programs that address issues affecting fishery resources within the watershed.

2.7.1 Navarro Watershed Restoration Plan The Navarro Watershed Restoration Plan, dated June 1998, provides a comprehensive assessment of the condition of coho and steelhead, an analysis of factors that limit salmonid populations, and recommendations to restore and enhance water quality and fishery resources. The plan includes a detailed evaluation of hydrology, geomorphology, salmonid habitat and populations, water quality, water temperatures, stream flows and land use patterns. The preparation of the plan was funded by grants from the Coastal Conservancy (\$86,200) and from federal funds administered by the SWRCB (\$83,800). The plan was prepared under the direction of the Mendocino County Water Agency, the California Coastal Conservancy and the Anderson Valley Land Trust. Much of the technical work was performed by Entrix, an Engineering/Environmental consulting firm.

2.7.2 Watershed Protection and Restoration Council In 1997, the Governor signed Executive Order W-159-97 that established the Watershed Protection and Restoration Council (WPRC). The

primary responsibility of the WPRC is to provide oversight and coordination of activities of state agencies. The main objective of the WPRC is to develop a watershed protection program which includes an element for the protection, restoration and enhancement of anadromous salmonoids in the watersheds throughout California. The WPRC is directed to develop a program that will include specific measures and actions to protect and conserve anadromous fishery resources. The program will promote cooperative efforts among various governmental agencies, local watershed groups, environmental and fishery organizations, local businesses, landowners and the general public.

3.0 CONSTITUTIONAL, STATUTORY, AND REGULATORY BACKGROUND

3.1 General The authority of the SWRCB on water right issues is defined primarily by the Water Code and implementing regulations. The Water Code and regulations describe specific procedures that the SWRCB must follow when acting on applications for water right permits. In addition, the SWRCB must comply with provisions of the California Environmental Quality Act (CEQA) and the California and federal ESAs. The SWRCB must also ensure that water use, method of use, and method of diversion are reasonable, in accordance with Article X, section 2 of the California Constitution, and take into consideration the public trust doctrine. The SWRCB must also comply with provisions of the Fish and Game Code and the basin plan for the North Coast Region. The following provides a brief discussion of these requirements as they relate to SWRCB review of pending water right applications within the Navarro River watershed.

3.2 Water Code Under the Water Code, the SWRCB must consider a number of factors when acting on applications to appropriate water. The SWRCB must consider the instream flows required to protect beneficial uses of water, including recreation, the preservation and enhancement of fish and wildlife, and any beneficial uses designated in the applicable water quality control plan, or basin plan.³

Beneficial uses of water also include offstream consumptive uses, including irrigation and frost protection, the intended uses of the applicants' proposed diversions. The SWRCB must consider the relative benefits to be derived from all possible beneficial uses of water concerned,⁴ and the SWRCB must take action consistent with the state policy that water resources be put to beneficial use "to the fullest extent of which they are capable"⁵

In accordance with the Water Code, the Division must distribute notices of water right applications to interested parties, who may submit protests against the applications. For minor projects (i.e., storage of less than 200 acre-feet or direct diversion of less than 3 cfs) with unresolved protests, the Division must conduct a field

³ Wat. Code, §§ 1243, 1243.5.

⁴ Wat. Code, § 1257.

⁵ Wat. Code, § 100.

investigation and prepare a Division decision, in accordance with Water Code sections 1345-1348, which were revised effective January 1, 1998.

3.3 Reasonableness Doctrine Article X, section 2 of the California Constitution and Water Code section 100 prohibit waste, unreasonable water use, unreasonable method of use, or unreasonable method of diversion. An evaluation of reasonableness requires a case-by-case evaluation of the specific facts relating to a proposed use of water.⁶

3.4 Public Trust Doctrine In *Audubon Society v. Superior Court*, the California Supreme Court stated that "[t]he state has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible."⁷ The public trust doctrine requires consideration of a broad array of public values, including recreation, aesthetics, and the preservation of fish and wildlife habitat.⁸ Public trust uses are not necessarily paramount, however, and necessity may require the SWRCB to approve appropriations even if doing so may harm public trust uses in light of, among other things, the need for water and the cost, both economic and environmental, of obtaining water elsewhere.⁹

3.5 California Environmental Quality Act CEQA imposes responsibilities on the SWRCB in addition to those imposed by the Water Code and the public trust doctrine. In this case, the SWRCB is the lead agency, as defined by CEQA. Prior to approval of an application to appropriate water, the SWRCB must prepare the appropriate environmental document for that "project."¹⁰

As the lead agency, the SWRCB must determine whether approval of an application will have a significant effect on the environment.¹¹ An environmental impact report must be prepared if the SWRCB determines that substantial evidence in the record supports a fair argument that approving the application may have a significant effect on the environment.¹² Conversely, if no substantial evidence exists that approval of the application may have a significant effect on the environment, or if the applicant agrees to modify the application such that no substantial evidence exists that approval of the application,

⁶ SWRCB Decision 1600 (1984) pp. 22-29.

⁷ *Audubon Society v. Superior Court* (1983) 33 Cal.3d 419, 446 [189 Cal.Rptr. 346] cert. den. 464 U.S. 977.

⁸ *Id.* at pp. 434-435.

⁹ *Id.* at pp. 446-448.

¹⁰ See Pub. Resources Code, §§ 21065, 21067.

¹¹ Pub. Resources Code, §§ 21080, subds. (c-d), 21080.2, subd. (a).

¹² Pub. Resources Code, § 21080, subd. (d); Cal. Code Regs., tit. 14, § 15063, subd. (b).

as modified will have a significant effect on the environment, then the SWRCB prepares a negative declaration.¹³

3.6 Endangered Species Act As stated in section 1.0 above, the Navarro River provides valuable habitat for Central California Coast coho salmon and Northern California steelhead. The NMFS has listed the Central California Coast coho salmon as a threatened species under the federal ESA.¹⁴ Although NMFS has determined that the Northern California steelhead does not currently warrant listing as threatened, NMFS will reevaluate the status of this species within the next four years.¹⁵

Under the federal ESA, federal, but not state or local agencies are required to consult with the responsible federal agency before approving an action that could affect federally listed threatened or endangered species. Also under the federal ESA, it is illegal for any person to "take" a species listed as endangered under the federal ESA. NMFS has extended this prohibition to the threatened Central California Coast coho salmon.¹⁶ "The term 'take' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."¹⁷ The term "harm," in turn, means an act which actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."¹⁸

Coho salmon has also been listed as endangered under the California Endangered Species Act (CESA), but only in its range south of San Francisco Bay.¹⁹ The applicants would have to comply with the requirements of CESA, if these fish were designated under CESA as threatened or endangered species within the Navarro River Watershed.

Strictly speaking, the prohibition against taking a protected species does not apply to the SWRCB, but to the applicants whose diversions could result in a take. Consistent with its duty to protect public trust resources when feasible and to consider the flows required to protect instream uses, however, the SWRCB will place special emphasis on the flows and other measures needed to protect threatened or endangered species.

3.7 Basin Plan When acting on applications to appropriate water, the SWRCB must consider water quality control plans (basin plans) that

¹³ Pub. Resources Code, § 21080, subd. (c)(1-2); Cal Code Regs., tit. 14, § 15070.

¹⁴ 61 Fed.Reg. 56138-01; 50 C.F.R. § 227.4; 50 C.F.R. § 17.11.

¹⁵ 63 Fed.Reg. 13347-02.

¹⁶ 50 C.F.R. § 227.21.

¹⁷ 16 U.S.C.A. § 1532, subd. (19).

¹⁸ 50 C.F.R. § 17.3.

¹⁹ Cal. Code of Regs., tit. 14, § 670.5, subd. (a)(2)(N).

have been promulgated pursuant to division 7 (commencing with section 13000) of the Water Code.²⁰ Similarly, Water Code section 1243.5 provides that, in determining whether water is available for appropriation, the SWRCB must, when it is in the public interest, take into account the amount of instream flow required to protect beneficial uses, including any beneficial uses designated in the applicable basin plan.

The basin plan for the North Coast Region designates the Navarro River as having the following existing, beneficial uses: municipal and domestic supply; agricultural and industrial supply; groundwater recharge; navigation; recreation; commercial and sport fishing; cold freshwater, wildlife, and estuarine habitat; and habitat necessary for aquatic migration and fish spawning.²¹ The basin plan also identifies aquaculture as a potential beneficial use.²²

3.8 Fish and Game Code Section 5937 Fish and Game Code section 5937 provides, in relevant part, that the owner of a dam shall "allow sufficient water to pass over, around or through the dam to keep in good condition any fish that may be planted or exist below the dam."

4.0 DESCRIPTION OF PENDING APPLICATIONS

4.1 General The following provides a description of the five water right applications that are the subject of this decision. Figures 2 and 3 are U.S. Geologic Survey (USGS) topography maps that show the locations of the proposed diversions, the tributaries from which water would be diverted and the portions of the watershed areas which are upstream of the points of diversion.

4.2 Bennett/Cahn (A29711) This application requests the right to store 30 afa of water in a reservoir located on an unnamed stream tributary to the Navarro River within section 2. of T14N, R15W, MDB&M. The purposes of use are fire protection, irrigation and frost protection for 33 acres of existing vineyards, and recreation at the reservoir. The requested collection season is October 15 through April 30.

The applicants have constructed a 10 af pond for the purpose of domestic use at the site of the proposed reservoir and intend to expand this reservoir to a capacity of 30 af, provided a permit is issued.

Bennett holds water right licenses 12918, 12919 and 12951 for appropriations from two unnamed streams tributary to Lazy Creek and Navarro River. These licenses provide for the storage of 47 afa in an existing pond and for the direct diversion of 1.15 cfs, with a maximum annual diversion under all three licenses of 81 af. The

²⁰ Wat. Code, § 1258.

²¹ NCRWQCB & SWRCB, Water Quality Control Plan, North Coast Region (1994) p. 2-5.00.

²² *Id.*

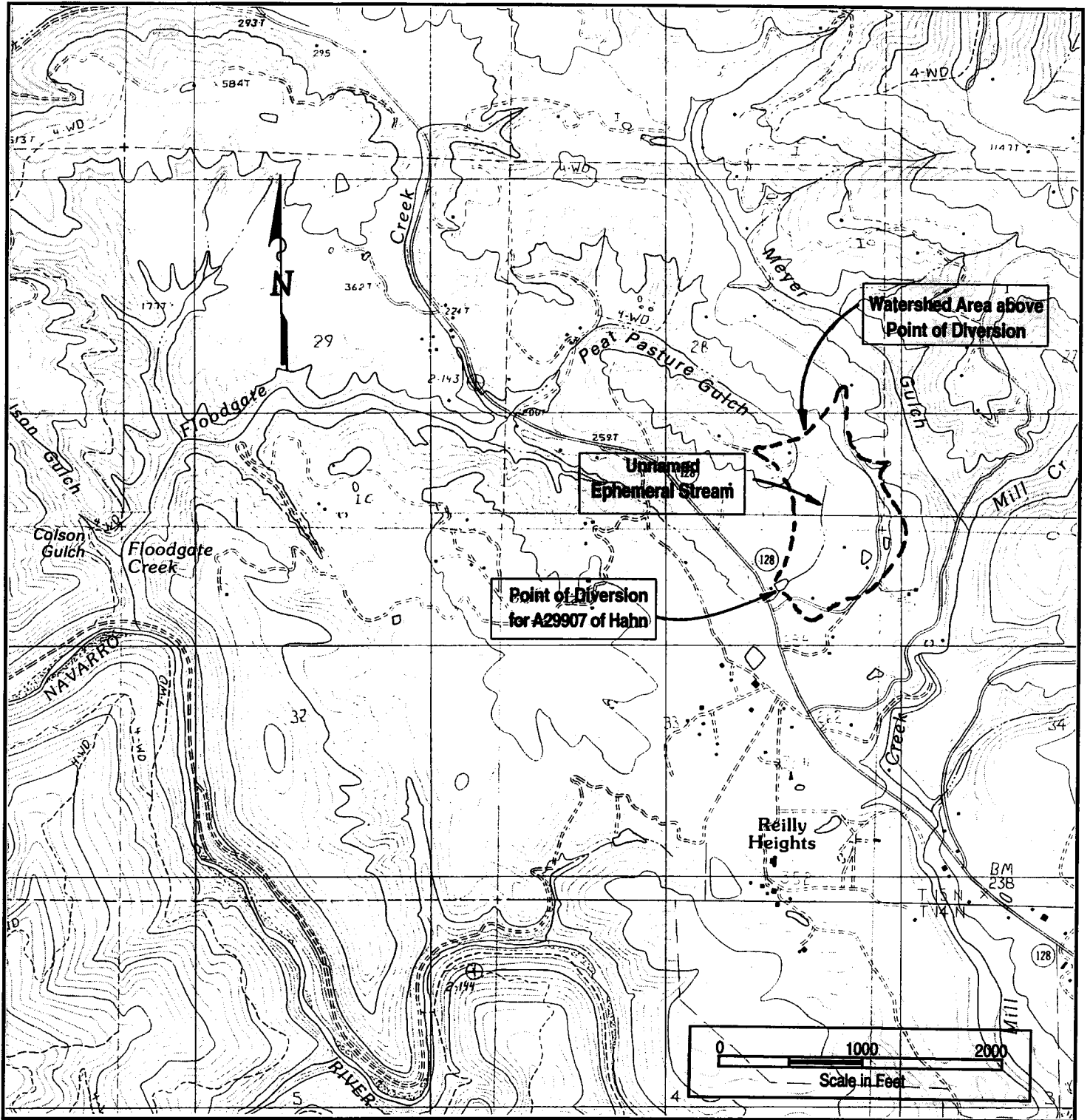


Figure 2
USGS Map Showing
the Tributary and the Area Upstream of the Proposed Diversion

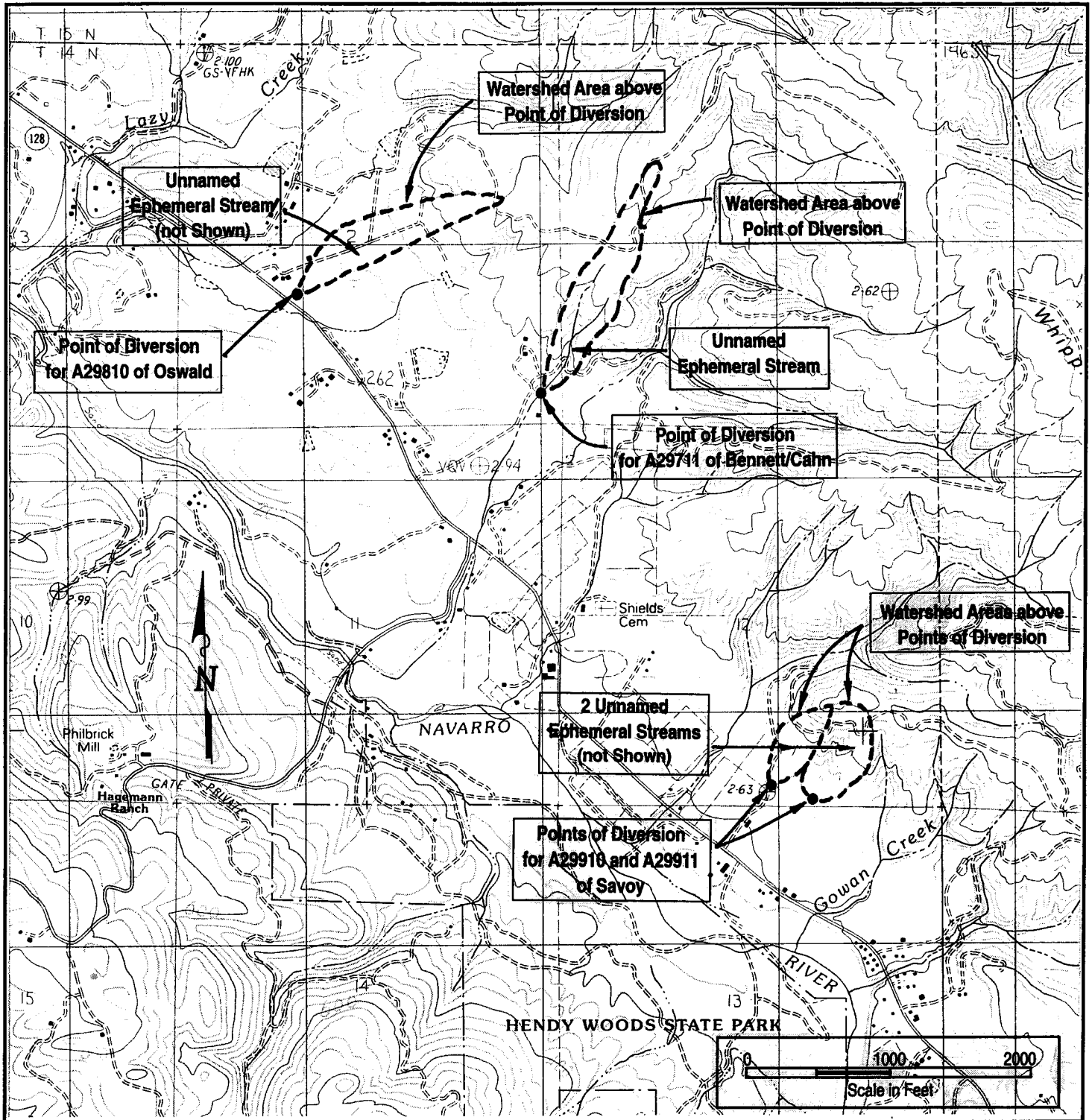


Figure 3
USGS Map Showing
the Tributary and the Area Upstream of the Proposed Diversion

seasons of diversion vary with purposes of use as follows: irrigation direct diversion from May 1 to June 15; frost protection direct diversion from April 1 to May 31; and storage for the purposes of stockwatering, wildlife enhancement, recreation, fire protection, irrigation and frost protection from October 1 to April 30. The places of use for these licenses are located in sections 2 and 11 of T14N, R15W, MDB&M.

4.3 Oswald (A29810) This application requests the right to divert water from an unnamed tributary and to store 12 afa of water in an existing reservoir located within section 2 of T14N, R15W, MDB&M for the purposes of irrigation, heat control and frost protection of 10 acres of established vineyards. The requested collection season is November 15 through April 1.

During the field investigation, Mr. Oswald stated that, in addition to diverting water from the unnamed tributary, the reservoir also collects diffused surface runoff, water captured in a "French drain" located at the base of the hills, and irrigation tail water. Mr. Oswald may not need a water right permit for storage in this pond. Under California water law, a person can store water in a pond that is collected from percolating groundwater or diffused surface flow without obtaining an appropriative water right permit from the SWRCB. In addition, Mr. Oswald could temporarily retain water in the pond under claim of riparian right, without obtaining a water right permit issued by the SWRCB. Seasonal storage of water diverted from a watercourse, however, is not a proper exercise of riparian right; seasonal storage of such water constitutes an appropriation for which a permit must be obtained. A "watercourse" consists of bed, banks and the concentrated flow of water within a well-defined channel; a water course does not include diffused surface flow.²³

Since Oswald probably is diverting surface flow from the unnamed tributary captured in the "French drain" at the base of the hills, and may be diverting water from the water course through his property, the Division intends to process Oswald's application for seasonal storage of water from the unnamed stream.

Oswald holds water right licenses 10324, 12632 and 12633 for appropriations from the Navarro River and an unnamed stream tributary to Lazy Creek. These licenses provide for the storage of 55 afa in two existing ponds and for the direct diversion of 0.22 cfs. The seasons of diversion vary with the purposes of use as follows: irrigation and frost protection direct diversion from March 15 to October 1; and storage for the purposes of wildlife enhancement, recreation, fire protection, irrigation and frost protection from November 1 to May 15. The places of use for these licenses are located in sections 2 and 3 of T14N, R15W, MDB&M.

4.4 Hahn (A29907) This application requests the right to store 6 afa of water in an existing offstream reservoir. Water is to be diverted from an unnamed stream tributary to Floodgate Creek and the Navarro River. Both the reservoir and the point of diversion are located within section 33 of T15N, R15W, MDB&M. The purposes of use are irrigation, heat control and frost protection for 16 acres of

²³ Hutchins W.A. *The California Law of Water Rights*, 1956 pp. 21-28.

established vineyards. The requested collection season is from November 15 through May 15.

4.5 Savoy (A29910 and A29911) These applications request the right to directly divert and to store a total of 195.6 afa of water. Water is to be diverted from the Navarro River and from two unnamed streams tributary to the Navarro River. The point of diversion on the Navarro River (POD #1) is located within section 13 of T14N, R15W, MDB&M; and the points of diversion for the unnamed streams (POD #2 and POD #3) and the reservoir are located within section 12 of T14N, R15W, MDB&M.

4.5.1 A29910 This application requests the right to store 55.6 afa. Water is to be diverted from POD #1 at a maximum rate of 3.0 cfs, from POD #2 at a maximum rate of 1.0 cfs, and from POD #3 at a maximum rate of 0.5 cfs for a total maximum rate of 4.5 cfs. The purposes of use are irrigation and frost protection of 40 acres of existing vineyards and for domestic use. The requested season of storage is year round.

This application also requests the right to directly divert from the three points of diversion. For domestic use, the application requests a year-round maximum rate of 8765 gallons per day year round (not to exceed 4.5 afa). For irrigation the application requests a maximum rate of 0.53 cfs from June 1 through October 31 (not to exceed 42.3 afa). The maximum direct diversion amount under this application would be limited to 46.8 afa.

4.5.2 A29911 This application requests the right to directly divert from the three points of diversion at a maximum aggregate rate of 3.0 cfs. The purpose of use is frost protection and the requested season of diversion is March 1 through June 1. The maximum direct diversion amount under this application would be limited to 45.2 afa.

Savoy has constructed a pit reservoir on his property, with an estimated capacity of approximately 25 to 30 af. At the time of the field investigation, the reservoir held a substantial quantity of water. The applicant claims that the reservoir is being filled with regulatory water pumped from the Navarro River under claim of riparian right, percolating groundwater, diffused surface flow and direct precipitation.

The applicant has graded the property so that the flow from the two unnamed tributaries is collected into pipes. At the time of the field investigation, these pipes did not discharge water into the pit reservoir; however, these pipes could be modified to divert the water into the reservoir.

5.0 PROTESTS

5.1 General The Division distributed notices of the applications to interested parties in accordance with sections 1300-1324 of the Water Code. Any interested party may submit a protest against an application on the grounds that granting the application will injure prior rights, have adverse environmental impacts, or be contrary to

law, the public interest, or public trust uses.²⁴ The following provides a summary of the protests received on each application.

5.2 Bennett/Cahn A notice of the application dated May 13, 1994, was distributed to interested parties and five protests were submitted.

5.2.1 North Greenwood Community Association (NGCA) NGCA submitted a protest, based on environmental and public trust issues, which was accepted by the Division. NGCA contended that the cumulative impacts of diversions from the Navarro River and its tributaries have already stressed the resources of the river to the point where no more appropriations should be allowed and the river and its tributaries should be declared fully appropriated year round. NGCA stated that no conditions existed under which its protest could be withdrawn. It stated that it might reconsider, if provisions for protecting the ecosystem were developed subsequent to the preparation of a full environmental impact report with emphasis on the cumulative effects of water diversions from the Navarro River and its tributaries and estuary. The protest was not resolved prior to the field investigation.

5.2.2 Friends of the Navarro Watershed (FNW) FNW submitted a protest, based on environmental and public trust issues, which was accepted by the Division. FNW contended that decreases in flow in the Navarro River (presumably due to appropriative diversions) would affect the river's ability to recharge groundwater, clear sedimentation and siltation, and maintain sufficient flow and temperature for spawning and nursery habitat of coho salmon and steelhead trout. FNW's protest included specific conditions for withdrawal (i.e., offstream storage, minimum bypass flow, and reduction in season and amount). The protest was not resolved prior to the field investigation.

5.2.3 J. B. Neilands Mr. Neilands submitted a letter of comment, which was accepted by the Division as a protest. Mr. Neilands contended that water diverted from the Navarro River and its tributaries which is impounded in reservoirs is needed to replenish the aquifers and assure a year-round release. Mr. Neilands also contended that a substantial amount of the water held in reservoirs will be lost to evaporation, presumably constituting waste and unreasonable use. Mr. Neilands' protest did not give specific conditions for withdrawal. The protest was not resolved prior to the field investigation.

5.2.4 Salmon Unlimited (SU) SU submitted a protest, based on environmental and public trust issues, which was accepted by the Division. SU contended that the proposed project would block the movement of sediments to the Navarro River and alter or reduce the natural runoff pattern necessary for the maintenance of certain runs of salmon and steelhead trout. SU also contended that the alteration in the natural runoff pattern would lead to the introduction of nonnative fish populations.

²⁴ See Wat. Code, § 1335; Cal. Code Regs., tit. 23, § 745.

SU stated that it believed that the effects of this project will be small, but will contribute to significant adverse cumulative effects to the fisheries and the environment. SU's protest included specific conditions for withdrawal (i.e., the project must be subject to review under CEQA and comply with all mitigating measures developed). The protest was not resolved prior to the field investigation.

5.2.5 DFG DFG submitted a protest, based on environmental, public interest and public trust issues, which was accepted by the Division. DFG contended that cumulative water diversions throughout the Navarro River watershed have the potential to diminish stream flow during critical periods, thereby reducing habitat for a variety of plant, fish, and wildlife resources. DFG stated that specific conditions for withdrawal could not be submitted until surveys were undertaken to determine cumulative use in the Navarro River watershed. The protest was not resolved prior to the field investigation.

5.3 Oswald A notice of the application dated June 28, 1991, was distributed to interested parties and two protests were submitted.

5.3.1 DFG DFG submitted a protest based on environmental and public trust issues, which was accepted by the Division, with similar concerns as DFG's protest of the Bennett/Cahn application, but with additional concerns regarding the effects on Lazy Creek. DFG's protest included specific conditions for withdrawal (i.e., a limited diversion season, minimum bypass flows, measuring devices, mitigation plan for lost habitat, erosion control plan). The protest was not resolved prior to the field investigation.

5.3.2 Salmon Unlimited SU submitted a protest based on environmental and public trust issues, which was accepted by the Division, with similar concerns as were contained in SU's protest of the Bennett/Cahn application. SU's protest included specific conditions for withdrawal (i.e., minimum bypass flows and provisions for the free passage of fish). The protest was not resolved prior to the field investigation.

5.4 Hahn A notice of the application dated October 4, 1991, was distributed to interested parties and eight protests were submitted.

5.4.1 E. and J. Seibert The Seiberts submitted a protest, based on environmental and public trust issues, which was accepted by the Division. The Seiberts contended that the cumulative effects of Navarro River watershed diversions have reduced the flow in the river, caused an unnatural sandbar to form at the mouth of the river and resulted in degradation of the river. The Seiberts' protest did not include conditions for withdrawal. The protest was not resolved prior to the field investigation.

5.4.2 North Greenwood Community Association NGCA submitted a protest based on environmental and public trust issues, which was accepted by the Division. NGCA's protest was very similar to the protest of the Seiberts. The protest did not include

conditions for withdrawal. The protest was not resolved prior to the field investigation.

5.4.3 R. and G. Collins The Collins submitted a protest, based on environmental and public trust issues, which was accepted by the Division. The Collins' protest was also very similar to that of the Seiberts. The protest did not include conditions for withdrawal. The protest was not resolved prior to the field investigation.

5.4.4 Albion Residents Association (ARA) ARA submitted a protest, based on environmental and public trust issues, which was accepted by the Division. ABA's protest did not cite any specific reasons why the project would harm the environment or include conditions for withdrawal. The protest was not resolved prior to the field investigation.

5.4.5 Pacific Coast Federation of Fishermen's Association (PCFFA) PCFFA submitted a protest, based on environmental and public trust issues, which was accepted by the Division. PCFFA contended that the diversion would have an adverse impact on the salmon fishery resources of the Navarro River by reducing the amount of flow in the river and potentially increasing water temperature. PCFFA's protest did not include specific conditions for withdrawal. The protest was not resolved prior to the field investigation.

5.4.6 D. and D. Hendricks The Hendricks submitted a protest, based on environmental and public trust issues, which was accepted by the Division. The Hendricks' protest was also very similar to that of the Seiberts. The protest did not include conditions for withdrawal. The protest was not resolved prior to the field investigation.

5.4.7 D. Paget D. Paget submitted a protest, based on environmental and public trust issues, which was accepted by the Division. D. Paget's protest did not cite any specific reasons why this project will harm the environment. The protest included a specific condition for withdrawal (i.e., that a study be done which considers the cumulative impacts of all appropriative water use in the Navarro River watershed). The protest was not resolved prior to the field investigation.

5.4.8 DFG DFG submitted a protest based on environmental, public interest and public trust issues very similar to the issues raised in DFG's protest against the Bennett/Hahn application. DFG's protest, which was accepted by the Division, deferred listing conditions for withdrawal of the protest until completion of a CEQA document. The protest was not resolved prior to the field investigation.

5.5 Savoy A notice of these applications dated June 23, 1995, was distributed to interested parties and 13 protests were submitted.

5.5.1 S. Hall S. Hall submitted a protest, based on environmental and public trust issues. Division staff did not notify the parties whether the protest was accepted or rejected; however, this decision addresses the issues raised in the

protest. S. Hall contended that the applicant's proposed rate of diversion was too high and the proposed season of diversion was too long. S. Hall stated that the protest would be withdrawn if the applicant accepted the environmental mitigating terms developed for the Navarro River, as described in the initial study and proposed negative declaration dated September 25, 1996, that was prepared for this application. The protest was not resolved prior to the field investigation.

5.5.2 B. Burns B. Burns submitted a protest very similar to that of S. Hall. Division staff did not notify the parties whether the protest was accepted or rejected; however, this decision addresses the issues raised in the protest. The protest was not resolved prior to the field investigation.

5.5.3 California Sportfishing Protection Alliance (CSPA) CSPA submitted a protest, based on environmental and public trust issues, which was accepted by the Division. CSPA's protest contended that cumulative impacts of diversions (both authorized and unauthorized) from the Navarro River and its tributaries have adversely affected fisheries resources. CSPA's protest included specific conditions for withdrawal (i.e., that a study be done which considers the cumulative impacts of all appropriative water use in the Navarro River watershed, and that permit terms mitigating environmental impacts be developed for the Navarro River watershed). The protest was not resolved prior to the field investigation.

5.5.4 B. and M. Dutra The Dutrass submitted a protest, based on environmental, public trust and other issues, which was accepted by the Division. The Dutrass contended that the application should not be granted until studies were completed addressing the cumulative impacts of diversions from the Navarro River and its tributaries on fisheries and other resources. They also contended that the proposed diversion amount and rate are excessive, and that a minimum bypass flow should be required. The protest included specific conditions for withdrawal (i.e., that a cumulative impact study be conducted, that permit terms mitigating environmental impacts be imposed, and that pesticide runoff be disclosed and reduced). The protest was not resolved prior to the field investigation.

5.5.5 Friends of the Navarro Watershed FNW submitted a protest, based on environmental and public trust issues, which was similar to the Dutrass' protest. It was accepted by the Division but was not resolved prior to the field investigation.

5.5.6 DFG DFG submitted a protest, based on environmental and public trust issues, which was accepted by the Division. DFG contended that the project would adversely affect fisheries resources and destroy riparian habitat. DFG deferred listing conditions for withdrawal until the Navarro River Restoration Plan was completed and the Division's Complaint Section had completed its investigation. In a letter dated February 27, 1996, DFG agreed to dismiss its protest with inclusion of the environmental permit terms described in the initial study and proposed negative declaration dated September 25, 1996, as well as measures to mitigate impacts to oak woodland habitat. The

protest was not, however, resolved prior to the field investigation.

5.5.7 D. Myers Mr. Myers submitted a protest, based on injury to prior vested rights (i.e., domestic use of 10,000 gpd based on claim of riparian right), which was accepted by the Division. Mr. Myers withdrew his protest prior to the field investigation when the applicant agreed to the inclusion of the environmental permit terms developed for the Navarro River and its tributaries. These terms are described in the proposed negative declaration dated September 25, 1996.

5.5.8 S. McCamaril Ms. McCamaril submitted a protest, based on environmental and public trust issues. Division staff did not notify the parties whether the protest was accepted or rejected; however, this decision addresses the issues raised in the protest. Ms. McCamaril's protest contended that the application did not conform to the environmental permit terms developed for the Navarro River and its tributaries, as described in the proposed negative declaration prepared for this application. The protest included specific conditions for withdrawal (i.e., agreement with the terms). The protest was not resolved prior to the field investigation.

5.5.9 H. Libeu Ms. Libeu submitted a protest, based on environmental and public trust issues, which was accepted by the Division. Ms. Libeu contended that cumulative impacts to the Navarro River and its tributaries were adversely affecting the fisheries. Ms. Libeu's protest included a specific condition for withdrawal (i.e., establishment of minimum bypass flows as a result of comprehensive studies of the river). The protest was not resolved prior to the field investigation.

5.5.10 H. Adams H. Adams submitted a protest, based on environmental and public trust issues, which was accepted by the Division. H. Adams contended that the cumulative impacts of diversions from the Navarro River and its tributaries have resulted in increased siltation, sedimentation and sandbar development in the river as well as the degradation to fisheries resources and to the health of the estuary. H. Adams also contended that the proposed diversions were excessive in both the amount of water and the season of diversion requested. The protest included specific conditions for withdrawal (i.e., establishment of minimum bypass flows and maximum water temperature value as a result of comprehensive studies of the river and estuary). The protest was not resolved prior to the field investigation.

5.5.11 North Greenwood Community Association NGCA submitted a protest, which was accepted by the Division, that was very similar to the protest of H. Adams. The protest was not resolved prior to the field investigation.

5.5.12 E. and S. Smith The Smiths submitted a protest, based on environmental and public trust issues, which was accepted by the Division. The Smiths contended that the project would result in a reduction in flow in the Navarro River, and the proposed diversion season and amount were harmful to fisheries. The

Smiths' protest included specific conditions for withdrawal (i.e., minimum bypass flows and monitoring of applicant's diversions). The protest was not resolved prior to the field investigation.

5.5.13 E. and J. Seibert The Seiberts submitted a protest, based on environmental and public trust issues, which was accepted by the Division. The Seiberts contended that low flows in the Navarro have created siltation problems which resulted in the formation of a sandbar at the mouth of the river which adversely affects spawning fish and contributes to the pollution of the estuary. The Seiberts' protest did not include specific conditions for withdrawal, as the protestants did not believe mitigation was possible. The protest was not resolved prior to the field investigation.

5.6 Division Letter Relating to Protests The Division distributed a letter dated April 18, 1997, to the applicants, protestants, and other interested parties that provided information relating to the applications and stated that the protests would be considered to have been withdrawn, unless the protestants requested that their protests remain in effect. Several protestants requested that their protests not be withdrawn. Accordingly, by letter dated August 25, 1997, the Division advised all interested parties that the protests would remain in effect and that Division staff would conduct a field investigation, in accordance with section 1346 of the Water Code.

6.0 FIELD INVESTIGATION

On September 19, 1997, the Division distributed a Notice of Field Investigation to the applicants, protestants and other interested parties. The Notice described the procedures for conducting the field investigation, the unresolved issues to be discussed and the issues that were outside the scope of the field investigation.

Division staff conducted the field investigation on October 15, 1997, in accordance with sections 1345-1348 of the Water Code. The field investigation began at 9:00 a.m. and concluded at about 2:00 p.m. Approximately 20 people were in attendance at the start of the field investigation, however, that number diminished to about 10 people by the end of the day. Although the DFG was a protestant to several applications, no DFG staff attended the field investigation. The following is a list of Division staff that participated in the field investigation and a list of those in attendance who signed the sign-up sheet at the start of the field investigation:

Ed Dito.....	Division staff
Laura Vasquez.....	Division staff
Steve Herrera.....	Division staff
Bruce Fodge.....	Division staff
Kendall Smith.....	Representing Senator Mike Thompson's Office
Jennifer Puser.....	Representing Assemblywoman Virginia Strom-Martin's Office
Deborah Cahn.....	Applicant
Ken Oswald.....	Applicant
Donald Hahn.....	Applicant

Janet Goldsmith.....The Law Offices of Kronick, Moskovitz,
Tiedemann & Girard, representing
Applicants Savoy and Bennett/Cahn
Stephan Volker.....Earthjustice Legal Defense Fund,
representing several protestants
and interested parties
Hillary Adams.....North Greenwood Community Association
R. W. Gates.....North Greenwood Community Association
Stephen Hall.....Friends of the Navarro River
Daniel Myers.....Protestant
J. B. Neilands.....Protestant
Daphne Martin.....Protestant
Dennis Slota.....Mendocino County Water Agency
Jennifer Pasquinelli...California State Parks
Rex McClellan.....Anderson Valley Advertiser

Essentially, the field investigation consisted of two phases. In the first phase, all parties met at the meeting room at the County Fairgrounds in Boonville. Division staff made a brief opening presentation to include background information relating to the five applications and the procedures for conducting the field investigation. All parties were then allowed an opportunity to present comments relating to the proposed projects and to ask questions of Division staff. In the second phase, Division staff conducted on-site field investigations of each of the pending applications. During the on-site investigations, the applicant provided a brief description of the proposed project and all parties were allowed the opportunity to offer comments or ask questions relating to the proposed project.

Section 1346 of the Water Code provides that the Division may request information from the parties before, during, or after the field investigation. During the initial meeting, Stephen Volker presented extensive comments on behalf of several parties.²⁴ At the request of Division staff, Mr. Volker submitted a written summary of his comments by letter dated March 2, 1988.²⁵ Mr. Volker also requested the opportunity to submit an analysis of the hydrology of the Navarro River. Staff agreed with that request. Mr. Volker submitted a report by cover letter dated March 10, 1998.²⁶

²⁴ Mr. Volker of Earthjustice Legal Defense Fund also represents the following organizations: Pacific Coast Federation of Fisherman's Associations, California Sportfishing Protection Alliance, California Trout, United Anglers, Friends of the River, Trout Unlimited, North Greenwood Community Association, Mendocino Environmental Center, Friends of the Navarro Watershed, Sierra Club, Hillary Adams, and Elsworth and Janet Seibert. As described in section 4.0, some of these parties are protestants to the pending applications; the other agencies/organizations are considered interested parties in this proceeding.

²⁵ Letter dated March 10, 1998, from Stephan Volker to Ed Dito.

²⁶ Li, Curry and Emery, *Review of Tennant Method as Applied on the Navarro River and in Coastal California Watersheds*. (Submitted under cover of letter dated March 10, 1998.)

In his March 2, 1998, letter, Mr. Volker identified eight specific concerns:

- The SWRCB's proposed use of the Tennant method to evaluate and establish stream flows necessary to restore and protect fish and wildlife uses is inappropriate for this coastal watershed.
- Before evaluating these water rights applications, the SWRCB should conduct a cumulative effect analysis and other environmental studies as required under CEQA and the California Water Code.
- The analysis should study the relationship between winter flows and summer groundwater levels in the Navarro River watershed.
- The effects on water quality and quantity of past, present and proposed land management practices within the watershed should be evaluated.
- Particular attention should be given to land management practices which involve instream storage such as the dams that the applicants in this proceeding have already constructed - unlawfully - across tributaries of the Navarro River.
- The SWRCB should integrate the recent listing of the coho salmon under the federal ESA, and the likely listing of steelhead under the act, into its management of water rights in this watershed.
- The SWRCB should not issue new water right permits prior to the required establishment, by December 31, 2000, of certain water quality criteria under the Clean Water Act.
- The SWRCB should conduct a comprehensive investigation of water diversions by riparian and appropriative rights holders (and others who lack such rights) to assure that an equitable methodology for reducing diversions and restoring fish and wildlife habitat and recreational uses of the Navarro River and its tributaries is adopted and implemented as soon as possible.

Janet Goldsmith, whose law firm represents applicants Savoy, and Bennett/Cahn, requested the opportunity to review and critique the information submitted by Mr. Volker. Staff also agreed with that request. Copies of all information submitted by Mr. Volker were forwarded to Ms. Goldsmith. Ms. Goldsmith subsequently stated that the applicants had decided that they would not submit comments on the protestant's submittals.²⁷

Dr. Hillary Adams presented extensive oral and written comments and also submitted several reports and technical papers on behalf of the

²⁷ Personal communication between Ed Dito, SWRCB, and Janet Goldsmith, Kronick, Moskovitz, Teidemann and Girard, on March 20, 1998.

North Greenwood Association.²⁶ Dr. Adams made the following general comments and referred to the documents listed in the footnote below:

- The Navarro River should be declared fully appropriated year round since winter diversions affect summer flows and sedimentation problems;
- Coho salmon have been declared threatened by the National Marine Fisheries Service and studies indicate that coho on the Navarro River and its tributaries may be endangered;
- Temperatures and sediment load within the Navarro River and its tributaries are at times lethal to fisheries;
- The Division has failed to determine that water is available for appropriation from the Navarro River as required by section 1375, subdivision (d) of the Water Code;
- The Division has failed to determine the amount of water required for the survival of fish and wildlife as required by sections 1243 and 1243.5 of the Water Code;
- The Tennant method was inappropriately used and incorrectly applied by the Division to determine instream flow requirements for the fishery resources of the Navarro River;
- Each river should be studied individually; the results of studies done for other coastal streams, such as the Instream Flow Incremental Method (IFIM) done on Brush Creek and Lagunitas Creek, should not be applied to the Navarro River;
- Establishing bypass flow requirements based on flows at the USGS Navarro River gage is unrealistic since the gage exists at the end of the river and does not reflect conditions in the tributaries;

²⁶ The following reports were submitted by Dr. Hillary Adams:

Steve Cannata, *Navarro River Estuary Progress Report May - June 1996*.

Steve Cannata and Terry Roelofs, *Navarro River Estuary/Lagoon Project Progress Report #3 August - October 1996* (November 27, 1996).

Letter from Department of Fish and Game to Dr. Hillary Adams (July 7, 1997), with attached data of downstream migrant trapping on the North Fork Navarro River for 1995-1997.

Trihey and Associates, Inc., *Sediment Production and Channel Conditions in the Navarro River Watershed, Draft Summary, Chapter 3* (March 19, 1997).

Pool Temperature Data for Tributaries within Navarro River Watershed for 1995 - 1996, as compiled by the Mendocino County Water Agency.

Donald Leroy Tennant, "Instream Flow Regimens for Fish, Wildlife, Recreation and Related Environmental Resources," *Fisheries* Vol. 1, No. 4 (July-August 1976) pp. 6-10.

Charles K. Fisher, Jr. and Forrest L. Reynolds, *Coastal Salmon and Steelhead Stream Low-Flow Angling Closure Study, 1987-1988* (Draft) p. 1.

- Environmental impact reports, which consider the cumulative impacts of all diversions, are necessary under the California Environmental Quality Act; and
- The Division has failed to satisfy section 1825 of the Water Code which requires the State to take vigorous action to enforce the terms and conditions of existing permits and licenses to appropriate water and to prevent the unlawful diversion of water. This sends a message that the permitting process can be ignored without harm (as in the case of Savoy).

During the initial phase of the field investigation, Ms. Goldsmith made the following comments:

- The Division must consider the public interest in, and economic benefits that result from, the continued use of water on the existing vineyards;
- The applicants are being asked by the protestants to determine all possible environmental effects of their diversions regardless of economic feasibility or sound reasoning;
- The increase in sedimentation within the Navarro River and low summer flows are issues that are not applicable to these applications;
- Denying winter storage appropriations will result in an increase in summer riparian diversions and groundwater extractions;
- Applicants acknowledge that endangered species have the first right to water, but that they wish to utilize the water which is in excess to that which is required for instream uses; and
- These applicants are being unduly asked to take on the burden of all the problems within the Navarro River.

During the initial phase of the field investigation, Dennis Slota, Manager of the Mendocino County Water Agency, stated that the Navarro River Habitat Restoration Advisory Group has evaluating measures needed to protect fishery resources. The Advisory Group has adopted a statement supporting the construction of agricultural water storage ponds, in accordance with sound environmental practices, to enable reduced diversion of summer stream flows.²⁹ Mr. Slota stated that the Advisory Group recommends that reservoirs not be constructed on "blue line" streams (i.e., streams that are shown in blue on USGS topographic maps and have flow during a substantial portion of the year). Mr. Slota also stated that the Advisory Group does not oppose construction of ponds on ephemeral streams (i.e., those streams that have flow only for short periods following storms) where there is no potential impact to fishery resources.

All parties were offered the opportunity to present comments and recommendations. Several other people spoke during the first phase of

²⁹ Navarro Watershed Restoration Plan, Appendix D. (June 1998.)

the field investigation, however, the comments described above provide an overview of the principal issues raised by all speakers.

Subsequent to the field investigation, the Division also received a copy of a report prepared by McBain and Trush.³⁰ Although the report focused on the methodology employed by the Division to establish permit terms for applications to divert water from the Russian River, the Division has employed a similar methodology here, and the report's comments and recommendations therefore bear upon this decision. The report provides numerous comments and recommendations, including comments relating to the proposed bypass terms and recommendations relating to channel maintenance flows. The Division has reviewed the information contained in the McBain and Trush report in conjunction with the preparation of this decision.

7.0 HYDROLOGY

7.1 General This section provides a summary of the Division's analysis of the hydrology, or streamflow, of the main stem of the Navarro River and the tributaries with pending applications. This analysis includes a review of flow data measured at the USGS gage and estimates of flow for each tributary.

Hydrologic data are presented in terms of flow rates, expressed in cubic feet per second (cfs). The "daily flow" is the average flow rate past a given location over a 24 hour period. The "annual flow" is the average of the daily flows over a given year. The "average annual flow" is the average of the recorded annual flows. Normally, annual flows are based on a "water year" which extends from October 1 through September 30. The quantity (volume) of water that is produced by a watershed (or the quantity of water that flows past a given point within the watershed) over a given time is called the "runoff" and is expressed in acre-feet (af). Typically, the "annual runoff" is expressed in acre-feet per annum (afa). A hydrologic analysis can evaluate impaired or unimpaired flow conditions. The impaired flow is the actual, or measured flow, in the river. The unimpaired flow is the natural flow that would occur without any dams or diversions within the watershed. Since there are existing diversions within the Navarro River watershed, the unimpaired flow must be calculated for a given year. Hydrologic studies frequently use hydrographs which show flow for a given time period.

The Navarro River is similar to most northern California coastal streams. Flow in the river is characterized by high winter flows and relatively low summer flows. There is substantial variation in the yearly, seasonal and daily flow.

The Navarro River watershed encompasses a total of approximately 323 square miles. There are no large dams or reservoirs within the watershed and relatively few diversions. As indicated on Tables 1 and 2, the Division has records of existing and proposed diversions

³⁰ McBain and Trush, *A Commentary on the SWRCB Staff Report: Russian River Watershed, Proposed Actions to be taken by the Division of Water Rights on Pending Applications within the Russian River Watershed, August 15, 1997.* (Submitted under cover of letter dated March 12, 1998.)

that total approximately 4,600 afa, or less than 2 percent of the average annual runoff of 370,000 afa. Most of these diversions are for agricultural irrigation and occur during the summer. Consequently, the measured flow during the winter is very close to the natural, or unimpaired, flow condition.

7.2 Precipitation Virtually all runoff within the watershed is a direct result of rainfall. Figure 4 shows the isohyetal contour lines (i.e., lines showing the mean annual precipitation) within the watershed. The isohyetal contour lines were generated from data collected from 48 rainfall stations within Mendocino County and submitted to the Department of Water Resources. The closest precipitation gage to these applications is located in the town of Philo. Precipitation data from this gage indicate there is an average of approximately 40.4 inches of precipitation per year, with about 63 percent of the precipitation occurring between December 15 and March 31.

7.3 Navarro Gage The USGS has maintained a stream flow gage on the Navarro River from 1951 to the present. The location of the gage is shown on Figure 1. The gage measures flow for a 303 square mile tributary area, or roughly 94 percent of the total watershed. The gage provides daily, monthly and annual flow data for the 46 year period of record.

7.4 Annual Runoff Figure 5 shows the annual runoff within the Navarro River watershed, as measured at the USGS gage for the water years 1954 through 1993. The Navarro River has an average annual runoff of approximately 370,000 afa, however, there is substantial variation in annual runoff. Runoff has varied from a low of 18,000 afa in 1977 to a high of 787,000 afa in 1995.

7.5 Average Monthly Flow Figure 6 shows the exceedence curves for the average monthly flow for different water years as recorded at the USGS gage. By way of explanation, a 90 percent exceedence curve represents the average monthly flow that would be exceeded 90 percent of the time, i.e., a dry year that would occur on an average of 1 in 10 years.

7.6 Daily Flow The Division has prepared hydrographs showing the daily flow data as measured at the Navarro gage for 43 years of record. These hydrographs are attached as Attachment A. Figures 7 and 8 are representative figures that show the daily flow as measured at the Navarro gage for a dry water year with a frequency of 1 in 10 years (1972) and for an average water year (1971). As indicated by these figures, there is substantial variation in the daily flow.

Figures 7 and 8 also show the relationship between precipitation and the daily streamflow as measured at the Navarro gage. Flow in the river responds rapidly to rainfall. As indicated in these figures, there are large "spikes" or "pulses" in the streamflow immediately following rainstorms. These figures also show the influence of antecedent soil conditions. Storms that occur early in the year produce relatively little runoff. Storms that occur during the winter, after the soil has become saturated, produce substantial runoff.

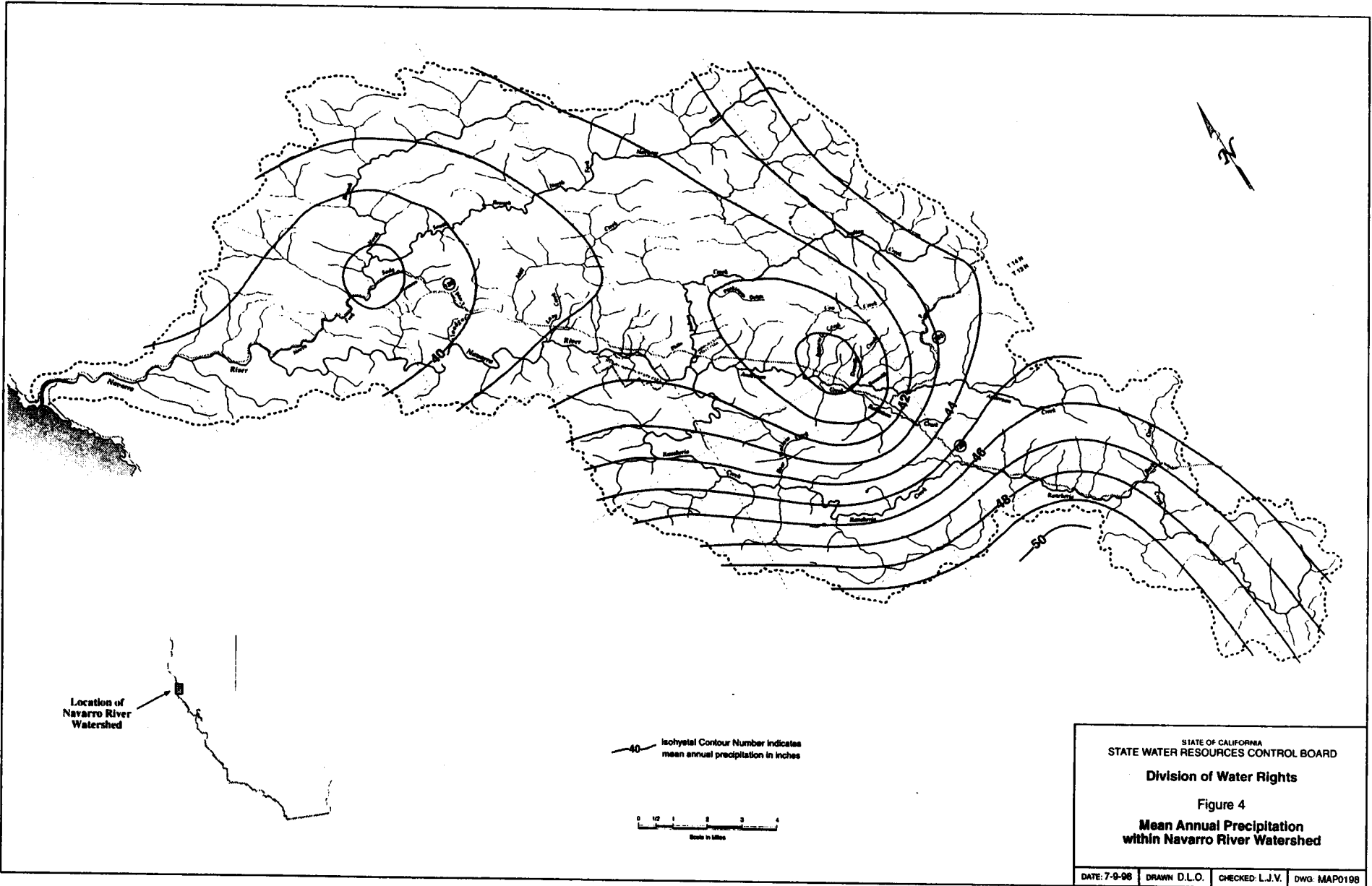


Figure 5: Annual Navarro River Runoff as Measured at USGS Gage near Navarro - Water Years 1954 to 1993

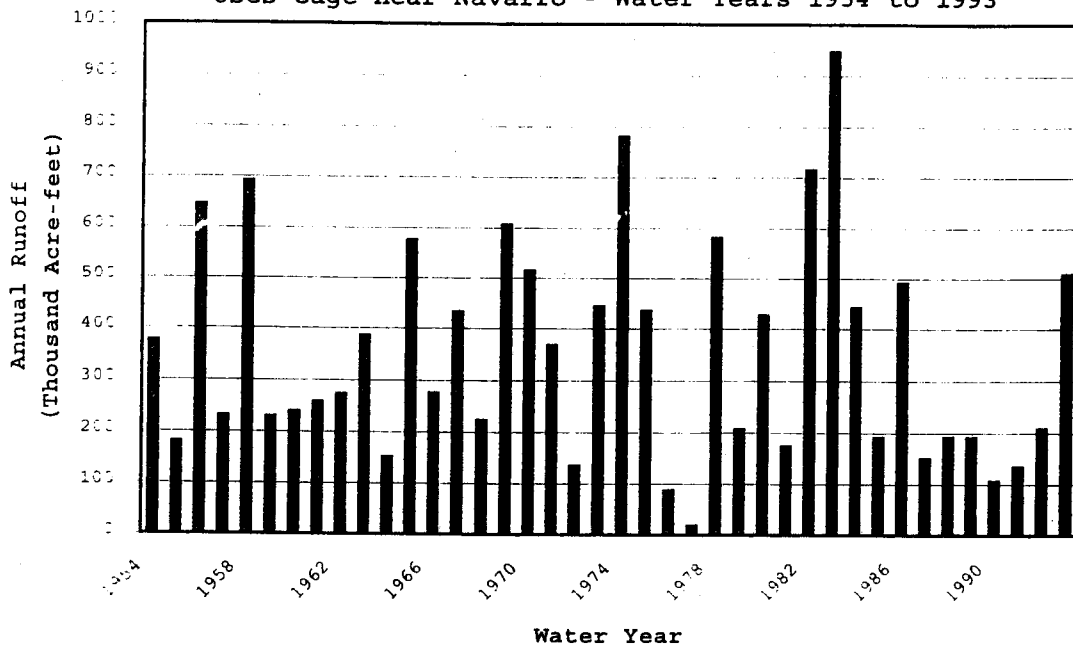


Figure 6: Monthly Exceedances Curves Based on USGS Gage near Navarro - Water Years 1951 to 1993 (Annual Daily Average = 504 cfs)

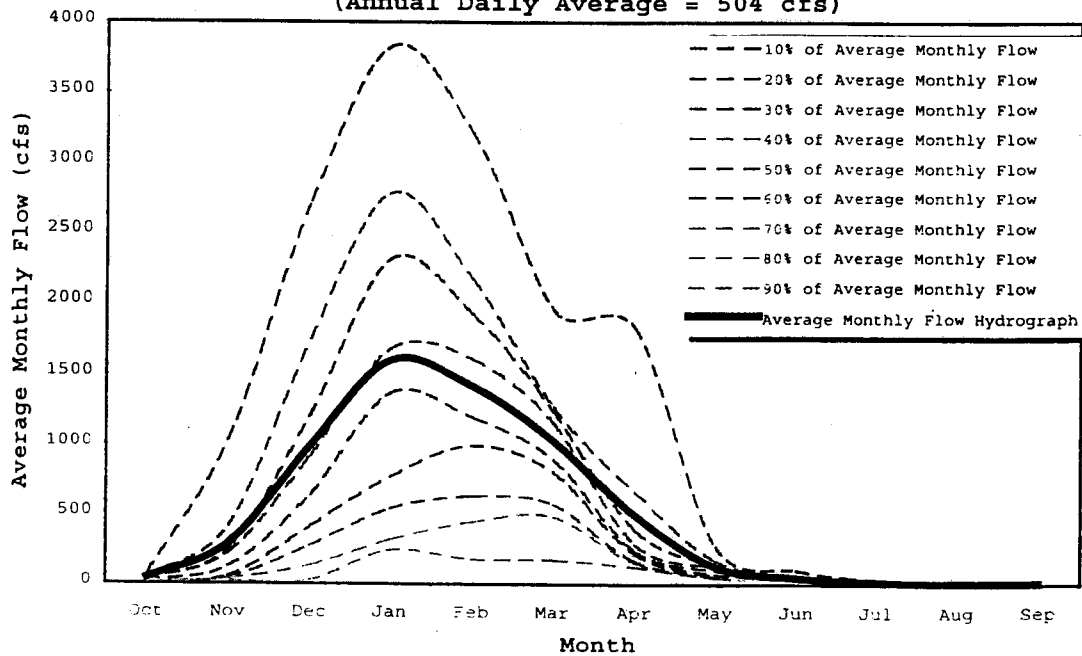


Figure 7: Observed Flow and Rainfall in Navarro River

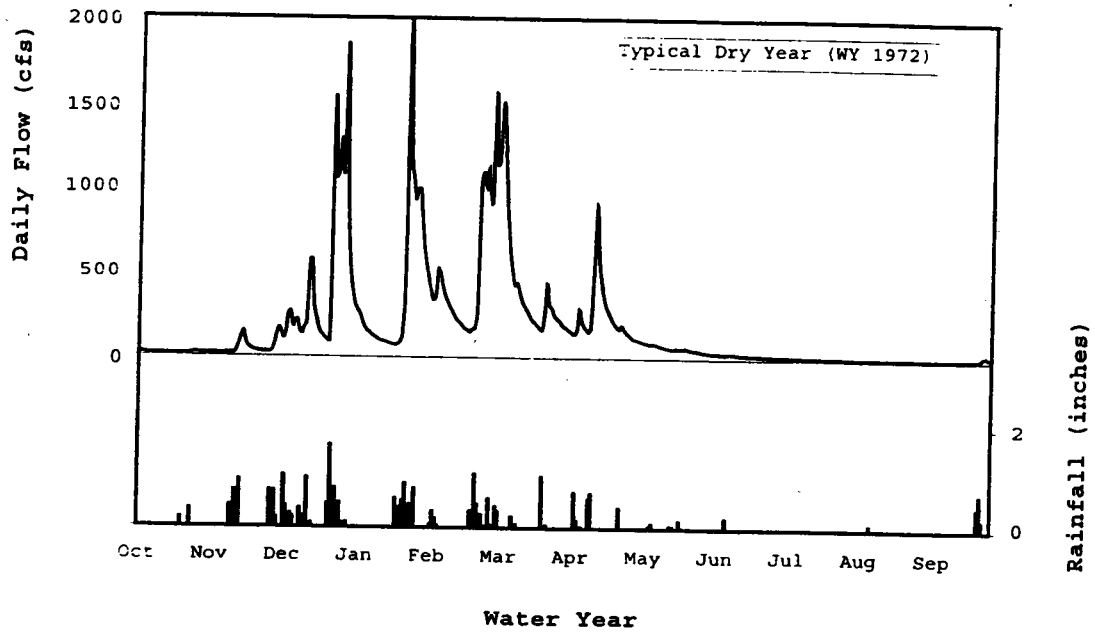
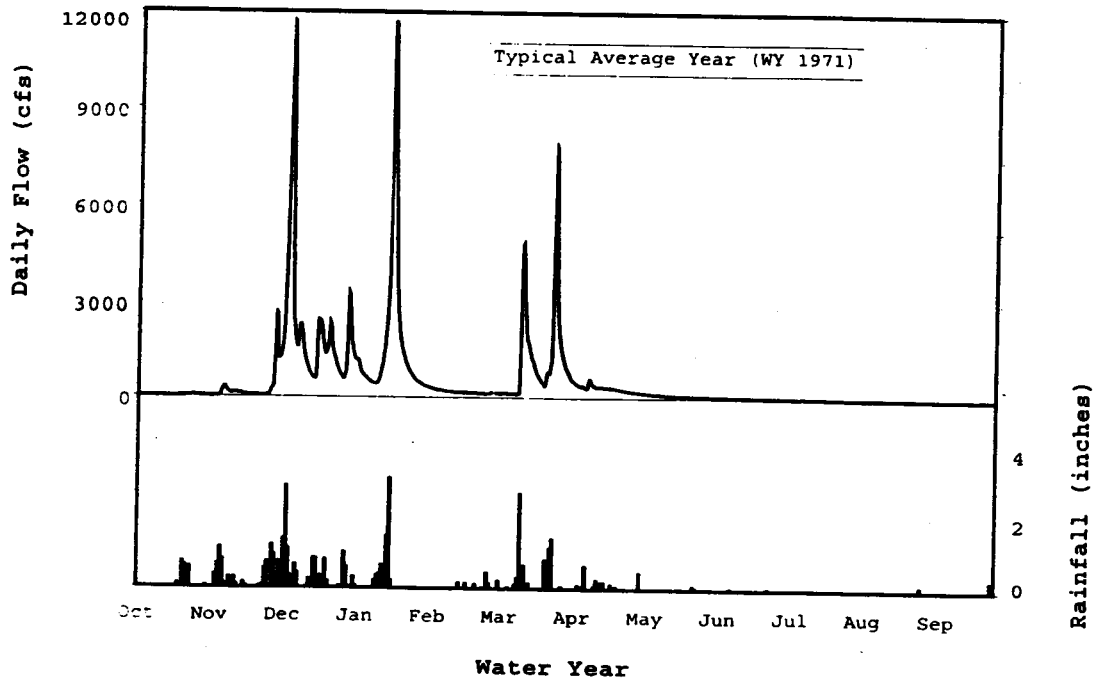


Figure 8: Observed Flow and Rainfall in Navarro River



7.7 Estimated Tributary Runoff at Each Project Site All of the pending applications propose diversion from unnamed tributaries to the Navarro River. No gages exist on any of these tributaries; consequently, no recorded data exist showing the runoff that would occur in these tributaries. The runoff in these streams depends entirely on the amount of precipitation within the tributary areas. As described below, the Division has estimated the runoff in these tributaries using two different methods, a proration of areas and the rational runoff method. The estimated runoff using both methods is shown in Table 3 below.

7.7.1 Proration of Areas Assuming these streams have runoff patterns that are comparable to the runoff as measured at the Navarro River gage, the Division has estimated the amount of runoff from the tributaries at the four sites based on the flow at the Navarro gage and a proration of the areas and average annual rainfall using the following formulas:

$$Q_2 = Q_1 \times (A_2/A_1) \times (I_2/I_1)$$

Where Q_2 = Average annual flow (cfs) at the point of diversion
 Q_1 = Average annual flow (cfs) at the Navarro River gage
 A_2 = Area tributary to the point of diversion
 A_1 = Area tributary to the Navarro Gage
 I_2 = Average annual precipitation in the local area tributary to the point of diversion
 I_1 = Average annual precipitation in the area above the Navarro gage

The resulting average annual flow (in cfs) can be converted to a yearly runoff flow expressed in acre-feet by the following:

$$Q_{\text{yearly}} = Q_{\text{AAF}} \times (365 \text{ days}) \times (1.98 \text{ acre-feet per day/cfs})$$

7.7.2 Rational Runoff Method The Natural Resources Conservation Service (formerly known as the U.S. Soil Conservation Service) developed a method to estimate average annual runoff, which is commonly referred to as the rational runoff method. The method is frequently used to estimate runoff. The Division used the rational runoff method, with modifications developed by the California Department of Transportation (CalTrans).³¹ Runoff is determined based on the following formula:

$$Q = C I A$$

Where Q = Average annual runoff (afa)
 C = Runoff coefficient
 I = Average annual precipitation (in/yr)
 A = Tributary area (acres)

7.7.3 Summary Table 3 provides a summary of the tributary area of the unnamed streams and annual unimpaired runoff that would be expected at the four tributary sites in an average

³¹ California Department of Transportation, Highway Design Manual (July 1, 1995).

water year as calculated by the two methods described above. It should be noted that an annual runoff of 60 afa represents an average daily flow of about 0.2 cfs during the peak runoff season and an average depth of flow in the tributaries of about 1/4 inch.

Table 3
Tributary Area and Estimated Runoff at Project Sites

Applicant	Area (acres)	Runoff (afa)	
		Proration	Rational
Bennett	35	63	58
Oswald	31	56	50
Hahn	80	144	113
Savoy	36	65	60

7.8 Peak Flows in Tributaries The Division calculated the peak flows that would occur in each tributary at the point of diversion using two methods that are used by CalTrans.³² These methods are used in the design of highway culverts, however, these methods can be used to estimate the peak discharge for relatively small drainage basins. The calculated values are shown in Table 4.

7.8.1 Rational Runoff Method This method is similar to the method described in section 7.7.1 above and uses the formula:

$$Q = C I A$$

For this equation, the Division used a time of concentration of 60 minutes as described in the CalTrans procedure and an estimated rainfall rate of 1.0 inch/hour.

7.8.2 Regional Flood - Frequency Equation This calculation is based on the equation:

$$Q = C A^{0.86} P^{0.93} H^{0.27}$$

where

- Q_{10} = Peak flow for the designated flood-flow frequency
- C = Constant for flood frequency
- A = Area in square miles
- P = Mean annual precipitation in inches
- H = Altitude index

The Division calculated the peak flows that would occur with a flood flow frequency of one in 10 years. Table 4 provides a summary of the estimated peak flows at the points of diversions for each tributary.

³² Ibid.

**Table 4
Tributary Peak Flows**

Applicant	Peak Runoff (cfs)	
	Rational	Equation
Bennett/Cahn	17	15
Oswald	15	14
Hahn	34	31
Savoy	18	16

7.9 Estimated Flow at Savoy's Diversion from Main Stem Savoy is the only applicant who proposes to divert from the main stem of the Navarro River. The Division estimated the average annual unimpaired flow that would occur in the main stem of the Navarro River at the location of Savoy's point of diversion. The estimated flow was calculated using two methods. An estimated flow of 332 cfs was determined based on a proration of the tributary areas and flow at the Navarro River gage, using the formula described in section 7.7.1. An estimated flow of 326 cfs was calculated using a hydrologic model (i.e., streamflow simulation model) developed by the Division.³³ Using an average annual flow of approximately 330 cfs (an average of the two methods), the annual runoff past Savoy's point of diversion on the main stem of the Navarro River is approximately 238,000 afa.

The watershed area tributary to Savoy's point of diversion represents 65 percent of the area tributary to the USGS gage; consequently, the flow patterns in the Navarro River at Savoy's point of diversion should be very similar to the flow patterns as measured at the USGS gage.

7.10 Relationship between Flow in the Tributaries and Flow in the Main Stem Essentially, flow in the main stem is the aggregate of the flow from the tributaries. As indicated in figures 7 and 8, there are frequent large spikes in the flow, as measured at the USGS gage. The flow in the tributaries would be more "spiky" than the flow in the main stem because of the relative small tributary areas, steep slope of the tributaries, and variations in precipitation patterns throughout the watershed. The peak flow in the tributaries would occur earlier than the peak flows measured at the USGS gage. During periods of low flow in the main stem, there is probably little or no flow in the tributaries.

8.0 FISHERY RESOURCES

8.1 General The most significant issue in this decision is the determination of the measures needed to protect coho and steelhead within the Navarro River watershed. Several protestants and environmental organizations contend that approval of any diversions

³³ SWRCB, Staff Report, Russian River Watershed, Proposed Actions to be taken by the Division of Water Rights on Pending Water Right Applications within the Russian River Watershed (August 15, 1997) Attachment A.

of water within the watershed could have a significant adverse impact on these fishery resources. Numerous factors can affect the condition of coho and steelhead. The Division has evaluated these factors and, as described in this section, has developed terms to protect coho and steelhead, both in the main stem and tributaries.

Between 1993 and 1995, Division staff held a series of meetings with DFG staff, representatives of environmental groups, applicants and protestants to develop measures that were acceptable to all parties and would protect fishery resources within the Navarro River watershed. Based on those discussions, Division staff originally recommended a minimum bypass of 200 cfs as measured at the USGS gage, an allowable season of diversion of November 15 to April 15, and a maximum rate of diversion of 2 cfs. At that time, the Division prepared initial studies and proposed mitigated negative declarations with these terms and circulated those documents to interested parties and the State Clearinghouse.

Subsequent to the October 15, 1997, field investigation, the Division has reevaluated the measures needed to protect the fishery resources. That reevaluation included review of information submitted by the applicants and protestants as part of the field investigation, consideration of the results of an analysis conducted by Division staff relating to pending applications within the Russian River watershed, a review of comments submitted by NMFS relating to that analysis, evaluation of the Navarro Watershed Restoration Plan, evaluation of reports submitted by McBain and Trush and Li and Emery, a review of hydrologic data for the main stem and tributaries, discussions with representatives of fishery agencies, a review of comments submitted by interested parties in response to the initial studies and proposed mitigated negative declarations, a review of the literature, and the professional opinion of Division staff.

Based on that reevaluation, the Division now proposes more restrictive terms to protect coho and steelhead, including shortening the allowable season of diversion to December 15 to March 31 (compared to November 15 to April 15), raising the minimum bypass flow to 60 percent of the average annual unimpaired flow (compared to a bypass flow equal to 40 percent of the average annual flow), requiring measurement of bypass flow at the point of diversion (rather than at the USGS gage) to ensure adequate flow in the tributaries, and terms that would limit diversion under claim of riparian right.

The proposed terms should not be considered as a definitive determination of the instream flow regime needed to protect coho and steelhead throughout the entire watershed. Rather, the proposed terms should be considered as conservative measures that will protect coho and steelhead and, at the same time, allow the SWRCB to act on the applications for the storage of water during the peak winter runoff season. The approval of these five applications, with inclusion of the proposed terms and conditions, will have no adverse impact to coho or steelhead in the main stem or tributaries.

8.2 Condition of Fishery Resources The populations of coho and steelhead have declined dramatically during the past 50 years. In the 1940's, the statewide population of coho was estimated to be

between 200,000 and 1,000,000. By the 1980's the estimated population had declined to 33,500. The historic population of steelhead was over 400,000; the present population is about 40,000 fish.

The condition of the anadromous fishery is dependant upon the proper combination of several factors including flow, temperature, dissolved oxygen, water quality, substrate conditions, cover and riparian habitat. The Navarro Watershed Restoration Plan identifies several factors that limit fish populations, including low summer flow, elevated water temperatures, sedimentation, lack of large woody debris and lack of riparian canopy. Several factors are identified as adversely impacting the fishery resources in the Navarro River watershed, including diversions from the main stem of the river and tributaries, barriers to fish passage, timber management practices and land use practices.³⁴

As part of the development of the Navarro Watershed Restoration Plan, Entrix, an Engineering/Environmental consulting firm, conducted a comprehensive evaluation of fishery resources within the watershed. Entrix conducted an assessment of aquatic habitat conditions in streams supporting coho salmon and steelhead and focused on those parameters that limit physical habitat. Entrix reviewed the results of several fishery studies conducted by other agencies and conducted field surveys in 1996 of 11 streams representing 16 miles of channel.

Entrix found coho in 3 of the 11 streams surveyed, primarily in the western portion of the watershed. DFG conducted surveys of 34 streams in 1994, 1995 and 1996 and found coho in 9 of the 34 streams. Entrix found steelhead in all 11 streams surveyed and DFG found steelhead in 32 of the 34 streams surveyed.

Chapter 4.0 of the Navarro Watershed Restoration Plan provides a summary of studies that have been conducted to determine the presence or absence of coho and steelhead within the watershed. As indicated in figures 4-1, 4-2 and 5-2 of the Restoration Plan, no coho or steelhead have been observed in the tributaries that are the focus of this decision; however, no specific studies were conducted on these tributaries.

Entrix also conducted field surveys of aquatic habitat to determine the distribution and abundance of fish. The Restoration Plan states "stream gradient appeared to be the best indicator of salmonid presence in streams surveyed. Coho were not present in streams with a gradient steeper than 2.0 percent, while steelhead were not present in streams with a gradient steeper than 8.0 percent."

The Restoration Plan states that the flow can dramatically affect the coho population. As indicated in the hydrographs in Attachment A, there is substantial natural variation in the hydrology, or the timing, magnitude and duration of flow in the fall and winter. Obviously, larger populations occur with higher flows. Since coho have a rigid three year life cycle, low flows in one year may affect the number of returning spawners three years later. Low flows, or a

³⁴ Navarro Watershed Restoration Plan (June 1998).

dry fall, may limit the distribution of coho to the western portion of the watershed. High flood flows in the winter can scour redds or bury eggs under sediment.

Entrix also identified priority streams for the restoration and conservation of fishery resources. The area that includes the tributaries that are the subject of this decision are classified as "low priority" restoration areas.

8.3 Description of Tributaries The instream flow required in the tributaries depends, in large measure, on whether the tributary provides habitat for fishery resources. Although no comprehensive studies have been conducted, the Division has reviewed available information to determine whether the unnamed streams that are the subject of this decision provide habitat for fishery resources. Figures 2 and 3 are USGS topographic maps that show these tributaries and the locations of the proposed diversions. The following provides a description of the tributaries for each pending application.

8.3.1 Bennett/Cahn Bennett/Cahn have constructed an on-stream reservoir, at the base of the hills, downstream of the confluence of two unnamed tributaries. These tributaries are shown as ephemeral streams on the USGS topographic map. (See figure 3.) Above the existing pond, the streams are less than one mile long and have gradients in excess of 20 percent. Below the pond, there is a well defined ephemeral stream that is about 2 miles long and has a gradient of about 2 percent. During the October 15, 1997, field investigation, there was no flow in the stream below the pond. This section of stream has large oaks and a well defined riparian habitat. The proposed bypass term will provide flow to maintain the downstream riparian corridor. The stream reach below the reservoir may provide habitat that is suitable for coho and steelhead spawning, however, a culvert located under Highway 128 may block passage to the portion of the stream located upstream of the highway.

8.3.2 Oswald Oswald's application proposes to divert water from an unnamed stream that flows onto his property. This tributary is not even shown as an ephemeral stream on the USGS topographic map. (See figure 3.) Upstream of the proposed point of diversion, the unnamed tributary has a gradient in excess of 20 percent. The USGS topographic map shows an ephemeral stream immediately downstream of Oswald's property.

There is no defined stream channel on Oswald's property through his vineyard. During the field investigation, the protestants questioned whether the land was graded in a manner that obliterated the original stream channel through the vineyard. Oswald stated that the land was always a swale and that there was never a defined stream channel through his property.

The Division examined the USGS topographic maps for this area and photographs submitted with the application (1990) and taken by Division staff (1991). The topographic map has a

40 foot contour interval; consequently, the map does not clearly indicate whether there was stream channel, or defined watercourse, through Oswald's property at the terminus of the unnamed tributary, at the time the topographic map was prepared. Similarly, the photographs taken of the site do not clearly indicate whether there was a defined watercourse. The protestants did not submit any information that would demonstrate that there may have been a stream channel. Absent other information, the Division agrees with the applicant's assertion that there probably was never a well-defined stream or watercourse through the existing vineyard. Furthermore, based on the review of available information, it is doubtful that any water course that may have existed on Oswald's property would have provided habitat to support anadromous fishery resources. Directly below the Oswald's reservoir; the unnamed stream channel may provide limited habitat for anadromous fish. It is a short distance from the reservoir to the confluence of Lazy Creek, where the presence of both steelhead and coho salmon was verified by the Entrix investigation.

8.3.3 Hahn Hahn diverts water from an unnamed tributary for offstream storage. This unnamed tributary is shown as an ephemeral stream on the USGS topographic map. (See figure 2.) The topographic map indicates that there is about 1/2 mile of ephemeral stream upstream of Hahn's reservoir. This stream reach has a gradient of about 4.0 percent. During the October 15, 1997, field investigation, the stream was dry near Hahn's point of diversion. This unnamed tributary flows into Floodgate Creek about 1 1/2 mile downstream. Fishery surveys were conducted on Floodgate Creek by DFG during 1994-1996. DFG observed steelhead but did not observe coho in Floodgate Creek. It is unlikely that the ephemeral stream adjacent to and upstream of Hahn's point of diversion provides spawning or rearing habitat for coho or rearing habitat for steelhead.

8.3.4 Savoy Savoy diverts water from the main stem and diverts from two unnamed tributaries. These two tributaries are not even shown as ephemeral streams on the USGS topographic map. (See figure 3.) These two tributaries flow into an unnamed ephemeral stream that then flows into the Navarro River. Upstream of the points of diversion, the watercourses have gradients in excess of 20 percent. During the field investigation, both tributaries were dry.

During the field investigation, the project was under construction. The site was being graded so that water from the two unnamed tributaries will be directed into pipes that will divert the water around the reservoir. According to the applicant, the project could be modified to allow the water to be diverted into the reservoir. The construction has obliterated any watercourse that may have existed. It is doubtful that any watercourse that may have existed across Savoy's property would have provided habitat for coho or steelhead.

8.3.5 Summary Based on a review of available information, it is unlikely that these tributaries provide habitat for coho or steelhead. As indicated on the USGS maps, a clearly defined watercourse does not exist on Savoy's or Oswald's properties below the points of diversion. Furthermore, it is doubtful that any watercourse that may have existed would have provided habitat for coho or steelhead. Upstream of the points of diversions, the stream reaches are all relatively short with steep slopes that are usually unsuitable for coho and steelhead. Consequently, none of these projects block passage to streams that would provide habitat for coho and steelhead. A culvert located under highway 128 may block passage to the stream reach between the highway and Bennett/Cahn's reservoir.

As described in section 7.0, these small tributaries would have very "flashy" flow and would only have flow for short periods following rainstorms in the winter and would be dry in the summer. As described in section 7.7.1, these tributaries would have an estimated average annual runoff of from about 50 to 150 afa. The estimated average annual runoff of 60 afa at Bennett/Cahn's point of diversion represents an average daily flow of 0.2 cfs during the winter with depth of flow of about 1/4 inch. Similarly, at Hahn's point of diversion, an estimated average annual runoff of 150 afa represents an average daily flow of 0.5 cfs and a depth of flow of about 1/2 inch.

These tributaries contribute runoff to downstream tributaries including Floodgate Creek and Lazy Creek that may provide habitat for coho and steelhead. The proposed terms and conditions will insure that these projects bypass sufficient flow to protect coho and steelhead habitat in downstream tributaries and in the main stem of the Navarro River.

8.4 Life Stages Coho and steelhead are anadromous fish. Both species are born and live in fresh water, migrate to the ocean and then return to their stream of birth to spawn and repeat the life cycle. Although the species are similar, the life stages of the two species occur during different time periods. Generally, coho migrate upstream and spawn earlier than steelhead. Figure 9 shows the life stages for coho and steelhead.

Coho have a fairly rigid life cycle. Coho usually spend 18 months in freshwater before migrating to the ocean and normally return to spawn three years after birth. Coho die after spawning. Steelhead usually spend one to three years in fresh water before migrating to the ocean. Steelhead then spend one or two years in the ocean before returning to spawn for the first time. Steelhead do not necessarily die after spawning and may return to the ocean and may spawn again.

Stream flow can significantly affect the various life stages of anadromous fish. Upstream migration of coho and steelhead usually occurs after the first large storm in the fall. A dry fall/winter season can delay upstream migration and spawning.

Figure 9
Life Stages for Coho Salmon and Steelhead

Coho Salmon

STAGE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Immigration		■	■	■								
Spawning			■	■								
Incubation			■	■	■	■						
Emigration					■	■	■	■	■			
Rearing	■	■	■	■	■	■	■	■	■	■	■	■

Steelhead

STAGE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Immigration		■	■	■	■	■	■					
Spawning				■	■	■	■	■				
Incubation				■	■	■	■	■				
Emigration								■	■			
Rearing	■	■	■	■	■	■	■	■	■	■	■	■

Information regarding coho spawning preferences and out-migration of smolts is rather limited for the Navarro River watershed. However, a report prepared by the U.S. Department of Commerce indicates that, on the Navarro River, coho smolt out-migration occurs between the months of February and June, with the peak out-migration in late April.³⁶ The report states that the coho smolts usually begin their out-migration immediately upon emergence from the gravel. The report also suggests that the out-migration season in the Navarro River is influenced by high stream flows that occur later in the season and are of shorter duration, when compared to other northern streams. Consequently, the smolts need to migrate out as soon as possible, because favorable conditions exist for a shorter period of time.

In a letter dated October 26, 1998, that relates to the Russian River report dated August 15, 1997, the NMFS provided a description of the life stages of coho.³⁷ NMFS states that adult coho salmon migration typically begins after the first fall rains. Upstream migration continues from October to March, generally peaking in December and January. Spawning usually peaks from November to January, but may continue through February. Young fish, called fry, then emerge from the redds in 38 to 101 days depending on the water

³⁶ U.S. Department of Commerce National Oceanic and Atmospheric Admin., NOAA-NWFSC, Tech Memo-24: Status Review of Coho Salmon, Appen. Tab. C-1. (May 1998).

³⁷ Letter dated October 26, 1998, from William Hogarth, Regional Administrator for NMFS to Ed Anton, Chief of the Division of Water Rights.

temperature. Coho outmigration begins in late March and early April and usually peaks in mid-May.

8.5 Flow Requirements The following provides a discussion of the flow requirements for different seasons and life stages of coho and steelhead.

8.5.1 Fall Coho and steelhead arrive at the mouth of the Navarro River in the late summer and fall and then migrate upstream when storms increase the flow in the river.

Fall storms provide "pulse" flows that help breach the sand bar at the mouth of the river and serve as an "environmental cue" causing the fish to migrate upstream. These pulse flows also increase the flow in the major tributaries, which allows for the physical passage of fish and provides adequate areas for spawning. Consequently, the pulse flows are particularly important to the upstream migration and spawning of coho and steelhead.

The Division has reviewed precipitation data and flow data from the Navarro River USGS stream gage. (See Attachment A.) These data indicate that in many years there is relatively little precipitation and few pulse flows before mid-December. However, in four out of five years, substantial precipitation and pulse flows occur by mid-December. Accordingly, the Division has determined that no new diversion should be allowed before December 15 in order to avoid reduction in the early season pulse flows in the Navarro River. It should be noted that in dry years, when there is little or no flow at the USGS gage, there would also be little or no flow in the tributaries.

These proposed conditions are consistent with comments by experts retained by the protestants. Specifically, the Li and Emery report states that "[a] flow for opening the natural barrier when spawning conditions exist up stream should be accounted for in the instream flow recommendations . . .," and that "[i]t may be more appropriate to restrict all diversions to the period December to March."³⁸ Similarly, a report prepared by McBain and Trush states that "limiting diversion after the first winter storms . . . is extremely important for early upstream adult migration."³⁹

High pulse flows are also important for providing proper substrate, or streambed conditions, for coho and steelhead. As described in section 8.6 below, however, the proposed diversion will not have a significant affect on the peak flows in the tributaries or main stem of the river. The permits would not allow diversion before December 15, consequently, these projects would have no impact on peak flows that occur before that date.

³⁸ See footnote 27 above at pp. 6-7.

³⁹ See footnote 31 above at p. 19.

8.5.2 Winter Coho migrate upstream from November through January and spawn from December through the end of January, with incubation of embryos extending through February. Steelhead begin upstream migration as early as November, with spawning occurring from January through April, and incubation extending through May. Many adult steelhead return to the ocean during this early spring period.

Adequate flow is required for successful spawning. In addition, it is important that adequate flow be maintained through the incubation period to prevent dewatering of redds and to prevent an increase in temperature and a reduction in dissolved oxygen levels. Usually steelhead require higher flows than coho in order to achieve optimum spawning conditions. Consequently, the instream flow that is required for steelhead spawning is the limiting factor during this time period.

During the allowable season of diversion, the Division will require a minimum bypass flow that is equal to 60 percent of the average annual unimpaired flow as measured at the point of diversion. The methodology used to develop this bypass flow is described in detail in Appendix B of the Division Staff Report relating to the Russian River.⁴⁰ This methodology is based on the analysis of IFIM studies conducted on four Northern California streams that have coho and steelhead. The analysis included Big Sulphur Creek and Dry Creek within the Russian River watershed, Lagunitas Creek in Marin County and Brush Creek in Mendocino County. These are the only four IFIM studies that have been completed for Northern California streams that have coho and steelhead.

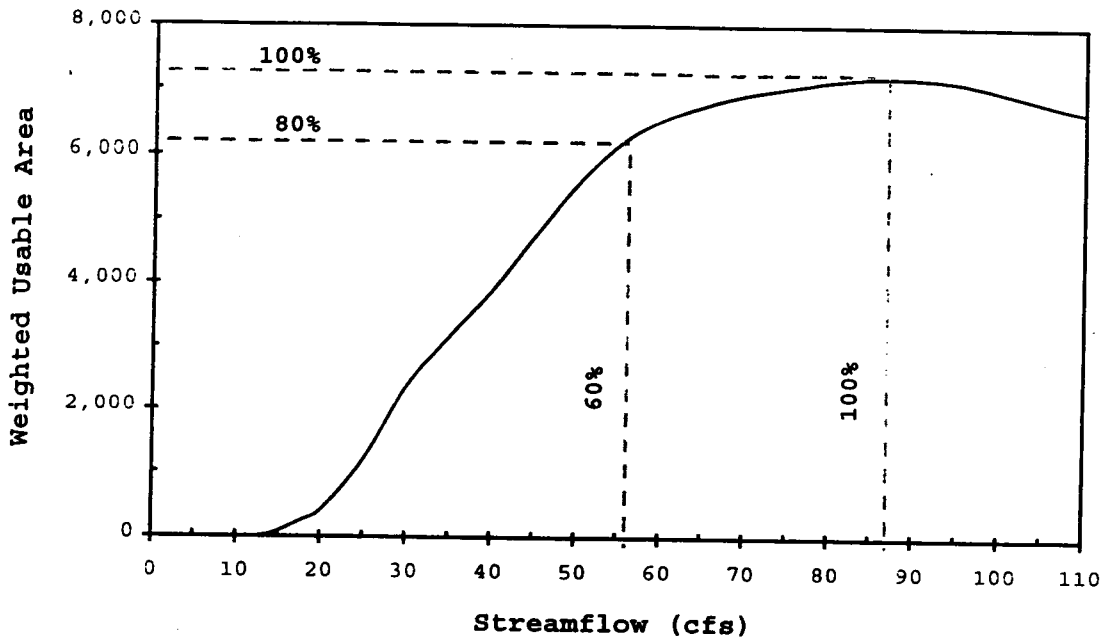
As illustrated in Figure 10 below, the IFIM procedure determines the quality of the spawning habitat (expressed in terms of weighted usable area) in relation to the streamflow. The Division compared the flow that provided optimum steelhead spawning habitat to the average annual unimpaired flow. For the four IFIM studies, the optimum flow averaged 100 percent and ranged from 72 to 114 percent. Based on this analysis, the Division concluded that the optimum weighted usable area for steelhead spawning would be provided at a flow equal to 100 percent the average annual unimpaired flow.

Based on a previous SWRCB decision relating to Mono Lake,⁴¹ the Division has also concluded that a bypass flow that provided 80 percent of the weighted usable area will protect coho and steelhead in the main stem of the Navarro River and its tributaries. As illustrated in Figure 10 below (a typical curve in California streams), 80 percent of the weighted usable area is provided by 60 percent of the average annual unimpaired flow.

⁴⁰ See footnote 34 ante.

⁴¹ SWRCB Decision 1631 (1994) at pp. 27-29, 32-33, 64-65 (holding that 80 percent of the weighted usable area for adult habitat would keep brown trout in good condition).

Figure 10
Relationship between Weighted Usable Area
and Streamflow



As described in section 8.6 below, maintaining peak flows is an important factor in providing proper streambed or substrate conditions for coho and steelhead. The permits would include terms that would limit the maximum allowable rate of diversion in order to preserve these peak flows.

8.5.3 Spring During the spring (March through April) coho incubation and out-migration occur. Steelhead spawning, incubation and out-migration also occur during this time period.

Although streamflow diminishes naturally during the spring, it is important that adequate flow be maintained, particularly for incubation and out-migration. A reduction in flow could dewater redds, cause a harmful increase in temperature and a reduction in dissolved oxygen levels, and impede the physical passage of out-migrating fish. Consequently, the Division has determined that the minimum bypass flow should extend to the end of March and that no new diversions should be allowed after March 31.

Several applicants have requested diversion of water for frost protection during the spring (i.e., April and May). As indicated in the hydrographs in Attachment A, substantial flow may be available during April and May in some years. The Division has evaluated the possibility of establishing

bypass terms based on the type of water year (i.e. wet, average, or dry year) that could allow diversion during April and May, in some water years, in order to provide additional water for frost protection. The Division has rejected this concept for two reasons. First, in average and wet years, sufficient water should be available to fill the applicants' relatively small reservoirs during the allowable diversion season. Second, in dry years, it is essential that adequate instream flow be bypassed in order to protect anadromous fish.

Since the permits would not allow diversion after March 31, approval of these pending applications would have an insignificant impact on peak flows that occur after that date.

8.5.4 Summer Adequate flow in the tributaries for rearing of coho and steelhead may be the limiting factor during the summer months. Review of available flow and temperature data indicates that the river has relatively low flow and elevated temperatures, particularly in the late summer. The combination of low flows, elevated temperatures and reduced dissolved oxygen levels, can produce conditions that are lethal to coho and steelhead.

Based on a review of available data, the Division has determined that no new diversions should be allowed during the low flow period (April 1 to December 14).

8.6 Geomorphology The following provides a discussion of geomorphology and an analysis of the potential impact that the proposed projects could have on geomorphologic conditions.

8.6.1 General The geomorphology, or condition of the streambed, is a particularly important factor for fishery resources. The geomorphology of a stream involves a complex mix of several factors including: the geology of the watershed, the topography (i.e., slope and cross-sectional area) of the stream, the total quantity of streamflow, the size and/or frequency of "pulse" or peak winter flows, and adjacent land use practices. The peak winter flows are particularly important in order to maintain a sediment balance to flush sediments out of the stream channel and to introduce cobbles and gravel into the streambed.

During and subsequent to the field investigation, several reports were submitted to the Division relating to the geomorphology of the Navarro River. The Navarro Watershed Restoration Plan includes a summary of studies and an analysis of geomorphology and sediment within the watershed. The purpose of that evaluation was to "identify sediment sources and sediment-related impacts to channels and fish habitat in the Navarro watershed."⁴² The protestants submitted a report prepared by McBain and Trush that provided information relating to geomorphology.

⁴² See footnote 35 ante.

8.6.2 Navarro Watershed Restoration Plan The Restoration Plan states "[t]he decline in the salmon and steelhead fishery has been attributed in part to sedimentation. Fine sediments -- silt and sand -- can choke spawning beds, and coarser sediments -- gravel, cobbles and boulders -- are known to fill deep pools and change the shape of stream channels."⁴³ Excess sedimentation can also result in a change in channel aggradation and widening which can, in turn, result in a loss of riparian canopy cover and an increase in water temperature. Modification of the flow regime can change the sediment transport balance. Both peak flow height and flood flow duration and frequency can affect sediment equilibrium.

The Restoration Plan states that the total sediment production within the Navarro River watershed is approximately 500,000 tons per year. The plan states that sediment production today is less than it has been in the recent past (1950's to 1970's). The plan states that "much of the sediment accumulation appears to be related to the timber boom of the late 1930's through early 1950's, and to large floods of 1955, 1964 and 1974."⁴⁴ The major causes of sediment production are a result of road construction, timber harvest, agriculture, grazing, grading, streamside erosion and slides. There are significant differences in sediment production within different subbasins.

The Restoration Plan recommends several watershed restoration programs to reduce sedimentation primarily related to land use practices (e.g., erosion control, bank stabilization, modification of logging practices and road construction). The Restoration Plan does not suggest a flow regime and/or a minimum instream flow requirement as a means to control the effects of sedimentation.

8.6.3 McBain/Trush Report The McBain and Trush report commented on several factors, including geomorphologic conditions.⁴⁵ McBain and Trush recommend a method that would allow diversions but would preserve peak flows or channel maintenance flows. McBain and Trush are critical of the method -- or protocol -- used by the Division to develop bypass terms for the Russian River watershed; however, McBain and Trush also state that "[d]etermination of channel maintenance flows does not have an established protocol."⁴⁶

⁴³ *Ibid.*

⁴⁴ *Ibid.*

⁴⁵ See footnote 31 above.

⁴⁶ *Id.* at p. 14.

Trush stated that channel maintenance flows can be based on exceedance curves for average daily flow.⁴⁷ Trush stated that an average daily flow with an exceedance of 8 to 10 percent would mobilize sand and fine material in the stream channel. An average daily flow with an exceedance of 3 percent would mobilize cobbles and coarse material in the stream channel. Trush stated that these channel maintenance flows are important to maintaining proper conditions in the stream bed. An average daily flow with an exceedance of 10 percent and 3 percent would occur at a flow of 1,200 cfs and 3,700 cfs, respectively, as measured at the USGS gage.

8.6.4 Division Analysis The Division has evaluated the potential impact to the peak flows that could result from the approval of the five water right applications that are the focus of this decision.

8.6.4.1 Main Stem Figure 11 is a hydrograph of the daily flow in the Navarro River, as measured at the Navarro gage. This hydrograph has been "compressed" to emphasize the peak flows. As indicated on this figure, peak flows of 40,000 cfs have occurred on three occasions during the 46 year period of record, and peak flows in excess of 15,000 cfs have occurred on 23 occasions, or approximately every other year. Peak flows of about 10,000 cfs have occurred on 45 occasions, or about once each year. Flows greater than 1,200 and 3,700 cfs occur frequently. It should be noted that these data are recorded, or impaired, flow data and take into account all existing diversions. Diversion by the five pending applications would total about 11 cfs or roughly 1/10 of 1 percent of the 10,000 cfs peak flow.

In a recent water rights decision, experts advised the SWRCB that protecting average year peak flows is sufficient to protect streambed conditions and public trust resources.⁴⁸

The Division also compared the unimpaired flow and the impaired flow to include the five pending applications that are the focus of this decision. Figures 12 and 13 are hydrographs that show these relationships. As indicated on these figures, there will be no appreciable impact on the peak flows in the main stem due to existing and projected diversions during the peak winter runoff period.

8.6.4.2 Tributaries The Division evaluated the potential impact of the proposed diversions on the estimated daily flow, based on a proration of areas and rainfall as described in section 7.7.1.

⁴⁷Personal communication between Bill Trush and Division staff (Dec. 9, 1998).

⁴⁸ See footnote 41 ante.

Figure 11: Peak Daily Flow Recorded at USGS Gage near Navarro -
Water Years 1951 to 1996

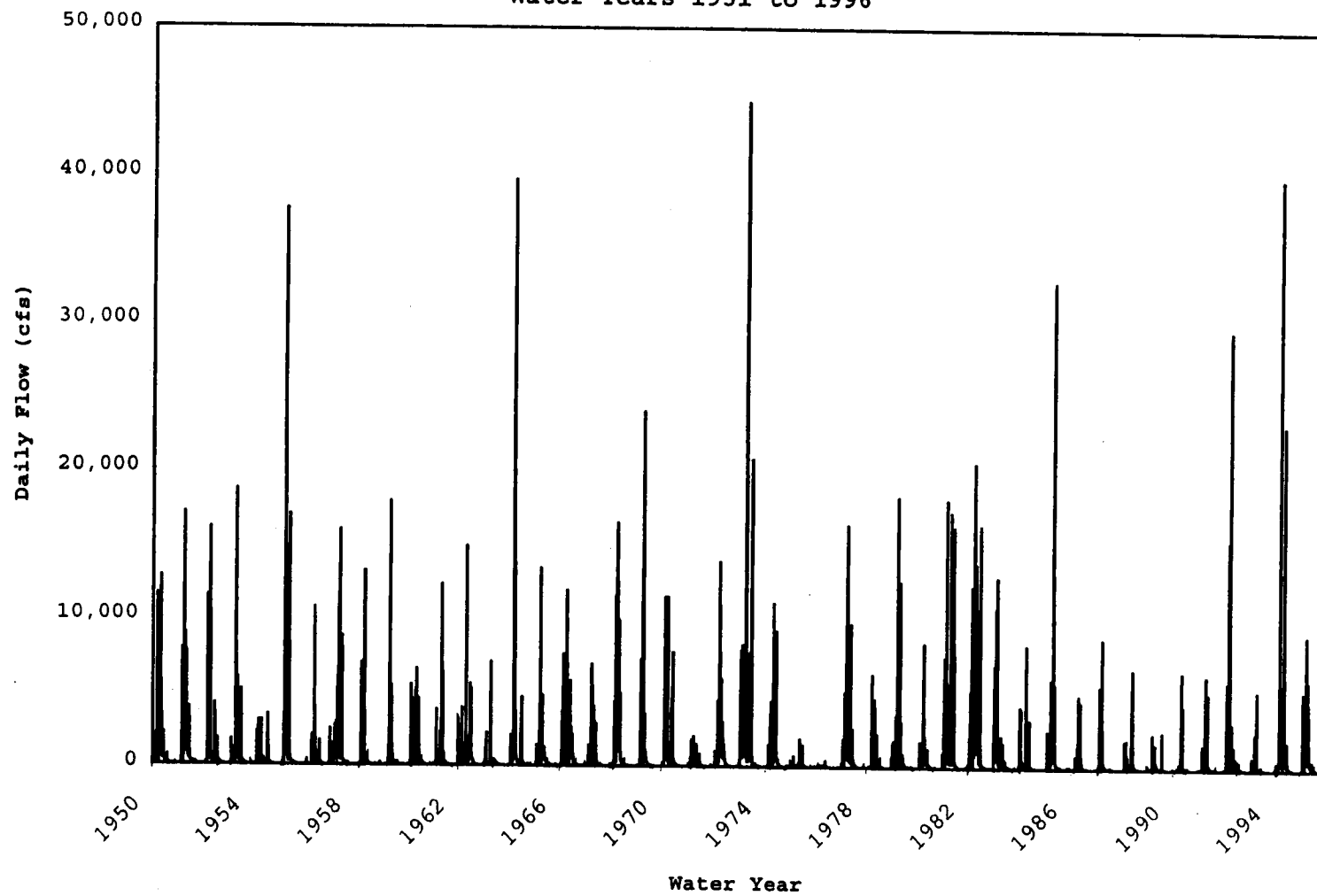


Figure 12: Navarro River Flow Comparison for Typical Average Year during Months of November to May

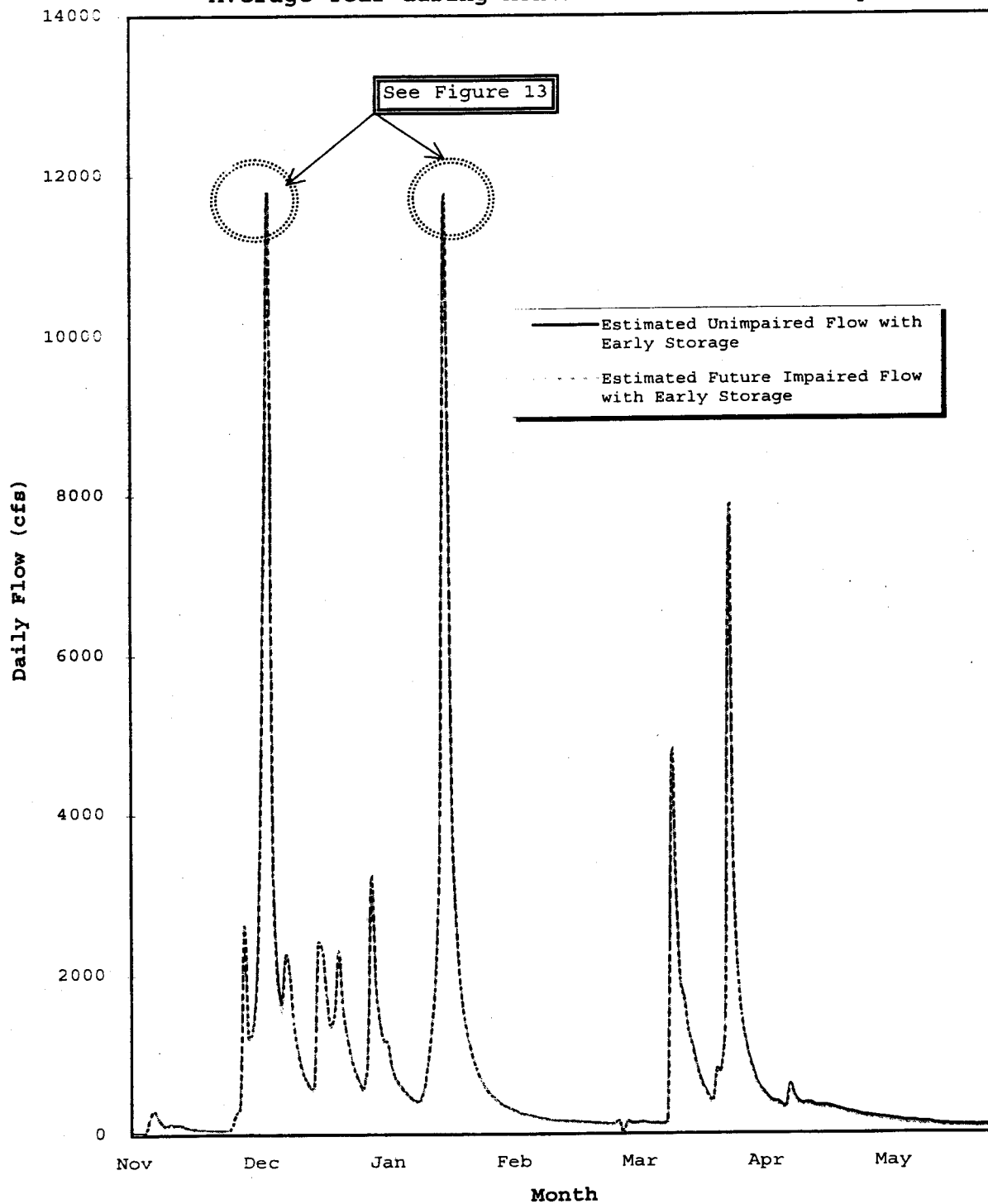
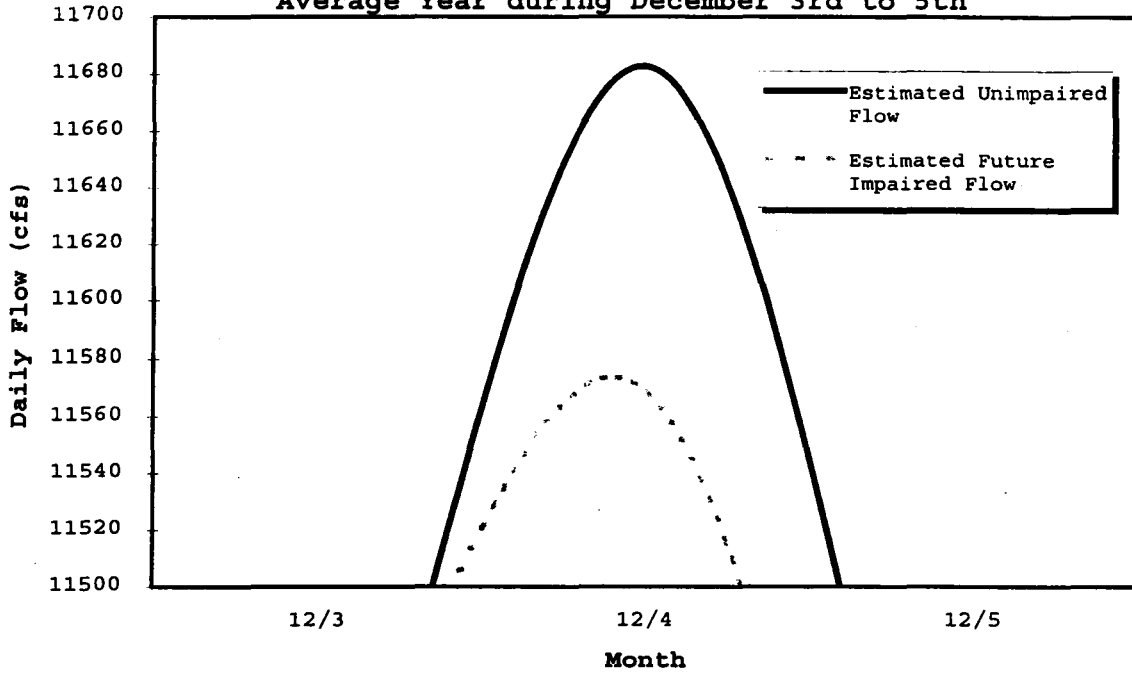
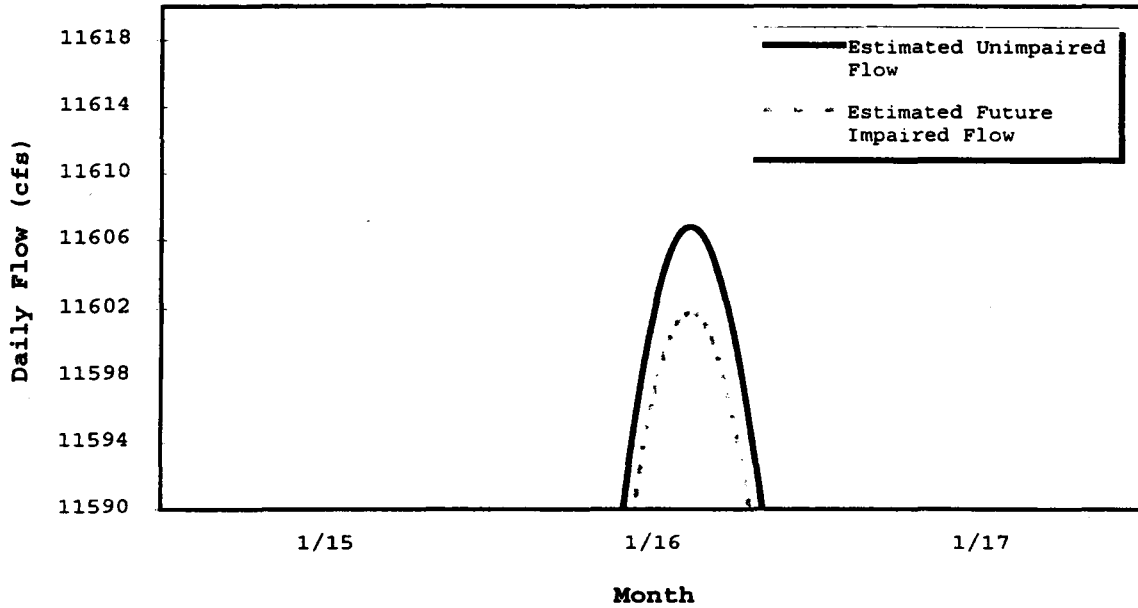


Figure 13: Navarro River Flow Comparison for Typical Average Year during December 3rd to 5th



Navarro River Flow Comparison for Typical Average Year during January 15th to 17th



Figures 14 and 15 are hydrographs for an average water year (1971) that illustrate the impact on the daily flow at Bennett/Cahn's and Hahn's points of diversion. These two projects represent the range of lowest and highest runoff for the tributaries.

The Division also evaluated the potential impact that the proposed diversions could have on peak flows at each point of diversion. For this analysis, the Division used the CalTrans method described in section 7.8.2 above to estimate the peak flows that would occur at the point of diversion and at downstream locations at an average frequency of once every 10 years. Table 5 below is a representative analysis that shows the estimated peak flow at Hahn's point of diversion and at other downstream locations and the impact that Hahn's diversion of 2 cfs would have on the peak flows. The diversions on the other tributaries would have similar impacts to peak flows.

Table 5
Impact of Hahn's Diversion on Peak Flows

Location	Estimated Peak Flow (cfs)	Impact of Hahn's Diversion on Peak Flow (%)
Point of Diversion	31	6.5%
Confluence with Floodgate Creek	267	0.8%
Confluence with Navarro River	509	0.4%
Navarro River	31,000	0.007%

8.6.5 Summary and Conclusions Preserving peak flows is important for maintaining proper streambed conditions for salmonids. In order to preserve peak flows, the Division will place limits on the allowable season of diversion and maximum allowable rate of diversion. Diversion from the tributaries will be limited to 2 cfs. Diversion by Savoy from the main stem will be limited to 3 cfs, the amount requested in his application.

As indicated in the analysis below, these projects will have no significant impact on the peak flows in the main stem or ephemeral streams. It should be emphasized that the applicants may not divert water prior to December 15 or after March 31; consequently, these projects will have no impact on peak flows that occur before December 15 or after March 31. As indicated in Attachment A, peak flows frequently occur during those periods. It should also be noted that, in many years, these relatively small reservoirs will fill early in the season and the projects will have little or no impact on peak flows that occur later in the season. Figures 14 and 15 illustrate this concept. Finally as illustrated on Table 5, the impact of the 2 cfs diversion on peak flows would diminish at downstream locations.

Figure 14: Estimated Bennett Tributary Flow Comparison for Typical Average Year

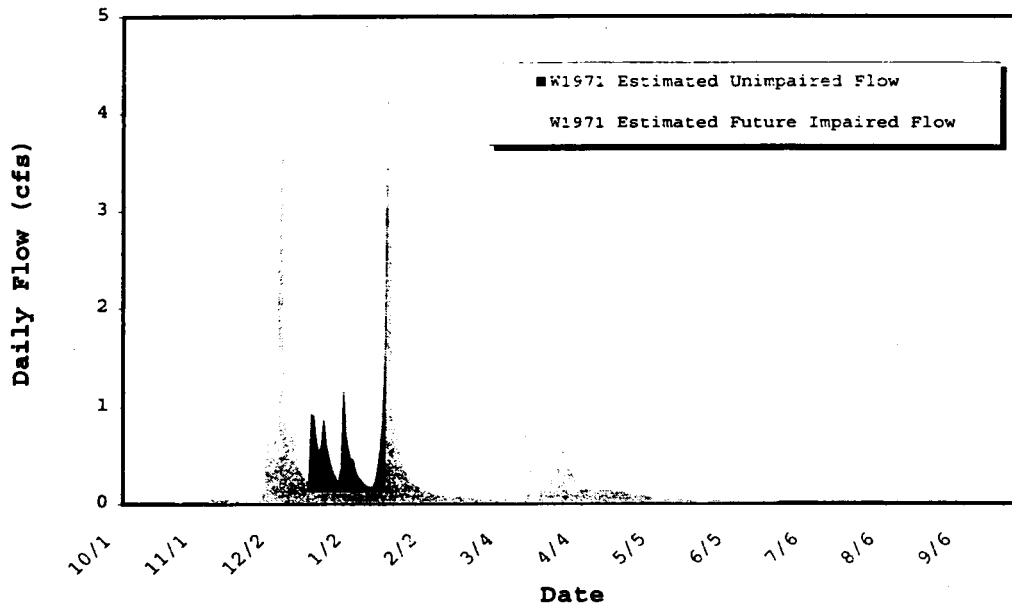
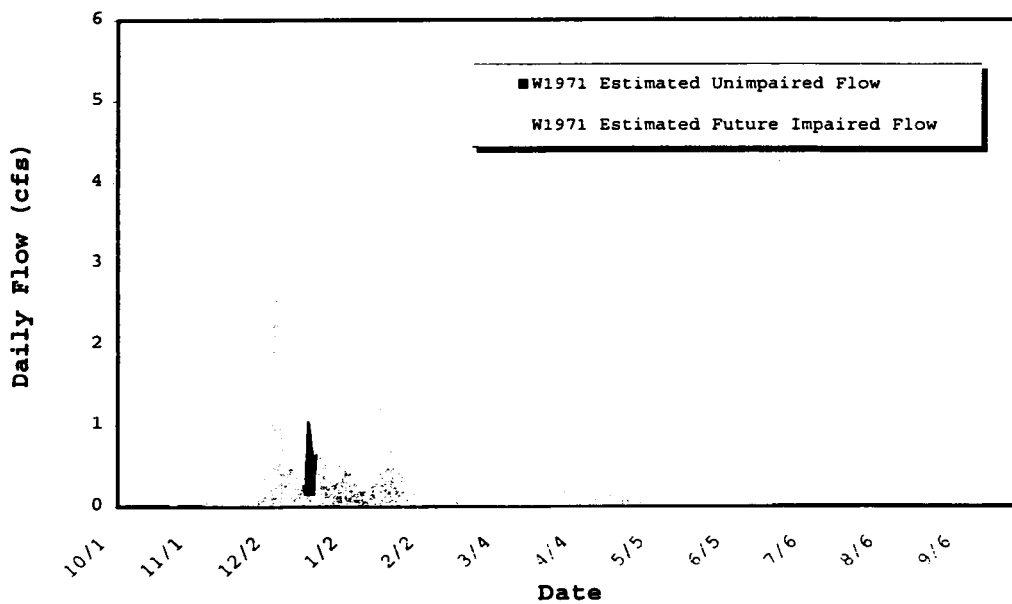


Figure 15: Estimated Hahn Tributary Flow Comparison for Typical Average Year



Construction of on-stream reservoirs could affect gravel recruitment (i.e., the introduction of cobbles and gravel into the river) and could also affect sedimentation (e.g., an on-stream reservoir could capture fine sediments). Three of the projects are off-stream reservoirs and will have no significant impact on gravel recruitment or sedimentation in the tributaries or the main stem of the Navarro River. Only one project (Bennett/Cahn) involves construction of an on-stream reservoir. This reservoir will be constructed on an ephemeral stream and will be located about one mile upstream of the main stem of the Navarro River. Do to its size and distance from the river, with the proposed bypass terms, this reservoir should have an insignificant impact on gravel recruitment or sedimentation in the main stem of the Navarro River.

All five pending water right applications involve vineyards. The conversion of natural habitat to vineyards could increase erosion and sedimentation in the Navarro River. Accordingly, the Division has determined that the applicants must prepare and implement erosion control measures that are acceptable to the Chief of the Division of Water Rights and include these measures in a land management plan. The primary objective of the erosion control measures is the protection of aquatic habitat for coho and steelhead. As described in section 8.11 below, the applicants will be required to prepare a land management plan that describes the specific measures that will be taken to control erosion and to prevent the introduction of additional sediment into the Navarro River or tributaries. The land management plans should incorporate recommendations contained in the Navarro Watershed Restoration Plan, Chapter 6.0, Recommended Land Management Practices. During the development of the land management plans, applicants should contact representatives from DFG and the North Coast Regional Water Quality Control Board (RWQCB). The plans will be submitted to DFG and RWQCB for review and comment.

8.7 Water Temperature Proper water temperature is an important factor in the health of steelhead and coho. Table 6 below shows the preferred water temperatures for various steelhead life stages.

**Table 6
Preferred Water Temperatures
for Various Life Stages of Steelhead⁴⁹**

Life History Stage	Temperature Range (°F)
Adult Migration	46 to 52
Spawning	39 to 52
Incubation and Emergence	48 to 52
Fry and Juvenile Rearing	45 to 58
Smoltification	<50

⁴⁹ Trihey and Associates, Inc., *Sediment Production and Channel Conditions in the Navarro River Watershed*, Chapter 3 (Draft Summary March 19, 1997).

DFG has indicated that steelhead egg mortality occurs at temperatures near 56°F.⁵⁰ Temperatures above 70°F are lethal to adult steelhead. In California, concerns are mostly for high temperatures during adult migration, egg incubation, and juvenile rearing. Preferred water temperatures for juvenile coho are slightly different than those for juvenile steelhead. Coho prefer slightly cooler water temperatures in the range of 45 to 53°F, whereas juvenile steelhead prefer 45 to 58°F. Usually, temperatures above 70°F are lethal to juvenile steelhead and coho.⁵¹ NMFS states that water temperatures above 25°C (77°F) may be lethal to coho juveniles.⁵²

The Navarro Watershed Restoration Plan states that summer water temperatures, coupled with large daily fluctuations in water temperature, may limit coho and steelhead populations. Appendix E to the Restoration Plan provides a summary of available water temperature data for several streams for 1995, 1996 and 1997. These data indicate that summer temperatures are well above preferred temperatures and, in many cases, exceed temperatures identified as lethal to steelhead and coho. The majority of these temperature studies were conducted from late May through the end of September. The highest water temperatures typically occur in late June. As the summer progresses and flows naturally decrease, the water temperatures in the Navarro River tend to decrease. The reason for this is not known; however, the reduction in temperatures may result from contributions from subsurface flow. The subsurface flows are cooler and therefore tend to reduce stream temperatures as river flow decreases. Once the water turns cooler in the fall, river temperatures approach levels that are preferred by steelhead and coho.

The proposed permit terms will not allow diversion during the low-flow summer months; the water right permits will allow diversion only during the peak winter runoff period (i.e., December 15 through March 31). Consequently, approval of the applications will not adversely affect water temperature during the summer. There is relatively little water temperature data for the winter season; however, there is also no indication that water temperature exceeds optimal water temperature for anadromous fishery resources during the winter.

Based on a review of available information, the Division has concluded that the proposed diversions, with the proposed terms and conditions, will have no measurable effect on water temperature during the winter. In addition, the storage of relatively small quantities of water during the winter should have no effect on the water temperature in the Navarro River watershed during the summer.

⁵⁰ *Id.* at p. 26.

⁵¹ U.S. Fish and Wildlife Services, *Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates* (Pacific Southwest Biological Report 82(11-60)).

⁵² See Footnote 27 ante.

8.8 Water Quality Appendix E to the Navarro Watershed Restoration Plan provides a summary of water quality data taken by several agencies at several locations throughout the watershed during 1995, 1996 and 1997 for several parameters including turbidity, conductivity, pH, and dissolved oxygen. These data indicate that, with the exception of temperature, water quality parameters are suitable for coho and steelhead.

Dissolved oxygen (DO) is a particularly important factor for maintaining coho and steelhead in good condition. Most of the data relating to DO are a result of tests taken during the low flow period (i.e. June through October). Generally, DO levels were greater than 8.0 mg/l, except during extremely low flow periods during the summer. Only a few data were recorded during December. DO levels during December were greater than 10.0 mg/l. These DO levels would provide good conditions for anadromous fishery resources.

The protestants submitted reports that indicate that water quality is an important factor for protecting the condition of anadromous fish; however, the protestants did not submit information that demonstrates that approval of the applications would affect water quality.

Based on a review of available information, the Division has concluded that approval of the applications, with the proposed terms and conditions, would have no measurable effect on water quality.

8.9 Riparian Habitat The protestants stated that riparian habitat (e.g., shaded riverine habitat and woody debris) is an important parameter for salmonid habitat.⁵³ The Navarro Watershed Restoration Plan states that the absence of large woody debris (for example, large tree trunks from old growth redwoods) adversely affects stream habitat. The Restoration Plan states that much of the large woody debris was removed in the 1950's and 1960's as part of salvage logging operations or because fishery managers believed that the debris created barriers to upstream fish migration. In addition, the Restoration Plan states that the lack of riparian canopy can result in elevated stream temperatures.

The Division agrees that riparian habitat is an important factor for fishery resources; however, approval of the pending applications would not have any significant effect on riparian habitat in the main stem or tributaries.

As described in section 8.11 below, the applicants will be required to prepare and implement a land management plan that will incorporate recommendations from the Restoration Plan relating to protection of the riparian corridor and preservation of large woody debris in the stream channel.

8.10 Conditions in the Estuary The protestants stated that approval of the pending applications could adversely impact conditions within the estuary. The Navarro Watershed Restoration

⁵³ See footnote 27 ante at p. 6.

Plan, Appendix F, provides an analysis of conditions in the estuary, prepared by the Humboldt State University Foundation.

Based on review of available information, the Division has concluded that approval of the pending applications, with the proposed terms and conditions, would have no measurable effect on the conditions within estuary. In particular, approval of the pending applications would have no measurable effect on the "pulse" flows that help breach the sand bar at the mouth of the estuary.

8.11 Land Management Plan The Navarro Watershed Restoration Plan provides a detailed discussion of land management practices that have adversely affected water quality and aquatic habitat conditions for coho and steelhead and describes actions that can be taken by individual land owners to control these factors. The Restoration Plan recommends the development and implementation of best management plans, or the development of a land management plan, to address the following factors:

- Control of erosion and sedimentation
- Protection of the riparian corridor
- Stabilization of stream banks
- Preservation of woody debris in stream channels

The Restoration Plan states that the land management plan must "be based on, and tailored to, existing site specific conditions." In addition, the development of a land management plan should include the technical assistance of qualified professionals or public agencies such as the Natural Resources Conservation Service, University of California Cooperative Extension, Department of Fish and Game and the North Coast Regional Water Quality Control Board.

It should be noted that the applicants may have already installed facilities and/or may be operating their vineyards, consistent with the recommendations of the Restoration Plan. It should also be noted that one of the principal concepts suggested in the Restoration Plan is the construction of storage ponds to capture peak winter flows and to reduce diversions during the summer. The Navarro Watershed Advisory Group, which assisted in the development of the Navarro Watershed Restoration Plan, adopted a statement supporting winter diversion ponds. The statement reads:

"It is the policy of the Navarro Watershed Advisory Group (AG) to promote the construction of agricultural water storage ponds, in accordance with sound environmental practices, to enable reduced diversion of summer stream flows."

The Division supports the concepts described in the Restoration Plan relating to land management practices to protect water quality and aquatic habitat conditions. Accordingly, the Division will require the applicants to prepare and submit a land management plan. This plan should describe specific actions that will be taken on the applicants' property to control erosion, preserve riparian habitat, stabilize streambanks and preserve large woody debris in stream channels. As described in the Restoration Plan, the plan should be developed on a site-specific basis and should describe the actions to be taken, or best management practices to be implemented, the time schedule for implementing those actions, and procedures to

maintain and/or protect those measures. During the development of the plan, the applicants should contact qualified professionals, local agencies, or other public agencies with expertise in these areas.

A land management plan acceptable to the Chief of the Division of Water rights must be prepared before the Division will issue a water right permit. A draft plan must be submitted within 90 days of the date of this decision. The Division will forward copies of the land management plan to DFG and RWQCB for review and comment.

9.0 EVALUATION OF ISSUES

9.1 General As described in section 3.0 above, when acting on pending water right applications, the Division must comply with numerous requirements, including provisions of the California Water Code, CEQA, and the state and federal ESA. In addition to complying with CEQA and the ESAs, the Division must ensure that water use, method of use, and method of diversion are reasonable, in accordance with Article X, section 2 of the California Constitution and Water Code section 100, and take into consideration the public trust doctrine.

The SWRCB must also take into account the instream flows required to protect beneficial uses,⁵⁴ and the relative benefit to be derived from all possible beneficial uses of the water concerned.⁵⁵ Finally, the SWRCB must take action consistent with the state policy that water resources be put to beneficial use "to the fullest extent of which they are capable."⁵⁶

The Division has taken into account the fact that approving the pending applications would authorize the diversion and use of water for irrigation and frost protection of established vineyards, a beneficial use of water which is important to the public interest and the economy of Mendocino County. The Division has also taken into account the importance of maintaining adequate instream flow necessary for the protection of coho and steelhead, particularly during low-flow conditions in the main stem and tributaries. The Division has placed particular emphasis on the measures needed to protect the anadromous fishery resources. Finally, the Division has evaluated relevant issues raised by the protestants.

9.2 Use of Water The applicants request water right permits for irrigation and frost protection. Applications 29810 and 29907 request the additional use of heat control; Application 29711 requests the additional uses of recreation and fire protection; and A29910 requests the additional use of domestic. These are defined as beneficial uses of water in accordance with sections 659-672 of title 23 of the California Code of Regulations. All applicants use

⁵⁴ Wat. Code, § 1257.

⁵⁵ Wat. Code, §§ 1257, 1243 and 1243.5.

⁵⁶ Wat. Code, § 100.

high efficiency drip irrigation systems and, where applicable, overhead spray irrigators for frost protection and heat control.

The Department of Water Resources has determined that the historic irrigation demand for vineyards within the North Coastal region of California is 0.9 af per acre.⁵⁷ Mr. Glen McGourty, viticulture and plant science adviser for the Ukiah Office of the University of California, Davis' Cooperative Extension, advised the Division by telephone in June, 1998, that annual irrigation use for new vineyard development within the Anderson Valley of Mendocino County was approximately 1.0 af per acre.

Data for frost protection demand is available from the Mendocino County Agricultural Commissioner's Fruit Frost Summary. Twenty-two years of records for the Anderson Valley indicate a maximum frost demand of 1.0 af per acre in 1988, and an average yearly demand of 0.44 af per acre within the Anderson Valley.

Typically, spraying for heat control occurs when the temperature is at or above 100°F. According to the U.S. Weather Bureau, the mean maximum temperature in the Navarro River watershed for the month of July ranges from approximately 64°F at the coast to 88°F at the eastern border, while the highest observed temperatures range from approximately 92°F to 110°F. The rate of application is approximately 50 gpm, however the water is cycled on and off every 30 seconds resulting in a net application of 25 gpm. Given the moderate climate of the area, the need for heat control is expected to be minimal; estimated at 10 hours a season. This corresponds to an annual water duty for heat control of approximately 0.05 af per acre.

The SWRCB's suggested water duty for domestic use is a maximum of 75 gallons per day per person.⁵⁸

Fire protection and recreation are considered incidental and non consumptive water uses and therefore they have no water duty associated with them.

Based on the review of Savoy's applications and the duty limitations above, Division staff have determined that restrictions should be placed on Savoy's use. Under A29910, Savoy requests the right to directly divert a total of 42.3 afa for the purpose of frost irrigation. Since his requested season of June 1 through October 31 is completely outside the allowable season of diversion defined in this decision, this portion of the application will not be approved. However, A29910 also requests 55.6 afa of storage, which could be used for irrigation, or frost protection, or for a combination of irrigation, frost protection and domestic use. In addition, under A29911, Savoy requests 45.2 afa of direct diversion for frost protection. This means that Savoy could use 55.6 af of water for the purpose of irrigating 40 acres of vineyard within a given year,

⁵⁷ Department of Water Resources, *California Water Plan Update*, Bulletin No. 169-93 (October 1995).

⁵⁸ State Water Resources Control Board, *A Guide to California Water Right Appropriation* (January 1989).

although to do so would exclude using any of the stored water for frost protection or domestic use. Similarly, 100.8 afa could be used for the purpose of frost protection of the same 40 acres within a given year, although to do so would preclude use of water for irrigation for that year and limit domestic use to direct diversion. Using maximum demands of 1.0 afa per acre for irrigation and for frost protection, the Division has determined that Application 29911 should be limited to a maximum of 40 afa, and the combined maximum diversion for irrigation and frost protection under both Applications 29910 and 29911 should be limited to 80 afa.

With these limitation, the Division has concluded that the uses of water for these applications would not constitute waste, unreasonable use, or unreasonable method of use.

9.3 Water Availability The determination of the amount of water available for appropriation by the pending applications is a critical issue in this proceeding.

9.3.1 Procedure for Determining Water Availability Water Code section 1375(d) states:

1375. As a prerequisite to the issuance of a permit to appropriate water the following facts must exist:
(d) There must be unappropriated water available to supply the applicant.

A determination of water availability includes an evaluation of the hydrology for different types of water years, the flow needed to protect existing water users with prior water rights and the instream flow needed to protect fishery and other public trust resources. As described in section 7.0, the Division has conducted an evaluation of the hydrology of the Navarro River and tributaries to estimate the flow in both average and dry water years for each pending application. As described in section 8.0, the Division has evaluated available data and developed terms and conditions to protect fishery resources to include limitations on the season, the rate of diversion and bypass flows to protect anadromous fishery resources.

Based on this analysis, the Division has determined that there is sufficient water available during the peak winter runoff season for appropriation by the applicants and, at the same time, to provide adequate instream flow to protect the fishery resources within the Navarro River watershed, with the inclusion of the terms and conditions that are designed to protect fishery resources.

9.3.2 Flow in the Navarro River The Division has evaluated the hydrographs of daily flow for all 46 years of record. (See Attachment A.) Figures 16 and 17 are representative hydrographs that show the daily flow that would occur in the Navarro River for an average year (1971) and a dry water year with a 1 in 10 year frequency (1972). These figures also show the allowable season of diversion and minimum bypass flow requirements. Substantial quantities of water may be available for appropriation during the peak winter runoff

season. As indicated in figures 16 and 17, there is a flow of approximately 184,000 and 52,000 acre feet in excess of the average, annual unimpaired flow in average and dry water years, respectively, as measured at the Navarro gage.

The Division has also calculated the number of days when flow would be greater than 60 percent of the average, annual flow. As indicated in figures 16 and 17, flows would be greater than 60 percent of average on 73 days during an average year and on 51 days during a dry year.

9.3.3 Water Available for Diversion at Each Project Site

The Division has estimated the amount of water that would be available for appropriation at each site for the 46 year period of record. The water available for diversion is the runoff which occurs during the season of diversion (i.e. December 15 through March 31) minus that portion of the runoff which must be bypassed in order to satisfy the minimum bypass flow requirements (i.e., 60 percent of the average annual flow). Diversions are further restricted by the maximum rate of diversion which is 2 cfs from the tributaries and 3 cfs for direct diversion from the main stem of the Navarro River. Table 7 shows the amount of water which would have been available for diversion at each of the four project sites during the 20 driest years on record.

As indicated in Table 7, sufficient water would have been available for appropriation in most years. For Hahn, sufficient water would have been available in all water years, except 1977. For Savoy, sufficient water would have been available in all water years, except 1977 and 1976. For Oswald, sufficient water would not have been available in seven dry years. For Bennett, sufficient water would not have been available in all of the 20 driest years, but 75 percent of the requested diversion amount would have been available in all but the nine driest years. It should be noted that the 1976-77 drought was an extraordinarily severe drought.

Figure 16: Water Availability And Fish Flow Requirements in Navarro River near Navarro for Dry Year Condition

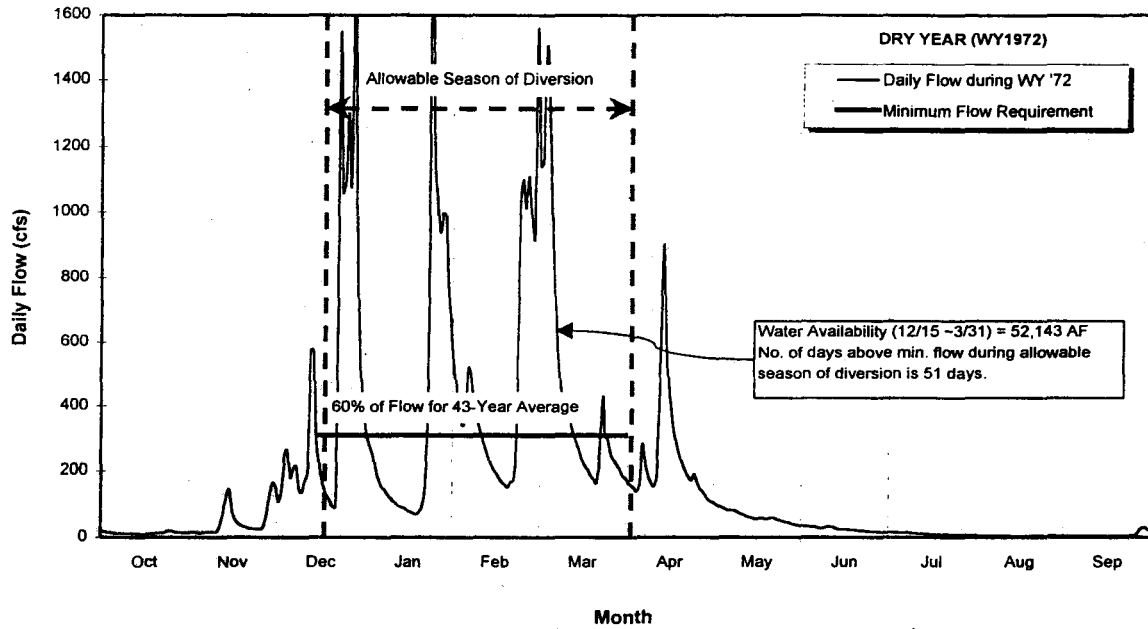


Figure 17: Water Availability And Fish Flow Requirements in Navarro River near Navarro for Average Year Condition

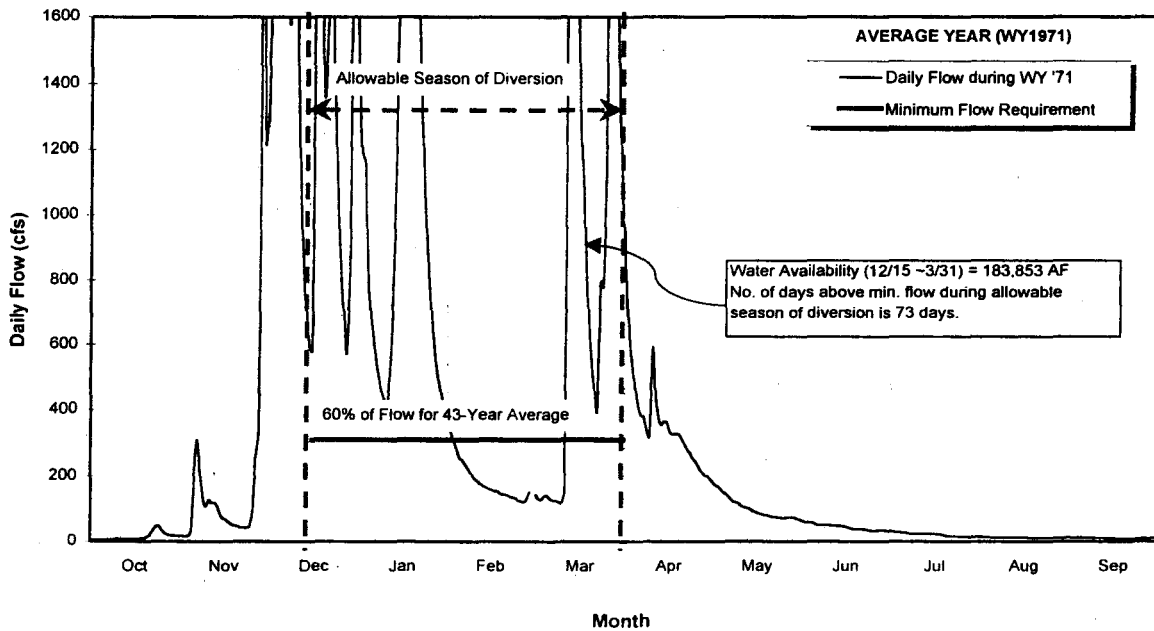


Table 7
Water Available for Appropriation
during the 20 Driest Years of Record.

Year	Water Available For Diversion (AF)			
	Bennett	Oswald	Hahn	Savoy
1977	0.1	0.1	0.6	7.9
1976	3.6	3.2	11.5	59.4
1990	5.5	4.9	20.5	143.7
1955	6.1	5.4	21.6	145.0
1985	9.0	8.0	24.1	114.8
1964	10.5	9.4	25.5	95.0
1972	9.7	8.7	33.1	196.3
1991	16.8	15.0	42.7	122.8
1988	13.9	12.4	37.8	162.4
1987	16.2	14.4	48.6	221.8
1981	18.7	16.6	50.1	233.6
1989	20.9	18.6	56.7	202.0
1957	23.6	21.0	58.4	198.0
1979	24.5	21.8	65.5	199.1
1968	24.6	21.9	69.8	292.6
1992	26.2	23.4	69.0	229.7
1963	24.1	22.3	55.0	205.9
1961	26.3	23.4	72.0	249.5
1959	28.4	25.7	67.3	226.8
1960	27.8	25.2	63.0	203.1

Note: Shaded areas represent years when water may not be available to satisfy applicants' demands.

9.4 Diversion under Claim of Riparian Right The determination of water availability, and evaluation of the potential impacts of the proposed diversions, is made more complex by the fact that all four applicants divert water from unnamed tributaries and may have riparian rights to those streams. Savoy (the only applicant requesting a right to divert water from the main stem of the Navarro River) submitted information to support a claim of riparian right to divert water from the Navarro River.⁵⁹

Under a riparian right, a person can directly divert a correlative share of the natural flow of the stream for reasonable beneficial uses. Under a riparian right, a person can not seasonally "store" water, i.e., store water during a time of higher stream flow for use during a time of deficient stream flow.⁶⁰ A riparian diverter may, however, temporarily retain natural flow. Consequently, all applicants could temporarily regulate, or retain, a correlative share of the natural runoff from the unnamed tributaries in the existing reservoirs.

⁵⁹ Letter dated February 13, 1998, from Janet Goldsmith to Ed Dito.

⁶⁰ *People v. Shirokow* (1980) 26 Cal.3d 301, 307, fn. 7 [162 Cal.Rptr. 30, 34, 605 P.2d 859, 864].

If the pending applications are approved for winter storage, without requiring a restriction in diversions under claim of riparian right, all applicants could divert and temporarily retain water in their reservoirs, throughout the entire year, under claim of riparian right. For example, the applicants could temporarily retain water in the ponds in April or May for frost protection, or other uses, during that season. In addition, the applicants could divert water during low flow periods in the winter under claim of riparian which could preclude bypass of water as required by the terms of the appropriative water right.

The proposed diversions would result in the beneficial use of water, would provide economic benefits, and would be in the public interest. On the other hand, the Division has determined bypass flows are necessary during the winter and that diversions during the low flow season may have significant impact on anadromous fishery resources.

To the extent that the applicants' appropriations and storage of water may lead to increased demand for water outside the allowable season of diversion, the Division can not approve the applications unless EIRs are prepared pursuant to CEQA. For instance, appropriating and storing water may enable the applicants to establish and maintain vineyards that the applicants could not otherwise establish and maintain. Those vineyards, in turn, could lead to an increased demand for water during the low-flow season which could have a significant effect on fishery resources.

Accordingly, the Division proposes to prohibit an increase in the diversion of water for use on the place of use authorized by the permits under basis of riparian right, in order to prevent these impacts from occurring. It should be noted that the applicants historic use of water under claim of riparian right would represent the "baseline" condition as defined by CEQA.

The Division has no record or evidence, however, of the use of water under basis of riparian right by any of these applicants, none of whom have filed a statement of diversion and use pursuant to Water Code sections 5100-5108. Consequently, since there is no record of any diversion under claim of riparian right, this term would prohibit any diversion under claim of riparian right.

If, based on substantial evidence, any applicant were to establish recent use of water under riparian right that predated the appropriation authorized by the applicant's permit, then the Division would consider modifying the permit term to prohibit any increase in use of water on the place of use authorized by the permit. The permits will include a term to reserve jurisdiction to modify permits, as appropriate.

The prohibition against diversion will apply only to the place of use authorized under the permit because use of water outside the authorized place of use would be unrelated to the use authorized by the permits. Similarly, the prohibition need not apply to any use of water under basis of riparian right that predated the appropriation and storage of water that will be authorized by the

permits. Such use would likewise be unrelated to the use authorized by the permits.

It bears emphasis that the permittees would not be required to permanently forfeit or extinguish their riparian rights; they would be required only to refrain from diverting under those rights as a condition of their permits. Should the permittees relinquish their permits at some point in the future the permittees could then exercise any riparian rights they may have.

If any applicant wishes to divert water under claim of appropriative or riparian right, in addition to diverting water during the peak winter season under the appropriative right permit, then the applicant will be required to conduct appropriate studies and prepare an environmental impact report evaluating the potential impacts of the diversions. The applicants will be expected to proceed diligently with the completion of any necessary studies and the preparation of an EIR. Absent specific approval by the SWRCB, diversions that do not comply with the permit terms, including diversion outside the allowable season of diversion, would be considered a violation of the water right permits.

9.5 Compliance with Bypass Terms There are several methods that could be used to demonstrate compliance with the bypass terms. The Division originally proposed that the allowable period of diversion be tied to the flow as measured at the Navarro gage.⁶¹ There are problems associated with this approach, however, particularly for the smaller diverters located on small tributaries. Because of the "flashy" nature of the runoff, the variation in precipitation within the watershed, and the time lag between flow in the tributaries and flow at the USGS gage, the Navarro gage may not provide an accurate indication of when water is available for appropriation at the proposed points of diversion on the tributaries. Accordingly, the Division has tied the minimum bypass flow requirement to the point of diversion.

Rather than specifying the method to be used to demonstrate compliance, the Division has determined that the applicants should be required to develop and implement measures that will adequately ensure compliance with the bypass terms. This will allow the applicants to develop innovative, cost-effective proposals that are tailored to their specific projects.

⁶¹ By letter dated April 18, 1997, Edward C. Anton, Division Chief, proposed that the following permit term be included in any permit issued pursuant to A29711, 29810, 29907, 29910 and 29911: "For the protection of fish and wildlife and instream uses, permittee shall bypass the total streamflow at all points of diversion whenever the flow in the Navarro River is less than 200 cubic feet per second as measured at the United States Geological Survey Streamflow gage No. 146800 on the Navarro River near Navarro, California. In the event that said gage is no longer available for streamflow measurements, no water shall be diverted under this permit unless an equivalent type gage, satisfactory to the Chief of the Division of Water Rights, is installed as near as practical to the present location of gage No. 146800. The permittee, alone or in cooperation with other interested parties, will be responsible for installation and maintenance of said gage."

The plans should specify the measuring devices and bypass facilities to be installed, the criteria for operation of the reservoir, and other measures that will be taken by the applicants to assure compliance with the permit terms. Whenever feasible, the applicants should install "passive" bypass facilities, i.e., facilities that will automatically bypass flows without any action by the permittee. The plans should also include a time schedule for installation of the facilities.

Prior to issuance of a permit, each applicant will be required to submit a plan that is acceptable to the Chief of the Division of Water Rights. The Division will forward copies of the proposed plans of compliance to the DFG for review and comment. The applicants will be required to operate and maintain all compliance facilities in good working condition.

9.6 Continuing Authority of the SWRCB All permits will include standard water right permit term 12. This term provides for the continuing authority, or reserved jurisdiction, of the SWRCB to modify terms relating to the public trust resources. In accordance with term 12, the SWRCB may modify permit terms if new information is submitted that justifies a change in the water right. For example, the authorized diversion season or bypass flow requirement could be modified, if sufficient information is submitted to justify the proposed modification.

9.7 Impact on Prior Rights As described in section 5.0 above, there are no outstanding protests that contend that approval of the pending applications would have any impact on existing downstream prior rights, nor is there any information that would suggest that storage of peak winter flows would have any effect on the quantity of water available for downstream water users.

9.8 Impact on Groundwater The protestants contend that diversions from the stream system during the winter could affect the groundwater levels within the watershed during the summer. Further, the protestants contend that the SWRCB should conduct studies to determine the relationship between winter diversions and summer groundwater levels in order to determine whether water is available for appropriation.

In response to this contention, the Division discussed this issue with Dennis Slota,⁶² Director of the Mendocino County Water Agency, and also reviewed the publication prepared by the Department of Water Resources relating to groundwater within the Navarro River watershed.⁶³

There are only limited data available relating to groundwater levels within the Navarro River watershed and no data that establish a relationship between the proposed storage by the pending

⁶² Personal communication between Ed Dito and Dennis Slota (March 12, 1998).

⁶³ Department of Water Resources, *Anderson Valley Groundwater Study Interim Report* (September 1983).

applications and the groundwater levels within the basin. Conducting the studies proposed by the protestants would require substantial time and cost. In addition, because of the complexity of hydro-geologic conditions, the studies proposed by the protestants might not produce the information needed to determine the relationship suggested by the protestants, regardless of the amount of time, effort or money spent on the studies.

Conceptually, the diversion and storage of relatively small amounts of water during the winter could effect the groundwater levels. Arguably, the storage of water in the reservoirs during the winter could serve to recharge the groundwater basin during the summer, since the reservoirs would function as spreading basins or percolation ponds.

The protestants state that high flows recharge the groundwater table through percolation from the riverbed, river banks, and adjacent flood plains. As described in section 7.0 above, however, there is substantial variation in the quantity and/or depth of flow and the resultant recharge. Further, the quantity of water that would be stored under these applications (130 afa) is relatively small in comparison to the average annual runoff within the watershed (370,000 afa). Therefore, these applications would have no measurable effect on the depth of flow in the Navarro River or the recharge of the riverbed, river banks, and adjacent flood plains.

Consequently, the Division has concluded that the approval of the pending applications would have no measurable effect on groundwater recharge and/or quantities of water available from the groundwater basin within the Navarro River watershed.

9.9 Summer Flows The protestants raised concerns relating to potential impacts to fishery resources due to diversions during the summer. As described above, the permits would allow diversion only during the peak winter runoff season. Permittees would not be allowed to divert water under the permit from April 1 through December 14; consequently, approval of these water right permits would have no adverse effect on flow during the summer.

9.10 Unauthorized Diversions The protestants also raised concerns relating to the potential impacts to fishery resources due to unauthorized diversions throughout the watershed. That issue is not relevant to this decision. As described in sections 2.4 and 2.5 the Division has taken separate action in response to complaints relating to unauthorized diversions.

9.11 Land Use Practices The protestants state that numerous factors can affect the condition of the fishery resources and the pending applications should be reviewed within the broader context of other land use practices such as logging and road building practices. The protestants suggest that the SWRCB conduct a statutory adjudication in accordance with Water Code sections 2500-2900 in order to correct "abusive land use practices." A statutory adjudication would require a separate proceeding by the SWRCB. In addition, a statutory adjudication would not evaluate all land use practices within the watershed; rather, an adjudication would provide for a determination of "all rights to water of a stream

system whether based upon appropriation, riparian right, or other basis of right."⁶⁴

If the protestants want the SWRCB to conduct a statutory adjudication, the protestants must submit a petition.⁶⁵ The SWRCB would then evaluate the petition and determine whether the "public interest and necessity will be served by a determination of the water rights involved."⁶⁶ It should be noted that an adjudication would require substantial time and cost and that all costs would be borne by the parties to the adjudication.⁶⁷

It should also be noted that the SWRCB has authority under the Water Code to regulate land use practices directly related to an appropriative water right permit or license by placing terms or conditions on the permit or license, but the SWRCB has limited authority to control land use factors that are not related to a water right permit.

As described in section 8.11, the Division will require that the applicants develop and implement land management plans that incorporate recommendations contained in the Navarro Watershed Restoration Plan.

9.12 Methodology Used to Develop Bypass Flow Requirements The protestants contend that the Division used the Tennant method to develop the minimum bypass flow and also contend that the Tennant method is not a valid method to determine instream flow requirements. The protestants submitted several reports that critique the methodology used by the Division to develop a minimum bypass flow.

The assertion that the Division relied on the Tennant method is simply not correct. The Division did not use the Tennant method to develop the minimum bypass flow. A description of the methodology used by the Division to develop the minimum bypass flow is provided in section 8.0 above. It should also be emphasized that the Division did not develop instream flow requirements; rather, the Division developed a conservative bypass flow for the purpose of acting on the pending applications.

By letter dated October 26, 1998, NMFS submitted a letter to the Division, dated August 15, 1997, that comments on the Division Staff Report relating to the Russian River. NMFS stated that the Division's proposed methodology is inadequate because of the Division's reliance on the Tennant method to establish a minimum flow regime to protect coho and steelhead, and recommended that the SWRCB conduct comprehensive IFIM studies. The NMFS comments relate specifically to the Russian River, however, their comments bear on

⁶⁴ Wat. Code, § 2501.

⁶⁵ Wat. Code, § 2525.

⁶⁶ *Ibid.*

⁶⁷ Wat. Code, § 2852.

this decision, since similar techniques were used by the Division to evaluate pending applications in both watersheds.

By letter dated November 5, 1998, the Division responded to the NMFS letter and stated that NMFS mischaracterized the Division's methodology for two principal reasons. First, as described above, the Division did not use the Tennant method to establish flows. Second, as described in section 8.0, the Division has established a conservative bypass flow and did not establish a "minimum flow regime" to protect coho or steelhead.

There are several other factors that would support the validity of the methodology used by the Division to develop the bypass flow.

- **DFG Concurrence** As described in section 8.1 above, Division staff held numerous discussions with DFG staff in an effort to develop appropriate bypass flow requirements. By letter dated February 27, 1996, DFG agreed to dismiss its protest against Savoy's application (the largest of the five applications) so long as Savoy agreed to the permit terms proposed at that time, which included a minimum bypass of 200 cfs at the USGS gage and an allowable season of diversions of November 15 through April 15. The Division has since increased the minimum bypass flow and further restricted the allowable season of diversion.
- **Cal Trout Analysis** Mr. Jim Edmondson, of California Trout Inc⁶⁶ evaluated DFG instream flow recommended on ten streams, that were based upon studies that utilized IFIM/PHABSIM methodology.⁶⁹ The streams studied included both anadromous and freshwater fisheries. As indicated in Mr. Edmondson's analysis, there is a wide range in instream flows recommended by DFG. On average DFG recommended flows that were equal to 45 percent of the average annual unimpaired flow.

Protestants argued that the SWRCB has a statutory duty to conduct detailed IFIM studies in order to determine the amount of instream flows needed to protect fishery resources. Protestants based their argument on the fact that DFG recommended that IFIM studies be performed, and on Water Code sections 1243, 1243.5, and 1257, which require the SWRCB to consider the instream flows necessary to protect fishery resources, among others. Protestants also pointed to Water Code section 1257.5, which requires the SWRCB to consider proposed streamflow requirements prepared by the DFG pursuant to Public Resources Code sections 10001 and 10002. Sections 10001 and 10002 provide, among other things, that the DFG is to list those streams for which streamflow requirements are needed to assure the continued viability of fish and wildlife, and prepare proposed streamflow requirements for those streams.

⁶⁶ Presentation by California Trout, Jim Edmondson, Director, at the 1998 Annual Meeting of the California/Nevada Chapter of the American Fisheries Society in Sacramento, California.

⁶⁹ The acronym IFIM/PHABSIM refers to the physical habitat simulation model developed by the U.S. Fish and Wildlife Service's Instream Flow Group in 1982 to evaluate the relationship between flow and available habitat.

Contrary to protestants' assertion, the Water Code does not impose upon the SWRCB the duty to employ any particular methodology in considering the instream flows required to protect fishery resources. In addition, the SWRCB cannot consider proposed streamflow requirements prepared pursuant to Public Resources Code sections 10001 and 10002 because the DFG has not developed any proposed streamflow requirements for the Navarro River Watershed pursuant to those sections.

9.13 Compliance with Basin Plan As set forth in section 3.0, in acting on applications to appropriate water, the SWRCB must consider water quality control plans or basin plans.⁷¹ Similarly, Water Code section 1243.5 provides that, in determining whether water is available for appropriation, the SWRCB must, when it is in the public interest, take into account the amount of instream flows required to protect beneficial uses, including any beneficial uses designated in the applicable basin plan.

The beneficial uses of the Navarro River that are designated in the basin plan for the North Coast Region are as follows: municipal and domestic supply; agricultural and industrial supply; groundwater recharge; navigation; recreation; commercial and sport fishing; cold freshwater, wildlife, and estuarine habitat; and habitat necessary for aquatic migration and fish spawning.⁷¹

The Division has considered the amount of instream flows required to protect these beneficial uses, and has concluded that approval of the applications, with the proposed terms and conditions described in this decision, will not result in instream flows less than those required to protect the beneficial uses of the Navarro River.

Protestants argued that section 1258 prohibits the SWRCB from approving the pending applications until total maximum daily loads (TMDLs) for sediment and temperature are developed and incorporated into the basin plan for the North Coast Region. Those TMDLs are scheduled to be developed by the year 2000. Section 1258, however, requires only that the SWRCB consider the basin plan in acting on applications; it does not require the SWRCB to suspend action on applications until water quality standards are developed and incorporated into the basin plan. Likewise, Water Code sections 1243.5 and 1257.5 require the SWRCB, in acting on applications, to consider the instream flows required to protect the beneficial uses designated in the applicable basin plan; those sections do not require the SWRCB to suspend action on applications until additional standards are developed that are designed to protect those uses. The Regional Water Quality Control Board has not requested the SWRCB to suspend processing water rights permits until applicable water quality standards (i.e., TMDLs) have been established. Moreover, the record does not contain any evidence that approval of the pending applications, with the proposed terms and conditions, will cause a measurable change in sediment or

⁷¹ Wat. Code, § 1258.

⁷² NCRWQCB & SWRCB, Water Quality Control Plan, North Coast Region (1994) at p. 2-5.00.

temperature levels in the river, or adversely affect any beneficial use.

9.14 FESA Requirements As set forth in section 3.6 above, the Central California Coast coho salmon is a threatened species protected under the ESA. No person may "take" a threatened or endangered species. "To take" means, among other things, "to harm," and the term "harm," in turn, includes "significant habitat modification or degradation where it actually kills or injures [the salmon] by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."⁷² In the future, the steelhead in northern California may be listed as threatened or endangered under the ESA, and both species of fish may be listed under CESA.

Any permits issued to the applicants will not authorize any diversions that would result in a taking of a protected species. The permittees will be required to comply with the ESA and CESA, and permits will contain the following term:

This permit does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the CESA (Fish and Game Code §§ 2050-2116) or the federal ESA (16 U.S.C.A. §§ 1531-1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain an incidental take permit prior to construction or operation. Permittee shall be responsible for meeting all requirements of the applicable ESA for the project authorized under this permit.

For the reasons set forth in detail in this decision, the Division has determined that diversions in accordance with the proposed terms and conditions will not result in the take of or harm to either protected salmon or to steelhead at the present time. The Division expects that, should any permittee have any question as to whether diversions will result in a take of a protected species in the future, the permittee will contact the appropriate agency and inquire whether an incidental take permit is required for diversions otherwise authorized by the permit.

9.15 Fully Appropriated Stream Designation Based on the results of the water availability analysis conducted for this decision, the Division will recommend that the SWRCB add the entire Navarro River watershed to the list of Fully Appropriated Stream (FAS) for the period from April 1 through December 14, in accordance with Water Code section 1205. It should be noted that a FAS designation can be modified, after notice and hearing, upon petition of any interested person. A person requesting a change in the FAS designation would be required to submit hydrologic data to show that water is available for appropriation, including studies relating to the instream flow needed to protect coho, steelhead, and other public trust resources.

⁷² 16 U.S.C.A. § 1532, subd. (19); 50 C.F.R. § 17.3.

10.0 COMPLIANCE WITH CEQA

With respect to the pending applications, the SWRCB is the lead agency within the meaning of the CEQA, and is therefore responsible for the preparation and circulation of appropriate CEQA documentation. As set forth in section 3.5, CEQA requires the SWRCB to determine whether approval of a water right application will have a significant effect on the environment.⁷³ An environmental impact report must be prepared if the SWRCB determines that substantial evidence in the record supports a fair argument that approving the application may have a significant effect on the environment.⁷⁴ Conversely, if no substantial evidence exists that approval of the application may have a significant effect on the environment, or if the applicant agrees to modify the application such that no substantial evidence exists that approval of the application as modified will have a significant effect on the environment, then the SWRCB prepares a negative declaration.⁷⁵

The Division conducted a preliminary environmental review of each of these pending water right applications pursuant to CEQA. Initial studies and proposed negative declarations were circulated for review and comment during 1995 and 1996 for each of the pending applications. The initial studies and proposed negative declarations were distributed to the State Clearinghouse and to a mailing list developed by the Division, that included the applicants and protestants to the applications. The Division received comments on these documents from state and local agencies, environmental groups and individuals. At that time, the Division proposed, among other things, to restrict the season of diversion to November 15 through April 15, and to impose a minimum bypass flow of 200 cfs as measured in the main stem of the Navarro River at the gage, which is equivalent to approximately 40 percent of the average annual unimpaired flow.

Subsequent to the circulation of the environmental documents, coho salmon was listed as threatened species, pursuant to the Federal ESA. As a result of the listing of coho as a threatened species and the information developed in conjunction with the field investigation, the Division has reevaluated the measures needed to protect coho and steelhead, as described in section 8.1 above. In order to support a determination that approval of the applications will have no significant effect on the environment, and in particular on the fish, the Division has concluded that the season of diversion should be further restricted to December 15 to March 31 of each year, the minimum bypass should be increased to 60 percent of the average annual unimpaired flow as measured at the points of diversion, the permittees can not divert under claim of riparian right for use on the place of use authorized under the permit, and

⁷³ Pub. Resources Code, § 21080, subs. (c-d), 21082.2, subd. (a).

⁷⁴ Pub. Resources Code, § 21080, subd. (d); Cal. Code Regs., tit. 14, § 15063, subd. (b).

⁷⁵ Pub. Resources Code, § 21080, subd. (c)(1-2); Cal. Code Regs., tit. 14, § 15070.

the applicants must prepare a land management plan acceptable to the Chief of the Division of Water Rights.

If the applicants agree to the inclusion of the revised terms and conditions, the Division proposes to prepare and circulate for review and comment revised initial studies and proposed mitigated negative declarations for these pending water right applications. If any applicant does not agree with the inclusion of the proposed terms and conditions, the Division has concluded that a fair argument can be made that approval of the application may have a significant effect on the environment, and therefore it will be necessary to prepare an environmental impact report. If this is the case, the Division will defer further processing of the application until the environmental impact report has been completed at the applicant's expense.

In the March 2, 1998, letter submitted by Stephen C. Volker on behalf of several protestants, protestants argued that "[t]he 'project', for purposes of CEQA encompasses all past, present and future water diversions in this watershed whose bypass flows, diversion rates and instream impoundments ultimately may be regulated by the restrictions adopted in this proceeding." Protestants argued further that the Division should prepare a programmatic EIR evaluating the impacts of this "project."

The protestants have not cited to any persuasive authority in support of their assertion. CEQA defines a "project," in relevant part, as follows: "'Project' means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, . . . [including] [a]n activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use The term 'project' refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term 'project' does not mean each separate governmental approval."⁷⁵

Consistent with this definition, the Division maintains that the issuance of a permit to each, discrete applicant is a "project," for purposes of CEQA. None of the cases cited by protestants support the claim that all past, present, and future diversions that "may be regulated" by the permit terms proposed in this decision constitute a single project. The Division has not, for example, treated an activity which is subject to several levels of discretionary approval as more than one project.

It bears emphasis on this point that, although this decision addresses five different applications, each application has been evaluated individually. Similarly, although this decision will provide a framework for future decisions, each future application within the Navarro River watershed will be evaluated on a case-by-case basis, as will any reevaluation of existing permits or licenses. Likewise, the Division will evaluate on a case-by-case

⁷⁵ Cal. Code Regs., tit. 14, § 15378, subs. (a)(3), (c).

basis whether to take enforcement action against any given person, and what remedy to seek. The present decision will not bind the SWRCB in other cases; future action on any given application, permit, or license, and any future enforcement action, will be based on the facts specific to the case, and on the information before the SWRCB at that time. Protestants would have the Division engage in undue speculation concerning future action it may or may not take concerning diversions within the watershed.

Some of the protestants also argued that CEQA requires the Division to perform an analysis of the cumulative impacts of the proposed diversions and other activities within the Navarro River watershed. For purposes of determining whether preparation of a negative declaration is appropriate, however, the Division need not perform a cumulative impacts analysis. Rather, CEQA requires the Division to determine whether the incremental impacts of approving each application will be considerable, when viewed against the backdrop of the effects of other activities within the watershed.⁷⁷ The Division has tentatively concluded that, even when viewed against the backdrop of the effects of other activities within the watershed, the approval of each application with the conditions proposed in this decision will not have a significant cumulative effect on the environment.

11.0 SUMMARY, CONCLUSIONS AND DECISION

11.1 Summary and Conclusions This draft decision provides a summary of the Division's analysis of five pending water rights applications located within the Navarro River watershed. These applications request water rights for diversion of a total of 195.6 afa, primarily for irrigation, frost protection, and heat control of established vineyards. Water would be stored in four existing reservoirs.

Numerous protests were submitted against these applications contending that the proposed diversions would have significant environmental impacts, including impacts to coho salmon, which have been listed as an threatened species under the federal ESA. As a result of unresolved protests, the Division conducted an on-site field investigation with the applicants and protestants on October 15, 1997, in accordance with Water Code sections 1345-1348.

The Division has reviewed all information submitted by the applicants and protestants. In addition, the Division has evaluated the hydrology within the Navarro River watershed and has developed terms and conditions that are designed to protect coho salmon, steelhead trout and other public trust resources. Based on this analysis, the Division has concluded that, with the proposed terms and conditions, sufficient water is available for appropriation by the applicants and, at the same time, that sufficient flow will

⁷⁷ *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus (Western Stone Products)* (1996) 42 Cal.App.4th 608, 623-624 [49 Cal.Rptr.2d 494].

remain in the streams to protect the coho salmon and other public trust resources.

Based on a review of reasonable water use, the Division intends to issue a water right permit to Savoy that would authorize the diversion and use of 82.9 afa, rather than 147.6 afa, as requested in his applications. The issuance of these five permits would authorize diversion of a total of 130.9 afa during the peak winter runoff period.

The water right permits will provide for the reasonable beneficial use of water. Issuance of water right permits that would authorize storage during the peak runoff period is consistent with the recommendations contained in Navarro Watershed Restoration Plan, which recommends winter storage rather than summer diversion. Approval of the applications will not adversely impact the beneficial uses of the Navarro River that are listed in the basin plan for the North Coast Region. As described in this decision, approval of these applications will have no significant impacts, or unmeasurable impacts, on several factors including: downstream prior rights, groundwater storage, geomorphology, erosion/sedimentation, water temperature, water quality, riparian habitat, and other public trust resources.

11.2 Decision The Division has determined that the five pending applications should be approved. All permits will include all applicable standard permit terms.⁷⁸ In addition, the permits will be subject to the following permit terms and conditions:

11.2.1 Bennett/Cahn (A29711) The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed 30 afa to be collected from December 15 of each year to March 31 of the succeeding year.

Water shall be used for the purposes of fire protection, recreation, and irrigation and frost protection of 33 acres of vineyards.

Permittee shall not divert water for use on the place of use authorized by this permit, under basis of riparian right.

The Division reserves jurisdiction to modify the permit term above to prohibit any increase in use of water under a claimed riparian or other right that predated the appropriation authorized by this permit, provided the applicant submits substantial evidence acceptable to the Chief of the Division of Water Rights, quantifying the extent of recent water use under these rights.

During the authorized season of diversion, permittee shall bypass 0.05 cfs, or the actual flow in the unnamed streams as measured at the point of diversion, whichever is less.

⁷⁸ Copies of standard permit terms can be obtained by contacting the Division.

The maximum rate of diversion to storage shall not exceed 2 cfs.

Prior to the issuance of a permit, the applicant shall submit a plan that is acceptable to the Chief of the Division of Water Rights that describes the measures that will be taken to demonstrate compliance with the terms specified in this permit. The plan shall include a time schedule for implementation of the elements included in the plan. Permittee is not authorized to divert water under this permit until all measures are in place and are operating in accordance with the approved plan.

Prior to the issuance of a permit, the applicant shall submit a land management plan that is acceptable to the Chief of the Division of Water Rights. The plan shall describe the specific measures to be taken to minimize erosion and sedimentation, protect the riparian corridor, stabilize streambanks and preserve large woody debris. The applicant shall refer to measures described in the Navarro Watershed Restoration Plan dated June 1998. The plan shall include a time schedule for implementation of the elements included in the plan.

This permit does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California ESA (Fish and Game Code §§ 2050-2116) or the federal ESA (16 U.S.C.A. §§ 1531-1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain an incidental take permit prior to construction or operation. Permittee shall be responsible for meeting all requirements of the applicable ESA for the project authorized under this permit.

Permittee shall allow SWRCB personnel, or their designated representatives, reasonable access to the reservoirs, diversion facilities, and the designated places of use for the purpose of verifying compliance with terms and conditions of this permit.

Permittee shall allow the SWRCB, or their designated representative, reasonable access to the storage reservoir and stream channels to conduct studies and to implement measures to improve habitat for fish and other public trust resources.

11.2.2 Oswald (A29810) The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed 12 afa to be collected from December 15 of each year to March 31 of the succeeding year.

Water shall be used for the purposes of irrigation, heat control, and frost protection of 10 acres of vineyards.

Permittee shall not divert water for use on the place of use authorized by this permit, under basis of riparian right.

The Division reserves jurisdiction to modify the permit term above to prohibit any increase in use of water under a claimed riparian or other right that predated the appropriation authorized by this permit, provided the applicant submits substantial evidence acceptable to the Chief of the Division of Water Rights, quantifying the extent of recent water use under these rights.

During the authorized season of diversion, permittee shall bypass 0.05 cfs from the unnamed stream as measured at the point of diversion, or the actual flow, whichever is less.

The maximum rate of diversion to storage shall not exceed 2 cfs.

Prior to the issuance of a permit, the applicant shall submit a plan that is acceptable to the Chief of the Division of Water Rights that describes the measures that will be taken to demonstrate compliance with the terms specified in this permit. The plan shall include a time schedule for implementation of the elements included in the plan. Permittee is not authorized to divert water under this permit until all measures are in place and are operating in accordance with the approved plan.

Prior to the issuance of a permit, the applicant shall submit a land management plan that is acceptable to the Chief of the Division of Water Rights. The plan shall describe the specific measures to be taken to minimize erosion and sedimentation, protect the riparian corridor, stabilize streambanks and preserve large woody debris. The applicant shall refer to measures described in the Navarro Watershed Restoration Plan dated June 1998. The plan shall include a time schedule for implementation of the elements included in the plan.

This permit does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California ESA (Fish and Game Code §§ 2050-2116) or the federal ESA (16 U.S.C.A. §§ 1531-1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain an incidental take permit prior to construction or operation. Permittee shall be responsible for meeting all requirements of the applicable ESA for the project authorized under this permit.

Permittee shall allow SWRCB personnel, or their designated representatives, reasonable access to the reservoirs, diversion facilities, and the designated places of use for the purpose of verifying compliance with terms and conditions of this permit.

Permittee shall allow the SWRCB, or their designated representative, reasonable access to the storage reservoir and stream channels to conduct studies and to implement measures to improve habitat for fish and other public trust resources.

11.2.3 Hahn (A29907) The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed 6 afa to be collected from December 15 of each year to March 31 of the succeeding year.

Water shall be used for the purposes of irrigation, heat control, and frost protection of 16 acres of vineyards.

Permittee shall not divert water for use on the place of use authorized by this permit, under basis of riparian right.

The Division reserves jurisdiction to modify the permit term above to prohibit any increase in use of water under a claimed riparian or other right that predated the appropriation authorized by this permit, provided the applicant submits substantial evidence acceptable to the Chief of the Division of Water Rights, quantifying the extent of recent water use under these rights.

During the authorized season of diversion, permittee shall bypass 0.12 cfs in the unnamed stream as measured at the point of diversion, or the actual flow, whichever is less.

The maximum rate of diversion to storage shall not exceed 2 cfs.

Prior to the issuance of a permit, the applicant shall submit a plan that is acceptable to the Chief of the Division of Water Rights that describes the measures that will be taken to demonstrate compliance with the terms specified in this permit. The plan shall include a time schedule for implementation of the elements included in the plan. Permittee is not authorized to divert water under this permit until all measures are in place and are operating in accordance with the approved plan.

Prior to the issuance of a permit, the applicant shall submit a land management plan that is acceptable to the Chief of the Division of Water Rights. The plan shall describe the specific measures to be taken to minimize erosion and sedimentation, protect the riparian corridor, stabilize streambanks and preserve large woody debris. The applicant shall refer to measures described in the Navarro Watershed Restoration Plan dated June 1998. The plan shall include a time schedule for implementation of the elements included in the plan.

This permit does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California ESA (Fish and Game Code §§ 2050-2116) or the federal ESA (16 U.S.C.A. §§ 1531-1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain an incidental take permit prior to construction or operation. Permittee shall be responsible for meeting all requirements of the applicable ESA for the project authorized under this permit.

Permittee shall allow SWRCB personnel, or their designated representatives, reasonable access to the reservoirs, diversion facilities, and the designated places of use for the purpose of verifying compliance with terms and conditions of this permit.

Permittee shall allow the SWRCB, or their designated representative, reasonable access to the storage reservoir and stream channels to conduct studies and to implement measures to improve habitat for fish and other public trust resources.

11.2.4 Savoy (A29910) The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed 55.6 afa by storage to be collected from December 15 of each year to March 31 of each succeeding year, 2.9 afa by direct diversion.

Water is to be used for the purposes of domestic use, and irrigation and frost protection of 40 acres of vineyards.

The maximum rate of diversion to offstream storage shall not exceed 3.0 cfs from the Navarro River, 1.0 cfs from one of the unnamed streams (POD #2) and 0.5 cfs from the other unnamed stream (POD #3). The maximum rate of diversion by direct diversion shall not exceed 8765 gpd.

The maximum amount diverted for the purposes of irrigation and frost protection under this permit, together with any permit issued pursuant to A29911, shall not exceed a total of 80 afa. The maximum amount diverted, either by direct diversion or storage for the purpose of domestic use shall not exceed a total of 2.9 afa.

Permittee shall not divert water for use on the place of use authorized by this permit, under basis of riparian right.

The Division reserves jurisdiction to modify the permit term above to prohibit any increase in use of water under a claimed riparian or other right that predated the appropriation authorized by this permit, provided the applicant submits substantial evidence acceptable to the Chief of the Division of Water Rights, quantifying the extent of recent water use under these rights.

During the authorized season of diversion, the permittee shall bypass 0.03 cfs in each of the unnamed streams as measured at the points of diversion, or the actual flow, whichever is less. During the authorized season of diversion, Permittee shall not divert water from the main stem of the Navarro River when the flow in the Navarro River is less than 200 cfs as measured at the point of diversion, or alternatively, when the flow in the Navarro River is less than 300 cfs as measured at the USGS gage on the Navarro River.

Prior to the issuance of a permit, the applicant shall submit a plan that is acceptable to the Chief of the Division of

Water Rights that describes the measures that will be taken to demonstrate compliance with the terms specified in this permit. The plan shall include a time schedule for implementation of the elements included in the plan. Permittee is not authorized to divert water under this permit until all measures are in place and are operating in accordance with the approved plan.

Prior to the issuance of a permit, the applicant shall submit a land management plan that is acceptable to the Chief of the Division of Water Rights. The plan shall describe the specific measures to be taken to minimize erosion and sedimentation, protect the riparian corridor, stabilize streambanks and preserve large woody debris. The applicant shall refer to measures described in the Navarro Watershed Restoration Plan dated June 1998. The plan shall include a time schedule for implementation of the elements included in the plan.

This permit does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California ESA (Fish and Game Code §§ 2050-2116) or the federal ESA (16 U.S.C.A. §§ 1531-1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain an incidental take permit prior to construction or operation. Permittee shall be responsible for meeting all requirements of the applicable ESA for the project authorized under this permit.

Permittee shall allow SWRCB personnel, or their designated representatives, reasonable access to the reservoirs, diversion facilities, and the designated places of use for the purpose of verifying compliance with terms and conditions of this permit.

Permittee shall allow the SWRCB, or their designated representative, reasonable access to the storage reservoir and stream channels to conduct studies and to implement measures to improve habitat for fish and other public trust resources.

11.2.5 Savoy (A29911) The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed 40 cfs to be diverted from March 1 to March 31 of each year. The maximum rate of diversion shall not exceed 3 cfs.

Water is to be used for the purposes of frost protection of 40 acres of vineyards.

Permittee shall not divert water for use on the place of use authorized by this permit, under basis of riparian right.

The Division reserves jurisdiction to modify the permit term above to prohibit any increase in use of water under a claimed riparian or other right that predated the appropriation authorized by this permit, provided the

applicant submits substantial evidence acceptable to the Chief of the Division of Water Rights, quantifying the extent of recent water use under these rights.

The maximum amount diverted for the purposes of irrigation and frost protection under this permit, together with any permit issued pursuant to A29910, shall not exceed a total of 80 afa.

During the authorized season of diversion, permittee shall bypass 0.03 cfs in each of the unnamed streams as measured at the points of diversion, or the actual flow, whichever is less. During the authorized season of diversion, permittee shall not divert water from the main stem of the Navarro River when the flow in the Navarro River is less than 200 cfs as measured at the point of diversion, or alternatively, when the flow in the Navarro River is less than 300 cfs as measured at the USGS gage on the Navarro River.

Prior to the issuance of a permit, the applicant shall submit a plan that is acceptable to the Chief of the Division of Water Rights that describes the measures that will be taken to demonstrate compliance with the terms specified in this permit. The plan shall include a time schedule for implementation of the elements included in the plan. Permittee is not authorized to divert water under this permit until all measures are in place and are operating in accordance with the approved plan.

Prior to the issuance of a permit, the applicant shall submit a land management plan that is acceptable to the Chief of the Division of Water Rights. The plan shall describe the specific measures to be taken to minimize erosion and sedimentation, protect the riparian corridor, stabilize streambanks and preserve large woody debris. The applicant shall refer to measures described in the Navarro Watershed Restoration Plan dated June 1998. The plan shall include a time schedule for implementation of the elements included in the plan.

This permit does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California ESA (Fish and Game Code §§ 2050-2116) or the federal ESA (16 U.S.C.A. §§ 1531-1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain an incidental take permit prior to construction or operation. Permittee shall be responsible for meeting all requirements of the applicable ESA for the project authorized under this permit.

Permittee shall allow SWRCB personnel, or their designated representatives, reasonable access to the reservoirs, diversion facilities, and the designated places of use for the purpose of verifying compliance with terms and conditions of this permit.

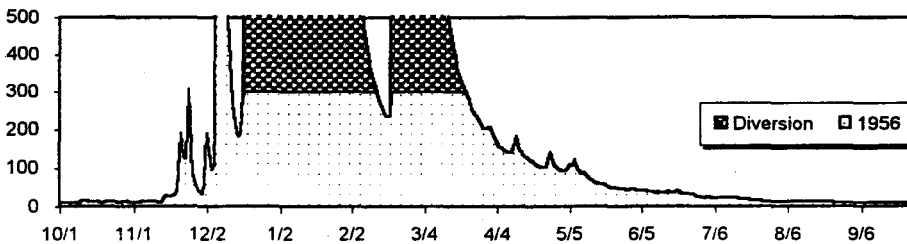
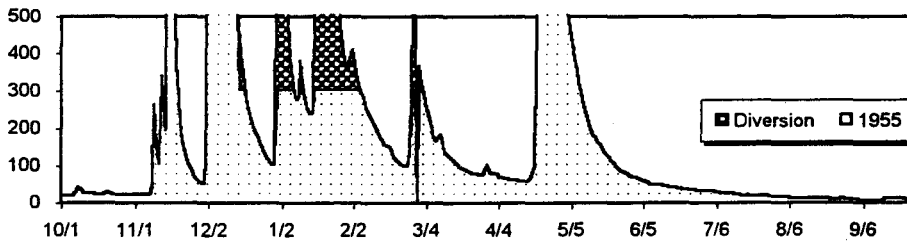
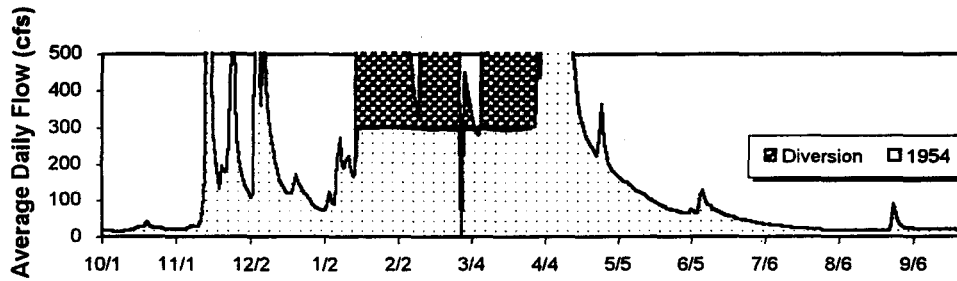
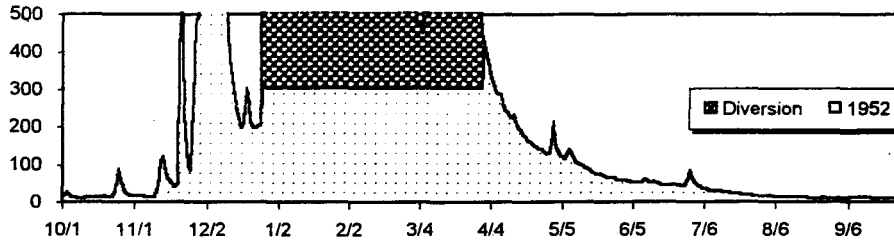
Permittee shall allow the SWRCB, or their designated representative, reasonable access to the storage reservoir and stream channels to conduct studies and to implement measures to improve habitat for fish and other public trust resources.

11.3 Fully Appropriated Stream Based on the water availability analysis conducted in conjunction with this decision, the Division will recommend that the SWRCB add the entire Navarro River watershed to the list of fully appropriated streams for the period of April 1 through December 14 in accordance with Water Code section 1205.

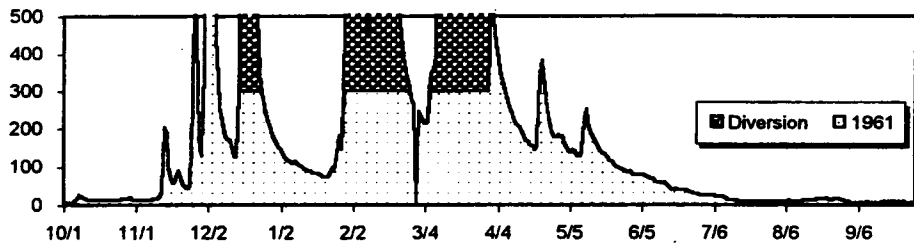
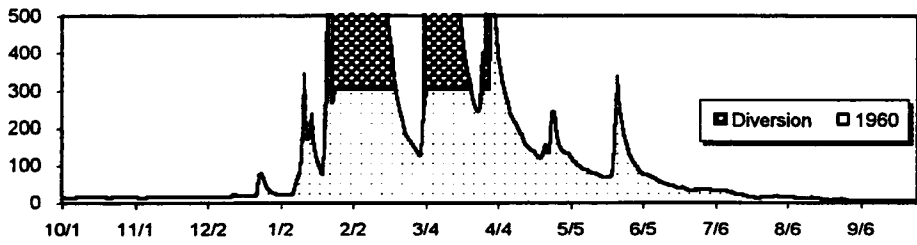
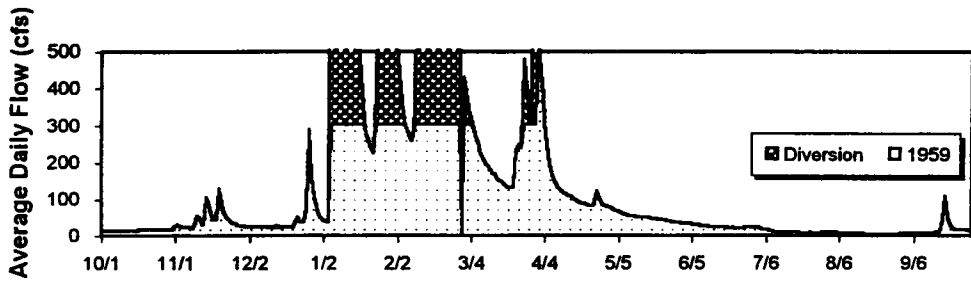
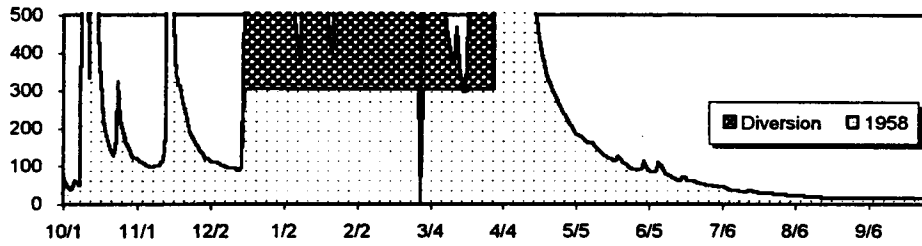
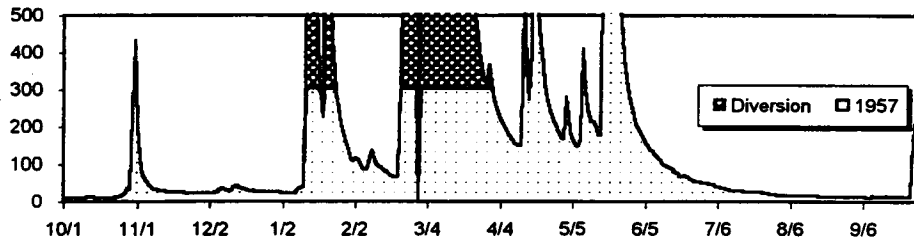
Attachment A

**Hydrographs of Recorded Daily
Flow as Measured at the
USGS Gage on the Navarro
River for all Years of Record
(1954 to 1996)**

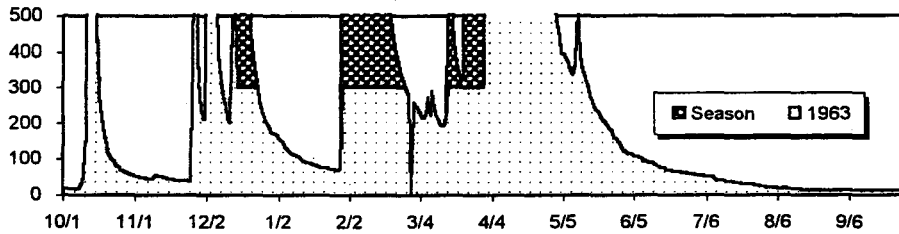
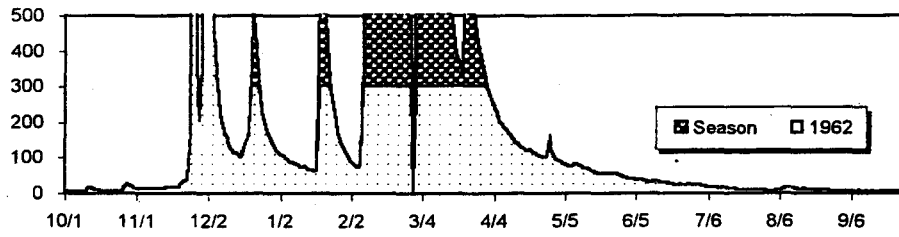
Recorded Daily Flow at Navarro River near Navarro



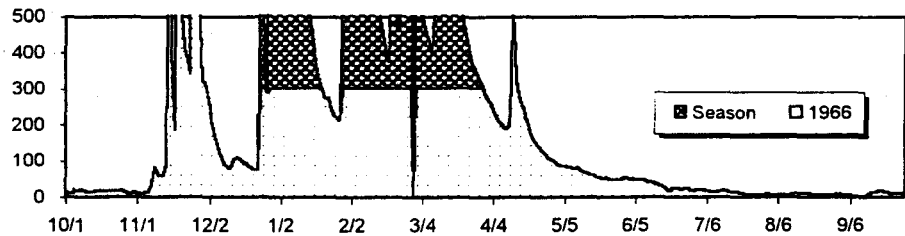
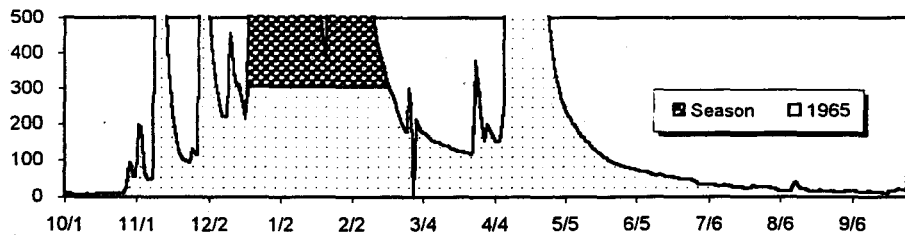
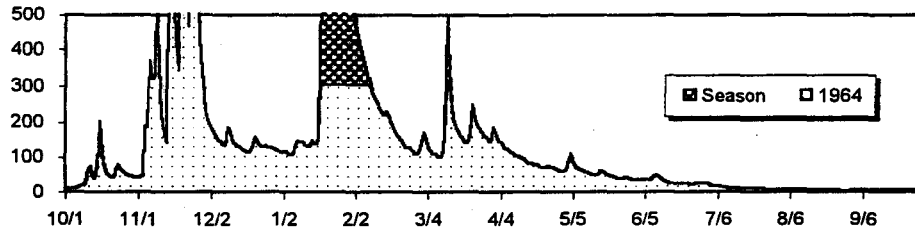
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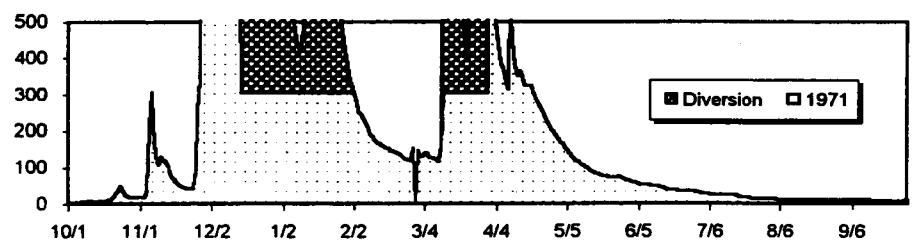
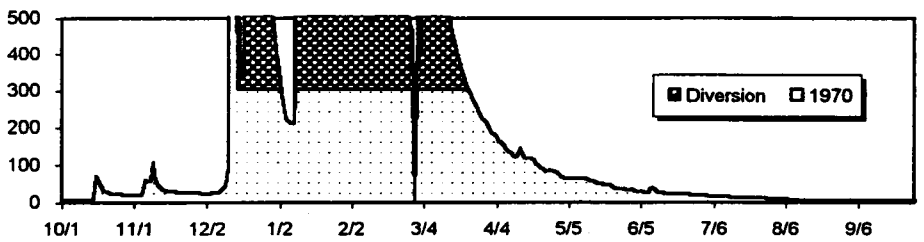
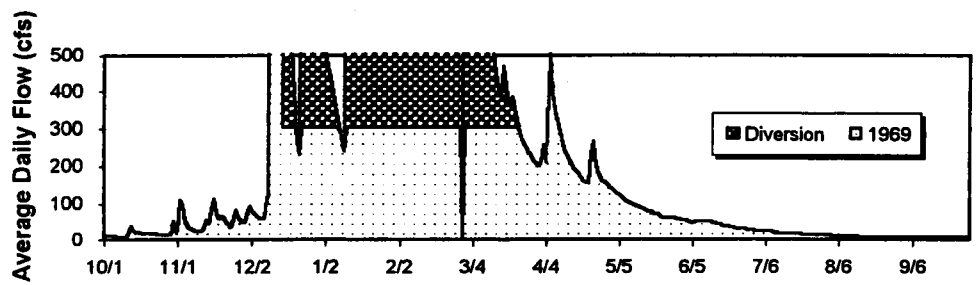
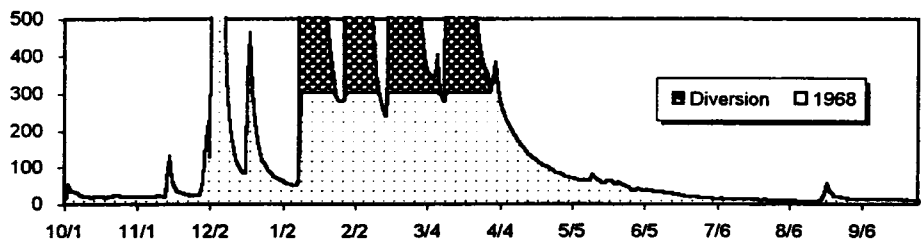
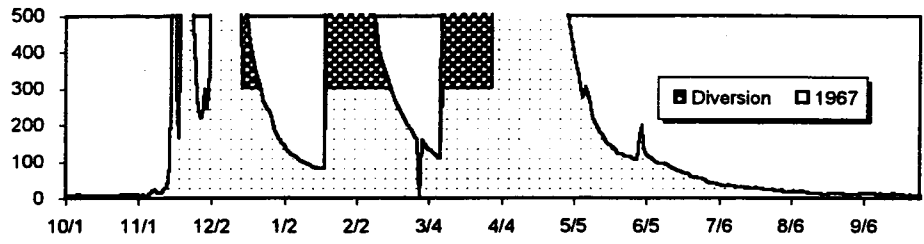
Recorded Daily Flow at Navarro River near Navarro



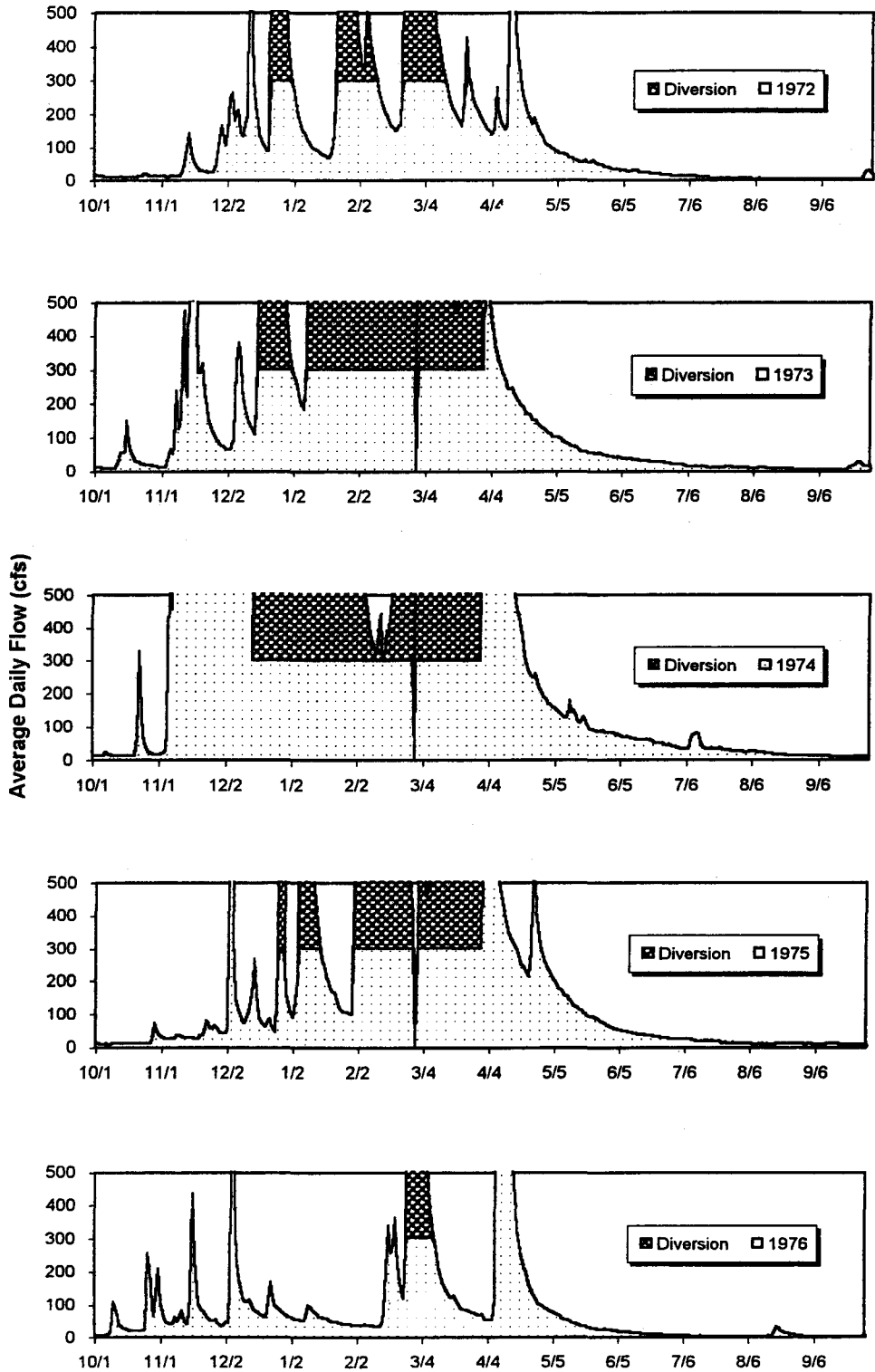
Average Daily Flow (cfs)



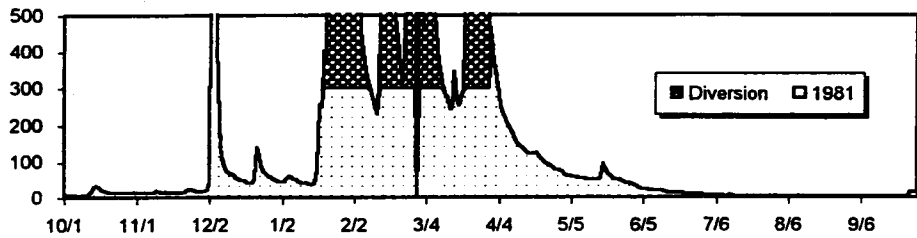
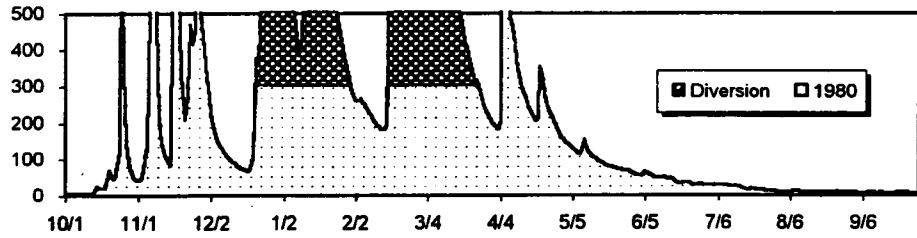
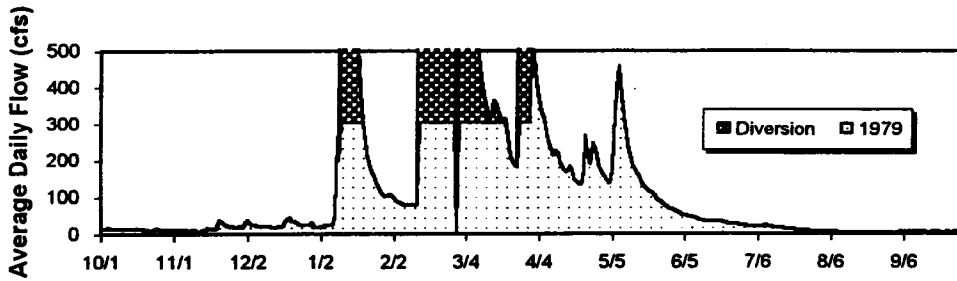
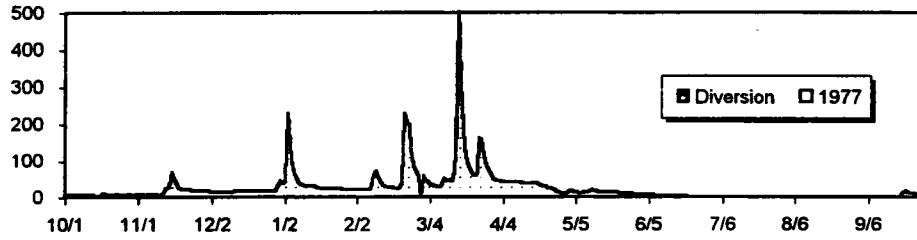
Recorded Daily Flow at Navarro River near Navarro



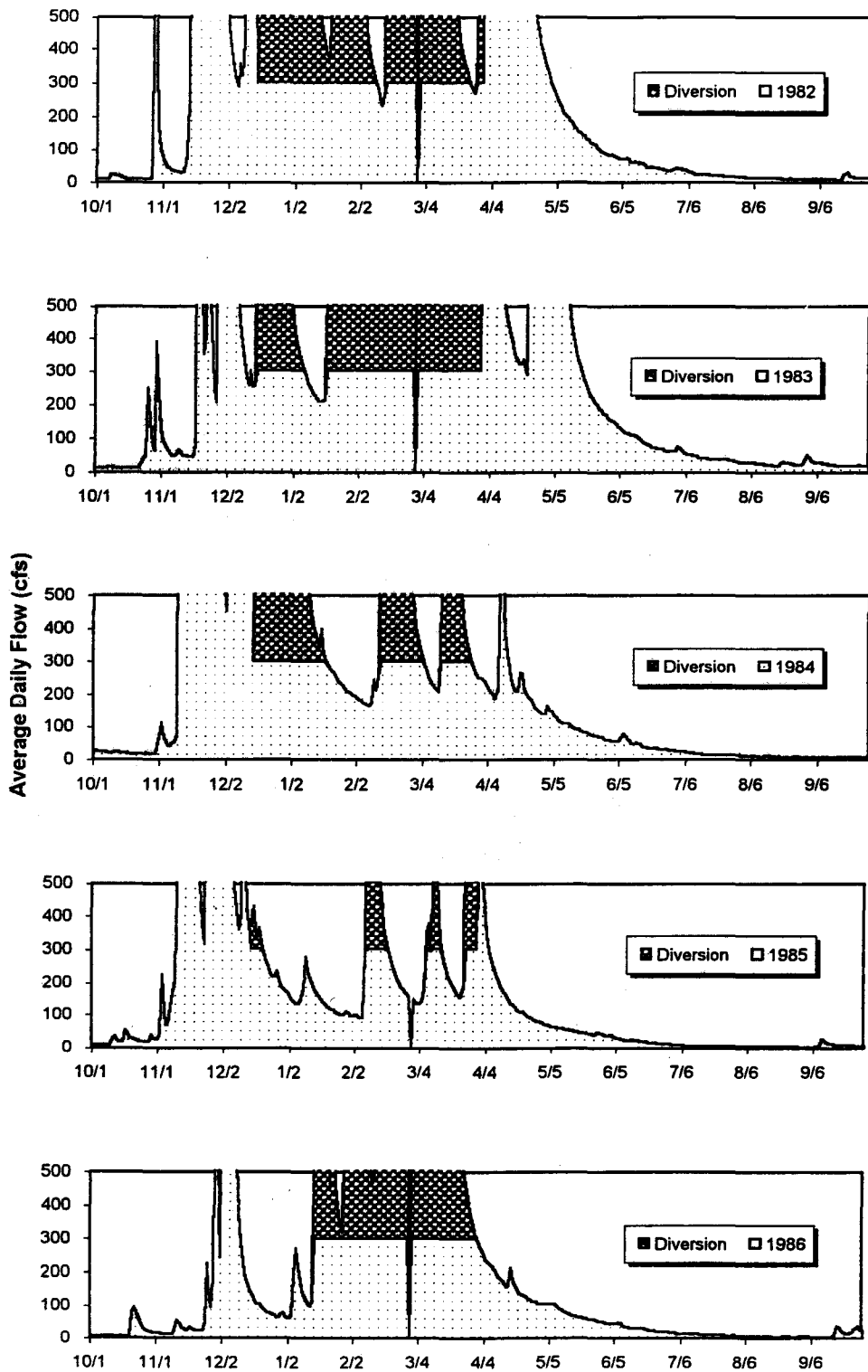
Recorded Daily Flow at Navarro River near Navarro



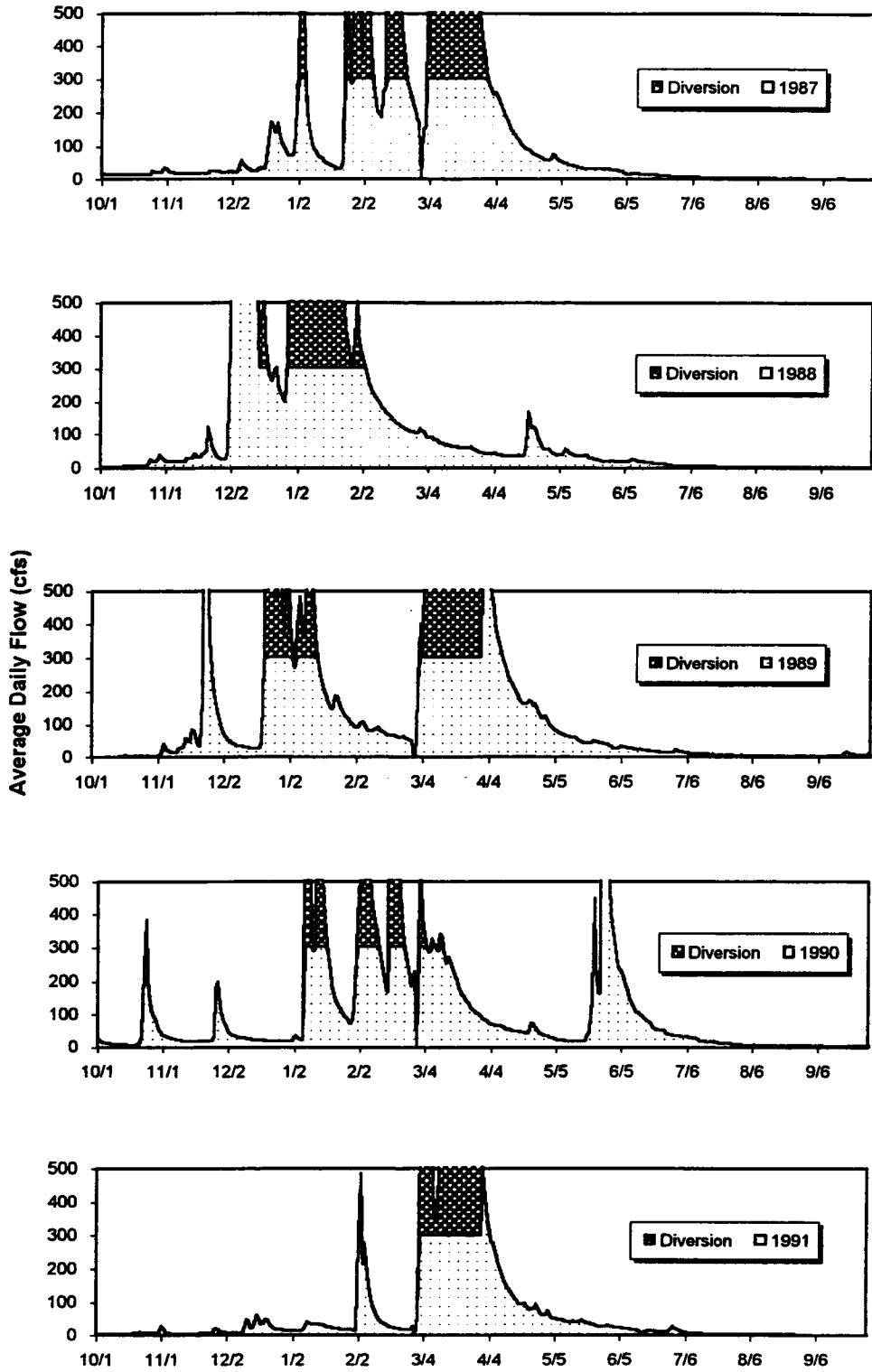
Recorded Daily Flow at Navarro River near Navarro



Recorded Daily Flow at Navarro River near Navarro



Recorded Daily Flow at Navarro River near Navarro



Recorded Daily Flow at Navarro River near Navarro

