Total Maximum Daily Load for Fecal Coliform for the Lower Salinas River Watershed,
Monterey County

March 18, 2010, Item 12
Staff Report Attachment 6

PUBLIC COMMENTS AND STAFF RESPONSE

Water Board staff received comments from:

1. Tom and Terry Bengard, Salinas, in an email attachment received January 20, 2010
2. Brian Finegan, Attorney at Law, Salinas, representing Tom and Terry Bengard of Salinas, in an email attachment received January 21, 2010.
3. Celeste Settrini, Settrini Ranch LLC, Salinas, in an email attachment received January 21, 2010.
4. Pete Silacci Ranch, Salinas, in an email attachment dated January 19, 2010, and received January 21, 2010.
5. Bill Massa, Salinas, in an email attachment received on January 21, 2010.
6. Justin Oldfield, California Cattlemen's Association, in an email attachment received January 21, 2010.
7. Steve Shimek, Monterey Coastkeeper, in an email attachment received on January 21, 2010.
8. Aaron P. Johnson, Monterey County Cattlemen's Association, in an email attachment received on January 21, 2010.
9. Scott Violini, in an email attachment received on January 21, 2010.
10. Kay Mercer, Central Coast Agricultural Water Quality Coalition, in an email attachment received on January 21, 2010.
11. Dorothy Giannini, Christensen Cattle Company, in an email attachment received on January 21, 2010
12. Traci Roberts, Monterey County Farm Bureau, in an email attachment received on January 21, 2010.
13. Robert M. Swanson, Jim Bardin Ranch, Salinas, in a letter dated January 19, 2010, and received on February 1, 2010.

Staff responses to these comments are provided below. All comments are direct transcriptions from the letters.

List of Acronyms and Abbreviations

This document contains several acronyms and abbreviations. In general, staff wrote an acronym or abbreviation in parentheses following the first time a title or term was used. Staff wrote the acronym/abbreviation in place of that term from that point throughout this report. The following alphabetical list of

acronyms/abbreviations used in this document is provided for the convenience of the reader:

CCAMP	Central Coast Ambient Monitoring Program
CDFG	California Department of Fish and Game
FMMP	Farmland Mapping and Monitoring Program
MPN	Most Probable Number (an analytical unit for measuring bacteria concentrations)
NASS	National Agricultural Statistics Service (U.S. Dept. of Agriculture)
MS4	Municipal Separate Storm Sewer System
NPS	Nonpoint Source
NRCS	Natural Resources Conservation Service
REC-1	Water Contact Recreation
REC-2	Non-contact Water Recreation
SWRCB	State Water Resources Control Board
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
Water Board	California Central Coast Regional Water Quality Control Board
WDR	Waste Discharge Requirements

Comments and Responses

Comment 1 – Tom and Terry Bengard

Our family has lived and worked on our Ranch abutting Alisal Creek for nearly 100 years……(W)e have approximately three-fourths of a mile of dry creek bed that travel through the property…..except in flood conditions we have no water available in our section of Alisal Creek. Because of that we have developed water systems and water troughs to take care of the needs of our livestock.

We understand that you are trying to classify this stream as being capable of use as a full body water contact (swimming) stream (REC-1). This is ridiculous, as was stated previously, we are dealing with a dry stream bed which would certainly not provide anyone with an opportunity for water sports.

Staff Response to Comment 1

Staff concurs that swimming is impractical in reaches of Alisal Creek and its tributaries. It is important to recognize that the REC-1 beneficial use is not simply limited to *full* body contact, as, for example, swimming. REC-1 beneficial uses of waters of the State are broadly defined as any body contact where ingestion of water is reasonably possible. This includes, but is not limited to, wading or fishing (see Water Quality Control Plan, Central Coast Basin (Basin Plan), Chapter 2: Beneficial Uses).

With regard to the comment on intermittent flow conditions on your property, please note that State law for water quality control in California is directed toward achieving the highest water quality which is reasonable and consistent with maximum benefit to the people of the State (Basin Plan, Chapter 2). Therefore, all water resources must be protected from pollution and nuisance that may occur as a result of waste discharges. In accordance with the Basin Plan, current or potential beneficial uses of waters of the State apply to water bodies, whether the water body is perennial or ephemeral, or whether the flow is intermittent or continuous (Basin Plan, Chapter 2, page II-1). Also, while staff recognizes that many inland surface waters in the central coast region have intermittent flows due to our regional climatic and hydrologic conditions, staff also notes that the Water Board's Central Coast Ambient Monitoring Program was able to collect monthly water quality samples at the Alisal Creek-Old Stage Road site between July 1999 and November 1999, indicating that there were flows at this site in the dry season (see Project Report, Attachment 2, Appendix A- Water Quality Dataset).

With regard to the comment on off-creek watering systems/water troughs for livestock, the Water Board strongly supports and encourages effective livestock management activities that will limit the opportunity for domestic animals to discharge fecal waste into surface waters, or into intermittent or ephemeral surface water drainage features. It is important to note that indicator bacteria (e.g., *E. coli*) or pathogens in manure that are deposited on grasses or in ephemeral stream beds may survive for weeks or months (Guan and Holley, 2003; Avery et al., 2004), potentially being mobilized in the water column by subsequent stream flows.

Staff emphasizes that current ongoing rangeland management practices and implementation actions have the potential to be effectively used by responsible parties to demonstrate compliance with the proposed load allocations for domestic animals. Also, compliance with the pollutant load allocations (e.g., water quality objectives for fecal coliform) implies compliance with the Domestic Animal Waste Discharge Prohibition. The discharge prohibition should be achievable as it affects the management of livestock and domestic farm animals for which there are various affordable land management and livestock management options to control and/or treat runoff or discharges of fecal material to surface water drainage features. In addition, compliance does not necessarily require development of a pollution control plan. Options for compliance with the prohibition include submitting documentation demonstrating there are no fecal coliform discharges by livestock that would contribute to exceedances of stream load allocations.

Comment 2 - Tom and Terry Bengard

The Ranch also supports a variety of wildlife including an ever expanding herd of tule elk, wild hogs, and wild turkey. These animals contribute significantly to the

fecal coliform density of our area, but we have absolutely no control over them. There is no way for us to regulate their fecal output.

Staff Response to Comment 2

Property owners are not required to take any actions to reduce pollutant loads from non-controllable natural sources. Staff has identified non-controllable natural sources (e.g., wildlife) as a source of indicator bacteria loads to surface waters in the Lower Salinas River watershed. Non-controllable natural sources have been assigned a pollutant load allocation. These constitute non-controllable sources that are not subject to regulation by the Water Board.

Comment 3 - Tom and Terry Bengard

We would like to know why there was no representation for us – the livestock producers – during the original drafting of the plan to essentially disrupt our ability to run our livestock in a responsible manner. Why were none of the people who were directly affected by this plan notified of your earlier meetings? We are all offended by the lack of transparency that has been shown in this manner.

Staff Response to Comment 3

Staff attempted to contact and inform interested parties during the development of the TMDL. Unfortunately, the scope of the Project (~400 square miles of watershed, and > 200,000 residents in Project Area) apparently precluded the possibility of outreach and inclusion of every potential stakeholder pertaining to the development of this TMDL. Entities and individuals representing a variety of interests, including livestock interests, participated in Public Meetings during the TMDL process. Stakeholders representing livestock interests whom participated in the Public Meetings included representatives of the Monterey County Cattlemen's Association, as well as individuals representing commercial ranches. Sign-in sheets documenting meeting attendees will be included in the Administrative Record. Attendees of public stakeholder meetings included representatives from the following:

- United Fresh Fruit and Vegetable Association
- Monterey County Department of Environmental Health
- State of California Department of Health Services
- United States Department of Agriculture
- United States Food and Drug Administration
- Monterey County Cattlemen's Association
- The City of Salinas
- Commercial Ranches
- Commercial Farms
- Monterey County Water Resources Agency
- Monterey Bay National Marine Sanctuary

- Monterey County Farm Bureau
- Monterey County Agricultural Commissioner's Office
- Resource Conservation District of Monterey County
- Central Coast Agricultural Task Force
- California State University Monterey Bay, Watershed Institute
- Central Coast Agricultural Water Quality Coalition

In accordance with State law, relevant public meetings were noticed in local newspapers, and documents were made available on the Central Coast Water Board's website as appropriate. Staff adds names to our Interested Parties mailing list, on the basis of emails and correspondence we receive from the public in regards to this TMDL Project. That said, staff recognizes the importance of stakeholder outreach and will endeavor to expand/improve, as merited, our stakeholder processes.

Comment 4 - Tom and Terry Bengard

(W)e question the science that has been used to develop your assessments. As we pointed out, our family has been on this property for nearly 100 years. Our management of our property has not materially changed during this time, so why now is everything unacceptable. It appears if your criteria is enforced it would be a classic case of government over reaching and would be a "taking" of our ability to manage and use our private property for its only economically viable use.

Staff Response to Comment 4

Staff was unable to ascertain what aspect of the technical analysis was problematic to the commenter, as noted in the first sentence of the comment. However, the Project Report clearly describes the scientific basis of the draft amendments.

With regard to the remainder of the comment, it is important to note that activities involving discharges of waste that either do, or may affect the quality of the waters of the State, have always been subject to compliance with the Porter-Cologne Water Quality Control Act (California Water Code), regardless of whether State resources have been directed to any oversight activities. In short, the absence of regulatory oversight or resources is not an acknowledgement that State water quality objectives are being met. Further, the Water Board is required by the Federal Clean Water Act to adopt TMDLs for water bodies listed pursuant to Section 303(d) of the Clean Water Act and impaired water bodies.

To address the commenter's question about the timing of these regulatory proposals, some background information is provided below:

After the Legislature and Governor enacted the Porter-Cologne Water Quality Control Act in 1969, the State focused on point sources of pollution initially (pipe

discharges associated in waste water treatment plants, industrial facilities) as they were the sources of pollution most easily identified and controlled.

More recently, diffuse nonpoint sources of pollution (e.g., agricultural sources, urban runoff, timber harvesting, etc.) have been widely demonstrated nationally and regionally to be a major source of controllable water quality pollution. In July 2000 the State Water Resources Control Board and the California Coastal Commission developed the *Plan for California's Nonpoint Source Pollution Control Program* to reduce and prevent nonpoint source pollution in California, expanding the State's nonpoint source pollution control efforts. In August 2004 the State Office of Administrative Law approved the *Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (NPS Policy). The NPS Policy makes it clear that all NPS discharges must be under regulation - waste discharge requirements (WDRS); waivers of WDRs; or Basin Plan prohibitions. The policy formally eliminates the previous "three-tiered approach" of voluntary compliance, regulatory-based encouragement (waivers), and regulation (permits and prohibitions). Further information on the State's nonpoint source pollution control plans and policies is available at:
http://www.swrcb.ca.gov/rwqcb2/nonpointsource.shtml

Please note that staff considers the adoption of the proposed prohibitions to be the least burdensome regulatory mechanism for responsible parties, from an economic standpoint, as a prohibition does not include or trigger any requirement to pay annual permit fees, as could be the case with waste discharge requirements or waivers of WDRs.

However, bearing the aforementioned background information in mind, note that staff does not presume that all domestic animal activities are contributing to surface water pollutant loads that contribute to, or cause an impairment of applicable water quality standards. Staff acknowledges that there are an array of management measures, voluntary efforts, and operational practices throughout the Project Area. The proposed waste discharge prohibition simply sets a pollutant load allocation goal, and identifies reporting requirements for owners and operators of lands containing domestic animals to demonstrate if they are in compliance with load allocations, or alternatively how they will achieve compliance with the load allocations, and whether implementation is effective. As such, the proposed waste discharge prohibition and the proposed Basin Plan amendments are regulatory tools in accordance with the California Water Code to 1) enable the State to identify and prioritize areas or activities where controllable sources of fecal coliform pollution threaten water quality and 2) to facilitate efforts to document and track the scope and effectiveness of current or future land management actions to reduce pollutant loads.

With regard to the commenter's concerns on economic impacts, staff has endeavored to propose a TMDL that limits requirements to the minimum necessary to achieve water quality results. Staff also made a concerted effort to

identify and propose requirements for any and all industries or responsible parties contributing or threatening to contribute fecal coliform to the waterbodies. Staff made a concerted effort in the proposed TMDL to limit the burden of monitoring and reporting and built flexibility into the plan to allow staff, and the responsible parties, to adapt monitoring and reporting requirements for optimal financial and informational value. Staff has endeavored to identify as many options as possible for responsible parties to demonstrate compliance with the proposed Basin Plan amendment, while still achieving water quality results. As such, we are trying to be as flexible as possible in the implementation approach for reducing pathogen loading. We anticipate that enforcement mechanisms will only be needed where dischargers have chosen not to assess, and/or reduce their potential to impact water quality from controllable sources.

Comment 5 – Brian Finegan, Attorney at Law

I represent Tom and Terry Bengard of Salinas who have asked me to comment on their behalf regarding the Draft TMDL Project Report for Fecal Coliform for the Lower Salinas River Watershed ("the Report")…. The Bengards' ranch is located east of Old Stage Road in the area of the headwaters of Alisal Creek. The Report includes the Bengard property in a subarea (Sub-Area 3b) that takes in the rural and undeveloped headlands of Upper Alisal Creek along with a significant urban and suburban area of the City of Salinas. The blending of these two areas is reflected in the title of the sub-area: "Salinas Reclamation Canal, Upper/Alisal Creek" (p. 13, Table 2-3). We contend that inclusion of the undeveloped upper Alisal Creek area with the lower urban/suburban area along the reclamation Canal incorrectly and unfairly tilts the analysis of fecal coliform concentrations present east of Old Stage Road, including the Bengard ranch. Figure 3-1 (p. 23) and Table 3-1 (p. 25) appear to confirm that no test sites were located east of Old Stage Road in the upper areas of Alisal Creek.

Staff Response to Comment 5

Please note that virtually all the watersheds in the Project Area comprise of a variety of land uses and land cover. This reflects the nature of watershed assessment and TMDL development. Hydrologically connected catchments at the watershed scale are often include a variety of land uses and land cover. Alisal Creek and the Upper Reclamation Canal (upstream of Carr Lake) constitute a hydrologically connected drainage that merited delineation as a subwatershed. It is uncommon to have receiving water data that reflects catchment-scale or field-scale plots, or that are representative of one individual property or one specific type of discharge.

That said, responsible parties are only accountable for discharges of waste to receiving waters in proximity to their property or operations. It is recognized that it is generally impractical to assess receiving water quality, and load contributions at the field or ranch-scale, unless there are unusual and compelling reasons to

require that nature and scope of monitoring. Therefore, while the primary measure of success for this TMDL is attainment or continuous progress toward attainment of the TMDL water quality numeric targets and load allocations, it is important to emphasize that in evaluating successful implementation of this TMDL, attainment of trackable implementation actions will also be heavily relied upon. Therefore, staff are proposing two types of monitoring for this TMDL:

1) water quality monitoring, and
2) monitoring of the implementation of management measures.

Consequently, we are proposing that every three years, following approval of the TMDL, the Central Coast Water Board will perform a review of implementation actions, monitoring results, and evaluations submitted by responsible parties of their progress towards achieving their allocations. The Central Coast Water Board will use annual reports, nonpoint source pollution control implementation programs, evaluations submitted by responsible parties, and other available information to determine progress toward implementing required actions and achieving the allocations and the numeric target.

With regard to the comment on monitoring data, please note that Water Board staff only collects stream data at locations with public access. Presumably, the upper reaches of the Alisal Creek watershed are on private property. However, there is monitoring data on Alisal Creek that captures grazing land drainage; please refer to Project Report Section 3.3 (Water Quality Data). Monitoring site ALI-OSR (Alisal Creek at Old Stage Road) reflects water quality data from drainages coming from the upper Alisal Creek catchments. As such, water quality from this site represents primarily grazing land runoff, with no urban, residential, or cropland inputs. Please refer to Figure 1.

Figure 1 shows the spatial extent of grazing land in the Alisal Creek watershed. The grazing land spatial data depicted in Figure 1 come from the Farmland Mapping and Monitoring Program (FMMP - California Dept. of Conservation, 2005). FMMP, in cooperation with the California Cattlemen's Association and others, developed digital mapping data depicting the location and extent of grazing lands. As such, this map illustrates that monitoring site ALI-OSR drains predominantly grazing lands. Monitoring data for fecal coliform is annotated on the map.

The fecal coliform concentrations in water quality samples for ALI-OSR significantly exceeded the REC-1 water quality screening objective (400 mpn/100mL); also, three of six samples (50%) from ALI-OSR also exceeded the much less stringent REC-2 (i.e., the non-water contact recreational use) water quality screening standard (4000 mpn/100mL). Note that the data from ALI-OSR contrasts with water quality data the Water Board has collected from undeveloped watersheds that are dominated by forest and native grass and that are devoid of any significant anthropomorphic or domestic animal operations. Indicator bacteria

concentration medians and ranges from undeveloped watersheds in the central coast region are typically more than an order of magnitude lower than those from ALI-OSR (for example, please refer to Figures 2 and 3 in this document).

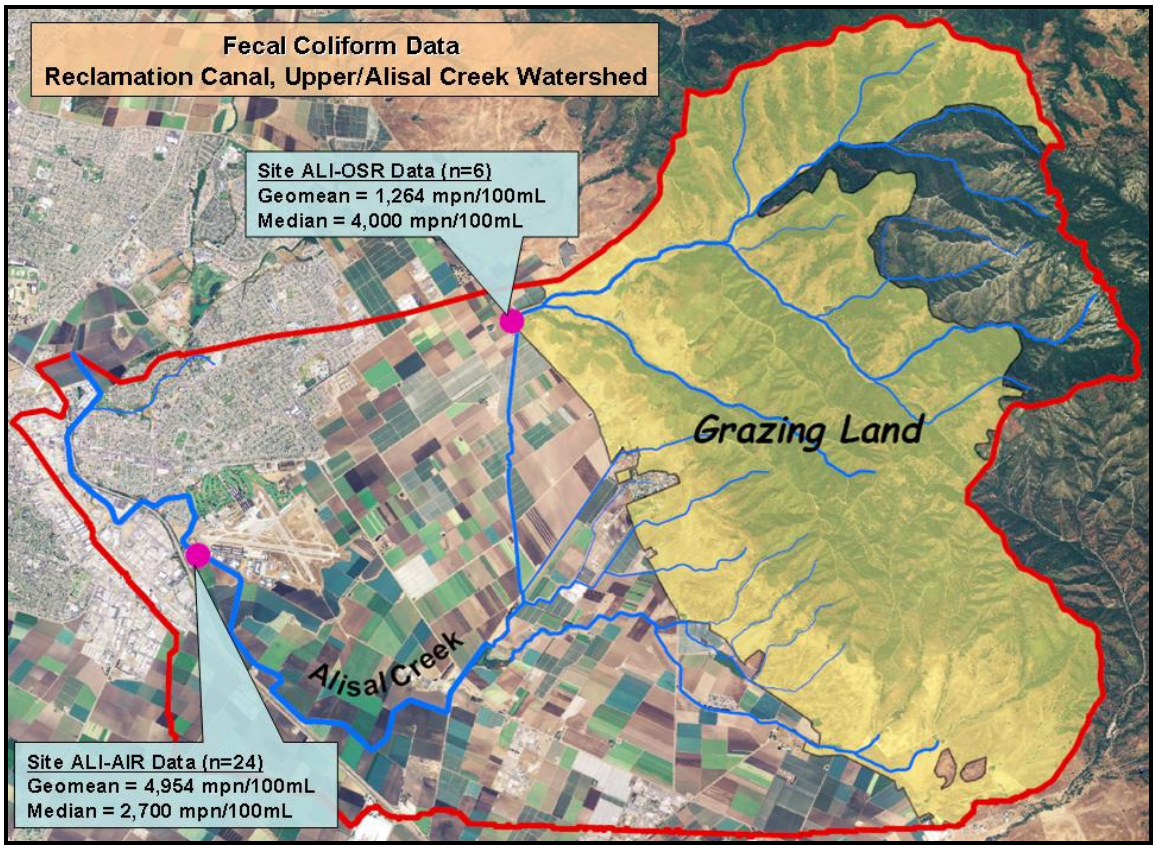


Figure 1. Alisal Creek Watershed monitoring data, and FMMP grazing land spatial extent.

ALI-OSR is a monitoring site for the Water Board's Central Coast Ambient Monitoring Program (CCAMP) and the site is monitored on a five-year rotational basis. The next round of CCAMP monitoring is scheduled tentatively for 2011, and should additional monitoring at the ALI-OSR site be conducted, it may provide insight into whether bacteria loads from upstream grazing land in the Alisal Creek watershed have substantially changed since the previous round of CCAMP monitoring in 2006.

Comment 6 – Brian Finegan, Attorney at Law

Bengards also contend that the designation of their portion of the sub-area for REC1 (water contact recreation) beneficial uses (Table 1-1 (p. 5) is arbitrary, capricious and totally unsupported by any evidence. All of the Upper Alisal Creek area is private property, fenced and gated, and not open to public access or use. As noted in the Bengard letter, the creek bed within their ranch is dry, not just

seasonally, but year round. That Bengards' livestock operations should be regulated to support water contact recreation on or off their ranch is preposterous.

Staff Response to Comment 6

Please see Staff Response to Comment 1.

Also, please note that State water quality objectives and beneficial uses broadly apply to all surface waters of the state, regardless of whether they are on private property or public property, and regardless of whether they have perennial flows or ephemeral flows (please see Basin Plan, Chapters 2 and 3). Electronic versions of the Basin Plan are available at:

http://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/

Additionally, streams and waterbodies are not closed systems. Impaired water quality in a reach of a stream that is inaccessible, or where the property owner never comes into contact with the water, does not preclude that those waters of the state can and will flow into downgradient stream reaches where other property owners or citizens of the state may potentially come in contact with the water, either through wading, fishing, or any recreational activity involving some form of water contact. Recall that the REC-1 beneficial use is broadly defined as any activity that involves contact with the water, and the reasonably possible ingestion of water, including, but not limited to, wading or fishing.

Comment 7 – Brian Finegan, Attorney at Law

Bengards dispute the Report's assertion that their sub-area contains 28 homeless persons who contribute to the fecal coliform load of Upper Alisal Creek. That conclusion is based totally on assumptions that are unsupported by any facts. In fact, there are no homeless persons in the Upper Alisal Creek area. If the Report's assumption is based upon homeless persons in the lower Reclamation Canal area, it is further demonstration of the unfair "tilting" of analysis resulting from including the area east of Old Stage Road in the subarea.

Staff Response to Comment 7

Staff did not conclude there are homeless encampments in the upper watershed areas of Alisal Creek. Staff made screening level of estimates of the number of homeless in the Project Area, based on the 2007 Monterey County Homeless Census and Survey (see Section 4.3.2.4 of the Project Report- Attachment 2). Staff maintains that the screening estimate of 28 homeless in the Reclamation Canal, Upper/Alisal Creek Watershed is fully justified on the basis of Monterey County's Homeless Survey street count. The spatial distribution of homeless shown by the Monterey County street count bubble map (Figure 4-10 of the

Project Report), indicates a population of homeless of at least 25 to 50 unsheltered homeless in the urbanized portion of the Reclamation Canal, Upper/Alisal Creek watershed.

Mr. Finegan's comment may stem from insufficient clarity about the watershed naming conventions staff used in the Project Report. Watershed 3b is identified as "Reclamation Canal, Upper/Alisal Creek" in the Project Report. This refers to the fact that, although hydrologically part of the same drainage, the channelized ditch east (upstream) of Carr Lake and continuing upstream to about Alisal Road is generally referred to as the Reclamation Canal. Subsequently, upstream of Alisal Road, the stream reach is referred to as Alisal Creek as shown on USGS topographic maps. Staff's naming convention included a "Reclamation Canal, Upper", so as to distinguish it from the part of the Reclamation Canal downstream of Carr Lake (i.e., Reclamation Canal, Lower – Watershed 3a). When the words are juxtaposed, e.g., Watershed 3b - "Reclamation Canal, Upper/Alisal Creek" – it may appear to be a reference to the *upper* reaches of Alisal Creek proper.

Staff, however, as a result of this comment did add narrative to the Project Report clarifying that the unsheltered homeless population in watershed 3b (Reclamation Canal, Upper/Alisal Creek), is likely to be concentrated in the urbanized areas or urban fringes of the City of Salinas. However, staff received comments from an Interested Party at the August 2009 Stakeholder Meeting in Salinas that there are homeless along Alisal Creek, so in the Project Report staff will avoid making conclusive and definitive statements in the Project Report about the exact location of all the unsheltered homeless populations.

Also, please note that responsible parties with property in the Alisal Creek watershed that do not have populations of homeless people are not responsible for pollutant allocations assigned to owners and operators of lands with homeless encampments.

Comment 8 – Brian Finegan, Attorney at Law

Finally. Bengards contend that any regulation imposed on the basis of the Report that renders all or portions of their ranch unusable for livestock grazing constitutes a regulatory taking of their property. There is no other viable economic use for their property which is designated Permanent Grazing in the County's General Plan.

Staff Response to Comment 8

Please refer to staff response to Comment 4, in particular the narrative about economic concerns.

Also, it is important to emphasize that the Water Board is required by the Federal Clean Water Act to adopt TMDLs for water bodies listed pursuant to Section

303(d) of the Clean Water Act and impaired water bodies. That said, staff anticipates that voluntary efforts and implementation measures currently underway may, in fact, result in achieving the goals of the TMDL and may be sufficient to demonstrate regulatory compliance with the proposed Basin Plan Amendment.

The proposed waste discharge prohibition simply sets a pollutant load allocation goal and identifies reporting requirements for owners and operators of lands containing domestic animals to demonstrate that they are currently in compliance with pollutant load allocations, or, alternatively, how they will achieve compliance with the load allocations, and whether implementation is effective.

Staff emphasizes that the Water Board cannot mandate or designate the specific types of on-site actions necessary to reduce indicator bacteria loading. Specific actions or management measures that are described or identified in the Project Report can only be suggestions or examples of actions that are known to be effective at reducing loading. Staff acknowledges that land owners and their collaborative partners in the Resource Conservation Districts and other public and private entities are in the best position to identify sound, and cost-effective, on-site management practices that are effective at reducing or controlling pathogen loading to water bodies from livestock and domestic animals.

Also, note that compliance with the load allocations (i.e., fecal coliform water quality objectives) implies compliance with the Domestic Animal Waste Discharge Prohibition. Compliance with the discharge prohibition should be achievable as it affects the management of livestock and domestic farm animals for which there are various affordable land management and livestock management options to control and/or treat runoff.

In addition, compliance does not necessarily require development of a pollution control plan or rangeland management plan. Options for compliance with the prohibition include submitting documentation demonstrating there are no discharges from fecal sources by livestock/domestic animals that would contribute to exceedances of stream load allocations.

Comment 9 – Celeste Settrini, Sattrini Ranch LLC

I believe it is important for the Central Coast Regional Water Board to have an accurate picture of the "creeks" identified in this Report. First, the creeks, such as the Gabilan Creek are ephemeral. It takes a rare occurrence of several storms in a row to saturate the ground enough to result in water runoff to the point water from my property will "flow." There have been years between the times the Gabilan "creek" on our property has flowed.

To follow my comments are some photos of the Gabilan Creek – both dry and wet. The Creek is dry the majority of the year unless we have a tremendous amount of rain and if we do then it runs for a day or two prior to drying up. I believe that

water is present near the bridge at the Boronda Bridge near the Creekbridge development. Unless it has been a tremendous rain event there is NO water coming from upstream so any water that is in there would come from tail water from the fields or from the domestic homes waste water from lawns etc. The frustration comes from knowing that water is being tested down stream however upstream there is no water passing through Gabilan Creek. I believe another area where there is water in the Gabilan Creek is at the bridge on Hebert Rd. This too is another domestic living area; if you go upstream near rangeland you will not find water flowing that far down. My point is that it seems there is water at minimal times in the Creek near the domestic homes. The rest of the time the Creek is dry.

Staff Response to Comment 9

(Staff Note: Photos submitted are part of the administrative record, along with all public comments received during the formal public comment period. The photos submitted by Settrini Ranch show several reaches of Gabilan Creek, dry (no flow) in January 2009, and a photo showing ephemeral flow after a large rain in February 2009)

Staff concurs that many creeks and stream reaches in the Lower Salinas River watershed Project Area have intermittent or ephemeral flows. Narrative in the Project Report addresses the nature of perennial, intermittent, and ephemeral flows in the Lower Salinas River watershed Project Area (see Section 2.3 of Project Report).

With regard to Gabilan Creek specifically, staff included flow information in the Project Report for Gabilan Creek from USGS flow gage 11152600, located 6.2 miles northeast of the City of Salinas. Flow records from this gage indicate Gabilan Creek in this particular stream reach only has measurable flow on average for about 30% of the year. However, based on the commenter's submittal, staff added additional narrative to the Project Report further clarifying the nature and scope of perennial versus ephemeral flow variability in the Project Area (see Section 2.3 of Project Report). Staff also referenced flow conditions pertaining to reaches of Gabilan Creek upstream of Hebert Rd., based on the observational and photographic documentation the commenter provided (see Section 2.3 of Project Report).

That said, please note that in accordance with the Basin Plan, current or potential beneficial uses of waters of the State apply to water bodies, regardless of whether the water body is perennial or ephemeral or the flow is intermittent or continuous (Basin Plan, Chapter 2, page II-1). In accordance with the Porter-Cologne Water Quality Control Act (California Water Code), "waters of the state" is broadly defined to mean any surface water or groundwater, including saline waters, within the boundaries of the state. State law for water quality control in California is directed toward achieving the highest water quality which is reasonable and consistent with maximum benefit to the people of the State (Basin Plan, Chapter 2, page II-1). Therefore, all water resources must be protected from pollution and nuisance that may occur as a result of waste discharges.

With regard to the linkage between flow conditions and fecal pollutant loading from domestic animals, please note that staff's source analysis took into account climatic conditions, flow conditions, and probable pathways of fecal coliform loading to streams. The Project Report source analysis indicates that, generally speaking, direct fecal deposition into surface water or into ephemeral drainage features and riparian areas is likely a much more significant load contributor than overland or hillslope runoff from grazing lands or other lands containing domestic animals (see Section 4 of Project Report, and Table 4-19 of Project Report).

It is important to note that indicator bacteria (e.g., *E. coli*) or pathogens in manure that are deposited on grasses or in ephemeral stream beds may survive for weeks or months (Guan and Holley, 2003; Avery et al., 2004), potentially being mobilized in the water column by subsequent stream flows. Also, during the dry weather period, coliforms build up on the land surface and may be washed off into intermittent or ephemeral creek channels by rainfall. Also, please see Staff Response to Comment 1 for more information pertaining to this issue.

With respect to the comment on other potential sources of fecal coliform loads to Project Areas stream reaches (e.g., urban areas, irrigation), staff endeavored to identify all probable sources of fecal coliform loads, including urban runoff, illegal dumping, homeless encampments, domestic animals, sediment resuspension, sewage spills, and natural wildlife background sources. The Domestic Animal Discharges source category and the proposed Domestic Animal Fecal Material Waste Discharge Prohibition apply not just to livestock, but to pets and farm animals as well (see proposed Resolution No. R3-2010-0017). Staff was not able to identify plausible evidence that runoff from irrigated land or from failing septic systems were a significant controllable source contributing to exceedances of water quality objectives in the Project Area. Indeed, the evidence and metrics staff evaluated concerning these sources appeared to substantiate that they are not significant sources of controllable bacteria loads.

However, note that a TMDL is, in large measure, a planning and implementation document; it is not the final word on source analysis. Adaptive measures and changes are anticipated, as noted in the draft Basin Plan Amendment documents. More information will be obtained, if merited, during the implementation phase of the TMDL to further assess the level of FIB contribution from other controllable sources that have not yet been identified, and what actions, if any, are necessary to address those sources.

At present, however, staff maintains that there is currently sufficient knowledge of the nature and sources of fecal coliform loading in the Project Area to begin to initiate management of currently known or probable controllable sources. Staff maintains that initiating control measures for known and probable sources outweighs the benefit of taking more time to develop more data and information on other possible sources or specific localized conditions.

Comment 10 – Celeste Settrini, Sattrini Ranch LLC

On many accounts during walks along the Gabilan Creek and other waterways in the area I have seen used toilet paper and human feces in the dry Creek bed, children playing in the sand building sand castles and dogs running in the creek while their owners jog along the top of the Creek (near Creekbridge homes) I do not have photos to prove this however will start carrying a camera with me to document these sorts of findings.

Staff Response to Comment 10

Staff concurs that pets in rural areas that do not drain to MS4 storm sewer systems, human feces, diapers, and toilet paper associated with illegal dumping are sources of controllable fecal coliform loads to Project Area stream reaches. Staff has identified illegal dumping as a source of controllable fecal coliform loads. The proposed Human Fecal Material Discharge prohibition is intended to address discharges of human waste to Project Area waterbodies. The Water Board considers the control of discharges of human fecal material to be a priority, because of the relatively higher pathogenic risk associated with human fecal material. Furthermore, Water board staff have observed pets in Project Areas stream reaches, particularly in the lower Salinas River. Your observations about Gabilan Creek add further weight to pets being a probable source of fecal coliform loads to surface water.

Also, please note that a pet is considered a "domestic animal" under the Domestic Animal Waste Discharge Prohibition (see proposed Resolution No. R3-2010-0017). However, in terms of the source analysis in the Project Report, the analysis was weighted towards farm animals and livestock, because these are source categories in agricultural and rural watersheds for which ubiquitous and robust peer-reviewed scientific information on pollutant loading is available. There does not currently appear to be any significant peer-reviewed research or studies documenting the magnitude and scope of fecal coliform loads from dogs and cats in rural areas.

Additionally, scientific literature, census data, and survey data appear to indicate that the amount of fecal coliform produced by cats and dogs in the Project Area is nearly an order of magnitude less than the fecal coliform produced by farm animals and livestock (see Table 4-1 and Figure 4-1 in the Project Report). Additionally, the majority of these pets likely reside in urbanized areas, where their waste is much more likely to be discharged to surface water via a municipal storm sewer system (i.e., MS4), rather than direct deposition into surface water features or via direct runoff. MS4s are identified as a distinct controllable source and assigned their own pollutant load allocation, separate from owners/operators of lands with domestic animals. However, as noted previously, staff recognizes that pet waste is a potential source of significant fecal coliform loads to stream

reaches, which merited their inclusion in the Domestic Animal Waste Discharge Prohibition.

Comment 11 – Celeste Settrini, Sattrini Ranch LLC

You have recommended an outright prohibition of the direct or indirect discharge of domestic animal waste into creeks such as ours (the "Prohibition") I have a couple questions:

- *Are you adding TMDL standards to the watersheds and creeks for the purpose of food safety?*
- *Are you imposing these standards for recreational users of the watershed?*

There appears to be absolutely no logic between the standards you seek to impose on our property and the purpose of establishing those watersheds.

Staff Response to Comment 11

Staff emphasizes that proposed Basin Plan amendment is not an outright prohibition of all direct or indirect discharges of animal waste to surface waters.

The Water Board may, pursuant to California Water Code section 13243, specify certain *conditions* or areas where the discharge of waste, or certain types of waste, will not be permitted (i.e., prohibitions). In accordance with this authority, compliance with the proposed domestic animal pollutant load allocations (e.g., water quality objectives for fecal coliform) implies compliance with the Domestic Animal Waste Discharge Prohibition. Simply put, this proposal is not a "zero discharge" prohibition of domestic animal waste; receiving waters associated with domestic animal activities that meet the concentration-based pollutant load allocation (i.e., the REC-1 Basin Plan water quality objective) are considered in compliance with the proposed Domestic Animal Waste Discharge Prohibition. Also, it is recognized that it is not possible to immediately achieve applicable water quality objectives for fecal coliform. As such, the TMDL has a proposed 13-year time frame, and measuring TMDL achievement and compliance will, in part, be measured by observing progression or continuous improvements to water quality over the long term. Also, please refer to the last paragraph of Staff Response to Comment 1, and refer to Staff Response to Comment 5 for further clarification of this issue.

With regard to food safety and recreational use: the Water Board has no authority to adopt regulations related to food safety. The Water Board is required by the Federal Clean Water Act to adopt TMDLs for water bodies listed pursuant to Section 303(d) of the Clean Water Act and impaired water bodies. Staff is proposing that the Water Board adopt TMDLs and Waste Discharge Prohibitions for Human Fecal Material and Domestic Animal Waste in order to restore or maintain the REC-1 Beneficial Use for surface waters of the state within the

Project Area. Please refer to Staff Response to Comment 1 and Comment 6 for further clarification of the State's REC-1 Beneficial Use.

Finally, staff notes for informational purposes that one (out of multiple) considerations in developing recent bacteria TMDLs for the central coast region is the fact that the known pathogen *E. coli* O157:H7 was recently identified by state and federal investigators in surface water samples from the Salinas and Pajaro river watersheds (USDA, 2006, CalFERT 2007). The *E. coli* O157:H7 pathogen is known to be associated with discharges of human, livestock, and wildlife fecal material.

Comment 12 – Celeste Settrini, Sattrini Ranch LLC

We try to promote healthy watersheds and many of our waterways have no cattle in them, those that do also have their water source or mineral tub source away from any watershed. These watersheds are a common water source, if any water is in them, for wild pigs, birds and deer. As of the last few dry years we have wildlife now drinking from our water troughs since the creek beds they normally drink from are dry. Many times I have seen them drinking from this and though I do not have photos will start to carry a camera in my truck to take photos for the future.

Staff Response to Comment 12

Staff concurs that wildlife contribute fecal coliform loads to stream reaches in the Project Area. Wildlife has been identified as a non-controllable source and assigned a pollutant load allocation. With regard to non-controllable discharges of fecal material from wildlife, please refer to Staff Response to Comment 2 for further clarification.

With regard to off-creek water sources for livestock, please refer to Staff Response to Comment 2 for further relevant information.

Comment 13 – Celeste Settrini, Sattrini Ranch LLC

At certain points of the Gabilan is farming ground and because of the LGMA Leafy Greens Agreement Cattle need to be away from the farming area, in turn they will not be near the Creek either since the Creek runs along the area being farmed.

Our family has been of the few to object to urban development on agricultural land such as ours. We have a desire to maintain the agricultural heritage and the integrity of our property. However, the standards imposed by this report, particularly, the Prohibition will render our future ag operations unsustainable, infeasible and susceptible to urban development. We feel it is so important to protect the land that has been in our family since the early 1900's.

My hope is that you would take my letter into consideration prior to accessing any rules on cattle grazing ground. I appreciate you taking the time to read my comments and am eager to find a common ground. We can all work together on this, we love what we do and we do not want to give that up.

I urge you to please not adopt such a Prohibition.

Staff Response to Comment 13

The Water Board recognizes the economic, cultural, and environmental benefits of well-managed grazing land and commercial, domestic animal operations in the Central Coast region. The Water Board strongly supports and encourages effective livestock management activities that will limit the opportunity for domestic animal waste to be discharged to surface water bodies.

Staff acknowledges that there are many property owners, commercial ranches, and owners/operators of lands with domestic animals that endeavor to manage their lands for maximum environmental, as well as economic, performance. Staff believes the Discharge Prohibition would be achievable as it affects the management of livestock and domestic farm animals for which there are various affordable land management, and livestock management options to control, limit, and/or treat runoff or discharges of fecal material to surface water drainage features.

Please also refer to Staff Response to Comments 4 and 8 for relevant information and clarification pertaining to your comment.

It is worth noting that the State's nonpoint source (NPS) pollution policy makes it clear that all NPS discharges must be under regulation - waste discharge requirements (WDRS), waivers of WDRs, or Basin Plan prohibitions. Staff considers the adoption of the proposed Prohibitions to be the least burdensome regulatory mechanism for responsible parties, from an economic standpoint. A Prohibition does not include or trigger any requirement to pay annual permit fees, as could be the case with waste discharge requirements or waivers.

Comment 14 – Pete Silacci, Silacci Ranch

(T)he report and notice are extremely difficult for a lay person to understand. It is not clear if this will affect us and our livestock business; if so how it would affect us; are we far enough away from the problem that we should not be concerned, what would be required of us, is this a meeting to inform us or to make a decision.

The majority of what we read addresses something called "shellfish harvesting beneficial use". This means nothing to us. There is some mention of domestic animals and the word livestock appears twice. There are many other factors

besides livestock that are mentioned and some that are not which might affect the water below us.

Some have said that we could possibly be made to fence off all creeks and stress [sic]. That would be an ominous task. In addition it would deny water to our livestock.

Staff Response to Comment 14

For clarity and simplicity, staff will make an effort to address your questions and concerns, in bullet outline format, below:

- Creeks, and streams in the Lower Salinas River Watershed have highly elevated bacteria concentrations, which impair certain recreational uses of these waters, their tributaries, and/or their downstream receiving water bodies. Any current, potential, or future recreational uses in these water bodies which involve body contact (including but not limited to wading, fishing, etc.) and the possible ingestion of water could be a potential risk to human health because of the increased risk of the ingestion of pathogens (i.e., viruses, bacteria, protozoa that are known to be risks for human health).

- The shellfish harvesting beneficial use is only applicable to coastal confluence waterbodies (i.e., estuaries, lagoons, bays, coastal sloughs) and is not relevant to property owners whose land is adjacent to inland streams. Waterbodies that have a shellfish harvesting beneficial use require much lower and more stringent levels of bacteria to support the shellfish, in contrast to the level of bacteria required to support recreational uses. Again however, please note that the shellfish beneficial use criteria do not apply to inland surface streams associated with grazing land and ranches located near the City of Salinas, the foothill areas, or inland valley floor areas.

- The Central Coast Water Board is required under both State and Federal law to protect and regulate beneficial uses of waters of the state.

- The Federal Clean Water Act, which the State implements and enforces, requires the Water Board to adopt total maximum daily loads (TMDLs) to protect or restore beneficial uses that are impaired. A TMDL stands for a Total Maximum Daily Load. This is the amount of a particular pollutant that a waterbody can assimilate on a regular basis and still remain at levels that protect beneficial uses designated for that waterbody. A TMDL is, in essence, a quasi-regulatory process and planning tool, that identifies sources of pollution, identifies appropriate regulatory actions, and documents an implementation plan to restore beneficial uses of waters of the state.

- The proposed Basin Plan Amendment developed for Water Board consideration constitutes a suite of regulatory tools to implement the TMDLs (e.g., proposed Prohibitions of Discharges of Human Fecal Material and Domestic Animal Waste), as required by the Clean Water Act. It is important to emphasize that the Domestic Animal Waste Discharge Prohibition does not constitute an outright ban or "zero discharge" requirement on domestic animal waste (please see Staff Response to Comment 11 for further clarification on this issue).

- Note that the State nonpoint source (NPS) pollution policy (adopted in 2004) makes it clear that all NPS discharges must be under regulation. NPS sources of pollution, for example, include urban runoff, agricultural runoff, timber and forestry discharges, etc. Staff considers the proposed Prohibitions to be the least burdensome regulatory mechanism for Responsible Parties with lands containing domestic animals, from an economic standpoint. A Prohibition does not include or trigger any requirement to pay annual permit fees, as would be the case with other available regulatory tools.

- The proposed Implementation Plan identifies a suite of reporting requirements and options for owners/operators of lands with domestic animals to demonstrate whether they are in compliance with the Domestic Animal Waste Discharge Prohibition, or alternatively, to report how they will achieve compliance with State water quality standards. The Water Board is not requiring that all streams and creeks be fenced off. Please refer to Staff Response to Comments 1, 4, 5, 8 and 11 for further relevant information on the proposed implementation plan and compliance options.

Comment 15 – Bill Massa, of Salinas, CA

1) *Where are the researchers gathering samples for the data that is being submitted in the study?*
2) *What process was used in the development of the TMDL*
3) *It was stated that public involvement was used during development of the TMDL; however, it appears that no Cattlemen or Cattlemen's associations were invited to attend any of the prior presentations. They are certainly stakeholders in this matter. The passing of this resolution could have huge ramifications to the cattle industry.*

Staff Response to Comment 15

Information about which organizations/researchers collected the water quality samples are provided in the draft Final Project Report, Section 3.1. However, for ease of reference, the information is summarized below:

The bulk of the water quality data used in TMDL development was collected by the Central Coast Ambient Monitoring Program (CCAMP). CCAMP is the Central Coast Water Board's regionally scaled water quality monitoring and assessment program. The purpose of the program is to provide scientific information to Water Board staff and the public. For further information, please refer to the website (www.ccamp.org). Supplemental sources of water quality analysis data are summarized below:

Additional data was available for Chualar Creek and Natividad Creek. The Central Coast Watershed Studies Team (CCoWS) from the California State University-Monterey Bay collected a suite of samples from Chualar Creek during the 2001/2002 monitoring period. The samples were analyzed for total coliform, fecal coliform, and *E. coli*.

Snapshot Day *E. coli* monitoring data for Natividad Creek was collected by the Monterey Bay National Marine Sanctuary Citizen Watershed Monitoring Network (Network). The Network provides guidance, training and equipment to support citizen monitoring groups. The Network also coordinates between citizen monitors and government agencies so that the data collected is useful. Information gathered by trained Snapshot Day volunteers are used to help resource managers focus attention on priority areas.

A suite of *E. coli* water quality data from Natividad Creek from the City of Salinas Stormwater Monitoring Program was used to supplement the Snapshot Day monitoring data (City of Salinas 2007-2008 Annual NPDES Report).

Finally, a suite of water quality samples from the Project Area was collected by the U.S. Department of Agriculture – Agriculture Research Service Microbiology Research Unit.

With regard to the question about the process involved in TMDL development: TMDLs are developed by analyzing data and information provided by existing or commissioned studies, and/or by stakeholders interested in the waterbody or conditions being investigated. Development results in a clear definition of water quality problems in a waterbody or watershed, a numeric value for the TMDL, and an implementation plan that identifies how the problems will be solved and the TMDL achieved. The implementation plans identify new requirements, based on existing regulations, in conjunction with other existing water quality management activities. The implementation plans identify which requirements or activities (via voluntary or regulatory programs) apply to which agencies, landowners, resource managers, and/or the public.

Typically, TMDLs and their implementation plans are approved by adoption into the Regional Board's Basin Plan, via a Basin Plan amendment. Once approved, it establishes 1) an allowable amount of a pollutant to a waterbody, 2) proportional

responsibility for controlling the pollutant, 3) numeric indicators of water quality, and 4) implementation to achieve the allowable amount of pollutant loading.

Additional information on TMDL background and information is available at the Water Board's TMDL program webpage:

http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/index.shtml

Finally, staff acknowledges an unintentional oversight in not documenting the participation of individuals and groups representing cattle interests in the draft Final Project Report. This oversight has been rectified. Stakeholders representing livestock interests who participated in the public meetings included representatives of the Monterey County Cattlemen's Association, as well as individuals representing commercial ranches. Sign-in sheets documenting meeting attendees will be included in the Administrative Record. Unfortunately, the scope of the Project (~400 square miles of watershed, and > 200,000 residents in Project Area) precluded the possibility of outreach and inclusion of every potential stakeholder pertaining to the development of this TMDL. Entities and individuals representing a variety of interests, including livestock interests, participated in public meetings during the TMDL process.

Comment 16 – Aaron P. Johnson, Monterey County Cattlemen's Association

Our immediate concern is the following prohibition contained on page 147 (the "Prohibition"):

*"Domestic Animal Waste Discharge **Prohibition**:*

*"The **direct or indirect** discharge of waste from domestic animals (including, but not limited to: horses, cattle, goats, sheep, dogs, cats, or any other animals in the care of owners/operators of these animals) from **any grazing operations, farm animal and livestock facilities** including paddocks, pens, corrals, barns, sheds, yards, **or other activity of whatever nature** into waters of the State within the [Lower Salinas River Watershed]." (Emphasis added.)*

Adoption of this Prohibition has the capability of completely destroying the livelihood and lifestyle of a culture established by generations of cattle ranchers in Monterey County.

Staff Response to Comment 16

Staff acknowledges an error in including the above Prohibition language in the draft Final Project Report, and appreciates the commenter making note of it. The Prohibition language, as reproduced by the commenter, is outdated draft boilerplate language that is not intended for Water Board consideration, and is not being proposed for Water Board consideration in the proposed Basin Plan

Amendments. As such, the inclusion of the above boilerplate language in the draft Final Project Report was unintentional and staff has rectified the error in the draft Final Project Report. Also, please note that the Project Report is a technical analysis, and in and of itself, has no binding legal authority. The legal authority for implementation of the Basin Plan Amendments resides in the Board Resolutions.

The Water Board adopted a Domestic Animal Waste Discharge Prohibition on March 20, 2009 (Resolution No. R3-2009-0008) that reads:

> *Domestic Animal Waste Discharge Prohibition:*
>
> *Discharges containing fecal material from domestic animals to the waters of the State that cause or contribute to exceedance of water quality objectives in the areas listed below are prohibited. Examples of domestic animals include, but are not limited to, horses, cattle, goats, sheep, dogs, cats or any other animal(s) in the care of any person(s).*
>
> 1. *Pajaro River Watershed*

It is important to emphasize that the proposed Basin Plan Amendment recommends that the Lower Salinas River Watershed be *added* to the Domestic Animal Waste Discharge Prohibition which the Water Board adopted in R3-2009-0008 (please see the proposed Basin Plan Amendment Documents, Attachment 1, Resolution R3-2010-0017).

Note that, in accordance with the Domestic Animal Waste Discharge Prohibition (as adopted in R3-2009-0008) the prohibition is not a "zero-discharge" prohibition, or an outright prohibition of all discharges of domestic animal waste. Please see Staff Response to Comment 11 for further clarification on this issue. Also, please refer to Staff Response to Comments 1, 4, and 5 for further information on compliance and options for compliance with the proposed Prohibition by responsible parties.

Comment 17 – Aaron P. Johnson, Monterey County Cattlemen's Association

These are interesting times for Cattlemen. We find ourselves defining and redefining "sustainability" and what it means for our rangeland and operations. We tackle food safety issues with row crop farmers as if they were our own (and in some cases they are), participating in round table discussions with ag commission offices, Western Growers, Grower-Shipper Association, NRCS, RCD and The Nature Conservancy, to name a few. Recently, six different county Cattlemen's Associations of the Central Coast Region assembled to address impending water issues, largely at the request of CCRWQCB staff. We have participated and supported the California Rangeland Coalition. We are positively contributing to our community and society on a number of policy issues.

As a result of our coalition building, leadership and outreach, and at the request of CCRWQCB staff, Cattlemen initiated and staff was given a "Central Coast NPS Grazing and Benefits of Grazing" report. The cattlemen used the EPA Non-Point Source Management Measures, Grazing Chapter as a guide and they attempted to meet all elements of the SRWCB Non-Point Source Policy. CCRWQCB staff were given a final draft to review and informed that peer review was underway. Staff elected not to review it or comment on it, even though it was written at their insistence. As suggested by the research community, the final draft has been subjected to peer review of NRCS range specialists and conservationists, researchers. The report and peer review will most likely be complete within the next two months and will provide you with information and details lacking in your Report.

Cattlemen would like to report on the final, peer-reviewed document at the March RWQCB Hearing.

Monterey County Cattlemen's Association has worked very hard with many stakeholders on food safety and water discharge issues to find reasonable, science-based, and economically sound solutions. In doing so, we have opened doors of communication with entities and groups that have had historically adverse interests with great success.

Yet, as proactive and engaging as we have been, Cattlemen are rarely, if at all, cited as a resource or stakeholder in your process or in your Report. We find this problematic.

Staff Response to Comment 17

Staff acknowledges an oversight in failing to reference the participation of Cattlemen in public scoping and stakeholder meetings pertaining to this TMDL project. The project report has been modified to correct the oversight.

Staff made an effort in the Project Report to acknowledge proactive efforts of entities or organizations to improve water quality in the watershed; however, staff unintentionally neglected to mention proactive efforts of the cattle industry. This oversight has been rectified and the Project Report has been updated with narrative acknowledging work done by California Cattleman's Association, the Central Coast Rangeland Coalition, the Monterey County Cattlemen's Association, Conservation Districts, Natural Resource Conservation Districts, University of California Cooperative Extension, and rangeland managers within the Salinas River watershed to improve environmental performance and water quality.

Regarding the "Central Coast NPS Grazing and Benefits of Grazing" report (Report): Staff is unaware of any formal or informal request, by staff, for the Cattlemen to prepare the Report. Staff did receive the Report and were asked to

comment on it. However, in order to effectively comment, staff required more information, particularly regarding the intent of the Report. Staff sent an email to the Cattleman representative who forwarded the Report asking for clarification. Staff received a response email from that representative indicating that they would no longer be working on the issue. Staff was not at that time redirected to another contact person. Several months later, staff received a phone call from a new contact person asking for comment on the Report. Staff commented on the report with the new contact person over the telephone, and followed-up with an email as well. Staff received a response email from the new contact person who thanked staff for their input; no further request was made, at that time or since, to make additional comment on the Report. In March 2009, staff presented the Pajaro River Fecal Coliform TMDL to the Board for consideration. The Pajaro TMDL project identified livestock as a source of fecal coliform loading, and a prohibition as the mechanism to address the source. Cattlemen provided public comment for the Pajaro TMDL project, but did not mention the Report. Finally, staff held a stakeholder workshop in August 2009 in Salinas to discuss the lower Salinas River Fecal Coliform TMDL; cattlemen were present at the meeting. There was no mention of the Report at the meeting by cattlemen or their representatives.

The Water Board and staff recognize that voluntary pollution control measures are vitally important with regard to managing water pollution in California. However, the Water Board required by federal law to develop TMDLs and is also required by State policy to regulate nonpoint sources of pollution. As a result of long-standing and unresolved problems associated with nonpoint source pollution throughout California, the State adopted a nonpoint source pollution (NPS) policy in 2004, which formally did away with voluntary and unregulated compliance options. The State's NPS policy makes clear that known or probable sources of NPS pollution must be regulated, through waste discharge requirements (WDRs), waivers of WDRs, or prohibitions.

However, it is also important to emphasize that ongoing, voluntary, and proactive land management and animal management efforts (such as voluntary efforts by cattlemen) are still critically important to California water pollution control efforts. These efforts have the capacity to be leveraged by responsible parties to demonstrate and achieve compliance with the State's nonpoint source (NPS) pollution policy and with any proposed regulatory mechanisms adopted in accordance with the NPS policy. The Water Board cannot mandate or designate a specific land management or animal management practice. With this in mind, it is important to recognize that the State requirement for the Water Board to provide regulatory oversight of NPS sources of controllable pollution and the cattlemen's Report are not necessarily divergent goals. The Water Board's authority is to provide regulatory oversight, document trackable goals, and implementation actions and to determine if progress is being made towards compliance with applicable water quality objectives over the long term.

Simply put, the cattlemen's Report as a stand-alone document cannot be accepted in lieu of, or as an alternative to, regulation. Trackable land and animal management strategies implemented (where appropriate) that will reduce pathogen loading can be used to demonstrate compliance with the proposed Prohibition and the State's NPS policy.

Staff has forwarded your request to Water Board management for an extended period of time for Cattlemen to report to the Water Board at the March meeting.

Comment 18 – Aaron P. Johnson, Monterey County Cattlemen's Association

Additionally and inevitably, the law of unintended consequences, or CEQA's "growth-inducing impacts" as the case may be, is triggered when your Prohibition is one that leads to substantially greater adverse impacts than those created by the subject matter you are regulating. Agricultural families, one particularly located in the "Salinas Growth Area" northeast of Salinas and within the Prohibition watershed, have expressed a desire to retain their agricultural heritage and zoning and have rejected attempts of developers and the City of Salinas to convert them to urban development. The likelihood of family farms to convert from agriculture to development is substantially increased when the means to sustain such a living are prohibited.

An outright Prohibition will result in the conversion of agricultural ground to urban uses, a significant impact that was not addressed in your Report. As such, your reliance on the CEQA exemption for a negative declaration is flawed.

The regulations you seek to impose are duplicative and are therefore in conflict with already established laws and regulations.

Additionally, the Report fails to list agriculture as a beneficial use. I don't believe it is your intention to de-list it as such and it should be listed in the Report.

Staff Response to Comment 18

The Water Board recognizes the economic, cultural, and environmental benefits of well-managed grazing land and commercial domestic animal operations in the Central Coast region. The Water Board strongly supports and encourages effective livestock management activities that will limit the opportunity for domestic animals waste to be discharged to surface water bodies.

Please note that the Domestic Animal Waste Discharge Prohibition is not an outright Prohibition, a ban on all discharge of domestic animal waste, or a "zero discharge" prohibition. Please refer to staff response to Comment 11 for further information on this topic.

Staff acknowledges that there are many property owners, commercial ranches, and owners/operators of lands with domestic animals that endeavor to manage their lands for maximum environmental, as well as economic, performance. Staff believes the Discharge Prohibition would be achievable as it affects the management of livestock and domestic farm animals for which there are various affordable land management, and livestock management options to control, limit, and/or treat runoff or discharges of fecal material to surface water drainage features.

The State's nonpoint source (NPS) pollution policy makes it clear that all NPS discharges must be under regulation - permitted Waste Discharge Requirements (WDRS); waivers of WDRs; or Basin Plan Prohibitions. [edit as above] The policy formally eliminates the previous "three-tiered approach" of voluntary compliance, regulatory-based encouragement (waivers), and regulation (permits and prohibitions). Further information on the State's nonpoint source pollution control plans and policies is available at:
http://www.swrcb.ca.gov/rwqcb2/nonpointsource.shtml

Staff considers the adoption of the proposed Prohibitions to be the least burdensome regulatory mechanism for responsible parties from an economic standpoint, as a Prohibition does not include or trigger any requirement to pay annual permit fees, as could be the case with waste discharge requirements, or waivers of WDRs.

Staff emphasizes that voluntary or ongoing rangeland management practices and implementation actions have the potential to be effectively used by responsible parties to demonstrate compliance with the proposed load allocations for domestic animals. Also, compliance with the pollutant load allocations (e.g., water quality objectives for fecal coliform) implies compliance with the Domestic Animal Waste Discharge Prohibition.

In addition, compliance does not necessarily require a pollution control plan to be developed. Options for compliance with the prohibition include submitting documentation demonstrating there are no discharges from fecal sources by livestock/domesticated that would contribute to exceedances of stream load allocations.

With regard to the comment pertaining to CEQA, again please note that there is no outright ban, or "zero discharge" requirement in the Prohibition. In this action, the Central Coast Water Board is not adopting a new water quality objective, but rather is implementing an existing objective. Staff evaluated the environmental characteristics of the watershed, identified the beneficial uses of water, evaluated the conditions that could be achieved with compliance with the TMDL, and economics. Staff does not concur that the adoption of the proposed Basin Plan Amendments will result or be responsible for a conversion of agricultural land to urban land. Staff has proposed a TMDL that limits requirements to the minimum

necessary to achieve water quality results. Staff also made a concerted effort to identify and propose requirements for any and all industries or responsible parties contributing or threatening to contribute fecal coliform to the waterbodies. Staff made a concerted effort in the proposed TMDL to limit the burden of monitoring and reporting, and built flexibility into the plan to allow staff and the responsible parties to adapt monitoring and reporting requirements for optimal financial and informational value. Staff has endeavored to identify as many options as possible for responsible parties to demonstrate compliance with the proposed Basin Plan Amendment, while still achieving water quality results.

As such, we are trying to be as flexible as possible in the implementation approach for reducing pathogen loading. We anticipate that enforcement mechanisms will only be needed where dischargers have chosen not to assess and/or reduce their potential to impact water quality from controllable sources.

With regard to the comment about the report not mentioning agriculture as a beneficial use, agricultural water supply is identified as a beneficial use (please see Table 1-1 in the Project Report). Staff are not proposing delisting agricultural water supply as a beneficial use. It is unclear to staff if the commenter is referring to agricultural water supply, or if the economic practice and land use practice of agriculture, in and of itself, is a beneficial use. It is important to recognize that the term "beneficial use" has a specific legal meaning with respect to water quality standards, pursuant to the Clean Water Act, and the Porter-Cologne Water Quality Control Act. As such, there is no codified beneficial use for agriculture as a land use, or economic category in this specific legal context. Beneficial uses,in the statutory context of Porter-Cologne, is limited to the beneficial uses of waters of the state, independent of land use. That said, the Water Board recognizes that well managed rangeland can and does have many economic, cultural, and environmental benefits in the central coast region.

Comment 19 – Aaron P. Johnson, Monterey County Cattlemen's Association

Finally, we need to better understand your goals. Is it your goal to implement the Prohibition on cattle ranchers for purposes of food safety? Or, are you imposing such a Prohibition for purposes of recreational use of the lower Salinas River and ocean? Either goal is impacted substantially (if not completely) in the late summer months, rather than February, when intermittent rainfall may occur unlike it has this week.

Staff Response to Comment 19

Please refer to Staff Response to Comment 11.

Also, please note that in this proposed action, the Central Coast Water Board is implementing an existing water quality existing objective, in accordance with the Central Coast Basin Plan. Please refer to Staff Response to Comments 1 and 6

for further clarification pertaining to recreational beneficial uses and water quality standards.

Comment 20 – Aaron P. Johnson, Monterey County Cattlemen's Association

Cattlemen were not adequately addressed, consulted nor engaged in this Report. The Report, as written, has many flaws related to an unclear, speculative and punitive implementation program, at best. In incorporating the comments written to you from my fellow MCCA officer, Scott Violini, I ask for several changes in your process that will positively impact the outcome for all:

1. Move the hearing date from March to a date that provides us sufficient time to thoroughly discuss the Prohibition, the science and methodology contained in your Report,;
2. Allow us at least 15 minutes of time to report at your hearing about our findings on the "Benefits of Rangeland Report"; and,
3. Establish a true, meaningful stakeholder group that includes Cattlemen, who have significant experience and resources at their disposal, between now and the hearing to help resolve problems cited in this letter and to develop alternatives to the Prohibition.

Staff Response to Comment 20

Staff has forwarded your request for 15 minutes of speaking time to Water Board management.

Staff maintains that there is currently sufficient knowledge of the nature and sources of fecal coliform loading in the Project Area to initiate management of currently known or probable controllable sources. Staff maintains that initiating control measures for known and probable sources outweighs the benefit of taking more time to develop more data and information on other possible sources, or specific localized conditions. With regard to the science and methodology in the Project Report, Staff employed methods and techniques that are recognized by USEPA or other Agencies to develop approved TMDLs. USEPA has approved many TMDLs which utilize theses methods; and to the extent possible, staff utilized methods that USEPA themselves recognize or recommend (USEPA, 2001). As such, Staff maintains that the technical effort and source characterization provided in the Project Report fully supports the initiation of management measures for probable controllable sources in the watershed.

The Project Report has been through scientific peer review, and to the extent possible, staff modified the Project Report in accordance with peer review guidance.

Staff strongly took stakeholder recommendations and feedback into account with regard to source analysis. Stakeholders requested that Staff conduct source

analyses of livestock/commercial grazing, domestic animals, illegal dumping, illegal human sources including septic, wildlife, urban, rural residential land uses.

Based on feedback and concerns expressed by Stakeholders, staff utilized USEPA-recognized source analysis methods, and methods developed by researchers with TMDL expertise. Further, to the extent possible staff interviewed individuals with local, regional, or national knowledge or expertise in areas that were relevant to source analysis and/or Staff obtained studies and data from relevant agencies/entities; e.g., California Department of Fish and Game, Monterey County Ag Commissioner's Office, Monterey County Resource Conservation District, Monterey County Department of Health, Natural Resources Conservation District, U.S. Department of Agriculture, etc.

With regard to the comment on stakeholder involvement, Staff will work with responsible parties to develop implementation, assessment, and monitoring strategies as the implementation phase of the TMDL project commences. Please note that Staff strongly took stakeholder input and concerns into consideration in developing this Project. The level and scale of technical analysis and source characterization arguably exceeds any that have been done for a central coast region bacteria TMDL. This was a direct result of stakeholder input and feedback.

With regard to developing alternatives to the Prohibition, please note that the State's nonpoint source (NPS) pollution policy makes it clear that all NPS discharges must be under regulation - permitted Waste Discharge Requirements (WDRS); waivers of WDRs; or Basin Plan Prohibitions. The policy formally eliminates the previous "three-tiered approach" of voluntary compliance, regulatory-based encouragement (waivers), and regulation (permits and prohibitions). Please see Staff Response to Comment 18 for further clarification on this issue.

Staff considers the adoption of the proposed Prohibitions to be the least burdensome regulatory mechanism for responsible parties from an economic standpoint, as a Prohibition does not include or trigger any requirement to pay annual permit fees, as could be the case with waste discharge requirements, or waivers of WDRs.

Comment 21 – Scott Violini, Monterey County Cattlemen's Association

My first set of comments address the process by which RWQCB Staff has engaged the Cattlemen in this TMDL public process.

In June of 2007, cattlemen from Monterey County attended a workshop in Salinas and requested staff to better define the scoping of the TMDL. At that meeting, we asked Staff to:

1. *Do Source Characterizations of livestock/commercial grazing, domestic animals, illegal dumping, illegal human sources including septic, wildlife, urban, rural residential land uses;*

2. *Engage in a more extensive peer review process if the science, data and assumptions used to formulate the TMDL approach;*

3. *Analyze and evaluate the data of Southern Monterey County (Arroyo Seco watershed). This is where land use is livestock/commercial and where RWQCB Staff there is NOT an exceedances of fecal coliform loads.*

Also in 2007, The Cattlemen wrote a Central Coast Non-Point Source Grazing Approach and Benefits of Grazing Appendix in an effort to address RWQCB staff's questions. The Cattlemen created a group composed of representatives from the six County Cattlemen's Associations (Santa Cruz, Santa Clara, San Benito, Monterey, San Luis Obispo and Santa Barbara) to address Staff's demands. The document provided background about Central Coast Ranching and addressed the eight elements of the 2004 SWRCB Non-Point Source Policy. The document was presented to RWQCB Staff in early September, 2007. Staff has yet to provide feedback or comment on the document.

Proactively, and without further interaction with Staff, our group subjected the Central Coast NPS Grazing Approach to a peer review process and it is almost completed. Additionally, the group updated the Rangeland Water Quality Management Plans format and the Rangeland Water Quality Management Planning education classes. Simultaneously, The Cattlemen have been working with the University of California Cooperative Extension and NRCS to find grant funding to continue to offer education to ranchers throughout the Central Coast.

It was another 2 years before Staff convened a meeting to discuss the fecal coliform TMDL in the Lower Salinas River. In August 2009, Staff convened a second scoping meeting that the Monterey County Cattlemen attended at the Monterey County Water Resources Agency Board Room. The Cattlemen repeated the same concerns: science did not sufficiently evaluate sources, the cited science did not include most recent research such as UCDavis/UC/NRCS work, the peer review process lacked diverse jurisdictional (animal/soil/plant science) sources, and there was confusion about Staff expectations and the public process.

The attendance records for some reason do not accurately reflect that Monterey County Cattlemen in attendance at this scoping meeting.

If the Report you are now issuing is considered staff's version of feedback, we would request a more intimate setting in which to voice our concerns and discuss a more science-based, pragmatic approach with staff, preferably in the form of a stakeholder group, rather than a public, knee-jerk prohibition against the cattle industry.

The public process of the TMDL was flawed. The science was flawed. Staff's assumptions were flawed. The peer review was flawed. Comments received during the public comment were not addressed. The lack of responsiveness to the affected Cattlemen has not been adequate.

Staff Response to Comment 21

Staff acknowledges an oversight in failing to reference the participation of Cattlemen in public scoping and stakeholder meetings pertaining to this TMDL project. The project report has been modified to correct the oversight.

Staff made an effort in the Project Report to acknowledge proactive efforts of entities or organizations to improve water quality in the watershed; however Staff unintentionally neglected to mention proactive efforts of the cattle industry. This oversight has been rectified, and the Project Report has been updated with narrative acknowledging work done by California Cattleman's Association, the Central Coast Rangeland Coalition, the Monterey County Cattlemen's Association, Conservation Districts, Natural Resource Conservation Districts, University of California Cooperative Extension, and rangeland managers within the Salinas River watershed to improve environmental performance and water quality.

With regard to the extended periods of time between stakeholder meetings, please note that after stakeholder outreach, the CEQA scoping meeting, and development of the preliminary project report in 2007, the TMDL project was essentially on administrative hold for a year. The TMDL Project was in scientific peer review for one year (May 2008 to May 2009) during which time the Project was on hold administratively and staff was reassigned to other priorities. Scientific peer review took longer than expected, due to budgetary and administrative issues, therefore there was little in the way of TMDL development or stakeholder outreach between May 2008 and May 2009. Staff ultimately received scientific peer review in May 2009. During June of 2009, staff modified the Project Report, in accordance with scientific peer review, and in accordance with previous concerns that stakeholders had provided to us. Two months after receiving scientific peer review, Staff scheduled another stakeholder meeting in July 2009, which was held in Salinas on August 18, 2009. In December 2009, the draft Final Project Report and proposed Basin Plan Amendments were published on the Water Board's website and notification for opportunity for public comment was sent to Interested Parties and published in the Salinas Californian newspaper.

With regard to the *Central Coast Non-Point Source Grazing Approach and Benefits of Grazing Appendix* document Cattlemen submitted, please see response to Comment 17. Staff acknowledges and appreciates the level of effort cattlemen put into producing this report.

The Water Board and Staff recognize that voluntary pollution control measures are vitally important with regard to managing water pollution in California. However, please note that Staff are required by federal law to develop TMDLs, and staff are also required by State policy to regulate nonpoint sources of pollution. As a result of long standing, and unresolved problems associated with nonpoint source pollution throughout California, the State adopted a nonpoint source pollution (NPS) policy in 2004, which formally did away with voluntary and unregulated compliance options. The State's NPS policy makes clear that known or probable sources of NPS pollution must be regulated; either through waste discharge requirements (WDRs), waivers of WDRs, or prohibitions.

However, it is also important to emphasize that ongoing, voluntary, and proactive land management and animal management efforts (such as voluntary efforts by cattlemen) are still critically important to California water pollution control efforts. These efforts have the capacity to be leveraged by responsible parties to demonstrate/achieve compliance with the State's nonpoint source (NPS) pollution policy and with any proposed regulatory mechanisms adopted in accordance with the NPS policy. Note, that the Water Board cannot mandate or designate a specific land management or animal management practice. With this in mind, it is important to recognize that the State requirement for the Water Board to provide regulatory oversight of NPS sources of controllable pollution, and cattlemen's Non-Point Source Grazing Approach and Benefits of Grazing Appendix Report are not necessarily divergent goals. The Water Board's authority is to provide regulatory oversight, document trackable goals and implementation actions, and determine if progress is being made towards compliance with applicable water quality objectives over the long term.

Simply put, while the cattlemen's Non-Point Source Grazing Approach Report as a stand-alone document cannot be accepted in lieu of, or as an alternative to, regulation, proactive, voluntary, trackable land and animal management strategies implemented (where appropriate) that will reduce pathogen loading can be used to demonstrate compliance with the proposed Prohibition and the State's NPS policy.

Please note that Staff considers the adoption of the proposed Domestic Animal Waste Prohibition to be the least burdensome nonpoint regulatory mechanism for Responsible Parties, from an economic standpoint. A Prohibition does not include or trigger any requirement to pay annual permit fees, as could be the case with waste discharge requirements, or waivers of WDRs.

Staff concurs that more meetings, and more interactions as merited and as time and resources permit, can provide additional value to the TMDL development process. Staff intends to work with stakeholders during the implementation phase of the proposed TMDL.

However, Staff maintains that there was appropriate opportunity for public comment and Staff considered and took Cattlemen's input strongly into account.

For example, the commenter notes three broad areas of TMDL development that of concern to Cattlemen, and are routinely brought up in stakeholder meetings, as shown below:

- *Comment: "Do Source Characterizations of livestock/commercial grazing, domestic animals, illegal dumping, illegal human sources including septic, wildlife, urban, rural residential land uses*

Staff invested significant effort in empirically assessing and characterizing the spatial distribution and relative magnitude of sources at the subwatershed scale in the Project Area. Staff used methods that are accepted and recognized in State and USEPA-approved TMDLs, and staff used local and regional data where possible, augmented by peer-reviewed data from scientific literature or from public agency sources. Staff considers the level of effort directed towards addressing this stakeholder concern to be substantial and substantive. The source characterization in this Project Report arguably exceeds any done for previous central coast pathogen TMDLs. This effort was a direct result of stakeholder input.

- *Comment: "Engage in a more extensive peer review process if the science, data and assumptions used to formulate the TMDL approach"*

Staff used methods and data that are commonly used and recognized in TMDL development. Staff did not attempt to employ methods that are new, unrecognized, or have not been used in previous State and USEPA-approved TMDLs.

Staff maintains that it is unnecessary to have USEPA-recognized or USEPA-recommended methods submitted for additional peer review. These methods have been commonly applied nationally in a variety of USEPA approved pathogen TMDLs.

With regard to the TMDL development overall, including water quality objectives, and implementation, the draft Final Project Report was submitted for scientific peer review, and staff made substantial changes to the Project Report based on peer reviewer guidance. Two researchers from UC Davis provided peer review guidance to staff. Dr. Stefan Wuertz, Professor of Environmental Engineering, and Dr. Alexander Schriewer (Wuertz and Schriewer, 2009).

Additionally, although we are not required to do so, Staff also submitted the draft Final Project Report to U.S. Environmental Protection Agency (USEPA) for review and technical comment. Comments from USEPA are currently pending.

Finally, Staff maintains that there is currently sufficient knowledge of the nature and sources of fecal coliform loading in the Project Area to begin to initiate management of currently known or probable controllable sources. Staff maintains that initiating control measures for known and probable sources outweighs the

benefit of taking more time to develop more data and information on other possible sources, or specific localized conditions.

- *Comment: "Analyze and evaluate the data of Southern Monterey County (Arroyo Seco watershed). This is where land use is livestock/commercial and where RWQCB Staff there is NOT an exceedances of fecal coliform loads"*

With regard to the Arroyo Seco watershed, a drainage that contains both undeveloped public forest lands and grazing land, please note that this water body is proposed to be listed for impairment due to fecal coliform on the 2008 303(d) updated list, based on more recent vintage indicator bacteria data. Please note that based on stakeholder input, Staff evaluated water quality data from the Arroyo Seco River, and included our evaluation in Section 4.3.2.7 of the Project Report.

However, based on continuing Stakeholder interest in the Arroyo Seco watershed, staff added additional analysis in the Project Report (see Section 4.3.3 of the Final Project Report), evaluating more broadly observed water quality data in Monterey County from monitoring sites draining exclusively grazing lands and/or forest-undeveloped lands. For ease of reference, parts of the relevant narrative from the Project Report are reproduced, below:

> (S)takeholders have expressed concerns about the ability to discriminate between water quality conditions in catchments draining grazing land, versus natural background conditions in water draining undeveloped forest catchments (i.e., lands having no significant anthropomorphic inputs or domestic animal operations).
>
> Consequently, staff evaluated water quality conditions from monitoring sites in Monterey County which drain only grazing lands and/or forest and undeveloped lands (i.e., monitoring sites where there are zero, or negligible urban, residential or cropland inputs). The results are presented in Figures 2 and 3.
>
> Figure 2 illustrates the spatial extent of grazing land and forest/undeveloped lands in Monterey County, with selected CCAMP water quality monitoring points annotated on the map.
>
> The land use spatial data depicted in Figure 2 comes from the Farmland Mapping and Monitoring Program, 2005 (FMMP - California Dept. of Conservation). FMMP, in cooperation with the California Cattlemen's Association and University of California Cooperative Extension, developed digital mapping data depicting the location and extent of grazing lands. The FMMP metadata defines the grazing land dataset as "land on which the existing vegetation is suited to the grazing of livestock."
>
> Bubble charts shown in Figure 2 depict the proportion of grazing lands versus forest/undeveloped lands in the catchments draining to each individual monitoring site. As the bubble charts show for this selected suite of monitoring

sites, land uses/land cover draining to these monitoring sites are almost exclusively comprised of grazing lands and/or forest and undeveloped lands, based on the FMMP spatial data set.

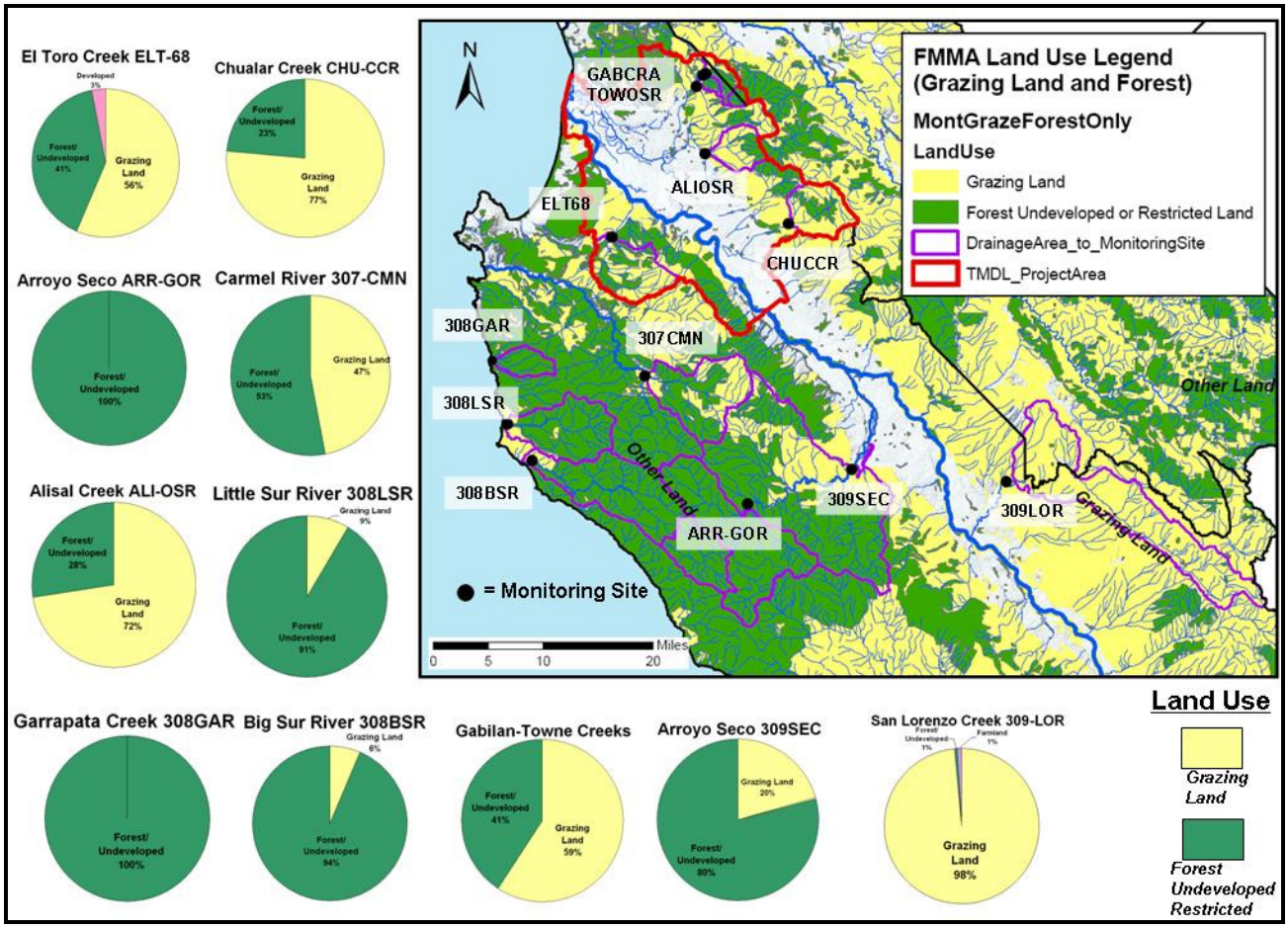


Figure 2. Selected CCAMP Monitoring Sites, and Grazing Land and Forest Distribution (FMMP Dataset), Monterey County.

As shown in Figure 3, the range of water quality data in this suite of monitoring sites show that water quality samples from catchments draining predominantly forest and undeveloped lands trend significantly lower in bacteria concentrations than water quality samples from lands containing significant amounts of grazing lands. It is important to note that the vertical scale is logarithmic (a scale which depicts orders of magnitude of difference) These data appear to be consistent with conclusion in Section 4.3.2.1 of this Project Report that domestic animal operations and lands containing domestic animals on pasture or grazing lands contribute to exceedances of water quality standards, and are a probable controllable source of indicator bacteria loads to surface waters.

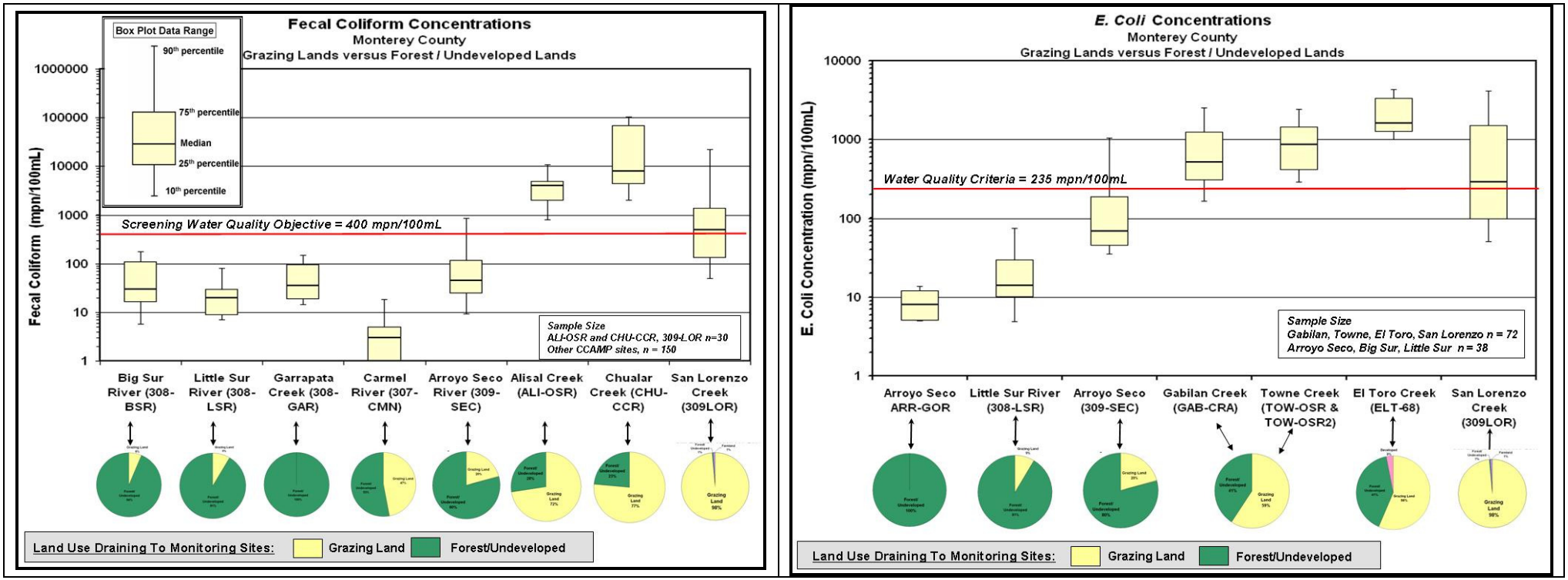


Figure 3. Box Plots of Fecal Coliform and *E. coli* Data, Monterey County, From Monitoring Sites Draining Predominantly Grazing and/or Forest Lands.

Comment 22 – Scott Violini, Monterey County Cattlemen's Association

Why were there no references to the positive initiatives and efforts that The Cattlemen have taken? There were no references to: 1) Central Coast NPS Grazing Approach and Benefits of Grazing document, 2) the efforts to create a positive point self assessment, 3) the work the Central Coast Rangeland Coalition has done to focus on positive performance measures 5) educational efforts or 4) the many management practices implemented by individual landowners.

Staff has made revisions to the Project Report to acknowledge the proactive efforts of the cattle industry to improve environmental performance. Staff are reviewing the NPS Grazing Approach and Benefits of Grazing document, and have requested permission from representatives of the Monterey County Cattlemen's Association to potentially include the document as a technical appendix to the TMDL project report.

Staff Response to Comment 22

Comment 23 – Scott Violini, Monterey County Cattlemen's Association

The report discusses that The Gallo Feedlot and Moon Glow Dairy are not sources of fecal coliform. The Cattlemen wonder how this can be? How can grazing animals in a natural environment have a greater impact than a dairy or feedlot?

Staff Response to Comment 23

Staff recognizes and concurs that unregulated, or poorly-managed confined animal facilities on a unit area basis (e.g., per acre) are typically a higher pollutant loading risk than lightly grazed rangeland or pasture. According to the information Staff obtained with regard to the Gallo Feedlot, this operation is currently regulated and required to manage their wastewater/runoff, and to discharge all wastewater to land (wastewater holding ponds and stormwater retention basins). Discharges to surface waters are only allowed under certain specified conditions, which are not common. Staff was neither able to identify, nor was provided by interested parties, any information that there are significant pollutant loads discharging to surface water bodies from this facility. Further, there are currently no data to indicate pathogen-impaired waterbodies are proximal to this facility. As noted in the Project Report (Section 4.3.1.3), we recommend that Water Board staff periodically review the permit conditions and operations of this facility during implementation of the proposed TMDL.

Staff noted the location of the Moon Glow dairy, but did not assess the Moon Glow dairy as a potential source. This dairy is in the Bolsa Nueva hydrologic unit, and is outside the scope of this TMDL project area. Pathogen impairments that are currently identified, or may be identified in the future, in the Bolsa Nueva hydrologic unit will be addressed through a separate TMDL process.

That said, Staff concur that poorly managed or unpermitted confined animal operations, or lands containing confined animals (e.g., hobby ranches, properties with relatively dense unit-area concentrations of farm animals, etc) are typically a higher water quality risk for pathogen loads than lightly grazed rangeland, all other things being equal (e.g., proximity to surface water, runoff, access of animals to surface water drainage features, etc). Based on the comment, Staff has added narrative to the Project Report to provide more clarity on this issue, and to make reference to the differential magnitude of environmental risk associated with various types of animal management practices.

Comment 24 – Scott Violini, Monterey County Cattlemen's Association

I am concerned about the sound science and peer review of the Report. Staff's scientific review of this document was done by one person Stefan Wuertz Ph.D, UC Davis. On page 1 of his review he stated " A substantial uncertainty as to the ability to distinguish between natural and controllable sources of fecal pollution is mentioned in this report. Microbial source tracking techniques should be employed alongside FIB measurements whenever feasible" on page 87, staff used source tracking data on Santa Cruz County wildlife gathered for Waddel and Scott Creeks, not in the project area. Again we asked for multiple reviewers of the Proposed Document.

Staff Response to Comment 24

Two researchers from UC Davis were involved in providing scientific peer review comments to staff: Dr. Stefan Wuertz, Professor of Environmental Engineering, and Dr. Alexander Schriewer (Wuertz and Schriewer, 2009).

In addition, although we are not required to do so, staff submitted the project report to USEPA for technical comment and guidance. Comments from USEPA are pending. Staff endeavored to employ source characterization methods that are either recommended or developed by USEPA, or are widely used in many State and USEPA approved pathogen TMDLs. Staff did not employ new methods, new techniques, or new source characterization methodologies that have not already been employed in numerous USEPA approved pathogen TMDLs.

Data sources used (such as USDA agricultural census statistics, US Census Bureau statistics, USGS flow data and flow estimates, or wildlife data from state wildlife agencies) have either been explicitly recommended by USEPA, or are data sources that have been used in numerous USEPA approved pathogen TMDLs. As such, staff maintains it was not warranted to seek additional scientific peer review for methods and datasets that are widely accepted in TMDL development.

With regard to microbial source tracking, the Water Board has conducted microbial source tracking in various basins in the central coast region. Staff considered DNA fingerprinting data from the Central Coast region broadly. These results have widely shown that, with regard to impaired waterbodies, multiple controllable and non-controllable sources are contributing to the impairment (i.e., wildlife, humans, pets,

domestic animals, livestock). Please refer to Staff Response to Comment 49 for more information.

It is also important to note that Dr. Stefan Wuertz, UC Davis, Scientific Peer Reviewer for this TMDL, has cautioned Water Board staff regarding uncertainty associated with assigning host-specific load based on ribotyping data for fecal sources (*Scientific Peer Review of TMDLs for Pathogens in the San Lorenzo River Watershed, Soquel Lagoon Watershed, and Aptos Creek Watershed*, dated Oct. 1, 2007). Dr. Wuertz stated that "ribotyping is not a quantitative method." Further, Dr. Wuertz informed Water Board staff that assigning proportional loads or percent contributions from individual host species based on the isolates is problematic. Professor Wuertz stated, "A certain number of isolates per water sample are analyzed and it is unknown whether the same numerical distribution of microbial host species would be obtained if 10 or 100 times as many isolates from the same water sample had been analyzed." Even if an optimal number of isolates were analyzed Dr. Wuertz points out, "it is not known if these strains all have the same decay function/environmental persistence." Based on our scientific peer reviewer's comments, Water Board staff are using the ribotyping data mostly for qualitative identification of wildlife, livestock, pets, and human as sources of pollution.

As such, Staff maintain that ribotyping techniques throughout the central coast region have shown that controllable and noncontrollable sources are contributing to water quality impairments, but that it is currently not merited to conduct ribotyping for every TMDL project. Regional ribotyping consistently show there are problems pertaining to controllable sources.

Staff maintains that the preponderance of evidence clearly indicates that controllable sources in the watershed are contributing to exceedances of applicable water quality objectives.

Comment 25 – Scott Violini, Monterey County Cattlemen's Association

Some of the research data, statistics and formulas seem outdated (Horner 1992) and out of the area (Shaver et al New Jersey Department of Environmental Protection) section 4.2. Is there no research that has been done in the State of California that could have been referred too? Ei UC Davis/UC/ NRCS or local RCD documents.

Staff Response to Comment 25

The commenter references unit area loading rates published by Horner (1992) and published in reports from the New Jersey Dept. of Environmental Protection. Unfortunately, there appears to be very little published information on bacteria unit area loading rates (e.g. mpn/hectare/year) for specific land uses. Staff were unable to identify unit area loading rates that are specific for California. USEPA documentation for their Watershed Treatment Model only identifies Horner (1992) as the only literature source for unit area bacteria loads. Staff spent considerable time trying to identify

additional unit area load rates for bacteria tied to land cover from other literature sources, but where unable to identify any.

It is common practice in TMDL development to use national median unit area loading rates, or unit area loading rates from scientific literature when project area or region-specific unit area loading rates are unavailable. However, it is important to note that the unit area loads from Horner were used for calibration purposes only, as described in Project Report Section 4.2, Additionally, the Central Valley Regional Water Quality Control Board also reported that *predicted* fecal coliform loads using Horner's loading rates appeared to comport reasonably well with *observed* fecal coliform stream loads at the subwatershed scale, in the lower Sacramento River area.

With regard to research sources that commenter identifies, Staff acknowledges there is a rich literature pertaining to water quality and agricultural nonpoint sources. It was not possible for Staff to review and assess more than a minority of them. That said, Staff did include information from reports published by a range of sources, including California-specific sources in the Project Report (please see Project Report, Section 14-References Cited). These sources include, but are not limited to the NRCS, US Department of Agriculture, Monterey County Resource Conservation District, etc.

Comment 26 – Scott Violini, Monterey County Cattlemen's Association

The areas in question for the proposed TMDL are quite a distance from the Pacific Ocean where recreational contact is assumed and standard of 235MPN/ML for fecal coliform must be met. Not only are these areas distant but the limited run-off from these ephemeral streams is co-mingled with other sources downstream, irrigated agriculture run-off, rural residential run-off, hobby farmers, ranchette owners, illegal dumping , human fecal deposition, densely populated urban areas, city sewer systems and point source pollution from paved roads and city streets.

Staff Response to Comment 26

Please refer to Staff Response to Comments 1 and 6, for clarification and information pertaining to the water quality objectives for fecal coliform as they apply to inland surface waters.

Staff acknowledges that commingling of sources makes source identification problematic. It is uncommon to have receiving water data that reflects catchment-scale or field-scale plots and that are representative of one individual property or one specific type of discharge. That said, the City of Salinas and the Central Coast Ambient Monitoring Program have many established monitoring sites within the Project Area from which data can provide insight into broad classes of land use categories and sources.

Also, please refer to Staff Response to Comment 5, for further information on how staff proposes to assess compliance with load allocations (e.g., nonpoint sources) from responsible parties.

Comment 26 – Scott Violini, Monterey County Cattlemen's Association

Since most of this property is private with no public access, the methods used to aquire these water samples in the upper watershed are questionable. How was these data sampled without landowner permission and involvement?

Staff Response to Comment 26

To the best of staff's knowledge, all CCAMP data, and presumably the U.S. Department of Agriculture data, the Monterey State University (CCoWS), and the Monterey Bay National Marine Sanctuary Volunteer Monitoring data were collected along streams/creeks at public access points (e.g., county roads, bridges, etc.).

Comment 27 – Scott Violini, Monterey County Cattlemen's Association

CCAMP only collected data from 1999-2006. Why is there no data from late 2006 through and 2009.

Staff Response to Comment 27

CCAMP samples central coast watersheds on a rotational basis. The next round of CCAMP sampling in the Lower Salinas Watershed is scheduled tentatively for 2011.

Comment 28 – Scott Violini, Monterey County Cattlemen's Association

Snapshot day, as described in Section 3.1, samples were collected by a Citizens Watershed Monitoring Network for the Monterey Bay Sanctuary. What qualifications or expertise do they have for helping to initiate a TMDL on the Lower Salinas?

Staff Response to Comment 28

Please note that multiple waterbodies in the Lower Salinas Watershed have been listed as impaired due to fecal coliform indicator bacteria since 2002, or earlier, on the basis of CCAMP data. As such, Staff does not concur that Monterey Bay National Sanctuary volunteer monitoring helped initiate a TMDL project on the Lower Salinas.

It is important to note that only seven water quality samples from MBNS volunteer monitoring were used in this TMDL project for purposes of assessing impairment status: seven samples from Natividad Creek. The water quality dataset for the entire project consists of hundreds of samples (see water quality dataset, Project Report, Appendix A). Virtually all water quality dataset used in this TMDL comes from CCAMP, with supplemental data from U.S. Department of Agriculture, and Monterey State University,

Central Coast Watershed Studies team. Water quality samples on Natividad Creek collected by the City of Salinas corroborate and supplement the MBNS volunteer data; i.e. all samples collected from Natividad Creek, regardless of sampling entity, indicate significant impairment by indicator bacteria.

Note that in addition to the water quality samples that the Water Board's CCAMP staff collect., CCAMP staff receive, evaluate, and compile water quality data from various private, academic, and volunteer sources; including but not limited to the Cooperative Monitoring Program (Central Coast Water Quality Preservation, Inc.), Monterey Bay State University (Central Coast Watershed Studies), Monterey Area Research Consortium (Elkhorn Slough Foundation), etc. With regard specifically to The Monterey Bay National Marine Sanctuary Citizen Watershed Monitoring Network (Network): the Network provides guidance, training and equipment to support citizen monitoring groups. The Network also coordinates between citizen monitors and government agencies so that the data collected is useful.

Sample collection, quality control protocols, and field measurement protocols have been developed for the Network by the State Water Resources Control Board's Clean Water Team. The Clean Water Team (CWT) is the citizen monitoring program of the State Water Resources Control Board. The CWT Coordinators are members of the Assessment and TMDL Support Unit, Total Maximum Daily Load (TMDL) Section. Regional CWT Citizen Monitoring Coordinators are each assigned to work with three of the Regional Water Quality Control Boards in order to provide technical assistance, training, data management consultation, outreach and education to citizen monitoring organizations. Volunteer monitoring networks are funded, in part, through the State Water Resources Control Board and Federal grants, pursuant to Proposition 13, and Clean Water Act Section 319(h), and as such grant recipients are required to work with the State Board's CWT to ensure consistency and data quality whenever citizen monitoring is involved. The model Quality Assurance Project Plan (QAPP) were developed through the CWT as guidance for citizen monitoring projects.

More information is available from the State Water Resources Control Board Clean Water Team webpage at:
http://www.waterboards.ca.gov/water_issues/programs/swamp/cwt_volunteer.shtml

More information about the Monterey Bay National Sanctuary Citizen Monitoring Network, is available at the U.S. National Oceanographic and Atmospheric Administration's Monterey Bay website:
http://montereybay.noaa.gov/monitoringnetwork/welcome.html

Comment 29 – Scott Violini, Monterey County Cattlemen's Association

The data on page 88 Table 4-17 and throughout the document may misrepresent the numbers of wildlife and livestock in the area. There is no mention of the Elk herd that resides in the area, nor has any one seen any wild pheasant for at least 20 years. Feral pigs are constant nuisance to landowners because of the damage they do to the soil

and water sources, 520 feral hogs is far below the amount rangeland owners know are there.

Staff Response to Comment 29

Please note, in Project Report Section 4 staff documented the uncertainties in human, wildlife, and livestock estimates; identified the source of the estimates; and acknowledged these estimates as approximations. These types of uncertainties and approximations are inherent and unavoidable in TMDL development for pathogens. It is not practical or possible to precisely quantify project area-specific populations of humans, wildlife and livestock in most TMDL projects.

To mitigate these uncertainties, staff endeavored to use credible peer-reviewed scientific information - to the extent possible - rather than anecdotal information or professional judgments. Stakeholders themselves have rightly expressed the expectation that TMDL development, to the extent possible, is supported by scientific data and credible scientific estimates. To further mitigate uncertainty and subjectivity, Staff employed estimation methods widely used in many State TMDL programs and in USEPA-approved TMDLs.

Staff considers it important to communicate to Stakeholders, the nature of the methodologies used in the Project Report, as well as any uncertainties and assumptions. With this in mind, staff provides further clarification here, pertaining to the nature of the population inventories and fecal coliform production estimates used. Note that this information and documentation is available in the Project Report, but is presented here for ease of reference.

Staff used estimation methods for livestock numbers as recommended in USEPA pathogen TMDL guidance (USEPA, 2001). This method is commonly used in pathogen TMDL development (for example, Mississippi Dept. of Environmental Quality, 2000; Oklahoma Dept. of Environmental Quality, 2006; Montana Dept. of Environmental Quality, 2009). The method is also used by academic researchers involved in water quality studies (for example, Gibson, 2005). The method involves deriving estimated average stocking density (livestock/acre) using County livestock numbers available from the USDA National Agricultural Statistics Service (NASS), in conjunction with land use data. NASS provides census inventories of livestock and farm animals on a county-wide basis. A direct transcription of USEPA's recommended methodology for estimating livestock inventory is provided in Staff Response to Comment 56.

As documented in the Project Report, staff used credible scientific estimates of wildlife population density estimates from California Department of Fish and Game (CDFG) or other agency and scientific sources. Water Board Staff contacted CDFG staff for information, and used published CDFG reporting. For the majority of wildlife and livestock species inventoried in the project report, staff used population density estimates that were based on Monterey County-specific, Central Coast-specific, or California-specific reporting.

Staff used credible scientific reporting on the amount of fecal coliform produced (mpn/day) by each animal species as available from the American Society of Agricultural Engineers, from the USEPA Pathogen TMDL Guidance Report (USEPA, 2001), and other scientific sources (identified in the Project Report). Using these literature values staff calculated Project Area and watershed-specific fecal coliform aggregate production using the Bacteria Source Load Calculator spreadsheet model, developed by the Virginia Tech University Center for TMDL Studies. The Virginia Tech University Center for TMDL Studies is composed of researchers having expertise in water resources, hydrology, agricultural sciences and engineering, dairy sciences, forestry, and biological systems.

Staff developed delivery ratios (i.e., estimates of the proportion of fecal coliform deposited on land that is ultimately discharged to surface waters) which are consistent with ranges of bacteria delivery ratios published in USEPA-recognized loading assessment models (Watershed Treatment Model, V.3.1, 2002); which are consistent with other State and USEPA-approved TMDLs (for example Minnesota Pollution Control Agency, 2002; and Minnesota State University Water Resources Center, 2007); and that also comport with published scientific literature estimates on ranges of bacteria delivery ratio estimates (as documented in the Project Report Section 4.2).

It is important to emphasize that, with respect to wildlife estimates, staff went above and beyond what is normally published in other State and USEPA-approved pathogen TMDLs. Staff reviewed pathogen TMDLs from many state TMDL programs; additionally staff assessed USEPA's Bacterial Indicator Spreadsheet tool (available at http://www.epa.gov/waterscience/basins/bs3tbit.htm). USEPA's bacterial spreadsheet tool tabulates estimates for only up to a maximum of six mammal and bird species. Furthermore, pathogen TMDLs approved by USEPA from various other states typically tabulate only half a dozen or so major mammal and bird species. These aforementioned TMDLs present these estimated wildlife inventories as the natural background contribution of bacteria loads. Indeed, staff identified several USEPA-approved pathogen TMDLs where the fecal coliform production from only one species (deer) is estimated and then presented to represent natural background loads (i.e., fecal coliform production from other wildlife, besides deer, was presumed to be insignificant) - for example, Mississippi Department of Environmental Quality (1999).

Consequently, based on stakeholder interest and concerns about the magnitude of bacteria loads from wildlife, staff concluded that it was prudent to identify and tabulate as many major species of mammals and birds as possible for the Project Area. Therefore, Staff determined that the USEPA bacterial indicator spreadsheet tool, and the scope of wildlife estimates as presented in numerous other State approved TMDLs, were insufficient to address Stakeholder concerns. Staff endeavored to identify as many mammal and bird species (for which there are published scientific estimates for fecal coliform production) as could reasonably be expected to range in the Project Area. As a result, in the draft Final Project Report Staff included population estimates and

fecal coliform production estimates for ten species of mammals and birds that are known, or are reported to have range in the Project Area.

Unfortunately, because there is limited scientific literature quantifying the amounts of fecal coliform produced by wildlife species, there is an upper limit to how many wildlife species can be included with TMDL fecal coliform estimates. For example, with respect to the comment about tule elk, there does not appear to be any scientific literature on the amount of fecal coliform elk produce. However, Staff provided estimates to account for the amount of fecal coliform that could be produced from other animals for which there are no literature values for fecal coliform production (see Table 4-1 of the Project Report). The nature and scope of these assumptions were based on similar assumptions used in other State and USEPA-approved TMDLs.

With respect to the comment on pheasant: staff recognizes that the pheasant population for the Project Area presented in the project report is likely grossly overestimated; staff recognizes that indeed there may be few pheasants in the project area. Staff reviewed California Department of Fish and Game reports, which indicated that pheasants are concentrated in the central valley, but range through much of the state in scattered locations. As such, pheasant populations on the central coast reportedly are limited to scattered and isolated areas.

However, staff reasoned that pheasant populations should be included for Project Area wildlife estimates for two primary reasons: 1) California Department of Fish and Game habitat and range maps indicate that pheasant do indeed range in the Project Area (see Figure 4); and 2) Due to the lack of fecal coliform production and population density information for other bird species, staff reasoned that including a pheasant population would serve as a plausible surrogate in an attempt to account for amounts of fecal coliform that would be produced by other bird species. Other state and USEPA approved TMDLs have also used species for which fecal coliform production is known (or can be reasonably presumed) as a surrogate to represent wildlife populations for which fecal coliform production or population density is unknown (for example, Minnesota TMDL program). Staff modified the Project Report to clarify the nature and utility of the pheasant population estimate as used in the Project Report.

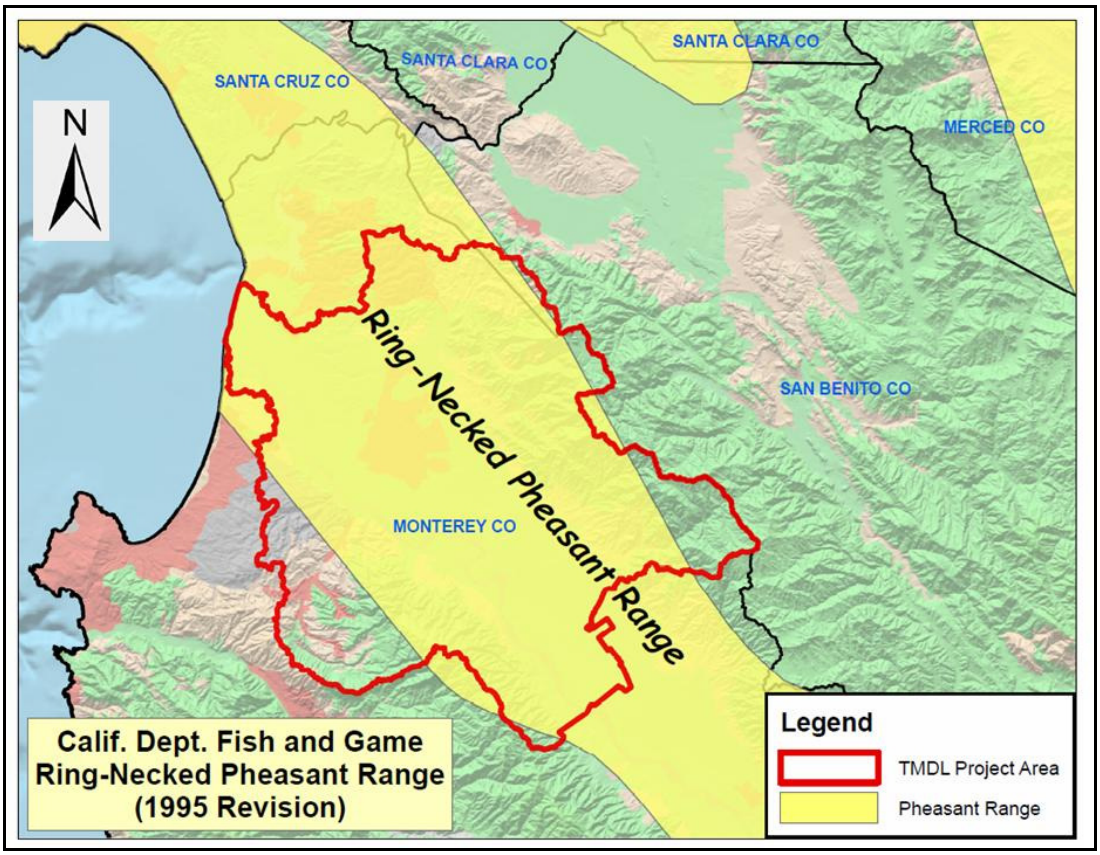


Figure 3. Pheasant Range, Northern Monterey County.

With respect to the comment on feral pigs: to the extent possible, staff endeavored to use credible peer-reviewed scientific information rather than anecdotal information or professional judgments. We understand that Stakeholders as well as Staff, have the expectation that to the extent possible, TMDLs be supported by peer-reviewed scientific data and scientific estimates, rather than professional judgment or anecdotal evidence.

As such, staff used feral pig population density estimates for Monterey County provided by the California Department of Fish and Game (CDFG). These CDFG reports will be appended to the Project Report. For Monterey County, CDFG provides population density estimates of 1.3 to 2.1 feral pigs per square mile of suitable habitat. Staff used an average of this range (1.7 pigs/mi^2), falling between 1.3 and 2.1 pigs per square mile. CDFG reports that feral pig habitat are oak woodlands, grasslands, riparian areas, shrub and brush areas, and conifer forest. Staff's estimate conservatively assumed that all of the Project Area (excluding urban areas) provide suitable habitat for feral pigs. Staff maintains these estimates are fully justified by the scientific information provided by CDFG.

Please note that there are approximately 310 square miles in the TMDL Project Area that could conceivably constitute habitat for feral pig (see Project Report Table 2-2). Even if staff were to use the upper range of the CDFG population density estimate (i.e., 2.1 pigs per square mile of suitable habitat x 310 square miles of habitat = 651 feral

pigs), it would make only a negligible difference on the amount of fecal coliform produced by feral pigs at the project area-scale, relative to all other sources in the Project Area (please see Figure 4-1 in the Project Report). Consequently, staff did not modify the wildlife population estimates in the Project Report.

That said, Staff acknowledges here - as was also acknowledged in the Project Report - that these population estimates are approximations, involving inherent uncertainties, and that the feral pig population density can vary spatially and temporally at localized scales within the Project Area. Finally, please note that implementation of the TMDL aims at regulating the controllable sources of fecal indicator bacteria, regardless of the contribution from non-controllable wildlife.

Comment 30 – Scott Violini, Monterey County Cattlemen's Association

On page 90, 3rd paragraph, it states – "Staff did not have sufficient flow velocity, travel time, attenuation, and die-off information to evaluate the water quality impact of upstream source loads coming from outside the individual sub-watershed drainages." How do you estimate this if they are factors contributing to a water quality sample?

Staff Response to Comment 30

As noted in the project report, for purposes of mass-load calculations, staff only made calculations at the downstream drainage outlets for individual subwatersheds (i.e., at the drainage outlets of identified impaired stream reaches). Staff did not calculate an aggregate, basin-wide bacteria export load. As noted in the project report, the purpose of such calculations were to assess the relative magnitude of sources identified in each individual subwatershed in an effort to ascertain the presence and relative magnitude of controllable sources occurring *within* that particular drainage. Also, these calculations were included to comply with USEPA guidance and scientific peer review guidance, which recommended a daily load mass expression calculation.

However, these mass load assessments do not preclude potential loading to a particular subwatershed, from upgradient sources outside the subwatershed's drainage boundaries. For example, there are no identified urban stormwater sources in the Old Salinas River watershed; however, this does not preclude the possibility that indicator bacteria from upstream urban stormwater discharges to the Reclamation Canal and Tembladero Slough ultimately reach and discharge into the Old Salinas River.

Staff presumes that the commenter's question is possibly related to concerns about whether or not bacteria loads from headwater reaches or inland valley floor reaches contribute loads to downstream coastal confluence receiving waters. As noted in the Project Report, Staff maintains that some fraction of the urban stormwater waste loads, or nonpoint source loads originating in the inland valley floor or headwater reaches of the Project Area likely contribute to bacteria loads in the coastal confluence receiving waters (i.e., Salinas River Lagoon, Tembladero Slough, Old Salinas River). Although this assessment was provided in the Project Report, due to the recurring nature of

questions pertaining to this issue, Staff provides further clarity and information on this topic, below.

Note that while Staff did not have field measurements of flow velocity, travel time, and die off information specific to the Project Area, there are generalized empirical datasets applicable to Project Area stream reach travel times, and fecal coliform die off rates. These data appear to support the assessment that some fraction of the bacteria loads discharged from point sources and nonpoint sources in the inland valley floor or headwater stream reaches (when flow is present) of the Project Area do indeed contribute to loads in the coastal confluence receiving water bodies.

Note that Figure 4 illustrates stream reach flow travel time (hours of travel time) for Project Area stream reaches as estimated from the U.S. Geological Survey NHDplus digital hydrography dataset (available at http://www.horizon-systems.com/nhdplus). NHDplus provides stream reach mean velocity attributes, which are derived from digital elevation rasters and digital stream networking techniques. Therefore, stream reach mean flow travel time can be calculated as a hydrologic attribute by simply multiplying stream reach length by stream reach mean flow velocity.

As can be observed from Figure 4, these generalized mean flow travel times suggest that flows from Project Area inland valley floor and headwater reaches have estimated mean travel times downstream to the coastal confluence receiving water bodies ranging from a few hours (e.g. lower Reclamation Canal), to perhaps two or three days maximum (e.g., from first-order stream reaches in Gabilan Range). Note that these are estimated average travel times, based on approximated mean flow velocities. Mean flow velocities do not imply sustained, perennial flows. It is understood that most lower order stream reaches in the Project Area have ephemeral or intermittent flows.

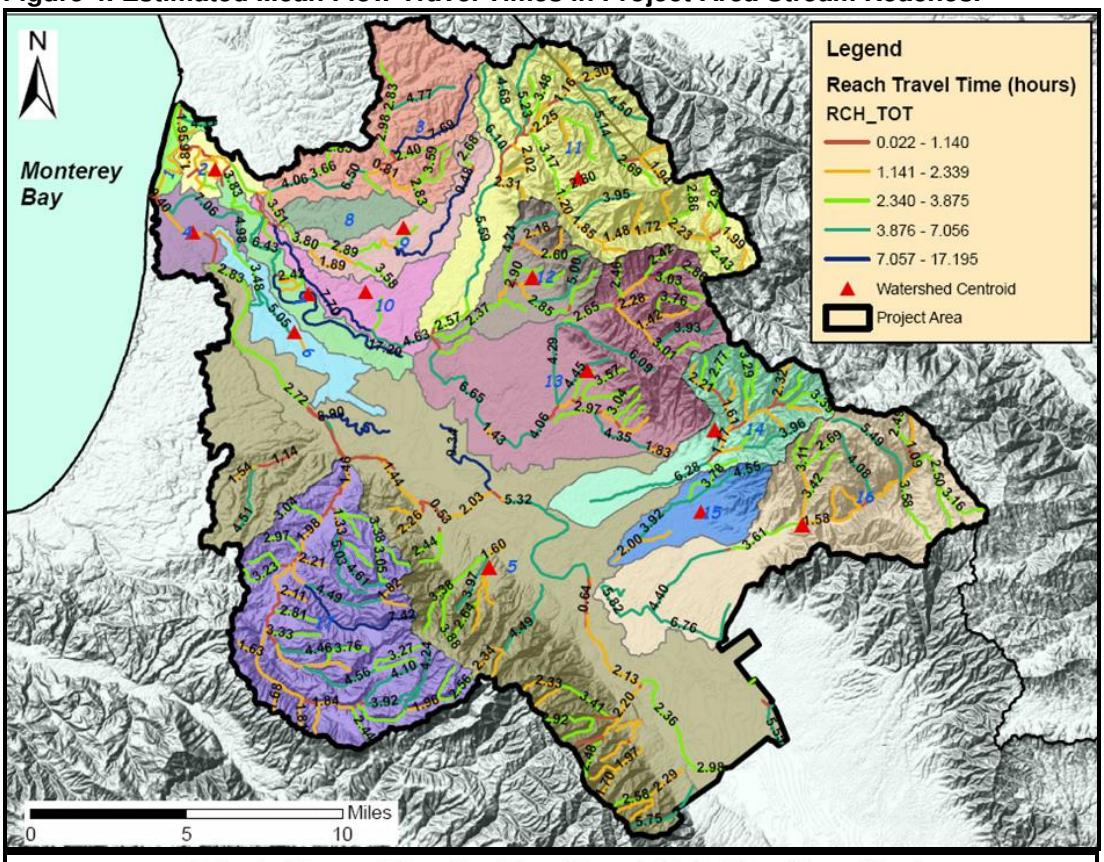
Consequently, estimated reach travel time can be used to provide insight, or to make some generalized presumptions about fecal coliform die off rates/attenuation in the watershed, as described below.

Figure 5 illustrates reported fecal coliform first-order decay constants (K_B – see Table 6-1 in USEPA, 2001). Based on this USEPA-reported decay rate, a fecal coliform load discharged higher in a watershed and subjected to a flow travel time of between one and three days, can potentially result in a surviving fraction of the original load of between 0.2 and 0.6 (20% to 60%). Recall that approximated mean flow travel times from first order headwater reaches in the Gabilan Range down to the coastal receiving water bodies is around two to three days, based on the aforementioned NHDplus hydrologic attributes.

It is important to note that these are approximations, and fecal coliform die off is subject to numerous factors such as temperature, solar radiation, salinity, and flow losses due to subsurface percolation. However, flow travel time approximations and the USEPA-reported fecal coliform decay constants support staff's assessment that some significant fraction of fecal coliform loads from Project Area inland valley floor and headwater stream reaches can ultimately discharge into coastal confluence receiving water bodies.

Again, staff recognizes the temporal variability of these potential loads, as most lower order Project Area stream reaches have ephemeral or intermittent flows.

Figure 4. Estimated Mean Flow Travel Times in Project Area Stream Reaches.



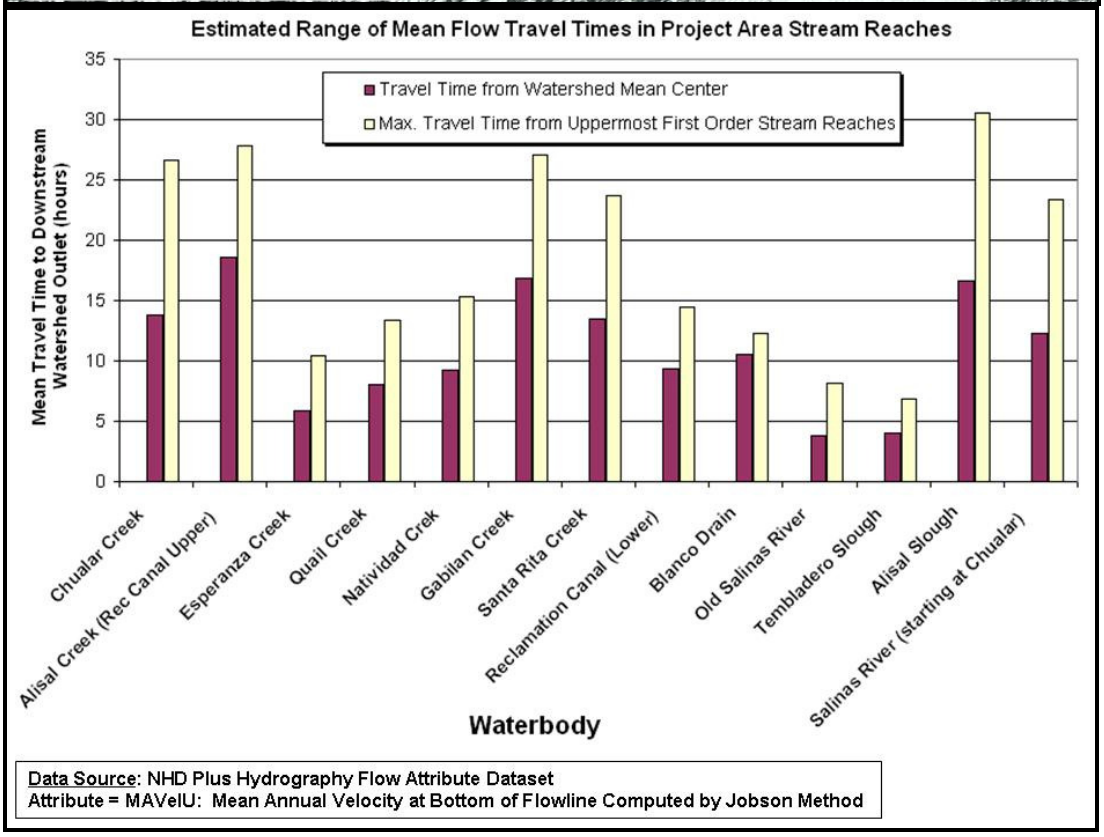
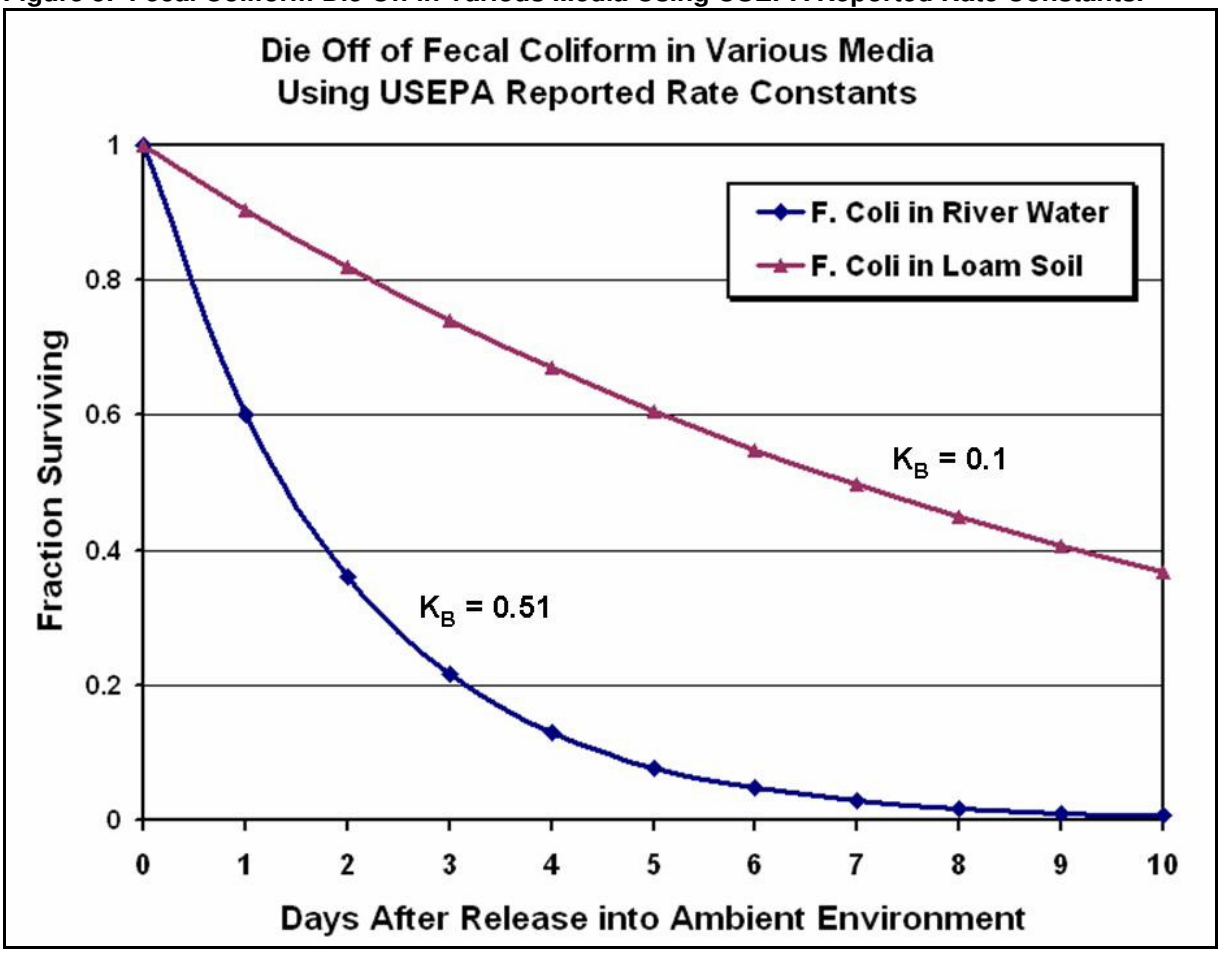


Figure 5. Fecal Coliform Die Off in Various Media Using USEPA Reported Rate Constants.



Comment 31 – Scott Violini, Monterey County Cattlemen's Association

If recreational water contact is the issue wouldn't it be more prudent to be concerned with rangeland run-off in the summer months (when the upper watershed is dry) when the general population is more apt to go to the beach. Or is this a food safety issue, where, there again, the timing is off because most outbreaks have occurred in late summer or early fall when the upper watershed is dry? What are your goals for the TMDL? How long does fecal coliform live in a water body such as the Salinas River and do they survive in the Pacific Ocean?

Staff Response to Comment 31

With regard to the applicability and scope of recreational uses of waters of the state (REC-1), please refer to Staff response to comments 1, 6, 9, 11, and `18.

Staff Responses to Comments 5, 8, 14, and 18 have information pertaining to goals for this TMDL, expectations, and trackable goals.

Please refer to Staff Response to Comment 11 for information pertaining to the question about food safety.

With regard to how long fecal coliform can survive in a fresh water body, please refer to Staff Response to Comment 30. Broadly speaking, an ambient fecal coliform load discharged to the water column in a stream, can be reduced due to die by about 90% in approximately a week, in accordance with first rate die off constants reported by USEPA (independent of other considerations; e.g., temperature, salinity, solar radiation).

Salinity tends to increase the die off rate of fecal coliform. With regard to seawater, some research appears to suggest a fecal coliform load discharged to seawater (salinity = 35 parts per thousand) could be reduced by over 90% within a few hours, although it is important to note there is variability in die off rates due to numerous factors. However, other indicator bacteria (e.g., *E. coli*) and pathogens associated with fecal coliform loads may have longer residence times in seawater (for example, see Table 6-1, USEPA, 2001). Also, it is important to note that a 90% die off rate does not ensure water quality standards are protected. A highly elevated fecal coliform concentration (say, 35,000 mpn/100 mL, which is not unheard of in Project Area waterbodies) attenuated even by 90% is still not protective of REC-1 water quality standards.

Comment 32 – Scott Violini, Monterey County Cattlemen's Association

We are an established and an integral part of the Local, State and National economy with our commitment to raise the safest, best quality beef with minimal impacts to the landscape.

We object to an outright prohibition on the basis of comments and questions expressed above. We believe that the only way to comply with this report is the total removal of cattle from this landscape, and clearly this cannot be the goal of the Central Coast Regional Water Quality Control Board, right?

Staff Response to Comment 32

The Water Board and staff recognize the economic importance of the cattle industry, and that well-managed rangeland can have important economic, cultural, and environmental benefits.

It is important to emphasize that in accordance with the Domestic Animal Waste Discharge Prohibition (as adopted in R3-2009-0008) the prohibition is not a "zero-discharge" prohibition, or an outright ban or prohibition of all discharges of domestic animal waste. In accordance with Water Code section 13243, the Water Board has considerable flexibility in how to craft and implement a Prohibition. Please see Staff Response to Comment 11 for further clarification on this issue. Also, please refer to Staff Response to Comments 1, 4, 5. 8, and 11 for further information on compliance and options for compliance with the proposed Prohibition by responsible parties.

Also, please note that achievement of the TMDL has a proposed 13 year time frame. Since the proposed Prohibition is not "zero discharge" or outright ban on discharges of domestic animal waste, the primary measure of success for this TMDL is attainment or *continuous progress* toward attainment of the TMDL targets and load allocations (i.e., water quality goals) over this 13 year time frame. Staff believes the Discharge Prohibition would be achievable as it affects the management of livestock and domestic farm animals for which there are various affordable land management, and livestock management options to control and/or treat runoff or discharges of fecal material to surface water drainage features.

Simply put, compliance with the proposed prohibition requires a documentation of trackable implementation measures (where merited), and continuous progress over the long term toward achieving applicable water quality objectives for surface waters of the state. There is no proposal or intent for any outright ban on discharges from domestic animals. As noted previously, the implementation plan is clear that there is no expectation for immediate compliance with applicable water quality objectives.

In addition, compliance does not necessarily require a pollution control plan to be developed. Options for compliance with the prohibition include submitting documentation demonstrating there are no discharges from fecal sources by livestock/domesticated that would contribute to exceedances of stream load allocations.

In evaluating successful implementation of this TMDL, staff proposes that attainment of trackable implementation actions will also be heavily relied upon. Therefore, as noted in the propose Basin Plan Amendment package, we propose two types of monitoring for this TMDL: 1) water quality monitoring, and 2) monitoring of implementation of actions.

It is also important to note that Staff are required to develop TMDLs in accordance with the Clean Water Act, and staff are required to regulate nonpoint sources of pollution accordance with State Policy, as detailed below.

In July 2000 the State Water Resources Control Board and the California Coastal Commission developed the Plan for California's Nonpoint Source Pollution Control Program to reduce and prevent nonpoint source pollution in California, expanding the State's nonpoint source pollution control efforts. In August 2004 the State Office of Administrative Law approved the "Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program" (NPS Policy). The NPS Policy makes it clear that all NPS discharges must be under regulation - permitted Waste Discharge Requirements (WDRS); waivers of WDRs; or Basin Plan Prohibitions. The policy formally eliminates the previous "three-tiered approach" of voluntary compliance, regulatory-based encouragement (waivers), and regulation (permits and prohibitions). Further information on the State's nonpoint source pollution control plans and policies are available at:
http://www.swrcb.ca.gov/rwqcb2/nonpointsource.shtml

Please note that Staff considers the adoption of the proposed Prohibitions to be the least burdensome regulatory mechanism for Responsible Parties, from an economic standpoint. A Prohibition does not include or trigger any requirement to pay annual permit fees, as could be the case with waste discharge requirements, or waivers of WDRs.

The Proposed Waste Discharge Prohibition simply sets a pollutant load allocation goal, and identifies reporting requirements for owners and operators of lands containing domestic animals to demonstrate if they are in compliance with load allocations, or alternatively how they will achieve compliance with the load allocations, and whether implementation is effective. As such, the Proposed Waste Discharge Prohibition, and the Proposed Basin Plan Amendments are regulatory tools in accordance with the California Water Code, to 1) enable the State to identify/prioritize areas or activities where controllable sources of fecal coliform pollution threaten water quality; and 2) to facilitate efforts to document and track the scope and effectiveness of current or future land management actions to reduce pollutant loads. As stated previously, staff proposes that compliance with the prohibition simply requires a documentation and implementation of trackable animal and land management measures (where merited), and continuous progress toward meeting applicable water quality objectives for surface waters. Staff proposes a 13 year time frame in which to achieve applicable water quality objectives, unless site specific objectives are merited.

With regard to the commenter's concerns on economic impacts, Staff has endeavored to propose a TMDL that limits requirements to the minimum necessary to achieve water quality results. Staff also made a concerted effort to identify and propose requirements for any and all industries or responsible parties contributing or threatening to contribute fecal coliform to the waterbodies. Staff made a concerted effort in the proposed TMDL to limit the burden of monitoring and reporting, and built flexibility into the plan to allow Staff, and the responsible parties, to adapt monitoring and reporting requirements for optimal financial and informational value. Staff has endeavored to identify as many options as possible for responsible parties to demonstrate compliance with the proposed Basin Plan Amendment, while still achieving water quality results. As such, we are trying to be as flexible as possible in the implementation approach for reducing pathogen loading. We anticipate that enforcement mechanisms will only be needed where dischargers have chosen not to assess, and/or reduce their potential to impact water quality from controllable sources.

Comment 33 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

Since 2005, The Coalition has participated in Fecal coliform and bacterial TMDL public processes throughout the Central Coast region. We have attended multiple public process meetings and hearings and provided comments on the Southern Santa Barbara Beach, Santa Maria, Salinas, Pajaro, and Watsonville Slough TMDLs. And we have communicated TMDL information to ranchers. Because of our region-wide involvement, we have grave concerns about the inconsistency of the TMDL process across the region. There is quite a bit of variation in how TMDLs are implemented from watershed

to watershed and between types of regulated communities. Furthermore, the Central Coast Regional Water Quality Control Board (Regional Board) TMDL process and policy appears to be a moving target that shifts from year to year depending on regulatory, budgetary and staffing pressures.

Staff Response to Comment 33

Staff was unable to ascertain or address the comments regarding the nature of variation in TMDL development or moving targets without reference to any specific examples. Staff concurs that, where merited and appropriate, consistency between TMDLs and implementation measures is warranted.

Comment 34 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

In 2006, we hosted a "Cut the Crap" class for Cattlemen in Santa Barbara County. Regional Board staff was invited and presented information about the TMDL process at that meeting. Also, since that time, The Coalition has been actively involved in the Co-management of Water Quality and Food Safety issue.

In 2007, The Coalition assisted The Cattlemen in responding to Regional Board Staff demands to regionally address pathogen and sediment management practices. This involved facilitating representatives from six Central Coast County Cattlemen's Associations and the California Cattlemen's Association. This group was called the Central Coast Cattlemen's Leadership Group (CCCLG)

Consequent to Regional Board Staff insistence that Coastal Cattlemen write a regional water quality protection plan, The Coalition and the CCCLG wrote the Central Coast Non-Point Source Grazing Approach and Benefits of Grazing document. This document was written by this dedicated group at considerable personal expense and time. The Cattlemen utilized the EPA Non-Point Source Grazing Management Measures Guide as a template for the document. Furthermore, they made an effort to comply with all elements of the 2004 SWRCB Non-Point Source Policy. Their approach was to create a flexible, living document that could be used by the most traditional or the most progressive rancher. The Central Coast Benefits of Grazing is attached as an Appendix to the document and is the first compendium of all the environmental, fire protection, weed control, economic, social, and cultural benefits associated with grazing on the Central Coast. The Central Coast NPS Grazing Approach document was completed in August, 2008 and submitted to Regional Board Staff for comment in early September, 2008. Regional Board staff never provided feedback to the Cattlemen. The Cattlemen took that to mean Regional Board condoned, if not endorsed, their work. Subsequently, The Cattlemen moved forward with their proactive efforts.

Staff Response to Comment 34

Staff acknowledges the work done by California Cattleman's Association, the Central Coast Rangeland Coalition, the Monterey County Cattlemen's Association,

Conservation Districts, Natural Resource Conservation Districts, University of California Cooperative Extension, and rangeland managers within the Salinas River watershed. Staff understands that these entities have provided and attended educational courses, provided research and funding assistance to rangeland managers, and have reportedly implemented rangeland management practices to improve water quality.

With regard to the Central Coast NPS Grazing Approach, Water Board strongly supports and encourages effective livestock management activities that will limit the opportunity for domestic animals to discharge fecal waste into surface waters, or into intermittent or ephemeral surface water drainage features. Also, please refer to Staff Response to Comments 17 and 21 for further information regarding this topic.

Staff emphasizes that voluntary or ongoing rangeland management practices and implementation actions have the potential to be effectively used by responsible parties to demonstrate compliance with the proposed load allocations for domestic animals. Also, compliance with the pollutant load allocations (e.g., water quality objectives for fecal coliform) implies compliance with the Domestic Animal Waste Discharge Prohibition.

It is important to note that Staff are required by federal law to develop TMDLs, and staff are required by State policy to regulate nonpoint sources of pollution. As a result of long standing, unresolved problems associated with nonpoint source pollution in California, the State adopted a nonpoint source pollution policy in 2004, which formally did away with voluntary and unregulated compliance options. Please see Staff Response to Comment 4 for more information on the State policy for nonpoint source pollution.

Please note that Staff considers the adoption of the proposed Prohibitions to be the least burdensome nonpoint regulatory mechanism for Responsible Parties, from an economic standpoint, as a Prohibition does not include or trigger any requirement to pay annual permit fees, as could be the case with waste discharge requirements, or waivers of WDRs.

Also, it is important to emphasize that ongoing, voluntary, and proactive land management and animal management efforts are still critically important to California water pollution control efforts, and these efforts have the capacity to be leveraged by responsible parties to demonstrate/achieve compliance with the State's nonpoint source (NPS) pollution policy and any regulatory mechanisms adopted in accordance with the NPS policy. Please refer to Staff Response to Comment 21 for further information regarding this topic.

Comment 35 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

The Coalition recognizes that load calculations and allocations are very complicated. It requires experts scientifically trained in the discipline of concern. We also recognize that Staff have worked diligently on these calculations for several years. As a result of this

complexity, during the August, 2009 Stakeholder meeting, stakeholders requested if it would be possible to "preview" the TMDL Project Report and Implementation plan prior to release for public comment. Stakeholders expressed concern that they would not be able to digest the science and provide adequate feedback to Regional Board in the allotted public process time period . Granted, Regional Board Staff did not make such a commitment; however, considering that Staff was aware of stakeholder concern, it is disappointing that Staff not only did not "preview" the document, but also, chose to release it prior to the holidays, December 7, 2009, and provided the minimum amount of time allowed for public comment. While this may meet CEQA minimum reporting requirements, it truly is not a responsive public process that solicits informed stakeholder input.

Staff Response to Comment 35

It is important to emphasize the mass load calculations included in the Project Report have no regulatory or legal consequences. In short, there is no legal obligation on the part of responsible parties with respect to mass-based daily load calculations.

As stated in the Project Report, daily load calculations were provided by Staff so that our TMDL projects are in compliance with USEPA guidance. In effect, the daily load calculations are provided in order that Water Board Staff comply with a potential legal obligation on our part (i.e., it imposes no legal obligation on responsible parties). The TMDL numeric targets and load allocations are concentration-based, i.e., the applicable water quality objectives for contact recreation. In addition to fulfilling a potential legal obligation on our part, the mass loading assessment provides some informational value on the nature, and magnitude of pollutant loads, assimilative capacity of water bodies and estimated existing loads, and seasonality issues (e.g., flow regimes). But again, it is important to note that these technical assessments result in no legal or regulatory obligation for responsible parties. Compliance with the TMDL will be determined by numeric water quality concentration targets.

For ease of reference, the relevant section from the Project Report that addresses the comment on daily load calculations is reproduced here:

> Staff provides the following daily load expressions in light of a recent court decision and draft USEPA guidance, despite the fact that this is a concentration-based TMDL and a daily or average daily TMDL is not appropriate for this TMDL project. The District of Columbia (D.C.) Circuit Court of Appeals issued a decision in *Friends of the Earth, Inc. v. EPA, et al.*, No. 05-5015 (D.C. Cir. 2006), in which the D.C. Circuit held that two TMDLs for the Anacostia River did not comply with the Clean Water Act because they were not expressed as *daily* loads.
>
> As a result of the decision, USEPA issued a memorandum entitled *Establishing TMDL "Daily" Loads in Light of the Decision by the U.S. Court of Appeals for the D.C. Circuit in Friends of the Earth, Inc. v. EPA et. al., No. 05-5015* (April 25, 2006) and Implications for NPDES Permits in November 2006 that recommends that all TMDLs and associated load allocations (LAs) and waste load allocations (WLAs) include a daily time increment

in conjunction with other temporal expressions (e.g., annual, seasonal) that may be necessary to implement the relevant water quality standards.

The 2007 USEPA draft guidance for establishing Total Maximum Daily Loads includes the following statements:

> *"If technically appropriate and consistent with the applicable water quality standard, it may also be appropriate for the TMDL and associated load allocations and wasteload allocations to be expressed in terms of differing maximum daily values depending on the season of the year, stream flow (e.g., wet v. dry weather conditions) or other factors. In situations where pollutant loads, water body flows, or other environmental factors are highly dynamic, it may be appropriate for TMDLs and associated allocations to be expressed as functions of controlling factors such as water body flow. For example, a load-duration curve approach to expressing a TMDL and associated allocations might be appropriate, provided it clearly identifies the allowable daily pollutant load for any given day as a function of the flow occurring that day. Using the load-duration curve approach also has the advantage of addressing seasonal variations as required by the statute and the regulations."*
>
> *"For TMDLs that are expressed* ***as a concentration of a pollutant****,* a *possible approach would be to use a table and/or graph to* ***express the TMDL as daily loads for a range of possible daily stream flows****. The in-stream water quality criterion multiplied by daily stream flow and the appropriate conversion factor would translate the applicable criterion into a daily target."**
>
> *-- USEPA, 2007 "Options for Expressing Daily Loads in TMDLs", Office of Wetlands, Oceans and Watersheds, June 22, 2007.*

* emphasis added

A daily or average daily TMDL is inappropriate for the proposed allocations and TMDLs due to both (1) the temporal component embedded in the applicable water quality objective for bacteria; and (2) the episodic and highly variable nature of FIB transport and loading in streams make daily fecal coliform loads inappropriate for this TMDL project.

U.S. EPA noted in this guidance document that "for pollutants where the [water quality standard] has a longer than daily duration (e.g., monthly or seasonal average), individual values that are greater than the daily expression do not necessarily constitute an exceedance of the applicable standard." This is the case with this TMDL project, which is in response to elevated FIB concentrations in project area waterbodies, and a water quality objective that has an embedded monthly temporal component.

Staff, nonetheless, provide the following interpretations of our concentration-based allocations and TMDLs as a daily load expression in MPN/per day in accordance with the draft U.S. EPA guidance. However, we intend to implement the concentration-based TMDLs and allocations.

With regard to the comment on allowing Interested Parties more time to assimilate and comment on the daily load calculations, please note that since the daily load calculations were added to the Project Report for administrative reasons, and there are no regulatory consequences or obligations associated with mass daily load calculations, staff determined that additional public comment time and review was not warranted. For further detail on staff's efforts to address comments and concerns from stakeholders pertaining to this project please refer to Staff Response to Comment 20 and 21.

Comment 36 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

As a result of time constraints, The Coalition will not comment on the technical merits of the load calculations and allocations except to express frustration at the number of "assumptions" that are built into the report. It is an interesting exercise to list stated assumptions in order to comprehend the full degree of uncertainty in load allocation calculations:

• Loading from cropland was assumed to be similar to forest land.
• Direct livestock/wildlife defecation into a stream channel was assumed to have a 100% delivery potential, because all fecal coliforms are discharged directly into the surface water, with no opportunity for attenuation.
• Urban runoff was assumed to be 100%, since the effluent data comes from end-of-pipe storm outfall monitoring, and therefore presumably represents effluent concentration that is directly discharging into surface water.
• Areal loading rate for roads is representative of rural impervious cover loads more broadly.
• Per capita rate of waste generation in California was representative of Monterey County, and the Project Area
• City-reported illegal discharges are representative of the nature of illegal dumping throughout the Project Area.
• Nineteen percent of the 11 tons of "trash" collected (by the City) were of a nature that could potentially contain FIB.
• City volunteer cleanup efforts recover 5% of illegally-dumped material annually.
• Delivery potential of FIB-associated solid waste illegally discharged to riparian areas is twice the estimate for effluent runoff from failing OSDS: a delivery potential of 16% is assigned to fecal coliform associated with illegal dumping in riparian areas.
• Illegal dumping occurs uniformly in all Project Area waterbodies, therefore the amount of FIB available for discharge within each Census County Division (CCD) is assigned in equal proportion between the major stream reaches within the associated CCD.
• The remainder of the Homeless Census numbers for the Salinas Urban area were assumed by staff to be evenly distributed through the other urban creeks of the City
of Salinas: Gabilan Creek and Reclamation Canal upper/Alisal Creek (3b) – 28 people each
• Fecal coliforms produced by unsheltered homeless people would have a relatively low delivery potential to surface waters (i.e., the fractional amount of fecal coliform produced that is actually delivered to surface waters), because presumably some fraction of the unsheltered homeless have a degree of access to sanitary facilities.
• Estimated annual load proportion is shown for each impaired stream reach.
• The BSLC contains default literature-based values and assumptions for the amount of fecal coliform various livestock produce and the fraction of livestock that have access to streams and drainages and the amount of time they spend daily or seasonally in riparian zones.

• That up to 25% of cattle in the project area have some degree of access to waterways
• The estimate was based on the assumption that only homes and business within 600 feet or the impaired water bodies would have the potential to have an impact on surface waters.
• There's an assumption on the delivery potential to surface water of FIB from illegal dumping
• These are intended to be approximations based upon simplifying assumptions of the annual averaged amount of estimated illegal dumping.
• It is assumed that bedload contributions in the Old Salinas River and the Salinas River Lagoon are equivalent to the estimated bedload in the Tembladero Slough.
• Annual amount of fecal coliform that is potentially available for runoff or discharge into surface waters is shown in Table 4-19. [This] contains default literature-based values and assumptions for the amount of fecal coliform various wildlife produce, their habitat requirements and the amount of time they spend daily or seasonally in streams and riparian zones.
• Flow at the ungaged stream is proportional to the ratio of the drainage areas between the ungaged stream, and the gaged stream.
• Streamflow at an ungaged site is the same per unit area as a nearby hydrologically similar stream gaged station, and the method does not account for spatial variations in precipitation and runoff, the DAR method is generally best used for transferring flows between sites within the same drainage basin.
• It was assumed that mean annual precipitation of the PRISM grid point in the subwatershed was representative of mean annual precipitation throughout the subwatershed.
• Stream flows in the Mediterranean climate may serve to either increase or dilute FIB c concentrations.
• Environmental conditions, e.g. stagnant or slow moving water with fine sediment, may be areas where FIB concentrations increase due to cell-propogation, which could be entrained during rain events.
• Environmental conditions can fluctuate from year to year, creating an uncertainty regarding our estimates.
• Using historic rain events create uncertainties in actual current streamflows

Some level of uncertainty may be unavoidable, but, hopefully Regional Board Staff will keep that uncertainty in mind when they are ascertaining TMDL progress.

Staff Response to Comment 36

Staff concurs there will be uncertainty is assessing TMDL progress. Staff recognizes there will be uncertainty in the implementation of effective management practices, and in ascertaining water quality response to implementation measures. As previously stated in response to public comments, and in the Project Report Implementation Plan we anticipate that enforcement mechanisms will only be needed where dischargers have chosen not to assess, and/or reduce their potential to impact water quality from controllable sources.

With regard to load calculations, please refer to Staff Response to Comment 35.

With regard to the bulleted list provided by the commenter, the Water Board is required to adopt TMDLs for waters that have been listed as impaired pursuant to Clean Water Act section 303(d). The TMDL must be based on the best available information, even when there is uncertainty. Staff endeavored to identify all uncertainties in the technical analysis, and to provide the basis for any assumptions used (e.g., best professional

judgment, indirect evidence, etc.). It is not possible to have analytical or observational data for every metric associated with bacterial pollution at a basin scale. Staff conducted a cursory review of other USEPA-approved TMDLs from California and other States, and found numerous cases where dozens of assumptions, professional judgments, and uncertainties were included or identified in a TMDL analysis. Therefore, staff does not concur that the uncertainties, assumptions, and professional judgments incorporated in this Project Report are unmerited or unusual.

Comment 37 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

Proactive Stakeholders were disappointed that staff did not make an effort to capture and document all of the positive efforts that have taken place in the past 10-15 years. Stakeholders feel that Regional Board Staff's failure to acknowledge their efforts is either disinterest or ignorance in their water quality protection efforts. To a certain degree, stakeholders look at the Regional Board's expectations as set forth in this TMDL and wonder if their proactive efforts were wasted. The implementation plan seems onerous and expensive, in spite of Regional Board Staff assurances of flexibility and adaptive management.

Staff Response to Comment 37

Staff made an effort in the Project Report to acknowledge proactive efforts of entities or organizations to improve water quality in the watershed; however Staff unintentionally neglected to mention proactive efforts of the cattle industry. This oversight has been rectified, and the Project Report has been updated with narrative acknowledging work done by California Cattleman's Association, the Central Coast Rangeland Coalition, the Monterey County Cattlemen's Association, Conservation Districts, Natural Resource Conservation Districts, University of California Cooperative Extension, and rangeland managers within the Salinas River watershed to improve environmental performance and water quality.

With regard to the expectations and requirements of the implementation plan, please refer to Staff Response to Comments 1, 4, and 18 for relevant information.

Comment 38 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

Lumping rural residential owners/operators and commercial livestock as one source (i.e. domestic animals) regardless of size and type of operation, is problematic. Rural residential and commercial livestock operations should be separated. They are a completely different communities with different outreach requirements and entirely different management practices requirements. It will be logistically impossible to ascertain implementation effectiveness and compliance using Regional Board Staff's consolidated approach. Here are a few questions which pertain to enforcement of rural residential owners/operators:

What plan does Regional Board Staff have for identifying who should be regulated?

• How does Regional Board Staff propose communicating the TMDL requirements to this group?
• How realistic is it to expect this community to monitor? As a group? As individuals?
• How realistic is it to expect this community to create an implementation plan that tracks implementation effectiveness? As a group? As individuals?
• Can this Regional Board Staff, with current staffing and budgetary constraints, actually regulate and enforce the proposed implementation plan in the rural residential community?

Staff Response to Comment 38

Staff did not create separate distinct source categories in the Project Report and Basin Plan amendment for lightly grazed rangeland operations, confined farm animals, hobby ranches, or properties with higher unit area densities of domestic animals. However, staff recognizes and concurs that there are differential levels of risk for pathogen loading associated with various animal management practices. Please refer to Staff Response to Comment 23, in particular the last paragraph of Staff's response, for further information.

Comment 39 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

- *What compliance plan will be promulgated for this community?*
• How does Regional Board Staff propose obtaining "clear evidence" of compliance?
• What is the likelihood that Regional Board Staff will enforce upon this regulated community? Will there be some sort of class distinction where larger landowners will be targeted; while smaller landowners are ignored, albeit they are subject to the same requirements?
• In regards to liability, what third party would be willing to accept the liability for ensuring implementation, monitoring, reporting and compliance for rural residential properties?

Staff Response to Comment 39

The scope of the compliance requirements are broadly outlined in the Resolution and Implementation Plan. With regard to a detailed plan to track implementation and track compliance, Staff will work with stakeholders and responsible parties to develop reporting and documentation goals and methods. It is important to note, that because of the hierarchy of approvals that a TMDL and Basin Plan Amendments must go through, the earliest conceivable date that required implementation efforts will begin to commence is sometime in late 2011.

With regard to the commenter's second bullet, it is important to note that Staff considers the "clear evidence" criteria to be relatively narrowly restricted in nature and scope. This is because the limited scope of existing monitoring data, and the limited information available at present on existing management practices make it problematic in the near term to definitively determine whether significant numbers of Owners/Operators are

currently, and will continue to be, in compliance with the Domestic Animal Waste Discharge Prohibition.

Staff anticipates that clear lines of evidence that the Owner/Operator is currently and will continue to be in compliance with the Prohibition would include the following:

a) The owner/operator no longer maintains domestic animals on the property;
b) The property neither contains, nor is adjacent to any surface water features, including perennial waters, intermittent waterbodies, water conveyance structures (ditches, canals, etc), or ephemeral drainage features to which domestic animals may have access, or to which their waste may have the potential to be discharged.
c) Monitoring data indicates that water quality objectives are currently being met in surface waters of the State that occur within or adjacent to the property of the Owner/Operator of lands containing domestic animals.

With regard to the commenter's third bullet, Staff has endeavored to identify as many options as possible for responsible parties to demonstrate compliance with the proposed Basin Plan Amendment, while still achieving water quality results. As such, we are trying to be as flexible as possible in the implementation approach for reducing pathogen loading. *We anticipate that enforcement mechanisms will only be needed where dischargers have chosen not to assess, and/or reduce their potential to impact water quality from controllable sources*. With regard to property size, Staff anticipate that regulatory oversight will initially proceed largely on the basis of prioritization of pollutant loading risk independent of property size. Staff intends to focus on a prioritization strategy during implementation which may involve (but not be limited to), assessing prioritization of water bodies/watersheds (degree of impairment), proximity of lands containing domestic animals to surface water bodies, identifying water quality risk associated with other factors (unit area density of animals, types of operations, confined animals versus rangeland animal operations, etc); indentifying "hot-spots" or problem areas, etc. . Staff intends to work with stakeholders with regard to implementation efforts and strategies that maximize cost effectiveness while still providing for water quality results.

With regard to the fourth bullet, third parties or consultants acting in concert, or on behalf of owners/operators of lands with domestic animals are not subject to legal liability or compliance with the Prohibition. The Domestic Animal Waste Discharge prohibition, in accordance with the Porter-Cologne Water Quality Control Act, makes explicitly clear that the responsibility for discharges of waste is vested in the owners/operators of lands/activities that discharge, or threaten to discharge, waste to waters of the state (please refer to Basin Plan Amendments package, Attachment 1, Resolution No. R3-2010-0017). Also note, the "operators" are legally defined as persons who operate, but do not own the property (for example, persons leasing the property). In cases of leased property, both the owner and the operator are legally responsible for discharges to waters of the state.

Comment 40 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

The Coalition recommends that Staff separate commercial cattle producers from rural residential properties and revisit the TMDL load calculations and allocations, implementation plan and monitoring requirements and economic analysis. Failure to separate these sources now will create future confusion about TMDL progress and will jeopardize the long-term success of the TMDL program.

Staff Response to Comment 40

Please note that the mass-based load allocations, as calculated in the Project Report, impose no legal or regulatory liability on responsible parties (please see Staff Response to Comment 35).

The TMDL is a concentration-based target, equal to the Basin Plan applicable water quality objective (water contact, REC-1). As such, Staff did not separate or recalculate the TMDLs. Staff maintains that concentration-based allocations are more straightforward since they only require measuring concentrations in the waterways and do not require extensive flow monitoring and loading calculations. Therefore, staff established concentration-based TMDLs and pollutant load allocations, expressed in terms of indicator bacteria concentrations.

With regard to making rural residential properties and commercial cattle producers separate and distinct source categories, please refer to Staff Response to Comment 23.

Comment 41 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

In regards to monitoring, water quality monitoring should not be the only indicator of TMDL success. In fact, in 2007, Regional Board Staff told the Cattlemen that they could use other forms of monitoring such as photo monitoring, Residual Dry Matter calculations or other performance measures to determine implementation effectiveness. The Non-Point Source Policy, Key element #4 states "An NPS control implementation program shall include sufficient feedback mechanisms so that the Regional Board dischargers, and the public can determine whether the program is achieving its stated purpose and whether additional or different management practices or other actions are required". The Coalition does not believe, nor did Regional Board Staff believe at one time, that water quality monitoring is the sole way to fulfill this requirement.

Staff Response to Comment 41

Staff concurs that water quality monitoring is not the sole way to determine compliance. Please refer to the Project Report, Section 13. Also, with regard to compliance options, and staff proposals for determining progress towards achieving the TMDL over the long term (i.e., 13 year proposed time line to achieve the TMDL) please refer to Staff Comments 5, 11, and 32 for more information.

Comment 42 – Kay Mercer, Central Coast Agricultural Water Quality Coalition

Staff has grossly underestimated the costs of implementation, monitoring, reporting and compliance plan requirements. The Coalition appreciates the difficulty of calculating true economic costs. Budgeting requires as many assumptions as calculating load allocations. The Coalition also appreciates staff providing estimated costs of management practices as this is useful information.

Most ranchers do not have the resources or expertise to comply with TMDL requirement as individuals. Therefore, some group approach likely will be required. The Coalition is well acquainted with the costs to create and administer a group approach as suggested in the Implementation Plan. Unfortunately, Regional Board Staff did not fully capture the startup and maintenance expenses associated with the group approach in their cost estimates, such as:
• Organizational startup expenses which include:
o Forming a Board
o Creating organizational documents
o Filing with the State
o Establishing an office
o Numerous meetings and conference calls
• The cost of negotiating a monitoring plan with Regional Board Staff.
• The cost of procuring and retaining consultants and other contractors to conduct the monitoring and reporting program.
The cost of creating and obtaining funding to pay for monitoring and reporting costs.
• The cost of writing a SWAMP compatible QAPP to meet Regional Board specifications.
• The cost of setting up monitoring and reporting systems to meet Regional Board specifications.
• Actual monitoring and analytical costs.
• Troubleshooting glitches in monitoring processes and laboratory analysis.
• Cost of informing constituents of compliance requirements (outreach).
• Costs of demonstrating management practices (outreach).
• Costs associated with measuring implementation effectiveness (outreach).
• Costs associated with negotiating an e-reporting form with Regional Board Staff in order to meet SWAMP compatible reporting requirements.
• Costs associated with reporting monitoring results.
• Costs of renegotiating any and all of the above because of changes in Regional Board TMDL policy, process or adaptive management.
• The coast of staff and overhead (office space, IT equipment and maintenance, taxes, insurance, and professional services such as bookkeepers, accountants and attorneys).

Staff Response to Comment 42

Staff acknowledges the commenter's concerns with regard to concerns regarding time and financial investments. Staff maintains that it is problematic and highly speculative to calculate total costs, or costs associated with future measures at this time. This is in

part, due to the uncertainty surrounding the number of facilities, ranches, farms, etc. that will require implementation. It is possible that scope of water quality problems as they pertain to lands containing domestic animals are confined to a limited amount of problem areas. On the other hand, discharges from lands containing domestic animals that cause or contribute to exceedances of applicable water quality objectives may be more widespread. Staff intends to focus on a prioritization strategy during implementation which may involve (but not be limited to), assessing prioritization of water bodies/watersheds, proximity of lands containing domestic animals to surface water bodies, identifying water quality risk associated with other factors (unit area density of animals, types of operations, confined animals versus rangeland animal operations, etc). Staff intends to work with stakeholder with regard to implementation efforts and strategies that maximize cost effectiveness while still providing for water quality results.

Staff recognize that in the current economic climate, there are limitations to what both private entities and public regulatory agencies can accomplish. Also, it is recognized that it is not possible to immediately achieve applicable water quality objectives for fecal coliform. Consequently, it is important to note that the TMDL has a proposed 13 year time frame, and measuring TMDL achievement and compliance will - in part - be measured by observing progression or continuous improvements to water quality over the long term. Considering the hierarchy of approvals a TMDL and Basin Plan Amendment are required to go through, the earliest possible date that active regulatory oversight efforts and implementation tracking could conceivably begin to be initiated would be late-2011. Bearing in mind these timelines, please note that while the primary measure of success for this TMDL is attainment or <u>continuous progress</u> toward attainment of the TMDL water quality numeric targets and load allocations over the long term, it is important to emphasize that in evaluating successful implementation of this TMDL, attainment of trackable implementation actions will also be heavily relied upon (tracking the scope and extent of implementation of management measures, in addition to water quality monitoring as warranted).

Also, it is important to note that the Water Board cannot mandate or designate the specific types of on-site actions necessary to reduce indicator bacteria loading, or to meet allocations by the various responsible parties. Specific actions or management measure that are described or identified in the project report can only be suggestions or examples of actions that are known to be effective at reducing loading.

With the above information in mind, Staff maintains that speculative estimates of costs, and concerns about the current economic climate due not preclude the need to adopt a TMDL based on current water quality standards in order to begin to initiate (or assess) control measures for known or probable controllable sources of fecal coliform loads. The Water Board is required by the Federal Clean Water Act to adopt TMDLs for water bodies listed pursuant to Section 303(d) of the Clean Water Act and impaired water bodies, and State Nonpoint Source Pollution Policy requires the Water Board to regulate nonpoint sources of pollution. Please note that Staff considers the adoption of the proposed Domestic Animal Discharge Prohibition to be the least burdensome

nonpoint regulatory mechanism for Responsible Parties, from an economic standpoint, as a Prohibition does not include or trigger any requirement to pay annual permit fees, as could be the case with waste discharge requirements, or waivers of WDRs.

Comment 43 – Dorothy Giannini, Christensen Cattle Company

Our family has been raising cattle in this area since the 1950's. We have worked carefully to maintain our rangeland grasses. We believe this offers protection to downstream water bodies from sediment and any pathogen that may be present. The existence of privately owned rangelands in these watersheds is the very best water quality protection tool we have in the region.

There is research data available to support that rangeland grasses are very effective at removing pathogens as water moves through them. Your proposed TMDL should acknowledge this and not lump us in with other "controllable" sources. We are willing to do what is necessary, but we should start by looking at what is already in place and what the research tells us about rangeland grasses as a natural filter in our watersheds.

Staff Response to Comment 43

Staff concurs that well-managed rangeland and native grasslands can provide superior environmental performance. As such, the Project Report has been modified by Staff with narrative to acknowledge this, in accordance with your comment. Staff acknowledges there are a substantial number of rangeland operators and cattlemen that manage their property and animals in ways that are economically and environmentally viable.

That said, Staff maintains that there are some water quality problems associated with domestic animal operations in the Project Area, including (but not limited to) grazing lands in the inland valley floor and upper reaches of the watershed. Please note, this is not intended to imply that all rangeland operators or cattlemen are contributors to the water quality impairment. Please refer to Project Report Section 4.3.2.1; also, please refer to Figures 2 and 3 in this document and the narrative associated with those figures found in Staff Response to Comment 21.

Comment 44 – Dorothy Giannini, Christensen Cattle Company

The "non-controllable" sources listed in the draft TMDL include homeless people and wildlife. These are certainly difficult to control and it may make practical sense to focus on sources that can be controlled. The fact that your "water quality objective" must be met for every type of "controllable source" in these watersheds regardless of where they are in the watershed is problematic when non-controllable sources are out there in variable amounts across the watersheds.

Staff Response to Comment 44

Staff made estimates of the relative magnitude of potential risk of discharges from controllable and non-controllable sources for every subwatershed in the Project Area (please see Project Report, Section 4). Please note that discharges of waste from unsheltered homeless is considered a controllable source in the Project Report. Staff maintains that there is currently sufficient knowledge of the nature and sources of fecal coliform loading in the Project Area to begin to initiate management of currently known or probable controllable sources.

Staff maintains that initiating control measures for known and probable sources outweighs the benefit of taking more time to develop more data and information on other possible sources, or specific localized conditions. Staff also maintains that, over the 13 year timeline proposed for achieving the TMDL, effective measures to control controllable sources will result in the TMDL being achieved for applicable water quality objectives (i.e. Central Coast Basin Plan water contact objective for fecal coliform, REC-1). The non-controllable contribution from wildlife and background is not subject to regulation; however Staff maintains that should control measures for controllable sources be in place, the contribution from back ground would not result in impairment of beneficial uses of waters of the state in any systematic or widespread way (for more information pertaining to this topic, please refer to Figures 2 and 3 in this document and the narrative associated with those figures found in Staff Response to Comment 21).

However, staff acknowledges that there is a degree of uncertainty about localized conditions in the basin, and the possibility remains that in certain locations or stream reaches background could potentially be a sole cause of impairment of the applicable water quality objectives. The proposed Basin Plan Amendment has adaptive measures to address this; for example the Central Coast Water Board may pursue and approve a site-specific objective. The site-specific objective would be based on evidence that natural, or background sources alone were the cause of exceedances of the Basin Plan water quality objective for pathogen indicator organisms. Additionally, narrative was added stating that should all control measures be in place, and fecal coliform concentrations remain high, and the TMDL not be met, staff may investigate or require investigations (e.g., genetic studies to isolate sources or other appropriate monitoring) to determine if the high level of fecal coliform is due to uncontrollable sources or other controllable sources not previously identified. It is important to note however, that even in local areas where background conditions might cause sustained impairment of water quality objectives, this condition does not imply that dischargers may exacerbate or magnify the scope of the impairment. Controllable sources still need to be controlled to the extent feasible.

Comment 45 – Dorothy Giannini, Christensen Cattle Company

If you cannot tell "controllable" from "non-controllable sources" when you conduct monitoring on this TMDL, how will you know where the problem is really coming from?

How will you be able to acknowledge that the regulated community is doing its part? I understand you are considering having all "domestic animal" operations provide some type of documentation about the measures they are taking not to contribute fecal coliform to these waterbodies. How will you differentiate among the very different domestic animal operations? For example, how will you make a distinction between highly dense stocking rates behind someone's house and a grazing operation with stocking rates calculated to leave a specific amount of dry matter on the ground as recommended by USDA? How will you ensure that no one is unfairly categorized as a source when your sampling continues to pick up hits from Wildlife? Under this proposed plan, you cannot fairly implement your TMDL. Will you implement species sampling? This would allow us to know whether the fecal coliform in a water sample is from bird or mammal sources. This type of testing is not unknown and has been used in and around the Salinas area where the California Department of Public Health detected birds as the primary source of fecal coliform in many of these same water bodies.

Staff Response to Comment 45

Staff maintains that it is beyond reasonable doubt, and that the preponderance of evidence clearly indicates that controllable sources are contributing to a condition of water quality impairment in the Project Area. As such, regardless of possible localized conditions where background potentially is the sole source of sustained impairment of water quality objectives, Staff maintains that there is currently sufficient knowledge of the nature and sources of fecal coliform loading in the Project Area to begin to initiate management of currently known or probable controllable sources. Staff maintains that initiating control measures for known and probable sources outweighs the benefit of taking more time to develop more data and information on other possible sources, to quantitatively discriminate precise load contributions from individual sources, or to further evaluate specific localized conditions. The Water Board is required to adopt TMDLs for waters that have been listed as impaired pursuant to Clean Water Act section 303(d). The TMDL must be based on the best available information, even when there is uncertainty. While the relative magnitude of various nonpoint sources were estimated in this project report, load allocations were not allocated to separate, discrete nonpoint sources due to the lack of sufficient source characterization data. This is consistent with the Clean Water Act. 40 CFR 130.2(g), which states: *"load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading*.

As noted in Staff Response to Comment 44, even in local areas where background conditions might cause sustained impairment of water quality objectives, this condition does not imply that dischargers may exacerbate or magnify the scope of the impairment. Controllable sources still need to be controlled to the extent feasible. Adaptive measure are provided for TMDL development over the long term to establish numeric site specific objectives (please see Staff Response to Comment 44).

With regard to the comment about the ability to discriminate between risk levels associated with various types of domestic animal operations, Staff concurs that all other factors being equal, poorly managed confined animal facilities, relatively densely stocked hobby ranches, etc., on a unit area basis (e.g., per acre) are a higher pollutant loading risk than lightly grazed rangeland or pasture. Staff intends to focus on a prioritization strategy during implementation which may involve (but not be limited to), assessing prioritization of water bodies/watersheds (degree of impairment), proximity of lands containing domestic animals to surface water bodies, identifying water quality risk associated with other factors (unit area density of animals, types of operations, confined animals versus rangeland animal operations, etc); indentifying "hot-spots" or problem areas, etc. . Staff intends to work with stakeholders with regard to implementation efforts and strategies that maximize cost effectiveness while still providing for water quality results.

With regard to the comments pertaining to concerns about holding people accountable for discharges from wildlife, and about genetic species sampling it is important to emphasize that the Water Board cannot regulate non-controllable discharges. Since the proposed Prohibition is not "zero discharge" or outright ban on discharges of domestic animal waste, the primary measure of success for this TMDL is attainment or *continuous progress* toward attainment of the TMDL targets and load allocations (i.e., water quality goals) over the proposed 13 year time frame to achieve the TMDL. Since the preponderance of evidence clearly indicates that current fecal coliform concentrations are, to various degrees, the result of discharges of controllable loads, Staff anticipates that control measures put in place and verified by the Water Board should be reflected by a progression of water quality improvements over the long term. As noted previously, should all control measures be in place, and fecal coliform concentrations remain high, and the TMDL not be met, staff may investigate or require investigations (e.g., genetic studies to isolate sources or other appropriate monitoring) to determine if the high level of fecal coliform is due to uncontrollable sources or other controllable sources not previously identified. As such, the intent is that responsible parties will not be unfairly held accountable for fecal coliform discharges that are solely the result of noncontrollable background conditions.

With regard to acknowledging voluntary and proactive efforts to improve water quality, The Water Board and Staff recognize that voluntary pollution control measures are vitally important with regard to managing water pollution in California; Please refer to Staff Response to Comment 17 and 21.

Comment 46 – Dorothy Giannini, Christensen Cattle Company

Another concern relates to the hydrology of these water bodies. If waterbodies in this TMDL do not actually contain flows connecting them to downstream waterbodies, shouldn't there be a different way of handling them under this TMDL? Unless water samples are taken during a storm, most of these water bodies contain no flows between storms or outside of the storm season, but rather have puddles or sections that may be

wet. What Is the practical basis for requiring the public to monitor a waterbody that is not flowing and report those results?

Staff Response to Comment 46

With regard to State water quality objectives, and Basin Plan Beneficial Uses for ephemeral surface water bodies, please refer to Staff Response to Comments 1 and 5. Also, it is important to recognize that indicator bacteria (e.g., *E. coli*) or pathogens in manure that are deposited on grasses or in ephemeral creek beds may survive for weeks or months (Guan and Holley, 2003; Avery et al., 2004), potentially being entrained in the water column by subsequent stream flows.

With regard to monitoring staff recognizes that it is generally impractical to assess receiving water quality, and load contributions at the field or ranch-scale (particularly for lower-order ephemeral stream reaches), unless there are unusual and compelling reasons to require that nature and scope of monitoring. The proposed Basin Plan Amendment has identified other forms of monitoring (for example, such as a report documenting visual site inspections, supported by site photos), besides water quality monitoring, as indicated in the Project Report, Section 13. Therefore, while the primary measure of success for this TMDL is attainment or continuous progress toward attainment of the TMDL water quality numeric targets and load allocations, it is important to emphasize that in evaluating successful implementation of this TMDL, attainment of trackable implementation actions will also be heavily relied upon. Therefore, staff are proposing two types of monitoring for this TMDL:

1) water quality monitoring, and
2) monitoring of implementation of management measures.

Consequently, we are proposing that every three years, following approval of the TMDL, the Central Coast Water Board will perform a review of implementation actions, monitoring results, and evaluations submitted by responsible parties of their progress towards achieving their allocations. The Central Coast Water Board will use annual reports, nonpoint source pollution control implementation programs, evaluations submitted by responsible parties, and other available information to determine progress toward implementing required actions and achieving the allocations and the numeric target.

Bearing the above information in mind, Staff maintains that it is not warranted to break out ephemeral, intermittent, or perennial stream reaches in the watershed to address through separate TMDL projects.

Comment 46 – Dorothy Giannini, Christensen Cattle Company

Regarding the stakeholder involvement. I have reviewed meeting notes from an August 2009 regional board hearing that documents your staffs commitment I stated intention to work with stakeholders in the grazing community to determine a suite of practical

management measures that could be encouraged, but not required, as part of this TMDL. Prior to that August 2009 meeting, I am told by our Cattlemen's Association that several counties formed a group to work with you. That group has completed many important milestones and is still working to communicate with you. However, it seems that Regional Board staff has received a well thought out document written by cattlemen and have not used it. That seems to be a huge waste of effort and local resources. I hope you will look back to that local group of cattlemen and honestly work with them on these issues.

In closing, I strongly request that instead of approving this TMDL proposal today, that you allow your staff additional time to work with the grazing community to more carefully consider how this TMDL can be implemented and evaluated over time to achieve actual water quality improvements.

Staff Response to Comment 46

With regard to the document cattlemen gave to Water Board staff (Central Coast Non-Point Source Grazing Approach and Benefits of Grazing Appendix), please refer to Staff Response to Comment 17.

Please note that Staff maintains that there is currently sufficient information and justification for initiating a TMDL for this watershed, as outlined in Staff Response to Comment 45, and elsewhere in this document.

Comment 47 – Traci Roberts, Monterey County Farm Bureau

The Implementation Plan should be designed with stakeholders. This draft TMDL does not adequately acknowledge nor incorporate into its implementation plan the significant existing and ongoing work being done by rangeland managers in an organized fashion through Monterey County Cattlemen's Associations in our local area and through similar associations throughout the region.

For Example: The proactive Cattlemen of the Central Coast have developed a rangeland water quality, positive point, self assessment in conjunction with Cal Poly and UCCE staff; performance measures developed by the Central Coast Rangeland Coalition. The Cattlemen wrote a Central Coast Non-Point Source Grazing Approach and Benefits of Grazing Appendix. This document provided very important background about Central Coast Ranching to the "Nacitone Steering Committee" while they worked to address a range of watershed issues in a watershed management plan for the Nacimiento and San Antonio watersheds - a project funded through the Regional Board. Yet, it does not appear that this document was used for any part of the analysis for this TMDL and is not mentioned in the implementation plan for this TMDL.

The August 2009 stakeholder meeting I attended for this Fecal Coliform TMDL in Salinas included a statement my regional board staff that they would work with stakeholders to determine the most feasible and logical implementation plan for this TMDL. This was a laudable intention. We are not aware that such efforts on the part of

staff have occurred since then. Stakeholders also requested an opportunity to meet again with staff when this project report was available for review. Instead, the final report was distributed as usual and no further meetings or communications were offered from staff.

Staff Response to Comment 47

Please refer to Staff Response to Comments 17, 21 and 34 with respect to these topics.

Comment 48 – Traci Roberts, Monterey County Farm Bureau

Site specific TMDLs may be needed in this very large, multiple watersheds project area. At the 2009 stakeholder meeting, staff suggested that the creation of "site specific TMDLs" might be possible and agreed to provide a set of steps that would need to be taken to determine whether a "non-controllable" source such as sea-birds actually contributes more significantly to impairment than do the "controllable" sources. This is a real possibility in and around the Salinas area and coast. Stakeholders clearly stated this as a need during the 2009 meeting with you. But staff resources need to be invested to assist the community in pursuing such a logical and potentially long-term, cost saving option.

Staff Response to Comment 48

Please refer to Staff Response to Comment 44 for with regard to this issue.

Comment 49 – Traci Roberts, Monterey County Farm Bureau

The 'non-controllable' sources listed in the draft TMDL include HOMELESS PEOPLE and WILDLIFE. However, the "water quality objective" established by this TMDL must be met by each "controllable source" in these watersheds. How will the Regional Board substantiate requirements they impose through this TMDL on people responsible for "controllable sources" when it is impossible to tell what part the "controllable sources" play in the overall water quality impairment? Unwarranted and un-scientifically founded requirements will be challenged.

Staff Response to Comment 49

Please note that homeless encampments have been identified as a controllable source. With regard to how the Water Board will substantiate implementation and monitoring requirements, and with regard to prioritization and identification of controllable source loads please refer to Staff Response to Comments 5, 39, 42, 45 and 46.

Comment 50 – Traci Roberts, Monterey County Farm Bureau

The peer reviewer for this TMDL Stefan Wuertz Ph.D, UC Davis provides in his comments on this TMDL that, "A substantial uncertainty as to the ability to distinguish between natural and controllable sources of fecal pollution is mentioned in this report. Microbial source tracking techniques should be employed alongside FIB measurements whenever feasible" on page 87, you have found source tracking data on Santa Cruz County wildlife gathered for Waddel and Scott Creeks, not in the project area. This is too important to extrapolate.

Staff Response to Comment 50

Please note, The Water Board has conducted microbial source tracking in various basins in the central coast region. These results have routinely shown that, with regard to impaired waterbodies, multiple controllable and non-controllable sources are contributing to the impairment (i.e., wildlife, humans, pets, domestic animals, livestock).

It is also important to note that Dr. Stefan Wuertz, UC Davis, Scientific Peer Reviewer for this TMDL, has cautioned Water Board staff regarding uncertainty associated with assigning host-specific load based on ribotyping data for fecal sources (*Scientific Peer Review of TMDLs for Pathogens in the San Lorenzo River Watershed, Soquel Lagoon Watershed, and Aptos Creek Watershed*, dated Oct. 1, 2007). Dr. Wuertz stated that "ribotyping is not a quantitative method." Further, Dr. Wuertz informed Water Board staff that assigning proportional loads or per cent contributions from individual host species based on the isolates is problematic. Professor Wuertz stated, "A certain number of isolates per water sample are analyzed and it is unknown whether the same numerical distribution of microbial host species would be obtained if 10 or 100 times as many isolates from the same water sample had been analyzed." Even if an optimal number of isolates were analyzed Dr. Wuertz points out, "it is not known if these strains all have the same decay function/environmental persistence." Based on our scientific peer reviewer's comments, Water Board staff is using the ribotyping data mostly for qualitative identification of wildlife, livestock, pets, and human as sources of pollution.

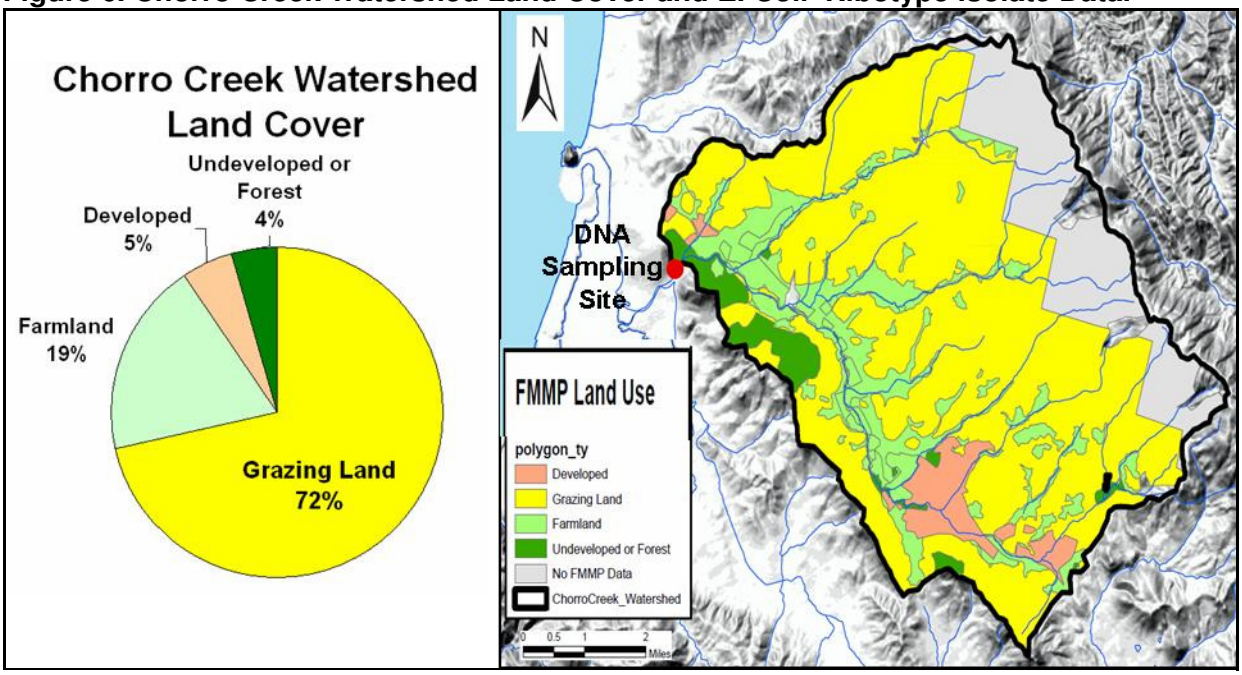
As such, Staff maintain that ribotyping techniques throughout the central coast region have shown that controllable and noncontrollable sources are contributing to water quality impairments, but that it is currently not merited to conduct ribotyping every time for every TMDL project. Regional ribotyping consistently show there are problems pertaining to controllable sources. Regional ribotyping data also show that fecal coliform loads from controllable sources (livestock, domestic animals) are associated with watersheds predominantly comprised of grazing lands – for example, Chorro Creek (see Morro Bay pathogens TMDL, Central Coast Water Board, 2002). The Project Report has been updated with more specificity regarding the scope and utility of regional ribotyping data. For ease of reference, the relevant narrative of the Final Project Report is reproduced below.

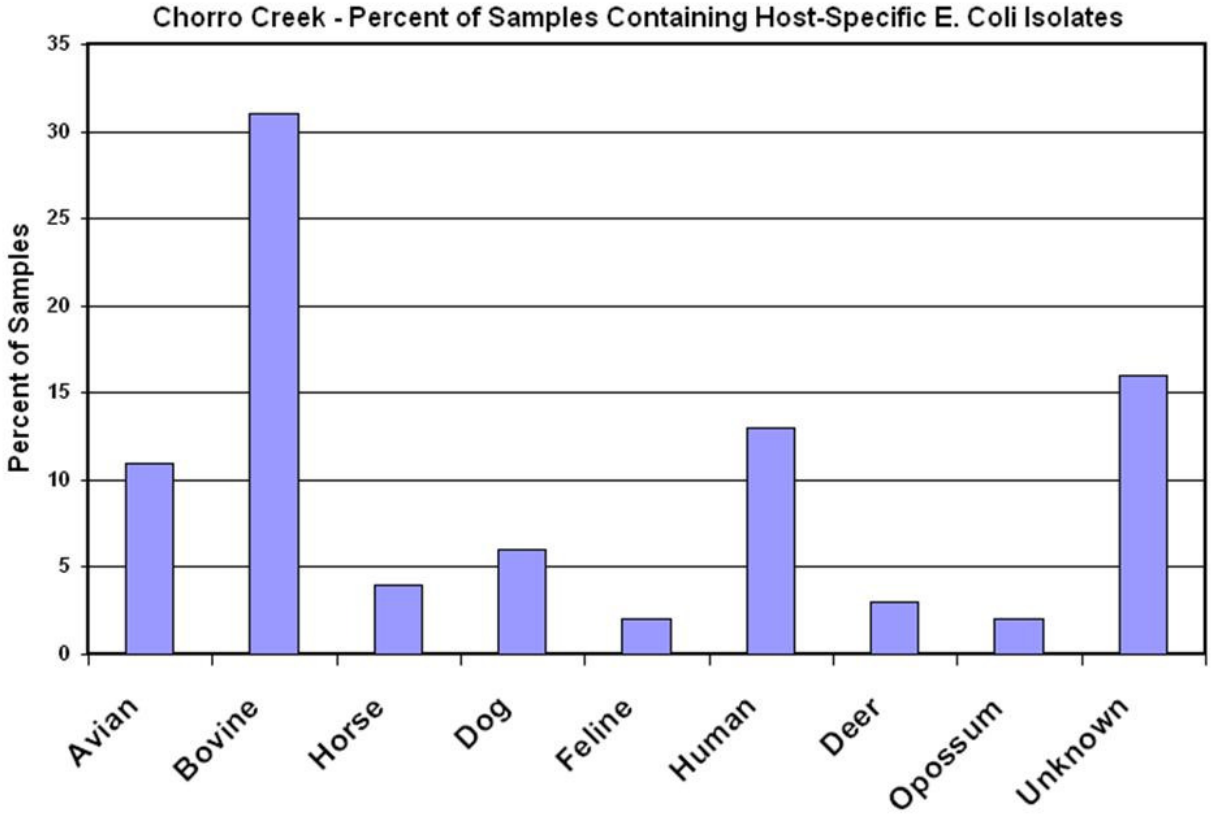
Although DNA fingerprinting was not conducted for this TMDL project, DNA fingerprinting data has been collected and used in TMDL development throughout the Central Coast region. DNA fingerprinting is a type of analysis that can discriminate E. coli isolates that are associated with a specific animal host. *E. coli* lives in the intestines of warmblooded animals. Different *E. coli* species are preferential to different animal hosts. Using this premise, a DNA fingerprint of a certain *E. coli* isolate found in a field sample (water, sediment, or oyster tissue) can be matched to *E. coli* known to inhabit a particular animal's intestines. The method can provide insight into whether indicator bacteria loads are coming simply from natural background (wildlife), or if there is a component of controllable loads in the water sample (humans, domestic animals).

DNA ribotyping in the central coast region has widely demonstrated that observed indicator bacteria loads are associated with both non-controllable sources (e.g., wildlife) and controllable sources (human and domestic animals). A DNA site which represents a watershed that drains predominantly grazing lands (Chorro Creek), is reported in the Total Maximum Daily Load for Pathogens (Central Coast Water Board, 2002). The *E. coli* ribotypes from the Chorro Creek watershed matched to birds, domestic animals (cats and dogs), livestock (cows, horse, sheep and pigs), humans and wild animals .

Figure 6 illustrates the FMMP land cover for the Chorro Creek watershed and the *E. coli* ribotype data. Note that the FMMP digital land use data was compiled by the California Dept. of Conservation, in cooperation with the California Cattlemen's Association and others. Note that grazing lands comprises the large majority of the Chorro Creek watershed. Also note that 31% of the ribotypes matched to bovine, 13 % to human, 11% to avian, and other ribotypes matched to a variety of other wildlife and domestic animals. The Chorro Creek DNA data illustrate that both controllable and non-controllable sources of indicator bacteria can contribute loads in a watershed predominantly comprised of grazing lands.

Figure 6. Chorro Creek Watershed Land Cover and *E. Coli* Ribotype Isolate Data.





> While the Chorro Creek analysis was not specific to Project Area watersheds, the data and observations presented in this report, along with regional DNA evidence which suggests that grazing lands can be a source of controllable loads to surface waters, collectively support the conclusion that domestic animal operations and lands containing domestic animals are a probable controllable source of indicator bacteria loads to surface waters in the Project Area.

Staff maintains that the preponderance of evidence clearly indicates that controllable sources in the watershed are contributing to exceedances of applicable water quality objectives. It is important to note however, that even in local areas where background conditions might cause sustained impairment of water quality objectives, this condition does not imply that dischargers may exacerbate or magnify the scope of the impairment. Controllable sources still need to be controlled to the extent feasible. Staff notes that site all control measures be in place, and fecal coliform concentrations remain high, and the TMDL not be met, staff may investigate or require investigations (e.g., genetic studies to isolate sources or other appropriate monitoring) to determine if the high level of fecal coliform is due to uncontrollable sources or other controllable sources not previously identified.

Comment 51 – Traci Roberts, Monterey County Farm Bureau

Since genetic testing of the water samples collected was not performed for this TMDL, you, the scientific peer reviewer, and the community that will be regulated are left with doubts about whether sources of fecal coliform are from wildlife and birds or not.

Staff Response to Comment 51

Staff does not concur that there is any substantial uncertainty, at the basin-scale, about whether wildlife alone is the sole cause of the magnitude and frequency of indicator bacteria levels observed in the Lower Salinas valley. Staff maintains that it is beyond reasonable doubt, and the preponderance of evidence clearly indicate that controllable sources are contributing, at least in part, to exceedances of water quality objectives in the Project Area. And, at least at the basin macro-scale, the magnitude and frequency of the exceedances are not plausibly explained exclusively by wildlife contributions.

The Lower Salinas Valley has among the highest sustained and widespread bacteria stream impairments in the whole central coast region. The concentrations of bacteria far exceed what are found in most other areas of the central coast region, and far exceed what are found in streams draining undeveloped catchments having little anthropomorphic activities. Photo documentation, field observations, empirical load analysis assessment, and monitoring of stormwater outfalls, all indicate that there are a range of controllable sources in the Project Area that are contributing to stream impairments. Adaptive measures are included in the TMDL should all appropriate control measure be in place, and water quality objectives are still not being met.

Comment 52 – Traci Roberts, Monterey County Farm Bureau

We strongly urge the Regional Board to take a phased and careful approach to these TMDLs. As one participant from a local water agency pointed out during the 2009 stakeholder meeting, "Since we have so little money and staff it makes more sense to do better at identifying the sources and then work with that smaller source audience and use a PHASED APPROACH to improve the area. MCWRA has been doing this a long time and this makes more sense.

Staff Response to Comment 52

The proposed TMDL has adaptive measures incorporated (potential for site specific objectives); staff are proposing to defer compliance with the more stringent SHELL numeric water quality objectives for Project Area coastal confluence waters, be recommending that a goal for attainment of the less stringent REC-1 standard be the numeric target, Also, with regard to addressing beneficial uses, Staff, other Water Boards and the State Board have been evaluating establishment of a limited REC1 water quality objective that allows higher levels of bacteria. This possibility remains on the table for future consideration.

Staff maintains there is sufficient information on known and probable controllable sources of fecal coliform loads to begin to initiate control measures. Tracking of implementation measures, and measuring water quality response over the long term may result in adaptations, as provided for in the proposed Basin Plan Amendment.

Comment 53 – Traci Roberts, Monterey County Farm Bureau

This TMDL should address differences that make a difference. The term "domestic animals" is used to describe one of the "controllable sources" in the project area. By combining all domestic animals under one definition, very different potential impacts will not be recognized or addressed by this TMDL. For example, under this combined definition, cattle grazing a vegetated hillside at a density calculated to leave residual dry matter for the future will be evaluated and treated the same as one of our ranchette owners who may keep a much higher density of animals. Each of these scenarios, and many more that would be invisible under a single definition, may require unique actions to address the potential impact.

Staff Response to Comment 53

Staff concurs that assessing and prioritizing pollutant load risk is critical in achieving water quality results. Please refer to Staff Response to Comments 23, 38, and 39 with more information pertaining to this issue.

Comment 54 – Traci Roberts, Monterey County Farm Bureau

Due to the long time lag in the development of this TMDL, much of what you may have observed in the watersheds has already changed. In the intervening years since this TMDL was begun, there has been a significant amount of communication between cattlemen and leafy green vegetable farmers. As the leafy greens industry developed the Leafy Greens Marketing Agreement (LGMA) it became clear that neighboring landowners or tenant and leasee would now ensure that cattle, goats, sheep, etc. are not in proximity to the farming ground. Since many cattle operators are also engaged in farming, there is a mutual, heightened awareness and care taken to ensure that fecal matter from grazing cattle upstream of farming is not conveyed into the downstream farming area. The way the ranching and farming community has met the challenge of increasing protection of food safety has also meant greater protections

Staff Response to Comment 54

Staff recognizes that it could be possible that proactive efforts by public entities, landowners, and cattlemen have recently improved environmental performance with respect to pathogen loading to surface waters of the state. The Water Board and Staff recognize that voluntary pollution control measures are vitally important with regard to managing water pollution in California.

However, please note that in accordance with State nonpoint source (NPS) pollution policy, sources of NPS pollution must be regulated. The State NPS policy makes clear there is no longer an option to avoid some degree of regulatory oversight pertaining to quality of the waters of the State. As such, Water Board staff are required to be in a position to verify land management efforts pertaining to water quality, and to evaluate water quality response. It should be noted that voluntary efforts, and the presence of a degree of regulatory oversight are not divergent goals. Please refer to Staff Responses to Comments 4 and 17 for more information on this topic.

Comment 55 – Steve Shimek, Monterey Coastkeeper

We oppose removal of the shellfish harvesting beneficial use for the Salinas River Lagoon (north), Old Salinas River, and Tembladero Slough. Our opposition is based on the simple fact that recreational shellfish harvesting is VERY COMMON in Moss Landing Harbor and Elkhorn Slough, the tidal embayment these waters drain into.
The removal of the shellfish harvesting beneficial use will dramatically lower the standard (reduce water quality protection) for these impaired waters. We are concerned by this move to lower water quality standards at a place where the beneficial use is so obviously needed to protect public health and safety. We fear that this attempt to lower standards is driven by stakeholder groups reluctant to comply with water quality regulations.

The arguments used to support the removal of the beneficial use are fundamentally flawed, based on inaccurate information, fly in the face of logic, and must be rejected.

We will address the following points:
1. Shellfishing does not occur.
2. Shellfishing may occur but not in the waterbodies listed
3. The science of pathogen pollution
4. Changes conditions and Salinas River continuous flow.

1) As noted above and below, shellfishing occurs literally every minus tide in Elkhorn Slough and Moss Landing Harbor.

These pictures show 5 different people digging for clams (Washington, Pismo, and Geoduck(?)) on one date, at one location, within 25 yards of one another. Clamming is popular in Moss Landing Harbor and Elkhorn Slough.

Although anecdotal, it is interesting to note that the road on the south side of the harbor – across from the confluence of the Old Salinas River Channel and Moro Cojo Sloughs -- is named "Clam Way". Clamming does occur – frequently – in Moss Landing Harbor.

Although I would have to look at the date, the RWQCB staff held a meeting approximately two years ago on this same issue. At that meeting I stated that clamming occurred in the Harbor.

2) The assertion that shellfishing does NOT occur appears to be based on the notion that water on one side of the Harbor and Elkhorn Slough is somehow different from water on the other side. Clamming has historically occurred on both banks of Elkhorn Slough. It is fundamentally incorrect that water is
somehow different on one side of the Slough from the other. Elkhorn Slough is an embayment fed by a variety of water sources including those listed.
3) As noted in the peer review, pathogens are attached to sediment and these sediments are moving freely throughout the Harbor and Elkhorn Slough; the clamming that occurs in the Slough is intimately associated with water from the listed waterbodies.
4) Changed conditions. The staff report refers to the flood control gates on the Old Salinas River Channel. With the Salinas River Project slated to be online this summer, there is expected to be continuous surface flow of the Salinas River all year long. Except in winter months when the Salinas River will flow directly through the sandbar and out to sea, there will be significant flow all year.

Staff Response to Comment 55

Staff has removed the Use Attainability Analysis from the proposed Basin Plan Amendment package. Therefore, staff will not be proposing de-designation of SHELL from the Salinas River Lagoon (North), the Old Salinas River, or Tembladero Slough for Board consideration. Staff proposes attainment of the REC-1 beneficial use in these water bodies.

At this time, we are not requiring work related to the SHELL standard in the proposed Implementation Plan. The State Water Resources Control Board (SWRCB) is conducting a project to re-assess the areas designated for the shellfish harvesting beneficial use. As a result of this project SWRCB may potentially separate out the commercial from the other components of the shellfish definition. The current definition is broad, encompassing recreational harvesting for consumption, harvesting for bait, and commercial aquaculture. The breadth of the definition reduces flexibility to apply the most appropriate water quality standards to each of these applications.

Consequently, waterbodies designated with SHELL beneficial use in Project Area will be addressed in a separate SHELL TMDL and/or standards action pending the outcome of the work of the statewide task force involving the Ocean Planning Unit of the State Water Board, the California Department of Public Health, the USEPA, and the coastal Regional Water Boards whom are involved in re-assessing the SHELL standard.

Comment 56 – Robert M. Swanson, Jim Bardin Ranch

It is an ungrounded assumption to point to domestic livestock in the tributaries on ranches of northern Monterey County as the source of total maximum daily loads for fecal coliform at the mouth of the Bay. The tributaries listed by the document have historically run through livestock grazing acreages which have been a vital part of the Monterey County economy, even prior to California statehood.

Staff Response to Comment 56

With regard to source characterization of fecal coliform loads in the Project Area, please refer to Staff Response to Comment 30, 44, and 45 for information pertaining to your comment. Also, please refer to the Project Report, Section 4, Source Analysis.

With regard to economic concerns, please refer to Staff Response to Comments 8, 13, and 32.

Comment 57 – Robert M. Swanson, Jim Bardin Ranch

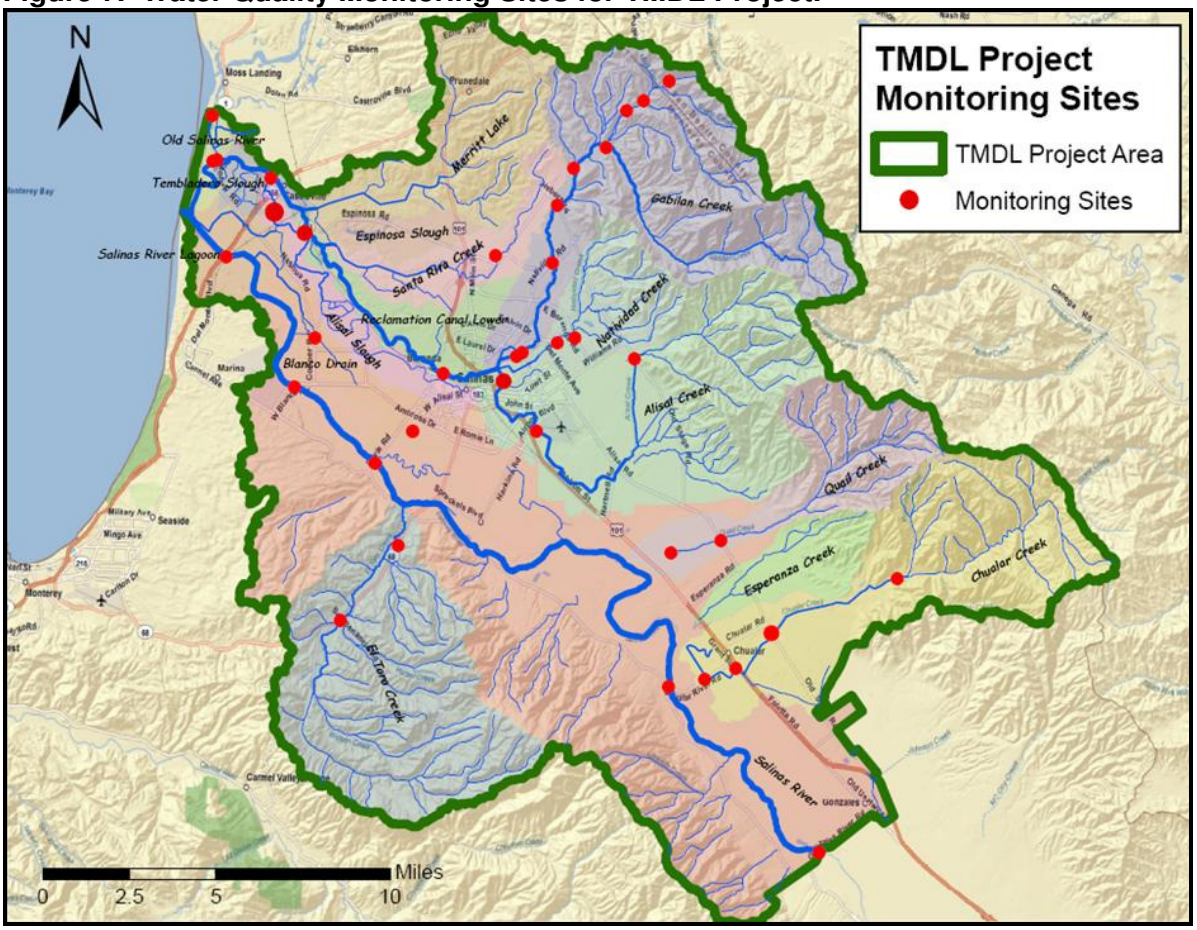
Proposed methodologies are questionable. It seems reasonable to first identify the problem--if in fact one exists---then proceed to identify sources of pollution! as it relates to land and water uses. Testing should begin at the mouth of waterways flowing into the Bay. It would be logical to then proceed upstream through the valley floor where industrial run-off, irrigated agricultural run-off, rural residential run-off, hobby and ranchette farm run-off, illegal dumping, human fecal deposition, densely populated urban areas, city sewer systems, and point source pollution from paved roads and city streets. My particular ranch waterways are dry on average ten months of the year. Drainage to the valley floor is unlikely except during heavy rain events.

Staff Response to Comment 57

With regard to the validity of the methodologies used, please refer to Staff Response to Comments 20 and 24. With regard to intermittent or ephemeral stream flows, please refer to Staff Response to Comment 9.

With regard to the comment about the extent of water quality testing, Staff concur that the spatial extent of water quality monitoring data should not be limited to impaired coastal confluence receiving water bodies, but (to the extent practical) should also include upstream reaches, and lower order streams, to delineate the scope and extent of the impairments. Please note that this TMDL project did include water quality monitoring data having significant spatial representation. Table 3-1 in the Project Report documents the spatial extent of water quality monitoring sites used in this TMDL Project. For ease of reference, the spatial locations of water quality monitoring sites are reproduced in Figure 7, below:

Figure 7. Water Quality Monitoring Sites for TMDL Project.



With regard to the comment about intermittent or ephemeral flows in creeks, please refer to Staff Response to Comments 1, 6, and 9.

Comment 58 – Robert M. Swanson, Jim Bardin Ranch

Conclusions of the study are not justified with appropriate and accurate evidence. For example, the numbers for various game populations are incongruent with my own ,as developed through habitat work with the Department of Fish and Game. Additionally, the domestic livestock count is not aligned with a methodology that is apparent nor reasonable.

Staff Response to Comment 58

Wildlife density estimates used in the Project Report came from Dept. of Fish and Game reporting, other public agencies, or credible scientific literature. Please refer to Staff Response to Comment 29 for further information pertaining to this comment.

Also, as documented in the Project Report and as noted in Staff Response to Comment 29, Staff used an USEPA-recommended method for estimating livestock numbers in the Project Area. This method is commonly used in pathogen TMDL development (for example, Mississippi Dept. of Environmental Quality, 2000; Oklahoma Dept. of Environmental Quality, 2006; Montana Dept. of Environmental Quality, 2009). The method is also used by academic researchers involved in water quality studies (for example, Gibson, 2005). The method involves deriving estimated average stocking density (livestock/acre) using County livestock numbers available from the USDA National Agricultural Statistics Service (NASS), in conjunction with land use data. NASS provides census inventories of livestock and farm animals on a county-wide basis. For the sake of additional clarity and for ease of reference, Staff provides a direct transcription of the USEPA-recommended method from USEPA (2001).

USEPA Pathogen TMDL Guidance:
Estimation Method for Number of Grazing Cows in a Watershed

Laurel River watershed contains areas in Gunston and Putnam counties. A major potential source of bacteria loading within the watershed is grazing livestock, primarily cattle. Data from the 1997 USDA Census of Agriculture provided numbers of livestock in each county covering portions of the watersheds, as well as total pastureland within each county. The livestock counts and pasture areas were used to determine livestock densities (e.g., number of cows per acre of pastureland) for each county, assuming livestock are evenly distributed over pasture area in the county.

The area of pastureland in each subwatershed and within each county was determined using GIS data layers. The pasture area of the subwatershed within each county and the livestock density for the counties were used to calculate the livestock counts within the portion of the subwatershed intersecting that county. That is to say, each county has a unique livestock density that was applied to the portion of the subwatershed within that county. The county/subwatershed livestock estimates were then summed to determine livestock counts for the entire subwatershed. The following example presents the calculation of beef cattle grazing in the West Fork 1 subwatershed of the Laurel River watershed. The county densities for beef cattle are

$$\text{Gunston County density} \cdot \frac{2{,}850 \text{ beef cows}}{16{,}485 \text{ acres pastureland}} \cdot 0.17 \frac{\text{beef cows}}{\text{acre of pastureland}}$$

$$\text{Putnam County density} \cdot \frac{6{,}376 \text{ beef cows}}{19{,}811 \text{ acres pastureland}} \cdot 0.32 \frac{\text{beef cows}}{\text{acre of pastureland}}$$

The West Laurel 1 subwatershed of the Laurel River watershed has 37 acres of pastureland in Gunston County and 172 acres of pastureland in Putnam County. Therefore, the total number of beef cows in the West Laurel 1 subwatershed is

$$\left(37 \text{ acres} \times 0.17 \frac{\text{cows}}{\text{acre}}\right) \cdot \left(172 \text{ acres} \times 0.32 \frac{\text{cow}}{\text{acre}}\right) \cdot 61 \text{ beef cows}$$

From: USEPA (2001), Protocol for Developing Pathogen TMDLs (EPA 841-R-00-002)

Comment 59 – Robert M. Swanson, Jim Bardin Ranch

There exist respected and knowledgeable voices in Monterey County and the Salinas Valley. The Monterey County Cattlemen'women Association, the California Women for Agriculture, and the Monterey County Farm Bureau, have the expertise of their membership. At your June 2007 and your August 2009 meetings to provide the scoping of the TMDL, the Monterey County Cattlemen's Association was not even recognized as present. Various business leaders, farmers and ranchers are available with their own data and experience. Livestock producers have been for generations and continue to be responsible stewards of their family ranches.

I'm asking your board to reconsider this resolution. Obtain accurate information from producers of the area. Restudy TMDL and sources using appropriate scientific methods. Resubmit recommendations to all landowners and others affected. Before extraordinary harm to the livestock industry is affected, ordinary measures need to be implemented. Thank you for your thoughtful attention to this matter.

Staff Response to Comment 59

Staff acknowledges an unintentional oversight in not documenting the participation of individuals and groups representing cattle interests in the draft Final Project Report. This oversight has been rectified. Please see Staff Response to Comment 4.

With regard to the validity of the methodologies used, please refer to Staff Response to Comments 20 and 24.

Staff concur that it is important to work with stakeholders and responsible parties during TMDL development and implementation. Staff concur that it is essential to work with cattlemen, and to leverage their knowledge, with regard to implementation solutions and to achieve water quality results. Please see Staff Response to Comments 20, 21, and 39 for more information pertaining to this comment.

Also, please note the Water Board is required under State policy to regulate nonpoint sources of pollution (please see Staff Response to Comment 4 and 17). However, this does not mean that regulatory oversight, and independent voluntary proactive practices which improve environmental performance are divergent goals. Proactive and voluntary trackable land and animal management strategies implemented (where appropriate) that will reduce pathogen loading can be used to demonstrate compliance with the proposed Domestic Animal Waste Prohibition and the State's NPS policy (please see Staff Response to Comment 1).

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