Public Hearing (5/18/11)
ASBS Special Protections
Deadline: 5/20/11 by 12 noon

MONTEREY COUNTY

RESOURCE MANAGEMENT AGENCY

DEPARTMENT OF PUBLIC WORKS
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May 20, 2011

VIA ELECTRONIC MAIL (commentletters@waterboards.ca.gov) AND U.S. MAIL

JEANINE TOWNSEND, CLERK TO THE BOARD
STATE WATER RESOURCES CONTROL BOARD
1001 I STREET, 24TH FLOOR
SACRAMENTO, CA 95814

SUBJECT: GENERAL EXCEPTION TO THE CALIFORNIA OCEAN PLAN WASTE DISCHARGE PROHIBITION FOR SELECTED DISCHARGES INTO AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE, INCLUDING SPECIAL PROTECTIONS FOR BENEFICIAL USES AND THE ASSOCIATED PROGRAM ENVIRONMENTAL IMPACT REPORT

Dear Members of the State Water Resources Control Board:

Thank you for the opportunity to review and comment on the Draft Program Environmental Impact Report (PEIR) and the Special Protections. The County of Monterey appreciates the enormous effort that has been invested in developing the current program. We look forward to continuing to work with the State Water Board to develop an effective and efficient program that will protect the California coastline for many years to come.

The County of Monterey has been collaborating with our neighboring communities, discussing how best to accomplish protection of the Areas of Special Biological Significance (ASBS) in a fiscally responsible way that has the support of our residents. We are fully supportive of effective measures that protect the unique characteristics of each ASBS, and we support the comments presented by our Central Coast neighbors.

In lieu of reiterating many of the comments that have already been successfully presented by other Central Coast communities, we will limit our comments on ASBS issues to those that we feel are most important to the protection of the health of the ASBS adjacent to our jurisdiction. The attached comments contain our primary concerns with the Special Protections program as it is presented in the Draft PEIR.

Comments on the ASBS Draft PEIR and Special Protections

The County looks forward to our continued collaboration with State Water Board staff on this important and very unique program. Should you have any questions regarding these comments, please contact Thomas Harty at (831) 759-6630.

Sincerely,

YAZDAN T. EMRANI, M.S., P.E.
DIRECTOR OF PUBLIC WORKS

By
Thomas R. Harty, P.E.
Stormwater Program Manager

Enclosures: Attachment 1: County of Monterey - Comments on the Special Protections and General Exception to the California Ocean Plan Waste Discharge Prohibition of Selected Discharges into Areas of Special Biological Significance and Draft Program EIR, May 20, 2011

cc: City of Pacific Grove, Sarah Hardgrave
City of Monterey, Tom Reeves, Tricia Wotan
Carmel-By-The-Sea, Bob Jaques
Pebble Beach Company, Thomas Quattlebaum
Hopkins Marine Station, Chris Patton
Monterey Bay Aquarium, Roger Phillips

Attachment 1: County of Monterey - Comments on the Special Protections and General Exception to the California Ocean Plan Waste Discharge Prohibition of Selected Discharges into Areas of Special Biological Significance and Draft Program EIR, May 20, 2011

1. **The Expense of the Program** in the context of the studies completed to date

The County of Monterey (County) questions whether the expense of operating and maintaining the program is justified in light of the fact that little evidence points to a degraded condition in the ASBS[1]. Funding opportunities for managing the County's stormwater program are limited due to the restrictions imposed by recent Court decisions on stormwater programs and the Proposition 218 process. This process itself is expensive and there is little guarantee that voters will approve additional fees that do not impact their properties directly. Funding for the ASBS program may come at the expense of other equally deserving components of the stormwater program until new sources of funding can be secured. The County is committed to protecting the ASBS adjacent to its jurisdiction while attempting to attain the highest return on every dollar of its investment in the stormwater program.

The Monterey Peninsula is home to two preeminent research facilities on the West Coast, the Monterey Bay Aquarium and the Hopkins Marine Station. We understand from their staff that the monitoring programs described in the Special Protections may not provide definitive results that confirm that stormwater is indeed impairing the beneficial uses of the ASBS. Should the monitoring program provide inconclusive results, it would be viewed as ineffective by the County. The County will support a monitoring program that provides an unambiguous link between impairments that may be observed and the wastes that cause it.

Several comments were made throughout the May 18 public hearing that the Southern California Coastal Water Quality Research Project (SCCWRP) has found that the ASBS tested in Southern California are consistently protective of natural water quality following storm events. The 2010 Annual Report[1] states that "additional information on the magnitude and duration of anthropogenic contributions is crucial before state regulators or regulated ASBS managers can rank or prioritize discharges for remediation." We ask that this information be collected and analyzed before adopting the Special Protections to avoid creating a program that is unclear in its scope, inefficient in its use of available funding, and ultimately ineffective at protecting the ASBS.

2. **Stormwater and Waste**

The County questions how stormwater itself has come to be viewed as waste. We reference a 2008 UC Davis School of Law Environmental Law and Policy Journal entitled "When Water Becomes Waste: A Practical Approach to Regulating Stormwater Discharges"[2] that discusses the distinction between stormwater and the wastes or pollutants that it carries. The County maintains that it is the waste within stormwater that adversely affect ASBS, not stormwater per se, and that the waste should be the focus of the Special Protections, not preventing stormwater from entering ASBS. Categorically preventing stormwater from entering the ASBS is an inefficient method of preventing wastes from entering the ASBS that may result in treatment facilities that are grossly oversized.

3. Pollutant Source Reduction

The vast majority of harmful wastes that enter the ASBS are generated well inland of the coastline. As an example, runoff from most of California's Central Valley ultimately flows to the ocean through San Francisco Bay. Because ocean wastes are generated throughout the entire State and not only in the coastal communities, the County questions whether more equitable ways of distributing the cost of the ASBS program can be developed that pass these costs onto all those who generate the pollutants. As designed in the current Special Protections, the bulk of the costs of maintaining the ASBS program will fall onto the shoulders of the coastal communities who happen to own the final drainage pipes that flow into ASBS. In the SCCWRP report, copper and zinc were identified as having elevated concentrations in stormwater. Zinc is used in automobile tires, and copper in brake pads. There may be ways that a small tax could be imposed on the sources of these pollutants to discourage their continued use and encourage the development of alternative products that generate fewer pollutants. The recent regulation requiring the reduction of copper in brake pad material is an excellent example of pollution source reduction. If a method to generate income from the sources of these pollutants could be established, some of the revenues generated could be used to fund the ASBS and other stormwater pollution programs. Eliminating these pollutants will benefit not only the ASBS but all surface waters of the State.

4. Natural Water Quality

At the public hearing on May 18, several of the speakers noted that a working definition of natural water quality had not been developed by the Natural Water Quality Committee. Because there is no target for compliance, it will be impossible for dischargers to know how to plan the physical improvements that will be required to meet the standard. Until a workable definition has been established, any work performed by the dischargers would be at risk of being inappropriate or inadequate. We request that this definition be established in order to provide more clarity on the entire Special Protections program. Until this has been clearly defined, dischargers have no compliance standard to work toward.

5. Compliance Dates

The County requests that the schedules for compliance be reassessed to provide a more realistic schedule for the milestones proposed in the Special Protections. Additional funding sources need to be researched and secured, project design parameters need to be determined, and facilities need to be designed, approved and put out to bid before construction can begin. Additional monitoring may also be needed to determine the appropriate standards that the discharger needs to meet. Doubling the time frames for each component would provide a realistic and attainable schedule, such that all improvements be completed and installed within 8 years of adoption of the ASBS Order.

6. Alternative Program

Members of the Central Coast group of dischargers have worked together to develop a conceptual program as an alternative to the program that is outlined in the Special Protections.

This alternative is described in greater detail in the comments of other municipalities (Pacific Grove in particular), but the major components of the program include:

1. having an impartial panel complete additional monitoring and analysis of each ASBS to develop background conditions at various locations throughout the ASBS to identify and quantify variations that may occur within its boundaries;
2. if statistically significant degradation is identified, its location(s) would be mapped,
3. identify the specific pollutant(s) causing the degradation and identify storm drains that may be transporting them into the ASBS; and
4. if degradation is determined to be caused by stormwater discharges, the discharger shall begin effective mitigation measures and create a sampling and monitoring program to track the progress made toward its removal.

We believe that a logical approach similar to this would be effective at isolating the sources of waste that enter the ASBS without creating an extensive program designed to monitor every waste and stormwater discharge regardless of individual site conditions. The Special Protections should be designed to identify the unique and highest priority beneficial uses of each ASBS and effective measures that can be taken to protect them. Protecting all ASBS from all wastes is a large undertaking that neglects the features that make each ASBS unique. If a particular pollutant is never detected at an ASBS, we question why testing for it should be required in perpetuity.

The County has offered these comments in the context of improving the program that is ultimately approved by your Board. The County looks forward to working with State Board staff to develop an efficient and effective program that will meet the needs of both the regulators and the dischargers who have applied for the Exception. Our desire is to be able to use our available funds wisely, to target specific problems that threaten the health of the ASBS, and to be able to maintain its uniqueness for future generations to enjoy. We appreciate the opportunity to comment on this program and hope that these comments will help to shape the program in a way that takes advantage of its potential to preserve the most unique areas of one of the great resources of the State.

References

1. Southern California Coastal Water research Project (SCCWRP) 2010 Annual Report, "Assessing Water Quality Conditions in Southern California's Areas of Special Biological Significance" by Kenneth Schiff, Brenda Luk, Dominic Gregorio and Steve Gruber, page 251.
2. Environs Environmental Law and Policy Journal, University of California, Davis, School of Law, "When Water Becomes Waste: A Call for a Practical Approach to Regulating Stormwater Discharges" by Paul N. Singarella and Kelly E. Richardson, Volume 31, Number 2, Spring 2008, page 123.

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Assessing water quality conditions in southern California's areas of special biological significance

Kenneth Schiff, Brenda Luk, Dominic Gregorio[1] and Steve Gruber[2]

Abstract

Over 280 km of shoreline have been designated as marine water quality protected areas, termed Areas of Special Biological Significance (ASBS), in southern California, USA. While the standard for water quality protection in an ASBS is "natural water quality", there are at least 271 documented coastal discharges that potentially threaten this important ecological resource. The goal of this study was to assess the water quality status of ASBS by answering two questions: 1) What is the range of natural water quality near reference drainage locations? and 2) How does water quality near ASBS discharges compare to the natural water quality near reference drainage locations? The sample design focused exclusively on receiving water (not effluents) and wet weather, which are the locations and times where natural and anthropogenic contributions can mix making pollutants difficult to identify and control. Sixteen locations encompassing 35 site-events were sampled immediately prior to (<48 hours), then immediately following (<24 hours) storm events ranging from 0.1 to 9.8 cm rainfall. Concentrations of total suspended solids (TSS), nutrients (ammonia, nitrate, nitrite, total nitrogen, total phosphorus), total and dissolved trace metals (arsenic, cadmium, chromium, copper, nickel, lead, silver, and zinc), and polycyclic aromatic hydrocarbons (PAH) from post-storm samples were similar at reference drainage and ASBS discharge sites. The average concentration difference between post-storm geometric mean concentrations at reference drainage vs. ASBS discharge sites across all parameters (except chlorinated hydrocarbons) was 3%. Concentrations of chlorinated hydrocarbons were almost entirely nondetectable and no post-storm sample exhibited significant toxicity to the purple sea urchin *Strongylocentrotus purpuratus*. In addition, there was no consistent increase from pre- to post-storm concentrations at either reference drainage or ASBS discharge locations. Most post-storm concentrations did not correlate well with storm parameters (i.e., rainfall quantity, antecedent dry period) or stormwater tracers (i.e., salinity, dissolved organic carbon), decreasing the utility of these tools for predicting impacts. A reference-based threshold was used as a proxy for distinguishing differences from natural water quality. The reference-based threshold included a two-step process that was used to determine if water quality near ASBS discharges differed from natural water quality: 1) was the individual chemical post-storm discharge concentration greater than the 85th percentile of the reference drainage site post-storm concentrations; and then 2) was the individual post-storm discharge concentration greater than the pre-storm concentration for the same storm event. While the concentrations near ASBS discharges were on average similar to reference site concentrations, there were some individual ASBS discharge sites that were greater than the reference site based threshold. Cumulatively across all ASBS, the constituents that were most frequently greater than the reference site-based threshold were nutrients and general constituents, followed by dissolved or total trace metals.

Introduction

Coastal municipalities and other agencies subjected to nearshore water quality regulation face a

[1] *State Water Resources Control Board, Sacramento, CA*
[2] *Weston Solutions, Carlsbad, CA*

difficult task. The public demands equal access to the shoreline and, at the same time, mandates protection of water quality to maintain the integrity of marine ecosystems. Public access, especially in highly populated urban centers is almost always to the detriment of coastal marine life. This is routinely observed in terms of habitat loss (Boesch *et al.* 2001), harvesting of seafood and other marine resources (Cohen 1997), and the introduction of pollutants (O'Connor 1998, Schiff *et al.* 2000). Almost by definition, natural water quality is in the absence of coastal development and public access (Halpern *et al.* 2008).

Southern California epitomizes this conundrum. Approximately 17.5 million people live within an hour's automobile drive to the beach and is home to the sprawling urban centers of Los Angeles and San Diego, two of the nation's eight largest cities (US Census Bureau 2009). Over 1.5 billion gallons of treated wastewater are discharged to the ocean every day (Lyon and Stein 2009). In a typical rainy season, over double this volume is discharged via surface runoff (Ackerman and Schiff 2003). Surface runoff following storm events will carry the accumulated anthropogenic pollutants from urban activities such as residential application of fertilizers and pesticides (Schiff and Sutula 2004), trace metals from brake and tire wear (Davis *et al* 2001), and atmospheric fallout from mobile and non-mobile sources (Sabin *et al* 2006). Exacerbating these potential threats to the environment, sanitary and stormwater systems are separate in southern California. Therefore, stormwater runoff receives virtually no treatment prior to entering the ocean (Lyon and Stein 2009).

The dilemma between water quality protection and urbanization reaches a climax in southern California at areas of special biological significance (ASBS). The ASBS are marine water quality protected areas whose standard is "no discharge of waste" and maintenance of "natural water quality" (SWRCB 2005). More than 280 km of shoreline in southern California is designated as ASBS. While state regulatory agencies have been effective at minimizing point source discharges into ASBS, there are at least 271 storm drain discharges. These storm drains can discharge urban runoff, but also natural runoff from undeveloped portions of their respective watersheds. Nutrients, trace metals, and some organic constituents found in urban runoff are also natural components of the ecosystem (Yoon and Stein 2006). The dichotomy between natural versus anthropogenic inputs ultimately clashes because the state regulatory structure does not numerically define natural water quality.

In order to address the dilemma between water quality protected areas and development in the coastal zone, the goal of this study was to assess the water quality in southern California ASBS. Specifically, the study was designed to answer two questions: 1) what is the range of natural water quality near reference drainage locations? and 2) how does water quality near ASBS discharges compare to the natural water quality at reference drainage locations? These two questions address the primary lack of information faced by both ASBS dischargers and regulators that stymies management actions, if they are necessary. The first question aims to quantify what is meant by "natural water quality" by visiting locations presumptively free of anthropogenic contributions. The second question compares the natural water quality levels derived from the first question to water quality near ASBS discharges to determine the level of existing water quality protection.

METHODS

There are 34 ASBS in California, 14 of which occur in southern California (Figure 1). The majority (78%) of ASBS shoreline in southern California surrounds the offshore Channel Islands, but a significant fraction (35 km) occur along the six mainland ASBS.

This study had two primary design elements. The first design element was a focus on receiving water. All samples were collected in receiving waters near reference drainage or ASBS discharges; no effluent discharge samples were collected as part of this study. The second design element was to focus on wet weather. Dry weather was not addressed in this study.

Sampling

Sixteen sites were selected for wet weather sampling in this study (Table 1). Six of the sampling locations were reference drainage sites (representing natural water quality) and 10 were ASBS discharge sites. Reference site selection followed five criteria: 1) the site must be an open beach with breaking waves (i.e., no embayments); 2) the beach must have drainage from a watershed that produces flowing surface waters during storm events; 3) the reference watershed should be similar in size to the watersheds that discharge to ASBS; 4) the watershed must be

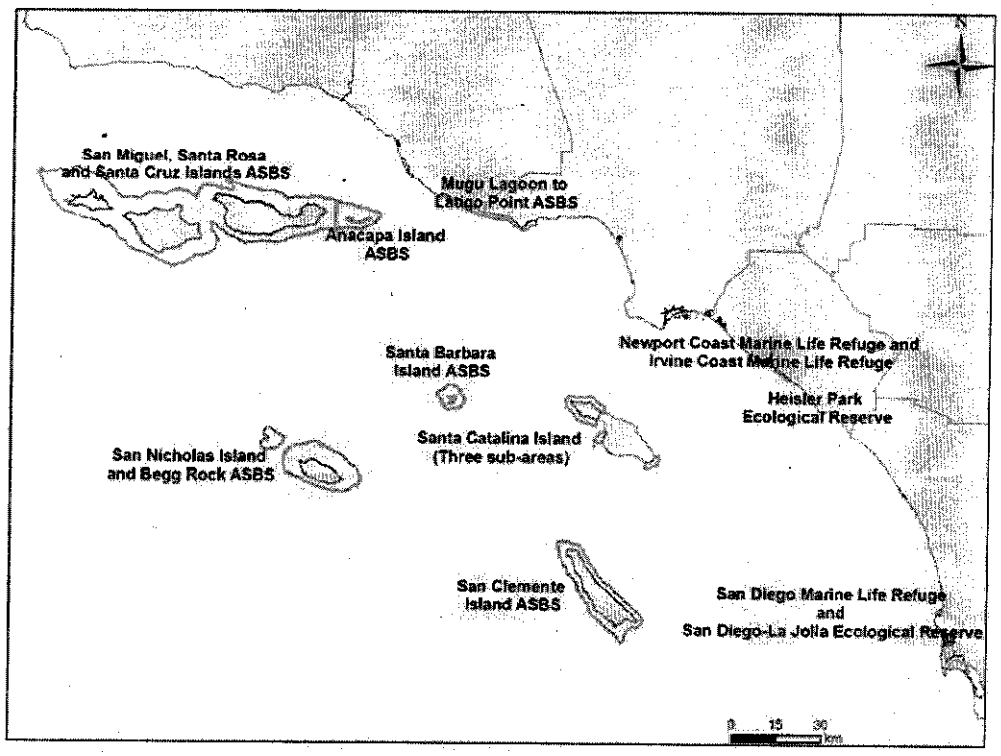

Figure 1. Map of Areas of Special Biological Significance (ASBS) in Southern California.

comprised of primarily (>90%) open space; and 5) neither the shoreline nor any segment within the contributing watershed can be on the State's 2006 list of impaired waterbodies (e.g., §303d list). All but one of the reference drainage sites was located within an ASBS. At least one discharge site was selected in each southern California ASBS. Each site was selected based on three criteria: 1) greater than 1m diameter outfall; 2) the discharge catchment contained amongst the most land use development in that ASBS; and 3) local knowledge of potential impact to receiving water.

Table 1. Reference drainage and ASBS discharge sites, and their respective sampling effort, collected immediately prior to and immediately following storm events in southern California.

ASBS Number	ASBS Name	SiteName	Latitude	Longitude	Reference or Discharge	Number Pre-Storm Samples	Number Post-Storm Samples
ASBS 21	San Nicolas Island	Barge Landing	33.21967	-119.44728	Discharge	2	2
ASBS 21	San Nicolas Island	Cissy Cove	33.21448	-119.48459	Discharge	1	1
ASBS 21	San Nicolas Island	Reference Site	37.26600	-119.49828	Reference	2	2
ASBS 21	San Nicolas Island	Reverse Osmosis site	33.24281	-119.44433	Discharge	1	1
ASBS 24	Malibu	Solstice Beach	34.03255	-118.74216	Reference	1	1
ASBS 24	Malibu	Arroyo Sequit	34.04441	-118.93393	Reference	1	1
ASBS 24	Malibu	Broad Beach	34.03339	-118.85090	Discharge	3	3
ASBS 24	Malibu	Nicholas Canyon	34.04172	-118.91574	Reference	3	3
ASBS 24	Malibu	Westward Beach	34.01030	-118.81721	Discharge	2	2
ASBS 25	Santa Catalina Island	Two Harbors Pier	33.44194	-118.49821	Discharge	1	2
-	-	Italian gardens	33.41011	-118.38178	Reference	1	2
ASBS 29	San Diego	Avienda de la Playa	32.85486	-117.25899	Discharge	3	3
ASBS 31	La Jolla	San Diego Marine Life Refuge	32.86632	-117.25469	Discharge	1	3
ASBS 32	NewportCoast/CrystalCove	NewportCoast/CrystalCove	33.58867	-117.86759	Discharge	3	3
ASBS 33	Heisler Park	El Moro Canyon	33.56033	-117.82205	Reference	3	3
ASBS 33	Heisler Park	Heisler Park	33.54301	-117.78958	Discharge	3	3
					Discharge	20	23
					Reference	11	12
					Total	31	35

A total of 35 site-events were collected (Table 1). Twelve site-events were collected near reference drainage locations and another 23 site-events were collected near ASBS discharge locations. Up to three storm events were monitored per site. A storm was defined as any wet weather event that resulted in surface flow across the beach into the ocean receiving water. Rainfall during sampled events ranged from 0.1 to 9.8 cm. Pre-storm samples were collected prior to (<48 hour) rainfall, and post-storm samples were collected immediately following (<24 hour) rainfall, with most post-storm samples collected less than 6 h after rainfall cessation. Eighty nine percent of all post-storm site-events also had a pre-storm sample collected. Samples were collected in the ocean at the initial mixing location in the receiving water. Both pre- and post-storm samples were collected by direct filling of pre-cleaned sample containers just below the water surface. With the exception of one ASBS (Catalina Island), all samples were collected from shore without the use of boats.

Laboratory Analyses

All water samples were analyzed for 93 parameters: 1) general constituents including total suspended solids (TSS), dissolved organic carbon (DOC), and salinity; 2) nutrients including nitrate (NO3-N), nitrite (NO2-N), ammonia (NH3-N), total nitrogen (TN), total phosphorus (TP), and ortho-phophate (PO4-P); 3) dissolved and total trace metals (arsenic, cadmium, chromium, copper, nickel, lead, silver, zinc); 3) chlorinated hydrocarbons including total PCB (sum of congeners 18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, 206) and total DDT (sum of *o,p'*- and *p,p'*-DDT, DDE, and DDD); 4) total polycyclic aromatic hydrocarbons (28 PAHs); and 5) short-term chronic toxicity. All sample analysis followed standard methods and/or EPA approved procedures (APHA 2006). Trace metals were prepared for analysis using ammonium pyrrolidine dithiocarbamate (APDC), a chelation method that concentrates trace metals and removes matrix interferences (US EPA 1996). Toxicity of the receiving water was evaluated by performing an egg fertilization test using the endemic purple sea urchin *S. purpuratus* (USEPA 1995).

The project focused on performance-based measures of quality assurance. In general, laboratory data quality was quite good: no laboratory blank samples were greater than the method detection limit; there was 96% success meeting data quality objectives (DQOs) for precision using laboratory duplicates; and there was 91% success meeting DQOs for accuracy using spiked samples. The lowest accuracy success rate was for cadmium (12 of 15 batches) and zinc (8 of 16 batches) where the requirement of 75-125% recovery from seawater was not met. This was due, in part, to the APDC chelation method that has lower affinities for extracting cadmium and zinc.

Data Analysis

Data analysis followed four steps. The first step was determining the validity of reference drainage site selection. This was achieved by examining the data for known anthropogenic contamination (i.e., chlorinated hydrocarbons such as DDTs and PCBs), testing for outlier samples in the reference drainage data set, and the presence of toxicity. The second data analysis step compared the average concentration of post-storm ambient concentrations at reference drainage sites to ASBS discharge sites. Differences between these concentrations were evaluated using a studentized T-test. The third data analysis step examined potential relationships among parameters looking for explanatory variables that derive differences both within reference drainage sites and between reference drainage and ASBS discharge sites. Rainfall quantity, antecedent dry period, TSS and DOC concentrations were correlated with all of the post-storm chemical concentrations and with the relative change in concentration between pre- and post-storm concentrations after log-transformaton for data normalization. For the final data analysis, a reference based threshold was used as a proxy for distinguishing differences from natural water quality. The reference based threshold included a two-step process: 1) was the individual chemical post-storm discharge concentration greater than the 85th percentile of the reference drainage site post-storm concentrations; and then 2) was the individual post-storm discharge concentration greater than the pre-storm concentration for the same storm event. For ASBS discharge sites that did not have a matching pre-storm concentration, the pre-storm concentration from the previous storm at that site for which data was available, was used.

Results

Post-storm reference drainage site concentrations were similar to post-storm ASBS discharge site concentrations (Figure 2). For 13 parameters (including

TSS, nutrients, total PAH and total trace metals), none were significantly different between reference drainage and discharge sites following storm events ($p < 0.05$). Of the minor differences between reference drainage and ASBS discharge site results, post-storm geometric mean concentrations were greater for nine of 13 constituents at reference drainage sites. No detectable concentrations of total DDT or total PCB were observed at reference drainage sites. However, detectable quantities of chlorinated hydrocarbons (*p,p'*-DDE), while extremely rare, did occur at certain ASBS discharge sites. The average difference between geometric mean concentrations at reference drainage vs. ASBS discharge sites across all parameters (except chlorinated hydrocarbons) was 3%; no parameter differed by more than a factor of 70%.

In general, there was no consistent increase or decrease in concentrations pre- to post-storm at reference drainage or ASBS discharge sites (Figure 3). Pre:Post-storm ratios were not significantly different between reference drainage and ASBS discharge sites for any of the trace metals. Nearly every trace metal, whether from reference drainage or ASBS discharge sites, encompassed unity within its interquartile distribution indicating that pre- and post-storm concentrations were similar. The only exception was copper that, despite having similar reference drainage and discharge site concentrations, had roughly 75% of their respective distributions greater than unity. This would indicate that receiving water concentrations of copper increased following storm events.

Most relationships of discharge post-storm concentrations with storm characteristics were poor (Table 2). Correlation coefficients with storm size ranged from -0.2 to 0.25 across all constituents, none of which were significant. Correlation coefficients with antecedent dry days were marginally better, ranging from -0.45 to 0.34 across all constituents; only salinity and total P were statistically significant. Other potential explanatory variables such as salinity, TSS, or DOC concentrations provided limited insight. Salinity was negatively correlated with most of the total trace metals; cadmium, chromium, and copper were statistically significant. In contrast, TSS was positively correlated with most of the total trace metals; arsenic, chromium, lead and nickel were statistically significant. Despite the statistically significant correlation for a subset of metals for both salinity and TSS, no correlation explained more than 45% of the variability in parameter concentrations observed in ASBS receiving waters. In fact, roughly one-third of the parameters had correlation coefficients less than 0.30.

Differences from reference water quality were relatively infrequent at ASBS discharge sites (Figure 4; Table 3). ASBS 25 (Northwest Santa Catalina Island) had the greatest proportion of analyses that were greater than reference site based thresholds

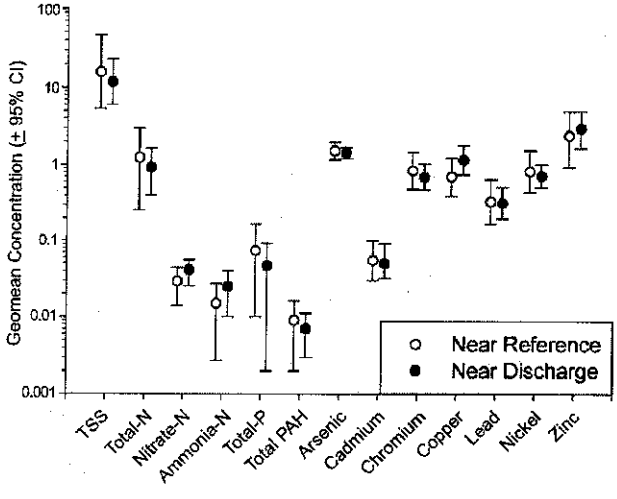

Figure 2. Comparison of geometric mean (± 95% confidence interval) concentrations in ambient near-shore receiving waters following storm events at reference drainage and ASBS discharge sites. Total suspended solids (TSS) and nutrients in mg/L; Total Polycyclic Aromatic Hydrocarbons (Total PAHs) and total trace metals in µg/L.

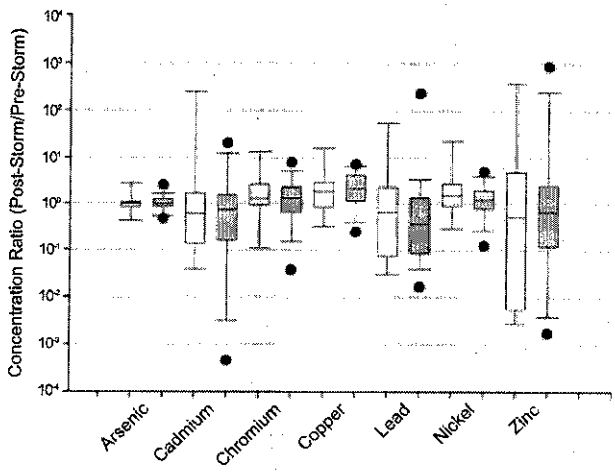

Figure 3. Distribution of post-storm relative to pre-storm trace metal concentrations in ambient near-coastal waters at reference drainage (in white) and ASBS discharge (in grey) sites. Box plots indicate the 5th, 25th, 50th, 75th, and 95th percentile of the data distribution.

Table 2. Correlation coefficients between storm characteristics (rainfall quantity, antecedent dry days) or conservative tracers (total suspended solids, salinity, dissolved organic carbon) and chemical parameters of interest. Bolded numbers are statistically significant at p <0.05.

	Rainfall	Ant Dry	Salinity	TSS	DOC
Salinity	0.20	**-0.43**			
TSS	0.19	0.23	0.02		
DOC	0.08	-0.11	**0.50**	0.05	
Ammonia-N	0.08	0.29	-0.34	-0.11	0.26
Nitrate-N	-0.05	0.05	0.00	-0.08	**0.41**
Total N	-0.20	0.22	-0.07	0.15	0.09
Total P	-0.07	**0.34**	0.03	0.07	-0.21
Arsenic	-0.04	-0.04	0.13	**0.46**	0.17
Cadmium	-0.01	-0.01	**-0.34**	-0.09	0.03
Chromium	0.25	0.25	**-0.34**	**0.67**	0.21
Copper	0.07	0.07	0.02	0.27	0.24
Lead	0.13	0.13	-0.06	**0.37**	0.15
Nickel	0.14	0.14	-0.19	**0.55**	0.32
Zinc	0.02	0.02	**-0.44**	0.31	-0.10
Total PAH	0.16	0.16	-0.03	**0.03**	0.11

(35% of all analyses). ASBS 29 (La Jolla) had the smallest proportion of analyses that were greater than reference site based thresholds (5% of all analyses). Cumulatively across all ASBS, 15% of all analyses were greater than reference site based thresholds. Nutrients and general constituents were greater than reference site based thresholds most frequently (24 and 23% of all analyses, respectively; Figure 5). For both total and dissolved metals, differences from natural water quality occurred in approximately 19% of all samples were greater than reference site based thresholds. Total PAH were greater than reference site based thresholds least frequently (2% of all analyses).

Significant toxicity was not observed during this study. Sea urchin fertilization in all post-storm samples ranged from 88 to 100% of laboratory control responses, indicating a lack of statistically significant effect in both the reference drainage and ASBS discharge samples. However, samples from ASBS 25, the site that differed most from natural water quality, had no toxicity data.

Discussion

Based on the data collected during this study, ASBS in southern California are consistently protective of natural water quality following storm events. On average, the range of post-storm pollutant concentrations in receiving waters sampled near ASBS discharge sites were not significantly different from post-storm concentrations at reference drainage sites, which included stormwater inputs free of (or minimally influenced by) anthropogenic sources. No conservative tracer could be used to track natural constituents such as salinity, TSS, or DOC, in large part because pollutant concentrations were so low. Furthermore, synthetic anthropogenic contaminants such as total DDT or total PCB were not detectable across the wide variety of reference drainage sample locations in ASBS, and were rarely detectable at discharge sites in ASBS. Moreover, no post-storm samples collected near ASBS discharges exhibited toxicity.

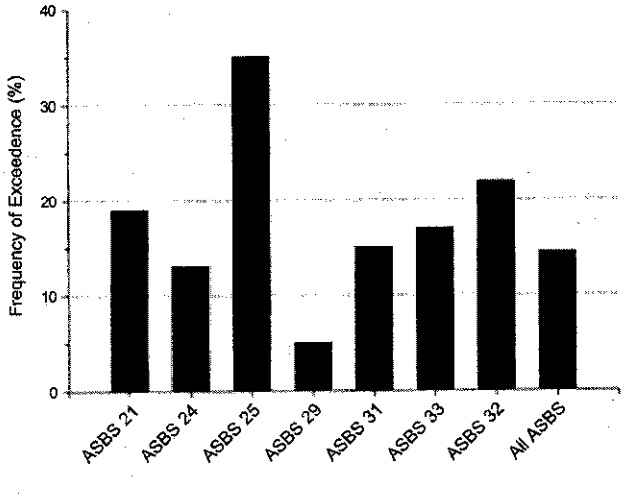

Figure 4. Frequency of reference site based thresholds exceedences for all parameters during all storm events at each Area of Special Biological Significance (ASBS) in southern California.

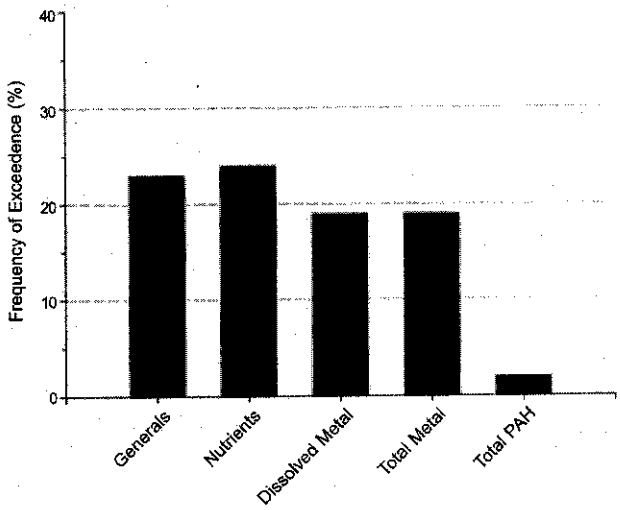

Figure 5. Frequency of reference site based thresholds exceedences by parameter group for all storm events and all Areas of Special Biological Significance (ASBS) in southern California.

Table 3. Natural water quality exceedence frequency near discharges into Areas of Special Biological Significance (ASBS) following storm events in southern California.

	Natural Water Quality		Discharge Site Comparison		
Parameter	85th Percentile of Reference Data	Units	Total No. Post-Storm Samples	Pct Samples > Reference 85th Percentile	Pct of Samples > Reference 85th Percentile and greater than Pre-Storm Concentration
Total Suspended Solids	16.5	mg/L	23	35	22
Dissolved Organic Carbon	0.80	mg/L	21	24	19
Ammonia-N	0.03	mg/L	23	30	26
Nitrate-N	0.05	mg/L	23	26	13
Nitrite-N	0.01	mg/L	23	0	0
Total Nitrogen	4.0	mg/L	21	10	5
Total Phosphorus	0.10	mg/L	23	9	9
Arsenic-Dissolved	1.48	ug/L	19	32	32
Arsenic-Total	1.9	ug/L	23	13	4
Cadmium-Dissolved	0.05	ug/L	19	21	16
Cadmium-Total	0.14	ug/L	23	26	17
Chromium-Dissolved	0.21	ug/L	19	5	5
Chromium-Total	1.6	ug/L	23	17	13
Copper-Dissolved	0.45	ug/L	19	47	42
Copper-Total	2.2	ug/L	23	26	26
Iron-Dissolved	1.7	ug/L	19	11	11
Iron-Total	813	ug/L	23	13	13
Lead-Dissolved	0.02	ug/L	19	26	21
Lead-Total	1.1	ug/L	23	13	17
Nickel-Dissolved	0.32	ug/L	19	32	26
Nickel-Total	1.5	ug/L	23	17	17
Silver-Dissolved	ND	ug/L	19	0	0
Silver-Total	0.0	ug/L	23	13	9
Zinc-Dissolved	2.86	ug/L	19	5	5
Zinc-Total	8.6	ug/L	23	30	30
TotalPAH	19.6	ug/L	23	9	9

Although ASBS on average were maintaining natural water quality, there were some individual ASBS sites that appeared to have anthropogenic contributions. ASBS 25 (Catalina Island) had an unusually large proportion of analyses that greater than reference site based thresholds. This is not wholly unexpected as this site is subject to pollutant inputs via stormwater runoff from a developed community as well as a vessel mooring field. ASBS 21 (San Nicolas Island), 32 (Newport Coast), and 33 (Heisler Park), all of which receive discharges from municipal and/or industrial (military) stormwater runoff, were the next three water quality protected areas to exceed reference site based thresholds. While no stormwater discharge information was collected just upstream of the ASBS during our storm events, other studies have identified pollutants such as nutrients and trace metals widespread in municipal (Tiefenthaler *et al.* 2008) and industrial (Lee *et al.* 2007) stormwater. Trace metals and nutrients were also two groups of constituents that had the greatest proportion of samples greater than the reference site based thresholds in this study.

The reference drainage sites in this study were used to as a proxy for establishing natural water quality thresholds. The algorithm selected for the natural water quality threshold, while not arbitrary, is not an exclusive approach to utilizing the reference drainage site information. In this case, the 85th percentile of the reference site distribution was selected as a primary threshold. Because of the similarities to the reference site data, approximately 15 percent of the ASBS discharge data distribution also exceeded this threshold. As a test of sensitivity, differing reference thresholds were used to assess the ASBS discharge site information. Regardless of whether the thresholds were empirically based (i.e., 95th percentile) or statistically based (i.e., 95th prediction interval), a concomitant decrease in ASBS discharge site difference from natural water quality followed (i.e., 5%). This once again emphasizes that, despite a few samples with high magnitude concentrations that exceeded reference site maxima, the reference and discharge data were similar in their distribution.

Turbulent mixing and advection associated with breaking waves likely plays a large role in reducing concentrations in coastal stormwater plumes. Mixing and advection were the primary forces associated with shoreline dilution of dye and bacteria near flowing storm drains in Santa Monica Bay (Clarke *et al* 2007). In these examples, dilution factors of 10^3 to 10^6 were observed at distances of 25 m from the discharge mixing zone during dry weather. While the increased flows from dry to wet weather could overwhelm nearshore mixing and advection, wave energy also increases during storm events. Similarly detailed studies at the shoreline during wet weather have not been conducted.

The data in this study represent some of the first near-shore seawater concentrations at reference drainage sites located on the Pacific coast of the United States that are influenced by stormwater inputs. The concentrations were generally low overall with many parameters very close to, or less than, method detection limits (i.e., DDTs, PCBs, PAHs). The trace metal concentrations measured in these nearshore waters were in the same range as concentrations measured from reference freshwater streams in the southern California coastal range (Yoon and Stein 2008). However, the trace metal concentrations measured in this study were greater than typical open ocean concentrations cited by the State of California as reference conditions (Klapow and Lewis 1979) suggesting that these open ocean concentrations are not representative of near-coastal conditions.

Despite this new source of information, many data gaps remain in regards to natural water quality and these data gaps limit our ability to definitively assess water quality in ASBS. The data gaps fall into five categories. First, the reference data set that was used to derive natural water quality is limited. While this study produced one of the most complete data sets to date on ambient seawater concentrations near reference drainages during wet weather, it was only comprised of 12 site-events. Undoubtedly, this is insufficient to capture the wide range of natural conditions associated with watershed size and composition, storm size and intensity, or receiving water dynamics associated with waves and currents. Without a good grasp of natural water quality following storm events, it will be uncertain whether those ASBS discharges that were similar to reference drainage conditions actually lacked measurable anthropogenic enhancements. The second data gap is associated with those ASBS discharges that were dissimilar from reference drainage sites. While it appeared clear, even from our limited reference data set, that some ASBS discharge sites contained anthropogenic contributions, the magnitude, duration, and ultimate source of anthropogenic contributions, the thresholds we evaluated are not currently regulatory compliance measures. Additional infor-

mation on the magnitude and duration of anthropogenic contributions is crucial before state regulators or regulated ASBS managers can rank or prioritize discharges for remediation. The third data gap addresses sources of anthropogenic inputs to ASBS discharges. Sites that appeared dissimilar from natural water quality may be attributable to non-anthropogenic site-specific causes (i.e., marine mammal defecation of nutrients). Alternatively, large unmonitored anthropogenic sources outside of the ASBS may be transported into the ASBS. This gap is best addressed through follow-on site-specific investigations. The fourth data gap addresses all of the non-sampled ASBS discharges. Only 10 ASBS discharges were targeted in this study and, while these may have been the largest and perceived greatest risk to the ASBS, they are only a small fraction of the 271 discharges to the southern California ASBS. The last data gap to evaluate for natural water quality is non-water quality threats. Risks posed by poaching, trampling, or invasive species are equally, or perhaps even more, threatening to the health of ASBS. To compliment this chemical and toxicity testing effort, the State of California and stakeholders are currently addressing this data gap by conducting intertidal and subtidal biological surveys of ASBS.

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When Water Becomes Waste: A Call for a Practical Approach to Regulating Stormwater Discharges

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INTRODUCTION

Stormwater management, particularly the reduction or elimination of adverse impacts on water quality from stormwater and non-point source runoff, is a significant challenge facing municipalities and other dischargers across the United States today.[1] Stormwater pollution occurs when precipitation picks up pollutants from widespread and diffuse sources before flowing into the ocean or other water bodies.[2] These sources include household chemicals, detergents, paints, motor oil, brake dust, pet wastes, fertilizers and pesticides.[3] Stormwater pollution is particularly difficult to control. Multiple, prevalent pollution sources contribute to the problem – many of which stem from common, generally accepted human activities, such as driving a car.[4] Additionally, the inherent inability to control the timing or extent of any rain event compounds the situation.

In a recent study, the Pew Oceans Commission claimed, "America's oceans are in crisis and the stakes could not be higher."[5] The article cited polluted runoff as the most harmful impact of development on marine and freshwater systems.[6] Shortly thereafter, California formed the Ocean Protection Council to coordinate and improve the protection and management of California's ocean and coastal resources.[7] Municipalities throughout the state also increased efforts to foster public awareness about stormwater pollution, underscoring the importance of stormwater management as a key environmental issue.[8] In

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[1] *See* Alexandra Dapolito Dunn & David W. Burchmore, *Regulating Municipal Separate Storm Sewer Systems*, 21 NAT. RESOURCES & ENV'T 3, 3 (2007) (describing challenges of regulating municipal separate storm sewers).

[2] *See, e.g.*, CALIFORNIA WATER BOARDS, STORM WATER POLLUTION AND THE SOLUTIONS, http://www.swrcb.ca.gov/fact_sheets/docs/stormwater_brochure.pdf (last visited Mar. 12, 2008) (defining stormwater pollution and encouraging public to alter their daily activities to reduce stormwater pollutant loads).

[3] *See, e.g., id.*

[4] *See, e.g., id.* (identifying cars as key source of constituent stormwater pollutants such as copper dust from brake pads, motor oil, and grit); Mike Lee, *Pollution Standard Set For Creek: Reduction of Metals Ordered by Regulators*, SAN DIEGO UNION-TRIB., June 14, 2007, at B1 (reporting difficulties of regulating stormwater pollutants at source and noting enormous expense of treating polluted stormwater).

[5] PEW OCEANS COMM'N, AMERICA'S LIVING OCEANS: CHARTING A COURSE OF SEA CHANGE 12 (2003), *available at* http://www.pewtrusts.org/our_work_ektid30009.aspx.

[6] *Id.*

[7] *See* California Ocean Protection Council, Proposed Funding Priorities for Fiscal Year 2007/2008, http://resources.ca.gov/copc/docs/FinalFundingPriorities2008_amended.pdf (last visited Mar. 12, 2008) (describing current priority issues affecting oceans abutting California).

[8] *See, e.g.*, City of San Diego, "Think Blue" Campaign, http://www.sandiego.gov/thinkblue (last visited Mar. 12, 2008) (raising awareness about stormwater pollution and informing public about how to minimize stormwater pollution).

addition, the Environmental Protection Agency ("EPA") designated stormwater as a national priority for the 2006-07 fiscal year and developed a corresponding regulatory strategy to address stormwater issues.[9]

As with other environmental issues, California was a bellwether of the ocean protection movement when it designated thirty-four Areas of Special Biological Significance ("ASBS") in the mid-1970s.[10] The purpose of the designations was to protect unique biological communities of certain coastal waters.[11] These areas currently are classified as a subset of State Water Quality Protection Areas under the Public Resources Code.[12] ASBS account for a significant portion of the California coastline – including highly developed municipalities such as La Jolla, Malibu, Laguna Beach and Monterey.[13]

ASBS stewardship is an important mission for the State Water Resources Control Board ("SWRCB" or "State Board"), the various Regional Water Boards, and all of the neighbors of these valuable coastal waters. As a result, many stormwater discharges are regulated through permitting programs. National Pollutant Discharge Elimination System ("NPDES") permits are issued under the federal Clean Water Act and Waste Discharge Requirements ("WDRs") are issued under California law, by the State or Regional Boards.[14] WDRs contain special conditions limiting both stormwater and non-stormwater discharge to receiving waters, including ASBS.[15] Additionally, the California Ocean Plan has regulated the discharge of "waste" to ASBS since 1972, and has prohibited such discharge since 1983.[16] This prohibition was not applied to stormwater runoff to ASBS until 2000 when the State regulated stormwater

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[9] Lauren Kabler, *EPA Steps Up Compliance Assistance and Enforcement at Construction Sites*, 21 NAT. RESOURCES & ENV'T 12, 13 (2007).

[10] D. E. GREGORIO, C. S. ANDERSON & S. AZIMI-GAYLON, STATUS REPORT: AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE: CALIFORNIA'S MARINE STATE WATER QUALITY PROTECTION AREAS 5 (2006).

[11] *See, e.g., id.* at 52-67 (describing unique qualities of 34 ASBS).

[12] CAL. PUB. RES. CODE § 36700(f) (2007) ("'Areas of special biological significance' are a subset of state water quality protection areas."); *see* STATE WATER RESOURCES CONTROL BD., CALIF. ENVTL. PROT. AGENCY, STATE WATER QUALITY PROTECTION AREAS: AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE: CALIFORNIA'S MARINE STATE WATER QUALITY PROTECTION (2003) (listing and providing legal descriptions of all California ASBS).

[13] *See* STATE WATER QUALITY PROTECTION AREAS *supra* note 12, at 5-7, 9.

[14] *See* 33 U.S.C. § 1342 (2006) (NPDES permitting program); CAL. WATER CODE § 13263 (2007) (waste discharge requirements).

[15] *See* CAL. WATER CODE § 13263 (waste discharge requirements).

[16] *See* STATE WATER RESOURCES CONTROL BD., WATER QUALITY CONTROL PLAN, OCEAN WATERS OF CALIFORNIA 6 (July 6, 1972), *available at* http://www.swrcb.ca.gov/tmdl/docs/303d_policydocs/408.pdf (controlling the discharge of waste into ASBS); WATER QUALITY CONTROL PLAN, OCEAN WATERS OF CALIFORNIA 9 (Nov. 17, 1983), *available at* http://www.swrcb.ca.gov/tmdl/docs/303d_policydocs/408.pdf ("'Waste' shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.").

discharge to an ASBS off the coast of Orange County.[17]

Since then, the State Board has endeavored to address runoff to other ASBS.[18] Controversy regarding the circumstances under which the prohibition against waste discharges is applicable to runoff has complicated the achievement of this objective.[19] Some stakeholders argue that the prohibition applies to runoff categorically, and that stormwater, at least when it contains detectable quantities of anthropogenic pollution, is *per se* waste.[20] Others have advanced a functional approach, focusing on whether the runoff poses a threat to the ASBS.[21] Runoff poses a threat if it can result in an undesirable change in the natural water quality of the ASBS, or if it conveys quantities of pollutants to the ASBS that can harm the biological communities present there.[22]

Based on the categorical interpretation, the Central Coast Regional Water Board initiated enforcement actions against several coastal municipalities.[23] The Water Board presumed all dischargers to be in violation of the Ocean Plan regardless of the feasibility of implementing control measures or whether the discharge affected the receiving ASBS.[24] The enforcement actions required the

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[17] California Regional Water Quality Control Bd., Santa Ana Region, Cease and Desist Order No. 00-87 (Nov. 16, 2001), *available at* http://www.waterboards.ca.gov/santaana/pdf/00-87.pdf.

[18] State Water Resources Control Bd., Res. No. 2004-0052, Approving an Exception to the California Ocean Plan (Ocean Plan) for the University of California Scripps Institution of Oceanography Discharge into the San Diego Marine Life Refuge Area of Special Biological Significance and Adopting a Mitigated Negative Declaration (Cal. July 22, 2004), *available at* http://www.swrcb.ca.gov/resdec/resltn/2004/rs2004-0052.pdf; State Water Resources Control Bd., Res. No. 2006-0013, Approving an Exception to the California Ocean Plan for the University of Southern California Wrigley Marine Science Center Discharge into the Northwest Santa Catalina Island Area of Special Biological Significance, Including Special Protections to Protect Beneficial Uses (Cal. Feb. 15, 2006), *available at* http://www.waterboards.ca.gov/resdec/resltn/2006/rs2006_0013.pdf.

[19] Comment Letters received by the State Water Resources Control Board in response to June 30, 2006 State Board Notice of Public Scoping Meetings — California Ocean Plan, Areas of Special Biological Significance (ASBS) Special Protections to Address Storm Water and Nonpoint Source Discharges (Oct. 24, 2006), *available at* http://www.swrcb.ca.gov/plnspols/asbs_comaug2006.html.

[20] Transcript of January 13, 2005 State Water Board ASBS Stake Holder Meeting, *available at* http://www.swrcb.ca.gov/plnspols/docs/asbs/stakeholder011305/transcript011305.pdf.

[21] Comment Letter from California Coalition for Clean Water regarding October 24, 2005 State Water Board Workshop on ASBS Waste Discharge Prohibition, *available at* http://www.swrcb.ca.gov/plnspols/docs/asbs/wrkshp102405/comments/cacoalition.pdf.

[22] STATE WATER RESOURCES CONTROL BD., DRAFT STAFF PROPOSAL, SPECIAL PROTECTIONS — AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE: STORM WATER AND NONPOINT SOURCE DISCHARGES (June 14, 2006), *available at* http://www.swrcb.ca.gov/plnspols/docs/asbs/wrkshps_aug2006/special_protections06142006draft.pdf.

[23] *See* Regional Water Quality Control Board, Central Coast Region, Agenda Item # 28, http://www.waterboards.ca.gov/centralcoast/Board/Agendas/021105/ItemReports/Item28/Index.htm (listing links to tentative Cease and Desist Orders issued by Board to cities in 2005 for discharge of runoff to ASBS) (last visited Mar. 12, 2008).

[24] *See, e.g.*, Regional Water Quality Control Board, Central Coast Region, Cease and Desist Order R3-2005-0008 (Feb. 11, 2005), *available at*

dischargers to either cease discharging stormwater to ASBS, which is extremely costly and technically infeasible, or seek a temporary exception through an expensive and burdensome application process.[25] For example, to avoid violating the State Board's discharge prohibition, the Scripps Institute of Oceanography in La Jolla engaged in the lengthy application process.[26] The State Board granted the Scripps Institutution an exception subjecting it to restrictions and monitoring requirements that will cost millions of dollars over five years.[27] Furthermore, a water board may impose other requirements upon a municipality that is unable to obtain an exception. These requirements may force a city to condemn shoreline property and spend many millions of dollars[28] to build treatment plants in order to achieve compliance[29] – all to prevent discharges that have not been shown to harm the ASBS.

This article asserts that the State Board has discretion under applicable law to regulate discharges of runoff into ASBS based on the quality of those discharges and the potential impacts, if any, on the receiving ASBS. California law does not mandate a categorical approach as the State Board staff claims. Rather, the law permits, and sound public policy supports, regulation based on whether the discharge creates adverse ecological effects on the receiving water body. In this article, we examine the legal basis for an effects-based approach to stormwater regulation. We also propose potential solutions to provide a foundation for a comprehensive regulatory program that is protective of ASBS *and* grounded in the achievement of attainable standards.

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http://www.waterboards.ca.gov/centralcoast/Board/Agendas/021105/ItemReports/Item28/documents/CDOR3-2005-0008PG2-03-05final.pdf (requiring city of Pacific Grove to stop discharges to ASBS).

[25] *See e.g., id.*

[26] *See* State Water Resources Control Bd., Transcript of ASBS Stake Holder Meeting, at 67 (Jan. 13, 2005), *available at* http://www.swrcb.ca.gov/plnspols/docs/asbs/stakeholder011305/transcript011305.pdf (last visited Mar. 12, 2008).

[27] *See id.*

[28] *See* STATE WATER RESOURCES CONTROL BD., DIV. OF WATER QUALITY, CALIFORNIA OCEAN PLAN, AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) WASTE DISCHARGE PROHIBITION WORKSHOP 68 (Aug. 31, 2005), *available at* http://www.swrcb.ca.gov/plnspols/docs/asbs/wrkshp083105/transcript083105.pdf (last visited Mar. 12, 2008) (estimating costs of compliance up to $322 million for a single municipality to meet an absolute prohibition of stormwater discharge to one ASBS).

[29] *See* Lee, *supra* note 4 (reporting "large expense" of treating stormwater and arguing that compliance with State Board's standard could require condemning thousands of homes to clear space for treatment facilities).

I. HISTORY

Discharges to ASBS are regulated pursuant to the Porter-Cologne Water Quality Control Act ("Porter-Cologne"),[30] the California Public Resources Code ("PRC"),[31] the California Ocean Plan ("Ocean Plan"),[32] and related authority. The purpose of the Ocean Plan is to address priority water quality objectives, and it provides the basis for regulating wastes discharged into California's coastal waters.[33] Pursuant to the authority in sections 13170 and 13170.2 of the California Water Code, the State Board adopted the first Ocean Plan in 1972.[34] Although none of the ASBS had been designated at that time, the plan contained several provisions for their protection.[35]

In particular, the 1972 plan stated that, "waste shall be discharged a sufficient distance from areas designated as being of special biological significance to assure maintenance of natural water quality conditions in these areas."[36] Shortly after adopting the 1972 Ocean Plan, the State Board designated thirty-four ASBS, which remain protected under the current plan.[37] While the discharge prohibitions in the original plan were adopted pursuant to Porter-Cologne authority, the Ocean Plan is also governed by recently amended PRC provisions. For example, section 36700(f) states that ASBS are "a subset of state water quality protection areas" designated "to protect marine species or biological communities from an undesirable alteration in natural water quality."[38] ASBS "require special protection as determined by the State Water Resources Control Board pursuant to the California Ocean Plan" and California Thermal Plan.[39] As a result, in 2005 the State Board amended the Ocean Plan to refer to ASBS as a subset of state water quality protection areas ("SWQPA").[40]

In 2000, Assembly Bill 2800 added section 36710 to the PRC. This addition authorized the prohibition or limitation of point source waste discharges into a SWQPA, and control of non-point source pollution to the extent practicable.[41] After revisions pursuant to Senate Bill 512, section 36710(f) currently directs the State Board to prohibit, or limit through the imposition of special conditions, waste discharges to a SWQPA regardless of whether the discharge is from a

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[30] CAL. WATER CODE § 13000 et. seq. (2007).

[31] CAL. PUB. RES. CODE § 36700 et. seq. (2007).

[32] *See* STATE WATER RESOURCES CONTROL BOARD, CALIFORNIA OCEAN PLAN 1 (2005) [hereinafter CALIFORNIA OCEAN PLAN] (describing the purpose and authority of the Ocean Plan).

[33] *Id.*

[34] *See* GREGORIO ET AL., *supra* note 10, at 6.

[35] *Id.*

[36] *Id.*

[37] *See* Dunn & Burchmore, *supra* note 1, at 5 (discussing designation of ASBS in 1970s).

[38] CAL. PUB. RES. CODE § 36700(f) (2007).

[39] *Id.*

[40] *See* CALIFORNIA OCEAN PLAN, *supra* note 32, at 24.

[41] CAL. PUB. RES. CODE § 36710(f) (2000).

point or non-point source.[42] Nonetheless, such actions must be in accordance with Porter-Cologne and its implementing regulations, including, but not limited to, the Ocean Plan.[43]

An analysis of Porter-Cologne, the PRC, the Ocean Plan, the ASBS rulemaking history, prior State Board precedent, and case law indicates that a detection-based approach, or any other approach that categorically regulates stormwater as waste, is not a legal mandate that the State Board must apply to stormwater and other forms of runoff to ASBS.[44] Principles of reasonableness and equity govern California water quality control law.[45] Water quality control requires a balancing of various interests to achieve the highest *reasonable* water quality, with an emphasis on whether a discharge causes or threatens to cause harm.[46] In the context of ASBS, regulations must protect beneficial uses from harmful concentrations of pollutants contained in stormwater, and from undesirable change that may result from such runoff.[47]

Both Porter-Cologne and the PRC focus on receiving waters – such that runoff is rendered a discharge of "waste" only if it contains harmful concentrations of pollutants.[48] Accordingly, the PRC authorizes the State Board to regulate ASBS in order to prevent undesirable change in natural water quality.[49] This directive clearly focuses on the receiving ASBS, and not the number of detectable anthropogenic molecules present in incoming flows from the adjacent land mass. Additionally, the PRC confers flexibility upon the State Board to permit waste discharges to ASBS pursuant to the imposition of "special conditions" designed to maintain healthy water quality.[50] Such allowances are clearly inconsistent with a categorical approach. Moreover, the effects-based approach encompassed in Porter-Cologne and the PRC enables the State Board to focus its limited resources on discharges that have been shown to be

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[42] § 36710(f) (2007).

[43] *Id.*

[44] This article generally refers to "stormwater" and "runoff" synonymously. The analysis described herein for stormwater discharges to ASBS is similarly applicable to other discharges that naturally flow, or are hydraulically connected, to ASBS, including *de minimis* dry weather flows such as groundwater, groundwater seeps, coastal armoring seeps, and other comparable discharges.

[45] *See, e.g.*, CAL. WATER CODE § 13000 (2007) ("The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved . . . .").

[46] *Id.*

[47] *Id.*; CAL. PUB. RES. CODE § 30920(b) (2007).

[48] *See* Building Industry Association of San Diego County, Order WQ 2001-15, 12 (State Water Resources Control Board 2001), *available at* http://www.waterboards.ca.gov/resdec/wqorders/2001/wq2001_15.pdf [hereinafter Order 2001-15] (concluding that stormwater is not waste *per se*; rather, it is the pollutants in urban runoff that is waste).

[49] CAL. PUB. RES. CODE § 36700(f) (2007).

[50] § 36710(f).

problematic, thereby achieving more efficient, cost-effective results – and an environmental benefit that is proportional to the resources expended.

II. THE PORTER-COLOGNE WATER QUALITY CONTROL ACT DOES NOT MANDATE A CATEGORICAL PROHIBITION OF STORMWATER RUNOFF TO ASBS

The PRC states that waste discharges to SWQPA "shall be prohibited or limited by the imposition of special conditions in accordance with the Porter-Cologne Water Quality Act . . . and implementing regulations, including, but not limited to the California Ocean Plan [and the California Thermal Plan]."[51] Thus, provisions of Porter-Cologne govern the regulation of discharges to ASBS, a subset of SWQPA. Porter-Cologne does not mandate that runoff constitutes "waste" whenever it contains detectable quantities of anthropogenic materials.

A. The Plain Language of Porter-Cologne Does Not Mandate a Categorical Prohibition for Stormwater Runoff to ASBS

According to Porter-Cologne, "'[w]aste' includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal."[52] Under this definition, raw sewage qualifies as waste regardless of how many, or few, particles of any particular pollutant it may contain.[53] In contrast, the definition does not expressly include stormwater or other kinds of runoff.[54] Stormwater *per se* does not fall into any of the listed classifications,[55] suggesting that runoff is not categorically defined as "waste." Thus, the legislature left it to the discretion of the agencies to determine when a potential resource like stormwater – flows of which fill many of our reservoirs – contains enough molecules to constitute "waste." A threshold of zero is plainly unnecessary under Porter-Cologne.[56]

Furthermore, where the legislature had particular concerns about certain types of runoff, it addressed them explicitly.[57] For example, Porter-Cologne defines "acid mine drainage," a type of runoff, as waste *per se*.[58] It states that "[w]aste,

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[51] *Id.*

[52] CAL. WATER CODE § 13050(d) (2007).

[53] *Id.*

[54] *Id.*

[55] *Id.*

[56] *See* discussion *infra*, Part II.C.

[57] *See, e.g.*, CAL. WATER CODE § 13397.5(c) (2007) (explicitly defining "acid mine drainage" as waste *per se*).

[58] *Id.*

including acid rock drainage from abandoned mines, has a devastating effect on aquatic life and has degraded some major waterbodies in the state."[59] This approach is consistent with Porter-Cologne's emphasis on regulating only where a threat of harm exists. Similarly, in other places Porter-Cologne expressly excludes certain types of stormwater from regulation where the legislature has determined that it does not threaten water quality.[60] Specifically, Porter-Cologne mandates that the term "hazardous substance" does not include "[n]ontoxic, nonflammable, and noncorrosive stormwater runoff drained from underground vaults, chambers, or manholes into gutters or storm sewers."[61] These provisions affirm that Porter-Cologne does not categorically define all runoff as waste *per se*. Rather, it realistically distinguishes different stormwater flows based on whether they contain harmful quantities of pollutants or otherwise negatively affect the receiving water body.

Notably, the purpose of storm drains is merely to prevent flooding, in contrast to domestic and industrial sewer systems, which are constructed to convey and treat "waste substances."[62] Notwithstanding this distinction, under California Water Code section 13050(d), the categorical approach to stormwater regulation would classify all stormwater as a "waste substance" by virtue of it containing something detectable and traceable to humans or animals. This classification would apply to routed or gathered stormwater from remote areas where the only detectable constituents are of animal origin.[63] However, it is unlikely that the State Board would attempt to regulate such "natural" discharges, indicating a tacit understanding that mere detection cannot be the *sin qua non* of waste under Porter-Cologne.

B. The Legislative History of Porter-Cologne Indicates That Stormwater Is Not Per Se Waste

The legislative history of the Porter-Cologne definition of "waste" also fails to support the conclusion that the Act requires stormwater to be classified as waste. The current definition of "waste" was created in 1969.[64] This early legislation streamlined the California Water Code by combining two prior

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[59] *Id.*; § 13397(a)(1).

[60] *See, e.g.*, § 13050(p)(2)(A) (excluding certain stormwater from the definition of "hazardous substance").

[61] *Id.*

[62] *See* STATE WATER RESOURCES CONTROL BOARD, CALIFORNIA'S RIVERS AND STREAMS, WORKING TOWARDS SOLUTIONS, *available at* http://www.swrcb.ca.gov/general/publications/docs/riversst.htm.

[63] *See* CAL. PUB. RES. CODE § 36700 (2007) (defining waste to include "waste substances" of animal origin).

[64] The current definition of "waste" under Porter-Cologne differs slightly from the 1969 definition in that the current definition includes a description of the containers used in manufacturing; however the substantive language relevant here remains unchanged.

definitions of "waste," neither of which included stormwater within their ambit.[65] It also pre-dates modern stormwater regulation by many years.[66] This suggests it is unlike that the legislature contemplated applying the term "waste" to typical rainfall runoff.

The 1969 changes to the California Water Code arose from a study commissioned by the legislature and conducted by the State Board.[67] The definition of waste enacted into law in 1969 combined the former definitions of "sewage" with "other waste," neither of which expressly included stormwater or runoff.[68] Clearly, stormwater is neither sewage nor "waste substance" from a "producing, manufacturing, or processing operation" as described by the definition of "other waste."[69] Furthermore, terms such as "runoff," "stormwater" and "dry weather flows" are compellingly absent from both definitions.[70] Aside from the State Board's specific proposal to include gaseous and radioactive substances as "waste," the State Board intended the definition created in 1969 to merge these two prior definitions without expanding them, and the State Board identified no other ways in which the new definition departed from the two it replaced.[71]

According to the Study Panel Report, the legislature also reviewed the California Attorney General's interpretations of the prior definitions in preparing the 1969 legislation.[72] Notably, the Attorney General had not

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[65] *See* Act of July 14, 1969, ch. 482, 1969 Cal. Stat. 1045 (AB 413).

[66] For example, the EPA first addressed the issue of stormwater in 1973 when it promulgated regulations that *exempted* stormwater runoff discharges uncontaminated by industrial or commercial activity from NPDES permit requirements. *See* 40 C.F.R. §§ 125.4(f), (j) (1974). The Clean Water Act was not amended to include comprehensive NPDES requirements for stormwater discharges until 1987, and the EPA did not promulgate final rules concerning the NPDES Phase I and II Stormwater Programs until 1990 and 1999, respectively. *See* Water Pollution Control Act amendments of 1972, Pub. L. No. 92-500, § 2, 86 Stat. 880 (codified as amended at 33 U.S.C. § 1342 (2000)); 40 C.F.R §§ 122-124 (1999) (publishing the final rule implementing the Phase II Stormwater Program); 40 C.F.R §§ 122-124 (1990) (publishing the final rule implementing the Phase I Stormwater Program).

[67] *See* CALIFORNIA STATE WATER RESOURCES CONTROL BOARD, RECOMMENDED CHANGES IN WATER QUALITY CONTROL: FINAL REPORT OF THE STUDY PANEL TO THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD (March 1969) [hereinafter STUDY PANEL REPORT] (recommending the changes to the legislation that were adopted by the legislature).

[68] Prior to the 1969 legislation, "sewage" was defined as "any and all waste substance, liquid or solid, associated with human habitation, or which contains or may be contaminated with human or animal excreta or excrement, offal or any feculent matter" and "other waste" referred to "any and all liquid or solid waste substance, not sewage, from any producing, manufacturing, or processing operation of whatever nature." CAL. WATER CODE § 13005 (1967) (repealed).

[69] CAL. WATER CODE § 13050(d) (2007).

[70] *Id.*

[71] *See* STUDY PANEL REPORT, *supra* note 67, at A-23 (proposing explicitly addition of gaseous and radioactive substances only to definition of waste).

[72] *Id.* at A-24.

interpreted the prior definitions as generally covering stormwater or runoff.[73] In fact, an Attorney General Opinion cited in the Study Panel Report supports the proposition that "waste" does not encompass stormwater *per se*.[74] It states that, "the current drainage, flow, or seepage into waters of the state of *harmful concentrations* of all the following listed materials constitutes the discharge of waste over which a regional board has jurisdiction."[75] The opinion then enumerated a finite list of constituents, limited to: debris resulting from logging operations, earth eroded as a result of logging operations, garbage and refuse from dumps, return irrigation or drainage water from agricultural operations containing materials not present prior to use, and discharges containing harmful materials flowing from water, oil, or gas wells.[76] Again, any mention of stormwater or runoff is conspicuously missing from the list.

Thus, in defining "waste," the State Board never intended to include all runoff, regardless of its constituents. Rather, the focus was, and should continue to be, on whether there are harmful concentrations of pollutants in the runoff. In contrast to a blanket prohibition on all stormwater, such an inquiry necessarily requires the potential to evaluate the impact of the discharge on receiving waters. Otherwise, the definition of "waste" could encompass rainfall runoff flowing passively over vast portions of the state. Furthermore, the 1969 Study Panel Report specifically warned against the "problem" of "sweeping . . . prohibitions" that "literally prohibit[] practically any and every discharge of waste into the waters [of the] state . . . ."[77] By prohibiting runoff even when it does not contain harmful quantities of pollutants, the categorical approach creates precisely the type of "sweeping prohibition[]" that the Study Panel found problematic.[78]

C. Stormwater May Be Categorized As Waste Only When It Contains Harmful Quantities of Pollutants

Under Porter-Cologne, the mere presence of a detectable anthropogenic signature does not turn water into waste.[79] It is clear that there must be some threshold level at which water contains enough pollutants to qualify as waste.[80] In a decision regarding a San Diego municipal separate storm sewer system permit, the State Board concluded that stormwater is not waste.[81] It is the

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[73] *Id.*

[74] 27 Op. Cal. Att'y Gen. 182 (1956) (Opinion No. 55-236).

[75] *Id.* at 182-83 (emphasis added).

[76] *Id.* at 183.

[77] STUDY PANEL REPORT, *supra* note 67, at 47-48.

[78] *Id.*

[79] *See* discussion *supra*, Part II.B.

[80] *Id.*

[81] Order 2001-15, *supra* note 48, at 12.

pollutants in stormwater that may cause it to become waste.[82] This approach is consistent with the Study Panel Report.[83] Consequently, the State Board's analysis of what constitutes a waste discharge to ASBS in the context of stormwater runoff is similar to, and should be informed by, the traditional analysis of "waste" under Porter-Cologne. This analysis does not require runoff to be treated as waste solely because it contains detectable quantities of anthropogenic constituents. A detection-based or other categorical approach to regulating stormwater discharge to ASBS would place stormwater in the same category as sewage. Moreover, this approach is inconsistent with the State Board's rejection of the finding that stormwater is categorically defined as waste.

D. Provisions of Porter-Cologne Specifically Applicable to the Coastal Zone Emphasize Harm-Based Regulation of Discharges

Porter-Cologne expounds the purpose of the Ocean Plan, which is the primary regulatory document governing ASBS regulation.[84] According to Porter-Cologne, the State Board shall review the Ocean Plan every three years "to guarantee that the current standards are adequate and are not allowing degradation to indigenous marine species or posing a threat to human health."[85] However, a categorical approach is not necessary to provide "adequate" protection of ASBS or to prevent "degradation" of indigenous biological communities.

Moreover, under Porter-Cologne, wastewater discharges to the coastal marine environment are to be "treated to protect present and future beneficial uses, and, where feasible, to restore past beneficial uses of the receiving waters."[86] The statute, however, does not require the categorical elimination of discharges to "biologically sensitive sites" in the coastal marine environment, such as ASBS.[87] Rather, the "highest priority" is to be accorded to those discharges that "adversely affect" such sensitive waters.[88]

Thus, Porter-Cologne focuses on the subset of discharges that adversely affect ASBS, and requires such discharges to be eliminated or improved.[89] The language of these provisions confirms that the focus of Porter-Cologne with respect to the coastal zone is identifying and addressing discharges that

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[82] *Id.*

[83] *See* discussion *supra*, Part I.B.

[84] For an overview of the myriad laws and regulations affecting ASBS, see Part II *supra*.

[85] CAL. WATER CODE § 13170.2(b) (2007).

[86] § 13142.5(a).

[87] *Id.*

[88] *See id.* ("Highest priority shall be given to improving or eliminating discharges that adversely affect . . . [w]etlands, estuaries, and other biologically sensitive sites.").

[89] *Id.*

adversely impact coastal water, and protecting beneficial uses from degradation. This emphasis contrasts sharply with the categorical approach, which targets all runoff equally notwithstanding the potential for differential impacts on receiving waters, including discharges that have no impact at all.

Section 13142.5 further evidences the effects-based approach to ocean protection underlying Porter-Cologne, stating in pertinent part:

> Ocean chemistry and mixing processes, marine life conditions, other present or proposed outfalls in the vicinity, and relevant aspects of areawide waste treatment management plans and programs, but not of convenience to the discharger, shall for the purposes of this section, be considered in determining the effects of such discharges.[90]

This provision indicates that Porter-Cologne does not focus exclusively on the detection or number of molecules in the incoming flow to the ocean. Rather, it contemplates whether effects occur after "[o]cean chemistry and mixing processes" are considered.[91] The categorical approach disregards Porter-Cologne's pragmatic, harm-based emphasis and fails to account for processes that could potentially ameliorate impacts that otherwise may raise concern.

E. Porter-Cologne Distinguishes Between "Water" and "Waste" and Recognizes That Water Containing Anthropogenic Molecules May Still Be a Valuable Resource

Porter-Cologne creates a regulatory scheme authorizing agencies to protect the beneficial uses of "waters" from the potentially adverse impacts of "waste." As a result, Porter-Cologne is replete with provisions that distinguish between these two terms.[92] However, the statute does not uniformly distinguish between "waters" and "waste" on the basis of whether a flow contains human-added molecules. In fact, if detectable quantities of anthropogenic substances converted "water" into "waste" in all cases, many important legislative distinctions between the two categories would begin to dissolve – a result the legislature did not intend. For example, Porter-Cologne characterizes the "disposal of waste" as an activity "which might degrade the quality of the waters of the state."[93] While water can clearly contain waste, with respect to runoff, it is the degree to which water is degraded by pollutants that marks the dividing line between "water" and "waste."

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[90] *Id.*

[91] *Id.*

[92] *See, e.g.*, CAL. WATER CODE § 13050(n) (2007).

[93] § 13002(a); *see also* § 13173.2(a) (permitting State Board to adopt policies "that provide for the means by which a regional board shall identify designated waste and the waters of the state that the waste may potentially impact," thereby further distinguishing between waste and waters).

Recycled water, for example is defined as "water," not "waste."[94] Recycled water is water that begins as wastewater, but is subsequently treated to remove some of the waste, rendering the final product non-waste: "'recycled water' means water which, as a result of treatment of waste, is suitable for a direct beneficial use . . . and is therefore considered a valuable resource."[95] Addressing water reclamation, the Study Panel Report noted that "the end product is water, not waste water."[96] Therefore, recycled water is one example of water that contains detectable levels of contaminants, yet does not cross the "waste" threshold.

Furthermore, contrary to the assumption underlying the categorical prohibition, the definition of recycled water indicates that water can still be a "valuable resource" even if it contains detectable levels of anthropogenic molecules.[97] Similarly, runoff to ASBS may serve a variety of ecological functions, such as where it flows overland to ASBS or flows in natural channels until proximate to ASBS, and provides much-needed freshwater influx to near-shore ecosystems.[98] Thus, like recycled water, ASBS runoff can be a resource and should not be categorically rendered "waste" in contravention of Porter-Cologne's intricate distinctions between water resources and waste water.

F. The Categorical Approach Disregards Important Statutory Factors Comprising Porter-Cologne

The categorical approach does not comport with statutory factors in Porter-Cologne that may be relevant to the ASBS context, as incorporated by reference into the ASBS provisions of the PRC.[99] For example, to the extent that ASBS is considered a beneficial use, section 13241 of the California Water Code may be relevant to the ASBS program. Section 13241 recognizes the importance of protecting beneficial uses, but also concedes that when exercising judgment as to proper regulation, "it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses."[100] The California Supreme Court has recognized the importance of section 13241 where state law – as opposed to the federal Clean Water Act – governs,[101] as is

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[94] § 13050(n).

[95] *Id.*

[96] STUDY PANEL REPORT, *supra* note 67, at 31.

[97] *See* CAL. WATER CODE § 13050(n) (2007).

[98] For additional discussion regarding the potential benefits of stormwater runoff, see Part VI *infra*.

[99] *See* CAL. PUB. RES. CODE § 36700(f) (2007) (discharges to SWQPA, including ASBS, "shall be prohibited or limited by the imposition of special conditions in accordance with the Porter-Cologne Water Quality Act . . . .").

[100] CAL. WATER CODE § 13241 (2007).

[101] *See* City of Burbank v. State Water Res. Control Bd., 108 P.3d 862, 868-70 (2005) (explaining that California law allows regional boards to consider compliance costs as reason to

the case with respect to ASBS. Additionally, State Board plans and policies, including prohibitions against discharges, are means to the general end of protecting beneficial uses.[102] This suggests that the section 13241 factors should apply here. However, the categorical approach would not require a showing that a beneficial use has been unreasonably affected before stormwater discharge is banned. In fact, it would ban discharges regardless whether the beneficial uses of the ASBS have been shown to be threatened or affected at all.

Section 13241 also delineates several factors to be considered in establishing water quality objectives, including:

> (a) Past, present, and probable future *beneficial uses* of water; (b) Environmental characteristics of the hydrographic unit under consideration, including the water quality available thereto; (c) Water quality considerations that could *reasonably be achieved* through the coordinated control of all factors which affect water quality in the area; (d) *Economic considerations*; (e) The *need for developing housing* within the region; and (f) The *need to develop and use recycled water*.[103]

In contrast, a categorical approach is exclusively based upon the chemistry of the discharge to the detriment of important statutory considerations such as the effect of the discharge on ASBS, the economic cost of treatment facilities, the level of water quality that could reasonably be achieved, and the need for housing in the region.[104] Such an approach is also likely to discourage water reclamation activity in ASBS watersheds, since the use of recycled water typically results in some return flows, even when using the most efficient application technologies.[105] As a result, the categorical approach overemphasizes water chemistry, while ignoring these other important factors.

We do not argue that runoff should be allowed where it harms beneficial uses of the ASBS. The analysis is not complete, however, upon a determination that runoff contains detectable concentrations of chemicals. Instead, it is necessary to take the additional step of determining whether the runoff may adversely affect the receiving ASBS. Applying a categorical approach regardless of the potential impact (or lack thereof) on beneficial uses would be inconsistent with Porter-Cologne because it ignores the probability that in many cases runoff may have little or no effect on the ASBS. It also disregards the important economic and social values subverted by requiring coastal entities to comply with such an extreme standard. Clearly, a categorical approach is not only not legally

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relax pollutant concentrations where federal law does not control).

[102] CAL. WATER CODE §§ 13000, 13142.5(a) (2007).

[103] § 13241(a)-(f) (emphasis added).

[104] *See id.*

[105] CALIFORNIA STATE WATER RESOURCES CONTROL BOARD, RECYCLED WATER TASK FORCE FINAL REPORT 2-7 (2003), *available at* http://www.owue.water.ca.gov/recycle/docs/TaskForceReport.htm.

mandated, but also contradicts numerous Porter-Cologne requirements that are expressly incorporated into ASBS governance.

G. *The Categorical Approach Is Inconsistent With the Principles of Reasonableness, Balance, and Equity Underlying Porter-Cologne*

Porter-Cologne was intended to promote a pragmatic approach to regulation that protects California's waters while also accounting for practical economic and social concerns. Correspondingly, the opening section of Porter-Cologne states that:

> [A]ctivities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is *reasonable*, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.[106]

The enactment of this language was rooted in the Study Panel Report. It states that "the recommended language [in paragraph 2 of section 13000] recognizes that efforts made toward accomplishing the ideal of clean water must accelerate but that economic progress and development is essential, not, however, at the sacrifice of the environment."[107] The Study Panel Report also recognizes that Porter-Cologne is premised upon striking a proper balance among competing objectives by requiring that "[t]he regional boards . . . balance environmental characteristics, past, present and future beneficial uses, and economic considerations (both the cost of providing treatment facilities and the economic value of development) in establishing plans to achieve the highest water quality which is *reasonable*."[108]

Furthermore, the State Board clearly has discretion to adopt a stormwater policy that protects ASBS while remaining sensitive to overarching economic and social concerns. For example, the Study Panel Report further notes that "[t]he key to the proper balancing of these interests lies only partly in established statewide policy. The regional and state boards which, in their decisions [applying] policy . . . to specific cases, weigh the benefits and costs to society, are the ones who actually determine this balance."[109]

Thus, a categorical approach is by no means mandated by Porter-Cologne. In fact, such an approach does not respect the principles of the Act as reflected in section 13000 and the Study Panel Report. Banning stormwater from entering ASBS foists potentially massive burdens on the historical stewards of the ASBS

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[106] CAL. WATER CODE § 13000 (2007) (emphasis added).

[107] STUDY PANEL REPORT, *supra* note 67, at 7.

[108] *Id.* at 13 (emphasis added).

[109] *Id.* at 7.

watersheds without any evaluation of the potential gains, and without regard to other regional or even more distant sources of the anthropogenic compounds present in ASBS waters. Requiring a few coastal dischargers to bear the enormous burden of treating stormwater that contains pollutants deposited by widespread and diffuse sources results in an inequitable allocation of burden without a commensurate opportunity for water quality progress – a result that is in stark contrast with the principles of equity that animate Porter-Cologne. Porter-Cologne recognizes that:

> All waste dischargers and others contributing to quality problems in a given water resource should share equitably in the costs of achieving and maintaining the requisite levels of quality . . . . Maintaining equity among waste dischargers and among water users and waste dischargers will be one of the more difficult problems of the future.[110]

Consequently, the State Board is plainly authorized to consider whether runoff flows to ASBS contain harmful concentrations of pollutants that could produce undesirable change in ASBS receiving waters. This approach is consistent with the overarching principles of reasonableness, equity, and balancing of competing objectives embodied in Porter-Cologne.

III. THE PRC DOES NOT MANDATE A CATEGORICAL PROHIBITION ON *STORMWATER* DISCHARGES TO ASBS

In accordance with the effects-based approach to water quality regulation exhibited in Porter-Cologne, the legislature established a framework for regulating discharges of "waste" into ASBS under the PRC that is both reasonable and protective of beneficial uses, including sensitive biological communities. Like Porter-Cologne, the PRC emphasizes regulation that is designed to prevent an "undesirable alteration of natural water quality."[111] ASBS are a subset of the "state water quality protection areas,"[112] which the PRC defines as:

> [A] nonterrestrial marine or estuarine area designated to protect marine species or biological communities from an *undesirable alteration in natural water quality*, including, but not limited to, areas of special biological significance that have been designated by the State Water Resources Control Board through its water quality control planning process. "Areas of Special Biological Significance" are a subset of state water quality protection areas, and require special protections as determined by the State Water Resources Control Board pursuant to the

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[110] *Id.* at 26.

[111] *Id.*

[112] *See* CAL. PUB. RES. CODE § 36700(f) (2007).

> California Ocean Plan adopted and reviewed pursuant to Article 4 (commencing with Section 13150) of Chapter 3 of Division 7 of the Water Code and pursuant to the Water Quality Control Plan of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (California Thermal Plan) adopted by the State Board.[113]

By including ASBS within the ambit of the PRC, through Senate Bill 512, the legislature specified that protecting ASBS from an "undesirable alteration in natural water quality" is a principal objective of the program. In fact, the legislative history of Senate Bill 512 reflects the legislature's understanding that the current water quality laws, which the bill did not purport to change, prohibit only those discharges "that would unreasonably affect beneficial uses," and only require "nonpoint source pollution discharge into a state water quality protection area to be controlled *to the extent practicable*."[114]

Because section 36700(f) references an "undesirable alteration," the PRC implicitly recognizes that there is not an absolute prohibition on discharge to ASBS. Accordingly, the Senate Rules Committee reported that there would be no fiscal effect imposed by Senate Bill 512 on local government and communities.[115] This report further illustrates that the amendments to the PRC were not intended to facilitate a categorical approach. Rather, the amendments clarified the purposes of ASBS governance and specified that such governance must be conducted pursuant to the policies embedded in Porter-Cologne. Interpreting the PRC to prohibit stormwater discharges into an ASBS without considering the quality of stormwater, or whether natural water quality of the ASBS has been undesirably altered, ignores the legislature's purpose in establishing SWQPA under section 36700(f). This narrow interpretation is not necessary to satisfy the stated objectives of the legislation.

Furthermore, the PRC only regulates discharges of "waste," which does not necessarily include all stormwater containing detectable levels of a pollutant.[116] While the PRC allows the State Board to regulate waste discharges to ASBS, either by prohibition or the limitation of discharges through special conditions, it does not define "waste."[117] Therefore, the PRC does not require the State Board to prohibit or limit the discharge of stormwater or other *de minimis* dry weather flows that do not constitute and should not be considered "waste."[118] Both

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[113] § 36700(f) (emphasis added).

[114] Senate Rules Committee Analysis of SB 512 (2004), *available at* http://www.leginfo.ca.gov/pub/03-04/bill/sen/sb_0501-0550/sb_512_cfa_20040816_135608_sen_floor.html.

[115] *Id.*

[116] *See* discussion *supra* Part II.

[117] CAL. PUB. RES. CODE § 36710(f) (2007).

[118] *See id.* (authorizing prohibition or limitation of waste discharges, but specifying that "no other use is restricted").

stormwater and dry weather flows, such as groundwater weeps and seeps, have always flowed to the ocean.[119] Barring the presence of harmful quantities of pollutants actually constituting "waste," the PRC provides no directive for the prohibition of these natural flows. Thus, the state board should not exceed its mandate by regulating all stormwater discharges, irrespective of whether they present a threat to ASBS.

Moreover, even if a particular discharge contained enough pollutants to be properly categorized as "waste," the PRC still does not impose an absolute prohibition on such discharges to ASBS. As explained above, the PRC grants discretion to the State Board to prohibit or *limit* discharges of waste through the imposition of special conditions.[120] This demonstrates that an absolute prohibition on stormwater discharges to ASBS is not mandated by the PRC. Such an interpretation would render meaningless the PRC provision permitting the State Board to limit discharges. As a result, the State Board is not required to prohibit all waste discharges to ASBS. Rather, it may allow such discharges pursuant to special conditions, such as discharge limitations or monitoring requirements, intended to "protect marine species or biological communities from an undesirable alteration in natural water quality."[121]

Because the PRC does not define "natural water quality," the State Board also has discretion to define this term. However, it is unlikely that "natural water quality" denotes water without any detectable anthropogenic compounds. In prior proceedings, neither the legislature nor the State Board mandated such an ideal, pre-industrial state. Historically, "natural water quality" has not meant contaminant-free in the context of ASBS.[122] For example, according to a 1975 State Board staff report on the Carmel Bay ASBS, ocean waters "naturally" contain at least some amount of heavy metals, pesticides, PCBs, and oil.[123]

Additionally, as documented in the State Board's 2003 inventory of ASBS, there is a considerable human presence in many of the ASBS, including piers, access paths, residences, recreational activities, and industrial and municipal storm drains.[124] Many of these structures and activities have existed for

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[119] *See, e.g.*, CHRISTOPHER J. CROSSLAND ET AL., COASTAL FLUXES IN THE ANTHROPOCENE 73 (2005).

[120] *See* CAL. PUB. RES. CODE § 36710(f) (2007) ("In a state water quality protection area, waste discharges shall be prohibited or limited by the imposition of special conditions in accordance with [Porter-Cologne] and implementing regulations, including . . . the California Ocean Plan . . . .").

[121] *Id.*; § 36700.

[122] *See, e.g.*, STATE WATER RESOURCES CONTROL BD., STAFF SUMMARY OF INFORMATION CONCERNING THE PROPOSED DESIGNATION OF CARMEL BAY AS AN AREA OF SPECIAL BIOLOGICAL SIGNIFICANCE 3 (1975) [hereinafter STAFF SUMMARY] (noting ocean waters naturally contain certain metals and other chemical substances).

[123] *Id.*

[124] *See, e.g.*, STATE WATER RESOURCES CONTROL BD., DISCHARGES INTO STATE WATER QUALITY PROTECTION AREAS, SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT (2003), *available at*

decades, and pre-date ASBS designation.[125] Thus, it is reasonable, and also consistent with the relevant authorities, for the State Board to consider background human influence and compatible human presence when fleshing out the term "natural water quality." Consequently, in defining "natural water quality," the State Board could plausibly consider factors such as background ocean quality, the potential influence of compatible human activity, the presence of pollutants in rainfall itself, and various scientific and technical considerations, such as what level of pollutants in a water stream will adversely affect a given receiving water body. As this type of scientific and technical expertise is obtained, the State Board can use these findings to form the basis for a pragmatic stormwater program that is both protective of ASBS and responsive to dischargers' equity and cost concerns.

IV. THE CALIFORNIA OCEAN PLAN DOES NOT MANDATE A CATEGORICAL PROHIBITION FOR STORMWATER DISCHARGES TO ASBS

The Ocean Plan is the primary document implementing Porter-Cologne and the PRC with respect to ASBS. It conforms to the effects-based approach to water quality regulation underlying both codes.[126] Although the Ocean Plan defines "waste" as a discharger's "total discharge, of whatever origin, i.e., gross, not net discharge,"[127] it does not address the primary issue of whether stormwater constitutes "waste."[128] However, the Ocean Plan does recognize that all waste discharges are not prohibited. It defines ASBS as "those areas designated by the State Water Board as ocean areas requiring the protection of species or biological communities *to the extent that alteration of natural water quality is undesirable*."[129] The definition also implicitly recognizes that some alterations of natural water quality might be desirable because they improve beneficial uses, or alternatively, because the *absence* of the discharge would be harmful to ASBS.

Several other provisions of the Ocean Plan also authorize certain waste discharges to ASBS. For example, Chapter III.H.2 declares that waste "shall not be discharged to designated Areas of Special Biological Significance *except as provided* in Chapter III.E Implementation Provisions For Areas of Special Biological Significance."[130] This provision demonstrates that discharge of waste

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http://www.swrcb.ca.gov/plnspols/docs/asbs/swqpa_finalsurveyreport_wlayouts.pdf.

[125] *Id.*

[126] *See* CALIFORNIA OCEAN PLAN, *supra* note 32, at 23-24 (focusing regulatory efforts on preventing undesirable changes to natural water quality, and permitting discharges under certain circumstances).

[127] *Id.* at 27.

[128] *See* discussion *supra* Parts II and III.

[129] *See* CALIFORNIA OCEAN PLAN, *supra* note 32, at 24 (emphasis added).

[130] *Id.* at 23.

is permitted under certain circumstances, such as when natural water quality is maintained despite the discharge. Chapter III.H.2 clearly anticipates that Chapter III.E contains an allowance for waste to enter ASBS as an alternative to prohibition. It necessarily recognizes that the enabling statute does not require a categorical approach since that type of regulatory policy would render the "except" clause of Chapter III.H.2 inoperative.

Likewise, Chapter III.E confirms that there is no Ocean Plan prohibition against all waste discharges to ASBS, authorizing discharges that do not flow directly into the ASBS or interfere with the maintenance of natural water quality.[131] Particularly, the provision states "waste shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas."[132] Thus, the second sentence explicitly recognizes that discharges to ASBS are permissible under certain scenarios. Such situations include when flows reach ASBS despite being discharged elsewhere, and do not harm the water quality of the receiving ASBS.[133] Interpreting the Ocean Plan to prohibit all stormwater flows containing any trace of anthropogenic materials from entering ASBS renders this second sentence superfluous. If the waste prohibition in the first sentence was intended to apply to stormwater containing any man-made substances – as all stormwater does[134] – then there would have been no need to specifically address discharges, such as runoff, that flow to ASBS from outside its borders. However, since the Ocean Plan *does* address these discharges separately, each provision must be given effect.[135]

In a Water Quality Order involving the discharge of stormwater to an ASBS, the State Board acknowledged the import of the second sentence of Section III.E when it responded to a contention that pipes discharging above the mean high

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[131] *See id.* at 20 ("Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.").

[132] *Id.*

[133] *Id.*

[134] *See, e.g.*, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF AIR QUALITY, ATMOSPHERIC DEPOSITION, *available at* http://www.maine.gov/dep/air/monitoring/Atmosdepos.htm (last visited Feb. 25, 2008) (describing studies of contaminants during storm events); *see also* GREAT LAKES INFORMATION NETWORK, ATMOSPHERIC DEPOSITION IN THE GREAT LAKES REGION, *available at* http://www.great-lakes.net/envt/air-land/airdep.html (last visited Feb. 25, 2008) (claiming up to ninety percent of pollution in Great Lakes results from airborne contaminants).

[135] *See* CAL. CODE CIV. PROC § 1858 (2007) ("In the construction of a statute or instrument, the office of the judge is simply to ascertain and declare what is in terms or in substance contained therein, not to insert what has been omitted, or to omit what has been inserted; and where there are several provisions or particulars, such a construction is, if possible, to be adopted as will give effect to all.").

tide line did not discharge "into" ASBS.[136] Although the State Board ultimately rejected that contention on the facts of the case, it admitted that the second sentence of Chapter III.E.1 "essentially prohibits discharges unless they are a sufficient distance from the ASBS 'to assure maintenance of natural water quality conditions in these areas.'"[137] Furthermore, as noted in the order, this sentence was once the only limitation in the Ocean Plan. The State Board explained that the "first sentence was added to amplify and clarify that there shall be no discharges [of waste] 'to' ASBS."[138] However, the second sentence was not eliminated, and its effect remains: indirect discharges to ASBS – whether to the ocean or on land – are still permitted provided that they are located sufficiently far enough that the natural water quality of the ASBS is protected.

The State Board order also focused on water quality conditions. Although it found that, "the [Caltrans] discharges fall onto the beach *abutting* the ASBS, with no treatment or dilution prior to *entering the ocean*," pursuant to the order, discharges that are located a sufficient distance from an ASBS – and undergo treatment or dilution sufficient to maintain natural water quality conditions – are not prohibited.[139] Therefore, the proper focus is not on detectable concentrations of anthropogenic molecules, but rather on the quality of the discharge and its potential impact on the water quality of ASBS. Likewise, the first sentence of III.E.1 should not be construed as implementing an absolute categorical approach since, read together, the provisions only prohibit waste discharges that impair ASBS.

In addition to the provisions discussed above, the Ocean Plan also specifically authorizes regional water boards to approve "limited-term activities" in an ASBS that result in "temporary and short term changes in existing water quality" as long as they do not cause permanent degradation of water quality.[140] These ASBS provisions in the Ocean Plan are consistent with the Ocean Plan's general requirements for managing waste discharges into the ocean, which emphasize the health of the receiving water body, and require that discharges occur "in a manner that will maintain the indigenous marine life and a healthy and diverse marine community."[141] Chapter III.A.2.d.2 further provides that discharges must be located in a manner that assures "natural water quality conditions are not altered in areas designated as being of special biological

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[136] California Dep't of Transportation, Order WQ 2001-08, 6 (State Water Resources Control Board 2001), *available at* http://www.swrcb.ca.gov/resdec/wqorders/2001/wq2001_08.pdf.

[137] *Id.* (emphasis added).

[138] *Id.*

[139] *Id.* (emphasis added).

[140] CALIFORNIA OCEAN PLAN, *supra* note 32, at 21.

[141] *Id.* at 11.

significance."[142]

Significantly, the Ocean Plan does not state that the location of waste discharges must be determined by ensuring that no detectable molecules of the discharge reach an ASBS. Rather, the Ocean Plan requires an analysis into whether waste discharges, by virtue of their location, have an adverse impact on water quality conditions. This aspect demonstrates once again that proper interpretation of the Ocean Plan permits waste discharges that do not harm ASBS water quality. Consistent with the foregoing provisions of the Ocean Plan, the State Board should formulate a comprehensive framework premised on regulating discharges that potentially affect water quality.

V. PRIOR STATE BOARD PRECEDENT AND RULEMAKING HISTORY DO NOT MANDATE A CATEGORICAL APPROACH FOR STORMWATER DISCHARGES TO ASBS

During the 1970s, when ASBS were initially designated, the State Board recognized certain human activities as compatible with the ASBS program.[143] This acknowledgment suggests the Board's awareness that not all discharges threaten the beneficial uses of ASBS. Remarkably, at that time, the State Board also considered major treatment plants, such as those that might be required to comply with a categorical discharge prohibition, to be a danger to ASBS.[144] This rulemaking history remains relevant and should inform the exercise of the State Board's discretion.

The State Board has never considered ASBS watersheds to be off limits to human activity or influence, as evidenced by its explicit distinctions between compatible and incompatible uses.[145] For example, in 1973, the State Board expressed concern that the regional boards were precluding from ASBS designation "any area which is presently used or visited for any reason whatsoever, making no distinction between uses which are compatible and those which are not compatible with the concept of a protected biological preserve."[146] To clarify the situation, the State Board explained that it "had not intended such an extremely restrictive interpretation," and that "[a]ny area in which current uses have not had a significant detrimental impact (as would likely be the situation in areas used for recreational or scientific observation or limited

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[142] *Id.*

[143] *See, e.g.*, STATE WATER RESOURCES CONTROL BD., STATE MARINE WATERS, WATER QUALITY MONITORING REPORT, AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE, RECONNAISSANCE REPORT, CARMEL BAY 72 (1979) [hereinafter RECONNAISSANCE REPORT] (recognizing that certain activities are important recreational uses of the ASBS waters).

[144] *Id.* at 78-85.

[145] *See, e.g.*, Memorandum from the State Water Resources Control Bd. to Regional Bd. of Executive Officers 1 (Jan 8, 1973) (on file with author).

[146] *Id.*

scientific collecting), and which meet the other tenets of the definition should be considered."[147]

Additionally, one of the factors that qualified an area for ASBS designation was its "recognized value to man for scientific study, commercial use, recreational use, or esthetic reasons."[148] This lends further support for the proposition that the State Board never intended ASBS to be entirely pristine. Accordingly, the State Board described the Pebble Beach Golf Links as an important recreational use of the ASBS, and noted that the course and its adjacent waters were inextricably bound together.[149] In other words, the course was considered in the calculus of the ASBS designation, and was deemed an important part of the ASBS itself. Indeed, the State Board recognized that, "[m]uch of the course's difficulty, as well as its beauty stems from its proximity to Carmel Bay."[150] Similarly, in 1970, Jacques Cousteau commented on the low-intensity residential nature of the Carmel Bay and Point Lobos area as a positive aspect. He observed that the Point Lobos Reserve "is surrounded by private property estates which reduces the main access to the sea and makes controls easier than practically anywhere else."[151]

Remarkably, some of the land uses that are now targeted by the categorical prohibition were initially factored into the decision to designate the ASBS, creating an inequitable situation where compatible, and even beneficial, uses of ASBS that were present upon designation, are now subject to exacting regulatory requirements without any showing that these uses have harmed, or have the potential to harm, the ASBS.[152]

Moreover, the State Board, through its ASBS designation proceedings, also acknowledged the fact that compounds traceable to man are innately present in seawater in certain concentrations.[153] The State Board characterized the presence of such compounds as a natural phenomenon, distinguishing those background levels from the higher concentrations that can result from sewage discharges.[154] For example, in the Carmel Bay designation proceedings, the State Board responded to a public comment regarding "heavy metals, pesticides, PCBs, and oil [being] harmful to sea otters."[155] It stated that:

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147 *Id.*

148 STAFF SUMMARY, *supra* note 122, at 2.

149 *See* RECONNAISSANCE REPORT, *supra* note 143, at 72 ("The highly publicized relationship between the fairways and the near shore waters renders this an important recreational use of the ASBS waters.").

150 *Id.*

151 Letter from Jacques Cousteau to William Penn Mott, Jr., Dir., Cal. Dep't of Parks & Recreation (Oct. 28, 1970) (on file with author).

152 *Id.*

153 STAFF SUMMARY, *supra* note 122, at 3.

154 *Id.*

155 *Id.*

> These materials are present in ocean waters naturally but the concentrations are higher than normal concentrations of the above materials in sea otters as a result of their ingestion of organisms which in turn acquire the materials from other food chain organisms, seawater or sediments. The concentration of these materials in ocean water can be controlled, *but not eliminated*, by compliance with the Ocean Plan.[156]

This rulemaking history indicates that the State Board was concerned with discharges to ASBS containing concentrations of pollutants *above* those levels that occur naturally in seawater, with "naturally" understood to mean reflecting the background anthropogenic signature. For this reason, the State Board did not view the runoff from Pebble Beach Golf Links, for example, as a discharge of "waste" during the designation period. Rather, the State Board approvingly described how Pebble Beach left Pescadero Canyon and another unnamed ravine "in a wild state," so that they would not be "expected to contain pesticide or herbicide residues."[157] The State Board also acknowledged that "the cliff sides immediately adjacent to the ASBS have not been landscaped, so chemicals applied locally would not come in contact with the intertidal zone" and recognized the "minimal" use of pesticides and herbicides at Pebble Beach Golf Links.[158] These comments indicate that the ASBS program was concerned with protecting ASBS waters, as opposed to monitoring how many molecules of anthropogenic substances eventually enter ASBS.

The absence of any statutory mandate to impose a categorical approach is also evident in a State Board proposal for establishing implementation provisions for discharges into SWQPA.[159] This proposal would have defined the phrase "limited by the imposition of special conditions" under the PRC with regard to NPDES-permitted stormwater discharges and allowed such discharges upon satisfaction of certain conditions more restrictive than those typically required for discharges to non-ASBS areas.[160] The "special conditions" definition would have prohibited any new discharges, prohibited certain non-stormwater discharges though stormwater conveyance systems, required an accelerated process for implementing best management practices, and required monitoring.[161] These elements of the proposal were designed to prevent an exceedance of the Ocean Plan's water quality objectives, and the proposed

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[156] *Id.* (emphasis added).

[157] RECONNAISSANCE REPORT, *supra* note 143, at 82.

[158] *Id.*

[159] State WATER RESOURCES CONTROL BD., DIVISION OF WATER QUALITY, INFORMATION DOCUMENT 21-44 (2003), *available at* http://www.waterboards.ca.gov/plnspols/oplans/docs/scopedoc.pdf (discussing proposed amendments to Ocean Plan).

[160] *Id.* at 28.

[161] *Id.* at 32.

amendment would have included provisions for non-stormwater point source discharges and non-point source discharges.[162] Had the State Board truly believed that it was statutorily constrained to impose a categorical prohibition on stormwater discharges to ASBS, it would have been inconsistent to propose allowing such discharges pursuant to "special conditions."

Finally, neither recent State Board decisions nor existing judicial precedent mandate a categorical approach prohibiting stormwater discharges to ASBS. The State Board's decision in the Caltrans matter, which acknowledged that the Ocean Plan authorizes discharges that ultimately reach ASBS so long as natural water quality is maintained, is irreconcilable with a categorical approach.[163] Another State Board decision regarding a San Diego urban runoff permit concluded that urban runoff is not waste *per se*; rather "it is the waste or pollutants in the runoff that meet these definitions of 'waste' and 'pollutant,' and not the runoff itself."[164] The decision also notes that the volume of runoff containing waste also must be considered, indicating that detectable molecules are not necessarily sufficient to convert stormwater into "waste."[165]

Correspondingly, in *Lake Madrone Water District v. State Water Resources Control Board*, a California court of appeals found "waste" where a dam concentrated sediment, changing "the innocuous substance into one that is deadly to aquatic life."[166] Consistent with Porter-Cologne's focus on water quality effects, the court considered the changed characteristics of the receiving water and detrimental effects on wildlife that resulted from the discharger's activities.[167] It held that "concentrated silt or sediment associated with human habitation *and harmful to the aquatic environment* is 'waste' under the statute."[168] Like the Study Panel Report, the court relied on pre-1969 Attorney General Opinions, in which waste was found when human activity created adverse effects.[169]

In contrast, only a single State Board decision, which pre-dated *Lake Madrone*, suggests that detection of constituents above background levels may be a sufficient basis for declaring a flow to be "waste."[170] However, this

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[162] *Id.*

[163] *See* discussion, *supra* Part IV.

[164] *See* Order 2001-15 *supra* note 48, at 12; *see also* discussion *supra* Part I.

[165] *See* Order 2001-15 *supra* note 48, at 12 n.23.

[166] Lake Madrone Water Dist. v. State Water Res. Control Bd., 256 Cal.Rptr. 894, 898 (Ct. App. 1989).

[167] *Id.*

[168] *Id.* (emphasis added).

[169] *See id.* ("[T]he discharge of fine-grained materials into a stream used for fishing and fish spawning would constitute pollution if the fishery were adversely affected.").

[170] City of Corona, State Board Order No. WQ 81-2, 4, 6 (State Water Resources control Board 2001 1981) *available at* http://www.swrcb.ca.gov/resdec/wqorders/1981/wq1981_02.pdf (stating waste discharge requirements were needed to discharge pumped groundwater containing sewage

decision may be of little import since the flow at issue was groundwater containing sewage, which is categorically defined as "waste."[171] Thus, the weight of applicable State Board and judicial precedent clearly favors an effects-based approach to the regulation of stormwater discharges to ASBS.

VI. AN EFFECTIVE AND PRAGMATIC PROGRAM IS NEEDED TO COMPREHENSIVELY REGULATE STORMWATER DISCHARGES TO ASBS

Thus far, the State Board has failed to establish a comprehensive program for stormwater discharges to ASBS. It has relied instead on the categorical prohibition coupled with the Ocean Plan's internal exception process.[172] However, in addition to contradicting important water quality principles embodied throughout California water law, a policy prohibiting runoff to ASBS or eliminating its anthropogenic signature to comply with the categorical approach is also economically and technically infeasible.[173]

For example, Caltrans testified at a State Board ASBS workshop that building a treatment plant that satisfies a categorical prohibition would not be possible because "[e]ven if you did have a treatment plant . . . anything in excess of [the design amount of rainfall will result in] flooding . . . [when] these diversionary structures get overwhelmed, and the discharge will still [reach ASBS]."[174] Similarly, the City of San Diego testified that there is no guarantee it could design a system to capture and divert all flows. It estimated that the cost of attempting such a system for a single discharge into a single ASBS in La Jolla would be approximately $322 million, and would require condemning numerous coastal homes and businesses.[175]

Moreover, the State Board itself has acknowledged the difficulty of controlling stormwater discharges. In its opposition to the Resources Agency's proposed amendments to the Marine Management Areas Improvement Act of 2000, the State Board acknowledged the immense practical problems inherent in controlling storm water runoff to ASBS. It argued that "[s]trict prohibition of [non-point source and storm water] discharges cannot be enforced, especially during the wet seasons."[176] The State Board also noted that compliance with such a prohibition would be impossible for non-point sources and prohibitively

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effluent percolated into ground at city's sewage effluent disposal ponds).

[171] CAL. WATER CODE § 13050(d) (2007).

[172] *See* STATE WATER RESOURCES CONTROL BOARD, STATUS REPORT ON AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE 5-10 (2006) *available at* http://www.swrcb.ca.gov/plnspols/docs/asbs/status_report_aug06.pdf.

[173] *See* Lee *supra* note 4 (reporting on the expense and difficulty of treating stormwater runoff).

[174] *See* CALIFORNIA OCEAN PLAN, *supra* note 32, at 64.

[175] *Id.* at 66-68.

[176] State Water Resources Control Bd., Doc. No. RA-01-44R, 3 (2001) (on file with author).

costly for point sources.[177] This reality further underscores the need for a more realistic, permit-based program. Accordingly, rather than insisting on an approach that is costly and unworkable *by its own admission*, the State Board should focus on developing a pragmatic, predictable and comprehensive process for the regulation of storm water to ASBS based on achievable standards.

In addition to the extreme cost and technical difficulties involved in preventing or treating stormwater discharge to ASBS, a further consideration is that runoff might actually *benefit* the ASBS. Rain falling on coastal watersheds has always resulted in fresh water runoff to the ocean, regardless of the state of local development. Runoff to the ocean carries a number of substances that may be important to local processes and ecosystems. For example, fresh water flows are necessary for the establishment of estuaries, which are coastal areas where fresh and saline waters mix.[178] Runoff also often carries sediments necessary for beach maintenance and replenishment, and nutrients that may be important to local productivity.[179]

Because the process by which rainfall becomes runoff to the ocean is a natural one, changing this process by attempting to prevent all runoff to the ocean could alter natural water quality conditions. In addition, attaining this unnatural state would be exceedingly difficult, if not impossible, from a technical standpoint. If it could be achieved, the process would likely require engineered solutions such as channelization and detention basins.[180] Introducing engineered solutions to the coastal environment to prevent fresh water storm flows from reaching the ocean could produce a number of unintended consequences, such as affecting the health of local ecosystems and availability of beach sand.

Moreover, "natural" conditions in the environment affect the quality of stormwater runoff. For example, pollutants may be stripped from the air and absorbed into rain droplets.[181] This means that stormwater runoff may contain some levels of anthropogenic compounds regardless of whether coastal dischargers contribute any additional pollutants to the runoff. For example, one of the main constituents addressed by the discharge prohibition is bacteria; yet, it is widely accepted that bacteria is present in runoff from open space, and that bacteria in runoff, at least in part, derives from wildlife.[182] Since it is unlikely

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[177] *Id.*

[178] United States Estuaries and Clean Waters Act of 2000 § 103(2), 33 U.S.C. § 2902(2) (2006).

[179] National Institute of Water & Atmospheric Research, New Zealand Estuaries 6 (last visited March 10, 2008) *available at* http://www.niwa.cri.nz/edu/students/estuaries.

[180] *See* California Coalition for Clean Water comment letter regarding October 24, 2005 State Water Board Workshop — ASBS Waste Discharge Prohibition, *available at* http://www.swrcb.ca.gov/plnspols/docs/asbs/ wrkshp102405/comments/cacoalition.pdf.

[181] Branen B. Johnson, *Public Reaction to Mandated Language for U.S. Drinking Water Quality Reports*, 12 RISK: HEALTH SAFETY & ENV'T 153, 162 (2001).

[182] KANSAS STATE UNIVERSITY AGRICULTURAL EXPERIMENT STATION AND COOPERATIVE EXTENSION SERVICE, TOTAL MAXIMUM DAILY LOAD (TMDL) FACT SHEET NO. 4, BACTERIAL

that the legislature intended for the State Board to prohibit stormwater discharges from parks and open spaces, the agency's interpretation of the term "waste" appears overbroad.

Importantly, requiring dischargers to comply with an absolute discharge prohibition may also run afoul of the maxim that the "law never requires impossibilities."[183] Coastal communities cannot control the intensity or duration of storm events, which vary from year to year. Further, capturing and treating runoff is infeasible, and may adversely impact ASBS. For these reasons, the State Board should reject a categorical discharge prohibition in favor of a more reasonable approach to regulating stormwater runoff and *de minimis* dry weather discharges to ASBS.

VII. THE OCEAN PLAN'S EXCEPTION PROCESS IS NOT THE SOLUTION

Perhaps in recognition that complying with an absolute ban on stormwater discharges to ASBS is infeasible in many cases, the State Board has encouraged the use of the Ocean Plan's exception process for qualifying discharges.[184] However, this process is not required, nor is it a feasible approach for regulating stormwater runoff to ASBS.

The exception process contained in the Ocean Plan is comprised of two substantive requirements.[185] First, the exception must "not compromise protection of ocean waters for beneficial uses."[186] Second, the public interest must be served by granting an exception.[187] Notably, nothing in the exception provision requires the implementation of a categorical approach for regulating stormwater discharges to ASBS, and the focus of the exception process is on whether the ocean's beneficial uses are preserved.[188] This is determined by overall water quality, not the amount of detectable anthropogenic molecules contained in incoming flows.[189]

Importantly, the existence of a discretionary exception process does not mean that it is required to be invoked, or that it is the only process that may be used to address discharges to an ASBS.[190] Ocean Plan "exceptions" and "special

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CONTAMINATION OF SURFACE WATERS IN KANSAS (2000), *available at* http://www.oznet.ksu.edu/library/h20ql2/MF2460.pdf.

[183] CAL. CIV. CODE § 3531 (2007).

[184] *See generally* Scripps Institution of Oceanography Exception to the California Ocean Plan, *supra* note 18; University of Southern California Wrigley Marine Science Center Exception to the Ocean Plan, *supra* note 18.

[185] CALIFORNIA OCEAN PLAN, *supra* note 32, at 23.

[186] *Id.*

[187] *Id.*

[188] *Id.*

[189] *See id.* (focusing on protecting the receiving ocean waters).

[190] *See id.* ("The State Water Board *may* . . . grant exceptions . . . .") (emphasis added).

conditions" implemented pursuant to the PRC are not synonymous. Even where runoff might constitute "waste," discharges are permitted pursuant to the PRC provided that special conditions are also implemented to protect water quality.[191]

Although the exception process provides a potential avenue of relief for dischargers unable to comply with a complete ban, and whose discharges do not harm ASBS, the exception process itself is extremely burdensome. The process consists of three procedural elements: (1) Compliance with the California Environmental Quality Act ("CEQA"); (2) Public notice and hearing; and (3) Concurrence by the U.S. EPA.[192] These procedural hurdles cause the exception process to be extremely onerous. For example, if CEQA requires the preparation of an Environmental Impact Report, the discharger will likely be forced to expend considerable time, effort and money before obtaining an exception. Moreover, once granted, exceptions remain temporary, and thus fail to provide the stability and predictability necessary for a reliable and efficient stormwater program.[193]

The State Board's approach also creates a huge administrative burden by wasting valuable resources on regulating potentially harmless discharges, and processing an exorbitant amount of exception applications. In order to effectively and efficiently regulate stormwater discharges to ASBS, the State Board must eschew the piecemeal approach encompassed in the Ocean Plan's exception process in favor of developing a consistent, uniform ASBS policy that emphasizes the effect of discharges on water quality, rather than the mere presence of detectable anthropogenic molecules in incoming stormwater flows.

Moreover, previous State Board precedent has demonstrated that prohibited discharges can be effectively regulated through programs based upon Best Management Practices, using statewide WDRs.[194] This approach would eliminate the need to apply an overbroad waste discharge prohibition to stormwater discharge to ASBS. Recently, the State Board issued WDRs for Sanitary Sewer Overflows, which effectively dealt with various issues of prohibition.[195] To address these discharges, the State Board worked:

> [W]ith a diverse group of stakeholders... to develop a regulatory mechanism to provide a consistent statewide approach to reducing Sanitary

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[191] CAL. PUB. RES. CODE § 36710(f) (2007).

[192] CALIFORNIA OCEAN PLAN, *supra* note 32, at 23.

[193] *See* Scripps Institution of Oceanography Exception to the California Ocean Plan, *supra* note 18, at 2 (creating triennial review provision in Finding 19); University of Southern California Wrigley Marine Science Center Exception to the Ocean Plan, *supra* note 18, at 2 (creating triennial review provision in Finding 16).

[194] *See* STATE WATER RESOURCES CONTROL BOARD, FACT SHEET FOR STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS 2-3 (2006), *available at* http://www.waterboards.ca.gov/sso/ docs/factsheet_wqo20060003.pdf.

[195] *Id.* at 5-6.

> Sewer Overflows.... Over the past 14 months, State Board staff in collaboration with [stakeholders], developed draft statewide general waste discharge requirements (WDRs) and a reporting program. The WDRs and reporting program reflect numerous ideas, opinions and comments provided by [stakeholders].[196]

The State Board should pursue a similarly collaborative strategy for developing a comprehensive, pragmatic, and predictable program for the regulation of stormwater discharges to ASBS.

CONCLUSION

In conclusion, Porter-Cologne, the PRC, the Ocean Plan, and other relevant sources encourage a practical, effects-based approach to water quality regulation. They do not require all stormwater to be deemed "waste," nor do they mandate a categorical approach for regulating stormwater discharges to ASBS. A categorical approach generates an overbroad and divisive regulatory program by purporting to regulate all stormwater discharges regardless of whether they present a threat to water quality. This approach risks imposing significant administrative and operational costs on agencies and municipalities without a corresponding environmental benefit. Furthermore, an enforcement/exception regime based on a categorical approach is burdensome and unpredictable – requiring dischargers to apply for temporary exceptions through a potentially lengthy and onerous process. Stormwater dischargers are entitled to the stability and predictability of a stormwater program founded upon achievable standards for compliance. As has proven successful in other contexts, the State Board should collaborate with stakeholders to implement a program based on avoiding undesirable alteration of natural water quality in the ASBS.

California is in a position to create a model for stormwater regulation in coastal states. The current categorical approach, however, has proven to be infeasible, costly and unwieldy, and is not mandated by California law. Thus, it is important that the State Board replace the categorical approach with a predictable, reasonable, and comprehensive effects-based program for regulating stormwater discharges to ASBS.

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[196] *Id.* at 1.