John dory (JDO 1)

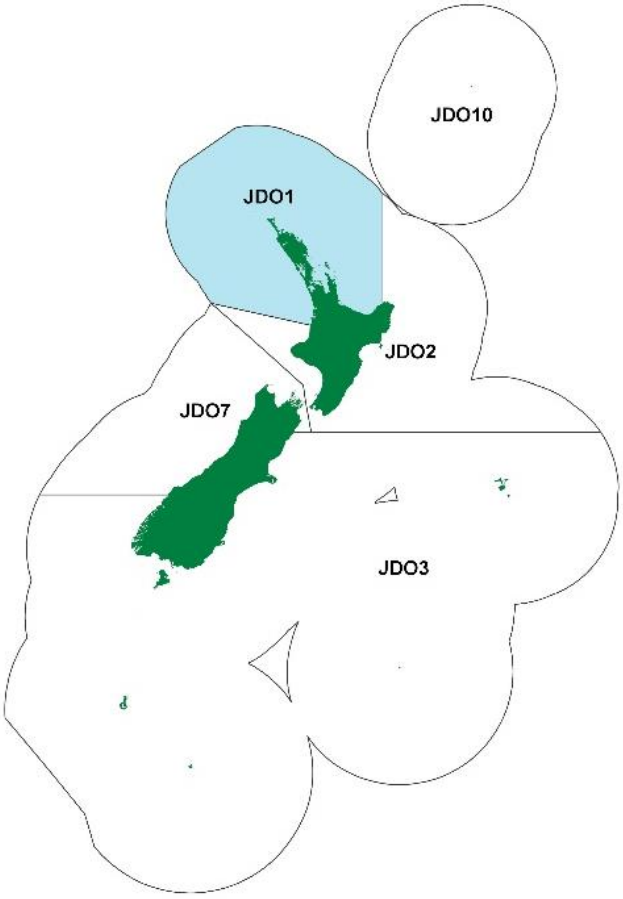

Figure 1: Quota Management Areas (QMAs) for John dory (JDO), with JDO 1 highlighted in blue.

1. What is proposed?

587. Fisheries New Zealand is reviewing the total allowable commercial catch (TACC) for John dory (*Zeus faber;* kuparu) in JDO 1 in the north of the North Island (see Figure 1) for the first time. Although a TACC for JDO 1 has been set, allowances for non-commercial sectors have not been set. In setting or varying the TACC under s 20 of the Act, the Minister shall have regard to the TAC and, under s 21, allow for Māori customary non-commercial fishing interests, recreational interests, and all other sources of mortality caused by fishing. In addition to setting or varying the JDO 1 TACC, this review provides the opportunity to set JDO 1 non –commercial allowances for the first time. The following initial options are proposed and Fisheries New Zealand seeks information and views from tangata whenua and stakeholders (Table 1):

Table 1: Proposed management settings in tonnes for JDO 1 from 1 October 2018, with the percentage change relative to the *status quo* in brackets.

Option	Total Allowable Catch	Total Allowable Commercial Catch	Allowances		
			Customary Māori	Recreational	All other mortality to the stock caused by fishing
Current settings	**-**	**704**	**-**	**-**	**-**
Option 1	790	704	15	36	35

Option 2	423 ↓	354 ↓ (50%)	15	36	18 ↓
Option 3	387 ↓	320 ↓ (55%)	15	36	16 ↓

588. The current interim deemed value rate is set at 50% of the annual rate. Consistent with Principle 7 of the Deemed Value Guidelines,[1] and to incentivise fishers to regularly cover catch with Annual Catch Entitlement(ACE) throughout the year, Fisheries New Zealand proposes increasing the interim deemed value rate for JDO 1 to 90%, as outlined in Table 2. Further details on this change can be found in the Deemed Values discussion document. No changes are proposed for the annual deemed value rate or differential schedule.

Table 2: Current and proposed Standard Deemed Value Rates ($/kg) for JDO 1

	Interim Rate ($/kg)	Annual Differential Rates ($/kg) for excess catch (% of ACE)					
		100-120%	120-140%	140-160%	160-180%	180-200%	200%+
Status quo	1.96	3.92	4.70	5.49	6.27	7.06	7.84
Proposed	3.52 ↑						

2. Why the need for change?

589. The best available information suggests that there is a risk to the sustainability of JDO 1 under recent levels of commercial catch of John dory in JDO 1, and under the current catch limit. The options proposed aim to address that risk. The TACC for JDO 1 has not been reviewed since the introduction of John dory into the Quota Management System (QMS) in 1986. The commercial catch of JDO 1 comprises more than 90% of the total catch by all sectors. Reported commercial catch has generally declined since a peak in the mid-1990s to an average of approximately 50% of the TACC in the last 5 years.

3. Background

3.1 BIOLOGICAL CHARACTERISTICS OF JOHN DORY

590. John dory are serial spawners (spawning more than once in a season), and in combination with a relatively high natural mortality and relatively short lifespan, this suggests that John dory stock abundance is likely to fluctuate as recruitment strength varies. Fluctuations in stock biomass means that management measures are sometimes required to reduce catches at times of persistent low recruitment. Conversely, fluctuations in stock biomass can provide opportunities for increased utilisation when strong year classes appear in the population.

3.2 FISHERY CHARACTERISATION

Customary Māori fishery

591. John dory (kuparu) is a valued taonga species for tangata whenua and has traditionally been a popular source of food. John dory has been identified as taonga species under the

[1] Available at www.mpi.govt.nz/document-vault/3663

Iwi Forum Fisheries Plans of Te Hiku o Te Ika, the Mai I Ngā Kuri a Wharei ki Tihirau, and the Ngaa Hapu o te Uru o Tainui.

592. Most tangata whenua groups in JDO 1 are still operating under regulations 50 and 51 of the Fisheries (Amateur Fishing) Regulations 2013 (the Amateur Regulations) and it is not mandatory to report on permits issued or catch taken. There are some rohe or areas mandated under the Kaimoana (Customary Fishing) Regulations 1998 where catch reporting, when authorised, is required. Regardless, information held by Fisheries New Zealand on Māori customary catch is that there has been only one customary permit approval recorded for JDO 1, and that was in 2011.

593. Fisheries New Zealand holds no quantitative information to enable estimation of the current level of Māori customary non-commercial catch of JDO 1. A Māori customary allowance for JDO 1 has not been set. In setting or adjusting the JDO 1 TAC, Fisheries New Zealand is proposing to set an initial allowance for Māori customary fishing of 15 tonnes for all options.

Recreational fishery

594. John dory is an important recreational fishing species in the north of New Zealand. It is sometimes targeted by spear fishers and line fishers using live bait. However, most John dory is taken in small quantities as bycatch of other line-caught species. Recreational harvesting of John dory is subject to the daily bag limit of 20 fish per person per day, as part of the combined species bag limit. There is no recreational minimum legal size set for John dory in JDO 1.

595. The National Panel Survey of Marine Recreational Fishers in 2011/12 (NPS)[2] provides the best available information on current recreational harvest of John dory in JDO 1. This survey estimated 36 tonnes of John dory were caught in JDO 1 in the 2011/12 fishing year.

596. A recreational allowance for JDO 1 has not been set. In setting or adjusting the JDO 1 TAC, Fisheries New Zealand is proposing to set an initial allowance for recreational fishing of 36 tonnes for all options, to reflect the current recreational catch of John dory in JDO 1 from the NPS.

597. A repeat of the 2011/12 National Panel Survey is currently underway in 2017/18, and updated estimates of recreational catch of John dory in JDO 1 will be used to inform future recreational catch allowance settings.

Commercial fishery

598. The quota management area for JDO 1 encompasses the fishery management areas of FMA 1 (eastern coast of the northern North Island) and FMA 9 (western coast of the northern North Island). John dory are taken mainly as a part of the mixed target bottom trawl fishery which also targets snapper, red gurnard, tarakihi and trevally, with the majority of the remaining catch taken by Danish seine. In recent years, reported

[2] Wynne-Jones, J.; Gray, A.; Hill, L.; Heinemann, A. (2014). National Panel Survey of Marine Recreational Fishers 2011–12: Harvest Estimates. New Zealand Fisheries Assessment Report 2014/67. 139p. Accessible at: https://www.mpi.govt.nz/dmsdocument/4719/send

commercial catch from JDO 1 has accounted for around 50–65% of the total commercial catch from all JDO stocks nationwide.

599. From reported commercial catch landing records, commercial catches, which make up more than 90% of the total catch across all sectors, have generally declined since a peak in the mid-1990s to an average of approximately 50% of the JDO 1 TACC in the last 5 years, with catches being maintained at about 350 tonnes per annum (Figure 2).

600. Most of the decline in John dory catch in JDO 1 has occurred in the Hauraki Gulf-East Northland fishery. Annual catches from the west coast (FMA 9) have been maintained at about 80-140 tonnes over the last 25 years (from 1990/91), predominantly as a mixed catch component of the targeted snapper, red gurnard, and trevally trawl fisheries. Annual catches from the Bay of Plenty fishery (trawl and Danish seine) have been about 80-120 tonnes during the same period.

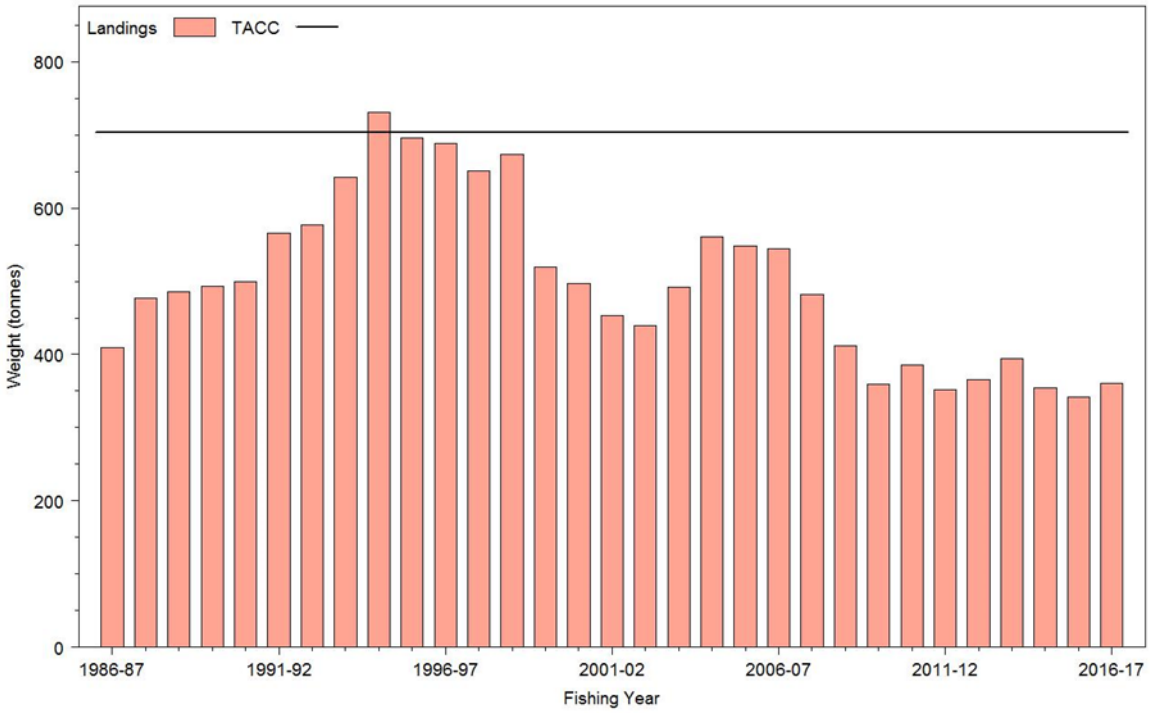

Figure 2: Commercial landings vs TACC for JDO 1 from 1986/87 to 2016/17.

3.3 STATUS OF THE STOCK AND MANAGEMENT TARGETS

601. JDO 1 is monitored using commercial catch per unit of effort (CPUE) as an index of the relative abundance of the stock. Component stocks within JDO 1 are below the target biomass level and, under the guidelines of the Harvest Strategy Standard (HSS),[3] Details of the CPUE analysis follow.

602. Three individual biological stocks within JDO 1 have been identified – Bay of Plenty, Hauraki Gulf and east Northland, and the west coast of the northern North Island – and the mean CPUE between the mid-1990s and 2010 for each biological stock provides

[3] Available at https://fs.fish.govt.nz/Doc/16543/harveststrategyfinal.pdf.ashx

reference points for a target biomass. CPUE indices for each biological stock within JDO 1 were updated with data including the 2016/17 fishing year. The updated assessment of JDO 1 CPUE did not change the reference levels.

603. Based on the CPUE analysis (Figure 3), JDO 1 in East Northland and the Hauraki Gulf is very unlikely to be at or above the target, and unlikely to be below the soft limit (half the target). Annual commercial catches and fishing mortality have been relatively low over the last five years. There has been a modest increase in the CPUE indices over the last 4 years indicating that the stock is rebuilding slowly, although it remains below the target. It is likely that recruitment[4] had been low during the preceding period. The continued rebuilding of the stock to the target biomass level will depend on future levels of recruitment.

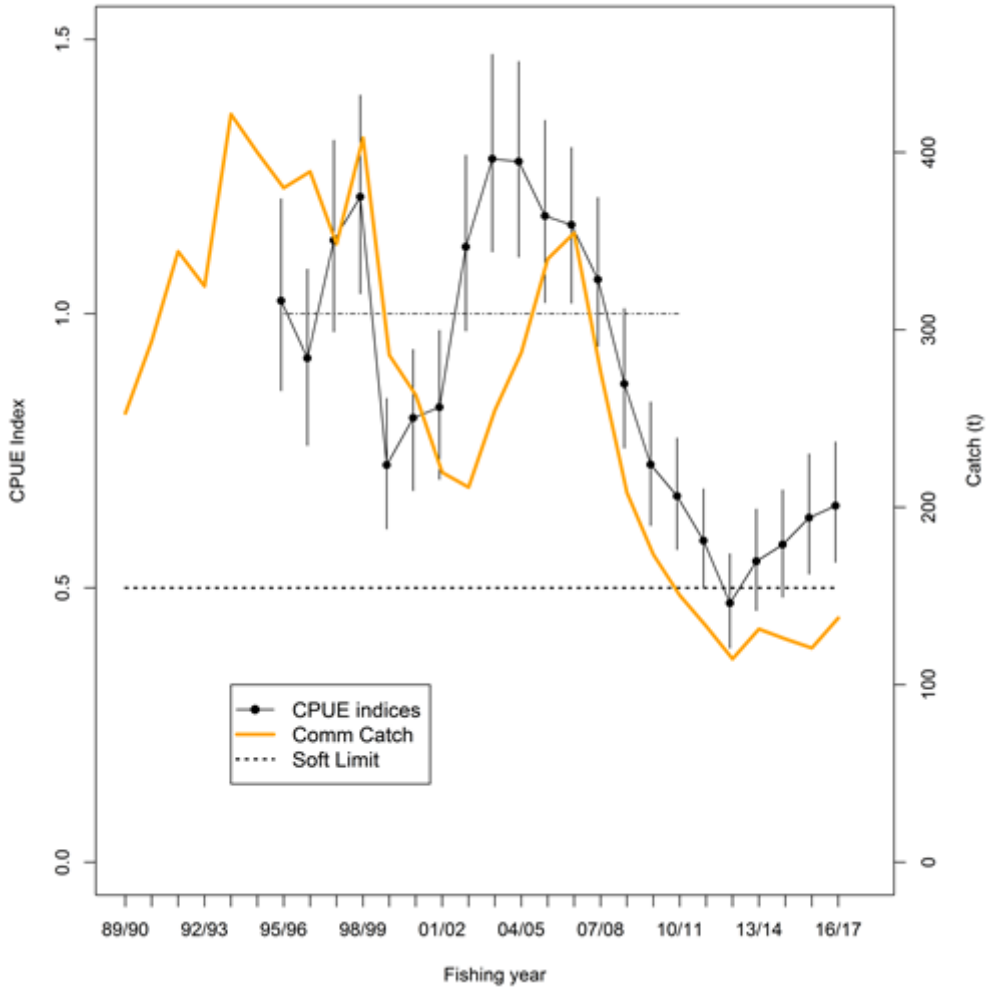

Figure 3: Standardised CPUE indices for John dory in the Hauraki Gulf and east Northland from estimates of catch rate in bottom trawl tows in a mixed target fishery. Broken horizontal lines indicate the target and soft limit.[5] The commercial catch from the area is also presented. Vertical lines show the 95% confidence intervals.

604. JDO 1 in the Bay of Plenty is unlikely to be at or above the target, and very unlikely below the soft limit (Figure 4). The CPUE indices fluctuated over the time series and

[4] Recruitment refers to the addition of new individuals to the fished component of a stock. This is determined by the size and age at which the fish are first caught.
[5] The Soft Limit is the biomass limit below which a requirement for a management review is triggered.

reached the lowest level in 2012-13. The CPUE indices increased in subsequent years and the 2016-17 index was at 85% of the target biomass level. Annual commercial catches have increased considerably over the last three years following the increase in abundance (as indexed by CPUE). There has been an increasing trend in fishing mortality over the last 8 years, and fishing mortality in 2016/17 was the highest in the series and considerably higher than the reference level. The current (higher) level of the fishing mortality may cause the stock to begin to decline.

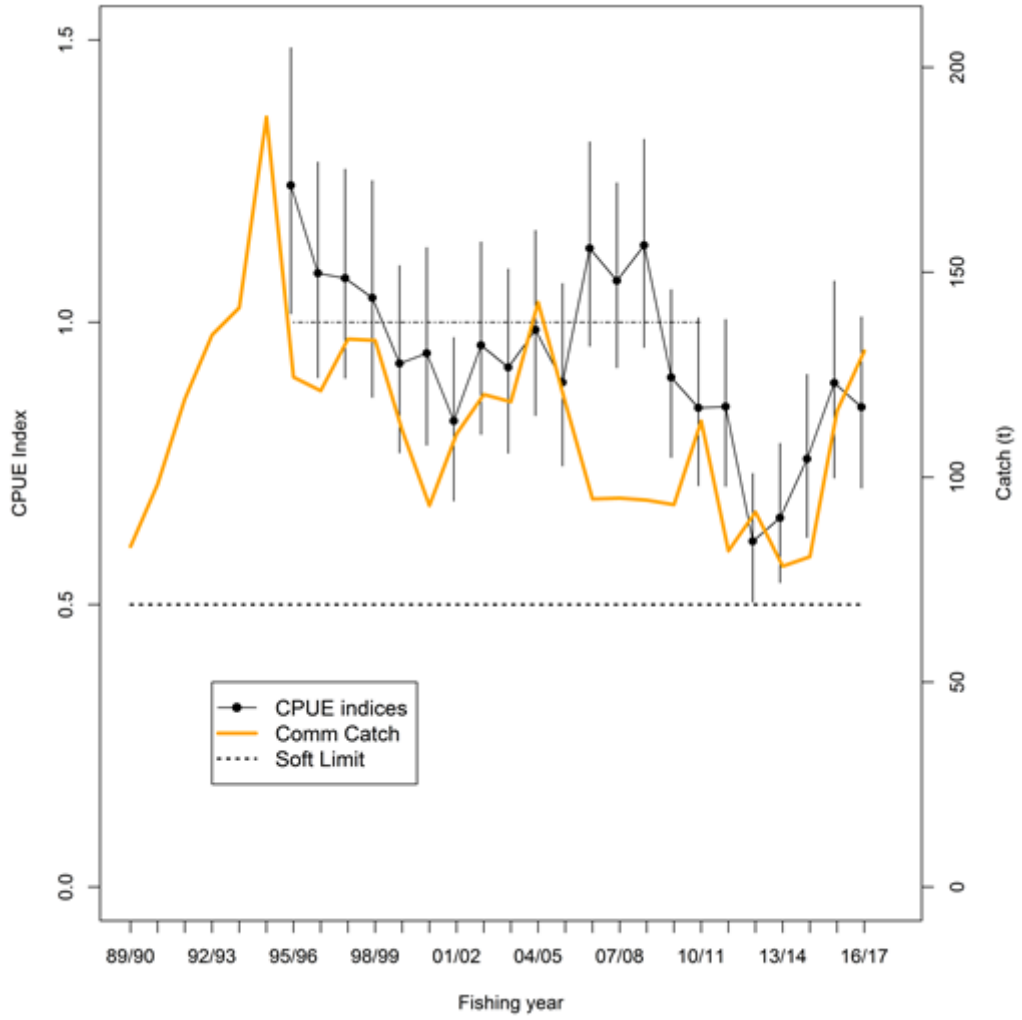

Figure 4: Standardised CPUE indices for John dory in the Bay of Plenty from estimates of catch rate in bottom trawl tows in a mixed target fishery.

605. JDO 1 west coast North Island is unlikely to be at or above the target and unlikely below the soft limit (Figure 5). CPUE indices have fluctuated over the time series. CPUE indices were at the highest level in 2010/11 to 2012/13, and declined over the next four years. The 2016/17 CPUE index is at 79% of the target biomass level. Fishing mortality was at a relatively low level in 2010/11 to 2012/13 (corresponding to the high CPUE indices). Fishing mortality has been maintained at about the reference level during 2014/15 to 2016/17.

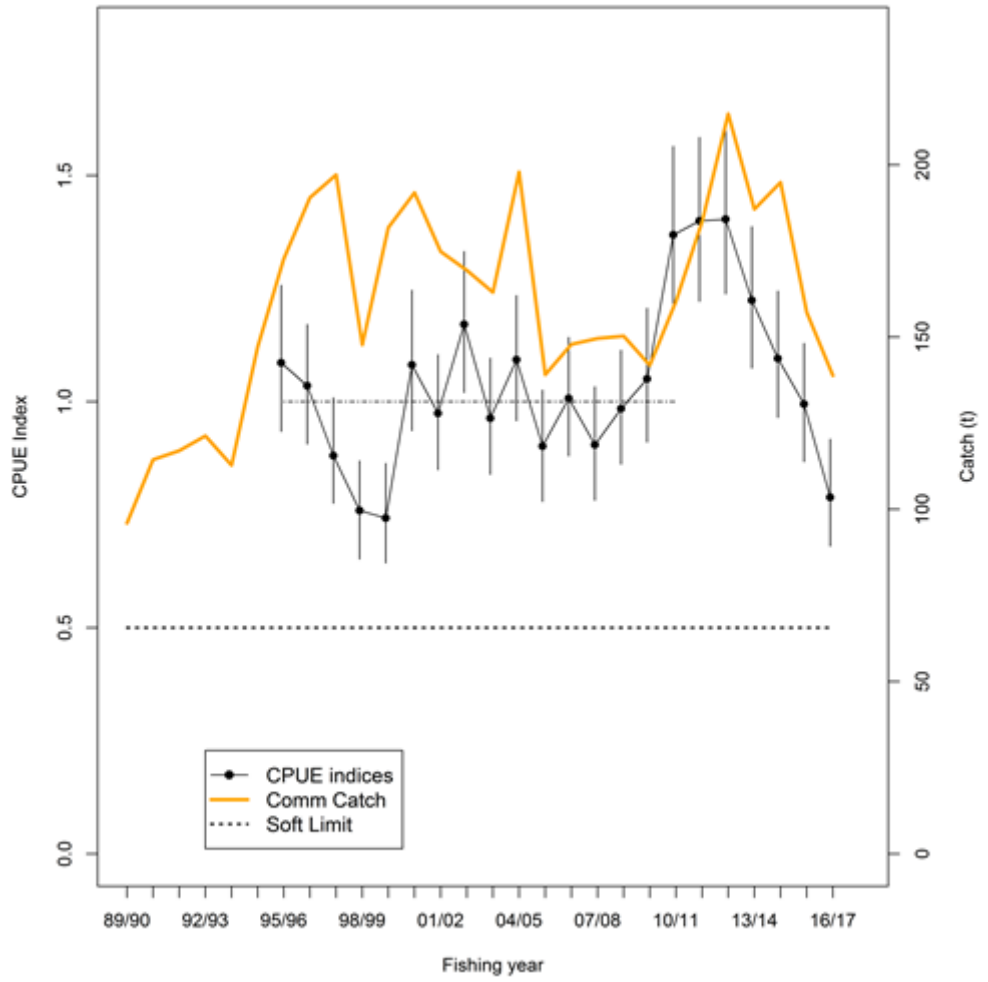

Figure 5: Standardised CPUE indices for John dory in the west coast North Island from estimates of catch rate in bottom trawl tows in a mixed target fishery.

4. Why are these options proposed?

606. The options proposed for JDO 1 are given in Table 3 and discussed below.

Table 3: Proposed management settings in tonnes for JDO 1 from 1 October 2018

Option	Total Allowable Catch	Total Allowable Commercial Catch	Allowances		
			Customary Māori	Recreational	All other mortality to the stock caused by fishing
Current settings	-	**704**	-	-	-
Option 1	790	704	15	36	35
Option 2	423 ↓	354 ↓ (50%)	15	36	18 ↓
Option 3	387 ↓	320 ↓ (55%)	15	36	16 ↓

4.1 SETTING THE TAC

607. JDO 1 is managed under s 13(2A) of the Act, which requires that the Minister set a TAC that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, a level that can produce the MSY. Section 13(2A) is used where the current level of the stock or the level of the stock that can produce the MSY cannot be reliably estimated.

608. An estimate of the stock biomass that will produce the MSY is not available for JDO 1, and neither is an estimate of the MSY. However, the Northern Inshore Scientific Working Group has agreed upon a CPUE reference level (indexing relative abundance) for each component stock in JDO 1 that represents a proxy for the biomass that will produce the MSY.[6] Mean CPUE between the mid-1990s and 2010 for each biological stock provides reference points for a target biomass.

609. The CPUE series shows that all the component stocks within JDO 1 are below the target biomass level and, under the Harvest Strategy Standard (HSS), Fisheries New Zealand considers that a reduction of the JDO 1 TAC is required to address sustainability risks and help rebuild the JDO 1 stock.

610. Currently, only a TACC for JDO 1 has been set. Options to set TACs propose to account for adjustments to the TACC and, for the first time, the setting of non-commercial allowances (an allowance for customary Māori fishing and an allowance for recreational fishing), and an allowance for all other mortality caused by fishing.

611. In using proxies estimated from commercial information it was assumed that levels of non-commercial catches and incidental mortality were relatively constant over time and that these may be treated as an on-going yield over and above the reference levels (that pertain only to commercial fishing mortality). In other words, estimates of customary catch and incidental mortality were added to the proposed commercial limits and used as the basis for deriving TACs in Table 2, rather than treated as a component and subtracted from the reference levels.

612. The options (other than that which is based on the *status quo* TACC) are intended to reduce the sustainability risk that exists because of the substantial headroom under the current catch limit.

613. Although there is an indication of some increase in relative abundance in the eastern stocks (East Northland and Hauraki Gulf, Bay of Plenty), a continuing increase towards targets will depend on recruitment strength and the levels of harvest. Fisheries New Zealand is unable to predict future recruitment of John dory into the JDO 1 stock. However, Fisheries New Zealand considers that if fishing pressure is relieved, ongoing JDO 1 recruitment is likely to increase the rate of rebuild towards the biomass level that can support the MSY.

614. There is uncertainty about whether current removals are likely to affect John dory recruitment, nonetheless, it is desirable to constrain the potential for any additional fishing effort and catch of JDO 1. To be more certain of moving the stock to a level that supports

[6] Langley A. D. 2015. Fishery characterisation and Catch-Per-Unit-Effort indices for John dory in JDO 1. New Zealand Fisheries Assessment Report 2015/47

the MSY, Fisheries New Zealand is proposing Option 2 (based on constraining catch to recent catch levels) and Option 3 (that reduces recent catch levels by 10%).

615. Adopting Options 2 or 3 effectively reduces the TAC (noting that currently no TAC has been set).

4.2 SETTING ALLOWANCES AND THE TACC

616. Having set the TAC, the Minister must set the TACC and in setting or varying the TACC must make allowances for Māori customary non-commercial fishing interests, recreational fishing interests, and all other mortality to the stock caused by fishing (s 20 & 21).

617. No Māori customary or recreational allowances or an allowance for all other mortality related to fishing are set for JDO 1. As part of reviewing the TAC and TACC, new allowances for non-commercial fishing and an allowance for other sources of mortality caused by fishing are required to be set. Details of the setting of these allowances are outlined in the sections below.

618. Commercial catches have been significantly below the TACC for several years and a sustainability risk exists if fishers attempted to take the full TACC while the JDO 1 stock abundance is relatively low. To address that risk, the proposed options 2 and 3 aim to remove the excess of the TACC above current catch levels, or 'headroom', in order to assist with rebuilding the component stocks towards target biomass levels.

Allowance for Māori customary fishing

619. The proposal has been presented to Northern Iwi Forums and feedback sought. Fisheries New Zealand seeks input from tangata whenua regarding the importance and level of customary take of JDO 1 for discussion on the setting of the customary Māori allowance.

620. Prior to consultation Fisheries New Zealand has discussed this with the Ngaa Hapu o te Uru o Tainui Iwi Fisheries Forum and Mai I Ngā Kuri a Wharei ki Tihirau Iwi Fisheries Forum, both of which have agreed that 15 tonnes is an appropriate setting for an initial customary allowance. Fisheries New Zealand was unable to discuss this with Te Hiku o Te Ika forum in the pre-consultation stages of these proposals, however Fisheries New Zealand is continuing to make contact and engaging with those Iwi, customary protocol holders and tangata whenua representatives to seek their input and participation prior to the formal consultation period.

621. Fisheries New Zealand acknowledges that the views of iwi forums identified are not representative of all customary interests and seeks input and information on alternative proposals for this setting.

Allowance for recreational fishing

622. The options proposed for non-commercial catch in JDO 1 are based on the best available information on non-commercial interests in JDO 1- the 2011/12 Panel survey. Fisheries New Zealand does not consider this level of recreational catch to pose a risk to the sustainability of the stock.

623. Fisheries New Zealand proposes that a recreational allowance be set at 36 tonnes for all options. Fisheries New Zealand is not proposing to review the current recreational daily bag limit of 20 John dory per person per day, nor proposing to review the setting of a minimum legal size for recreationally caught John dory in JDO 1.

Allowance for all other mortality to the stock caused by fishing

624. The level of incidental mortality to the JDO 1 stock caused by fishing has not been quantified. Trawling and Danish seining are the methods of fishing which take the greatest quantities of John dory in JDO 1 by volume, and Fisheries New Zealand considers that there is some incidental mortality associated with those methods, at least through the subsequent mortality of fish that escape the nets. As an initial allowance for discussion, Fisheries New Zealand proposes an allowance of 5% of the TACC for all options. The incidental mortality in the non-commercial fisheries is not considered to be significant, given that John dory are sought after as table fish, hence discards are likely to be low.

TACC

625. The TACC for JDO 1 has not been reviewed since the introduction of John dory into the quota management system (QMS) in 1986. Three options are proposed and evaluated in 4.4.

626. Option 1 proposes no change to the current TACC of 704 tonnes.

627. Option 2 proposes a TACC set at 354 tonnes based on the average commercial JDO 1 catch level (from reported landing returns) in the most recent 5 year period. Option 2 equates to a TACC reduction from the *status quo* of approximately 50% and is set at a level approximating the current commercial catch of John dory in JDO 1 and foreseeable future catches in the short-term.

628. Option 3 proposes a TACC set at 320 tonnes based on a catch level 10% below the most recent 5 year average catch, as outlined in Option 2, a level at which the commercial catch would be constrained below the catch levels of recent years. Option 3 is a more risk-averse approach to the sustainability of the JDO 1 stock and equates to a TACC reduction from the *status quo* of approximately 55%. Option 3 places greater weight on information regarding sustainability concerns for JDO 1.

4.3 DEEMED VALUE RATES

629. The review of deemed value rates for JDO 1 has been triggered by a sustainability review and not by landings in excess of TACC or a significant change in port prices. The current interim deemed value rate is set at 50% of the annual rate. Consistent with Principle 7 of the Guidelines[7], and to incentivise fishers to regularly cover catch with ACE throughout the year, Fisheries New Zealand proposes increasing the interim deemed value rate for JDO 1 for the 2018/19 fishing year to 90%, as outlined in Table 2. Further details are provided in the Deemed Values chapter of this document.

[7] Available at www.FNZ.govt.nz/document-vault/3663

4.4 EVALUATION OF OPTIONS

630. Although a TACC has been set for JDO 1, non-commercial allowances and an allowance for all other sources of mortality related to fishing have not been set. This review provides the opportunity to set or vary the TACC and allowances. In setting or varying the TACC under s 20 of the Act, the Minister shall have regard to the TAC and, under s 21, allow for Māori customary non-commercial fishing interests, recreational interests, and all other sources of mortality related to fishing.

631. Consistent across all options, Fisheries New Zealand proposes an allowance for all other sources of mortality from fishing of 5% of the TACC, and Māori customary and recreational allowances of 15 tonnes and 36 tonnes, respectively.

632. The economic implications of the proposed options are outlined in Table 4.

Table 4: Predicted changes to commercial revenue of the proposed options, based on the price to the fisher of $5.64/kg for JDO 1 in 2016/17.

	TACC (t)	Change from *status quo* (t)	Predicted revenue change ($ p.a.) from status quo	Change from average catch (last 5 years)	Predicted revenue change ($ p.a.) from last 5 years
Option 1	704	-	-		
Option 2	354	350 ↓	$1,974,000 ↓	0	
Option 3	320	320 ↓	$2,165,760 ↓	34 tonnes ↓	$191,760 ↓

Option 1

633. Option 1 provides the potential for commercial catches to increase from recent levels if fishers seek to utilise a greater proportion of available ACE, however, this option also presents the greatest sustainability risk to the stock given the long-term decline in catch and abundance of John dory in JDO 1 since the mid-90s.

634. As the JDO 1 stock is likely to be below the target biomass, Fisheries New Zealand considers that Option 1 is the option least likely of maintaining the stock at or above, or moving the stock towards or above, a level that can produce the MSY. Option 1 would have no short term negative effects on commercial fishers. However, this option does not reduce the sustainability risk arising from the potential for increased commercial catch. Fisheries New Zealand considers that Option 1 could impact on commercial and non-commercial fishers in the future if the JDO 1 biomass declines further.

635. There currently is no TAC set for JDO 1 and the setting of TAC proposed under Option 1 does not include any change to the current JDO 1 TACC of 704 tonnes. In setting the JDO 1 TAC for the first time, Fisheries New Zealand is also proposing to set JDO 1 non-commercial allowances for the first time. These non-commercial allowances are proposed to be set at consistent levels for all options.

Option 2

636. As the stock is likely to be below target biomass, Option 2 based on recent catch levels is less likely than Option 3 of maintaining the stock at or above, or moving the stock towards

or above, a level that can produce the MSY, since stock biomass may not rebuild under this option unless recruitment levels improve. The impact of adopting this option on recent commercial catch and revenues would be negligible, as this option reflects the stable catch levels of the most recent years. However, the reduction in the TACC will mean an opportunity cost for commercial fishers, who will no longer be able to catch up to the current catch limit (704 tonnes TACC).

Option 3

637. Fisheries New Zealand notes that the catch of JDO 1 has continued to decline under the current TACC. Setting a TACC below more recently observed catch levels is intended to reduce current commercial fishing pressure (both catch and effort) on the depleted JDO 1 stock, and adopting this option would provide the greatest certainty of stock biomass rebuilding towards the target level compared to the other options, under similar recruitment. The rate of biomass change cannot be determined, but would likely be faster under a lower TACC.

638. While utilisation of JDO 1 would be constrained under Option 3, there is a lower long-term sustainability risk associated with this option. John dory have relatively high productivity, and in the event of strong recruitment, John dory biomass is likely to rebound relatively quickly.

639. Option 3 is based on a TACC that provides for the lowest level of commercial catch compared to the other options (a 55% reduction of the current TACC). This option would constrain commercial catch to approximately 90% of recent levels. However, adopting this option is likely to impact fishers, particularly those that use all their ACE, as discussed below.

640. Option 3 will constrain commercial catch, particularly in years of high John dory abundance, where commercial fishers would have the opportunity to catch more than the proposed TACC.

641. Option 3 would also have the greatest potential economic impacts on commercial fishers in comparison to other options. JDO 1 has a relatively high commercial value (port price of $5.64/kg in 2016/17) and most of the JDO 1 commercial catch is taken by fishers contracted to quota holders. If the TACC is reduced, Fisheries New Zealand anticipates that the by catch of John dory will still be able to be covered through available ACE. However, adopting Option 3 is likely to impact on fishers that use ACE to target John dory, while having a more moderate impact on commercial catch and revenues based on recent catch levels overall. A reduction in the TACC will mean an opportunity cost for commercial fishers, who will no longer be able to catch up to the current catch limit (704 tonnes TACC).

642. If the JDO 1 TACC is reduced, ACE and quota will become scarcer, and the current average trade values, of around $0.90/kg and $10.00/kg respectively, may increase. These increases are likely to affect the profitability of individual (ACE) fishing operations, and conversely, quota holders may benefit over the medium term, because trade prices for both quota and ACE may increase.

643. Fisheries New Zealand considers that existing fishers will remain more likely to be able to access ACE as they are likely to already have existing relationships with quota holders.

However, reducing the JDO 1 TACC under either Option 2 or Option 3, and restricting the availability of ACE, is also likely to limit the number of new fishers entering the fishery.

644. Fisheries New Zealand notes that ongoing monitoring of this stock provides the ability to review management settings for the fishery should abundance increase and present an utilisation opportunity in the future.

5. Other Relevant Matters

5.1 REVIEW OF QMA BOUNDARIES

645. In 2012, the stock structure of John dory was reviewed[8] and evaluation of patterns in the distribution of catch and CPUE, research survey biomass trends, location of spawning and nursery grounds, size and age compositions, and anecdotal information from the fishery suggested that there are three biologically distinct John dory substocks in JDO 1: Hauraki Gulf and east Northland; Bay of Plenty; and west coast North Island. This review and the most recent CPUE analyses presented in this document support the separation of the northeast and northwest coast stocks of JDO 1.

646. Fisheries New Zealand seeks input from tangata whenua and stakeholders on considerations for a future review of QMA boundaries for John dory to better align with biological stocks.

5.2 PREFERENTIAL ALLOCATION (28N) RIGHTS

647. Two current quota owners hold 6.33 tonnes of preferential allocation ("28N") rights in JDO1. See section 1.10 of the Statutory Considerations chapter of this document. These preferential allocation rights have no implications for the options presented in this paper. But on a future increase in the JDO1 TACC these rights will need to be discharged via a reallocation of quota shares in accordance with section 23 of the Fisheries Act 1996.

5.3 ENVIRONMENTAL PRINCIPLES AND SUSTAINABILITY MEASURES

648. The Minister is required to consider any environmental impacts of the proposed management settings (section 9).

649. As JDO 1 is mostly a bycatch fishery, there is sparse information on key environmental issues associated specifically with the JDO 1 fishery. The proposed changes to the JDO 1 TAC reflect current or slightly reduced catch levels. There is no information to indicate there will be impacts upon the matters noted in section 9 of the Act.

650. The proposals are also considered to adequately address the requirements of section 11 (Sustainability Measures). As JDO 1incorporates the Hauraki Gulf Marine Park, sections 7 and 8 of the Hauraki Gulf Marine Park Act (HGMPA) 2000 are applicable to any management decisions. Fisheries New Zealand notes that about 20% of the JDO 1

[8] Dunn, M R; Jones, E (2013). Stock structure and fishery characterisation for New Zealand John dory. *New Zealand Fisheries Assessment Report 2013/40*. 99 p.

commercial catch is reported from within the Hauraki Gulf Marine Park Area and considers that a reduction in the level of harvest is an appropriate management action to aid a rebuild of the John dory resource within the Hauraki Gulf.

5.5 INPUT AND PARTICIPATION OF TANGATA WHENUA

651. In the pre-consultation stages of the October 2018 Sustainability Round, information about the proposal to review the management of JDO 1 was provided to the Te Hiku o te Ika Fisheries Forum, and presented to the Mai I Ngā Kuri a Wharei ki Tihirau Iwi Fisheries Forum and Nga Hapu o te Uru o Tainui Fisheries Forum. Fisheries New Zealand was unable to discuss the proposals with the Te Hiku o Te Ika forum in the pre-consutation stages of these proposals, however, Fisheries New Zealand is continuing to make contact and engaging with those Iwi, customary protocol holders, and tangata whenua representatives to seek their input and participation prior to the formal consultation period.

652. The Mai I Nga Kuri a Wharei ki Tihirau Iwi Fisheries Forum and Nga Hapu o te Uru o Tainiu Fisheries Forum both supported a review and the setting of recreational and customary allowances on the basis of the best available information. The Mai I nga Kuri a Wharei ki Tihirau Iwi Fisheries Forum noted the potential for future increases in the customary take associated with pātaka[9].

Kaitiakitanga

653. Under Section 12(1)(b) the Minister must also have particular regard to kaitiakitanga before setting or varying a TAC. Under the Act, kaitiakitanga is the exercise of guardianship, and in relation to any fisheries resources, includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori.

654. Relevant Iwi or Forum Fish Plans provide a view of the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from Forum meetings and submissions received from iwi can also provide an indication.

655. The Te Hiku o Te Ika Fisheries Plan contains three management objectives which are relevant to the management options proposed for JDO 1.
    a) Management objective 1: Iwi management systems support Te Hiku iwi in their fisheries decision making;
    b) Management objective 2: Fish stocks are healthy and support the social, cultural and economic prosperity of Te Hiku iwi and Hapu; and
    c) Management objective 3: To maximise iwi influence on all key environmental decisions that impact on fisheries.

656. The Nga Hapu o Te Uru Fisheries Plan contains two management objectives which are relevant to the management options proposed for JDO 1.
    a) Management objective 1: Nga Hapu o Te Uru kaitiaki are able to participate in and influence fisheries decision-making; and

[9] Tangata Kaitiaki/Tiaki can issue authorisations for commercial vessels to take non-commercial customary catch, and for commercial and non-commercial premises to be used to process and store non-commercial customary fish for later customary use. This practice is termed a Pataka (storehouse) approach.

b) Management objective 2: Relationships and partnerships with key stakeholders, managers and agencies are established and maintained.

657. The Mai I Ngā Kuri a Whārei ki Tihirau Iwi Fisheries Plan contains four management objectives which are relevant to the management options proposed for JDO 1.

a) Management objective 1: Iwi fisheries management activities support the growth and wellbeing of our people;
b) Management objective 2: Iwi are actively engaged with others to increase their fisheries potential within environmental limits;
c) Management objective 3: The fisheries environment is healthy and supports a sustainable fishery; and
d) Management objective 4: Tino rangatiratanga is advanced to ensure that iwi driven goals are achieved.

658. Fisheries New Zealand considers that the management options presented in this advice paper will contribute towards the achievement of these management objectives in ensuring that appropriate allowances are made for customary non-commercial fishing, the fishery remains sustainable, and that environmental impacts are minimised.

6. Further Information

Should you require further information, please see:

Fisheries Act (1996)

http://www.legislation.govt.nz/act/public/1996/0088/latest/DLM394192.html

Fisheries New Zealand Plenary document

Fisheries New Zealand (2018). Fisheries Assessment Plenary, May 2018: stock assessments and stock status. Compiled by the Fisheries Science Group, Fisheries New Zealand, Wellington, New Zealand.

Fisheries New Zealand recreational fisheries species page

https://fs.fish.govt.nz/Page.aspx?pk=8&stock=JDO1

John dory (JDO 7)

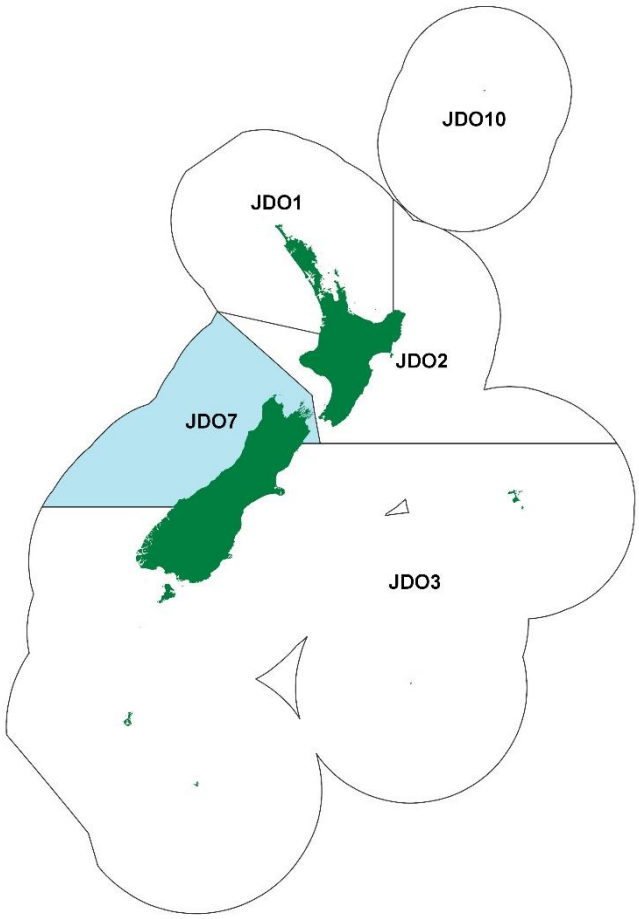

Figure 1: Quota Management Areas (QMAs) for John dory (JDO), with JDO 7 highlighted in blue.

1. What is proposed?

659. Fisheries New Zealand is reviewing the total allowable catch (TAC), allowance for Māori customary fishing, allowance for recreational fishing, allowance for all other mortality to the stock caused by fishing, and the total allowable commercial catch (TACC) for John dory (*Zeus faber;* kuparu) in quota management area JDO 7, which covers the Challenger area and the West Coast of the South Island (see Figure 1). Fisheries New Zealand proposes that the following initial options be considered, and seeks information and views from tangata whenua and stakeholders (Table 1):

Table 1: Proposed management settings in tonnes for JDO 7 from 1 October 2018, with the percentage change relative to the *status quo* in brackets.

Option	Total Allowable Catch (TAC)	Total Allowable Commercial Catch (TACC)	Allowances		
			Customary Māori	Recreational	All other mortality to the stock caused by fishing
Option 1 *(Status quo)*	206	190	2	4	10
Option 2	226 ↑ (10%)	209 ↑ (10%)	2	4	11 ↑ (10%)
Option 3	246 ↑ (19%)	228 ↑ (20%)	2	4	12 ↑ (20%)

660. The current interim deemed value rate is set at 50% of the annual rate. Consistent with Principle 7 of the Deemed Value Guidelines[10], and to incentivise fishers to regularly cover catch with ACE throughout the year, Fisheries New Zealand recommends increasing the interim deemed value rate for JDO7 to 90% of the annual rate, as outlined in Table 2. Further details on this proposed change can be found in the Deemed Values section of this discussion document. No changes are proposed for the annual deemed value rate or differential schedule.

Table 2: Current and proposed Standard Deemed Value Rates ($/kg) for JDO 7

	Interim Rate ($/kg)	Annual Differential Rates ($/kg) for excess catch (% of ACE)			
		100-120%	120-130%	130-140%	>140%
Status quo	2.62	5.25	6.00	8.00	10.00
Proposed	4.73 ↑				

2. Why the need for change?

661. The best available information in 2018 indicates that the abundance of John dory in JDO 7 has increased since the last assessment in 2015. Abundance is currently well above the target biomass and likely to remain so with recent strong recruitment. Fisheries New Zealand therefore considers that there is opportunity for increased utilisation of JDO 7 (increase the TAC) while ensuring the sustainability of the stock, consistent with s 8 of the Act.

3. Background

3.1 BIOLOGICAL CHARACTERISTICS OF JOHN DORY

662. John dory populations can fluctuate widely as a result of fluctuations in recruitment. Large fluctuations in stock biomass can provide opportunities for increased utilisation when strong year classes appear in the population. Large fluctuations in stock biomass also mean management measures are required to rapidly reduce catches at times of persistent low recruitment.

3.2 FISHERY CHARACTERISATION

663. In the 2016/17 year, 70% of John dory landed in JDO 7 was taken as a bycatch of bottom trawl fisheries targeting flatfish, tarakihi, and red gurnard, with only 19% of John dory landed in JDO 7 coming from target John dory fishing. In a mixed-species trawl fishery, an increase in TACC for John dory is expected to cover an increase in bycatch of John dory when targeting other fish species.

664. The overall abundance of a number of fish species is currently high in FMA 7. The west coast South Island (WCSI) research trawl survey in 2017 found continued high biomass for red gurnard and a marked increase for terakihi, and the second highest estimate of biomass for JDO 7 in the 25 year time survey series.

[10] Available at www.mpi.govt.nz/document-vault/3663

Customary Māori fishery

665. John dory (kuparu) is an important kaimoana species for tangata whenua. While John dory is not listed as a taonga species by the Te Waka a Māui me Ōna Toka Iwi Forum in the Te Waipounamu Iwi Fisheries Plan, the Forum regards all fish species as taonga species.

666. The JDO 7 QMA is under two different regulations for customary catch, the Fisheries (South Island Customary Fishing) Regulations 1999 (the South Island Regulations) and the Fisheries (Amateur Fishing) Regulations 2013 (the Amateur Regulations). The South Island Regulations apply south of the Kahurangi River down the west coast of the South Island, while the Amateur Regulations apply for the remainder of JDO 7 along the top of the South Island.

667. For tangata whenua groups in JDO 7 under the South Island Regulations, there is a requirement for Tangata Kaitiaki/Tiaki to provide information on Māori customary harvest of fish. However, for those tangata whenua groups still operating under regulations 50 and 51 of the Fisheries (Amateur Fishing) Regulations 2013 (the Amateur Regulations), it is not mandatory to report on permits issued or catch taken.

668. There are low levels of customary take of John dory in JDO 7, with the majority of customary take likely to be within the recreational catch allowance. This may reflect that tangata whenua in the Tasman/Golden Bay and Marlborough Sounds area are still operating under the Amateur Regulations, or it may suggest that tangata whenua use of the customary fishing regulations to harvest JDO 7 is low at this time (e.g., tangata whenua in JDO 7 are using recreational bag limits to meet their needs for John dory).

669. Consistent with the objectives of Te Waipounamu Iwi Fisheries Plan, Fisheries New Zealand is supporting and providing for the interests of South Island iwi by providing allowances that adequately allow for the utilisation of customary resources.

670. The taiāpure of Whakapuaka (Delaware Bay), and the mātaitai reserves of Okuru/Mussel Point, Tauperikaka, Mahitahi/Bruce Bay, Manakaiaua/Hunts Beach, Okarito Lagoon, Te Tai Tapu (Anatori), and Te Tai Tapu (Kaihoka) are all within the JDO 7 quota management area. Fisheries New Zealand notes that the proposals in this paper are unlikely to impact on these taiāpure and mātaitai reserves.

Recreational fishery

671. There is some recreational interest in JDO 7, however, recreational catches of John dory are low in JDO 7 compared to commercial John dory catches. John dory is mainly caught by rod and line, with some spearfishing catch and occasional set-net catch. Regulations[11] governing the recreational harvest of John dory from JDO 7 include no minimum size, a combined maximum daily bag limit of 20 of any combination of recreational species listed on the Challenger Area Regulations and a minimum mesh size of 100 mm for nets.

672. The most recent information on recreational catch is available from the National Panel Survey of recreational fisheries in 2010/12. This survey estimated that 1351 individual John dory were harvested in the Challenger management area (FMA 7) in the 2011/12

[11] Fisheries (Amateur Fishing) Regulations (2013)

fishing year[12]. This is equivalent to a harvest of 1706 kg based on an estimated mean weight of 1.263 kg per fish.

673. The main methods used to manage recreational harvest of John dory in JDO 7 include no minimum size, a combined maximum daily bag limit of 20 of any combination of recreational species listed on the Challenger Area Regulations, and a minimum mesh size of 100 mm for nets. There is no information to suggest a change to recreational controls would be needed and no change is proposed to the recreational daily bag limit.

Commercial fishery

674. Annual catches and the TACC for JDO 7 since 1986/87 are shown in Figure 3. JDO 7 catch last exceeded the TACC in 2015/16 by one tonne. Annual deemed value payments are low, with the average annual payment over the 5 years between 2012/13 and 2016/17 being $524.

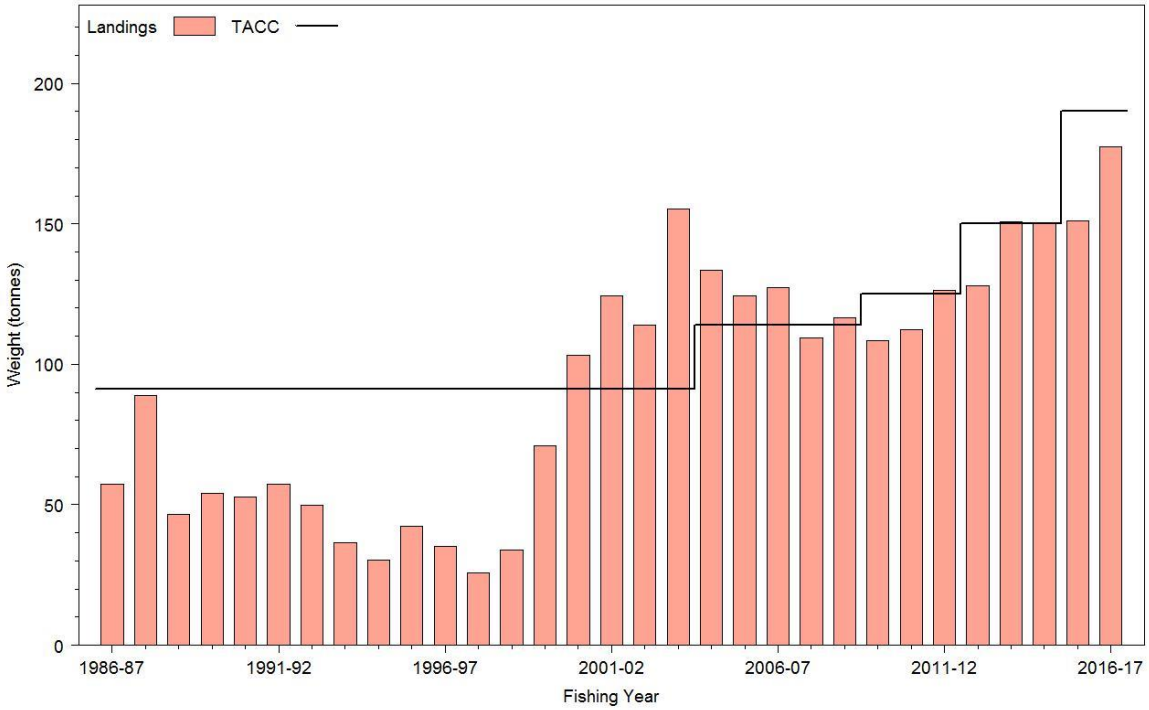

Figure 3: Landings and TACC for JDO 7 from 1986/87 to 2016/17.

3.3 STATUS OF THE STOCK

Management target

675. The WCSI research trawl survey has been accepted as providing an index of abundance for JDO 7, particularly recruited biomass (defined as fish that recruit into the fishery of at least 25 cm in length). The WCSI trawl survey reference period is the years 1992 to 2011, which are used to determine a proxy for B_{MSY} (the level of biomass that can produce the maximum sustainable yield).

[12] Wynne-Jones J, Gray A, Hill L, Heinmann A (2014) National Panel Survey of Marine Recreational Fishers 2011-2012: Harvest Estimates. New Zealand Fisheries Assessment Report 2014/67. 139p. Accessible at: https://www.mpi.govt.nz/dmsdocument/4719/send

676. The Harvest Strategy Standard (HSS)[13] defaults are used for the JDO 7 stock, where the soft limit is 50% of the target biomass, and the hard limit is 25% of the target biomass. Stock status is assessed in relation to mean total biomass for the trawl survey reference period (1992-2011).

Status of the stock

677. WCSI trawl surveys are undertaken every two years to estimate JDO 7 stock status (amongst other species). The best available information from the 2017 WCSI trawl survey[14] shows that the JDO 7 stock is currently at a relatively high level, very likely (>90%) to be above the target biomass level and is the second highest biomass level recorded since trawl surveys began in 1992 (see Figure 2). The JDO 7 stock is very unlikely (< 10%) to be below the soft or hard limits.

678. In addition, the 1+ year class of John dory (pre-recruits), visible in the WCSI trawl survey length frequencies, is stronger in 2017 than in any previous trawl survey in the 25 year time series, suggesting that the biomass will remain high, at least in the short term, as these fish recruit into the fishery in future years.

679. Length frequency analysis from the WCSI trawl survey series showed very good recruitment in 2000, 2003, and 2009, and these year classes are probably supporting the current high JDO 7 biomass. Recruitment strengths in the 2011 and 2013 WCSI trawl surveys was more modest, but was again high in 2015 and 2017. It is expected that the current level of biomass will remain in the fishery for the next two to four years.

680. The catch limits for John dory in JDO 7 were last reviewed in 2016 when, based on the evidence of an increasing index of abundance from the 2015 WCSI trawl survey, the TAC was increased from 161 to 206 tonnes and the TACC was increased from 150 to 190 tonnes. The customary Māori allowance was increased from 1 tonne to 2 tonnes (100% increase), the recreational allowance increased from 2 tonnes to 4 tonnes (100% increase) and the allowance for all other mortality from fishing increased from 8 to 10 tonnes (5% of the TACC).

681. The biomass of John dory in JDO 7 has continued to remain high since the 2016 review, and remains above the target level. The 2017 biomass estimate from the WCSI trawl survey (431 tonnes with a coefficient of variation of 12%) is the second highest in the 25 year time series, down slightly from the 2015 estimate, continuing an overall increasing trend since 1997 (Figure 2).

[13] Harvest Strategy Standard for New Zealand Fisheries, October 2008, accessible at: http://fs.fish.govt.nz/Page.aspx?pk=113&dk=16543 The Harvest Strategy Standard is a policy statement of best practice in relation to the setting of targets and limits for New Zealand fishstocks managed under the quota management system (QMS).

[14] Stevenson, M.L.; MacGibbon, D.J. (2018). Inshore trawl survey of the west coast South Island and Tasman and Golden Bays, March-April 2017 (KAH1703), New Zealand Fisheries Assessment Report 2018/18. 93 p.

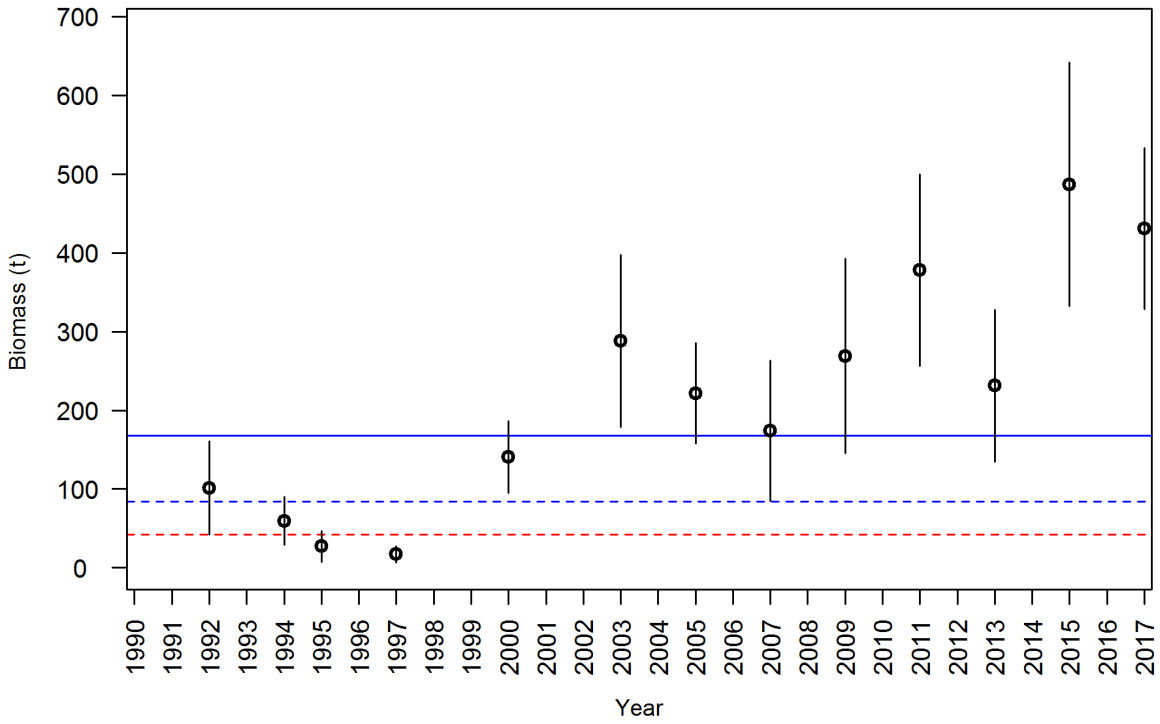

Figure 2: Trends in biomass for JDO 7 from west coast South Island inshore research trawl surveys. Biomass trends from the west coast South Island inshore trawl survey time series. Error bars are ± two standard deviations. The solid blue line represents the interim target and dashed blue and red lines the soft and hard limits, respectively.

4. Why are these options proposed?

682. The options proposed for JDO 7 are given in Table 3 and discussed below.

Table 3: Proposed management settings in tonnes for JDO 7 from 1 October 2018, with the percentage change relative to the *status quo* in brackets.

Option	Total Allowable Catch (TAC)	Total Allowable Commercial Catch (TACC)	Allowances		
			Customary Māori	Recreational	All other mortality to the stock caused by fishing
Option 1 *(Status quo)*	206	190	2	4	10
Option 2	226 ↑ (10%)	209 ↑ (10%)	2	4	11 ↑ (10%)
Option 3	246 ↑ (19%)	228 ↑ (20%)	2	4	12 ↑ (20%)

4.1 VARYING THE TAC

683. In cases such as JDO 7, where the level of biomass that can produce the maximum sustainable yield (B_{MSY}) is not known, s 13(2A) of the Act provides for the Minister to use the best available information to set a TAC that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, the B_{MSY} level.

684. The best available information from the 2017 WCSI trawl survey is that the biomass level of John dory in JDO 7 is currently well above the management target and likely to remain

so in the short term, because of the signals of good recruitment of new age classes of John dory into the fishery. Consequently, there is an opportunity to increase utilisation (increase the TAC) while ensuring sustainability in a manner that is not inconsistent with the objectives of s 13(2A).

685. Fisheries New Zealand considers that the proposed increases to the TAC (Options 2 and 3) are not inconsistent with the Minister's obligations under s 13 of the Act to set a TAC that maintains JDO 7 at, or above, a biomass level that can produce the maximum sustainable yield (MSY)[15].

686. In addition to the *status quo*, two different options are proposed to allow for uncertainty in the available information and caution that is required in making the TAC decision in accordance with information principles under s 10 of the Act.

687. Option 1 is the *status quo*.

688. Option 2 increases the TAC from 206 to 226 tonnes (an increase to the TAC of 20 tonnes, which is 10% of the current TAC), which would provide for a relatively conservative increase in catch and a low risk to sustainability.

689. Option 3 increases the TAC from 206 to 246 tonnes (an increase to the TAC of 40 tonnes, which is 19% of the current TAC), which provides for a higher level of catch, with a comparatively greater (but still low) risk to sustainability.

690. All options are likely to maintain the stock biomass above the target level, at least in the short term. In each case, ongoing monitoring of the stock using WCSI trawl surveys will enable responsive management and appropriate adjustments to address either risk or future opportunity. The next WCSI trawl survey is scheduled for 2019.

4.2 VARYING ALLOWANCES AND THE TACC

691. Having set the TAC, the Minister must set the TACC and in setting or varying the TACC must make allowances for Māori customary non-commercial fishing interests, recreational fishing interests, and all other mortality to the stock caused by fishing (s 20 & 21).

692. The previous TACC was fully caught in the three years between 2013/14 and 2015/16. In the most recent fishing year (2016/17), a total of 176 tonnes of JDO 7 was landed in JDO 7 (93% of the TACC). The proposed increases to allowances are intended to better allow for the utilisation opportunity presented by the high abundance of John dory in JDO 7. Recreational and customary harvests are relatively low, compared to the commercial catch. The recent doubling of allowances for Māori customary non-commercial fishing and recreational interests in 2016 is considered sufficient at this time, however, Fisheries New Zealand invites submissions from tangata whenua and stakeholders on this proposal.

[15] Maximum sustainable yield, in relation to any stock, means the greatest yield that can be achieved over time while maintaining the stock's productive capacity, having regard to the population dynamics of the stock and any environmental factors that influence the stock.

Allowance for Māori customary fishing

693. Fisheries New Zealand considers that the current allowance adequately provides for current levels of customary take of John dory in JDO 7, and is proposing to retain the current customary allowance for all options.

Allowance for recreational fishing

694. Fisheries New Zealand considers that the current allowance adequately provides for current levels of recreational take of John dory in JDO 7, and is proposing to retain the current recreational allowance for all options.

695. Ramp surveys indicate that recreational fishing effort has increased since 2011/2012, however, it is considered likely that recreational fishing harvest does not exceed the current recreational allowance of 4 tonnes. Fisheries New Zealand notes that there is uncertainty in using the estimate from 2011/12 to estimate or predict current catches.

696. A repeat of the 2011/12 National Panel Survey of Marine Recreational Fishers is currently underway in 2017/18, and updated estimates of recreational catch in JDO 7 will be used to inform future management.

All other mortality to the stock caused by fishing

697. An allowance for all other mortality to the stock caused by fishing is proposed to be 5% of the TACC for all options. For Option 1 (retaining the *status quo*) the allowance remains unchanged at 10 tonnes. For Option 2, increasing the TACC by 19 tonnes (10% increase), a one tonne increase to 11 tonnes is proposed, and for Option 3, increasing the TACC by 38 tonnes (20% increase), a two tonne increase to 12 tonnes is proposed.

698. While there is no information available to quantify all other mortality to the stock caused by fishing, the available evidence suggests that an allowance of 5% of the TACC is appropriate given the biological characteristics of the stock and mortality caused by trawling and non-commercial methods.

TACC

699. The two options proposed for the JDO 7 TACC (Table 1), of a 10% increase (Option 1) and a 20% increase (Option 2), are intended to provide an opportunity for increased sustainable utilisation. The options are higher than the TACC, or levels of landings, in JDO 7 in the past (Figure 3). This increase is proposed because of the strong signal from the WCSI trawl survey that the fishery is experiencing a pulse of increased abundance.

700. Fisheries New Zealand anticipates that the increase in TACC will mainly cover any increase in bycatch of John dory in the mixed trawl fishery as a result of its increased availability and abundance in JDO 7, rather than to provide for additional targeted fishing effort.

4.3 DEEMED VALUE RATES

701. The review of deemed value rates for JDO 7 has not been triggered by landings in excess of TACC or a significant change in port prices. Consistent with the deemed value

guidelines, Fisheries New Zealand proposes to increase the interim deemed values rate of JDO 7 from 50% of the annual deemed value rate to 90%, to incentivise fishers to balance their ACE throughout the year (see Table 2). Fisheries New Zealand does not propose increasing the annual deemed value rate for JDO 7.

4.4 EVALUATION OF OPTIONS

702. The increases to catch limits and allowances proposed by Option 2 and Option 3 are considered to be sustainable, and supported by the best available information which suggests that John dory abundance in JDO 7 is currently high and is likely above biomass management targets. The current recruitment pulse is expected to stay in the fishery for the next two to four years, and it is expected that John dory abundance will vary over time as recruitment fluctuates.

703. Fisheries New Zealand will continue to monitor the state of the JDO 7 fishery via the biennial WCSI inshore trawl survey, and may consider reviewing the TAC when this information is updated in 2019.

704. Fisheries New Zealand welcomes information and views of tangata whenua and stakeholders regarding these proposed options, including any other information to support alternate options.

705. The predicted economic revenues from the options are outlined in Table 4.

Table 4: Predicted changes to commercial revenue of the proposed options, based on port price of $6.49/kg for JDO 7 in 2017/18.

	TACC	Change from *status quo* (t)	Predicted revenue change ($ p.a.)
Option 1 *(Status quo)*	190		
Option 2	209	19 ↑ (10%)	$123,310 ↑
Option 3	228	38 ↑ (20%)	$246,620 ↑

706. Increasing the TACC will allow commercial fishers to take advantage of increased abundance of John dory (Table 4). An additional benefit for commercial fishers is that an increased TACC would reduce the amount spent on deemed values, provided fishers constrain their catch within the commercial catch limit. Retaining the current TAC and TACC (Option 1, *status quo*) may result in opportunity lost through unnecessarily constrained catch.

707. Available information suggests that recreational and customary Māori take of JDO 7 is within current allowances.

Option 1 *(Status quo)*

708. Option 1 proposes no change to the *status quo*. The existing TAC, TACC and allowances would be retained. As the stock is considered to be likely above target biomass, the current TAC is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, a level that can produce the maximum sustainable yield. This option reflects a cautious approach to change given the likely fluctuations in this fishery. Retaining the current TAC settings may result in opportunity lost for the commercial

sector. This is because Option 1 does not enable industry to respond to the high biomass in a way that would allow them to maximise value.

Option 2

709. A 19 tonne (10%) increase in the TACC (Option 2) is likely to be a comparatively conservative response to the signal of increased JDO 7 biomass. The increase allows for a likely increase in the availability and catch of John dory given the increase in stock abundance.

710. Under Option 2, Fisheries New Zealand proposes maintaining current allowances for Māori customary fishing and recreational fishing, and increasing the allowance for other sources of mortality from fishing by 1 tonne (5% of the TACC). Fisheries New Zealand is not proposing to increase the non-commercial allowances because these allowances provide for current utilisation in these fisheries, based on the best available information.

Option 3

711. A 38 tonne (20%) increase in the TACC (Option 3) places greater weight on the information showing increased abundance and further opportunities for sustainable utilisation. The expected effect on revenue of Option 3 is shown in Table 3. In the mixed-species trawl fishery, fishers may change their behaviour and increasingly target John dory to take advantage of the increased TACC. This may, in turn, increase bycatch of the other QMS species caught such as flatfish, red gurnard, and tarakihi.

712. Under Option 3, Fisheries New Zealand proposes maintaining current allowances for Māori customary fishing and recreational fishing, and increasing the allowance for other sources of mortality from fishing by 2 tonnes (5% of the TACC). Fisheries New Zealand is not proposing to increase the non-commercial allowances because these allowances are considered to provide for current utilisation in these fisheries.

5. Other Relevant Matters

5.1 ENVIRONMENTAL PRINCIPLES AND SUSTAINABILITY MEASURES

713. The key environmental interactions associated with the JDO 7 fishery are discussed below with reference to the likely impacts of the proposed management options.

Seabirds, mammals, and protected fish

714. Due to their low abundance in South Island waters, the endemic Hector's dolphin is declared as a threatened species under the provisions of the Marine Mammals Protection Act 1978. The set net and bottom trawl (when targeting flatfish) fisheries have been subject to a range of measures designed to reduce interaction with Hector's dolphins and seabirds. Interactions between the JDO 7 fishery and protected species are believed to be low. Fisheries New Zealand considers there will be no significant change to this level of interaction from the proposed options.

Benthic impacts

715. Research has characterised both New Zealand's benthic environment and the level of benthic impact from fisheries activity[16]. This research combined the trawl footprint created for all target species for five years and overlaid benthic habitat classes to get a measure of the coverage of habitat classes by trawl gear. As John dory are largely a bycatch species, Fisheries New Zealand does not anticipate any significant increase in trawling activity, nor significant increase of benthic impacts, arising from the TACC increases proposed under Options 2 and 3. The environmental impacts of fishing are summarised annually by Fisheries New Zealand. Fisheries New Zealand will continue to annually monitor the bottom trawl footprint of fisheries.

5.2 INPUT AND PARTICIPATION OF TANGATA WHENUA

716. The proposal to consult on JDO 7 was presented to the Te Waka a Māui me Ōna Toka Iwi Forum. This forum represents the nine iwi of the South Island, each holding mana moana and significant interests (both commercial and non-commercial) in South Island fisheries. The forum supported a review of the JDO 7 fishery.

Kaitiakitanga

717. Under Section 12(1)(b) the Minister must also have particular regard to kaitiakitanga before setting or varying a TAC. Under the Act, kaitiakitanga is the exercise of guardianship, and in relation to any fisheries resources, includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori.

718. Relevant Iwi or Forum Fish Plans provide a view of the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from Forum meetings and submissions received from iwi can also provide an indication.

719. John dory (kuparu) is not listed as a taonga species in the Te Waipounamu Iwi Fisheries Plan, but the Te Waka a Māui me Ōna Toka Iwi Forum consider the species taonga. This plan contains objectives to support and provide for the interests of South Island iwi. That Forum Fisheries Plan contains three objectives which are relevant to the management options proposed for JDO 7:

d) Management objective 1: to create thriving customary non-commercial fisheries that support the cultural wellbeing of South Island iwi and our whānau;
e) Management objective 3: to develop environmentally responsible, productive, sustainable and culturally appropriate commercial fisheries that create long-term commercial benefits and economic development opportunities for South Island iwi; and
f) Management objective 5: to restore, maintain and enhance the mauri and wairua of fisheries throughout the South Island.

[16] Aquatic Environment and Biodiversity Annual Review 2017, accessible at: https://www.mpi.govt.nz/news-and-resources/open-data-and-forecasting/fisheries/

720. Fisheries New Zealand considers that the management options presented in this advice paper will contribute towards the achievement of these three management objectives in ensuring that appropriate allowances are made for customary non-commercial fishing, the fishery remains sustainable, and that environmental impacts are minimised.

5. Further Information

Should you require further information, please see:

Fisheries Act (1996)

http://www.legislation.govt.nz/act/public/1996/0088/latest/DLM394192.html

Fisheries New Zealand Plenary document

Fisheries New Zealand (2018). Fisheries Assessment Plenary, May 2018: stock assessments and stock status. Compiled by the Fisheries Science Group, Fisheries New Zealand, Wellington, New Zealand.

Dunn, M.R.; Jones, E. (2013). Stock structure and fishery characterisation for New Zealand John dory. New Zealand Fisheries Assessment Report 2013/40. 99 p.
http://fs.fish.govt.nz/Page.aspx?pk=113&dk=23389

Langley, A.D. (2014). Updated CPUE analyses for selected South Island inshore finfish stocks. New Zealand Fisheries Assessment Report 2014/40. 116 p.
http://fs.fish.govt.nz/Page.aspx?pk=113&dk=23673

Fisheries New Zealand recreational fisheries species page

http://fs.fish.govt.nz/Page.aspx?pk=8&tk=31&stock=JDO7

Harvest Strategy Standard:

Harvest Strategy Standard for New Zealand Fisheries. (2008). Compiled by the Ministry of Fisheries, Wellington, New Zealand, 27 p.
http://fs.fish.govt.nz/Page.aspx?pk=104

Draft National Fisheries Plan for Inshore Finfish

Draft National Fisheries Plan for Inshore Finfish. (2011). Compiled by the Ministry of Fisheries, Wellington, New Zealand, 61 p.
https://fs.fish.govt.nz/Page.aspx?pk=152