

MARIN COUNTY
COMMUNITY DEVELOPMENT AGENCY

ALEX HINDS, DIRECTOR

REVISED

February 26, 2007

Marin County Planning Commission
3501 Civic Center Drive
San Rafael, California 94903

SUBJECT: Public Hearing on Draft Marin Countywide Plan Update

Dear Planning Commission Members:

RECOMMENDATIONS:

1. Conduct public hearing.
2. Conduct straw votes (non-binding motions of intent) on selected issues.
3. Continue the public hearing to Monday, March 5, 2007 at 2:00 p.m.

Today's meeting is second public hearing in 2007 on the Draft Marin Countywide Plan (CWP) Update. This hearing will focus on the Stream Conservation Area (SCA) and Wetlands Conservation Area (WCA) topics in the *Natural Systems and Agriculture* Element. Subsequent meetings will continue to progress through the document sequentially with up to three additional hearings scheduled for the *Natural Systems and Agriculture* Element. The dates and major topics of discussion include:

<u>Date</u>	<u>Topic</u>
March 5, 2007	Baylands Corridor
March 12, 2007	Agricultural home sizes, Agricultural regulations, and Trails
March 19, 2007	Sea level rise, and remainder of Natural Systems and Agriculture Element

Following today's public hearing, it will be necessary to continue the public hearing to a specific date and time. In order to keep to the schedule, staff is recommending that each topic area be reviewed as follows:

1. Staff presentation and introduction of topics for discussion
2. Public testimony (limited to three minutes or less per individual or 6 minutes or less per organization.)
3. Close public testimony and conduct Commission deliberations.
4. Conduct straw votes. Straw votes are non binding motions of intent that will be taken on selected issues.

The purpose of this process is to obtain a tentative decision from the Commission as each topic is addressed in order to finalize the Commission's recommendation on the CWP and FEIR by July 23, 2007.

Overview

The Natural Systems and Agriculture Element addresses watershed functions, water quality, streams, riparian habitat, wetlands, baylands, open space, trails, and agriculture. The topics covered in this portion of the Countywide Plan include:

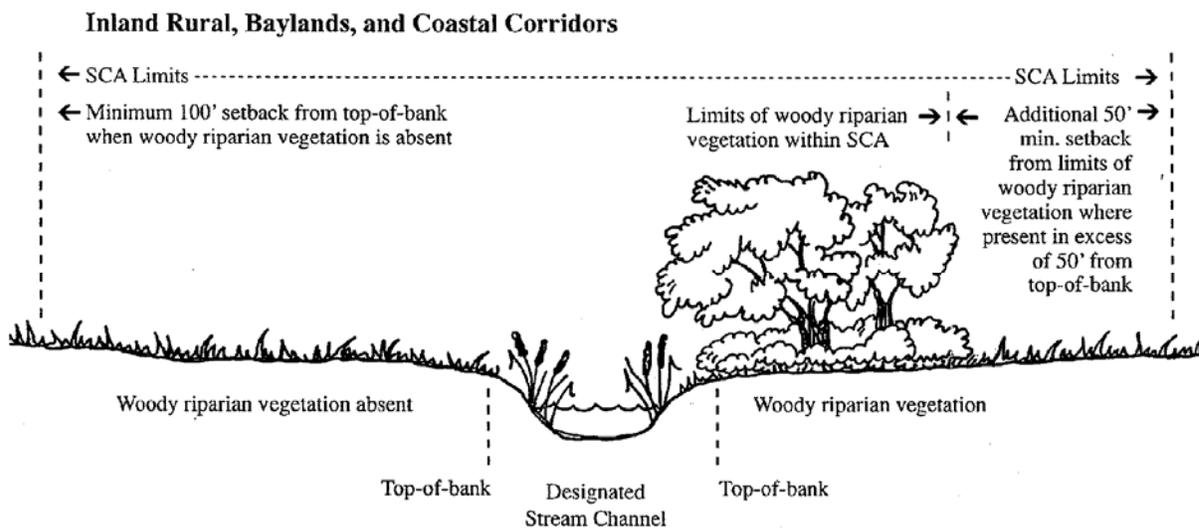
- Biological Resources
- Water Resources
- Environmental Hazards
- Atmosphere and Climate
- Open Space
- Trails
- Agriculture and Food

Stream and Wetland Conservation Areas

Stream Conservation Areas (SCA) and Wetlands Conservation Areas (WCA) are discussed in the Biological Resources section of the Natural Systems and Agriculture Element. SCAs are established along riparian corridors and protect the active channel, water quality and flood control functions, and associated fish and wildlife habitat values along streams. Modeled after the SCA protection polices, the WCA's would be established around jurisdictional wetlands to protect these features and associated buffer area. The SCA and WCA setbacks vary depending on which Countywide Plan Corridor it is located within (see Figures 1 and 2).

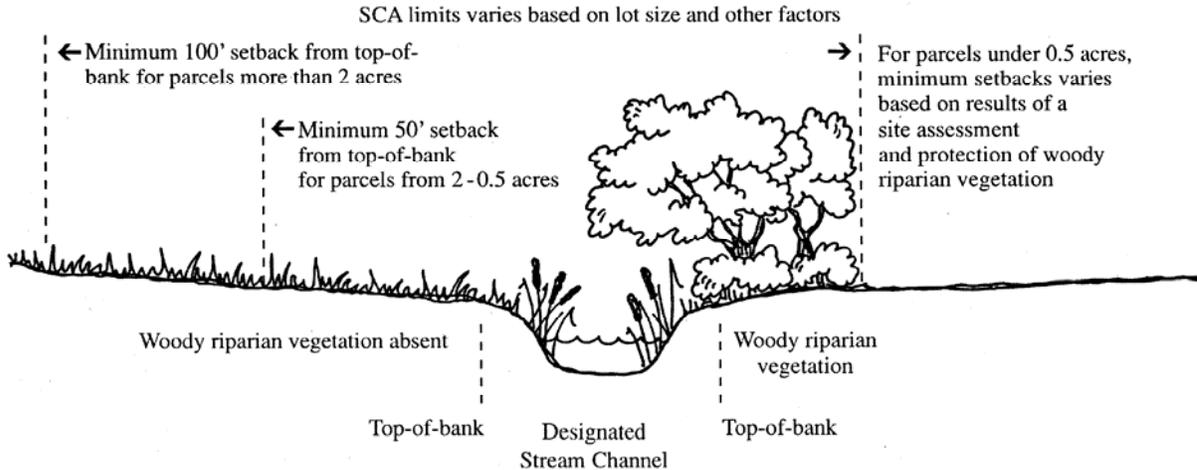
The following diagrams summarize the SCA requirements proposed in the CWP update:

Figure 1
Typical Cross Section of a Stream Conservation Zone



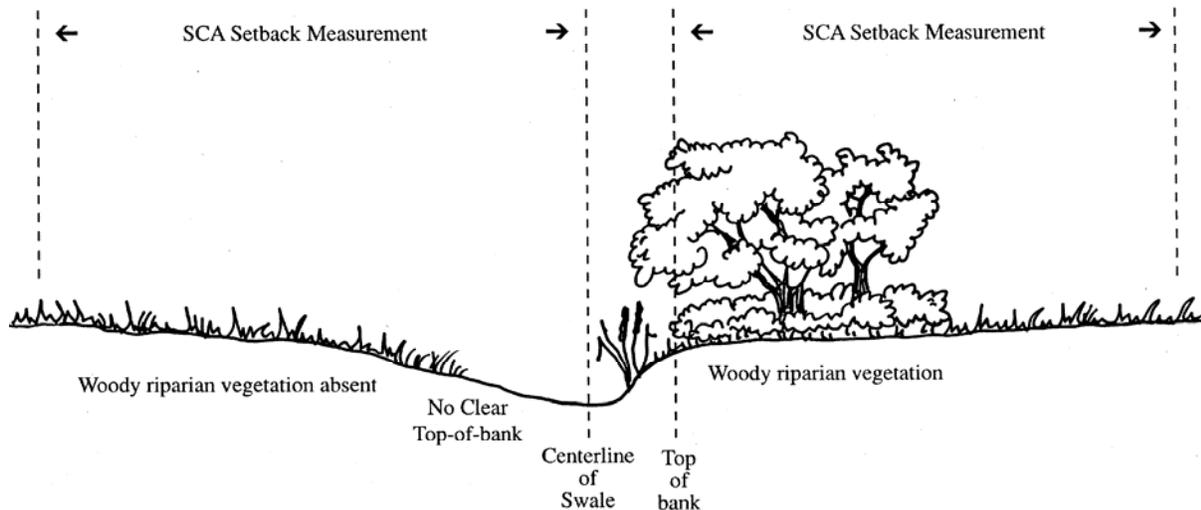
- ◆ Minimum setback distance of 100 feet from top-of-bank or an additional 50 feet from edge of woody riparian vegetation regardless of lot size, unless an exception is allowed because parcel falls entirely within SCA or development outside SCA is either infeasible or would have greater impacts.
- ◆ A site assessment is required where incursion into an SCA is proposed and where full compliance with all SCA criteria would not be met for any parcel size.

City Centered Corridor



- ◆ Minimum setback distance of 100 feet from top-of-bank for parcels more than 2 acres.
- ◆ Minimum setback distance of 50 feet from top-of-bank for parcels between 2 and 0.5 acres.
- ◆ No specific minimum setback distance from top-of-bank for parcels less than 0.5 acres in size, but assumes any woody riparian vegetation is avoided and a site assessment is required which considers site constraints, presence of other sensitive biological resources, and options for alternative mitigation.
- ◆ A site assessment is required where incursion into an SCA is proposed and where full compliance with all SCA criteria would not be met for any parcel size.

Setback Measurement for Ephemeral Streams

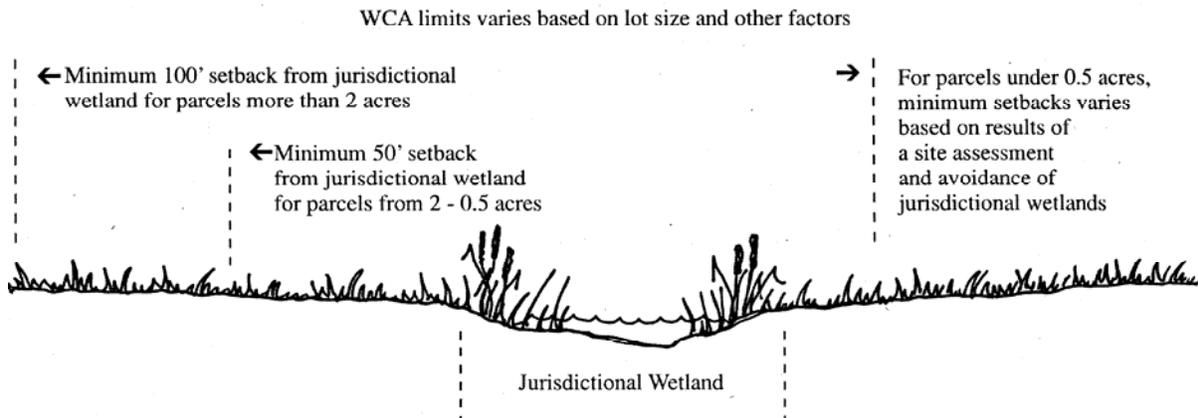


- ◆ Setback measurements are based on the corridor in which the stream is located.

The following diagrams summarize the WCA requirements proposed in the CWP update:

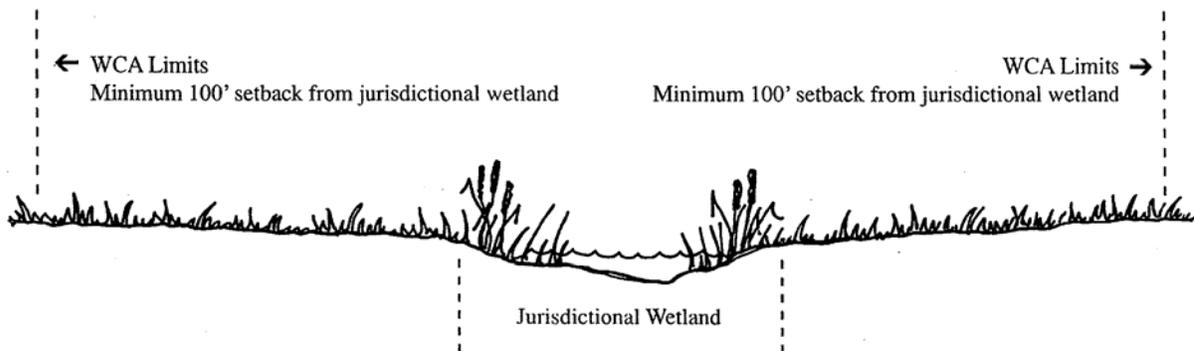
Figure 2
Typical Cross-Sections of Wetland Conservation Areas

City Centered Corridor



- ◆ Minimum setback distance of 100 feet from jurisdictional wetlands for parcels more than 2 acres.
- ◆ Minimum setback distance of 50 feet from jurisdictional wetlands for parcels between 2 and 0.5 acres.
- ◆ No specific minimum setback distance from jurisdictional wetlands for parcels less than 0.5 acres in size, but assumes any wetlands are avoided and a site assessment is required which considers site constraints, presence of other sensitive biological resources, and options for alternative mitigation.
- ◆ A site assessment is required where incursion into a WCA is proposed and where full compliance with all WCA criteria would not be met for any parcel size.

Inland Rural, Baylands, and Coastal Corridors



- ◆ Minimum setback distance of 100 feet from edge of jurisdictional wetlands regardless of size, unless an exception is allowed because parcel falls entirely within WCA or development outside WCA is either infeasible or would have greater impact.
- ◆ A site assessment is required where incursion into a WCA is proposed and where full compliance with all WCA criteria would not be met for any parcel size.

The CWP proposes the following measures to continue to avoid, preserve, and enhance stream and riparian areas:

- Amend stream policies to include perennial, intermittent, and ephemeral streams;
- Specify functional criteria for land uses in the SCA;
- Clarify when SCA policies apply to ephemeral streams with or without vegetation;
- Require detailed studies with development applications to assess impacts and recommend mitigation to riparian vegetation;
- Promote natural stream channel functions and restoration and stabilization of stream channels; and
- Conduct a comprehensive study to reevaluate standards used to protect streams and regulate development adjacent to streams.

With regards to the proposed Wetlands Conservation Area (WCA), the Draft CWP proposes the following measures to avoid and minimize potential adverse impacts on existing wetlands and encourage programs for restoration and enhancement of degraded wetlands. These include:

- Designate 50-foot and 100-foot buffers for parcels greater than 0.5 acres in size. In the City-Centered Corridor, a minimum 50-foot setback from jurisdictional wetlands would be required for parcels between 0.5 and two acres in size, and a minimum of 100-foot setback would be required for parcels over two acres. No specific minimum would be set for parcels less than 0.5 acres in size; however, a site assessment would be necessary. In the Coastal, Inland Rural, and Baylands Corridors, a minimum of 100-foot setback regardless of parcel size would be required.
- Require a minimum on-site replacement ratio of two acres for each acre lost (2:1) and a minimum 3:1 replacement ratio for off-site mitigation provided that, to the maximum extent feasible, no net loss of wetland acreage, function, and habitat values occurs.
- Continue a no-net loss wetlands policy.

Goal Bio-3 in the Draft CWP addresses wetlands conservation. The goal is to take and require all feasible measures to avoid and minimize potential adverse impacts on existing wetlands and encourage programs for restoration and enhancement of degraded wetlands. Goal Bio-4 addresses riparian conservation, to protect and, where possible, restore the natural structure and function of riparian systems.

The wetlands and stream policies in the Plan addressing the goals of wetlands and riparian conservation include (see attachment 1):

- BIO-3.1, Protect Wetlands
- BIO-3.2, Require Thorough Mitigation
- BIO-4.1, Restrict Land Use in Stream Conservation Areas

- BIO-4.2, Comply with SCA Regulations
- BIO-4.3, Manage SCAs Effectively
- BIO-4.4, Promote Natural Stream Channel Function
- BIO-4.5, Restore and Stabilize Stream Channels
- BIO-4.6, Control Exotic Vegetation
- BIO-4.7, Protect Riparian Vegetation
- BIO-4.8, Reclaim Damaged Portions of SCAs
- BIO-4.9, Restore Culverted Streams
- BIO-4.10, Promote Interagency Coordination
- BIO-4.11, Promote Riparian Protection
- BIO-4.12, Support and Provide Riparian Education Efforts
- BIO-4.13, Provide Appropriate Access in SCAs.
- BIO-4.14, Reduce Road Impacts in SCAs
- BIO-4.15, Reduce Wet Weather Impacts
- BIO-4.16, Regulate Channel and Flow Alteration

Discussion of Major Stream and Wetland Issues

This section focuses on the discussion of major issues identified for streams and wetlands. Each issue will include a discussion about key concerns, followed by impacts identified in the Environmental Impact Report, if any, and then staff recommendations. These issues are as follows:

Issue 1: Should undergrounded or culverted creeks (i.e. man-made ditches) be subject to SCA regulations?

Discussion

Artificial or man-made ditches are often constructed in uplands, with no riparian habitat or other important natural resource functions, and may have no relationship to the larger stream network. Application of SCA policies to all man-made ditches would not be appropriate as these tend to have been constructed for specific drainage functions and typically require routine maintenance that removes woody riparian vegetation and protective cover essential to habitat functions along a designated SCA. However, if evidence exists that the ditch was once part of a natural drainage system or contains sensitive habitat values, application of SCA policies may be appropriate on a case-by-case basis.

The SCA policies currently do not apply to undergrounded or culverted creek segments, but several policies encourage restoration of culverted streams. These include Policies BIO-4.4, BIO-4.5, BIO-4.8, and BIO-4.9.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Accept as proposed.

Issue 2: Should the SCA definition should be modified to include:

- **all ephemeral creeks, not just those that meet criteria defined in the Countywide Plan**
- **the 200-year floodplain when that floodplain is not already included in the SCA, and include flexible setback distances from the top of either bank**
- **ephemeral streams as headwaters**

Discussion

The identified revisions for extending SCA protections over ephemeral drainages is not intended to dismiss the implied drainage and water quality functions all drainages provide on a local and watershed-level basis. However, assuming the proposition that all ephemeral drainages should be protected under the SCA policies is unrealistic given the difficulty in mapping these features and the possible excessive implications on land use options. The proposed policies in the CWP are an attempt to more accurately define identifiable criteria for distinguishing those ephemeral drainages with more important habitat functions and values. Establishing SCA policies over all ephemeral drainages at the specified setback distances of from 50 to 100 feet or more would be very difficult to administer and would result in severe constraints that are not warranted biologically or hydrologically.

Flood intensity intervals and flood zones are not specifically addressed with regard to SCA policy in the Biological Resources or Environmental Hazards sections of the Countywide Plan. Extending consideration to the 200-year interval at this time would be very difficult to identify and administer. However, the issue of whether to require 200 year flood intervals is being considered at the California State Legislature and thus could be a legislative mandate in the future.

Not all ephemeral drainages occur in headwaters or upper watershed conditions and redefining these drainages this way would limit regulations over segments that may occur in valley floors and lower watershed conditions.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Accept as proposed.

Issue 3: Should allowable uses in an SCA require best management practices (BMPs) pertaining to water issues for any repair or minor development within an existing building footprint

Discussion

This suggestion to provide improved permeability and adherence to best management practices within an SCA during repair and retrofit of existing structures is reasonable for major remodels but may not have a nexus and may be problematic to regulate for repairs and minor additions.

On a similar note, some have suggested that uses in the SCA that do not require a permit (such as small accessory structures, patios, fences, and confinement of non agriculture animals) should only be allowed only when it can be demonstrated prior to construction that these activities do

not alter the stream hydrograph, cause a net loss in habitat, value, or function, or degrade water quality. This would also be difficult to enforce. Further, determining changes to stream hydrograph could only be accomplished with a detailed hydrologic assessment, at considerable expense, which appears unreasonable given the ministerial nature of the improvements. Most of the contemplated accessory improvements would most likely not register as a significant change in the flow capacity or characteristics, and this may be a futile exercise, at least from a flood flow capacity standpoint. Please also refer to Issue 15, which discusses stream sedimentation on agriculturally zoned properties.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Amend CWP to require water-related BMPs for major remodels.

Issue 4: Should fencing around creeks be required where down stream water is used for row cropping and processing activities

Discussion

Several SCA policies and programs are intended to address intensive and extensive agricultural practices. These include BIO-4.1, BIO-4.11, BIO-4.12, and BIO-4.j. Extensive agriculture presents challenges that may be best addressed through landowner education and coordination, as these uses are otherwise problematic as generally unregulated activities. Policy BIO-4.1 identifies allowable uses within an SCA, which includes “agricultural uses that do not require removal of woody riparian vegetation, result in installation of fencing within the SCA which prevents wildlife access to the riparian habitat within the SCA, and do not involve animal confinement within the SCA.” Please also refer to Issue 16 below. This issue will also be discussed at the March 12, 2007 hearing that focuses on agricultural home sizes and agricultural regulations.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

No change. Continue discussion to March 12, 2007.

Issue 5: Should mitigation be required when development within the SCA is unavoidable

Discussion

A site assessment and appropriate restrictions and mitigation would be required where incursion into an SCA is proposed, whether the parcel falls entirely or partially within the SCA. As defined in Program BIO-2a, the site assessment must identify measures for protecting the resource and surrounding habitat. Additional direction on mitigation priorities and options may be useful.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Accept as proposed.

Issue 6: Should additional incentives be provided to homeowners, such as reduced fees, who wish to improve habitat within the SCA in the most environmentally sensitive manner possible and/or apply best management practices to SCA enhancements.

Discussion

This is a good suggestion and could be incorporated into Policies BIO-4.5 or BIO-4.12, or program BIO-4.a.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Staff recommends modifying BIO-4.a as follows:

BIO-4.a Adopt Expanded SCA Ordinance. Adopt a new SCA ordinance that would implement the SCA standards for parcels that are subject to conventional zoning designations especially those traversed by or adjacent to a mapped anadromous fish stream and tributary. Such an ordinance could, by way of example, require compliance with the incorporation of best management practices into the proposed project and could consider modest additions to existing buildings that would not result in significant impact to riparian resources, such as additions that do not exceed 500 square feet of total floor area and which do not increase the existing encroachment into the SCA provided a site assessment first confirms the absence of adverse impacts to riparian habitats. Buffer criteria for smaller developed parcels within the City-Centered Corridor should allow flexibility based on site constraints, opportunities for avoidance, presence of sensitive biological resources, and options for alternative mitigation. As part of the new ordinance, consider including additional incentives, such as reduced fees, to reduce the extent of existing development within a SCA, or improve conditions that may be impacting sensitive resources.

Issue 7: Cumulative impacts of all development projects proposed in the SCA, including those at buildout, should be considered for each development proposal

Discussion

Policy BIO-4.2 *Comply with SCA Regulations* requires environmental review where incursion into a SCA is proposed and a discretionary permit is required. BIO-4.b *Reevaluate SCA Boundaries* requires a comprehensive study that shall consider stream functions on a watershed-level basis, which could presumably include cumulative impacts.

EIR Considerations

The Countywide Plan DEIR considers cumulative impacts. Specifically, cumulative hydrology and biotic impacts are discussed and summarized in Chapter 6.0 Growth Inducing and Cumulative Impacts.

Recommendation

Staff recommends no change. The discretionary and environmental review process already takes this into consideration.

Issue 8: Development on agriculturally zoned properties should be exempted from SCA policies

Discussion

Extensive agriculture, dairy production and animal confinement and other agricultural activities can all contribute to degradation of surface water quality due to excess nitrogen and bacteria levels from animal waste, and can cause increased stream sedimentation and erosion. Please also refer to Issues 9 and 15.

EIR Considerations

The Countywide Plan DEIR discusses impacts of agricultural activities in Section 4.5 Hydrology, Water Quality, and Flood Hazards with Impact 4.5-1 Water Quality Standards. This impact states land uses and development consistent with the Plan would introduce additional pollutants to downstream waters. Such pollutants would result in adverse changes to the water quality of Marin County's natural and artificial drainageways and ultimately to Richardson, San Francisco, and San Pablo Bays. This would be a significant impact. The DEIR also says that some agricultural practices and associated land uses have historically impaired water quality and, on occasion, contributed to the violation of water quality standards in Marin County. These practices and land use activities include hay farming, grazing, and dairies.

Such agricultural land uses consistent with the CWP could be a source of soil erosion and sedimentation of downstream waterways, especially when such land use activities occur on steep slopes. These land use activities, particularly when "conventional" agricultural practices are followed, could also be a source of nutrients from excess concentrations of chemicals used in agricultural operations (e.g., fertilizers) containing nitrogen and phosphorous in agricultural runoff.

Stormwater runoff from agricultural uses such as dairy operations and other areas of concentrated animal management activities could transmit pathogens from livestock feces to humans. These pathogens include E. coli (i.e., fecal coliform), cryptosporidium, and giardia. Pathogens are a concern in West Marin, especially during the rainy season, due to more intense agricultural land uses relative to other areas of the county. For example, in the Tomales Bay Watershed, streams flowing through agricultural lands drain into Tomales Bay and often carry pathogens from animal waste in stormwater runoff. During the rainy season, elevated levels of fecal coliform may contaminate shellfish beds and impair water quality. The California Department of Health Services prohibits commercial shellfish harvesting during rainfall periods to limit health risks to shellfish consumers.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Accept as proposed.

Issue 9: Delineate the impacts of agricultural uses, including dairy herds, on baylands and streams.

Discussion

Impacts on baylands will be discussed by the Planning Commission on March 5, 2007. Extensive agriculture, dairy production and animal confinement and other agricultural activities can all contribute to degradation of surface water quality due to excess nitrogen and bacteria levels from animal waste, and can cause increased stream sedimentation and erosion. Several policies in the CWP address landowner education, habitat protection, and riparian restoration, including Policies BIO-4.5 and BIO-4.12, and Program BIO-4.j. Policy BIO-4.1 states that agricultural is an allowable use in an SCA where they do not require removal of woody riparian vegetation, result in installation of fencing within the SCA which prevents wildlife access to the riparian habitat within the SCA, and do not involve animal confinement within the SCA. Please also refer to Issues 8 and 15, which discusses agricultural activities within an SCA and stream sedimentation and erosion on agricultural lands, respectively.

EIR Considerations

The Countywide Plan DEIR discusses impacts of agricultural activities in Section 4.5 Hydrology, Water Quality, and Flood Hazards with Impact 4.5-1 Water Quality Standards. See Issue 8 above for further details.

Recommendation

Accept as proposed.

Issue 10: Definition of Wetlands

Discussion

The Plan defines wetlands based on the definition provided by the Army Corp of Engineers (Corps), which is the primary agency responsible for identifying jurisdictional waters regulated under Section 404 and 401 of the Clean Water Act, rather than the Cowardin definition. Other agencies, such as the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG), use different definitions. For example, the CDFG uses a simpler bed and bank to define their jurisdiction under Section 1600 of the Fish and Game Code. The USFWS has no direct jurisdiction over wetlands and waters, and is not going to be stepping into a determination role for waters of the United States.

The Cowardin definition and other broader definitions of wetland habitat has been pushed by some to greatly expand the limits of County regulation over "wetlands", and would go far beyond the current jurisdiction of the Corps and the Regional Water Quality Control Board. This

would force the County to oversee all wetland delineations and verifications, with no other jurisdictional or trustee agency (like the Corps or RWQCB) to take the lead on this issue. This would create additional process and oversight responsibilities for the County. It would also force the County to oversee wetland regulations on a similar level to that found in the Coastal Zone, where only one criteria (vegetation, hydrology, or soils) would be necessary for the area to qualify as a wetland. In the Coastal Zone, the Coastal Commission and their staff provide the regulatory oversight for this broader wetland definition. For these reasons the County relies on the Corps definition.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Accept as proposed. Continue to rely on the Corps definition and determination of wetlands.

Issue 11: Provide a measure to rate the environmental value of wetlands.

Discussion

The functions and values of wetlands vary depending on a number of factors, including type, size, relationship and connectivity to other wetlands and surrounding habitat types, and other factors. Wetlands are generally considered highly sensitive and biologically important features, and additional policies and programs have been identified in the CWP Update to provide for their protection through establishment of a WCA. The site assessment required under Program BIO-3.d would serve to define existing functions and values where incursion into the WCA is proposed, or adverse impacts to wetland resources may otherwise occur.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Accept as proposed.

Issue 12: Acquisition of Martin Brothers Triangle

Discussion

Approximately 95% of Bothin Marsh in the Tamalpais Valley area has been purchased for public open space for purposes of preserving and protecting the marsh ecosystem. However, key parcels such as the Martin Brother's Triangle, remain unprotected and could potentially be developed. Many urge the County to target this parcel for acquisition.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Policy OS-2.3 in the Open Space section of the *Natural Systems and Agriculture* Element targets water edge lowlands in the Baylands and City-Centered Corridors for acquisition, including

Bothin Marsh. The acquisition of this property would close an important gap in the Bothin Marsh Open Space Preserve. Staff recommends modifying this policy to clarify the importance of targeting the Martin Brothers Triangle parcel for protection as follows:

OS-2.3 Balance Shoreline Protection and Access to Water Edge Lowlands. Consider tideland ecosystem health, habitat protection, and passive and active recreation in pursuing acquisition of additional marsh and other bay margin open space areas:

Targeted water edge lowlands in the Baylands and City Centered Corridors include:

- *Richardson Bay.* These sections of shoreline should be acquired or otherwise protected: Manzanita Green, connecting Marin City with the bay, Strawberry Cove, and the Martin Brothers Triangle adjacent to Bothin Marsh. Portions of Bothin Marsh (with the exception of the Martin Brothers Triangle), most of most of the Tiburon shoreline, and the head of Richardson Bay have been acquired.

(The rest of the policy remains unchanged and is not included.)

Issue 13: Appropriateness of reducing the 2:1 on-site wetland mitigation requirement when suitable “in-kind” wetland types would enhance the quantity but not the quality of overall habitat value. Can the mitigation include restoration of a season wetland with the expansion of an existing tidal marsh wetlands and conversion of an adjacent uplands habitat area at a 1:1 ratio.

Discussion

The Mill Valley School District (Strawberry Point School) has an application for a Tidelands Permit and Design Review proposing establishment of a turf play field at the Strawberry Point School and the restoration and expansion of an existing on-site tidal marsh. The applicant proposes to mitigate this impact by replacing a seasonal wetland with marginal water quality and wildlife value by restoring and expanding a tidal marsh wetland area and upland habitat adjacent (which includes the reduction in elevation of upland berms) to the project site at a 1:1 ratio. The project has been appealed on the assertion that it is inconsistent with Marin Countywide Plan policies regarding wetland protection and mitigation and does not achieve a 2:1 “in-kind” replacement ratio.

EIR Considerations

This issue will be addressed in the Final EIR responses to comments.

Recommendation

Staff recommends modifying BIO-3.2 Require Thorough Mitigation and BIO-3.d Prioritize Wetland Avoidance as follows:

BIO-3.2 Require Thorough Mitigation. Where complete avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration

and/or habitat creation at a minimum ratio of two acres for each acre lost (2:1 replacement ratio) for on-site mitigation and a minimum 3:1 replacement ratio for off-site mitigation, provided that, to the maximum extent feasible, no net loss of acreage, wetland ~~acreage~~, function, and habitat values occurs. Mitigation shall also be required for incursion within the minimum WCA setback distance where direct or significant indirect impacts on wetland functions or values would occur as a result of the incursion.

BIO-3.d *Prioritize Wetland Avoidance.* Amend the Development Code to require development to avoid wetland areas to the extent feasible. Where complete avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration and/or habitat creation, provided that no net loss of wetland acreage, function, and habitat values occurs. On-site wetlands mitigation shall be provided at a minimum ratio of two acres for each acre lost (2:1 replacement ratio). Allow off-site wetland mitigation only when an applicant has demonstrated that no net loss of acreage, wetland functions and values would occur and that on-site mitigation is not possible or would result in isolated wetlands of extremely limited value. In those rare instances when on-site wetlands loss is unavoidable and on-site replacement is infeasible, require that a minimum of three acres be provided through mitigation for each acre lost (3:1 replacement ratio), preferably of the same habitat type as the wetland area that would be lost.

Issue 14: Increased watershed peak flow rates, floodplain erosion and downstream sedimentation.

Discussion

Impact 4.5-4 in Section 4.5 Hydrology, Water Quality, and Flood Hazards in the EIR (page 4.5-37) states that land uses and development consistent with the Draft 2005 CWP Update could result in an alteration of local drainage patterns and/or the modes of stormwater conveyance that would increase watershed peak flow rates. Increased peak flow rates may exacerbate hillside or channel / floodplain erosion and downstream sedimentation. This is a significant impact.

EIR Considerations

The Environmental Impact Report (EIR) of the Draft 2005 CWP Update includes mitigation measures to reduce significant impacts of the Plan. The EIR recommends the addition of two new policies and associated programs to the Biological Resources section to address stream related impacts. The resulting mitigation measure is as follows:

Mitigation measure 4.5-4(a) is proposed to reduce impacts from erosion and downstream sedimentation in Marin County drainage ways to a less-than-significant level and to minimize the adverse affects of increased peak flow rates and storm drain discharges from development. This mitigation proposes a new policy to be added to the Biological Resources section, which states:

BIO-4.(new) Maintain Channel Stability. Project applicants for new development / redevelopment projects shall, where evidence is presented to the County

demonstrating the need for an assessment, be required to prepare a hydraulic and / or geomorphic assessment of on-site and downstream drainageways that are affected by project area runoff. Characteristics pertinent to channel stability would include hillslope erosion, bank erosion, excessive bed scour or sediment deposition, bed slope adjustments, lateral channel migration or bifurcation, channel capacity and the condition of riparian vegetation. The hydraulic and / or geomorphic assessment shall include on-site channel or drainageway segments over which the applicant has control and access. In the event that project development would result in or further exacerbate existing channel instabilities, the applicant could either propose their own channel stabilization program, or defer to the mitigations generated during any environmental review required by the County for the project, which could include pre-project peak flow maintenance. Any proposed stabilization measures shall anticipate any project-related changes to the drainageway flow regime.

Recommendation

Adoption of Mitigation Measure 4.5-4, along with Mitigation Measures 4.5-4(b) and (c) not discussed here, would ensure that discretionary projects are designed and constructed in accordance with accepted engineering practices to minimize local hillslope and channel instability, soil loss, impacts to riparian vegetation, increased peak flows, and adverse affects to downstream storm drainage facilities. These measures would also ensure that applicable regulatory statutes would be followed. Therefore, project impacts related to drainages, erosion and downstream sedimentation would be reduced to a less-than-significant level and the project's contribution to cumulative impacts would be less than cumulatively considerable. Staff recommends adoption of the Mitigation Measure 4.5-4 as proposed in the EIR.

Issue 15: Stream sedimentation and erosion on agriculturally zoned properties

Discussion

Concerns have been raised about the need for measures to reduce impacts on streams from agricultural operators in West Marin. The Marin Resource Conservation District (RCD), which includes the watersheds of Stemple, Walker, and Lagunitas creeks, works with landowners to conserve soil and water resources using grants and funds from State, federal and local agencies. The Marin Resource Conservation District (RCD) includes the watersheds of Stemple, Walker, and Lagunitas creeks. Using grants and funds from State, federal and local agencies, the RCD works with landowners to conserve soil and water resources. The RCD also offers education and outreach through landowner workshops, watershed newsletters and school education and service learning programs. In addition to erosion control and project assistance for agricultural lands, the RCD functions also include:

- Agricultural land conservation
- Watershed planning and management
- Water conservation
- Water quality protection and enhancement
- Soil and water management on non-agricultural lands
- Wildlife enhancement

- Wetland conservation
- Irrigation management, and
- Conservation education and forest stewardship.

The programs offered by the RCD are voluntary. The RCD cooperatively works with landowners interested in restoring or enhancing the natural resources of their property to improve water quality and wildlife values. This cooperative relationship is key to obtaining buy-in from the landowners to ensure success of the programs. One successful program is the Marin Coastal Watersheds Permit Coordination Program, where regulatory agencies issue permits to the RCD and the National Resource Conservation Service (NRCS) that cover projects on private lands, provided landowners work under the supervision of the RCD and/or NRCS. Under this partnership, the RCD obtains the permits and the landowner agrees to participate in the implementation, maintenance, and monitoring of projects on their properties.

EIR Considerations

In addition to Mitigation Measure 4.5-4 discussed above, the Mitigated Alternative (Alternative 4) proposes the following new policy and associated programs to address stream sedimentation and erosion issues:

BIO 4.(new) Continue Collaboration with the Marin Resource Conservation District. Continue to collaborate with, support, and participate in programs provided by the Marin Resource Conservation District and the Natural Resource Conservation Service to encourage agricultural operators who conduct farm or ranch activities within a Streamside Conservation Area to minimize sedimentation and erosion to enhance habitat values.

Programs:

BIO-4.(new) Encourage Conservation Plans within the Stream Conservation Area. Continue to collaborate with the Marin Resource Conservation District to encourage and support the continued implementation of the Marin Coastal Watersheds Permit Coordination Program, especially the preparation of management and conservation plans where appropriate for agricultural activities within the Stream Conservation Areas.

BIO-4.(new) Provide Information to Reduce Soil Erosion and Sedimentation. Provide information and fact sheets on programs offered by the Marin Resource Conservation District at the Community Development Agency front counter to landowners and applicants who submit development proposals within the Streamside Conservation Area in the Stemple, Walker and Lagunitas creek watersheds.

Recommendation

Accept as proposed the new policy and programs proposed in Alternative 4.

Policy:

BIO 4.(new) Continue Collaboration with the Marin Resource Conservation District. Continue to collaborate with, support, and participate in programs provided by the Marin Resource Conservation District and the Natural Resource Conservation Service to encourage agricultural operators who conduct farm or ranch activities within a Streamside Conservation Area to minimize sedimentation and erosion to enhance habitat values.

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Issue 16: Sea level rise.

Discussion

The topic of climate change and sea-level rise has been included both in the draft Countywide Plan and in the DEIR. This topic is new to the general plan context in California, and currently, Marin's draft Countywide Plan has addressed the topic more thoroughly than any other plan known in the State. Sea level rise will have multiple effects, not only on buildings and infrastructure, but also on local ecosystems. For example, there will be increased flooding of buildings, roads and other infrastructure, while wetlands will need room to migrate inland to continue providing ecosystem and flood protection functions.

Sea level rise is discussed in the 'key trend' portion of the Environmental Hazards and Atmosphere & Climate sections in the Plan. It is also addressed in specific policies and programs in three main subject areas: 1. Preparing for the hazardous impacts of sea-level rise, 2. Reducing our contributions to greenhouse gases (GHG), and 3. Adapting to sea-level rise.

Specific policies and programs to prepare for the hazardous impacts of sea level rise include: Monitor Environmental Change: Consider potential for sea-level rise (EH 3-3), Update Maps to show flood inundation hazards (EH 3.b), Restrict Development in Flood Prone Areas (EH 3.e), and Anticipate sea-level rise (3.k).

To reduce Marin's contribution to GHG emissions and the resulting sea level rise, policies include: Reduce GHG Emissions (AIR-4.1), and Foster Absorption of Greenhouse Gases (AIR 4-2). Implementing programs range from carbon reduction strategies like energy efficiency,

renewable energy and waste reduction to carbon absorbing strategies like tree planting, and concentrating urban development to protect open space (AIR 4.a-4.n).

To adapt to climate change, policies and programs include AIR 5.1, Determine Marin-Specific Climate Change (AIR 5.1), Prepare Response Strategies for Impacts (AIR 5.2), Study the Effects of Climate Change (AIR 5.b), Prepare Response Strategies (AIR-5.c) and Conduct Public Outreach & Education (AIR 5.g).

EIR Considerations

The EIR discusses sea level rise in Impact 4.5-7 Exposure of People or Structures to Flood Hazards in Section 4.5 Hydrology, Water Quality, and Flood Hazards. Impact 4.5-7 states “implementation of the Draft 2005 CWP Update could result in the development of residential or commercial structures in floodplains, and expose occupants and / or structures to flood hazards. Similar development could occur in shoreline areas and would be subject to flooding due to extreme high tides or coincident high tides and watershed flooding. Sea level rise associated with the warming of the earth’s atmosphere would exacerbate these risks.”

The following mitigations would reduce the exposure of people and structures to flooding to a less-than-significant impact and the project’s contribution to cumulative impacts would be less than cumulatively considerable:

Mitigation Measure 4.5-7 In order to reduce the exposure of people or structures to flood hazards to a less-than-significant level, the County would need to address issues related to channel stability, and sea level rise.

Mitigation Measure 4.5-7(a) Implement Mitigation Measures 4.5-3(b) of *Impact 4.5-3 Groundwater Recharge*, and 4.5-4(a) and 4.5-4(b) of *Impact 4.5-4 Drainage – On-Site and Downstream Erosion and Sedimentation* upon adoption of the *Draft 2005 CWP Update*.

Mitigation Measure 4.5-7(b) Obtain additional funding necessary to implement Program **AIR-5.c**. In addition, County staff would amend the Marin County Development Code to include construction standards for areas threatened by future sea level rise.

Mitigation Measure 4.5-7(c) Continue to implement County ordinances that regulate floodplain development to ensure that project related and cumulative impacts to flooding are minimized or avoided through conditions on project approval as required by the ordinances.

Recommendation

Staff recommends no changes at this time. This issue will be discussed in more detail at the March 5, 2005 hearing in conjunction with discussions on the Baylands Corridor, at which point staff’s recommendations will be presented.

Respectfully Submitted,

Alex Hinds
Agency Director

Kristin Drumm
Planner

Attachments:

1. Draft Marin Countywide Plan Stream and Wetland Goals, Policies, and Programs
2. Letter from Katherine Cuneo, dated February 15, 2007
3. Letter from Indian Valley Associates, dated February 12, 2007
4. Letter from James B. Hill, dated February 13, 2007

Attachment 1
Draft Marin Countywide Plan Stream and Wetland Goals, Policies, and Programs

Goal BIO-3

Wetland Conservation. Require all feasible measures to avoid and minimize potential adverse impacts on existing wetlands and encourage programs for restoration and enhancement of degraded wetlands.

BIO-3.1 Protect Wetlands. Require development to avoid wetland areas so that the existing wetlands and upland buffers are preserved and opportunities for enhancement are retained. Establish a Wetland Conservation Area (WCA) for jurisdictional wetlands to be retained, which includes the protected wetland and associated buffer area. Development shall be set back a minimum distance to protect the wetland and provide an upland buffer. Larger setback standards may apply to wetlands supporting special-status species or associated with riparian systems and baylands under tidal influence, given the importance of protecting the larger ecosystems for these habitat types as called for under Stream Conservation and Baylands Conservation policies defined in Policy BIO-4.1 and BIO-5.1, respectively. Employ the following criteria when evaluating development projects that may impact wetland areas (see Figure 2-1):

City-Centered Corridor:

- ◆ For parcels more than 2 acres in size, a minimum 100 foot development setback from wetlands is required.
- ◆ For parcels between 2 and 0.5 acres in size, a minimum 50 foot development setback from wetlands is required.
- ◆ For parcels less than 0.5 acres in size, avoid jurisdictional wetlands to the extent feasible, use best management practices, and provide landowner education and technical assistance. The developed portion(s) of parcels (less than 0.5 acres in size) located behind an existing authorized flood control levee or dike are not subject to a development setback.

Coastal, Inland Rural, and Baylands Corridors:

- ◆ For all parcels, provide a minimum 100 foot development setback from wetlands.

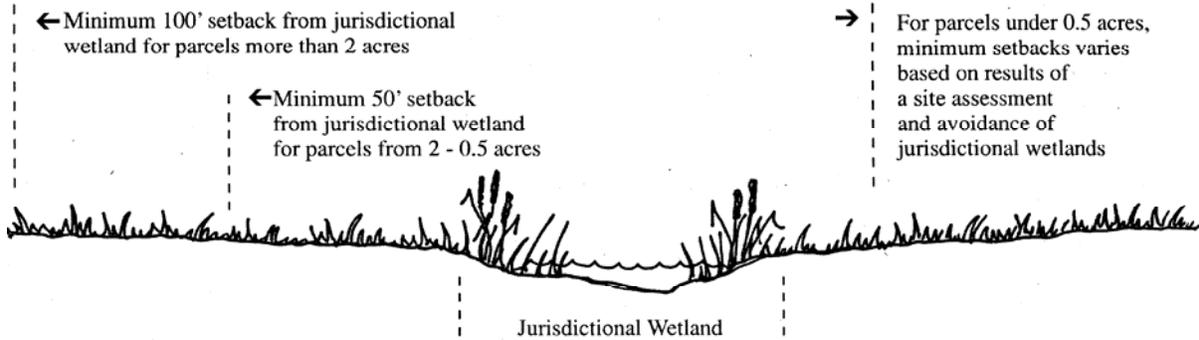
Exceptions to full compliance with the WCA setback standards may only apply if:

- 1) Parcel is already developed with an existing use, provided no direct unauthorized fill or other modifications to wetlands occur as part of on-going use and enjoyment of the property;
- 2) Parcel is undeveloped and falls entirely within the WCA;
- 3) Parcel is undeveloped and potential impacts on water quality, wildlife habitat, or other sensitive resources would be greater as a result of development outside the WCA than development within the WCA, as determined by a site assessment;
- 4) Wetlands are avoided and a site assessment demonstrates that minimal incursion within the minimum WCA setback distance would not result in any significant adverse direct or indirect impacts on wetlands.

Figure 2-1 Typical Cross-Sections of Wetland Conservation Areas

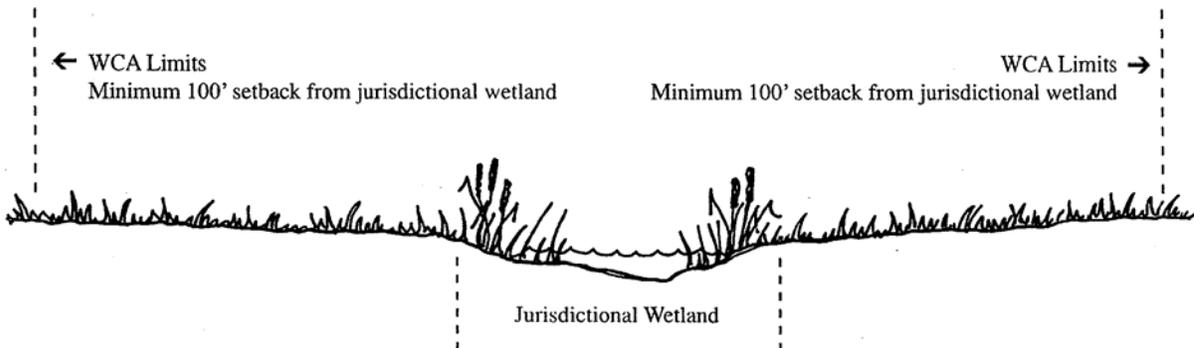
City Centered Corridor

WCA limits varies based on lot size and other factors



- ◆ Minimum setback distance of 100 feet from jurisdictional wetlands for parcels more than 2 acres.
- ◆ Minimum setback distance of 50 feet from jurisdictional wetlands for parcels between 2 and 0.5 acres.
- ◆ No specific minimum setback distance from jurisdictional wetlands for parcels less than 0.5 acres in size, but assumes any wetlands are avoided and a site assessment is required which considers site constraints, presence of other sensitive biological resources, and options for alternative mitigation.
- ◆ A site assessment is required where incursion into a WCA is proposed and where full compliance with all WCA criteria would not be met for any parcel size.

Inland Rural, Baylands, and Coastal Corridors



- ◆ Minimum setback distance of 100 feet from edge of jurisdictional wetlands regardless of size, unless an exception is allowed because parcel falls entirely within WCA or development outside WCA is either infeasible or would have greater impact.
- ◆ A site assessment is required where incursion into a WCA is proposed and where full compliance with all WCA criteria would not be met for any parcel size.

BIO-3.2

Require Thorough Mitigation. Where complete avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration and/or habitat creation at a minimum ratio of two acres for each acre lost (2:1 replacement ratio) for on-site mitigation and a minimum 3:1 replacement ratio for off-site mitigation, provided that, to the maximum extent feasible, no net loss of wetland acreage, function, and habitat values occurs. Mitigation shall also be required for incursion within the minimum WCA setback distance where direct or significant indirect impacts on wetland functions or values would occur as a result of the incursion.

Implementing Programs

- BIO-3.a** *Adopt Wetland Conservation Area Ordinance.* Prepare and adopt an ordinance to refine wetland standards pursuant to WCA polices. Setback distances and buffer criteria for smaller developed parcels within the City-Centered Corridor should allow flexibility based on site constraints, opportunities for avoidance, presence of sensitive biological resources, and options for alternative mitigation. As part of the new ordinance, consider including incentives to reduce the extent of existing development within a WCA, or improve conditions that may be impacting sensitive resources if the parcel is proposed for redevelopment.
- BIO-3.b** *Comply with Regulations to Protect Wetlands.* Continue to require development applications to include submittal of a wetland delineation for sites with jurisdictional wetlands and to demonstrate compliance with these wetlands policies, standards and criteria, and with State and federal regulations.
- BIO-3.c** *Require Site Assessment.* Require development applications to include the submittal of a site assessment prepared by a qualified professional where incursions into the WCA are proposed, or adverse impacts to wetlands resources may otherwise occur. The assessment should be considered in determining whether any adverse direct or indirect impacts on wetlands would occur as a result of the proposed development, whether wetlands criteria and standards are being met, and to identify measures necessary to mitigate any significant impacts. The site assessment may also serve as a basis for the County to apply restrictions in addition to those required by state and federal regulations. The site assessment shall be paid for by the applicant. Unless waived, the qualified professional should be hired directly by Marin County.
- BIO-3.d** *Prioritize Wetland Avoidance.* Amend the Development Code to require development to avoid wetland areas to the extent feasible. Where complete avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration and/or habitat creation, provided that no net loss of wetland acreage, function, and habitat values occurs. On-site wetlands mitigation shall be provided at a minimum ratio of two acres for each acre lost (2:1 replacement ratio). Allow off-site wetland mitigation only when an applicant has demonstrated that no net loss of wetland functions and values would occur and that on-site mitigation is not possible or would result in isolated wetlands of extremely limited value. In those rare instances when on-site wetlands loss is unavoidable and on-site replacement is infeasible, require that a minimum of three acres be provided through mitigation for each acre lost (3:1 replacement ratio), preferably of the same habitat type as the wetland area that would be lost.
- BIO-3.e** *Establish Clear Mitigation Criteria.* Amend the Development Code to incorporate wetland impact mitigations measures that accomplish the following objectives:
- a) No net losses shall occur in wetland acreage, functions, or values. This should include both direct impacts on wetlands and essential buffers, and consideration of potential indirect effects of development due to changes in available surface water and non-point water quality degradation. Detailed review of the adequacy of a proposed mitigation plan shall be performed as part of environmental review of the proposed development project to allow for a thorough evaluation of both the anticipated loss and replacement acreage, functions, and values.

- b) Mitigation shall be implemented prior to and/or concurrently with the project activity causing the potential adverse impact to minimize any short-term loss and modification to wetlands.
- c) An area of adjacent upland habitat shall be protected to provide an adequate buffer for wetland functions and values. Development shall be set back the minimum distance specified in Policy BIO-3.1 to create this buffer, unless an exception is allowed and appropriate mitigation is provided where necessary, pursuant to Policy BIO-3.2.
- d) Mitigation sites shall be permanently protected and managed for open space and wildlife habitat purposes.
- e) Restoration of wetlands is preferred to creation of new replacement wetlands, due to the greater likelihood of success.
- f) Mitigation projects must to the extent feasible minimize the need for on-going maintenance and operational manipulation (dredging, artificial water level controls, etc.) to ensure long-term success. Self-sustaining projects with minimal maintenance requirements are encouraged.
- g) All plans to mitigate or minimize adverse impacts to wetland environments shall include provisions to monitor the success of the restoration project. The measures taken to avoid adverse impacts may be modified if the original plans prove unsuccessful. Performance bonds shall be required for all mitigation plans involving habitat creation or enhancement, including the cost of five years of post-completion monitoring.
- h) Mitigation must be commensurate with adverse impacts of the wetland alteration and consist of providing similar values and greater wetland acreage than those of the wetland area adversely affected. All restored or created wetlands shall be provided at the minimum replacement ratio specified in Program BIO-3.b and shall have the same or increased habitat values as the wetland proposed to be destroyed.

BIO-3.f

Establish Criteria for Setbacks. Establish criteria to be used in the review of individual development applications for determining an adequate setback distance in upland habitat to serve as a buffer zone between development and wetland areas. Setbacks should provide for minimum filtration functions to intercept sediments and prevent degradation of adjacent wetlands to be protected. The setbacks shall conform with distances specified in Policy BIO-3.1, with varied minimum setbacks in the City-Centered Corridor, and minimum 100 foot setback distances in the Coastal, Inland Rural, and Baylands Corridors. Within the City-Centered Corridor, flexibility should be included in the criteria based on site constraints, opportunities to ensure the avoidance of sensitive wetlands and associated resources such as special-status species, and the feasibility of alternative mitigation options for already developed properties and exceptions for existing uses.

BIO-3.g

Provide Landowner Education. Landowner education regarding the sensitivity of wetlands and adjacent upland buffer areas will be provided as part of the Natural Resource Information Program called for in Program BIO-1.c. An emphasis will be placed on educating owners of developed properties adjacent to wetlands where minimum upland setback distances are not provided. Information on regulations protecting wetlands should be available, together with general methods to minimize disturbance and improve habitat

values. An updated list of regulatory agencies and their contact information should be maintained as part of the Natural Resource Information Program.

Goal BIO-4

Riparian Conservation. Protect and, where possible, restore the natural structure and function of riparian systems.

BIO-4.1 Restrict Land Use in Stream Conservation Areas. Limit land uses in a designated Stream Conservation Area to those that create minimal disturbance or alteration to water, soils, vegetation, and wildlife and that maintain or improve stream function or habitat values.

A Stream Conservation Area (SCA) is established to protect the active channel, water quality and flood control functions, and associated fish and wildlife habitat values along streams. Development shall also be set back to protect the stream and provide an upland buffer. Best management practices' shall be adhered to in all designated SCAs. Best management practices are also strongly encouraged in ephemeral streams not defined as SCAs.

SCAs are designated along perennial, intermittent, and ephemeral streams as defined in the Countywide Plan Glossary. An ephemeral stream is subject to the SCA policies if it: a) supports riparian vegetation for a length of 100 feet or more, and/or b) supports special status species and/or a sensitive natural community type, such as native grasslands, regardless of the extent of riparian vegetation associated with the stream.

SCAs consist of the watercourse itself between the tops of the banks and a strip of land extending laterally outward from the top of both banks to the widths defined below (See Figure 2-2). The SCA encompasses any jurisdictional wetland or unvegetated other waters within the stream channel, together with the adjacent uplands, and supercedes setback standards defined for WCAs. Human-made flood control channels under tidal influence are subject to the Bayland Conservation policies. The following criteria shall be used to evaluate proposed development projects that may impact riparian areas:

City-Centered Corridor:

- ◆ For parcels more than 2 acres in size, provide a minimum 100 foot development setback on each side of the top of bank.
- ◆ For parcels between 2 and 0.5 acres in size, provide a minimum 50 foot development setback on each side of the top of bank.
- ◆ For parcels less than 0.5 acres in size, provide an adequate setback from the top of bank based on a site assessment by a qualified professional, avoidance of woody riparian vegetation, presence of other sensitive biological resources, and options for alternative mitigation. The developed portion(s) of parcels (less than 0.5 acres in size) located behind an existing authorized flood control levee or dike are not subject to a development setback.
- ◆ This policy only applies to parcels within the City-Centered Corridor.

Coastal, Inland Rural, and Baylands Corridors:

- ◆ For all parcels, provide a minimum 100 foot development setback on each side of the top of bank. This shall be extended to include a buffer of 50 feet landward from the edge of riparian vegetation associated with the stream. SCAs shall be measured as shown in Figure 2-2.
- ◆ This policy only applies to parcels within the Coastal, Inland Rural, and Baylands Corridor.

Allowable uses consist of the following provided they conform to zoning and all relevant criteria and standards for SCAs:

- ◆ Currently existing permitted or legal non-conforming structures or improvements, their repair and retrofit within the existing footprint;
- ◆ Projects to improve fish and wildlife habitat;
- ◆ Road and utility crossings, if no other location is feasible;
- ◆ Water-monitoring installations;
- ◆ Passive recreation that does not significantly disturb native species;
- ◆ Necessary water supply and flood control projects that minimize impacts to stream function and to fish and wildlife habitat;
- ◆ Agricultural uses that do not require removal of woody riparian vegetation, result in installation of fencing within the SCA which prevents wildlife access to the riparian habitat within the SCA and do not involve animal confinement within the SCA.

Exceptions to full compliance with all SCA criteria and standards may only be allowed if:

- 1) A parcel falls entirely within the SCA; or
- 2) Development on any portion of the parcel outside the SCA is either infeasible or would have greater impacts on water quality, wildlife habitat, other sensitive biological resources, or other environmental constraints.

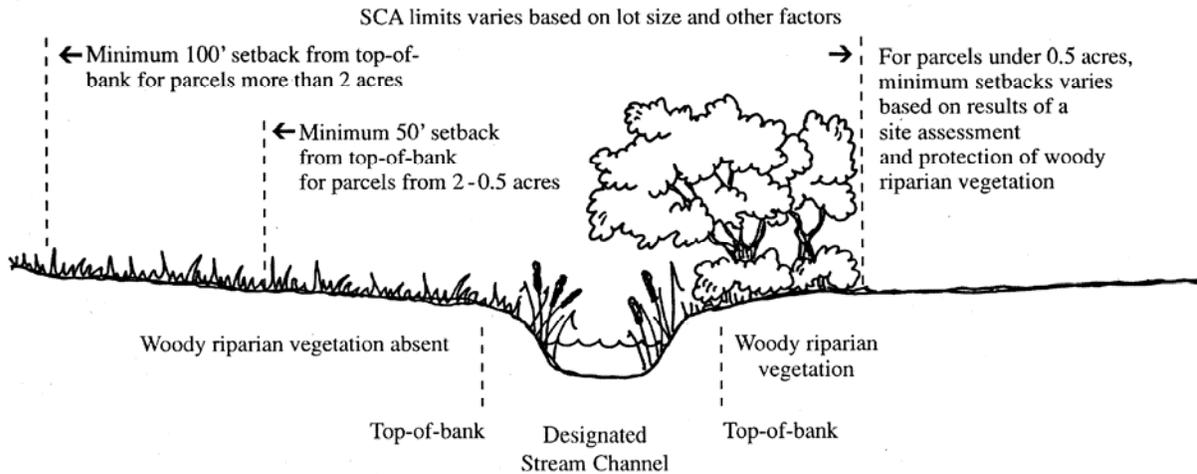
BIO-4.2 Comply with SCA Regulations. Implement established setback criteria for protection of SCAs through established discretionary permit review processes and/or through adoption of new ordinances. Environmental review shall be required where incursion into a SCA is proposed and a discretionary permit is required.

In determining whether allowable uses are compatible with SCA regulations, development applications shall not be permitted if the project:

- ◆ Adversely alters hydraulic capacity;
- ◆ Causes a net loss in habitat acreage, value, or function;
- ◆ Degrades water quality.

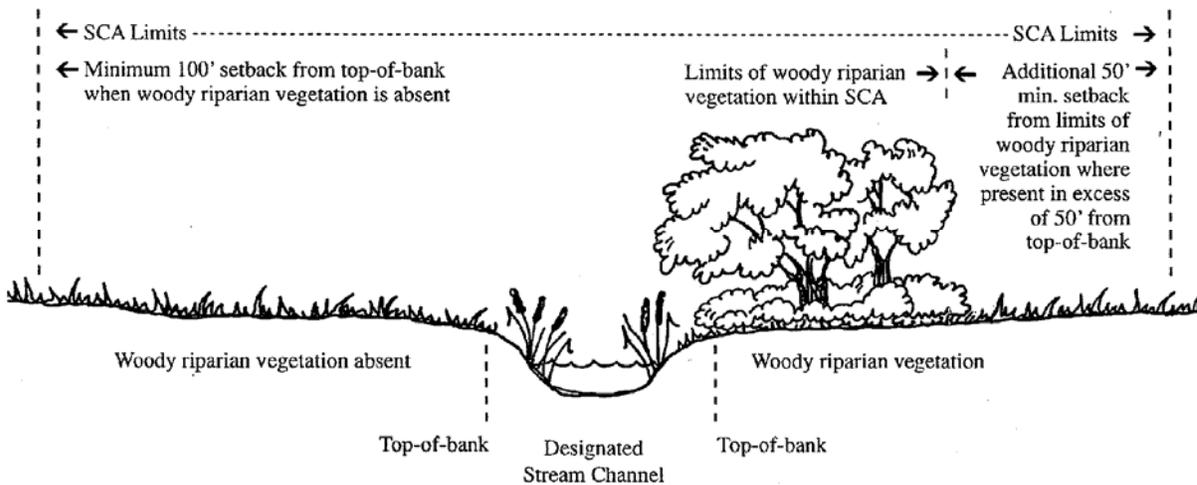
**Figure 2-2
Typical Cross Section of a Stream Conservation Zone**

City Centered Corridor

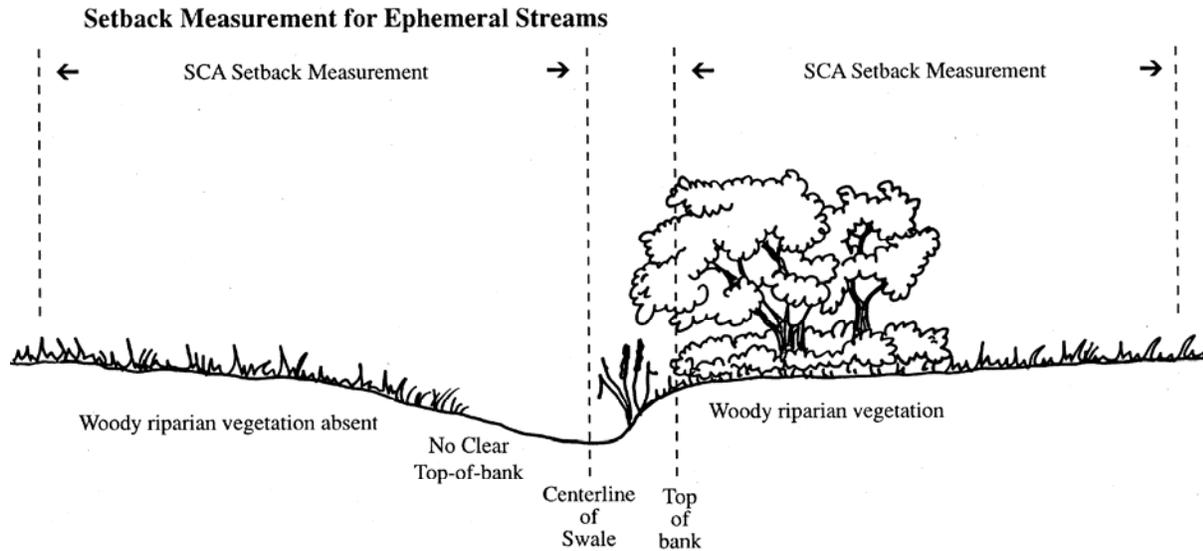


- ◆ Minimum setback distance of 100 feet from top-of-bank for parcels more than 2 acres.
- ◆ Minimum setback distance of 50 feet from top-of-bank for parcels between 2 and 0.5 acres.
- ◆ No specific minimum setback distance from top-of-bank for parcels less than 0.5 acres in size, but assumes any woody riparian vegetation is avoided and a site assessment is required which considers site constraints, presence of other sensitive biological resources, and options for alternative mitigation.
- ◆ A site assessment is required where incursion into an SCA is proposed and where full compliance with all SCA criteria would not be met for any parcel size.

Inland Rural, Baylands, and Coastal Corridors



- ◆ Minimum setback distance of 100 feet from top-of-bank or an additional 50 feet from edge of woody riparian vegetation regardless of lot size, unless an exception is allowed because parcel falls entirely within SCA or development outside SCA is either infeasible or would have greater impacts.
- ◆ A site assessment is required where incursion into an SCA is proposed and where full compliance with all SCA criteria would not be met for any parcel size.



◆ Setback measurements are based on the corridor in which the stream is located.

BIO-4.3 Manage SCAs Effectively. Review proposed land divisions in SCAs to allow management of a stream by one property owner to the extent possible.

BIO-4.4 Promote Natural Stream Channel Function. Retain and, where possible, restore the hydraulic capacity and natural functions of stream channels in SCAs. Discourage alteration of the bed or banks of the stream, including filling, grading, excavating, installation of storm drains and culverts. Protect and enhance fish habitat, including through retention of large woody debris, except in cases where removal is essential to protect against property damage or prevent safety hazards. In no case shall alterations that create barriers to fish migration be allowed on streams mapped as historically supporting salmonids. Alteration of natural channels within SCAs for flood control should be designed and constructed in a manner that retains and protects the riparian vegetation, allows for sufficient capacity and natural channel migration, and allows for re-establishment of woody trees and shrubs without compromising the flood flow capacity where avoidance of existing riparian vegetation is not possible.

BIO-4.5 Restore and Stabilize Stream Channels. Pursue stream restoration and appropriate channel redesign where sufficient right-of-way exists that includes: a hydraulic design, a channel plan form, a composite channel cross-section that incorporates low flow and bankfull channels, removal and control of invasive exotic plant species, and biotechnical bank stabilization methods to promote quick establishment of riparian trees and other native vegetation.

BIO-4.6 Control Exotic Vegetation. Remove and replace invasive exotic plants with native plants as part of stream restoration projects and as a condition of site-specific development approval in an SCA, and include monitoring to prevent re-establishment.

BIO-4.7 Protect Riparian Vegetation. Retain riparian vegetation for stabilization of streambanks and floodplains, moderating water temperatures, trapping and filtering sediments and other water pollutants, providing wildlife habitat, and aesthetic reasons.

BIO-4.8 Reclaim Damaged Portions of SCAs. Restore damaged portions of SCAs to their natural state wherever possible, and re-establish as quickly as possible any herbaceous and woody

vegetation that must be removed within an SCA, replicating the structure and species composition of indigenous native riparian vegetation.

- BIO-4.9** **Restore Culverted Streams.** Replace storm drains and culverts in SCAs with natural drainage and flood control channels wherever feasible. Where culverts interfere with fish migration but replacement is not possible, modify culverts to allow unobstructed fish passage.
- BIO-4.10** **Promote Interagency Cooperation.** Work in close cooperation with flood control districts, water districts, and wildlife agencies in the design and choice of materials for construction and alterations within SCAs.
- BIO-4.11** **Promote Riparian Protection.** Support agencies, organizations, and programs in Marin County that protect, enhance, and restore riparian areas.
- BIO-4.12** **Support and Provide Riparian Education Efforts.** Educate the public and County staff about the values, functions, and importance of riparian areas. Landowner education regarding the sensitivity of riparian corridors will be provided as part of the Natural Resource Information Program called for in Program BIO-1.c. An emphasis will be placed on public outreach to owners of developed properties encompassing or adjacent to SCAs where minimum setback distances are not provided. Information on regulations protecting riparian corridors should be available, together with general methods to minimize disturbance and improve habitat values. An updated list of regulatory agencies and their contact information should be maintained as part of the Natural Resource Information Program.
- BIO-4.13** **Provide Appropriate Access in SCAs.** Ensure that public access to publicly owned land within SCAs respects the environment, and prohibit access if it will degrade or destroy riparian habitat. Acquire public lands adjacent to streams where possible to make resources more accessible and usable for passive recreation and to protect and enhance streamside habitat.
- BIO-4.14** **Reduce Road Impacts in SCAs.** Locate new roads and roadfill slopes outside SCAs, except at stream crossings, and consolidated new road crossings wherever possible to minimize disturbance in the SCA. Require spoil from road construction to be deposited outside the SCA, and take special care to stabilize soil surfaces.
- BIO-4.15** **Reduce Wet Weather Impacts.** Ensure that development work adjacent to and potentially affecting SCAs is not done during the wet weather or when water is flowing through streams, except for emergency repairs, and that disturbed soils are stabilized and replanted, and areas where woody vegetation has been removed are replanted with suitable species before the beginning of the rainy season.
- BIO-4.16** **Regulate Channel and Flow Alteration.** Allow alteration of stream channels or reduction in flow volumes only after completion of environmental review, commitment to appropriate mitigation measures, and issuance of appropriate permits by jurisdictional agencies based on determination of adequate flows necessary to protect fish habitats, water quality, riparian vegetation, natural dynamics of stream functions, groundwater recharge areas, and downstream users.

Implementing Programs

- BIO-4.a** *Adopt Expanded SCA Ordinance.* Adopt a new SCA ordinance that would implement the SCA standards for parcels that are subject to conventional zoning designations, especially those traversed by or adjacent to a mapped anadromous fish stream and tributary. Such an ordinance could, by way of example, require compliance with the incorporation of best management practices into the proposed project and could consider modest additions to existing buildings that would not result in significant impact to riparian resources, such as additions that do not exceed 500 square feet of total floor area and which do not increase the existing encroachment into the SCA provided a site assessment first confirms the absence of adverse impacts to riparian habitats. Buffer criteria for smaller developed parcels within the City-Centered Corridor should allow flexibility based on site constraints, opportunities for avoidance, presence of sensitive biological resources, and options for alternative mitigation. As part of the new ordinance, consider including additional incentives to reduce the extent of existing development within a SCA or improve conditions that may be impacting sensitive resources.
- BIO-4.b** *Reevaluate SCA Boundaries.* Beginning with the City-Centered Corridor and smaller parcels, conduct a comprehensive study to reevaluate standards used to protect SCAs and regulate development adjacent to streams. The study shall consider available data on stream protection and management standards, their effectiveness, and the effectiveness of the current standards used in Marin County, including the 50 and 100 foot setback distances (plus additional setbacks from the edge of riparian vegetation where applicable). The study shall consider stream functions on a watershed-level basis, and include input from professionals such as a fluvial geomorphologist, hydrologist, wildlife biologist, and vegetation ecologist, together with resource agencies and interested public. Each SCA should encompass all woody riparian vegetation and be of sufficient width to filter sediments and other pollutants before they enter the stream channel. Careful study may be needed to distinguish woody riparian vegetation from other types of woodland or forest vegetation in some areas.
- BIO-4.c** *Prepare County Stream Map.* Use the County GIS to map perennial, intermittent, and where feasible ephemeral streams subject to SCA policies. Use the resulting mapping in conjunction with USGS maps and the “ephemeral stream” definition to confirm SCAs on parcels proposed for development. Add to and update the map on an ongoing basis as additional streams are surveyed.
- BIO-4.d** *Establish Functional Criteria for Land Uses in SCAs.* Develop detailed criteria for protection of riparian functions, and identify methods for their use in evaluating proposed development.
- BIO-4.e** *Identify Proposals within SCAs.* Determine whether a proposed development falls wholly or partially within an SCA, through review by County staff, and as necessary by a qualified professional, of discretionary application materials and site inspection.
- BIO-4.f** *Identify Potential Impacts to Riparian Systems.* At the time of a development application, evaluate potential impacts on riparian vegetation and aquatic habitat, and incorporate measures to protect riparian systems into the project design and construction. Retain and minimize disturbance to woody and herbaceous riparian vegetation in SCAs and adjacent areas. (Tree growth may be cleared from the stream channel where removal is essential to protect against property damage or prevent safety hazards.)

- BIO-4.g** *Require Site Assessment.* Require development applications to include the submittal of a site assessment prepared by a qualified professional where incursions into the SCA are proposed, or adverse impacts to riparian resources may otherwise occur. Unless waived, the qualified professional shall be hired by Marin County. The site assessment shall be paid for by the applicant and considered in determining whether any adverse direct or indirect impacts on riparian resources would occur as a result of the proposed development, whether SCA criteria and standards are being met, and to identify measures necessary to mitigate any significant impacts. The site assessment may also serve as a basis for the County to apply restrictions in addition to those required by state and federal regulations.
- BIO-4.h** *Comply with SCA Criteria and Standards.* All development permit applications shall be reviewed for conformity with these SCA policies, criteria and standards and in accordance with the California Environmental Quality Act. Proposals that do not conform to SCA policies, and cannot be modified or mitigated to conform, shall be denied. If a proposal involves the creation of a new parcel which is wholly or partially in an SCA, the land division shall be designed to assure that no development occurs within the SCA.
- BIO-4.i** *Replace Vegetation in SCAs.* When removal of riparian vegetation is unavoidable in an SCA, and mitigation is required, require establishment of native trees, shrubs, and groundcovers within a period of five years at a rate sufficient to replicate the appropriate density and structure of vegetation removed. Require replacement and enhancement planting to be monitored and maintained until successful establishment provides for a minimum replacement or enhancement ratio of 2:1.
- BIO-4.j** *Continue Funding Fencing of Sensitive Stream Areas.* Encourage continued funding in conjunction with the Resource Conservation District, the Natural Resource and Conservation Service, and other relevant agencies, to pay the cost of fencing sensitive streamside areas (on both public lands and private property) that could be impacted by cattle grazing.
- BIO-4.k** *Locate Trails Appropriately.* Situate trails at adequate distances from streams to protect riparian and aquatic habitat and wildlife corridors. Trails may occasionally diverge close to the top of bank to provide visual access and opportunities for interpretive displays on the environmental sensitivity of creek habitats. (See policies and programs in the Trails Section of this Element.)
- BIO-4.l** *Monitor Stream Conservation Areas.* Establish a system of monitoring SCAs which may include mapping fenced streams and stream restoration areas to assure the protection of vegetation, soils, water quality, and wildlife habitat along streams.