as much British possessions as the Kermadec Islands, formally annexed in January 1887. As early as 1868 JGB's father had published an empire map which showed Victoria Land, the Balleny Islands and Enderby Land as British possessions, daubed a provocative red smudge across an unnamed Wilkes Land, and added 'Kerguelen's Land' into the bargain. But in 1868 Graham Land and the South Shetlands, though shown, were not included in the empire, one foreign discovery, Adelie Land, was shown, and there was no outline of an Antarctic continent to draw the parts together (Bartholomew 1868: Sheet 1). By 1889, although Wilkes Land was shown and not claimed, the overall possessive political impression created by the paperweights map was clearer and stronger, as British geographers became steadily more confident that Antarctica existed.

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Early sealing regimes: the Bering Sea fur seal regime *vis-à-vis* Finnish–Soviet fishing and sealing agreements

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ABSTRACT. Environmental management had its early stages in the early years of the 20th century. This note contrasts the different regimes that emerged with regard to the management of seals and the seal hunt: the well-researched Bering Sea regime and the little known regimes between Finland and the Soviet Union. While the former shaped and already embedded principles of modern environmental law and has the seal population as its primary focus, the latter agreements did not make reference to the environmental dimension of the seal hunt, but must be read against the backdrop of the difficult border situations between the two countries.

Introduction

The modern dimensions of environmental law and policy are often traced back to Carson's famous treatise *Silent spring* (Carson 1962) that triggered the emergence of the environmental movement. Large international gatherings, such as the UN Conference on the Human Environment of 1972 in Stockholm or the UN Conference on Environment and Development of 1992 in Rio de Janeiro, serve as benchmarks for shaping international environmental law (Birnie and others 2009: 48–50). But environmental decision-making had seen its beginning many decades before the emergence of the League of Nations and the United Nations. This was especially with regard to the protection of specific species or ecosystems that provided marine resources for motivated states to enter into bi- or multilateral agreements (Koivurova 2013: 31).

This note briefly presents some agreements with regard to the seal resource that emerged in the Bering Sea as well as between Finland and the Soviet Union. While seemingly both are environmental in character, seal management occurred under significantly different premises in the two cases.

The Bering Sea fur seal agreements

The fur seal hunts in the Bering Sea

In the late 1700s and early 1800s, large populations of fur seals were discovered on the Pribilof Islands, a group of several volcanic islands the most important of which are St. Paul and St. George, north of the Aleutian Islands. With the decline of otters, the hunt of the abundant seal populations was conducted in an unregulated manner under the auspices of the Russian-American Company, leading to an overabundance of unusable seal skins and associated drastic decline in the seal population. Given the decline in numbers, the years 1806–1807 saw no hunt for fur seals in the Pribilofs for the herd to recover. In 1808, however, unregulated killing continued until the enactment of the first killing bans: in 1822 a two year ban was issued for St. Paul; a seasonal ban for the 1826–1827 season in St. George and another two-year ban for St. Paul in 1835–1837. During the time of heavy exploitation of the seals in the Pribilof Islands the human population of the Aleutian Islands was under the dominance of the Russian-American Company which relocated them to the Pribilofs in order to enable the company to uphold its demand for seal furs (Bonner 1982: 48; Busch 1985: 100, 101; Stone 2005: 47). In light of the declining seal populations, Russia pushed for a more regulated hunt in order to protect the herds. To this end specific regulations were established that protected females from the hunt and enabled only the hunt of premature males. Due to these protective measures by 1867 the seal population had increased significantly (Bonner 1982: 48; Busch 1985: 100).

With the sale of Alaska to the United States in 1867 the seal hunt fell under American jurisdiction and although the US intended to continue with the Russian scheme of protecting female seals, heavy sealing operations decimated the seal herds. Therefore, in 1869 the Pribilof Islands were protected as a special reservation for fur seals with the control over the sale of sealing rights to the Alaskan Commercial Company. Hunting of females and young seals under one year was now prohibited and sealing operations were only allowed in the months of June, July, September and October (Bonner 1982: 48; Busch 1985: 107).

The Bering Sea sealing agreements

Throughout the latter half of the 19th century until the early 20th century, it was especially Russian, American, Japanese and Canadian/British schooners which hunted large numbers of

seals in the water and which contributed to population decline. Pelagic sealing was not regulated and especially females were hunted. As a consequence, the first legally-binding bilateral treaty to protect seals was adopted in 1893 between the US and Great Britain under the Paris Tribunal of Arbitration that forbade the extremely wasteful pelagic seal hunt (Riley 1967: 2) within 60 nautical miles from the Pribilofs and between 1 May to 31 July of each year. This arbitration treaty was concluded over the seizing of ships by the Americans carrying fur seal skins hunted without licence in the waters surrounding the Pribilofs (United Nations 2007; Robb 1999: 43–88). In article 8 the arbitration treaty holds an exemption for the indigenous people of the region provided they are not engaged in the marketing of the seal products, but hunt the seals for subsistence purposes and in a manner that does not utilise modern equipment.

Although the treaty aimed at the protection of seals, the northern fur seal populations continued to decline due to the treaty's area of application which was only the eastern Bering Sea. This allowed Japan and Russia to conduct uncontrolled pelagic sealing in other areas. Moreover, the two countries were not bound by the arbitration treaty and once Japan had emerged as a stakeholder in the seal hunt, large numbers of seals were taken. It is also worth noting that a lack of enforcement capacities by US authorities enabled a continuous large-scale seal hunt. By 1910–1911 the northern fur seal herd had reached an all-time low (Kenyon and others 1954: 2), calling for more legislative action to prevent complete collapse.

In 1909 US Secretary of State Elihu Root initiated a process that brought the United States, Great Britain/Canada, Japan and Russia to one table to negotiate a treaty for the protection of the northern fur seal herd (Mirovitskaya and others 1993: 32, 33). It was thus that these four countries adopted the first multilateral fur seal treaty in 1911 which outlawed the commercialisation of seals of the Russian, Japanese and US herds and the pelagic seal hunt north of 30° N (United States and others 1911). Two exemptions from the treaty's provisions exist: firstly, if the authorities of a contracting party have legitimised a licensed and certified kill. Secondly, when hunters belong to 'Indians, Ainos, Aleuts, or other aborigines [. . .]' yet without commercial intent (United States and others 1911: articles III, IV). With the fur seal treaty in place the herd in the Pribilof Islands began to recover (Ray and McCormick 2014: 172).

The four-party status of the convention remained intact until 1940 when Japan voiced its intention to withdraw from it. With Japan's withdrawal the regime collapsed. During the Second World War hardly any commercial sealing took place and the seal stocks recovered. In 1957 a new treaty between the same parties (Canada was by then an independent country) was concluded applying more advanced provisions than in the 1911 fur seal treaty (Young 2010: 154, 158), the interim convention on conservation of North Pacific fur seals (United States and others 1957). Under this convention the commercial pelagic seal hunt was prohibited except for research purposes and for indigenous hunters using non-modernised hunting methods. Although the overall purpose of this convention was to protect seal stocks, the 'rational use' clause was embedded in the convention by inserting references to the maximum sustainable yield of seal populations. Paragraph 2 of the Chapeau therefore reads:

> Desiring to take effective measures towards achieving the maximum sustainable productivity of the fur seal resources of the North Pacific Ocean so that the fur seal populations can be brought to and maintained at the levels which will provide the greatest harvest year after year, with due regard to their relation to the productivity of other living marine resources of the area.

In practice 'rational use' was to occur in a manner that provides each contracting party with 15% of the number of skins taken and the value it yields at the end of the season (United States and others 1957: article IX). Article II (b) of the interim convention moreover makes use of an early version of the ecosystem approach and refers to the impact of seals on other marine resources. In this context, however, it is not ecosystem productivity or the assessment of carrying capacities but rather the potential detriment over-abundant seal populations may have on fish stocks. Birnie and other point out that at the time especially fisheries conventions have neglected a more integrative approach towards ecosystem services. In this sense the interim convention constitutes a rather progressive element in international environmental law (Birnie and others 2009: 665). In order to determine this effect and in order to establish a coordinated method for impact assessments, article V established the North Pacific Fur Seal Commission that was to design scientific research programmes to be carried out by the contracting parties, coordinate the scientific data and to issue sealing recommendations. Moreover, the interim convention provided for an enforcement scheme under which the authorities of the contracting parties were allowed to seize ships and arrest personnel if there was substantial cause to believe that the prohibition on pelagic sealing had been breached (United States and others 1957: art. IV).

While the fur seal regime constituted a rather successful international environmental regime for species protection 'it proved to be robust but not resilient in the face of major biophysical and socioeconomic changes' (Young 2010: 147). It remained in place until 1985 when endogenous and exogenous changes fostered its collapse (Young 2010: 156–165).

Finnish–Soviet sealing agreements in the Baltic Sea region and Arctic Ocean

Seals in the Baltic and Barents Seas with focus on Finland

The interaction between seals and humans in the Baltic Sea has long been shaped by competition over fish resources (Ylimaunu 2000). In fact, this still persists today and for example the current Finnish seal management plan is designed to protect the fisheries (Finland 2007). It therefore did not come as a surprise that bounty hunting commenced in the late 19th century as a primary motivation for the seal hunt. Especially the fresh water seals in Lake Ladoga, which up until the Treaty of Tartu in 1920 was in its entirety part of the Grand Duchy of Finland (see Fig. 1), saw significant bounty hunts. The bounty hunts contributed to a massive decline in the seal populations throughout the first half of the 20th century (Ylimaunu 2000: 120, 121). Bounty hunts occurred in Finnish waters until the 1970s. Around 10,000 seals were killed annually from 1908–1914 and approximately 4,000 between the two world wars (Härkönen and others 1998: 167). Although some commercialisation of seal products also occurred in the Baltic Sea, it never was conducted primarily for commercial purposes but seals were considered pest animals. Given the bounty payments, however, especially the seals in Lake Ladoga were hunted primarily by Finnish hunters up until the Second World War (Härkönen and others 1998: 32).

Although until 1944 Finland had an Arctic coastline in the Petsamo region (see Fig. 2), at the turn of the century

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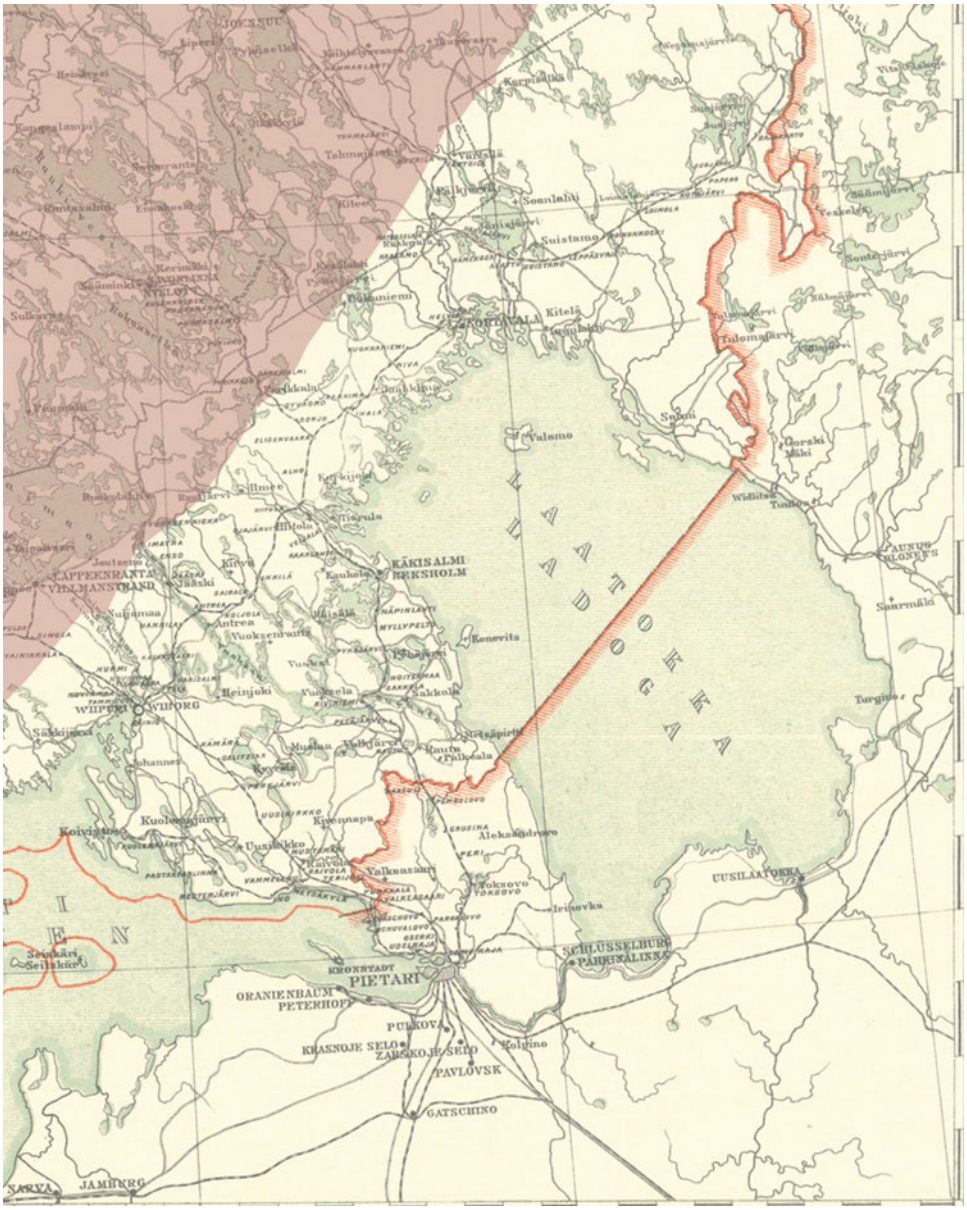

Fig. 1. Lake Ladoga. Finnish-Soviet border of 1920 with current Finnish landmass in red. Original map provided by National Library of Finland, edited by Jarkko Rintee.

commercial seal hunting in the area was primarily carried out by Russian and Norwegian hunters within the Pomor trade systems (Kulyasova and Kulyasov 2009: 202) while some subsistence sealing activities were also conducted by Finns (Ylimaunu 2000: 306). Seal hunting was conducted throughout the entire Barents and White Sea areas and was an important element in early settlements of the western Russian Arctic. During the First World War sealing in northwest Russia declined but experienced a rise during the 1920s, especially since tax exempt status was granted in April 1926 to all citizens living in sealing areas (Belikov and Boltunov 1998: 76, 77).

Finland and the Soviet Union: fishing and sealing in Lake Ladoga, in the Arctic and in the Baltic Sea

Contrary to the Bering Sea fur seals regime, to the knowledge of this author no research has thus far been conducted on the fishing and sealing agreements between Finland and the Soviet Union. While in the case of the northern fur seals the population status played a predominant part in the conclusion of the different agreements, the agreements between Finland and the Soviet Union must be considered in the light of the Treaty of Tartu of 1920 which established the inter-war borders of the countries (League of Nations 1920).

Based on the treaty, the Republic of Finland, which declared independence in 1917, was to remain within the borders of the Grand Duchy of Finland in the Russian realm, effectively granting the country access to the Arctic Ocean in the Petsamo District in the north and a border across Lake Ladoga in the south. At the same time, Finland abstained from any further claims to areas of Russian Karelia. According to article 21 of the Tartu treaty, access to waterways was to be without restrictions for both countries and mutual agreements were to be concluded that granted both parties unrestricted fishing rights. It is in light of this article that in 1922 two agreements were concluded, the

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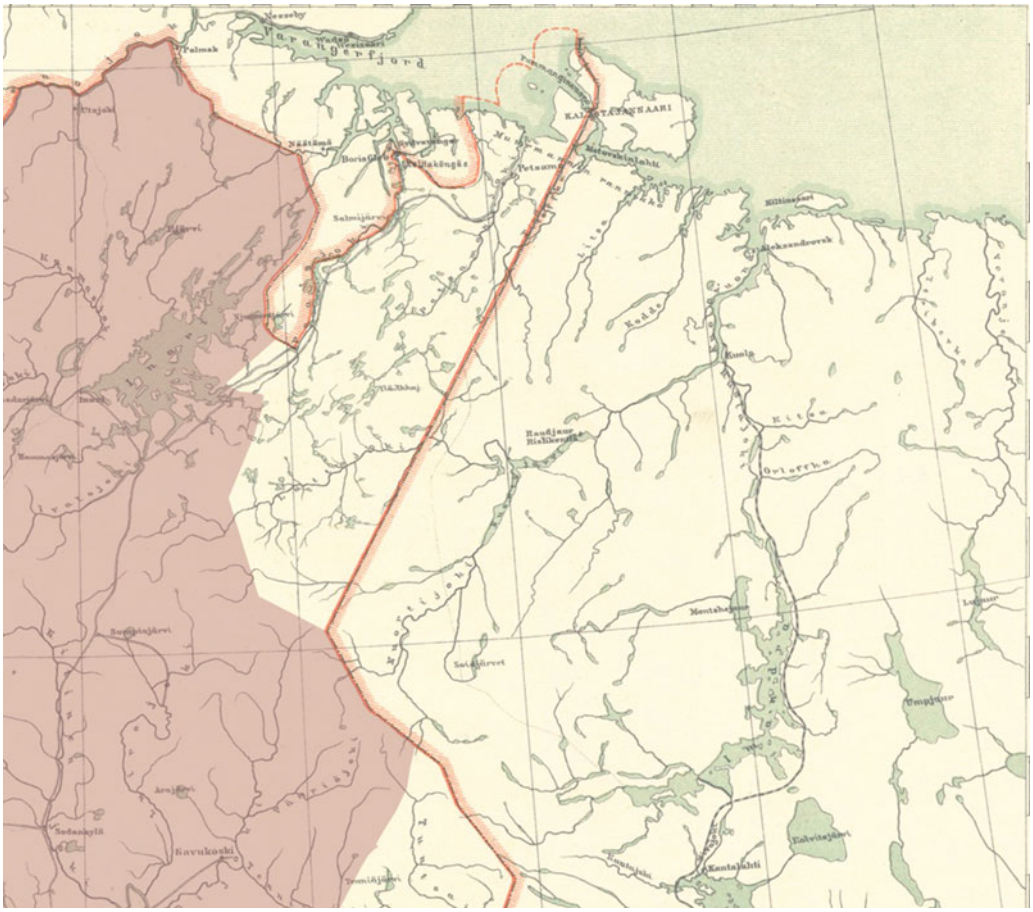

Fig. 2. Petsamo region. Finnish-Soviet border of 1920 with current Finnish landmass in red. Original map provided by National Library of Finland, edited by Jarkko Rintee.

Finnish and Russian agreement on fishing and sealing operations in Lake Ladoga (henceforth called *Ladoga agreement*; Finland 1922a) and the *Agreement between Finland and Russia on fishing and sealing operations in the territorial waters of both countries in the Northern Arctic Ocean* (henceforth called *Arctic Ocean fishing and sealing agreement*; Finland 1922b).

Significant differences in scope exist between these two treaties and their Bering Sea relative. The most significant of these lie in the technical and highly administrative provisions in the Finnish–Soviet treaties which therefore decouple the treaties from environmental contexts. Instead of protecting seal populations in the treaties' areas of application they aim at ensuring a smooth conduct of the seal hunt and fishing operations. Article 1 of both treaties therefore gives the citizens of both countries the right to conduct fishing and sealing activities in the other party's areas pursuant to article 21 of the Tartu treaty (Finland 1922a; 1922b: article 1). Equal access and equal fishing and sealing rights in the designated areas therefore constituted the main element of the treaties. While the Bering Sea fur seals regime contained provisions of a prohibitive nature, the Finnish-Soviet treaties were rather regulative in scope. For example, the Ladoga agreement in article 4 in eight subparagraphs stipulated which documents had to be carried, how the boats were to be marked or which legislation was applied in breach of the agreement's provisions. Along the same lines, the Arctic Ocean fishing and sealing agreement made the establishment and maintenance of facilities for the processing of fish and seal products an elementary part of its provisions in article 4. In both treaties reference to seal stocks was absent. Also no special recognition of the indigenous Sámi in the Petsamo region existed in the Arctic Ocean fishing and sealing agreement. These factors underline that the 1922 fishing and sealing agreements were aimed at administering the Tartu treaty rather than constituting independent treaties with an environmental scope. Only indirectly was reference made to the breeding behaviour of the Ladoga seals which give birth to their pups in the early spring: according to article 2 of the Ladoga agreement fishing and seal hunting was only permitted in the period of 1 May to 15 November with authorised hunting methods.

Since the 1922 agreements came into force in 1924 and were valid for 10 years according to article 10 (Ladoga) and 11 (Arctic Ocean) respectively, new agreements were to be negotiated in 1934. While this happened for Lake Ladoga (USSR 1934), no such successor agreement can be found for the Arctic Ocean. The 1934 Ladoga agreement in essence reflected the provisions of its predecessor and was a technical agreement which made no reference to the sustainability of the seal herds which had been experiencing significant decline. Notwithstanding, the fishing and sealing season had been extended by two weeks and lasted until 30 November. While this was the case, the 1934 Ladoga agreement in article 2 prohibited the utilisation of explosives, toxic and narcotic substances which prevented the killing of large numbers of animals.

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While technically still in force, the Moscow Armistice of 1944 (USSR 1944) ceded the Petsamo area, southern Karelia and consequently Ladoga as well as the region of Salla to the Soviet Union, making the fishing and sealing agreements void. With the peace treaty between Finland and the Soviet Union in 1948 (also called the YYT treaty for the Finnish terminology; see references), the borders were fixed (USSR 1948). Sealing, however, did not disappear from the countries' scope of cooperation and in 1959 as part of increased cooperation under the YYT treaty mutual access to fishing and sealing grounds in the Baltic Sea was established in an agreement in 1959, valid for five years (USSR 1959). The agreement was extended in 1965 for another five years while it covered a larger geographical scope towards the eastern parts of the Gulf of Finland.

The agreement mirrored the technical nature of the Ladoga and Arctic Ocean fishing and sealing agreements and no reference to sustainable seal hunts can be found. Instead, clear-cut rules on which documentation was to be kept, which nets to be used or how to mark the vessels were established. Merely the creation of fishing and hunting seasons from 1 July to 1 November for the summer and 1 January to 20 April for the winter could point towards recognition of environmental considerations.

Conclusion

This note briefly presented two regimes in the first half of the 20th century which were created to manage the seal hunt. While being in force at the same time, their scopes and structures could not have been more different. The Bering Sea fur seals regime reflected concerns over the population status of the seal herds and included the predecessors of principles of modern environmental law, such as 'rational use' or with an aboriginal exemption mirroring 'common but differentiated responsibilities' (see also Sellheim 2015: 25). It therefore must be mentioned in a context of environmental law. The agreements between Finland and the Soviet Union were diametrically different to the Bering Sea regime. None of the treaties directly reflected any environmental dimension, but were rather designed as a means to fulfil the provisions of the peace treaties between the two countries. They were consequently highly technical and merely administrative rather than environmental.

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South Georgia pipit nesting at Schlieper Bay, South Georgia

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An 18-strong international team is hard at work in South Georgia, undertaking the final phase of the world's largest rodent eradication project, run by the South Georgia Heritage Trust. Known collectively as 'Team Rat', its departure for South Georgia in January coincided with the discovery of a nest of five South Georgia pipit chicks (Fig. 1) in an area overrun with rats before being baited by the trust in 2013. The pipit is the world's most southerly songbird.

Fig. 1. South Georgia pipit nest. Photo Sally Poncet.

The South Georgia pipit is endemic to South Georgia, with an estimated 3000 pairs nesting on the island. It has an IUCN status of Near Threatened. Previous to the baiting work it bred only on offshore islands and areas of the southern coastline inaccessible to rats. In stark contrast, *Rattus norvegicus* has been thriving ever since it first reached the island as a stowaway on sealing vessels in the late 1800's. All of the small ground-nesting birds on the island, such as the pipits, prions and petrels, have had their nests decimated by the interloper, whose numbers are unknown but were reckoned to be in the millions before the baiting work began.

Rat populations range along the north coast of South Georgia. Their DNA varies from place to place, evidence that populations have been kept separate over the years by South Georgia's glacial divides. The same barriers have halted the rats' progress to areas on the south coast, and have allowed 'Team Rat' to bait the island over a number of years, confident that these natural boundaries will stop any re-invasion from neighbouring areas. However with glacial recession rats have been able to penetrate ever further into the pipits' territory. Even offshore islands are under threat of invasion from rodents given the right conditions (favourable currents and floating debris). The only way of ensuring the survival of the South Georgia pipit as a species is through the goal of eliminating every rat from South Georgia.

The discovery of the first pipit nest in an area cleared of rodents, was made at Schlieper Bay near Weddell Point to the very northwest of the island. The nest was found by Sally Poncet, an expert on South Georgia wildlife. Poncet was a member of Team Rat during its Phase 1 operation. She discovered the nest while on an expedition to survey wandering albatrosses. Many others have now reported pipits in numbers in the areas treated in 2013.

Experts estimate that the seabird population on South Georgia could increase by as much as 100 million in the absence of rodents.

Algal bloom in a melt pond on Canada Basin pack ice

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ABSTRACT. Melt ponds are common on the surface of ice floes in the Arctic Ocean during spring and summer. Few studies on melt pond