

Summary of Marin County Policies Relating to Anadromous Fish Habitat Conservation

Excerpted from the study: Effects of County Land Use Policies and Management Practices on Anadromous Salmonids and Their Habitat

January 2001
by
Dr. Richard Harris
Susie Kocher
UC Berkeley Extension

A list of activities considered to have potential impacts on fish and fish habitat was developed through the work of the County Planning Teams and the FishNet 4C Program Director. These activities are either conducted by county departments directly, or are regulated by the county with a county agency serving as the Lead Agency under the California Environmental Quality Act (CEQA). The identified activities were then categorized by the potential impacts they may have on anadromous salmonids and their habitat. This categorization is based upon Spence et. al. (1996). (See TABLE-1)

TABLE-1, Impact Categories for Identified Activities

Potential Impact to Anadromous Salmonids	County or County Regulated Activity
A. Streamflow Quantity Modifications	Road surfacing (impervious surfaces)
	Domestic water use
	Storm drainage
	Retention basins/overflow channels
	Road watering
B. Riparian Clearing	Floodplain clearing
	Channel clearing
	Levee construction
	Channel construction
	Site clearing
	Roadside brushing
C. Sedimentation	Grading/excavation/filling
	Culvert installation
	Bridge construction
	Emergency grading
	Culvert clearance/repair
	Bridge repair
	Road regrading/resurfacing
	Channel clearing
	Levee repair
	Landslide removal
D. Instream Habitat Modification (physical)	Erosion control and channel armoring
	Channel clearing
	Retention basins/overflow channels
	Channel structure installation

Potential Impact to Anadromous Salmonids	County or County Regulated Activity
E. Water Quality Impairment (thermal, biological or chemical)	Site clearing
	Channel structure installation
	Channel clearing
	Floodplain clearing
	Herbicide spraying
	Storm drainage
	Waste water discharge
	Domestic animals
F. Migration Barriers	Channel structure installation
	Retention basins/overflow channels
	Channel construction
	Culvert installation

This list of activities and impacts was the basis for the policy analysis. All Marin County general plan elements and ordinances which regulate these activities were analyzed (See TABLE-2). Policies which help avoid or mitigate impacts were identified, as were areas in which formal policies were missing. The specific policies along with relevant sections are presented in a series of tables at the end of this document. Highlights of the review are discussed below, by area of impact.

TABLE-2: General Plan Elements and Ordinances Reviewed

General Plan Elements	Ordinances
Environmental quality element	Dam permit (amendment), Chapter 11.04
Community development element	Watercourse diversion & obstruction, Chapter 11.08
Transportation element	Grading, Chapter 19.08
Housing element	Native tree preservation, Chapter 22.xx
Noise element	Mining and quarrying, 23.06 (amendment)
Environmental hazards element	Excavating, grading & filling, Chapter 23.08
Agricultural element	Urban runoff, Chapter 23.18
Community facilities element	Integrated pest management, Chapter 23.19
Parks and recreation element	Improvements, Chapter 24.04
Trails element	Drainage, Chapter 24.04.520
Economic element	Grading, Chapter 24.04.620
Local coastal plan unit I	Miscellaneous (bridges), Chapter 24.02.875
Local coastal plan unit II	Local Coastal Plan code Chapter 22.56
Tamalpais Area Community Plan	
San Geronimo Valley Community Plan	
Point Reyes Station Community Plan	

Summary of Conclusions

Marin County has a number of policies in place that serve to protect fish habitat. These protections are most comprehensive in the coastal zone where strict development standards protect salmonid streams with riparian buffers. Coastal zone rules restrict building in floodplains, channel modification, modification of streamflow quantity through water withdrawals, and they also strictly control grading.

In the non-coastal zone portions of Marin County, fish habitat protection measures are less stringent and consistent. The most important policies in place are the designation of riparian buffers throughout the entire county and the county's grading provisions. All of Marin County is also covered by a comprehensive storm water pollution prevention ordinance.

While existing policies play an important role in fishery protection in Marin County, a number of potential gaps were identified by this analysis. These are summarized below by impact category.

IDENTIFIED AND POTENTIAL POLICY GAPS SUMMARY

Wildlife Habitat

- Sensitive habitat is not designated in non-coastal areas. However, riparian buffers established by the general plan cover many areas of important fish habitat.
- Marin County does not have a comprehensive database that identifies locations of current fish habitat to check during the environmental review process.

Streamflow Quantity Modification

- Marin County does not require development projects demonstrate that they will not reduce the availability of stream water for fish, except in the Coastal Zone.
- Installation of permanent stormwater retention controls is not required in all cases.

Riparian Corridor Protection

- No specific implementation ordinances have been adopted to enact the riparian buffer requirements designated in the environmental quality element.
- No mandatory setbacks from floodways are established and development and filling in floodplains is allowed.

Sedimentation

- The extent to which public and emergency projects avoid the rainy season and follow an erosion plan is not known.
- Few written standards or policies for road maintenance were identified.

Channel modification

- Permits for private bank stabilization projects do not necessarily require applicants to assess the impact of the project on fish habitat.
- No formal written policies for public channel maintenance were found although training for maintenance crews is conducted each year prior to channel maintenance. The County is participating in the Bay Area Stormwater Management Program (BASMAA) and will eventually be operating under guidelines for channel maintenance established by BASMAA..

Water Quality

- No written county policies on use of chemicals in or near stream channels were identified or reviewed.

Fish Passage

- No written county policies or action plans to mitigate fish migration barriers due to county maintained culverts were identified
- No written policies requiring review of fish migration impacts due to emergency replacement of county culverts were identified.

Wildlife Habitat

Fish habitat in Marin County is protected by the same means as other sensitive wildlife habitat, through analysis during the CEQA environmental review process. Habitat protection goals and methods are articulated in the county's Environmental Quality (EQ-2.8). The plan directs the county to include conditions or mitigations to ensure health and survival of habitat in all project permits whenever possible. Development in areas which contain special status and migratory species is to be restricted or modified. Permit applicants in Significant Natural Areas are required to complete an environmental assessment, conducted by a qualified biologist, which identifies specific sensitive species and measures for protecting habitat.

Although a number of California counties establish special land use categories and procedures for development in and near sensitive habitat, including buffers and use restrictions, Marin County's general plan does not. Discretionary & some ministerial projects are checked for proximity to habitat depending on zone. The Community Development Agency is directed to maintain a Species Protection Resource Center in order to assess the potential impacts of proposed development on species and habitat (EQ-2.88). However, the county does not currently have a comprehensive database that identifies current fish habitat.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Sensitive habitat is not designated in non-coastal areas. However, riparian buffers established by the general plan cover many areas of important fish habitat.
- Marin county does not have a comprehensive database which identifies locations of current fish habitat to check during the environmental review process

A. Streamflow Quantity Modification

Streamflow quantity can be affected through withdrawals of water for domestic use and through increases in accumulated run off from surfaces hardened by development. Counties do not directly regulate water withdrawals, but they are responsible for regulation of drainage from developments

Instream Flow Withdrawals: Marin County, like other counties, acknowledges water supply as an issue in development and mandates water conservation and planning for the long-term water needs of county residents. However, only coastal zone policies require counties to determine and plan for instream flows adequate to protect fish habitat. Impoundments which would decrease streamflows below the minimum necessary to maintain fish habitat and spawning areas, as determined by the Department of Fish and Game (DFG) and the State Water Resources Control Board (SWRCB) are not permitted (LCP I &II).

Outside the coastal zone, Marin's Environmental Quality Element requires that minimum flows necessary to protect fish habitat be determined in conjunction with DFG and SWRCB before any stream alterations are allowed. The County's Subdivision Ordinance requires that detailed information on the proposed water supply of a new subdivision be submitted with a tentative map (20.24)

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Marin County does not require development projects demonstrate that they will not reduce the availability of stream water for fish, except in the Coastal Zone.

Stormwater Retention: Development projects typically create hardened surfaces which change hydrologic regimes affecting the magnitude and timing of stream flow. Marin's Environmental Quality Element directs the county to prohibit runoff rates above predevelopment levels which create new problems or exacerbate existing problems (EQ-2.19). Marin's San Geronimo Valley Community Plan calls for criteria to minimize adverse effects of surface runoff from development (ER-1.5).

The county's Urban Runoff Prevention Ordinance allows the Department of Public Works to establish controls on the volume and rate of stormwater runoff from new developments including limits on impervious areas or provisions for detention and retention of runoff prior to and during construction of private development projects and may require developers to install permanent sediment controls (23.18.093).

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Installation of permanent stormwater retention *controls* is not required in all cases.

B. Riparian Vegetation

Marin County has established riparian buffers throughout all parts of the county. Buffers in the coastal zone are defined to include all riparian vegetation on both sides of the stream or 100 feet from the stream bank. No development or vegetation removal is permitted within this buffer unless no alternative sites are feasible. Mitigation measures to control erosion and runoff and revegetation of disturbed areas are to be included (LCP I & II).

Outside the coastal zone, Marin County's Environmental Quality Element defines Stream and Creekside Conservation Areas (SCAs) for 100 feet on each side of perennial and intermittent streams within the Coastal Recreation Zone and Inland Rural Corridor, and 50 feet in the City Centered Corridor (EQ- 2.3). Ephemeral streams that have vegetation along 100 feet of channel or contain important habitat have the same buffer widths. Policies for these areas include prohibiting new roads, livestock confinement, use of motorized recreation vehicles, and structural repairs.

Exceptions are allowed when *the footprint of a proposed structure* falls within the riparian buffer and denial of development would prohibit economic use of the property. Mitigations such as on-site sediment retention, restricting construction to the dry season, revegetation, and limiting alteration of bed or banks may be required. Impacts on riparian vegetation extending beyond the

SCA buffer are to be evaluated by the county and prevented or mitigated during site development review. The county is to encourage retention of natural vegetation, replanting and removal of exotics.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- The environmental quality element directs the county to implement SCAs through the permit review process or adoption of specific new ordinances (EQ-2.3). No specific implementation ordinances have been adopted.
- The county is directed to establish a system of monitoring SCAs (EQ-2.14). It is not known if this system has been implemented.

Marin County's Native Tree Preservation and Protection Ordinance prohibits removal of native trees between 6 and 10 inches in diameter (depending on species) without a permit, unless the tree is a nuisance or hazard. The county may require tree removal to be mitigated by replanting (22.xx). This ordinance applies to trees in riparian corridors as well non-riparian areas.

Marin County's Urban Runoff Pollution Prevention Ordinance (23.18) was implemented as part of the county's National Pollutant Discharge Elimination System permit. A provision prohibits removal of healthy streambank vegetation beyond the amount actually needed for maintenance (23.18.084). The county's improvement standards (24.04) required that all drainage structures be set back from creeks and channels at least 20 feet from the top of the bank.

Floodplain Management

Riparian areas are by definition, a portion of the stream's floodplain. Some floodplain management policies may serve to protect riparian and stream functioning when they prohibit structures from the floodplain. Once structures are built on a floodplain, measures to prevent flooding such as installation of levees, clearing of riparian vegetation, or hardening of channel banks, often follow, all of which impact fish habitat.

Marin County manages the floodplain based on federal policy which seeks to minimize damage to property and people from flooding. The floodplain area is divided into two major sections, the floodway or primary floodplain and the flood zone, or secondary floodplain. The floodway is defined as the stream channel and immediately adjacent lands (i.e., bankfull). The floodzone is the area prone to flooding during the 100-year flood as defined by the Flood Insurance Rate Map (FIRM) delineated by the Federal Emergency Management Agency (FEMA).

Marin's Environmental Quality Element directs the county to promote compatible uses of the floodplain such as agriculture, wildlife habitat, and recreation and to retain natural features and conditions within flood control projects as much as possible (EQ-2.38). Easements held by the Flood Control District may not be transferred to allow development within floodways. The county strives to limit filling or other physical alteration in floodways, floodplains, or ponding areas to the minimum necessary as determined in development permits.

The County's Floodplain Management Ordinance (23.09) prohibits new structures in floodways. Variances are allowed on existing lots of record surrounded by lots with existing structures

below the base flood level. However, granting of variances is rare- Marin County has granted only one variance in 28 years. The ordinance seeks to control alteration of floodplains and channels by filling and grading. Building pads filled in above the base flood level must be certified by an engineer.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- No mandatory setbacks from floodways are established.
- Policies allow development and filling in floodplains.

C. Sedimentation

Land development and construction activities may release sediment into anadromous fish streams unless adequately controlled. Marin County's policies on grading, winter grading, development on steep slopes, and road maintenance contain measures to control erosion and sedimentation.

Coastal Zone Grading: Grading and clearing which results in movement of more than 150 cubic yards of soil must minimize the amount of exposed soil and be avoided in the winter. All measures for removing sediments, including sediment basins, and stabilizing slopes are to be in place before the beginning of the rainy season. Impervious surfaces are to be minimized (LCP I-25). Marin County requires a plan for installation of erosion control devices and a performance bond to assure installation and maintenance. The County's Excavating, Grading, and Filling Ordinance states that any grading in the coastal zone may be subject to a coastal development permit (23.09.012).

Non-Coastal Zone Grading: Marin's Environmental Quality Element directs the county to provide for on-site facilities for retention of sediment produced during and after construction and to require continued maintenance of these facilities (EQ-2.20). Stream Conservation Areas are to be protected by discouraging soil disturbance, locating new roads and road fill slopes outside SCAs, and prohibitions on depositing spoils from road construction. On-site retention of sediment produced during and after construction may be required (EQ-2.21).

Marin County's Grading Ordinance (19.06) requires adherence to Chapter 70 of the Uniform Building Code, except where this has been added to by the county's improvement standards for winter grading (24.04). Marin County's Excavating, Grading, and Filling Ordinance (23.08) requires permits for movement of 250 cubic yards of material, for roadways longer than 250 feet or with 20% slope, within an SCA, or for clearing of 10,000 square feet of vegetation on slopes greater than 15% (23.08.025). Emergency and public projects, as well as agriculture are exempted. When work poses an undue erosion potential, the county may require an erosion and sedimentation control plan in accordance with the county's improvement standards. Temporary and permanent erosion control measures, and winterization plans are required. The Department of Public Works may require a cash bond to insure compliance and repair damage (23.08.050). The permit shall be denied if work will affect functioning of any stream. Conditions to avoid erosion and sedimentation may be put on the permit.

Winter Grading: Marin, as other counties do, regulates grading more strictly during the winter than at other times of the year because winter rains increase the potential for eroding soil to leave construction sites and cause sedimentation in streams. The county's Environmental Quality Element requires that work done adjacent to Streamside Conservation Areas be done in the dry season only, except for emergencies (2.23). Disturbed areas must be stabilized and replanted before the rainy season. On-site retention of sediment produced during and after construction may be required.

Marin's Development Standards prohibit grading operations during the rainy season (10/15-4/15) unless the county determines that there is no substantial risk of increased sediment discharge from the site. Winter grading must follow a phasing plan and may require a cash bond. Erosion and sediment control measures are subject to review and approval and must conform to the current "Manual of Standards for Erosion and Sediment Control Measures" published by ABAG (24.04.625). Projects which require a Surface Runoff Pollution Control Plan must be conducted according to the current "Baseline Urban Runoff Control Plan for the Cities and County of Marin". Projects which require a Storm Water Pollution Prevention Permit (SWPPP) from the Regional Water Quality Control Board must obtain this permit before a county grading permit will be issued. The standards list construction and post-construction BMPs that may be required of projects.

Development on Steep Slopes: Development on steep slopes carries increased potential for soil erosion and subsequent stream sedimentation. Marin County plans and ordinances do not address this potential impact. However, the Tamalpais Community Plan directs the Department of Public Works to evaluate the impact of hillside development in terms of potential for erosion (PS6.1a). The San Geronimo Valley Community Plan requires that significant landscape changes in areas where slopes are greater than 20% be preceded by a detailed geologic investigation (NH-3.5).

Road Maintenance: Roads and road maintenance activities are a major potential source of sedimentation to streams. Marin County is responsible for maintenance of 870 miles of road. Of this, 420 miles are surfaced and 450 miles are unsurfaced. These road miles are divided between Marin County Department of Public Works (surfaced), the County Fire Department and County Open Space District (unsurfaced).

Very little written policy on avoiding road related impacts was found during this review. The San Geronimo Valley Community Plan directs that fire roads be graded to control erosion (ER-1.10). All new roadway improvements should be designed to minimize grading and impacts of surface runoff. New and modified roadways should be designed to retain significant vegetation unless it creates a safety hazard ((T-3.2b). Marin's Environmental Quality Element directs the county to locate new roads and roadfill slopes outside stream conservation areas except for at stream crossings. Special efforts to stabilize soil should be made there. No spoils from road construction are to be deposited within SCAs (EQ- 2.21).

The Marin Municipal Water District is in the process of developing a countywide, multi-agency MOU for rural road maintenance which will begin to address sedimentation issues.

Cultivation: No policies regulating cultivation were found.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Public projects are exempt from the county’s excavation, grading, and filling ordinance. The extent to which public projects meet the standards of this ordinance, by avoiding the rainy season and following an erosion control plan, is not known.
- Few written standards or policies for road maintenance were identified. Direction on maintenance of county fire roads is included in one Marin Community Plan. The extent to which these policies have been adopted countywide is not known.
- Marin County has no policies regulating development on steep slopes.

D. Channel Modification and Maintenance

The primary agencies regulating activities in stream channels are the California Department of Fish and Game through the requirement for Streambed Alteration Agreements, and the US Army Corps of Engineer through the Section 404 permitting process. However, county governments do have some jurisdiction over channels through their responsibilities to review permit applications for installation of bank stability structures, and through their own channel clearing and maintenance activities.

Bank Stabilization Structures: Marin County’s Environmental Quality Element directs the county to discourage filling, grading, excavating, obstructing flow or altering the bed or banks of the channel, and to allow such actions only after completion of environmental review, mitigation and permit by the Department of Public Works (EQ-2.22). The Tamalpais Community Plan mandates the county to retain existing unimproved water courses in natural appearance and to prohibit undergrounding of stream to accommodate development. (LA11.2b). Use of concrete lining or culverts along Reed Creek should be kept to a minimum (PS7.1b).

Marin County’s Watercourse Diversion or Obstruction Ordinance (11.08) prohibits dumping, depositing, maintaining or accumulating debris, garbage, brush, timber, dirt, fill, rocks, or anything which prevents or diverts natural flow into any creek in Marin County. Applicants wishing to install stabilization structures such as riprap within a stream channel must obtain a creek permit from the Department of Public Works. The permit may require an assessment by a civil engineer that construction will not impede the passage of water in the creek. Channel modifications made without a creek permit are considered a public nuisance and may be abated.

The county’s improvement standards require that fill and culvert crossings be allowed only where the Department of Public Works determines that they are consistent with erosion and sediment control policies (24.02.875). In addition, Marin’s Urban Runoff and Pollution Prevention Ordinance prohibits deposition of debris in or near a watercourse (23.18.084).

Channel Maintenance: Marin County maintains about 10 miles of flood control channel and eight miles of levees. No formal policies for public channel maintenance were identified in Marin County’s general plans and ordinances. Generally, mitigations are established through Memorandums of Understanding or blanket 1600 Streambed Alteration Agreements with DFG.

The Marin County Flood Control District in association with BASMAA will be holding training sessions this summer with maintenance staff using the newly developed Best Management Practices Manual.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Permits for private bank stabilization projects do not necessarily require permit applicants to assess the impact of the project on fish habitat.
- No formal policies for public channel maintenance or bank stabilization projects were found. Flood control maintenance crews receive annual training. This training is now documented through the Bay Area Storm Water Management Program (BASMAA), best management practices manual.

E. Water Quality

Marin’s Environmental Quality Element directs the county to maintain or enhance water quality (EQ-2.31). Marin County administers the Marin County Stormwater Pollution Prevention Program (MCSTOPP) which is a joint effort of Marin’s cities, towns and unincorporated areas to prevent stormwater pollution. The program publishes a five year action plan to reduce stormwater pollutants into creeks and wetlands. The plan combines education of the public and construction contractors, with increased scrutiny of development and construction projects.

Storm Water Pollution Prevention: In order to comply with the federal Clean Water Act, Marin County has obtained a permit from the National Pollutant Discharge Elimination System (NPDES) for storm drain systems throughout the county. Marin, like other counties, must report annually to the Regional Water Quality Board describing the amount of pollution prevented by cleaning storm drains, clearing channels and creeks, collecting material from street sweeping and chemical collection facilities.

To aid in implementation of NPDES requirements, Marin County enacted a specific Urban Runoff Pollution Prevention Ordinance (23.18). Non-storm water discharges to a county storm drain are prohibited except when in compliance with an individual (NPDES) permit. Each discharger must comply with BMPs. Exempt discharges include water line flushing, landscape irrigation and lawn watering, irrigation water, diverted stream flows, rising groundwater, infiltration to separate storm drains, uncontaminated pumped groundwater, foundation and footing drains, water from crawl space pumps, air condition condensation, springs, residential car washing, flows from riparian habitats and wetlands, and flows from fire fighting and permitted use of reclaimed water.

Marin’s Improvement Standards require additional measures, consisting of a county approved Surface Runoff Pollution Control Plan with construction and post construction BMPs in accordance with the current “Baseline Urban Runoff Control Plan for the Cities and County of Marin” (24.04.627).

Chemical Use: Marin County’s general plans and ordinances make no mention of herbicide or pesticide use near streams. County flood control maintenance crews do not use herbicides or pesticides.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- No written county policies on use of chemicals in or near stream channels were identified or reviewed.

F. Migration Barriers

Culverts and bridges over anadromous fish streams may create a barrier to migration of fish when not properly sized or installed. Counties are responsible for direct installation of county culverts and bridges and review of privately constructed infrastructure as well. Marin County maintains over 200 culverts and has replaced or improved two bridges in the past decade. Routine replacement of culverts and crossings affecting fish bearing streams is reviewed the Department of Fish and Game through the Streambed Alteration Agreement process. No policies on prevention of fish migration barriers due to routine or emergency replacements were found in county documents.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- No written county policies or action plans to mitigate fish migration barriers due to county maintained culverts were identified.
- No written policies requiring review of fish migration impacts due to emergency replacement of county culverts were identified.