

LANDOWNERS COALITION

MAYNE ISLAND

Trustee Jeanine Dodds,

[jdodds@islandstrust.bc.ca](mailto:jdodds@islandstrust.bc.ca)

January 23, 2012,

Trustee Dodds,

I will now forward to you a copy of the final report on the absence of fish in the waterways of Mayne Island. This study was completed in December 2011, by our Qualified Environmental Professional, biologist D.R. Clough at the request of Marlene Caskey, FLNR. This report confirms the findings of an absence of fish as determined in our first study instructed by Marlene Caskey, R.P., Bio., who received that study in August 2010. Both studies conclude that due to many factors, there are no salmonids in any of the streams on Mayne Island. The following is the summary quote from D.R. Clough in this report;

**This is a second assessment of fish presence on Mayne Island. This study was completed for the Mayne Island Land Owners Coalition under the direction of the MOE and serves as an addendum to the first assessment completed by D. R. Clough Consulting in July 2010.**

**Summary July 2010 assessment:**

**A fish inventory including headwater electro shocking in the three largest watersheds (Campbell Creek, Deacon Creek, and Horton Creek) found no resident fish populations due to barriers downstream and lack of fish habitat. All three streams suffer from lack of water or intolerable water quality in the summer.**

**Following the advice of MOE, the Land Owners Coalition was told a conclusive assessment of the streams on Mayne Island could not be determined unless studies of fish presence were conducted during periods of both summer and winter conditions. As the first study was completed in July, this is the second study, completed in December. The second study confirms the findings of the first study. We have found no fish presence on Mayne Island.**

We have now met the criteria as set out by Marlene Caskey at the outset of this investigation on behalf of our community by the Land Owners Coalition. As required by Ms. Caskey, we hired a Qualified Environmental Professional to study our waterways and to determine if there were salmonids present.

Mayne Islanders have known that historically, there have never been fish on our Island. The watersheds are too small to provide a good flow of runoff water into the drainage areas known as “streams”. We have no lakes or other natural water storage areas. We live in a relatively arid environment with the majority of our rainfall occurring over two or three months of the year. Water subsequently only flows as runoff for a short period of time. Waters of Horton Creek, for example, stagnate in a very peaty area over most of its length and therefore, as stated by D.R. Clough, intolerable water conditions prevail.

Even though all of the preceding factors are contributory to the lack of fish in our water ways, there are pre-existing stream side protection regulations in our OCP which include development area setbacks.

We, as a community, present our findings to the Islands Trust, FLNR, and MLA Coell. As determined by our Q.E.P., as required by the M.O.E., there are no fish on Mayne Island and therefore Riparian Area Regulation does not apply.

On behalf of the Land Owners Coalition of Mayne Island,

Ian Dow, Coordinator.

## **D. R. Clough Consulting**

*Fisheries Resource Consultants*

6966 Leland Rd. Lantzville B.C. V0R 2H0

Ph/Fax: 250 390 2901 email: [drclough@shaw.ca](mailto:drclough@shaw.ca)

January 20, 2012

Mayne Island Land Owners Coalition

## **Mayne Island Fish Presence Survey – Salmon Spawner Survey 2011**

### **Introduction:**

This is a second assessment of fish presence on Mayne Island. This study was completed for the Mayne Island Land Owners Coalition under the direction of the MOE and serves as an addendum to the first assessment completed by D. R. Clough Consulting in July 2010.

#### **Summary July 2010 assessment:**

A fish inventory including headwater electroshocking in the three largest watersheds (Campbell Creek, Deacon Creek, and Horton Creek) found no resident fish populations due to barriers downstream and lack of fish habitat. All three streams suffer from lack of water or intolerable water quality in the summer.

Following the advice of MOE, the Land Owners Coalition was told a conclusive assessment of the streams on Mayne Island could not be determined unless studies of fish presence were conducted during periods of both summer and winter conditions. As the first study was completed in July, this is the second study, completed in December. The second study confirms the findings of the first study. We have found no fish presence on Mayne Island.

---

## **RE: Mayne Island, Fish Presence Assessment, December 2011.**

SUMMARY: The objective of this second survey was to determine the presence or evidence of salmon spawners in Deacon and Horton Creek lower reaches in fall 2011. The survey was completed during the only period when flows permitted salmon access in the spawning season and found no evidence of fish.

### **Methods:**

This was a fall salmon spawner survey. Fish presence/absence was determined by the observation of living fish, redds, their carcasses or any other evidence such as eggs or particles in feces of predators (Otter/Mink). Streams are walked in an upstream direction at low flow to ensure visibility. Normally, undercut areas where fish could be hidden are prodded with a stick as well; in this study, there were none. Physical changes to the stream bed that show redds or practice areas by mating fish were inspected. Surveys were conducted to the point of natural barrier where impediments and obstructions were noted. This method is consistent with DFO Stock Assessment practices for small streams on Vancouver Island.

Stream survey information was collected at representative sample sites throughout the watercourses. The survey was conducted after the first large flow event of the year (Nov. 28) when dropping water levels would allow fish to be observed in shallower, clearer conditions. Brad Remillard, BIT, conducted a site survey on December 16, 2011.

Observations and data collected are presented within the text below. Our results are shown in the text, and summary table. The report was written by Brad Remillard, B.I.T. and reviewed and edited by Dave Clough, RPBio.

**Survey Area:** Two streams with potential salmon access were surveyed on Mayne Island; Deacon (Village Bay) Creek and Horton Creek (Hunts Brook). The study areas are based on previous stream habitat reaches described in Reimer<sup>1</sup>, Swell<sup>2</sup> and DR Clough<sup>3</sup> surveys submitted to Islands Trust.

---

<sup>1</sup> 2007, Reimer. Mayne Island Stream Survey Report.

<sup>2</sup> 2010, Swell Environmental. Review of Riparian Areas for Streams Mayne Island

<sup>3</sup> 2010, DR Clough. Mayne Island Fish Presence Survey

## Results

The survey was completed two weeks after a large rain event in late November. Drainages were at normal winter flow of approximately 20% of bankfull stage.

### Deacon Creek (Village Creek):

Located on the west side of Mayne Island draining into Village Bay adjacent the ferry terminal. It is locally known as Village Creek. It has two reaches previously identified in the D.R. Clough (2010) habitat assessment as having potential fish access that were assessed.

**Reach 1:** This reach is 140 m long and extends from the Village Bay beach upstream past houses and yards to Dalton Road Culvert. The intertidal area was inspected for evidence of beach spawning chum or any carcasses. At the mouth was a flock of sea gulls but no evidence of fish. A 30cm high concrete weir crosses the creek mouth. The next 30m offers no barriers to fish on a moderate 3% average gradient. At the property boundaries of #533, 535, and 525 Dalton Road, each owner has anchored 3" seine nets or page wire in the streambed to prevent deer access. Although unintentional these deer fences would completely block upstream access for any potential salmon spawners. This reach appeared to have degraded and eroded even further since the July survey.

Table 1: Deacon Creek Habitat Card Reach 1

Average Channel Width (m)	2.8	Wetted Width (m)	2.8	Stream Gradient (%)	3
Water Temperature (C)	5.5	Est. Flow (lpm)	100	Fish Access/Presence	Yes
Survey Date	Dec 16,11	Bank Full Stage (%)	20		
Substrate (% & Type)	5% Cobble, 10% Gravel, 85% Fines				
Canopy (% & Type)	65% Douglas Fir, Salmonberry, Lawn				
Instream Cover (% & Type)	5% Undercuts				

**Reach 2:** The channel crosses Dalton Road through a 1500mm metal culvert, which was sealed with a page wire fence on the downstream side. The best substrates for spawning were located within the culvert itself. These substrates of 2-4" gravels which appeared relatively stable and devoid of compacted fines. Above Dalton Road the stream had less than 1% of usable substrates for spawning, while the remainder was organic material and fine clays and sands. There was no evidence of spawner activity on the available gravel in the culvert or otherwise. Due to the numerous barriers, Reach 2 was inaccessible to fish.

Table 2: Deacon Creek Habitat Card Reach 2

Average Channel Width (m)	1.3	Wetted Width (m)	1.3	Stream Gradient (%)	7
Water Temperature (C)	5.5	Est. Flow (lpm)	100	Fish Access/Presence	Yes
Survey Date	Dec 16,11	Bank Full Stage (%)	20		
Substrate (% & Type)	5% Cobble, 10% Gravel, 85% Fines				
Canopy (% & Type)	80% Douglas Fir, Alder, Salmonberry				
Instream Cover (% & Type)	5% Undercuts				

### Deacon Creek Summary

This small seasonal channel was inspected for potential salmon spawner access. In Reach 1 this year there was potential access to 30m above the tidal influence, where instream obstructions block further access. This lower area was also the best of very poor habitat for salmon. Reach 1 and 2 were inspected There was no fish or spawning activity observed anywhere.

## Horton Bay Creek (Hunts Brook):

This creek is located on the southeast of Mayne Island and drains into Horton Bay. The main channel has been historically ditched through peat bogs. The watershed drains rural and agricultural properties.

### Reach 1:

The lower reach is approximately 150m long. There is a long confined muddy estuary leading to the creek mouth at the road culvert. The substrates were mixed gravel and sand that was compacted and embedded with no upwelling percolation evident. The survey began at low tide allowing inspection of the estuary substrates for activity. There were no observations of fish presence nor any redds apparent. The stream had approximately 10cm of water depth within the shallow channel. Potential fish access continued above the culvert another 100m on a shallow clay covered glide. No spawning gravel or redds were observed. Each side of the shallow forested riparian area was walked looking for carcasses but none were observed. The reach ends at the fish barrier which is a dam and spill pipe on a natural rise in the land at 130m upstream of the Horton Bay Road

**Table 11; Horton Bay Creek Habitat Card:** Watershed Code 925-312280-313484

Average Channel Width (m)	1.4	Wetted Width (m)	1.3	Stream Gradient (%)	1
Water Temperature (C)	15.5	Est. Flow (lpm)	5	Fish Access/Presence	Yes
Survey Date	July 6/10	Bank Full Stage (%)	5		
Substrate (% & Type)	10% Boulder, 20% Cobble, 50% Gravel, 20% Fines/Organics				
Canopy (% & Type)	80% - Douglas Fir, Cedar, Alder				
Instream Cover (% & Type)	5% LWD				

### Horton/Hunts Brook Summary:

No salmon carcasses or redds were observed during this survey. The only potential spawning gravel was located below the Horton Bay Road culvert, in the intertidal area but these gravels were impacted with fines with no evidence of use.

## Discussion and Conclusion

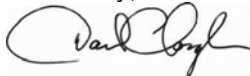
This survey was conducted in the late winter approximately 2 weeks after the first high runoff of the 2011 spawning season. It was an unusually dry fall and local streams did not see any earlier surges in flow until November 28, 2011. With that surge of water, we witnessed the small south east coast Vancouver Island streams received their spawner runs of Chum and Coho. On Mayne Island, walking these streams after the flood showed no salmon use or presence.

We found no presence of adult Coho in these watersheds and this is supported by consecutive summer fry surveys since 2008. We found no indication of Chum Salmon which would create highly visible large redds (over 1m<sup>2</sup>)<sup>4</sup> which are easily observable during the post spawn stream walk. We saw none.

We are confident of the results for the period during the season, given the excellent visibility and low water.

No salmon spawned on Mayne Island during the 2011 spawning season.

Yours truly,



Dave Clough RPBio

Attachments: Photo pages

<sup>4</sup> 1951. Burner, C. J. Characteristics of spawning nests of Columbia River salmon. U.S. Fish and Wildlife Service, Fisheries Bulletin 61:97-110.

**DR Clough Consulting Photo Page  
Mayne Island Fish Presence Report  
Winter 2011 Page 1 of 2 Deacon Creek**



**1.) Deacon Creek weir at intertidal boundary**



**3.) Culvert below Village Bay Road**



**2.) Seine net fence at 535 property boundary**



**4.) Reach 2: Typical Habitat above Village Bay Road**

**DR Clough Consulting Photo Page  
Mayne Island Fish Presence Report  
Winter 2011. Page 2 of 2. Horton Bay Creek**



**1.) Looking downstream off Horton Bay Road**



**3.) Typical substrates in the lowest reach**



**2.) Looking downstream below Horton Bay Road**



**4.) Typical habitat above Horton Bay Road**