Annual Report

 on the Implementation of the

Riparian Areas Regulation (RAR) 2008-09

May 5, 2009

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1.0   Executive Summary

The Riparian Areas Regulation (RAR) has been in effect since March 31, 2006. This report describes the status of RAR implementation since its inception and provides a summary of work completed for 2008-09. This summary paper fulfills the reporting requirements made under the Intergovernmental Cooperation Agreement (ICA) between Fisheries and Oceans Canada (DFO), BC Ministry of Environment (MOE) and the Union of British Columbia Municipalities (UBCM)

There are eight major components to the RAR workplan, and progress on the workplan this year was excellent, including the completion of several milestones and many items that are ongoing by nature. Among these workplan items were a number of internal meetings held to improve the progress of RAR implementation and maintain communication between MOE, DFO and UBCM. Compliance monitoring was carried out to determine both compliance with the Assessment Methodology by qualified environmental professionals (QEP) that submit RAR assessments and compliance by developers in following the recommendations of these reports. Since the compliance target set by MOE and DFO was not met for reports submitted in 2007, opportunities to increase compliance through outreach, education and enforcement have been discussed by the RAR working group.

Local government compliance and understanding of responsibilities under RAR continues to be the most significant impediment to the successful implementation of the regulation. While the majority of local governments have decided how they will approach RAR implementation, there are several local governments that have not fully adopted RAR into bylaws. The RAR working group is currently in discussion with these local governments to improve compliance with the regulation.

Training for qualified environmental professionals continues through a licensing agreement with Vancouver Island University. Feedback from the 3-day course continues to be positive and MOE maintains a role in overseeing course content, choice of instructor and course delivery.

Ongoing communication with Associations representing QEPs is important to RAR implementation to ensure that members are kept current to changes or improvements to RAR process or materials. In return, Associations, particularly the College of Applied

Biology, have provided feedback to agencies based on information provided by members.

2.0   Introduction

BC passed the Riparian Areas Regulation (RAR) under the authority of the Fish Protection Act on July 27, 2004 to become effective March 31, 2006. The main purpose of the RAR was to establish directives to local government to define and protect riparian areas from development so that the protected areas can provide the natural features, functions and conditions that support fish life processes. One output of the RAR was to initiate an Intergovernmental Cooperation Agreement (ICA) between the Ministry of Environment (MOE), Fisheries and Oceans Canada (DFO), and the Union of British Columbia Municipalities (UBCM).

The purpose of the ICA is to facilitate a coordinated approach to RAR implementation between MOE, DFO and UBCM, and to guide any future refinement of the RAR which is designed to take an adaptive management approach. The agreement defines the roles and responsibilities of Canada, the Province and local governments in the delivery of the RAR, creates a management structure to oversee implementation and ongoing delivery of the RAR , and defines the review, reporting and resource requirements for the implementation and ongoing delivery of the RAR. In order to meet the commitments made under the agreement, a tripartite Steering Committee was established with the signing of the ICA to represent the parties in the execution of the ICA.

This report describes the status of implementation, a summary of monitoring activities, an update on training and meetings, and recommendations for revisions. In addition to providing an overall summary assessment of RAR implementation for 2008-09, it highlights key activities, outputs, and outcomes that illustrate the progress achieved.

3.0   Status of Implementation

3.1. Workplan

There are eight major components to the RAR implementation workplan (Appendix 1):
  i.   Intergovernmental Cooperation Agreement
  ii.   Effectiveness Monitoring and Directed Research

iii. Compliance Monitoring
iv. Ongoing RAR Implementation
v. Training
vi. Professional Associations
vii. Communications
viii. Improvements to Materials

Since the ICA was signed last July, there have been several milestones completed within the workplan and many items are ongoing by nature. The highlights of the work completed this year are:

- ICA signed in July 2008 and a Terms of Reference for the Steering Committee approved.
- Scientific rationale paper completed in early 2008 and an information session to communicate the paper to technical staff was held.
- First year of compliance monitoring was carried out in summer of 2008 based on a plan jointly developed by MOE and DFO.
- Strategy to address variances has been developed by a sub-group of the RAR Coordination Committee. This protocol presents a detailed approach for QEPs to follow prior to the submission of variance applications to DFO and was created in response to workload issues associated with variances. The working group is currently seeking approval from the Steering Committee to finalize the protocol and advice on distribution and roll-out.
- MoE completed an annual review and audit of the RAR training course offered through Vancouver Island University. A plan is in place to work with the instructor to improve the content and delivery of the course.
- RAR Secretariat met with College of Applied Biology to discuss feedback received from members and report on compliance of Qualified Environmental Professionals (QEP) with the RAR assessment methodology.
- A Terms of Reference for the RAR Coordination Committee was developed and approved. It identifies the roles and responsibilities of both regional/area staff and headquarters and sets out the mandate, tasks , members and meeting schedule of the committee
- Improvements were made to the RAR notification system in response to feedback from QEPs and staff. The improvements increase the ability to monitor and assist local governments in tracking reports by enhancing search features.
- The RAR website has been transformed and improved using a new template in order to organize the site by user and relevant sections. The aim was to make

the website more user-friendly and increase the organization of materials. It is currently in test and will be ready for production shortly.

- A RAR pamphlet for landowners was completed in 2008. Many local governments have the pamphlet available on their websites or available at their front desks. It provides agencies with an outreach tool and has been well received by many QEPs, local governments and members of the public.

Overall progress on the workplan this year has been excellent. The only major workplan item that still requires a significant amount of effort and resources is the Effectiveness monitoring strategy. The ability of staff to implement a monitoring plan will be highly dependent on resources. However, technical staff have been formulating an approach to address effectiveness monitoring, including a discussion of the feasibility of an effectiveness monitoring plan for RAR, and developing a technical procedure and criteria for determining whether regulatory changes are technically supported and should be recommended.

3.2. Local Government Implementation Approaches

There are three suggested approaches that local governments may use to implement the RAR. Whichever approach a local government chooses to take generally depends on the level of stream-related information and mapping that is available. The suggested approaches are described below with a summary of the number of local governments who have chosen to use a particular approach (Figure 1).

Figure 1. Approaches taken by local governments in RAR areas (n=103)
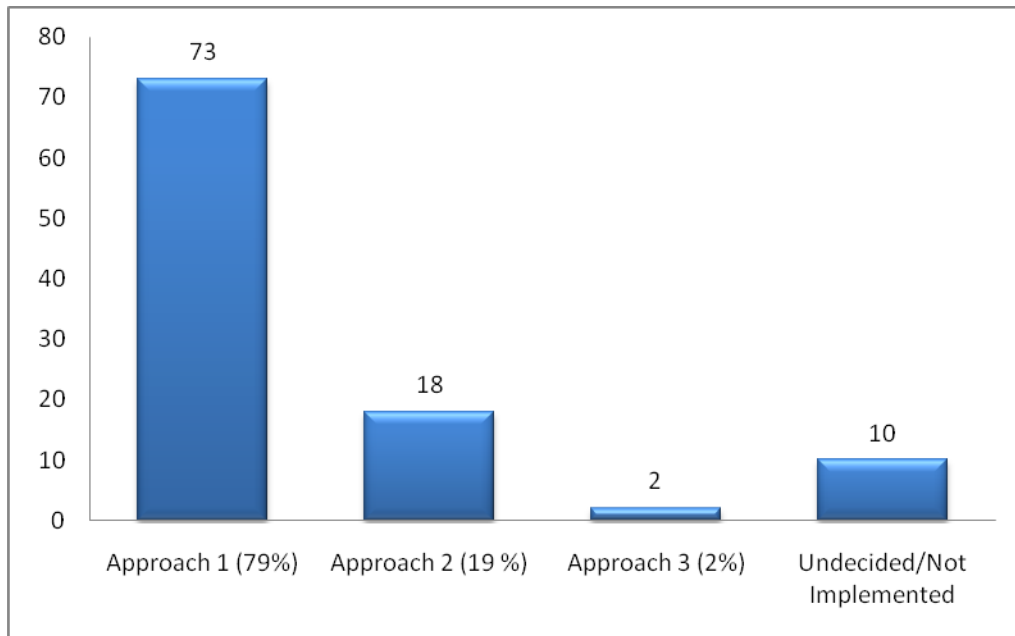
Approach 1: Adopt riparian assessment areas only

- With this approach a local government establishes an area around its streams that is 30 from the top of bank on all watercourses, within which a SPEA will be defined by a QEP according to the RAR assessment methods. The QEP may use either the simple or detailed assessment and submits the report to the RAR Notification System. This is the most widely used approach with 79% of local governments implementing RAR this way.

Approach 2: Adopt the riparian assessment areas and SPEAs generally

- To implement this approach, a local government would adopt Table2-4 under the simple assessment methodology of the RAR assessment methods. A QEP would determine which SPEA applies on a site specific basis. If the applicant wishes to vary from the SPEA determined by the simple assessment, the QEP would use the detailed assessment and upload the report to the RAR notification system. This approach is commonly used by local governments who had already adopted the Streamside Protection Regulation prior to the enactment of RAR. Nineteen per cent of local governments use this approach.

Approach 3: Adopt and designate (pre-determine) SPEAs

- This approach might be considered by local governments who have mapped and classified the streams in their jurisdiction. With this approach, a local government may establish or designate SPEAs on streams according to Table 2-4 of the RAR assessment methods. A development applicant would not need to hire a QEP, but they would be required to have a surveyor locate the top of

bank to show where the predetermined SPEA is relative to the proposed development. Alternatively, the proponent may choose to hire a QEP to perform a detailed assessment and upload it to the RAR notification system. Only 2% of local governments use this approach. Although it is a less costly alternative for development proponents, it requires a significant initial outlay of resources for the local government.

3.3. Internal Meetings

Several internal meetings have been held this year with the aim of improving the progress of RAR implementation and maintaining communication between MoE, DFO and UBCM. In addition to conference calls held on specific subjects by technical working groups, the following have taken place:

- The RAR Coordination Committee meets monthly via conference call to discuss implementation issues and solve problems that staff have encountered with respect to RAR.

- The RAR Steering Committee meets quarterly; in the early fall to facilitate workplan discussion, at a mid-point in the year for updates on the workplan and to address issues, and at year end for an annual report out from the RAR Secretariat. The early fall and mid-year meetings are held via conference call, and the year-end meeting is face-to-face.

- A workshop on the RAR compliance monitoring plan was held in October 2007 with MOE and DFO staff. The technical materials were assembled and used to develop a discussion paper as an input to the workshop. The workshop outputs consisted of confirming strategic directions, elaborating guiding principles and visioning a framework structure and its component parts. The resulting monitoring plan was used to develop the workplan for compliance monitoring carried out in 2008.

- An Information Session was held on April 2, 2008 to present the rationale document that summarizes the scientific basis for the detailed assessment methodology of the RAR. The workshop was attended by 9 MOE staff members, 13 DFO staff members and 1 representative from UBCM. During this information session we presented the rationale document, introduced the findings of the review, and discussed the next steps towards research and effectiveness monitoring. The intent of the session was to bring federal and provincial staff to a common understanding of the basis for the assessment methods introduced in March 2006.

- A face-to-face meeting of the RAR coordination committee was held for two days in September 2008. During this meeting we discussed the annual workplan and had an in-depth discussion on three of the major implementation challenges surrounding RAR. The second day was spent visiting sites that had received a RAR assessment, focussing on sites that local staff were seeking advice on from the larger group and situations where non-compliance had been reported.

4.0　Number of Notifications

### 4.1. Number of Reports in Notification System

Since the inception of RAR (March 31, 2006- March 31, 2009), there have been1067 reports submitted into the notification system. An additional 29 reports have been erroneously submitted for developments that were not subject to RAR. This year (April 1, 2008 to March 31, 2009), there have been 403 reports submitted. Since this is the first annual summary report since the inception of RAR, this report refers primarily to all reports submitted since 2006. The following sections will describe the distribution of these reports geographically and temporally.

4.2. Distribution of Reports

4.2.1. Geographic Distribution

Of the 1067 reports submitted, 440 (41%) were from Vancouver Island, 261 (24%) were from the Lower Mainland, 244 (23%) were from the Okanagan, 105 (10%) were from the Thompson, and 17 (2%) were from the Kootenay (Figure 2). These numbers are fairly representative of the development pressure within these regions, with some exceptions. For example, there are areas of the province, especially around large lakes, where development pressure is high, but there have been few RAR reports submitted due to lack of implementation by local governments in those areas.

Figure 2. Total number of reports submitted for MoE regions
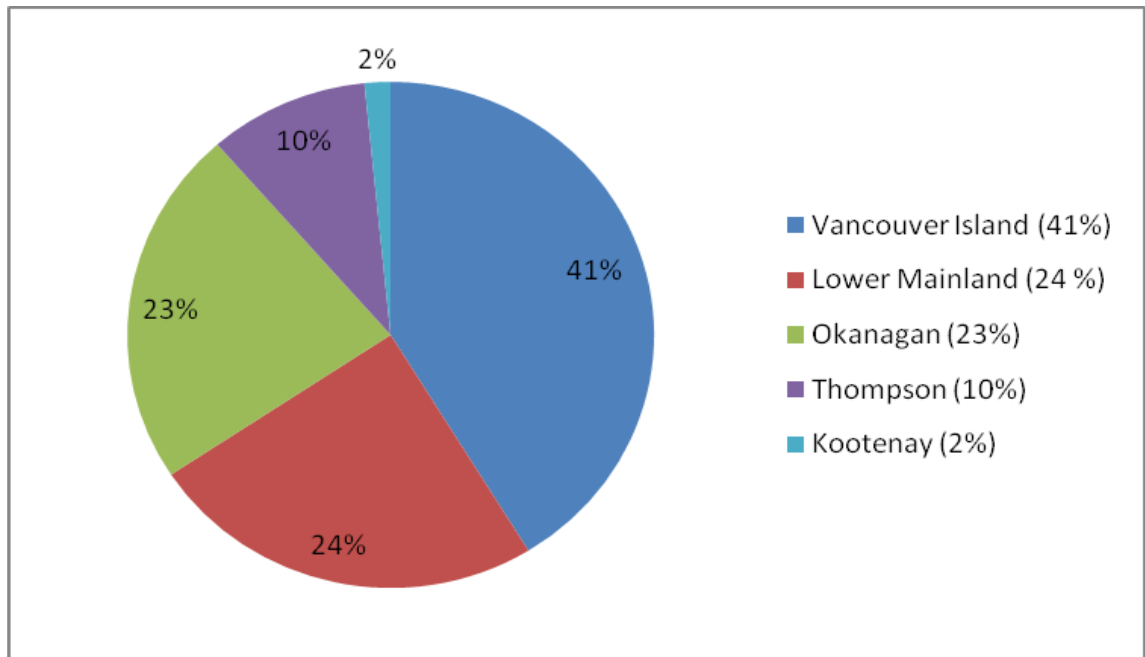
Local Governments

Some local governments have received a significantly higher number of reports than other similar local governments. The high number of reports received in the Cowichan Valley Regional District (CVRD) represents the kind of number we would expect for many regional districts or municipalities with large lakes in thier jurisdictions. The CVRD was one of the first regional districts to implement RAR with Development Permit Areas (DPAs) and has been attentive to lakeshore development issues, particulary in ensuring that proponents receive a RAR assessment prior to development. High numbers in other municipalities can be attributed to either a high level of development in that area, a large number of watercourses , or diligence by the local government in ensuring that they do not approve or allow development in contravention of RAR.

Figure 3. Local governments with total highest number of RAR submissions
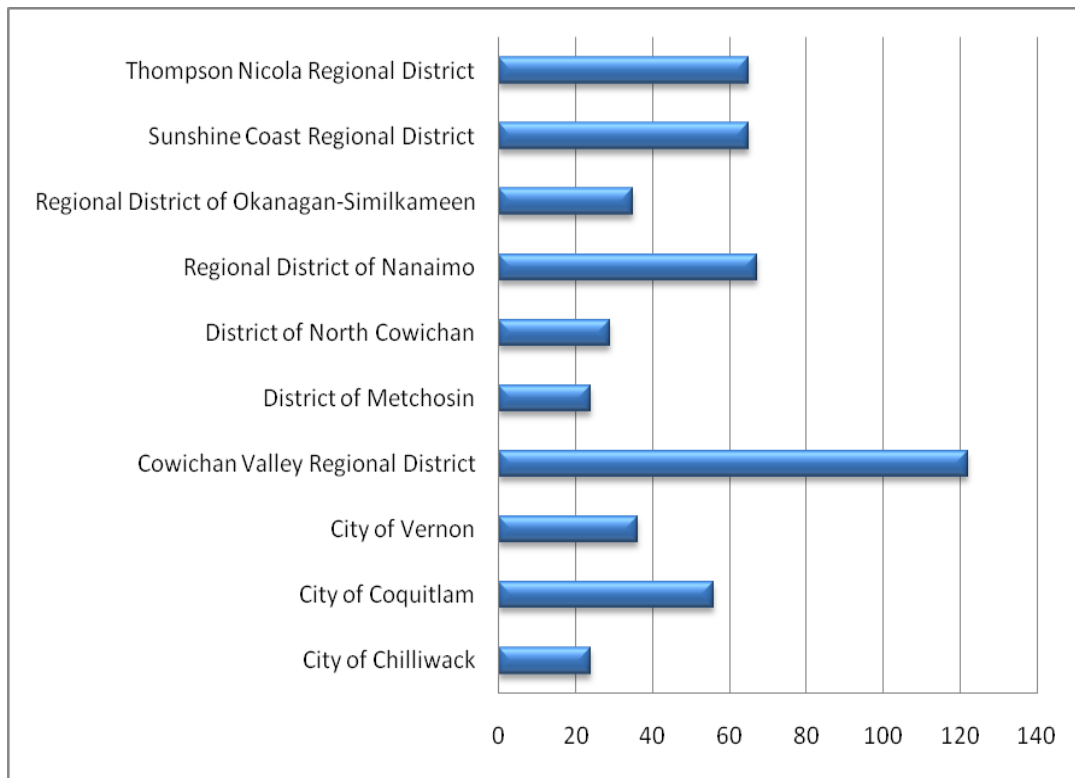
Primary QEPs

Most primary QEPs that submit RAR assessments are registered professional biologists. This is expected as the main skill sets required to perform RAR assesssments are typically those held by biologists, including an understanding of fish habitat requirements, riparian and stream ecololgy, and biogeoclimatic classification. However, there are some technicians, agrologists, and foresters that possess the necessary skills required to peform a RAR assessment. Typically, engineers and geoscientists lend thier expertise to making determinations of measures required to protect the SPEA from slope stability issues, as well as recommending stormwater and/or sediment and erosion control measures.

Figure 4. Professional designation of primary QEPs
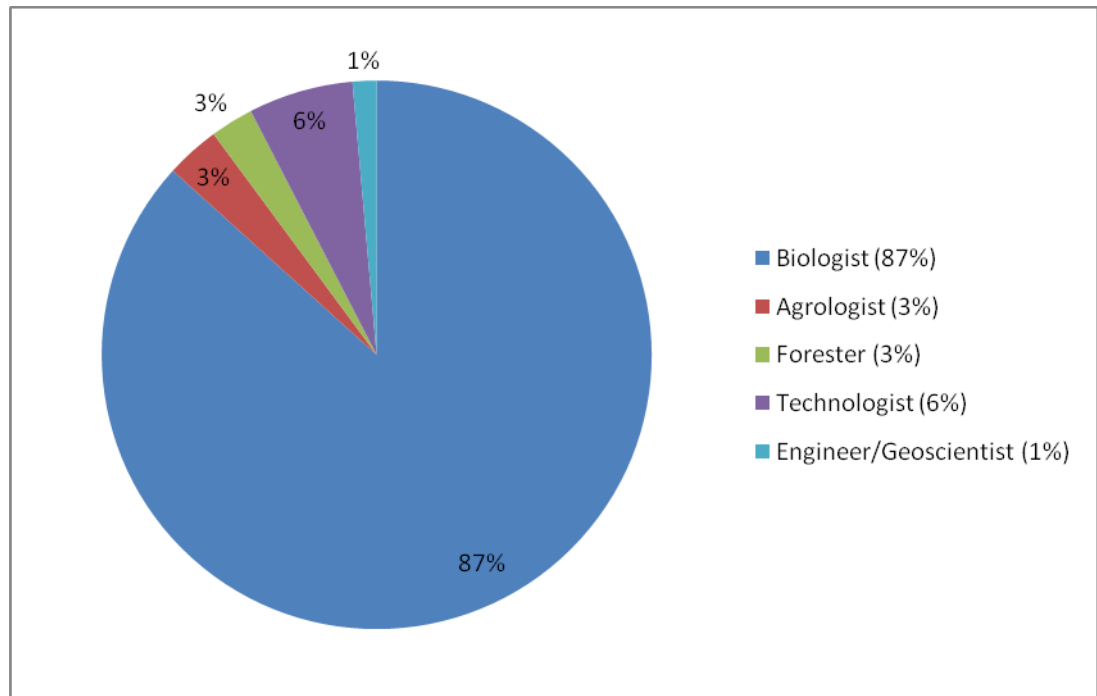
Development Types

Single family residential construction has consistently been the most common type of development seen in RAR reports, followed by small subdivisions (6 or fewer lots) and large subdivisions (6 or more lots). It is notable that of all the RAR reports received, 90% are for residential properties, 5% are for commercial development, 2% were for industrial development and 3% were for a combination of two or more types (e.g. a building for residential and commercial purposes).

Figure 5. Types of development for all RAR reports submitted to date
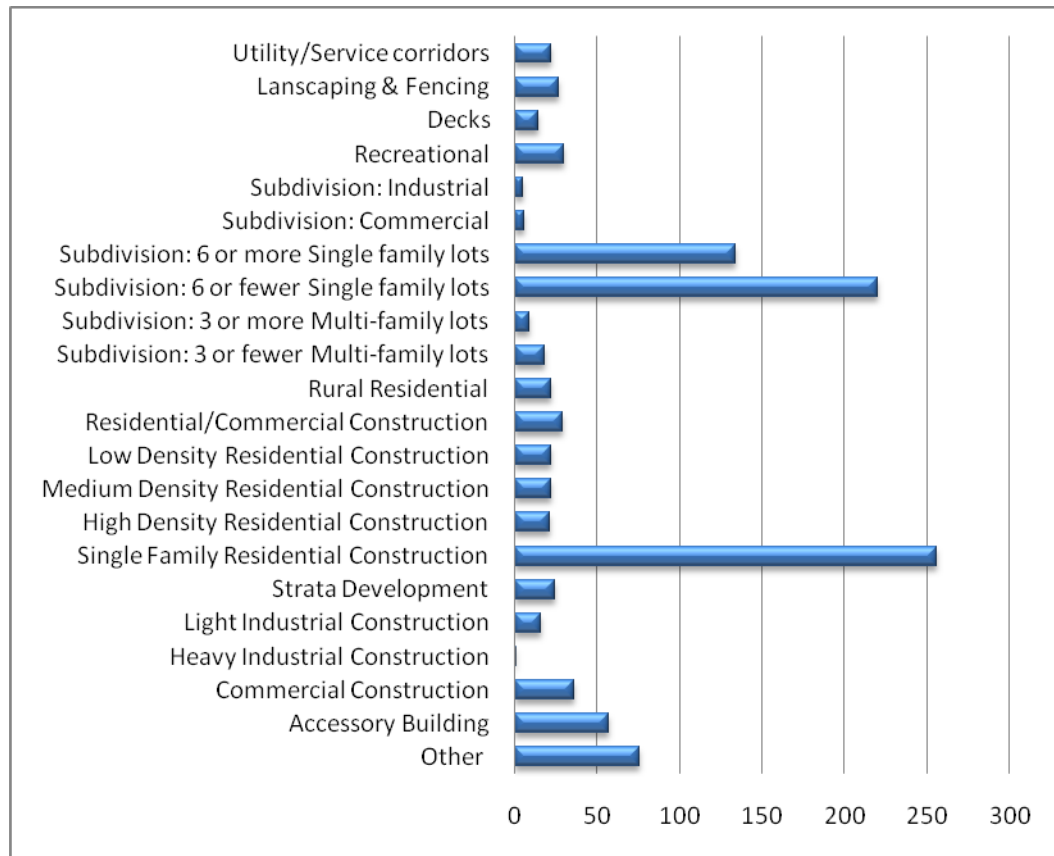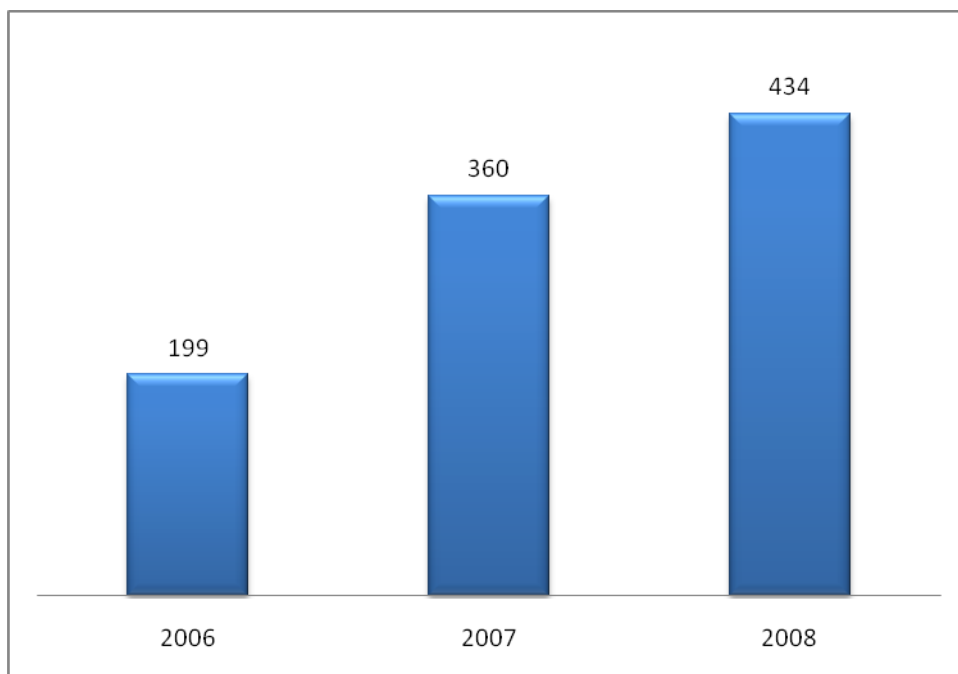
4.2.2. Temporal Distribution

Annually

As expected, the number of reports received every year has been increasing since the inception of RAR in 2006 (Figure 6). This can be attirbuted to increased understanding and compliance by local governments and greater awareness by developers.

Figure 6. Number of reports submitted over three years, since the inception of RAR

Quarterly

Generally, the greatest number of reports is received in the early spring, before the development season begins. Report submission continues throughout the summer, but slows down in the fall. Although report submissions seem to follow a predictable trend, it has been noted anecdotally that many projects that are proposed take more than a year after submission to begin.

Figure 7. Number of RAR reports submitted quarterly
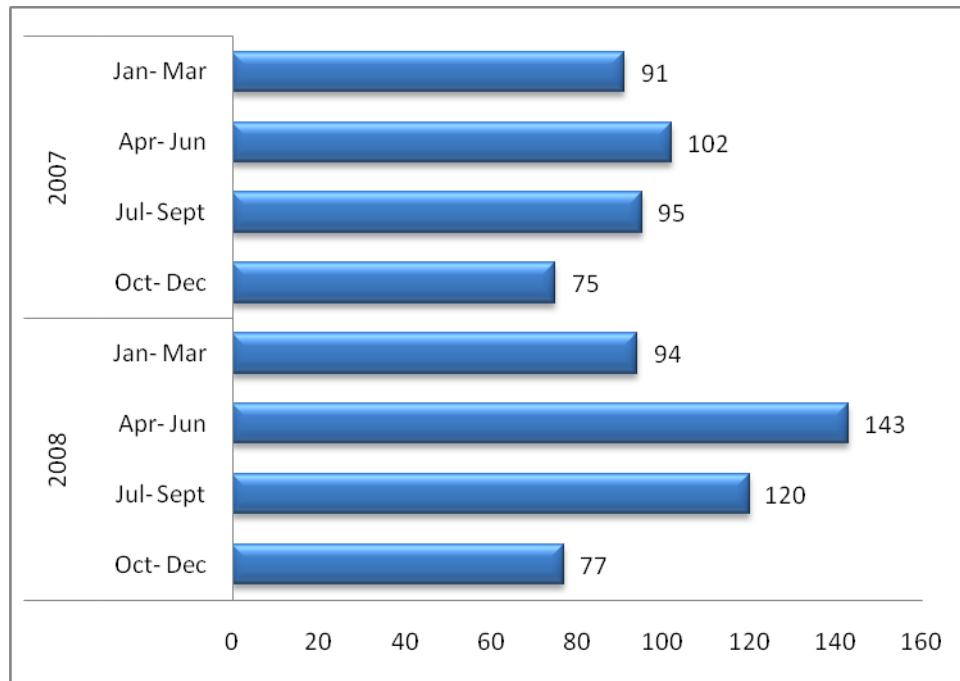
5.0   Summary of Compliance Monitoring Results

5.1.QEP Compliance

Report Compliance

Since the initiation of RAR in 2006, every report that has been submitted by a QEP through the electronic notification system has been reviewed for content and adherence to the RAR methodology. This was done to ensure QEPs had a clear understanding of RAR requirements and to collect data for the RAR monitoring program, which included determining sample size and stratification of reports. In keeping with the intention of the RAR Monitoring strategy, we are now out of the initial implementation stage and into the monitoring stage. As such, a plan is currently being discussed to phase out 100% review of reports. It is proposed that approximately 20% of reports will be randomly audited as they are submitted into the system.

Overall, QEP compliance with reporting requirements has increased significantly since 2006, but approximately 25% of reports are sent back to the QEP for amendments. A sample of 100 reports was taken from early 2009; of these, 28 required amendments.

Of those that required amendments, 5 were considered substantive errors in that adherence to the report could have resulted in a reduction of the SPEA on the ground. It is the opinion of MOE and DFO technical staff that one of these reports could have led to a harmful alteration of fish habitat if the development as proposed was approved.

Site Compliance

In total 108 sites were monitored in 2008 to determine compliance with the Riparian Areas Regulation (RAR). Forty-five of these sites within the Okanagan, Thompson, Lower Mainland and Kootenay Regions were reviewed on the ground to determine if the SPEA had been calculated and marked correctly by the QEPs, and if developers were following the requirements of the assessment reports. The remaining 63 sites were monitored only for developer compliance (see Section 4.2).

Out of 45 sites on the B.C. Mainland, there were 27(60%) that were considered to be compliant with the RAR. There were 18 (40%) sites that were determined to be non-compliant with RAR, but of these sites there were nine where encroachment into the SPEA was observed. Nine sites were non-compliant for other reasons, but no encroachment was observed at the time of the site visit. There were 23 occurrences of non-compliance reported, 12 of these were attributable to an error by a QEP.

The compliance target set by MOE and DFO was to achieve 90% compliance with 90% confidence. For the B.C. Mainland a 90% compliance rate would mean that only 2 of the 45 sites sampled were non-compliant. The 60% compliance rate achieved indicates that we have not reached our compliance target. One possible reason that compliance is low is that these samples were taken from 2007 when the regulation had recently been introduced. Since that time, QEPs have had opportunity to learn more about the regulation and gain a comfortable level of experience dealing with RAR assessments. If compliance monitoring shows improvement over the next two years, for assessments submitted in 2008 and 2009, the low rate of compliance for 2007 samples could be attributable to the learning curve associated with the implementation of a new regulation.

5.2.Developer Compliance

In the summer of 2008, the Vancouver Island Region of the Environmental Stewardship Division (ESD) entered into a monitoring project with the Coast Division of the

Conservation Officer Service (COS). The objective of the project was to assess the regulatory compliance of land developers in applying the RAR on development sites. Sixty-three sites were monitored on Vancouver Island by the COS to check compliance by the developer with QEP recommendations in the RAR reports. The rate of compliance was low at 38%. In order to reach the 90% compliance target there could only be 3 occurrences of non-compliance, rather than the 39 occurrences found by the COS.

On the B.C. Mainland, developers were responsible for 52% of the non-compliance situations. These results apply only to development where a RAR assessment was commissioned. There have been many incidences reported of development occurring without the benefit of a RAR assessment, although this has not been quantified. Additionally, QEPs have reported that in some areas sites are regularly cleared of vegetation before the QEP is called in to perform a RAR assessment.

5.3. Local Government Compliance

Local government compliance and understanding of the regulation continues to be the most significant impediment to successful implementation of the RAR.

Currently, 60% of local governments are compliant with the regulation in that they have a regulatory mechanism in place that triggers the RAR when development is proposed within the 30m riparian assessment area. However, within these compliant municipalities there are variations in the way RAR is adopted that result in non-compliance situations. The most common examples of this fall under the ancillary activities category, such as vegetation removal or soil disturbance, that are not captured by bylaws or do not trigger a development permit.

Several regional districts are struggling with RAR implementation because they lack land-use bylaws. In these areas, residents and Electoral Area Directors have expressed concern over increased regulation in their community. MOE is working with UBCM to help increase local government compliance with obligations under the RAR.

6.0   Summary of Effectiveness Monitoring Results and Directed Research

5.1 Effectiveness Monitoring

Streamside protection and enhancement area (SPEA) designations under the RAR are intended to preserve desirable stream habitat conditions by maintaining important biophysical processes at rates similar to those occurring at intact riparian forests. Buffer widths required under the RAR to maintain solar radiation, litter fall, and large woody debris inputs vary with the site potential vegetation type, stream channel width, and stream channel type. Because habitat characteristics vary through time in response to stochastic events, such as floods, because it is necessary to isolate the site-level effects of RAR from watershed-scale effects, and because RAR setbacks differ among sites with different stream and riparian characteristics, experimental designs to assess whether the regulation results in significant changes in average habitat conditions are likely to be complex.

5.2   Directed Research

Reviews of the technical basis of "zone of sensitivity" delineation under the RAR have identified several biophysical processes where functional relationships between rates and riparian and/or stream characteristics (vegetation type and density, buffer width, stream width, stream type) are poorly-defined, because the relevant data does not exist. These include:
(1) Source distances for the recruitment of (a) large woody debris, (b) leaf litter and other small particulate organic matter, and (c) terrestrial insects to streams,
(2) Source distances for the recruitment of large woody debris, leaf litter and terrestrial insects to lake littoral zones, and
(3) Attenuation coefficients for direct beam solar radiation, and resultant heat flux per unit stream surface.

The highest priority among these is for improved information on the recruitment of large woody debris to streams. Synoptic surveys of the distribution of source distances from mature riparian vegetation at different stream types are currently in their 3rd year. Information has been collected at 50 reaches to date, but the results of this year's research were not ready when this report was prepared.

7.0   Summary of Annual Meeting with Associations representing QEPs

7.1. Issues raised during annual meeting with Associations

As stated earlier (Figure 4), 87% of the primary QEPs who carry out RAR assessments are Registered Professional Biologists. We have received no feedback from the other associations representing QEPS. Recently, the RAR Secretariat met with the College of Applied Biology to discuss feedback they have received from their members with regards to RAR.

The Association of Professional Biologists is planning to have a mentoring program in place by fall. In this program, members would voluntarily agree to be mentors and the potential protégé could select mentors based on advertised expertise. MOE and DFO expressed t heir support for this program as veteran QEPs who have performed numerous RAR assessments could mentor new QEPs and thereby increase the quality of reports submitted by new QEPs. It has been noted that early submissions by QEPs tend to require several amendments and this program could reduce the number and nature of errors of which new QEPs are prone.

8.0   Training- Vancouver Island University (Malaspina)

Under the ICA, MOE committed to enter into a licensing agreement with Vancouver Island University (VIU) (formerly Malaspina College) to provide training on the RAR assessment methodology to QEPs on a cost recovery basis. MOE has continued to administer this agreement and meets in person annually, and as needed via phone/email, with VIU staff and audits the course from time to time to ensure the course is meeting ministry standards for content and delivery.

8.1. Number of Participants

Unsurprisingly, the number of participants in the RAR training course decreased from 2007 to 2008 (Figure 8). The course still remains popular for new QEPs and local government staff, but since many attended during the initial implementation of the RAR, the numbers were expected to plateau.

Figure 8. Number of participants in RAR training course in 2007 and 2008

	2007	2008
# of participants	82	29
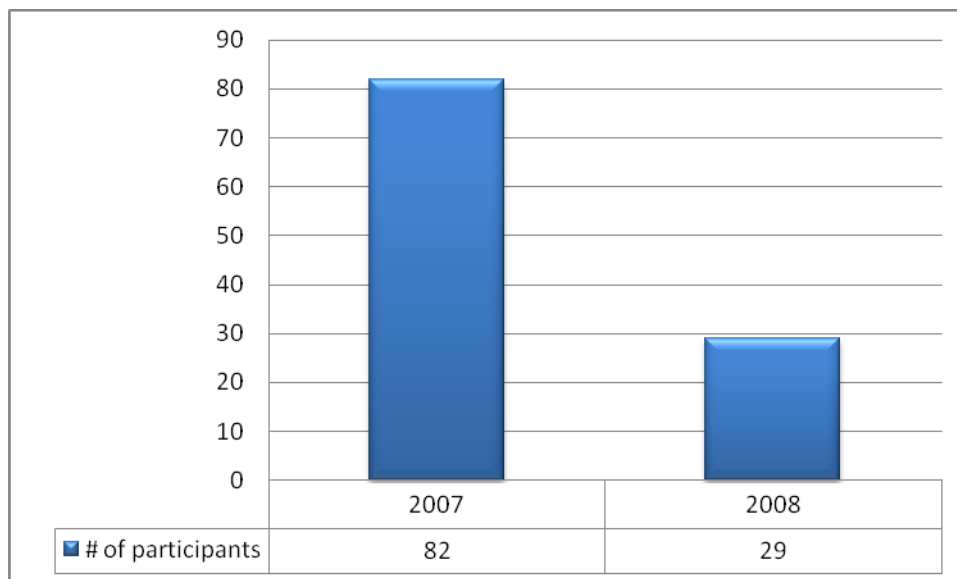
8.2. Distribution of Students

Students generally attend from regions where the RAR applies; however, QEPs from areas outside of RAR jurisdiction have shown interest in learning the methodology (Figure 9). The majority of the students are based on Vancouver Island, Okanagan, and the Lower Mainland, which corresponds to where the majority of the RAR reports are received from.

Figure 9. Distribution of participants in RAR training course in 2007 and 2008
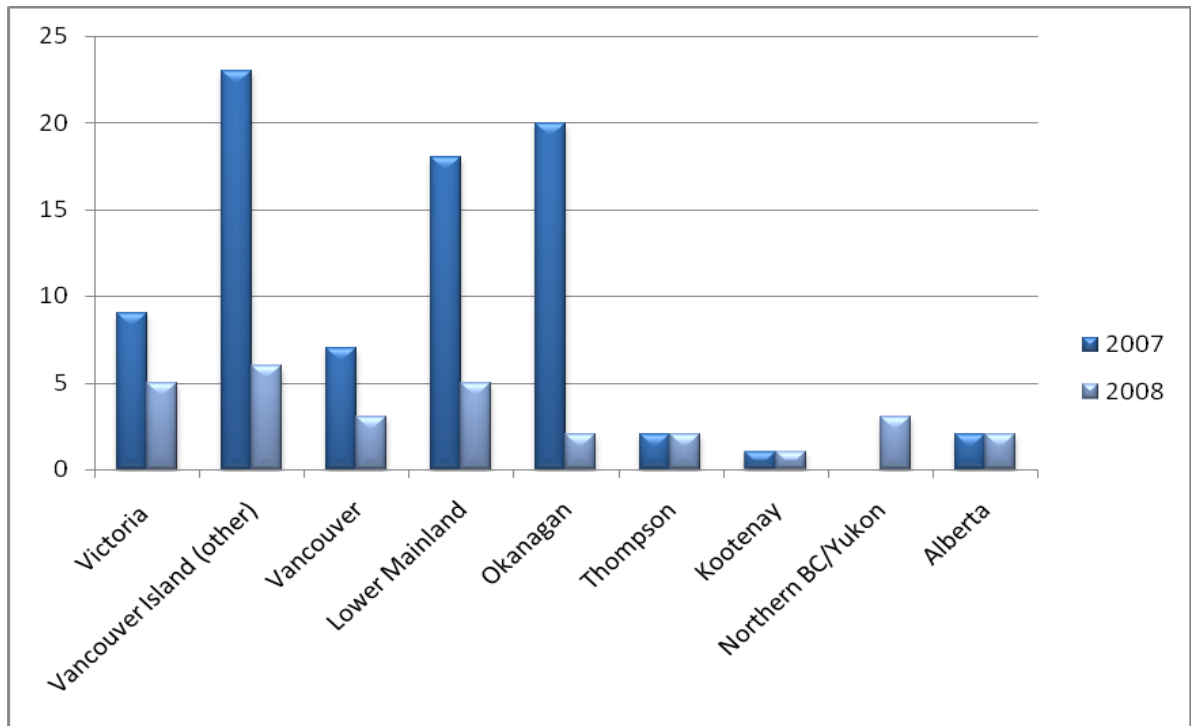
8.3. Feedback from Participants

Feedback from the course has generally been positive, but there have been recommendations from students that will be taken into consideration in order to improve the course. A new instructor has recently been hired to teach the course and is interested in working with MOE to improve the content and reorganize the course to maximize field time and increase participants' comfort level around the RAR process.

A summary of the feedback received from the 2008 courses is as follows:
- majority found the course to be the right length
- majority liked the combination of field and classroom time
- some would like to see a course for RAR graduates, so that they remain updated and current
- majority would recommend the course to others
- would like to see an increase in case studies (from start to finish)
- majority like the class size and the amount of interaction between students and instructor
- 1st day of the class is long but can see the need to cover the information
- excellent reference package provided