Oil spill settlement funds directed to seabird conservation

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ABSTRACT

Settlement funds from catastrophes can generate lasting conservation benefits, if directed appropriately. Such is the case with the Nestucca oil spill which occurred in Washington State in 1988. The spill killed thousands of marine birds and the subsequent litigation settlement awarded 3.3 million dollars for recovery and monitoring of Canadian seabirds, in addition to clean-up costs. Settlement damage funds were directed to eradicate introduced rats from Langara Island, to restore what was formerly the world’s largest colony of Ancient Murrelets (Synthliboramphus antiquus). In addition, settlement funds were devoted to establishing an ecosystem-level baseline of seabirds and their marine prey populations on Triangle Island, the largest and most diverse seabird colony in Western Canada. One of the projects tracked breeding Cassin’s Auklet (Ptychoramphus aleuticus) and determined that they foraged far away from the colony in search of deep-sea copepods. The results stimulated conservation planners to enlarge a marine protected area which had been proposed to protect marine birds in the region, but policy guidance was lacking. By 2018 policies had evolved, and Canada announced the formation of their first marine National Wildlife Area following a multi-year engagement process with many interested parties. At the same time, Shell Canada relinquished all of their exploratory drilling rights within the area. The settlement funds from a catastrophic oil spill facilitated the recovery of seabirds on Langara Island, the formation of the first marine protected area for wildlife in Canada, and a reduction of future threats from exploratory drilling in an internationally important ecosystem.

If settlement funds from catastrophes, like oil spills, are directed appropriately, lasting conservation benefits can arise and grow. Catastrophes are not implied to be a ‘good’ thing, rather, how can we work to make the best of a bad situation over the short and long term by investing in restoration and conservation actions. On December 22, 1988, the tug Ocean Service collided with its tow, the barge Nestucca, which was punctured and it spilled an estimated 874,000 L (5500 barrels) of Bunker C (No. 6) fuel oil into the Pacific Ocean near Grays Harbor, Washington [1; Fig. 1]. The oil slick floated and dispersed over 2072 km² from Grays Harbor north to Vancouver Island, British Columbia, Canada and south to Oregon. Prevailing winter winds continued to drift the spill northward along Vancouver Island for months and the effects were detected on exposed outer shorelines [3] and seabird colonies as far north as the Moore Islands, o[4]. It was estimated that 56,000 marine birds were killed with Common Murre (Uria aalge) and Cassin’s Auklet suffering among the greatest losses [5].

Legal proceedings commenced in the United States District Court of the District of Oregon against the responsible party, Sause Brothers Ocean Towing Co. (BP North American Petroleum, Inc. was a third party defendant, and owner of the fuel being transported), under the Migratory Birds Convention Act, Fisheries Act, Territorial Sea and Fishing Zones Act, National Parks Act, Canada Wildlife Act, Canada Shipping Act, as well as the US Federal Water Pollution Control Act [6]. Lead agencies for Canada were Canadian Coast Guard (Federal), Ministry of Environment (Provincial) and Nuu-Chah-Nulth Tribal Council (First Nations) with primary participation from Burrard Clean Operations, Environment Canada, and Fisheries and Oceans Canada. A conference before a settlement judge followed (20 May 1992) and all issues were settled by agreement by which the ship owner agreed to pay the to the Nuu-Chah-Nulth Tribal (Cdn$505,000), and the Federal Government (Cdn$4,382,000) for clean-up costs, as well as environmental claims to the Nuu-Chah-Nulth Tribal (Cdn$700,00) and the Federal Government of Canada and the Province of British Columbia for marine bird habitat restoration (Cdn$1,749,500, plus an annuity paid over a ten year period purchased with the sum of Cdn$1,600,000, [7]. The Nestucca Oil Spill Natural Resources Damage Fund was established by an agreement by the Minister of Environment, Canada, and Minister of Environment, Lands and Parks, British Columbia on 17 June 1992 [8]. The present note addresses how the spill damage funds were directed towards conservation and recovery of marine birds and their habitats in BC.

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The majority of the Nestucca Oil Spill Natural Resources Damage Fund were directed to remove introduced rats from Langara Island [9,10], formerly the world’s largest breeding colony for Ancient Murrelets [11]. The large scale eradication project was a success and the seabird colony demonstrated a rapid response and signs of recovery [12]. This note focusses on additional investments in monitoring and research from the Nestucca damage funds directed to a multiagency Canadian team (Environment Canada, Canadian Wildlife Service (CWS), Department of Fisheries and Oceans, and Simon Fraser University (SFU)) to develop a baseline of natural variation of breeding seabirds and their prey populations on Triangle Island, the largest and most diverse seabird colony in Western Canada [13–15].

A new Chair in Wildlife Ecology was formed in 1993 by the Canadian Wildlife Service at Simon Fraser University, and they quickly established a station on Triangle Island as a flagship for their seabird research and monitoring program. A multiagency team secured Nestucca damage funds to initiate a five year ecosystem-level study around Triangle Island. One of the projects sought to examine the at-sea foraging distributions of breeding Cassin’s Auklets, by combining colony-based nestling diet and growth investigations with VHF radio telemetry from a small plane, ship-board observations of birds, and ship-based zooplankton sampling along the newly established cross

![Map of Triangle Island and surrounding areas showing nesting and foraging areas for Cassin's Auklets.](image1)

Fig. 1. a. The 95% Home Ranges for breeding Cassin’s Auklets from Triangle Island telemetry in 1999 were largely outside of the rectangular area (4271 km²) proposed by the Canadian Wildlife Service in 1994 as a marine National Wildlife Area (mNWA). Figure 1b. The 95% Home Ranges from all years 1999–2001 (from Ref. [2] in relation to the proposed 1994 rectangle and the larger 2018 mNWA boundary (11,546 km²).
shelf transect which passes the seabird colony. In 1999, the telemetry work showed that birds were primarily in an area 40–75 km southwest of Triangle Island in waters > 1000 m deep, well beyond the shelf break. The university researchers were examining the 1999 telemetry data when they became aware of an effort by Canadian Wildlife Service habitat planners to develop a protected area around Triangle Island, the proposed Scott Islands marine National Wildlife Area [16,17]. It was clear that the majority of the at-sea foraging locations were outside of the boundaries of the proposed marine wildlife area (Fig. 1a). Additional years of telemetry data from 2000 to 2001 also showed that the foraging Cassin’s Auklet could cover areas up to 8200 km² [2] and that their distributions were determined by the location and availability of key copepod prey which require deep water habitats [18], beyond the shelf break [19; Fig. 1b).

Conservation actions began to occur, and by 2006 the waters surrounding the Scott Islands were recognized by Fisheries and Oceans Canada as an “Ecologically and Biologically Significant Area” [20,21]. Environment Canada evaluated the importance of the area to breeding and millions of non-breeding seabirds [22], proposed a large marine study area around the Scott Islands in 2007 [5], and developed the Scott Islands marine National Wildlife Area in consultation with a Steering Committee and a stakeholder Advisory Group, established in 2010. “The Steering Committee is chaired by Environment and Climate Change Canada and includes representatives from other federal departments (Fisheries and Oceans Canada, Transport Canada, and Natural Resources Canada), the Province of British Columbia, the Quatsino First Nation, and the Tlatlasikwala First Nation. The stakeholder Advisory Group includes representatives from local and regional governments, commercial and recreational fishing, marine transportation and shipping, non-renewable energy, marine conservation, and tourism.” (Erika Lok, pers. comm., [23].)

Canada announced the formation the Scott Islands marine National Wildlife Area, the first of it’s kind in Canada in September 2018 [24] in keeping with new policy goals under the United Nations Convention on Biological Diversity. The Scott Islands Protected Marine Area Regulations, made under the authority of the Canada Wildlife Act, came into

Fig. 2. Offshore oil and gas tenure areas [29] and percent composition of the seafloor within the Scott Islands mNWA for Chevron (4590 km², 39.7%), Exxonmibile (167 km², 1.4%), Petro-Canada (1356 km², 11.7%) and Shell Canada (3205 km², 27.7%). There are no tenures for the remaining 2252 km² (ca. 19.5%). Concurrent with the Scott Islands formal announcement, Shell Canada released their exploratory oil and gas permits within the mNWA.
force on the day on which they were published in the Canada Gazette [25], Part II on June 27, 2018 [26]. The 11,546 km² area is well over twice the size of the 1994 proposal (4271 km²) and now encompasses deep sea foraging areas for Cassin’s Auklet which were revealed by the historic VHF telemetry results (Fig. 1b, see also [27]).

At the time of the marine NWA formal announcement, Shell Canada released 50,000 km² of exploratory oil and gas drilling permits which include 3205 km² of the seafloor of the Scott Islands mNWA [28]; Fig. 2) to further support Canada’s marine conservation efforts. The Scott Islands will be collaboratively managed by Environment and Climate Change Canada, the Tlatlasikwala First Nation, and the Quatino First Nation, and the Province of BC with a framework currently under development. The Government of Canada will provide funding for the management of the marine National Wildlife Area through Canada’s Natural Legacy fund. “From 2018 to 2023, more than $3.2 million will be dedicated to support collaborative management, research, monitoring, and the removal of introduced predators that are harmful to seabirds” [24]. A new research cabin is currently under construction to enable the marine NWA to provide a long-term and focused monitoring and research environment to improve understanding of seabirds, the marine ecosystem, and the influence of human activities.

The Nestucca oil spill was a large scale catastrophe, but even with a modest damages fund a long term legacy for seabird conservation was established in BC. The removal of introduced rats on Langara Island was the largest successful rodent eradication ever achieved at the time and may never have been attempted without solid funding from a single source. The oil spill funds also supported the early years of what is now a seabird time series which spans several decades (e.g., [30]). The time series data contribute unique insights into ecosystem responses to ocean climate variability around the Scott Islands and serve as vital contributions to the annual State of Ocean Report for Pacific Canada [31]. The grants from settlement funds allowed researchers on Triangle Island to lever other sources of funding which helped to build the program and to attract additional attention as the first marine National Wildlife Area for Canada. The Nestucca settlement was not restricted to paying for cleanup but also supported a damages fund, explicitly required to restore and conserve seabird habitat. The Nestucca funds therefore provided a boost and were very effective in supporting major programs which contribute to the Government of Canada’s mandate to conserve and protect marine birds.

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