Infographic 5: A carbon assessment and life-cycle analysis of NZKS's business model

This infographic forms part of the McGuinness Institute's OneOceanNZ project. For references see www.mcguinnessinstitute.org/publications/infographics

A: A carbon assessment - Exploring Scope 1, 2 and 3 for New Zealand King Salmon's business model Scope 1 DIRECT Scope 2 **INDIRECT** Scope 3 INDIRECT Sý Feed from Chile lant and processir facilities and labs ned by NZKS AH ansportation of wast (e.g. heads and fins) Pens (from Chile X 🕻 and other equipr × × :心: -Production and **Business trave** Packaging Overs as/NZ transport of diese B: Life-cycle analysis – Exploring New Zealand King Salmon's business model Upstream activities **Reporting company FISHFOOD** The POO VITAMINS & MINERALS FISH OIL FISH PROTEIN **MORTALITY** SKELETAL ISSUES & DISEASE \odot 20 00 CURREN 20,000 SALMON FEED **IMPORTS FEED VOLUME DIESEL UPWELLING** HARVESTED BIOMASS MORTALITY FAECES SYSTEMS 2023 Feed largely from Tasmania, Australia FY2019 (p. 42) 18,616 t (est) 6834 t 4381 t (est) 3723 t (est) Cool water is pumped up to the surface of farm pens. FY2019 (p. 10) FY2023 (p. 7) FY2023 (pp. 10, 85)** (20% of feed)**** (Live weight) FY2023 (p. 85) \$25.9 m (cost) FY2023 (p. 85)***

Cool water is pumped up to the surface of farm pens.

FY2019 (p. 10)

Assumptions and estimates

FY2019 (p. 42)

2019

* Imports: See FY2019 (p. 86); FY2023 (p. 7). See also Winter, C. (8 January 2015). Chilean firm wins King Salmon contract. Stuff. Retrieved 13 June 2023 from www.stuff.co.nz/business/farming/aquaculture/64750652/chilean-firm-wins-king-salmon-contract

19,593 t

FY2019 (p. 13, 85)**

Feed from Chile and Australia. Pens from Chile

FY2019 (p. 86)*

- ** Feed volume in tonnes: [Total live weight harvested + mortality (est, see ***)] x Feed conversion ratio (FCR) (FY2023, pp. 10, 85: [6834 t + 4381 t (see very estimated figure in *** below)] x 1.66 = 18616 t) (FY2019, p. 13).
- *** Mortality in cost and tonnes: [Feed volume p.a. divided by FCR] harvest volume p.a. (FY2019, p. 13: [19593 t / 1.8] 7931 t = 2954 t). 2023: We have used FY2019 figures to estimate the relationship between cost of mortality and tonnes of mortality. (FY2023: [2019 \$17,465,000 cost / 2954 t = \$5,912 cost of mortality per t, then 2023 \$25,943,000 cost / 2019 \$5,912 cost of mortality per t = 4381 t (a rough estimate)). Note: We could not find feed volume in either FY2022 or FY2023, and we could not rely on FY2021 (as it was a seven-month financial year) or FY2020 (as the financial results were significantly impacted by COVID-19).

2954 t (est)

\$17.5 m (cost)

FY2019 (pp. 13, 82)***

3919 t (est)

(20% of feed)****

9013 t

(Live weight) FY2019 (p. 82)

**** Faeces: NZKS BOI June 2012 Wybourne: 'Skretting expects that about 20% of the dry matter consumed is excreted as faeces, for NZ King Salmon current salmon diet range'. Faeces estimate based on 20% of feed volume (FY2023: 18616 (pp. 10, 85) (est, see **) x 0.2 = 3723) (FY2019, p. 13: 19,593 x 0.2 = 3919)



