**Table 1** Summary of the observations of actual nitrogen loss rates. The locations, water depth range, observation numbers, core incubation methods and references are listed.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sampling locations | Water depth (m) | Observation numbers | Core incubations | References |
| Aarhus Bright, Denmark | 16 | 2 | Intact core incubations | (Nielsen and Glud, 1996) |
| Arabian Sea | 360 - 1430 | 4 | Intact core incubations | (Sokoll et al., 2012) |
| Arctic fjord (Svalbard, Norway) | 51 - 211 | 3 | Intact core incubations | (Gihring et al., 2010b) |
| Bassin d’Arcachon coastal lagoon | NA | 3 | Intact core incubations | (Welsh et al., 2000) |
| Casino, NSW, Australia | NA | 2 | Intact core incubations | (Erler et al., 2008) |
| Changjiang estuary and its adjacent East China Sea | 25.1 - 59 | 7 | Intact core incubations | (Song et al., 2021) |
| Changjiang River Estuary and Jiulong River Estuary, China | 1.9 - 58 | 23 | Intact core incubations | (Tan et al., 2022) |
| Changjiang River Estuary, China | NA | 22 | Continuous-flow experiments | (Liu et al., 2020) |
| Changjiang River Estuary, China | 6 - 61 | 14 | Continuous-flow experiments | (Liu et al., 2019) |
| Coast of Finland, northern Baltic Sea | 24 - 33 | 10 | Intact core incubations | (Hellemann et al., 2020) |
| Coast of Victoria, Australia | 1.5 - 8 | 11 | Intact core incubations | (Kessler et al., 2018) |
| Coastal area of the Gulf of Gdańsk | 5 - 24 | 6 | Intact core incubations | (Benelli et al., 2024) |
| Coastal lagoons, France | NA | 6 | Intact core incubations | (Rysgaard et al., 1996b) |
| Coastal sediments, Greenland | 36 - 100 | 11 | Intact core incubations | (Rysgaard et al., 2004) |
| Continental shelf and slope, North Atlantic | 50 - 2000 | 12 | Intact core incubations | (Trimmer and Nicholls, 2009) |
| Continental shelf region off central Chile | 85 | 5 | Intact core incubations | (Farías et al., 2004) |
| Danshuei River in northern Taiwan, China | NA | 1 | Intact core incubations | (Hsu and Kao, 2013) |
| East China Sea | 19 - 43.5 | 2 | Intact core incubations | (Song et al., 2016b) |
| Elbe Estuary, North Frisian Wadden Sea | 0.7 - 7.9 | 5 | Intact core incubations | (Deek et al., 2013) |
| Fjords in Svalbard and northern Norway | 115 - 329 | 5 | Intact core incubations | (Glud et al., 1998) |
| Georgia continental shelf, USA | 27 - 40 | 2 | Intact core incubations | (Vance-Harris and Ingall, 2005) |
| Great Barrier Reef lagoon | 5 - 29 | 2 | Intact core incubations | (Erler et al., 2013) |
| Gulf of Bothnia, Baltic Sea | 12.5 - 111 | 7 | Intact core incubations | (Bonaglia et al., 2017) |
| Gulf of Finland | 13 - 85 | 5 | Intact core incubations | (Susanna, 2007) |
| Gulf of Finland, Baltic Sea | 58 - 83 | 11 | Intact core incubations | (Jäntti and Hietanen, 2012) |
| Gulf of Finland, Baltic Sea | NA | 13 | Intact core incubations | (Jäntti et al., 2011) |
| Gulf of Finland, Baltic Sea | 33 | 5 | Intact core incubations | (Hietanen and Kuparinen, 2008) |
| Gulf of Mexico | NA | 6 | Intact core incubations | (Gihring et al., 2010a) |
| Gullmarsfjorden, Sweden, and Thames Estuary, England | 116 | 2 | Intact core incubations | (Trimmer et al., 2006) |
| Hypoxic zone off the Changjiang River estuary, China | 12 - 63 | 9 | Intact core incubations | (Yang et al., 2022) |
| Jinpu Bay, China | 5 - 15 | 12 | Continuous-flow experiments | (Yin et al., 2015) |
| Jiulong River Estuary, China | 4.1 - 11.8 | 2 | Intact core incubations | (Wan et al., 2023) |
| Kattegat and Skagerrak | 10 - 695 | 10 | Intact core incubations | (Rysgaard et al., 2001) |
| Lawrence estuary | 345 | 1 | Intact core incubations | (Crowe et al., 2012) |
| Little Lagoon, USA | 1.5 | 1 | Continuous-flow experiments | (Bernard et al., 2015) |
| Noosa River estuary, Australia | NA | 5 | Intact core incubations | (Chen et al., 2021) |
| North Sea | 0 - 116 | 9 | Intact core incubations | (Rosales Villa et al., 2019) |
| North Sea | 31 | 1 | Intact core incubations | (Fan et al., 2015) |
| North Sea | 9 - 49 | 8 | Intact core incubations | (Bale et al., 2014) |
| North Sea | 29 - 81 | 16 | Intact core incubations | (Neubacher et al., 2011) |
| Northeast Chukchi Sea | 41 - 66 | 5 | Continuous-flow experiments | (McTigue et al., 2016) |
| Northeastern New Zealand continental shelf | 30 - 128 | 7 | Intact core incubations | (Cheung et al., 2024) |
| Northern Baltic Proper | 31 - 41 | 17 | Intact core incubations | (Bonaglia et al., 2014a) |
| Northern East China Sea, China | 27.7 - 64.8 | 16 | Continuous-flow experiments | (Chang et al., 2021) |
| Norwegian Trench, Skagerrak | 176 - 688 | 4 | Intact core incubations | (Trimmer et al., 2013) |
| Öre Estuary, Swedish | NA | 6 | Intact core incubations | (Hellemann et al., 2017) |
| Pearl River Estuary, China | 7-26 | 5 | Intact core incubations | (Tan et al., 2019) |
| Plum Island Sound, Massachusetts | NA | 4 | Intact core incubations | (Koop-Jakobsen and Giblin, 2010) |
| Randers Fjord and Norsminde Fjord, Denmark | 0.5 - 1 | 2 | Intact core incubations | (Risgaard-Petersen et al., 2004) |
| Randers Fjord, Young Sound and Skagerrak, Denmark | 1 - 695 | 3 | Intact core incubations | (Risgaard-Petersen et al., 2003) |
| Sacca di Goro lagoon, Italy | NA | 6 | Intact core incubations | (Magri et al., 2020) |
| Sagami Bay, Japan | 1450 | 1 | Intact core incubations | (Glud et al., 2009) |
| Southern and central Baltic Sea | 0.2 - 80 | 12 | Intact core incubations | (Deutsch et al., 2010) |
| Southern Finland | NA | 5 | Intact core incubations | (Uusheimo et al., 2018) |
| St. George Island, Gulf of Mexico, Hausstrand, German Wadden Sea and Spitsbergen island, Svalbard | NA | 5 | Intact core incubations | (Canion et al., 2014) |
| St. Joseph Bay, USA | 0.82 | 4 | Continuous-flow experiments | (Hoffman et al., 2019) |
| St. Lawrence Estuary, Canada | NA | 3 | Intact core incubations | (Poulin et al., 2007) |
| Stockholm Archipelago, Baltic Sea | 28 | 1 | Intact core incubations | (Bonaglia et al., 2014b) |
| Svalbard, Norway | 170 - 869 | 10 | Intact core incubations | (Blackburn et al., 1996) |
| Taganga Bay, Colombia Caribbean | NA | 8 | Intact core incubations | (Arroyave Gómez et al., 2020) |
| Tama Estuary, Japan | 20 - 30 | 2 | Continuous-flow experiments | (Usui et al., 2001) |
| Texas estuaries, USA | 0.6 - 3 | 26 | Continuous-flow experiments | (Gardner et al., 2006) |
| The Baltic Sea | 105 | 1 | Intact core incubations | (Bonaglia et al., 2013) |
| The Curonian Lagoon | 1 - 2.5 | 8 | Intact core incubations | (Bartoli et al., 2021) |
| Tropical Coastal Lagoons | 0.2 - 3 | 11 | Intact core incubations | (Enrich-Prast et al., 2016) |
| Tropical Coastal Wetlands, Australia | NA | 8 | Intact core incubations | (Adame et al., 2019) |
| Ulleung Basin, East Sea | 72 - 2342 | 9 | Intact core incubations | (Na et al., 2018) |
| Wallis Lake estuary, Australia | NA | 2 | Intact core incubations | (Erler et al., 2017) |
| Young Sound fjord, northeast Greenland | 40 | 1 | Intact core incubations | (Rysgaard et al., 1996a) |

NM denotes that water depth is not mentioned.