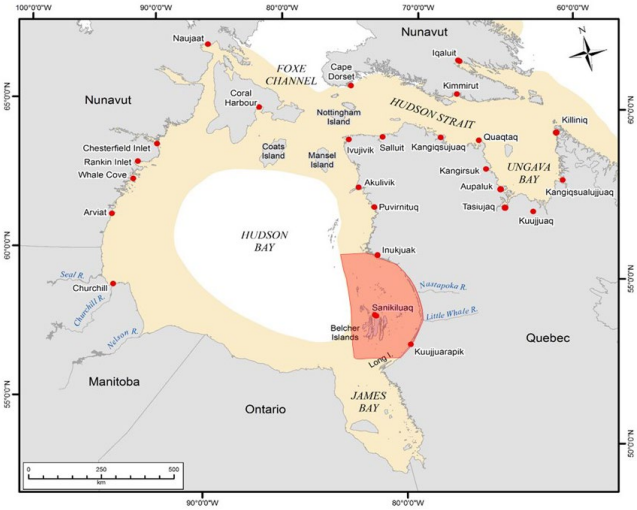
Fisheries and Oceans Canada
Pêches et Océans Canada

Ecosystems and Oceans Science
Sciences des écosystèmes et des océans

ᑯᐸᐃᒃ ᑕᕐᕋᖕᒐ

ᑲᓇᑕᐅᑉ ᖃᐅᔨᓴᖅᑎᒻᒪᕆᖕᒋᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ
ᐸᐸᑦᑎᔨᖕᒋᑦᑕ ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᓂᒃᑳᖕᒋᑦ 2020/031

2020 ᐊᖕᒍᓇᓱᒃᑕᐅᔪᓐᓇᕐᒪᖕᒑᑕ ᐅᖃᐅᑎᔭᐅᓯᒪᓂᖅ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖕᒐᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᕐᓂᒃ (*DELPHINAPTERUS LEUCAS*)



ᖃᑯᖅᑕᐃᑦ ᕿᓚᓗᒐᐃᑦ (Delphinapterus leucas). ᐊᔾᔨᓕᐊᖕᒐ ᕕ. ᓚᔅᔾ (ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ)

ᓴᕿᔭᖅᑐᖅ 1. ᕿᓚᓗᒐᐃᑦ ᑕᒫᓃᑦᑐᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᐊᒻᒪᓗ ᓱᓪᓗᐊᓗᒃ (ᕐᑯᖅᓱᖅᑐᖅ) ᐊᒻᒪᓗ ᐊᐅᔭᕐᕕᖕᒐᑦ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖕᒐᓂ ᕿᓚᓗᒐᐃᑦ (ᐊᐅᐸᖅᑐᖅ). ᓄᓇᕗᑦ ᐊᒻᒪᓗ ᓄᓇᕕᒃ (ᑯᐸᐃᒃ) ᓄᓇᖕᒋᑦ ᐊᒻᒪᓗ ᐊᑎᖕᒋᑦ ᓄᓇᐃᑦ ᐅᖃᐅᓯᐅᔪᓂᑦ ᑎᑎᕋᖅᓯᒪᓪᓗᑎᒃ ᓴᕿᔭᖅᐳᑦ

ᐃᓗᓕᖕᒐ

ᐃᓄᐃᑦ ᓂᕿᒋᖕᒪᒋᑦ ᐊᖕᒍᓇᓱᒃᐸᒃᑕᖕᒋᑦ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᑕᒫᓂ ᑲᓇᖕᓇᖕᒐᓂ, ᐱᓇᖕᓇᖕᒐᓂ ᐊᒻᒪᓗ ᐅᐊᖕᓇᖕᒐᓂ ᓱᒡᔭᖕᒋᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ, ᖃᓂᒋᔭᖕᒐᓂ ᓴᓂᑭᓗᐊᑉ ᕿᑭᖅᑕᖕᒐ, ᑕᒪᐅᓇ ᓱᓪᓗᐊᓗᒃᑯᑦ ᐊᒻᒪᓗ ᐃᓚᖕᒋᑦ ᑲᓇᖕᓇᖕᒐᓂ ᑕᓯᐅᔭᕐᔪᐊᖅ ᓄᓇᓖᑦ.

ᐊᖕᒍᓇᓱᒃᑐᑦ ᓄᓇᕕᒻᒥ ᐱᕐᑯᔭᖃᖅᑎᒃ ᑖᒃᑯᑎᒍᑦ ᑲᑎᖕᒐᔪᑦ ᓄᓇᖕᒋᑦ ᒪᑐᕙᖕᓂᖕᒋᓇᓄᑦ, ᐊᒻᒪᓗ ᐊᕐᕌᒍ ᐃᓗᐊᓂ ᐊᒻᒪᓗ ᐊᕕᒃᑐᖅᓯᒪᔪᓂ ᖃᑦᓯᑦ ᐱᔭᐅᔪᓐᓇᖅᑐᑦ. ᐅᓇ 3-ᐅᑭᐅᓄᑦ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᓂᐊᖅᑐᓄᑦ ᐸᕐᓇᐅᑎ ᓴᕿᑕᐅᓯᒪᔪᖅ ᓄᓇᕕᒃ ᑕᕆᐅᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᑦ ᐃᓱᓕᕕᒃᓴᖃᖅᑐᖅ ᔭᓄᐊᕆ 31, 2020. ᐊᕐᕌᓂ ᐸᕐᓇᐅᑎ, ᐊᖕᒍᓇᓱᒃᑕᐅᔪᓐᓇᖅᑐᑦ ᐱᔭᐅᓗᐊᓚᐅᖅᑐᑦ ᑖᒃᑯᓇᖕᒐᑦ ᑲᑎᓪᓗᒋᑦ ᐱᔪᓐᓇᖅᑕᖕᒋᓐᓂᑦ ᐃᒻᒪᖃ ᖃᓂᒋᔭᖕᒐᓂ 30 ᓂᕐᔪᑎᑦ.

ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ ᐃᑲᔫᑎᒃᓴᓂᒃ ᐱᓕᕆᓇᑉᑐᑦ ᐊᐅᓚᑦᓱᔨᖕᒋᑦ ᑐᒃᓯᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᕿᒥᕐᕈᐊᕐᓗᑎᒃ ᒫᓐᓇᐅᔪᖅ ᖃᓄᐃᓕᖕᒐᓕᖕᒪᖕᒐᑕ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖕᒐᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ, ᖃᐅᔨᓇᓱᑦᑎᐊᕐᓗᑎᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᖕᒪᖕᒐᑕ ᒫᓐᓇᐅᔪᖅ ᑲᑎᓪᓗᒋᑦ ᐱᔭᐅᔪᓐᓇᖅᑐᓂᑦ ᐊᐅᓚᑕᐅᓗᐊᓕᕐᓂᕐᐸᑕ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖕᒐᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ, ᐊᒻᒪᓗ ᓄᖑᑕᐅᕙᓪᓕᐊᓂᐊᓐᓇᖕᒋᒻᒪᑕ ᐊᕿᒃᓯᓯᒪᓗᑎᒃ ᐅᖃᐅᔾᔨᓯᒪᓗᑎᒃ ᐊᒻᒋᖅᑐᓄᑦ ᐱᖕᒐᓱᓄᑦ ᐅᑭᐅᓄᑦ ᐊᐅᓚᑦᑎᔾᔪᑎᔭᖅ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᖅ.

Canada

ᓇᐃᓈᖅᓯᒪᔪᖅ

- ᐊᐅᖏᑦᑎᒍᑦ ᖃᐅᔨᓴᕐᓂᖅ ᑕᑯᑎᑦᑎᓯᒪᔪᖅ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᕿᓚᓗᒐᖅᑕᐅᖃᑦᑕᖅᑐᑦ ᓄᓇᕕᒃ ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᓄᓇᖏᓐᓂᒃ ᓴᓂᑭᓗᐊᖅ ᐊᔾᓕᒋᓐᖏᑕᖏᑦ ᓇᒧᖔᓯᒪᓂᐊᖏᑦ ᐊᒻᒪᓗ ᐊᕐᕌᒍᑕᒫᑦ.
- ᐅᓇ ᐅᖃᐅᔾᔨᓂᖅ ᒪᓕᒃᑐᖅ ᖃᓄᖅ ᐅᓄᖅᑎᒋᓂᖏᓐᓂᒃ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ ᑕᒡᕙᖓᑦ ᑭᖑᓪᓕᖅᐹᖓᓂ ᖃᐅᔨᓴᖅᑕᐅᕕᕕᓂᖓᓂᖅ (2015) ᐊᒻᒪᓗ ᒫᓐᓇ ᕿᓚᓗᒐᖅᑕᐅᓯᒪᔪᑦ (ᑎᑭᓪᓗᒍ ᑭᓯᐊᓂᐅᓕᕐᒪᑦ 2019) ᐊᒻᒪᓗ ᖃᓄᐃᓕᖓᓕᕐᒪᖔᑕ ᐃᓗᓕᖏᑦ ᐊᐅᖏᑦ (ᑎᑭᓪᓗᒍ 2018) ᖃᐅᔨᒪᑎᑦᑎᔾᔪᑎᒋᔭᐅᔪᑦ.
- ᐃᓚᖏᓐᓂ ᐃᒪᕐᓂ ᓄᓇᓂ ᖃᓅᑎᒋᓂᖏᑦ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖏᓐᓂᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ ᐊᓯᑦᔨᖅᑐᖅ ᒥᑭᔪᒥᒃ, ᑭᓯᐊᓂ ᑕᐅᕙᓂ ᐅᐊᖕᓇᖓᓂ ᑲᓇᖕᓇᖓᓄ ᕿᓚᓗᒐᕋᓱᒃᕕᐊ ᐅᓄᖅᓯᔪᑦ ᐊᖏᒡᓕᒋᐊᖅᓯᒪᓕᖅᑐᖅ 30-ᒥᑦ 45%-ᒧᑦ ᖃᐅᔨᒪᔾᔪᑕᐅᔪᖅ ᐅᑭᐊᒃᓵᒃᑯᑦ ᕿᓚᓗᒐᕋᓱᒃᑐᓂᑦ.
- ᐅᓇ ᐊᕐᕌᒍᒥ ᑲᑎᓪᓗᒋᑦ ᐱᔭᐅᔪᓐᓇᖅᑐᑦ ᐱᔭᐅᔪᑦ ᑕᐃᑲᓂ 2017-ᒥᑦ 2020-ᒧᑦ ᐊᐅᓚᑦᑎᔾᔪᑎᒃᓴᖓᓄᑦ ᐸᕐᓇᐅᑎᖓᑦᑎᒍᑦ 68-ᖑᓚᐅᖅᑐᑦ ᓂᔪᑎᑦ. ᑲᑎᓪᓗᒋᑦ 70, 74, ᐊᒻᒪᓗ 98 ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᕕᓃᑦ ᓄᓇᓕᖕᓂᑦ ᓄᓇᕕᒻᒥ ᐊᒻᒪᓗ ᓴᓂᑭᓗᐊᖅ ᑕᐃᑲᓂ 2017, 2018, ᐊᒻᒪᓗ 2019 ᓂᑭᑖᖅᓱᑎᒃ ᐊᑐᓂ.
- ᐅᓇ 2019 ᓇᓚᐅᑖᖅᓯᒪᔪᖅ ᖃᓄᖅ ᐅᓄᖅᓯᒋᓐᓂᕐᒪᖔᑕ ᕿᓚᓗᒐᖏᑦ ᐱᓕᕆᔾᔪᓯᖓᑦᑎᒍᑦ 3300 (95% CI: 1900-5200) ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ (ᖃᓂᓈᖅᓱᒍ ᖃᓂᓛᖓ 100). ᑕᐃᒫᒃᑕᐅᖅ, ᑭᓯᐊᓂ ᐊᔾᔨᒋᓐᖏᐊᕐᔪᒃᑭᓪᓗᒍ ᐊᑦᑎᖕᓂᖅᓴᐅᓪᓗᓂ ᖃᓄᖅ ᐅᓄᖅᑎᒋᖕᒪᖔᑕ ᐱᓯᒪᔪᑦ 2016 ᑕᐃᒪᓐᓇᐅᓚᐅᖅᑐᖅ 3400 (95% CI: 2300-5400) ᑕᐃᑲᖕᒪᑦ ᑭᖑᓪᓕᖅᐹᒥᒃ ᕿᒥᕐᕈᐊᖅᑕᐅᕕᐊᓂᑦ.
- ᑕᒻᒪᖅᓯᒪᔪᖅᑕᖃᕐᒪᖔᑦ ᖃᐅᔨᓴᑦᑎᐊᓚᐅᖅᓱᒋᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ ᐱᔾᔪᑎᒋᓪᓗᒍ ᐊᔪᓕᖅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᐊᓯᐅᔪᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᐅᓐᖏᑦᑐᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᓂᑦ, ᐊᕐᕌᒍᓕᓴᒧᑦ ᐅᖃᐅᓯᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ 58 ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖏᓐᓂᒃ ᑕᐃᒪᓗ 50%-ᐅᔪᖅ ᐅᓄᖅᓯᒋᐊᕐᓂᐊᕋᓱᒋᔭᐅᓂᖓ ᖁᓛᓂ 3400 ᐊᓂᒍᖅᐸᑕ ᑕᓪᓕᒪᑦ ᐊᕐᕌᒍᑦ.
- ᓄᖑᑕᐅᕕᒐᔭᕋᓱᒋᔭᐅᔪᑦ ᐆᒪᔪᑦ ᑖᒃᑯᓇᖓᑦ ᑲᑎᖓᔪᓂᑦ 14-ᖑᔪᖅ ᓂᔪᑎᑦ ᑕᐃᒪᓗ ᐅᑎᖅᑎᓐᓇᓱᒃᓗᒋᑦ ᐱᑕᖃᖅᑎᑦᑎᒋᐊᖃᕋᔭᖅᑐᑦ 0.25-ᒥᒃ.

ᖃᓄᐃᓐᓂᕆᓯᒪᔭᖓ

ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᓇᒥᑐᐃᓐᓈᖅᑐᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ, ᑕᐃᑲᓂ ᔭᐃᒻᔅ ᐸᐃ ᐊᒻᒪᓗ ᐊᖕᖓᕙ. ᑕᐃᒪᓐᓇᐅᖏᓐᓇᕋᔭᓐᖏᑦᑐᑦ ᐊᐅᐅᔪᖅ ᓇᒧᖔᓯᒪᓂᖏᑦ, ᐊᐅᖏᑦᑎᒍᑦ ᐊᒻᒪᓗ ᐊᓯᖏᑦᑎᒍᑦ ᓇᓗᓇᐃᖅᑐᑦ ᐊᑐᖅᓯᓗᑎᒃ ᐊᐅᔭᒃᑯᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᓂᒃ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᓗᓂ ᓄᓇᓕᖕᓂ ᓄᖑᐸᐸᓪᓕᐊᓂᐊᓐᖏᒻᒪᑕ ᐊᒻᒪᓗ ᑖᒃᑯᐊᑦᑕᐃᓐᓇᐃᑦ ᐊᐅᖃᑎᒌᓐᖏᑦᑐᑦ. ᑎᑭᓪᓗᒍ ᑎᓴᒪᑦ ᐊᐅᔭᒥ ᑲᑎᖓᔪᑦ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᑖᒃᑯᐊᓗ ᐊᓯᐊᒍᓲᑦ ᓇᒧᖓᐅᓪᓗᑎᒃ ᐃᓂᖏᑦ (ᑕᓯᐅᔭᕐᔪᐊᖅ ᐊᑭᓐᓇᖅᐸᓯᐊ, ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓ, ᔭᐃᒻᔅ ᐸᐃ ᐊᒻᒪᓗ ᐊᖕᖓᕙ ᕿᓚᓗᒐᖏᑦ) ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᑕᒫᓂ ᓄᓇᖓᓂ. ᐅᑯᐊ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᓄᓇᖃᕐᒪᑕ ᑲᓇᖕᓇᖓᓂ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑎᓇᕐᑯᐊᓂ, ᑎᑭᐅᑎᓯᒪᓪᓗᒍ ᐱᓇᖕᓇᖓᓄ ᓴᓂᑭᓗᐊᖅ ᕿᑭᖅᑕᖏ (ᓴᕿᔾᔭᖅᑐᖅ 1). ᑕᐃᑲᓂ 2004, ᑲᑎᒪᔨᕋᓛᑦ ᓄᖑᑕᐅᓕᖅᑐᓄᑦ ᐆᒪᔪᓄᑦ ᑲᓇᑕᒥ ᐊᑐᓕᖅᑕᐅᕐᑯᔨᓚᐅᖅᑐᑦ ᑖᒃᑯᐊ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᑎᙵᕐᕋᖅᑕᐅᕐᑯᔭᐅᓪᓗᑎᒃ ᓄᖑᑕᐅᓕᕐᓂᖏᓐᓄᑦ. ᒫᓐᓇᐅᔪᖅ ᖃᓄᐃᓕᖓᓂᖏᑦ ᖃᐅᔨᓴᖅᑕᐅᑲᓐᓂᖅᓯᒪᔪᑦ. ᐅᑯᐊ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᐊᒻᒪᓗ ᑕᓯᐅᔭᕐᔪᐊᖅ ᐊᑭᓐᓇᖅᐸᓯᐊ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᐅᑭᐅᖃᑦᑕᖅᑐᑦ ᓱᓪᓗᐊᓗᖏ ᑕᐅᕙᖓ ᑕᓯᐅᔭᕐᔪᐊᒧᑦ ᐊᐅᔭᕆᐊᖃᖅᐸᒡᓗᑎᒃ. ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᓂᕿᒋᔭᐅᔪᑦ ᐃᓄᖕᓂᑦ ᑕᒪᐃᓐᓂᑦ ᓄᓇᕕᑦ ᑕᕆᐅᖏᓐᓂ ᐊᒻᒪᓗ ᓄᓇᓕᒃ ᓴᓂᑭᓗᐊᖅ (ᓄᓇᕗᑦ).

ᑕᖏᖅ ᖃᐅᔨᓴᕈᑎᑖᕐᕕᐅᒐᒥ ᓄᓇᕕᒻᒥ ᐱᓕᕆᑎᑦᑎᔾᔪᑕᐅᕙᒃᑐᖅ ᑕᐃᒪᖔᓂ ᕿᑎᐊᓂ 1990-ᓂ. ᐊᖑᓇᓱᒃᑎᑦ ᓇᑭᑐᐃᓐᓇᖅ ᓄᓇᕕᖕᒥ ᓄᓇᓖᑦ ᑐᓂᓯᓚᐅᖅᑐᑦ ᑭᒍᑎᓂᒃ, ᒪᒃᑖᖏᓐᓂᒃ ᖃᐅᔨᓴᕈᑎᑖᕐᕕᒃᓴᓂᒃ ᐊᒻᒪᓗ ᑐᓴᕐᑎᑦᑎᓪᓗᑎᒃ ᓇᑭᑦ ᑐᕐᑯᑕᐅᓚᐅᕐᒪᖔᑦ. ᑖᒃᑯᐊᑦ ᑎᑎᖃᖔᑦ ᐊᑐᖅᑐᒍ ᓈᓴᕈᑎᖏᓪᓗᒋᖅ ᖃᓅᑦᑕᕐᒪᖔᑕ ᓂᕐᔪᑎᑦ ᐊᑐᓂ ᑲᑎᖔᔪᓂᑦ ᕿᓚᓗᒐᕐᓂᑦ ᐱᕕᐅᓚᐅᖅᑐᓂᑦ ᕿᓚᓗᒐᕋᓱᒃᑕᐅᖏᓐᓇᖃᑦᑕᕐᓂᐊᕐᒪᑕ. ᑕᐃᒫᒃᑕᐅᖅ ᐱᓕᕆᑎᑦᑎᔾᔪᑎᖃᖅᑐᑦ ᓴᓂᑭᓗᐊᖅ (ᓄᓇᕗᑦ).

ᖃᐅᔨᓇᓱᒃᓯᒪᔪᑦ

ᐊᐅᖃᑎᒌᑦ ᖃᓄᖔᒪᖔᑦᑕ ᖃᐅᔨᓇᓱᒃᑕᐅᓯᒪᔪᑦ

ᑕᒪᒃᑯᐊ ᐊᐅᖏᓐᓂᒃ ᑎᒥᖔᓂᑦ ᖃᐅᔨᓴᕈᑎᑖᕐᓂᖅ ᖃᓄᖅ ᐊᐅᖃᑎᒌᖕᓂᖃᕐᒪᖔᑕ ᐱᓕᕆᔭᐅᓚᐅᖅᑐᖅ ᐊᒥᓱᓂᒃ ᕿᓚᓗᒐᕐᓂᑦ ᐱᔭᐅᔪᓂᑦ ᑖᒃᑯᓇᖔᖅᑐᓂᒃ ᐊᑕᐅᓯᖅ ᒪᕐᕉᖕᓂᑦ ᕿᓚᓗᒐᕐᓂᑦ ᐊᔾᔨᒌᓐᖏᑦᑐᓂᑦ, ᓇᓗᓇᐃᑦᑎᐊᕐᓗᒋᑦ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖔᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᐅᒡᕙᓘᓐᓃᑦ ᑕᓯᐅᔭᕐᔪᐊᑉ ᐊᑭᓐᓇᖅᐸᓯᐊᓂᑦ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ. ᖃᐅᔨᓇᓱᒃᑕᐅᑦᑎᐊᕋᒥᒃ ᐊᐅᓪᓗᑎᓪᓗᒋᑦ ᑕᖏᖅ ᓄᐊᑕᐅᔪᑦ ᓄᓇᕕᒻᒥ ᐊᒻᒪᓗ ᓴᓂᑭᓗᐊᖅ (ᓄᓇᕗᑦ), ᐊᕙᑖᓂᑦ 1982 ᐊᒻᒪᓗ 2019 ᖃᐅᔨᓇᖅᓯᓂᐊᕐᒪᑕ ᖃᓄᑎᖏᔪᖅ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖔᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᓐᓇᕐᓂᖏᑦ.

ᑕᐅᕙᓐᓇ ᐃᒪᖔ ᑲᑐᑎᔭᐅᕗᖅ ᓄᓇᕕᒃ ᓯᒡᔭᖏᓐᓂ ᑕᒪᐅᓐᓇ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖔᓂ ᐊᒻᒪᓗ ᑕᓯᐅᔭᕐᔪᐊᑉ ᐊᑭᓐᓇᖅᐸᓯᐊᓂ ᐊᕐᕌᒍᑕᒫᑦ ᑎᑭᑉᐸᒃᑐᑦ ᓯᓪᓗᒃᑰᖅᑐᑦ ᓇᓗᓇᐃᖅᑕᐅᓚᐅᖅᑐᑦ ᐊᒻᒪᓗ ᐃᓚᖃᕆᓪᓗᑎᒃ ᐅᐊᖕᓇᖔᓂ ᑲᓇᖕᓇᖔᓄ ᑕᓯᐅᔭᕐᔪᐊᖅ (NEHB), ᓂᒋᐊᓄᑦ ᓱᓪᓗᐊᓗᒃ (HS), ᐊᖕᖔᕙ (UNG) ᐊᒻᒪᓗ ᓴᓂᑭᓗᐊᖅ (SAN) ᓄᓇᖏᑦ ᐊᖑᓇᓱᒐᐅᕙᒃᑐᑦ ᑕᒫᓂ ᓴᓂᑭᓗᐊᖅ ᕿᑭᖅᑕᖏᑦ (ᓄᓇᕗᑦ ᓴᕿᒌᔭᖅᑐᖅ 1). ᑖᒃᑯᓄᖔ ᐅᐊᖕᓇᖔᓂ ᑲᓇᖕᓇᖔᓄ ᑕᓯᐅᔭᕐᔪᐊᖅ, ᓱᓪᓗᐊᓗᒃ ᐊᒻᒪᓗ ᐊᖕᖔᕙ, ᖃᐅᔨᓴᕈᑎᑖᑦ ᐊᕕᒃᑕᐅᓚᐅᖅᑐᑦ ᒪᕿᐃᖅᑐᑎᒃ ᕿᓚᓗᒐᕋᓱᒃᕕᖕᓂᑦ: "ᐅᐱᕐᖓᒃᑯᑦ ᕿᓚᓗᒐᕋᓱᒃᑎᓪᓗᒋᑦ ᑕᒫᓂ ᕕᕗᐊᓇ 1-ᒥᑦ ᐋᒍᓯ 31-ᒧᑦ, ᐊᒻᒪᓗ "ᐅᑭᐊᒃᓵᒃᑯᑦ" ᕿᓚᓗᒐᕋᓱᒃᑐᑦ ᓯᑎᐱᓇ 1-ᒥᑦ ᔫᓄᐊᓇ 31-ᒧᑦ.

ᓄᓇᕕᒻᒥ, ᖃᐅᔨᓴᕈᑎᑖᑦ ᐅᐱᕐᖓᒃᑯᑦ ᕿᓚᓗᒐᕋᓱᒃᑐᓂ ᓇᓗᓇᕈᓐᓃᓚᐅᖅᑐᖅ ᐅᓇ 6% ᐊᒻᒪᓗ 11.7% ᕿᓚᓗᖅᑕᐅᔪᑦ ᐊᑐᓂ ᐊᖕᖔᕙ ᐊᒻᒪᓗ ᓱᓪᓗᐊᓗᒃ ᕿᓚᓗᒐᕋᓱᒃᕕᖕᓂᑦ ᑖᒃᑯᓇᖔᖅᑐᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖔᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖏᑦ.

ᑕᐃᑲᓂ ᐅᑭᐊᒃᓵᒃᑯᑦ ᕿᓚᓗᒐᕋᓱᒃᑐᑦ, ᓇᓚᐅᑖᖅᒍ ᖃᑦᓯᐊᓂᖏᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖔᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖏᓐᓂᑦ ᐃᓗᐊᓂ ᓱᓪᓗᐊᓗᒃ ᐊᒻᒪᓗ ᐅᐊᖕᓇᖔ ᑲᓇᖕᓇᖔᓄᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᐃᒪᖔᓂ 29.1% ᐊᒻᒪᓗ 44.5% ᐊᑐᓂ.

ᓴᓂᑭᓗᐊᕐᒥᑦ ᐱᓯᒪᔪᑐᐊᑦ, 84% ᐅᖃᐅᓯᐅᓚᐅᖅᑐᑦ ᕿᓚᓗᖅᑕᐅᔪᑦ ᐅᐱᕐᖓᒃᑯᑦ ("ᐊᑯᓂᐅᓂᖅᓴᐅᓪᓗᓂ ᐅᐱᕐᖓᖔᑦ) (ᓱᕐᓗ ᐊᐃᓇᓕ 1-ᒥᑦ ᑎᑭᓪᓗᒍ ᔪᓚᐃ 14-ᒧᑦ). ᑕᐅᕙᓂ ᐃᒪᖔᓂ, ᑖᒃᑯᐊ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖔᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖏᑦ ᐅᓄᖅᑎᒋᔪᑦ 4.6% ᕿᓚᓗᒐᕕᐅᔪᑦ. ᐅᓇ ᖃᑦᓯᐅᓂᖔ ᐅᓄᖅᓯᓯᒪᔪᖅ 25.6%-ᒥᒃ ᐊᐅᔭᒥᑦ. ᐱᑕᖃᓐᖏᑦᑐᖅ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖔᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖏᑦ ᐅᖃᐅᓯᐅᔪᓂᑦ ᐅᑭᐊᒃᓵᒃᑯᑦ ᕿᓚᓗᖅᑐᓂᑦ ᓴᓂᑭᓗᐊᕐᒥ.

ᐊᖑᓇᓱᒃᑕᑦ ᓂᕿᒃᓴᑎᒃ

ᕿᓚᓗᖅᑐᑦ ᐅᓄᕈᓐᓃᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᓇᓕᒃᑎᒍᑦ ᐊᒻᒪᓗ ᐊᓯᑦᔨᖅᑕᖅᐸᖕᓂᖏᑦ ᒪᑐᓯᒪᔪᑦ ᐊᒻᒪᓗ ᑲᑎᓪᓗᒋᑦ ᖃᑦᓯᐅᓂᖏᑦ ᐱᔭᐅᔪᓐᓇᖅᑐᑦ ᐱᔭᐅᓯᒪᔪᑦ ᓄᓇᕕᒻᒥ, ᐊᒻᒪᓗ ᐊᕐᕌᒍ ᐃᓗᐊᓂ ᒪᑐᔪᑦ ᓴᓂᑭᓗᐊᕐᒥ (ᓄᓇᕗᑦ). ᑲᑎᓪᓗᒋᑦ ᕿᓚᓗᖅᑕᐅᔪᑦ ᑖᒃᑯᓇᓂ ᐃᒫᓂ ᓄᓇᖏᓐᓂ ᑲᑎᓪᓗᒋᑦ 323, 422, ᐊᒻᒪᓗ 380 ᓂᕐᔪᑎᑦ ᐃᓚᓕᐅᑎᓪᓗᒋᑦ 70, 74 ᐊᒻᒪᓗ 98 ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖔᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖏᓐᓂᑦ 2017, 2018, ᐊᒻᒪᓗ 2019 ᐊᑐᓂ. ᐅᖃᐅᓯᐅᔪᑦ ᕿᓚᓗᖅᑕᐅᔪᓂᒃ ᓴᓂᑭᓗᐊᕐᒧᑦ ᑕᐃᑲᓂ 2019 ᐊᑐᐃᓐᓇᕈᖅᓯᒪᓚᐅᓐᖏᑦᑐᑦ. ᐅᓇ ᖃᐅᔨᓴᕈᓯᖅ ᐊᑐᖅᓯᓚᐅᖅᑐᖅ ᖃᓂᓈᖅᓯᒪᔪᓂᑦ 2017 ᐊᒻᒪᓗ 2018 ᐅᖃᐅᓯᐅᔪᑦ ᕿᓚᓗᖅᑕᐅᔪᓂᒃ ᐋᕿᒃᓯᒪᔪᑦ (ᓇᓗᓇᐃᖅᓯᒪᔪᖅ 1). ᑖᒃᑯᓄᖔ

ᑕᒪᑐᒪᓂ ᐱᖓᓱᑦ ᐅᑭᐅᓂᑦ, ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖕᒋᑦ ᓇᓚᐅᑖᖅᓯᒪᓪᓗᑎᒃ ᐅᓄᖅᑎᒋᓚᐅᖅᑐᑦ 22% ᑲᑎᓪᓗᒋᑦ ᐅᖃᐅᓯᐅᔪᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᓂᑦ ᓄᓇᕕᒻᒥ ᐊᒻᒪᓗ ᓴᓂᑭᓗᐊᖅ. ᐅᓇ ᐅᓄᖅᓯᓯᒪᔪᖅ ᒥᑭᔪᒥᒃ 24%-ᒥᒃ ᕿᓚᓗᒐᑦᑕᐅᔪᑦ ᑕᐃᒪᓗ ᓴᓂᑭᓗᐊᖅ ᐲᖅᑐᒍ ᐃᓚᓕᐅᑎᓯᒪᒐᓂ.

ᓇᓗᓇᐃᖅᑐᖅ 1. ᐅᖃᐅᓯᐅᔪᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᓂᑦ (2017-2019) ᓄᓇᕕᒻᒥ ᓄᓇᖏᓐᓂᑦ ᐊᒻᒪᓗ ᓴᓂᑭᓗᐊᖅ (ᓄᓇᕗᑦ). ᓴᓂᑭᓗᐊᕐᒧᑦ, ᖃᓂᒋᔭᓂ 2017 ᐊᒻᒪᓗ 2018 ᕿᓚᓗᒐᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᐊᑐᖅᑕᐅᓚᐅᖅᑐᑦ 2019-ᒥ. ᐊᐅᖏᓐᓂᒃ ᑐᑭᓯᓇᓱᐊᖅᑐᑦ ᐱᓕᕆᔾᔪᑕᐅᓚᐅᖅᑐᖅ ᖃᕐᓯᑦ ᑲᑎᓪᓗᒋ ᓂᕐᔪᑎᑦ ᐱᔭᐅᖕᒪ ᖓᑕ ᓈᓴᐅᑎᕈᖅᑎᓪᓗᒋᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᑕ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖕᒋᑦ. ᖃᓄᖅ ᐅᓄᖅᑎᒋᒫᖓᑕ ᓇᓚᐅᑖᖅᓯᒪᔪᖅ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ ᓴᓂᑭᓗᐊᕐᒥᑦ ()-ᑐᒥ ᐃᓚᓕᐅᑎᓯᒪᓪᓗᑎᒃ ᑲᑎᓪᓗᒋᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂᑦ.

ᐊᕐᕌᒍᒥ	ᓄᓇᕕᒃ	ᓴᓂᑭᓗᐊᖅ (ᓄᓇᕗᖅ)	ᑲᑎᓪᓗᒋᑦ	ᑲᑎᓪᓗᒋᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ
2017	293	30	323	70 (1)
2018	372	50	422	74 (2)
2019	340	40	380	98 (2)

ᐅᓄᕐᓂᖕᒋᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ

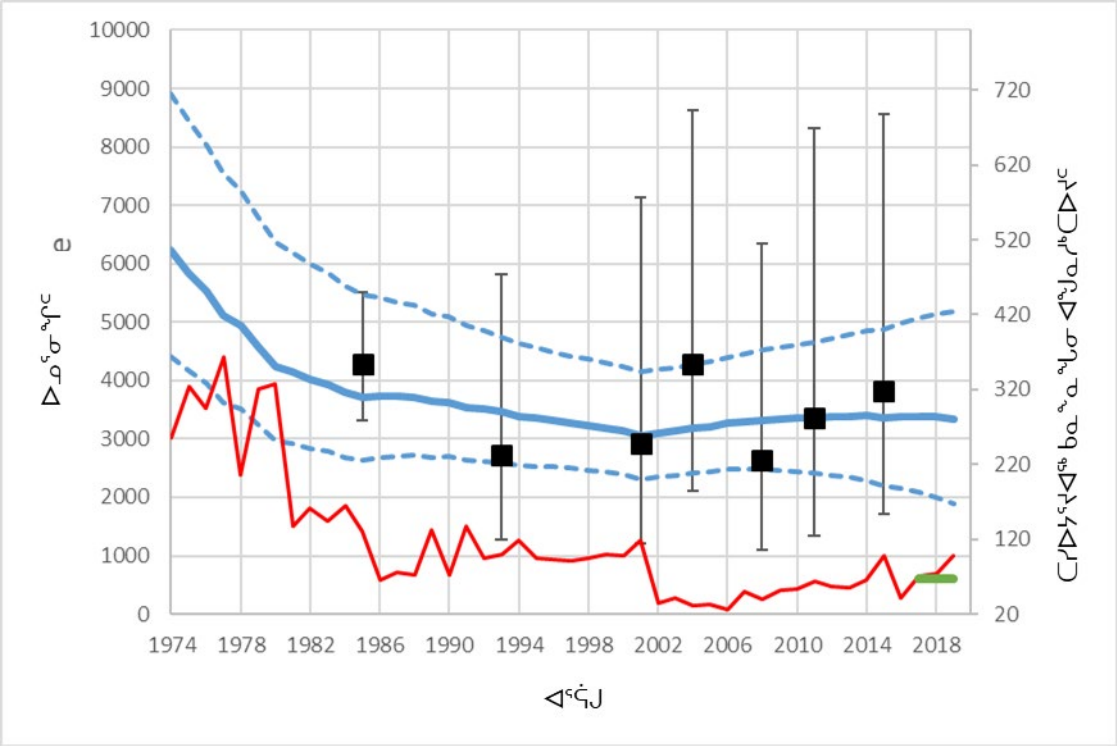
ᐅᑯᐊ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖕᒋᑦ ᑭᖑᓪᓕᖅᐹᒥᒃ ᓈᓴᖅᑕᐅᓯᒪᔪᑦ 2015-ᒥ, ᓴᕿᑦᑎᓯᒪᔪᑦ ᖃᓄᖅ ᐅᓄᖅᑎᒋᖕᒪᖔᑕ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ 2800 ᕿᓚᓗᒐᐃᑦ (ᖃᓂᓈᖅᓯᒪᔪᑦ 100-ᒃᑯᑦ) (ᓇᓗᓇᐃᖅᑐᖅ 2-ᒥ).

ᓇᓗᓇᐃᖅᑐᖅ 2. ᐅᓄᖅᑎᒋᓂᖕᒋᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ 7-ᖕᒋᖅᓱᑎᒃ ᖃᖓᑕᓱᒃᑯᑦ ᓈᓴᖅᑕᐅᓯᒪᔪᓂᑦ ᑖᒃᑯᓂᖓ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᓄᓇᖏᓐᓂ, ᑕᒻᒪᕈᓐᓃᖅᑎᓯᒪᔪᑦ ᖃᓄᖅ ᐊᑐᐃᓐᓇᐅᓂᖕᒋᑦᑎᒍᑦ ᐱᓯᒪᓪᓗᑎᒃ ᐃᓚᐃᓈᖅᑐᓂᑦ.

ᐊᕐᕌᒍᑦ	ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓ ᖃᑦᓯᐅᓂᖕᒋᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᖅ (95% CI)
1985	4282 (3322 – 5520)
1993	2729 (1282 – 5808)
2001	2924 (1197 – 7140)
2004	4274 (2115 – 8620)
2008	2646 (1102 – 6353)
2011	3351 (1350 – 8319)
2015	3819 (1704 – 8561)

ᐊᑐᖅᑕᐅᓯᒪᔪᖅ ᖃᓄᖅ ᐅᓄᖅᑎᒋᖕᒪᖔᑕ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᑕᓯᐅᔭᕐᔪᐊᒥ ᐊᒻᒪᓗ ᐊᒃᑐᐃᓂᖓ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ ᐱᓪᓗᒋᑦ

ᐅᓄᕐᓂᖏᓐᓂᒃ ᐊᑐᖅᑕᐅᔪᖅ ᐃᓚᓕᐅᑎᓯᒪᓪᓗᒋᑦ ᒫᓐᓇ ᑐᓴᖅᑕᐅᔪᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ ᓈᓴᐅᑎᖏᑦ (1974-ᒥᑦ 2019-ᒧᑦ) ᐊᒻᒪᓗ ᑖᒃᑯᐊ ᐊᑐᓂ ᑲᑎᖓᔪᑦ ᖃᓅᑎᒋᕙᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᓂᑦ ᐊᐅᖏᑦᑎᒍᑦ ᖃᐅᔨᓴᖅᓱᒋᑦ (1985-ᒥᑦ 2018-ᒧᑦ) ᓈᒻᒪᒃᓯᓕᖅᓯᒪᔪᖅ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᖃᖓᑕᓲᒃᑯᑦ ᓈᓴᖅᑕᐅᓯᒪᔪᓂᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ ᖃᓄᖅ ᐅᓄᖅᑎᒋᓂᖏᑦ (1985-ᒥᑦ 2015-ᒧᑦ). ᐅᓇ ᐊᑐᖅᑕᐅᔪᖅ ᓇᓗᓇᐃᖅᓯᓯᒪᔪᖅ ᑖᒃᑯᐊ ᐅᓄᕐᓂᖏᑦ ᕿᓚᓗᒐᐃᑦ ᐅᓄᕈᓐᓃᖅᑐᑦ ᑕᐃᒪᖓᓂ 1974, ᑎᑭᓪᓗᒍ ᐊᑦᑎᓛᖓᑦ 3100-ᒥᒃ 2001-ᒥ (ᖃᓂᓈᖅᓯᒪᔪᑦ 100-ᒃᑯᑦ), ᐅᓄᖅᓯᓛᖑᓯᒪᓪᓗᒋᑦ 3400 ᕿᓚᓗᒐᐃᑦ 2014-ᒥ ᐊᒻᒪᓗ ᓱᓕ ᑕᐃᒪᓐᓇᐃᓕᖓᑐᐃᓐᓇᖅᐳᑦ ᑕᐃᒪᖓᓂ ᓈᓴᖅᑕᐅᓚᐅᕋᒥᒃ ᓇᓚᐅᑖᖅᑕᐅᓪᓗᑎᒃ 2019-ᒥ 3300-ᖑᓚᐅᖅᑐᑦ. (95% CI: 1900 – 5200) (ᓴᕿᔭᖅᑐᖅ 2).



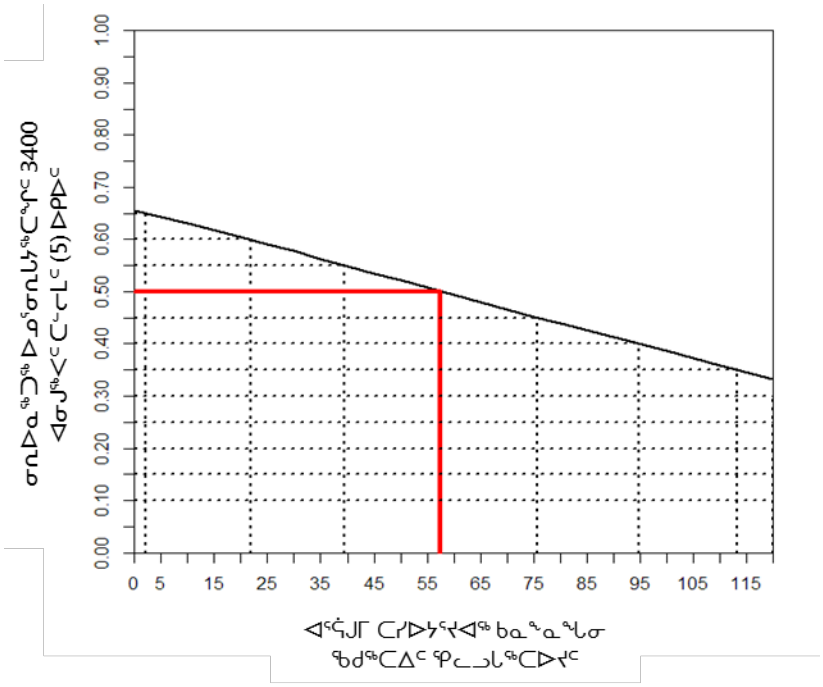
ᓴᕿᔭᖅᑐᖅ 2. ᐊᑐᖅᑕᐅᓚᐅᖅᑐᖅ ᓈᓴᐃᓪᓗᑎᒃ ᓇᓚᐅᑖᕈᒥᑦ ᐊᑐᓂ ᕿᓚᓗᒐᐃᑦ ᐅᓄᕐᓂᖏᑦ ᑲᓇᖕᓇᖓᓄ ᑕᓯᐅᔭᕐᔪᐊᖅ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ (ᑕᑯᔪᖅᑐᖅ ᑎᑎᑯᑖᒃᓯᒪᔪᖅ ±95% CI) ᖃᖓᑕᓲᒃᑯᑦ ᓈᓴᖅᑕᐅᓯᒪᔪᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ (ᕿᓂᖅᑕᐃᑦ ᑭᐸᓛᒃᑐᑦ ±95% CI), ᖃᓄᖅ ᐅᓄᖅᑎᒋᖕᒪᖔᑕ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ (ᐊᐅᐸᖅᑐᖅ ᑎᑎᑯᑖᒃᓯᒪᔪᖅ) ᐊᒻᒪᓗ ᑲᑎᓪᓗᒋᑦ ᐱᔭᐅᔪᓐᓇᖅᑐᑦ ᐱᔭᐅᔪᑦ 68 (ᐆᔭᐅᔭᖅ ᑎᑎᑯᑖᒃᓯᒪᔪᖅ) ᐊᑖᓂ 2017-ᒥᑦ 2019-ᒧᑦ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᓂᐊᖅᑐᓄᑦ ᐸᕐᓇᐅᑎᓂᑦ.

ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᕐᒪᖔᑕ ᐅᖃᐅᑎᔭᐅᓯᒪᓂᖅ

ᒫᓐᓇ ᐱᒋᐊᖅᐸᓪᓕᐊᔪᓄᑦ ᐊᐅᓚᑕᐅᓂᐊᕐᓂᖏᓐᓄᑦ ᐸᕐᓇᐅᑎᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᑕ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᖏᑦ, ᓇᓗᓇᐃᖅᑕᐅᓗᑎᒃ ᕿᓚᓗᒐᖅᑕᐅᕙᓪᓕᐊᔪᑎᒍᑦ ᐅᖓᑖᓄᐊᓐᖏᓪᓗᓂ 50% ᐃᓱᒪᒋᔭᐅᔪᖅ ᓄᖑᐹᓪᓕᕈᑕᐅᒐᔭᕆᐊᒃᓴᖓᓂᒃ. ᐅᑯᐊ ᐅᓄᕐᓂᖏᓐᓂᒃ ᐱᓯᒪᔪᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ 2018 ᖃᓄᖅ ᐅᓄᖅᑎᒋᖕᒪᖔᑕ 3300 ᐃᒻᒪᖔ ᐅᓄᕈᓐᓃᖅᑐᑦ. (95% CI: 1900 – 5200) ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ (ᖃᓂᓈᖅᓯᒪᔪᑦ 100-ᒃᑯᑦ), ᐅᑯᐊ ᐊᔾᔨᑎᐊᐸᓗᖏᑦ, ᑭᓯᐊᓂ ᐊᑦᑎᖕᓂᖅᓴᒐᓛᑦ ᐅᓄᕐᓂᖏᑦ ᓴᓚᐅᑖᖅᓯᒪᔪᑦ 3400 (95% CI: 2300-5400) ᕿᓚᓗᒐᐃᑦ ᑭᖑᓪᓕᖅᐹᒥᒃ ᓈᓴᖅᑕᐅᒐᒥᒃ ᐊᒻᒪᓗ ᐅᓄᕐᓂᖏᑦ ᑕᐃᑲᓂ ᐱᒋᐊᓕᕐᓴᖅᓗᑎᒃ ᑭᖑᓪᓕᖅᐹᖓᓂ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᔪᓄᑦ

ᐸᕐᓇᐅᑎᑦ. ᐊᕐᕌᒍᒥ ᓄᓇᓕᑦᑐᑦ ᕿᓚᓗᒐᑦ ᑐᕐᑯᔪᑦ 58 ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ 50% ᐅᓄᖅᓱᒋᐊᕋᔭᕐᒪᖔᑕ ᐅᓄᕐᓂᖅᓴᐅᓕᕐᓗᑎᒃ 3400-ᒥᑦ ᑕᐃᒪᖓᓂᑦ ᐊᕐᕌᒍᑦ ᐊᓂᒍᖅᑐᑦ 5-ᓂᑦ (ᓴᕿᔫᖅᑐᖅ 3). ᐅᑯᐊ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ ᓄᓇᓕᑦᑐᑦ ᕿᓚᓗᒐᐃᑦ ᑖᒃᑯᐊᓗ ᐊᔪᓕᖅᑐᑦ ᐊᒻᒪᓗ ᐊᓯᐅᔪᑦ.

ᐅᓇ ᐆᒪᔪᓂᑦ ᐱᑕᖃᕈᓐᓃᕕᒃᑐᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᖅ. ᐊᑐᖅᑕᐅᔪᖅ 3108, ᑖᒃᑯᐊᓗ CV 0.25. ᐊᑐᖅᓯᔪᑦ an F_R of 0.25 ᓄᖑᕕᒃᑐᑦ ᓂᕐᔪᑎᑦ 14-ᖑᔪᑦ ᕿᓚᓗᒐᐃᑦ.



ᓴᕿᔫᖅᑐᖅ 3. ᑕᐃᒪᓇᐅᓇᔭᕐᓂᖕᒋᑦᑎᒍᑦ ᓇᓚᐅᑖᖅᓯᒪᔪᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᕿᓚᓗᒐᐃᑦ ᐅᓄᕐᓂᖕᒋᑦ 3400 ᐊᓂᒍᖅᑎᓪᓗᒋᑦ ᑕᓪᓕᒪᑦ (5) ᐅᑭᐅᑦ (y-ᖕᒐ ᑭᐸᐊᓐᑏᑎᓂᑦ) ᖃᓄᖅ ᐊᔾᔨᒋᓐᖕᒋᓂᖕᒐ ᓄᓇᓕᑦᑐᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ (x-ᖕᒐ ᑭᐸᐊᓐᑏᑎᓂᑦ). ᐅᓇ ᐊᐅᐸᖅᑐᖅ ᑎᑎᑯᑖᒃᓯᒪᔪᖅ ᓇᓗᓇᐃᖅᓯᔪᖅ 0.5 ᑕᐃᒪᓇᐅᒐᔭᖅᑐᓂᒃ ᐅᓄᕐᓂᖕᒋᑦ 3400 ᕿᓚᓗᒐᐃᑦ ᐊᓂᒍᖅᑎᓪᓗᒍ 5 ᐅᑭᐅᓄᑦ ᐱᔭᐅᔪᑦ 58-ᖑᒃᐸᑕ ᕿᓚᓗᒐᐃᑦ.

ᑐᑭᓯᓇᓱᒡᕕᐅᔪᑦ ᖃᐅᔨᓇᖅᓯᓇᓗᐊᓐᖕᒋᑦᑐᑦ

ᐅᑯᐊ ᐅᓄᕐᓂᖕᒋᑦ ᐊᑐᓂ ᕿᓚᓗᒐᐃᑦ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᔪᓄᑦ ᖃᑯᖅᑕᓂᒃ ᕿᓚᓗᒐᕐᓄᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ/ᔭᐃᒻᒃ ᐸᐃ/ ᐊᖕᖓᕙ ᐱᔭᕐᓂᓐᖕᒋᑑᖕᒪᑕ ᒪᓕᒃᓗᒋᑦ ᐊᐅᔭᒥ ᓇᒧᖔᓯᒪᓂᖕᒋᑦ ᓂᕐᔪᑎᑦ. ᐅᑯᐊ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᕿᓚᓗᒐᐃᑦ ᐋᕿᒃᓱᖅᓯᒪᓪᓗᑎᒃ ᐊᐅᖕᒋᑦᑎᒍᑦ ᑖᒃᑯᐊ ᐊᕕᒃᑐᖅᓯᒪᓪᓗᒋᑦ ᖃᓄᖅ ᐊᑯᓚᐃᑦᑑᑕᐅᕙᖕᓂᖕᒋᑦᑎᒍᑦ ᖃᐅᔨᓴᕈᑎᑖᕐᕕᐅᔪᑦ ᐊᖑᓇᓱᒃᑎᓂᑦ ᖃᓂᒋᔭᖓᓂᑦ ᒥᑭᔪᑦ ᐊᕐᕕᒃ ᓄᓇᐅᑉ ᐊᑎᖓ ᐊᒻᒪᓗ ᓇᔅᑕᐳᒃ ᑰᖕᒋᑦ. ᐃᓱᒪᒋᔭᐅᔪᑦ ᐅᑯᐊ ᓂᕐᔪᑎᑦ ᑕᑯᔭᐅᖃᑦᑕᖅᑐᑦ ᐊᐅᔭᒃᑯᑦ ᓈᓴᖅᑕᐅᓯᒪᔪᑦ ᐃᒪᕕᖓᓂᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᑖᒃᑯᐊᑦᑕᐃᓐᓇᐅᔭᕆᐊᒃᓴᖕᒋᓐᓂᒃ ᓂᕐᔪᑎᑦ ᖃᐅᔨᓴᕈᑎᑖᖑᓯᒪᔪᑦ ᓂᕐᔪᑎᓂᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ ᖃᓂᒋᔭᖓᓂ ᓯᒡᔭᓂ (ᓴᕿᔭᖅᑐᖅ 1). ᑕᐃᒪᓗ ᐊᐅᖕᒋᑦᑎᒍᑦ ᖃᐅᔨᓇᖅᓯᔪᑦ ᓴᑭᖔᒪᖔᑕ ᓂᕐᔪᑎᑦ ᑕᑯᔭᐅᔪᑦ ᑖᒃᑯᐊ ᐃᒪᕕᖕᓂᑦ ᑖᒃᑯᐊᑦᑕᐃᓐᓇᐅᓚᐅᖕᒋᑦᑐᑦ, ᑕᐃᒪᓗ ᐊᑦᑎᓈᖅᓯᓯᒪᓗᐊᖅᑐᒃᓴᐅᒐᔭᖅᑐᑦ ᐊᒃᑐᐃᓂᖓᓂᒃ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ ᑕᐃᑲᖓᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂᑦ.

ᐅᓄᖕᒋᑑᖕᒪᑕ ᖃᐅᔨᒪᔾᔪᑎᒃᓴᐃᑦ ᖃᐅᔨᓴᖅᓯᒪᖕᒋᓗᐊᖅᑐᑦ ᖃᓄᖅ ᓱᑲᑎᒋᔪᒥᒃ ᐊᒻᒪᓗ ᐅᑭᐅᖕᒋᑦ ᕿᓚᓗᒐᐃᑦ ᐅᓄᕐᓂᖕᒋᑦᑕ, ᑕᐃᒪᓗ ᐱᕕᖃᕐᑎᑦᑎᖕᒋᓯᒪᔪᑦ ᖃᓄᖅ ᐊᔾᔨᒌᖕᒋᒻᒪᖔᑕ ᑖᒃᑯᐊ ᕿᓚᓗᒐᐃᑦ.

ᓄᓇᒥ ᑕᑯᔭᐅᓯᒪᔪᑦ ᕿᓚᓗᒐᐃᑦ ᓄᓇᒥ ᐊᔪᓕᖅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᑐᕐᑯᑕᐅᔪᑦ, ᑭᓯᐊᓂ ᐅᑎᖅᑎᑕᐅᒐᑎᒃ ᐅᓄᕐᓂᒃᓴᖕᒋᑕ, ᐃᑲᔫᑎᒐᔭᖅᑐᖅ ᐅᓄᕈᓐᓃᕈᑎᒋᓗᒋᑦ ᖃᐅᔨᒪᓐᖕᒋᑕᑦᑎᒍᑦ ᑕᐃᒪᓐᓇᐅᑎᑕᐅᔪᑦ ᑕᒫᓃᑦᑐᑦ.

ᐃᓱᐊ ᐊᒻᒪᓗ ᐅᖃᐅᔾᔨᓂᖅ

ᒫᓐᓇ ᐅᓄᕐᓂᖕᒋᑦ ᑕᓯᐅᔭᕐᔪᐊᖅ ᑲᓇᖕᓇᖓᓂ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ 3300-ᖕᒍᔪᑦ. (95% CI = 1900 – 5200) ᓂᕐᔪᑎᑦ. ᑕᐃᒫᒃᑕᐅᖅ ᐊᔾᔨᖓ, ᑭᓯᐊᓂ ᐅᓄᓐᖕᒋᓂᖅᓴᒐᓛᑐᐃᓐᓇᐃᑦ ᑖᒃᑯᓇᖓᓪᓕ 3400 (95% CI: 2300 – 5400) ᑕᐃᑲᖕᒐᑦ ᑭᖑᓪᓕᖅᐹᒥᑦ ᓈᓴᖅᑕᐅᓯᒪᔪᓂᑦ 2016-ᒥ ᐊᒻᒪᓗ ᐅᓄᕐᓂᖕᒋᑦ ᑕᐃᑲᓂ ᐱᒋᐊᖅᓯᒪᓪᓗᑎᒃ ᑭᖑᓪᓕᖅᐹᒥᒃ ᐊᐅᓚᑦᑎᔾᔪᑎᒃᓴᓄᑦ ᐸᕐᓇᐅᑎᑦ. ᐊᕐᕌᒍᒥ ᕿᓚᓗᒐᖅᑕᐅᔪᑦ 58-ᖕᒍᔪᑦ ᑕᐃᒪᓗ 50%-ᖕᒍᔪᖅ ᐅᓄᕐᓂᖕᒋᑦ ᐅᑎᕋᔭᖅᑐᓄᑦ 3400 ᐃᓗᐊᓂ ᑕᓪᓕᒪᑦ (5) ᐊᕐᕌᒍᓂ.

ᐊᓯᖕᒋᑦ ᐃᓱᒪᒋᔭᕆᐊᖃᖅᑐᑦ

ᒫᓐᓇ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᔪᑦ ᐱᒋᐊᕈᑎᖓ ᐊᔪᕐᓇᖅᑎᑦᑎᔪᖅ ᐋᕿᒃᓱᐃᖃᓐᓂᕈᑎᒋᔭᕆᐊᒃᓴᖓ ᕿᓚᓗᒐᕐᓄᑦ ᐅᒡᒃᓗᓐᓃᑦ ᐊᔾᔨᐅᓐᖕᒋᑦᑐᒥᒃ ᐱᔾᔪᑎᖃᖅᓱᑎᒃ ᑐᕐᑯᖃᑦᑕᕐᒪᑕ. ᐅᓇ ᖃᐅᔨᔪᒥᓇᖅᑐᖅ ᐊᕙᑖᓂᑦ ᐊᖑᓇᓱᒃᑎᑦ ᐃᓇᖕᒌᓂᐊᕐᒪᑕ ᒫᓐᓇᐅᔪᖅ ᐱᓕᕆᔾᔪᑕᐅᔪᕐᒥᒃ ᐃᓚᐅᑎᑦᑎᓂᖅᓴᐅᓗᑕ ᓄᓇᓕᖕᓂᒃ ᐊᒻᒪᓗ ᐊᕕᒃᑐᖅᓯᒪᔪᑎᒍᑦ ᐊᐅᓚᑦᑎᖃᑎᒌᒡᓗᑕ ᖃᓄᖅ ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᐊᑖᒍᑦ ᓄᓇᑖᕈᑎᑦ ᐊᖕᒋᕈᑎᖕᒋᑦᑎᒍᑦ. ᑕᐃᑲᓂᑦᑕᐅᖅ, ᐱᒻᒪᕆᐅᔪᖅ ᓇᓗᓇᐃᕐᓗᒋᑦ ᕿᓚᒻᒥᐅᔪᒃᑯᑦ, ᐊᑯᓂᐅᓗᐊᓐᖕᒋᑦᑐᒃᑯᑦ ᐊᒻᒪᓗ ᐊᑯᓂᐅᔪᒃᑯᑦ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᔪᒪᔪᓄᑦ ᐋᕿᒃᓯᒪᔾᔪᑎᒃᓴᐃᑦ ᑖᒃᑯᓄᖓ ᕿᓚᓗᒐᕐᓄᑦ ᐃᓛᒃᑰᖅᑐᓄᑦ.

ᐊᑎᖕᒋᑦ ᑲᑎᒪᔪᓂ ᐃᓚᐅᔪᑦ

ᐊᑎᖅ	ᐊᐅᓚᑦᓯᔾᔨ/ᓴᓇᕕᖓ
ᐊᐃᐸᓚᒪᐊᑰ, ᑯᓕᔅᑏᓐ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐋᑐᕙᖅ ᓄᓇᖕᒋᓐᓄᑦ
ᐊᐅᓚᓂᐃ, ᕗᓗᓕᐊᓐ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᑯᐸᐃᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᐸᕐᑐᕕᐅᑦ, ᒫᒃ	ᓄᓇᕕᒃ ᑕᕆᐅᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᑦ
ᐹᑭᖕ, ᐸᑉ	LGL ᑎᒥᖓ
ᐳᐊᑎᓗ, ᐸᐋᕕᐃ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᑯᐸᐃᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᑯᑭ, ᐃᒪ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐋᑐᕙᖅ ᓄᓇᖕᒋᓐᓄᑦ
ᑎᓐ ᐸᐃᔪ, ᓂᐅ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᒥᐊᓕᑕᐃᒻᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᑑᓕᐅᓪᓗᕙᓪᓗᑯᓗᒃ, ᑖᒪᒃ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐸᓯᕕᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᕗᑯᓴᓐ, ᒪᐃᑯ	ᕿᑭᖅᑖᓗᒃ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ
ᒐᓯᓕᓐ, ᔨᓐ-ᕗᓛᓐᓯᐊ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᑯᐸᐃᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᒍᓕᐃ, ᐋᑦ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᓅᕙᐅᓛᓐᑦ ᐊᒻᒪᓗ ᓛᐸᑐᐊ ᓄᓇᖕᒋᓐᓄᑦ
ᒍᓪᐳᐊᒃ-ᐸᐋᓐᓯᓐ, ᐅᓕᑭ	ᐊᑯᑭᑦᑐᓂ ᐊᐅᓚᑦᓯᕕᖓ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ
ᐸᐋᒧ, ᒪᐃᒃ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᑯᐸᐃᒃ ᓄᓇᖕᒋᓐᓄᑦ

ᐊᑎᖅ	ᐊᐅᓚᑦᓯᔨ/ᓴᓇᕕᖓ
ᕼᐊᖑᕕ, ᕖᓗᓕ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᑯᐸᐃᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᕼᐊᖑᒻᒪᓐ, ᔪᐊᑕᓐ	ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᑦ
ᔫᓐᓴᓐ, ᓂᕗ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ – IOM, ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐸᓯᕕᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᓛᖕ, ᓯᑦᓕ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᒥᐊᓕᑕᐃᒻᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᓛᓴᓐ, ᔫᒃ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᓅᕙᐅᓛᓐᑦ ᐊᒻᒪᓗ ᓛᐸᑐᐊ ᓄᓇᖕᒋᓐᓄᑦ
ᓖ, ᑕᐃᕕᑦ	ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓ
ᓚᓵᔾ, ᕗᕋᓃᒃ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᑯᐸᐃᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᒫᑯᔾ, ᒥᐊᓕᐊᓐ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᕿᑎᐊᓂ ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᖅ ᓄᓇᖕᒋᓐᓄᑦ
ᒪᒃᑲᓈᑦᓯ, ᓵᓐ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐸᓯᕕᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᒪᔨᐅᓯᑭ, ᓲᓇ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐸᓯᕕᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᒫᑎᐅ, ᑯᐊᓕ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᕿᑎᐊᓂ ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᖅ ᓄᓇᖕᒋᓐᓄᑦ
ᒥᒃᒥᓚᓐ, ᑯᓕᔅᑎ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ - ᐆᒪᔪᑦ ᐊᑦᑕᕐᓇᖅᑐᓂ, ᐸᓯᕕᒃ ᓄᓇᖕᒋᓐᓂ
ᒧᐊᔅ ᒫᕕ, ᕼᐃᓗᓕ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᒥᐊᓕᑕᐃᒻᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᒫᔅᓂᐃ, ᐊᕐᓈᑦ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᑯᐸᐃᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᓂᑰ, ᓕᓐᑕ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐸᓯᕕᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᐅᑳᓄ, ᒫᒃ	ᒪᑭᕕᒃᑯᑦ ᑎᒥᖓ
ᐹᓪᑲ, ᑎᐱ	ᑲᓇᑕᒥ ᐃᒪᕕᓕᕆᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓯᓚᒧᑦ ᐊᓂᖅᓵᖅᑐᖅᑕᖅᑎᓐᓄᖅ ᐊᐅᓚᑦᓯᕕᖓᑦ
ᐸᐅᔾᒪ, ᓕᐊᓐ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᕿᑎᐊᓂ ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᖅ ᓄᓇᖕᒋᓐᓄᑦ
ᐅᓚᑎᐅ, ᓯᑕᕙᓂ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ - ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᒍᐊᓪ ᓄᓇᖕᒋᓐᓄᑦ
ᓴᕙᑦᓯᑭ, ᓵᓐᑎᓕ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᕿᑎᐊᓂ ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᖅ ᓄᓇᖕᒋᓐᓄᑦ
ᓯᒫᑦ, ᐊᐃᕙᓐ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᑯᐸᐃᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᓯᒥᑦ, ᐹᓚ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᕿᑎᐊᓂ ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᖅ ᓄᓇᖕᒋᓐᓄᑦ

ᐊᑎᖅ	ᐊᐅᓚᑦᓯᔨ/ᓴᓇᕕᖔ
ᓯᑎᓐᓴᓐ, ᔨᐅᓕ (ᐃᒡᓯᕙᐅᑕᖅ)	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᓛᐸᑐᐊ ᓄᓇᖕᒋᓐᓄᑦ
ᑕᑯ, ᓯᑐᓚᕼᐊᓐ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐸᓯᕕᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᕖᓐᑐᓛᓐ, ᐋᓐᔨᓕᐊ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᒥᐊᓕᑕᐃᒻᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᒍᐊᑦ, ᑯᐊᑦᓂ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᕿᑎᐊᓂ ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᖅ ᓄᓇᖕᒋᓐᓄᑦ
ᐅᓚᐃᑦ, ᐋᑐᓗ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᒥᐊᑕᐃᒻᒃ ᓄᓇᖕᒋᓐᓄᑦ
ᐅᓚᐃᑦ, ᐳᓕᐊᓇ	ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ –ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ, ᐸᓯᕕᒃ ᓄᓇᖕᒋᓐᓄᑦ

ᑐᑭᓯᒋᐊᕐᕕᐅᓯᒪᔪᑦ ᓇᑭᖔᕐᒪᖔᑕ

ᐅᑯᐊ ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ ᐅᓂᒃᑳᖕᒋᑦ ᕕᕗᐊᕆ 17-ᒥᑦ 22-ᒧᑦ, 2020 ᖃᐅᔨᓇᓱᒃᑕᐅᓯᒪᔪᑦ ᐊᒃᑐᖅᑕᐅᓂᖕᒋᓐᓄᑦ ᑲᑎᕝᓗᒋᑦ ᐱᔭᐅᔪᓐᓇᖅᑐᑦ ᑲᓇᖕᓇᖔᓂ ᑕᐅᓯᔭᕐᔪᐊᖅ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ. ᐅᖃᓕᒫᒐ ᐊᓯᖕᒋᑦ ᑕᒪᑐᖕᒐᑦ ᑲᑎᒪᔪᓂᑦ ᐃᓕᔭᐅᓯᒪᓂᐊᖅᑐᑦ ᖃᕆᔭᐅᔭᕐᑯᑎᖔᓂ ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ ᒪᓕᒐᖕᒋᑦ ᐊᑐᐃᓐᓇᐅᓕᑐᐊᖅᐸᑕ.

ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ. 2018. **ᐊᓐᒍᓇᓱᒃᑕᐅᔪᓐᓇᕐᒪᖔᑕ ᐅᖃᐅᑎᔭᐅᓯᒪᓂᖅ ᑕᓯᐅᔭᕐᔪᐊᑉ ᑲᓇᖕᓇᖔ ᐊᒻᒪᓗ ᐊᑭᓐᓇᖅᐸᓯᐊ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ.** ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ.ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ ᑭᒻᒪᖅᑐᖅᑎᖔ. 2018/008.

ᒐᓯᓕᓐ, ᔨᒡᐃ ᕼᐊᒧ, ᐃ. ᐆ, ᐊᒻᒪᓗ ᒪᔅᓂᐃ, ᐃ. 2017 ᓇᓂᑦᑎᓯ ᖃᓄᖅ ᐅᓄᕐᓂᖕᒋᓐᓂᒃ ᖃᑯᖅᑐᑦ ᐃᓚᓗᒐᐃᑦ (*Delphinapterus leucas*) ᔭᐃᒡᔅ ᐸᐃ ᐊᒻᒪᓗ ᑲᓇᖕᓇᖔᓂ ᑕᓯᐅᔭᕐᔪᐊᖅ ᐊᐅᔭᖔᓂ 2015. ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ.ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ ᐱᕐᑯᔨᕗᒐᕈᑎ ᑎᑎᖃᖔ 2017/067. Iv + 25 Lᒃᐱᒐᖅ

ᕼᐊᒧ, ᐃᒡ. ᐆ, ᒫᓯᐃ, ᐃ, ᒐᓯᓕᓐ, ᔨ-ᕕ, ᒫᑎᐅᔅ, ᓱ.ᔨ, ᒫᑯᐊᔅ ᐃᒡ ᐊᒻᒪᓗ ᕗᑲᓴᓐ, ᐃᔅ ᕼ. 2017. ᐊᐅᓚᑦᑎᔾᔪᑕᐅᔪᑦ ᐱᒋᐊᕈᑎᒃᓴᐃᑦ, ᖃᓄᖅ ᐅᓄᕐᓂᖕᒋᓐᓄᑦ ᐅᐃᒍᑦ ᐊᒻᒪᓗ ᑲᑎᕝᓗᒋᑦ ᕿᓚᓗᒐᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᖃᓅᑎᒋᓂᖕᒋᑦ ᖃᑯᖅᑐᑦ ᕿᓚᓗᒐᐃᑦ ᑕᓯᐅᔭᕐᔪᐊᕐᒥ. ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ.ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᐃᔨᑦ ᐱᕐᑯᔨᕗᒐᕈᑎ ᑎᑎᖃᖔ. 2017/062. iv + 43 Lᒃᐱᒐᖅ

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ᐅᓇ ᐅᓂᒃᑳᖅ ᐱᔭᐅᔪᓐᓇᖅᑐᖅ ᐅᑯᖕᓇᖕᒐᑦ

ᖃᐅᔨᓴᖅᑎᒻᒪᕆᑦ ᐅᖃᐅᔾᔪᑎᔨᑦ ᑲᑎᖕᒐᕕᖕᒐ (CSA)
ᑯᐸᐃᒃ ᓄᓇᖕᒐᓂ
ᐃᖃᓗᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᐃᒪᕕᓕᕆᔨᒃᑯᑦ ᑲᓇᑕ
ᒧᑦᓱ ᓚᒫᖕᑖᔨᐃ ᐃᓕᓐᓂᐊᕐᕕᒃ
850 route de la Mer, ᑎᑎᖃᒃᑯᕕᒃ 1000
ᒫᓐᑦ-ᔭᓕ ᑯᐸᐃᒃ, ᑲᓇᑕ G5H 3Z4

ᐅᖃᓘᑖ: 418-775-0825
ᖃᕆᓴᐅᔭᒃᑯᑦ: Bras@dfo-mpo.gc.ca
ᖃᕆᓴᐅᔭᖃᕐᕕᖕᒐᑦ: www.dfo-mpo.gc.ca/csas-sccs/

ᓄᓇᕐᔪᐊᒥ ᐱᐅᓯᖅ ᓇᓗᓇᐃᒃᑯᑕᖕᒐᑕ ᓈᓴᐅᑖ 1919-5087
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ᑕᒻᒪᖅᓯᒪᓐᖕᒋᓪᓗᒍ ᓇᓂᑦᑎᓯᖕᒐ ᑖᔅᓱᒧᖕᒐ ᐅᖃᓕᒫᒐᕐᒧᑦ:

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