

EXHIBIT H

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Northern RI Chapter 737 Trout Unlimited
C/O Roland C. Gauvin
2208 Mendon Rd.
Cumberland, RI 02864
September 22, 2008

US Environmental Protection Agency
Clerk of the Board Environmental Appeals Board
Colorado Building
1341 G Street N.W., Suite 600
Washington, DC 20005

Re: NPDES Permit No. MA0102369

Dear Sirs:

The Northern RI Chapter 737Hearby contests the draft permit for the Upper Blackstone Water Pollution Abatement District 50 Route 20 Millbury, MA 01527.

In response to

Comment; #A7: Trout Unlimited commented that the permit should address concerns with aluminum toxicity.

Response #A7: We agree that aluminum toxicity is a potential concern. The final permit contains a monitoring requirement in order to obtain more information relative to the potential to violate receiving water criteria for aluminum. If the data indicates that there is a reasonable potential to violate receiving water criteria, future permit actions will include an aluminum limit.

In Comment #D2: EPA should utilize effluent data collected as part of the bioassay testing to determine whether reasonable potential exists for the UBWPAD facility to cause or contribute to water quality violations for additional pollutants. Since EPA does not enter pollutant data collected as part of the bioassay testing into ICIS, RIDEM was unable to evaluate reasonable potential for the following pollutants: Chromium, lead, nickel, and aluminum. At a minimum, based on typical lead levels seen in effluent from Rhode Island waste water treatment facilities, it appears that the UUBWPAD would have "reasonable potential" for lead and therefore would require lead limits. To ensure that bioassay pollutant monitoring data is readily available for review, RIDEM requests that EPA lists the pollutants monitored during the bioassay testing in Part1A1 of the permit.

Response#D2: We reviewed the bioassay reports from 2005 and 2006. The effluent chromium data are all below detection levels (detection levels ranged from 5-10 ug/l) and well below the applicable ambient criteria values in state standards. The effluent nickel data ranged from 5-20 ug/l which also is well below ambient criteria values. The effluent lead data are all below detection levels(detection levels ranged from 5-10 ug/l).

However the detection levels are higher than the ambient criteria values. Consequently we have

included a monthly lead monitoring requirement in the final permit, with a quantification level of 0.5 ug/l in order to be able to assess the need for a permit limit in future permit action. Effluent aluminum levels are of concern. Effluent values ranged from 70-240 ug/l. As indicated in response #A7, we have included a monthly monitoring requirement for aluminum in the final permit. A permit limit will be established if the data indicate a reasonable potential to exceed criteria.

We concur that requiring reporting of selected effluent data from bioassay testing on Discharge Monitoring Reports (in addition to submitting the information to EPA in a separate report) would make it easier to review these results. Copper, zinc, cadmium, aluminum, and lead are all required to be monitored more frequently than quarterly. Accordingly, for these metals, the final permit requires that the effluent results from the WET tests must be included in the required discharge monitoring reports. For nickel, a quarterly monitoring requirement has been included in the final permit in order that the effluent results for nickel from the WET tests are also included in the required discharge monitoring reports.

It is our contention that aluminum limits should be set at this time because in Response#A7 it states that limits will be set if data indicates that there is a potential to violate receiving water criteria. In Response#D2 it is stated that effluent levels of aluminum are of concern. Quote "Effluent values ranged from 70-240 eg/l. Because of these levels and documentation in exhibits A an B that substantiate that aluminum levels in this range are detrimental to the reproduction of salmonids. We implore the EPA to set discharge limits for aluminum and urge EPA to advocate for the use of technology that does not use aluminum oxide in the remediation of nitrogen discharge. We have invested much time money and effort in our project to bring fish ladders to the Blackstone and return anadromous fish to the river. Aluminum discharge at the current levels by the UBWPAD are unacceptable and discharge limits should be set at this time.

Roland C. Gauvin



For Northern RI chapter 737 Trout Unlimited

EFFECTS OF ACIDITY AND ALKALINITY ON THE PHYSIOLOGY AND MIGRATORY BEHAVIOR OF ATLANTIC SALMON

DAVID L. RYAN, JR. AND J. L. RYAN, JR.

Department of Biology, University of New Hampshire

Durham, New Hampshire 03824

The effects of acidity and alkalinity on the physiology and migratory behavior of Atlantic salmon (*Salmo salar* L.) were studied. Hatchery-raised fish were exposed to acid, neutral, and alkaline water for 14 days. Acid-exposed fish showed significant increases in plasma cortisol levels and a decrease in plasma glucose levels. Alkaline-exposed fish showed significant increases in plasma glucose levels and a decrease in plasma cortisol levels. Neutral-exposed fish showed no significant changes in plasma cortisol or glucose levels.

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Atlantic salmon (*Salmo salar* L.) is a highly migratory species that spends much of its life cycle in both freshwater and seawater. The fish's ability to tolerate a wide range of environmental conditions is a key factor in its success as a migratory species. However, the effects of acidity and alkalinity on the physiology and migratory behavior of Atlantic salmon have not been well studied. In this study, we examined the effects of acidity and alkalinity on the physiology and migratory behavior of Atlantic salmon. We found that acid-exposed fish showed significant increases in plasma cortisol levels and a decrease in plasma glucose levels. Alkaline-exposed fish showed significant increases in plasma glucose levels and a decrease in plasma cortisol levels. Neutral-exposed fish showed no significant changes in plasma cortisol or glucose levels. These results suggest that acidity and alkalinity can have significant effects on the physiology and migratory behavior of Atlantic salmon.

Keywords: Atlantic salmon, acidity, alkalinity, physiology, migratory behavior

1. Introduction

Atlantic salmon formerly occurred in nearly every river system in the U.S.A. north of the Hudson River, and annual returns are estimated to have been 500,000-600,000 fish. Reproducing stocks now exist in only seven rivers in Maine, and annual returns have declined to less than 50 in 1998 (USFWS, 1999). Harvest has been greatly reduced and the rivers are stocked with hatchery-produced fish, but populations have failed to increase. Atlantic salmon populations have been reduced by acidic deposition in Nova Scotia, Canada (e.g., 1989) and Norway (Heithagen and Hansen, 1991), however in previous investigations we were unable to demonstrate significant mortality of river resident life stages of Atlantic salmon in Maine rivers due to acidity (Haugen et al., 1999). Recently, Steingrimsdottir (1999) demonstrated that Atlantic salmon parr in the U.S.A. and Canada were more tolerant of acidic water than Atlantic salmon parr in Norway. We investigated the effects of acidity and alkalinity on the physiology and migratory behavior of Atlantic salmon.

Atlantic salmon, 1995, and 1996. (USFWS, 1999, 2000, 2001).

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water. Males were collected from the river on 17 May during the same period as the females. All fish were held in the laboratory until they were released.

3. Experimental Design

A total of 100 male and 100 female bluegills were used in the experiment. The fish were held in the laboratory for 10 days before the experiment. They were then divided into two groups of 50 males and 50 females. The males were held in a tank with a constant flow of water and a constant temperature of 25°C. The females were held in a tank with a constant flow of water and a constant temperature of 25°C. The fish were then released into the river. The males were released on 10 May and the females were released on 11 May. The fish were then tracked for 10 days. The fish were tracked using a radio transmitter and a receiver. The transmitter was implanted in the fish and the receiver was used to track the fish. The fish were tracked for 10 days and the results were recorded. The results showed that the fish were tracked for 10 days and the results were recorded. The results showed that the fish were tracked for 10 days and the results were recorded.

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Simon migratory behavior was monitored with the use of surgically implanted ultrasonic transmitters (1.2 MHz and 100 Hz) and stationary receivers in the river system (Figure 1). Hatchery and wild empires were released in groups of 4 to 5 on three occasions between 10 and 16 May, and were tracked until 24 May.

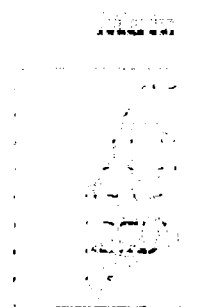
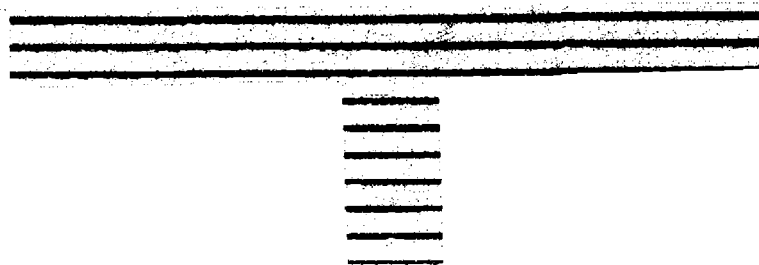
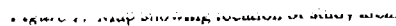


FIGURE 1. Map of the study area in the Florida Panhandle, showing the location of the Apalachicola River and the Gulf of Mexico. The study area is located in the Apalachicola River, near the town of Apalachicola, Florida.

The study was conducted in the Florida Panhandle, near the town of Apalachicola, Florida. The study area is located in the Apalachicola River, near the town of Apalachicola, Florida. The study was conducted in the Florida Panhandle, near the town of Apalachicola, Florida.



The first 1000 m of the river was sampled in 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 265

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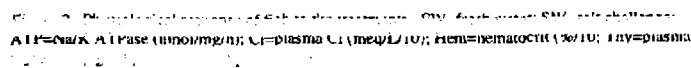
REFERENCES

No hatchery-reared smolts from any treatment died in LW or SW, but at 24 h in SW one wild smolt died, one was immobile, and one lost 23% of its body weight. Wild smolts lost 1-15% of body weight in LW and 1-23% in SW. Hatchery-reared smolts lost 1-15% of body weight in LW and 1-15% in SW. The mean weight loss of hatchery-reared smolts was 7.5% in LW and 7.5% in SW. The mean weight loss of wild smolts was 10.5% in LW and 10.5% in SW. The mean weight loss of all smolts was 9.5% in LW and 9.5% in SW. The mean weight loss of all smolts was 9.5% in LW and 9.5% in SW.

~~SEC. 11. SUPPLEMENTARY~~

[REDACTED]

1. The following information is being furnished to you for your information only. It is not intended to constitute an offer of insurance or any other financial product. It is not intended to be used as a basis for any investment decision. It is not intended to be used as a basis for any investment decision. It is not intended to be used as a basis for any investment decision.



Treatment	Regression Time (days)				
	1	2	3	4	5
Control	0.70 ± 0.00ab	0.88 ± 0.02	0.93 ± 0.01	0.98 ± 0.01	1.00 ± 0.01
Ward	1.00 ± 0.00b	1.43 ± 0.04	0.73 ± 0.00	0.93 ± 0.01	1.04 ± 0.00b

It is important to note that the results of the analysis are not statistically significant. The χ^2 test for independence of the variables is 1.04, with a p -value of 0.31. This indicates that there is no significant association between the variables.

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