

I hereby give notice that an ordinary meeting of the

Taharoa Domain Governance Committee

will be held on:

Date:	Thursday 10	May 2018
		5

Time: 2.00pm

Venue: Conference Room, Northern Wairoa War Memorial Hall, Dargaville

Open Agenda

Membership

Chair:	Councillor Andrew Wade
Members:	Messrs Alan Nesbit and Ric Parore
	Councillor Karen Joyce-Paki

Staff and Associates:

Chief Operating Officer and General Manager Infrastructure, General Manager Governance, Strategy and Democracy, Domain Manager, Financial Services Manager, Policy Manager, Policy Analyst, Governance Advisor (Minute-taker).

Jason Marris General Manager Governance, Strategy and Democracy



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KAIPARA DISTRICT COUNCIL

Meeting of Taharoa Domain Governance Committee

Thursday 10 May 2018

- 1 Opening
- 1.1 Karakia
- 1.2 Present
- 1.3 Apologies

1.4 Confirmation of Agenda

The Committee to confirm the Agenda.

1.5 Conflict of Interest Declaration

Committee Members are reminded of the need to be vigilant to stand aside from decision-making when a conflict arises between their role as a Committee Member/Councillor and any private or other external interest they might have. It is also considered best practice for those members of the Executive Team attending the meeting to also signal any conflicts that they may have with an item before the Committee.

2 Deputations and Presentations

3 Confirmation of Minutes

3.1 Taharoa Domain Governance Committee minutes 08 February 2018

Administration Manager 1606.17

Recommended

That the minutes of the Taharoa Domain Governance Committee meeting on 08 February 2018 be confirmed as a true and correct record.



Taharoa Domain Governance Committee

meeting held

Date	Thursday 08 February 2018	
Time	Meeting commenced at 2.07 pm Meeting concluded at 4.54 pm	
Venue	Lake Waikare Centre, Taharoa Domain	
Status	Unconfirmed	

Minutes

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Chair: Members: Councillor Andrew Wade Messrs Alan Nesbit and Ric Parore

Councillor Karen Joyce-Paki

Staff and Associates:

General Manager Infrastructure, Key Relationships Manager - Community, Domain Manager, Financial Services Manager, Policy Analyst, Administration Assistant (Minute-taker).

> Linda Osborne Administration Manager losborne@kaipara.govt.nz

2 **Unconfirmed** TDGC minutes 08 February 2018, Taharoa Domain



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5.5	Simmonds Family Memorial Seat Proposal for Taharoa Domain
6	General Business
6.1	General business
7	Presentations and Public Forum
7.1	Filming at the Taharoa Domain
7.2	Presentations and Public Forum
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KAIPARA DISTRICT COUNCIL

Minutes of the Taharoa Domain Governance Committee meeting

Thursday 08 February 2018 at Taharoa Domain

1 Opening

1.1 Karakia

Alan Nesbit opened the meeting with a karakia.

1.2 Present

Councillors Andrew Wade (Chair) and Karen Joyce-Paki, Messrs Alan Nesbit and Ric Parore and Deputy Mayor Wethey

In attendance

Name	Designation	ltem(s)
Peter Tynan	Acting Chief Executive	All
Darlene Lang	Key Relationships Manager Community	All
Andrew Howells	Domain Manager	All
Hamish Watson	Parks Officer	All
Layne Wadsworth	Contractor (Night Manager)	All
Mark Schreuers	Policy Analyst	All
Rick Groufsky	Treasury and Financial Services Manager	All
Lisa Hong	Administration Assistant	All (minute-taker)

Adjournments

Nil.

1.3 Apologies

Nil.

1.4 Confirmation of Agenda

The Committee confirmed the Agenda, with an addendum as below:

Moved Nesbit/Karen

That the Taharoa Domain Governance Committee add a presentation to the Committee's 08 February 2018 agenda regarding filming at the Taharoa Domain.

Carried



1.5 Conflict of Interest Declaration

Nil.

2 Deputations and Presentations

The public forum was moved to the end of the meeting at the request of the Committee and Section 7 and Section 8.

3 Confirmation of Minutes

3.1 Taharoa Domain Governance Committee Minutes 11 December 2017

Administration Manager 1606.17

Amendment:

Item 2.1, Public Forum Presentation, 'Birdlife at the Kai Iwi Lakes': This presentation was not notified to Committee members.

Moved Parore/Joyce-Paki

That the minutes of the Taharoa Domain Governance Committee meeting on 11 December 2017 be confirmed as a true and correct record, with an amendment noting that item 2.1, public forum presentation regarding 'Birdlife at the Kai Iwi Lakes', was not notified to Committee members.

Carried

4 Governance

4.1 Rotation of Chair

Administration Assistant 4702.24.02

Moved Wade/Joyce-Paki

That this item 'Rotation of Chair' lie on the table, to be brought back to the Taharoa Domain Governance Committee at its next meeting on Thursday 10 May 2018 with additional details regarding the two versions of the Taharoa Domain Governance Committee's Terms of Reference.

Carried



5 Operational

5.1 Taharoa Domain Operations Update: November 2017-January 2018

Parks and Community Manager 4702.24.02.02

Moved Nesbit/Parore

That the Taharoa Domain Governance Committee receives the Parks and Community Manager's report 'Taharoa Domain Operations Update: November 2017 to January 2018' dated 31 January 2018 and the information contained therein.

Carried

5.2 Financial Report for six months ended December 2017

Financial Services Manager 4702.24.02.01

Moved Parore/Joyce-Paki

That the Taharoa Domain Governance Committee receives the Financial Services Manager's report 'Taharoa Domain Governance Committee December 2017 Financial Report' and the information therein.

Carried

5.3 Northland Regional Council's Navigation Safety Bylaw for Kai lwi Lakes 2017: Opportunity to submit

Policy Analyst 4702.24.02

[Secretarial Note: Resolution 3: Committee members had been advised that as the submission closing date was the same date as the next Council meeting, there was insufficient time for an item to go before Council requesting a submission be made.]

Moved Nesbit/Parore

That the Taharoa Domain Governance Committee:

- 1 Receives the Policy Analyst's report 'Northland Regional Council's Navigation Safety Bylaw for Kai Iwi Lakes 2017 : Opportunity to submit' dated 23 January 2018; and
- 2 Believes it has complied with the decision-making provisions of the Local Government Act 2002 to the extent necessary in relation to this decision; and in accordance with the provision of s79 of the Act determines that it does not require further information prior to making a decision on this matter; and
- 3 Instructs Kaipara District Council staff to make a submission to the Northland Regional Council's Navigation Safety Bylaw for Kai Iwi Lakes 2017 advocating for 200 metre speed restrictions.

Carried



5.4 Alcohol Control Information

Policy Analyst 3216/2018 bylaw

Moved Joyce-Paki/Parore

That the Taharoa Domain Governance Committee receives the Policy Planner's report 'Alcohol Control Information' dated 23 January 2018 and the information contained therein.

Carried

5.5 Simmonds Family Memorial Seat Proposal for Taharoa Domain

Parks and Community Manager 4702.24.02.02

Moved Joyce-Paki/Nesbit

That the Taharoa Domain Governance Committee:

- 1 Receives the Parks and Community Manager's report 'Simmonds Family Memorial Seat Proposal for Taharoa Domain' dated 24 January 2018; and
- 2 Believes it has complied with the decision-making provisions of the Local Government Act 2002 to the extent necessary in relation to this decision; and in accordance with the provision of s79 of the Act determines that it does not require further information prior to making a decision on this matter; and
- 3 Declines to the request from the Simmonds family to erect a memorial seat (Attachment 1 of the above-mentioned report).

Carried

6 General Business

6.1 General business

Following items were discussed:

- Wardens and regrouping volunteers with training and direction;
- An update on the weed control programme; and
- The numbers of campers as agreed in the reserve management plan.

7 Presentations and Public Forum

7.1 Filming at the Taharoa Domain

Te Roroa's Commercial Development's Environs Manager, Taoho Patuawa-Nathan, gave a presentation regarding Great Southern Television's planned feature on the Kai lwi Lakes and the district. This will feature in *Coast NZ* (documentary television programme) and will include topics

7 **Unconfirmed** TDGC minutes 08 February 2018, Taharoa Domain



such as the science of dune lakes, as well as historical and cultural information. Filming is to commence on Monday 12 or Tuesday 13 February 2018, pending weather conditions. Due to short notice, a Te Roroa representative will be monitoring the filming. The Committee requested that boats, tanks and other equipment be cleaned to prevent spreading of aquatic pests. Councillor Joyce-Paki volunteered to be the contact person for the event as required.

Moved Parore/Nesbit

That the Taharoa Domain Governance Committee receives the presentation by Taho Patuawa-Nathan regarding Coast NZ documentary filming at the Taharoa Domain and supports the filming for this purpose, on the understanding that the boats, tanks and other equipment would be cleaned to prevent spreading of aquatic pests. Councillor Joyce-Paki volunteered to be the contact person for the event as required.

Carried

7.2 Presentations and Public Forum

Rose Cole spoke in the public forum. Steve spoke in the public forum.

The meeting closed at 4.54 pm

Confirmed

Kaipara District Council Dargaville



4 Governance



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KAIPARA DISTRICT COUNCIL

File number:	4702.24.	.02			Approved for agenda 🖂
Report to:	Taharoa	Doma	in Governance	e Comn	nittee
Meeting date:	Thursda	iy 10 N	lay 2018		
Subject:	Terms o	f Refe	rence update	and C	hair
Date of report:	03 May 2	2017			
From:	Lisa Hor	ng, Gov	vernance Advi	sor	
Report purpose		\boxtimes	Decision		Information
Assessment of signification	ance		Significant	\bowtie	Non-significant

Summary

This Committee was originally created in 2002 with a rotating Chair elected annually by the Committee. For some years, the custom was that the Chair rotated between Council and Iwi representatives. This was changed in 2013 with the tenure of the Commissioners. As a result of the 2016 elections, the Mayor of the day appointed the Chair. Members of the Committee have questioned whether the original practice can be re-instated. If the Committee wishes this to be included in its Terms of Reference for the remainder of this term, it is recommended that the Committee formally requests the Mayor or Council to amend the Terms of Reference to reflect this.

Recommendation

That the Taharoa Domain Governance Committee:

- 1 Receives the Governance Advisor's report 'Terms of Reference update and Chair' dated 03 May 2018; and
- 2 Believes it has complied with the decision-making provisions of the Local Government Act 2002 to the extent necessary in relation to this decision; and in accordance with the provision of s79 of the Act determines that it does not require further information prior to making a decision on this matter; and
- 3 Recommends to the Mayor or Council to amend the Taharoa Domain Governance Committee Terms of Reference to include 'The Chair of the Committee will rotate amongst members on an annual basis with a new Chair being selected at the first meeting following 01 July each year'.

Reason for the recommendation

To recommend to the Mayor or Council to amend the Committee's Terms of Reference and to appoint a new Chair, should the Committee wish to do so.

Reason for the report

To inform Committee members of the process to appoint a new Chair in accordance with the Local Government Act.



Background

Council established the Taharoa Domain Governance Committee (the Committee) and adopted its first Terms of Reference at its 24 July 2002 meeting, by resolving:

2

'That Council establishes a committee of Council to be known as the Taharoa Domain Governance Committee for the purposes of managing the Taharoa Domain in accordance with Sections 114P and 114Q of the Local Government Act 1974.

That Council adopts the amended Terms of Reference for the Taharoa Domain Governance Committee and that:

- 1 Membership of the committee be comprised of two members nominated by Kaipara District Council and two nominated by representatives of the Treaty of Waitangi claimants (Wai 38), as allowed for under Section 114R of the Local Government Act; and
- 2 The Chair of the committee will rotate amongst members on an annual basis with a new Chair being selected at the first meeting following 01 July each year.'

It was noted that Council's decision to establish a co-governance committee drew on an action from the Kai Iwi Lakes (Taharoa Domain) Reserve Management Plan (RMP), which was adopted in January 2002. One of the aims of the RMP was 'to establish an equal organisational partnership between tangata whenua and Council to govern the Domain'.

For some years, the practice of rotating the Chair between a Council representative and an Iwi representative occurred.

Commissioner Winder was elected as the Chair in August 2015 and remained in this role for 13 months. The current Chair, Councillor Andrew Wade, was appointed by Mayor Gent in 2016 using the mayoral powers provided by the Local Government Act, which was updated in 2014. Mayor Smith re-affirmed this decision in March 2018 along with all other committee appointments.

At its meeting in March 2018, Council also reviewed and adopted an updated version of the Local Governance Statement. The Committee Terms of Reference document is included in the Local Governance Statement. The latest version of the Committee's Terms of Reference is attached to this report as **Attachment 1**.

Committee members have raised this issue for discussion, with a view to recommending an approach to the Mayor or Council if an approach is agreed upon. If a change was recommended by the Committee, the Mayor or Council would make the decision and it would stand for the remainder of the term, or unless the Terms of Reference were amended again. If the Mayor chooses not to act under the authority provided by the Local Government Act, Council then makes the decision.

Factors to consider

Community views

Te Roroa and Te Kuihi have views regarding the governance of the Committee. The Committee was established with co-governance as a founding principle to reflect this.



Policy implications

This report does not trigger Council's Significance and Engagement Policy.

Financial implications

Pursuant to the Local Government Act 2002 and the Remuneration Authority Act 1977, Councillor remuneration is determined by the Remuneration Authority. If a person who is not a Councillor is selected as Chair, a fee may be negotiated.

3

Legal/delegation implications

The delegated authority of the Committee will be amended to include the ability to select its own Chair annually from the pool of Committee members as appointed by the Mayor.

Options

Option A: The Committee chooses to recommend to the Mayor or Council an amendment to its Terms of Reference to include: 'The Chair of the Committee will rotate amongst members on an annual basis with a new Chair being selected at the first meeting following 01 July each year'.

Option B: The Committee chooses not to recommend an amendment to its Terms of Reference.

Assessment of options

Option A: The Mayor and Council will receive the Committee's recommendation for consideration.

Option B: The Committee's Terms of Reference will remain unchanged.

Recommended option

If the Committee wishes to rotate the role of Chair between Council and Iwi representatives as was practise when the Committee was formed, the recommended option is A.

Next step

If the Committee wishes to make a recommendation, Council staff will seek direction from the Mayor and report to Council if needed.

Attachments

1 Taharoa Domain Governance Committee Terms of Reference (pages 25-26 of the Committee Terms of Reference)



Taharoa Domain Governance Committee Terms of Reference

Reports to:	Full Council
Chair:	Councillor Andrew Wade
Membership:	Councillor Karen Joyce-Paki
	Ric Parore and Alan Nesbitt
Meeting frequency:	Four times a year
Quorum:	Three

Purpose

To govern Taharoa Domain in accordance with the Kai Iwi Lakes (Taharoa Domain) Reserve Management Plan (RMP) and any legislative framework.

Responsibilities

- Implementing the RMP;
- Initiating a review of the Master Plan for the Domain when appropriate but at least every 10 years;
- Meeting all statutory requirements associated with the management and administration of the Domain;
- Submitting to the Annual Plan and Long Term Planning process;
- Monitoring the natural environment at Taharoa Domain and the Kai Iwi Lakes and reporting any issues or concerns to Council;
- Overseeing the management of the Kai Iwi Lakes camp grounds;
- Agreeing terms and conditions with external organisations for the use of the Domain.

Delegations

- Manage the financial affairs of the Taharoa Domain;
- Apply for funding from external sources for the enhancement of the Domain;
- Administer any Kaipara District Council bylaw or regulation associated with the Domain;
- Make recommendations to the Kaipara District Council for the development of policies, bylaws or other regulatory tools for the effective management of the Domain.



Membership

Two Kaipara District Councillors, one representative appointed by Te Roroa and one representative appointed by Te Kuihi.

Communications

- The Committee Chair is the authorised spokesman for the Committee in all matters where the Committee has a particular interest;
- Committee members, including the Chair, do not have delegated authority to speak to the media on behalf of Council on matters outside the Committee's interest;
- Council's Governance, Strategy and Democracy Team will manage and support formal communications between the Committee and Council, and for the Committee in the exercise of its business.

Conduct

The Committee shall conduct its affairs in accordance with the Local Government Act 2002, the Local Government Official Information and Meetings Act 1987, the Local Authorities (Members Interest) Act 1968 and Kaipara District Council's Standing Orders and Code of Conduct.

Remuneration

- Elected members will be reimbursed in accordance with the determination set by the Remuneration Authority under s255(5) and clause 18 of Schedule 15 of the Local Government Act 2002 and Council's Current Elected Members Expenses Policy;
- External members will be reimbursed their travel to and from duly called meetings of the Committee in line with Council's Current Elected Members Expenses Policy.

Funding and budgets

Funding for the Committee will align with Council's Annual and Long Term Plans.



5 Operational



File number:	4702.24.0)2.02			Approved for agenda 🖂
Report to:	Taharoa I	Domai	n Governance	Comr	nittee
Meeting date:	10 May 2	018			
Subject:	Taharoa	Doma	in Operation	s Upda	ate: February 2018-April 2018
Date of report:	27 April 2	018			
From:	Curt Mart	in, Ge	neral Manage	r Infras	tructure.
Report purpose		\boxtimes	Decision		Information
Assessment of significa	nce		Significant	\bowtie	Non-significant

Summary

The Committee is charged with implementing the Kai Iwi Lakes (Taharoa Domain) Reserve Management Plan (RMP) 2016. The RMP has been developed to provide strategic guidance to the custodianship and enhancement of Kai Iwi Lakes (Taharoa Domain).

The following is a brief summary of activities, operations and maintenance work carried out over the months of February 2018 to April 2018.

- There have been eight volunteer days at the Lakes. Volunteers have assisted in the removal of wattles and acacia;
- Kai Iwi Lakes Facebook page is continuing to prove popular, reaching previous campers and prompting new bookings;
- Health and Safety signage regarding swimming at the Lakes has been agreed, just waiting for installation;
- The Whitebait Connections Mountain to Sea Conservation Trust held an Open Day at Lake Waikare on 27 January 2018. This was a successful day;
- Ongoing acacia and wattle removal is continuing with some boring and pasting also happening;
- Track maintenance has been completed and will be ongoing;
- Animal pest control in conjunction with NRC is ongoing with KDC staff assisting;
- The past three months have been very busy for staff with high numbers of campers and day visitors continuing; and
- The new toilet facilities at Lake Waikare and caravan dump station are progressing with designs being finalised before construction starts.

Recommendation

That the Taharoa Domain Governance Committee receives the General Manager Infrastructure's report 'Taharoa Domain Operations Update: February 2018-April 2018' dated 27 April 2018 and the information contained therein.

Reason for the recommendation

To ensure the Committee is informed about the implementation of the Kai Iwi Lakes (Taharoa Domain) RMP and information regarding the ongoing Domain and camp grounds operations.

KAIPARA DISTRICT COUNCIL



Reason for the report

To present the operational report for the Kai Iwi Lakes (Taharoa Domain) for the February 2018 to April 2018 period so the Committee can be well-informed.

2

Background

The Committee is charged with implementing the Kai Iwi Lakes (Taharoa Domain) Reserve Management Plan (RMP). The RMP has been developed to provide strategic guidance to the custodianship and enhancement of Kai Iwi Lakes (Taharoa Domain).

The Kai Iwi Lakes are among the best known dune lakes in New Zealand and all three Lakes, Taharoa, Waikare and Kai Iwi, are ranked as outstanding by NIWA. Growing populations, particularly Auckland, along with road improvements has led to increased visitors and associated pressures.

It is the intent of the RMP to enable the Lakes and its surrounds to be enjoyed by all visitors while simultaneously enhancing the area and reducing risks through knowledge and active management.

Finding a balance between public use and ensuring its continued health and well-being of the Lakes is a challenge for the Committee. Continued thought, collaboration, planning and funding is required around pest and weed control (the largest issues facing the long term health and natural character of the Domain) along with biosecurity (aquatic weed incursion and prevention), understanding the hydrology of the Lakes, as well as recognising the cultural importance of the area.

Below is a table that shows the number of campers from October 2016 to March 2018 and breaks the numbers down to domestic and international visitors.





Month	Total visitors	Domestic visitors	International visitors
April 2018	1544	1446	98
March 2018	4066	3953	113
February 2018	5331	5188	143
January 2018	13884	13739	145
December 2017	6626	6514	112
November 2017	689	561	128
October 2017	74	64	10
September 2017	63	55	8
August 2017	27	12	15
July 2017	53	32	21
June 2017	47	29	12
May 2017	129	114	15
April 2017	1816	1376	33
March 2017	939	904	35
February 2017	5500	5363	137
January 2017	16022	15899	123
December 2016	6531	6382	149
November 2016	888	609	279
October 2016	921	828	93

3

Visitor numbers



Vistors	Amount	%
Vehicles	1,743	24.8%
People	5,134	72.9%
Jet Skis	34	0.5%
Boats	69	1.0%
Campervans	48	0.7%
Caravans	10	0.1%
Total	7,038	



Factors to consider

Community views

The RMP was developed using a public process and reflects the views of the community and other stakeholders at the time of its development.

4

Policy implications

Nil. Operational decision-making has been consistent with the RMP.

Financial implications

It is the General Manager Infrastructure's responsibility to ensure all operations are conducted within budget. The financial budgets are set within the Long Term Plan and respective Annual Plans. Operative budgets and performance are reported in a separate financial report.

Legal/delegation implications

There are no delegation issues; the Committee has delegated authority from Council to govern the Domain in terms of the RMP.

Assessment of significance

This matter does not trigger Council's Significance and Engagement Policy.

Next step

Council Officers will continue to implement the RMP.

Attachments

Nil.





Taharoa Domain Governance Committee

March 2018 Financial Report

This report covers:

- Kai Iwi Lakes including Pine Beach and Promenade Point campgrounds; and
- Taharoa Domain.

Overview

Key Indicators for year to March are set out in the tables below (all in \$000's).

	Actual	Whole Year
	Mar 2018	Budget
Total Revenue	373	303
Total Operating Costs	448	474
Capital Expenditure	217	300

Attachment 1 Financial Summary Report

Commentary

Camp fees and charges are below by \$11,000 last year for the period to March. The decision to not allow overflow campers has slightly reduced revenue. A review of the budget during the forecast one process has seen the forecast revenue revised to \$400,000.

Costs

Costs are generally tracking well at this stage of the year. Ground and building maintenance is generally performed away from the summer peak and the final maintenance will be completed in the autumn. Salaries are ahead of budget and relate to the higher activity.

Capital Expenditure

There are three projects in the financial year:

- The first is improving the general Kai Iwi facilities. 81% of the budget has been spent to March in readiness for the summer season.
- The replacement tractor has been purchased.
- Taharoa Domain development is 50% complete at the end of March.

Taharoa Domain

Financial Summary Report for the 9 month period ended 31 March 2018

Income

ACTUAL 12 months to 30.06.2017		Kai lwi Camp	Taharoa Domain	ACTUAL 9 months to 31.3.2018	BUDGET 12 months to 30.06.2018
\$	Revenue			\$	\$
406,667	Camping fees	373,045	-	373,045	303,004
35,000	Other Income	-		-	-
441,667	TOTAL	373,045	-	373,045	303,004

ACTUAL				ACTUAL	BUDGET
12 months to		Kai Iwi Camp	Taharoa Domain	9 months to	12 months to
30.06.2017	Description			31.3.2018	30.06.2018
\$				\$	\$
12,618	Transport costs	153	2,220	2,373	17,856
1,297	Resource Consents	83	454	537	840
157,237	Grounds maintenance	24,663	106,579	131,241	121,920
41,787	Building maintenance	22,520	27,629	50,149	43,488
54,402	Professional service	30,727	-	30,727	47,412
0	Advertising and promotion	-	211	211	1,584
150,851	Staff salaries and employee costs	-	171,264	171,264	167,196
2,085	Insurance	1,491	1,452	2,943	5,880
10,924	Power and water costs	5,395	3,697	9,092	12,388
24,235	Refuse disposal	20,850	-	20,850	30,000
42,380	Sundry	25,032	3,158	28,191	25,692
497,816	TOTAL	130,914	316,664	447,578	474,256

Capital Expenditure

ACTUAL Total 12 months to 30.06.2017 \$	Description	Kai lwi Camp	Taharoa Domain	ACTUAL Total 9 months to 31.3.2018 \$	BUDGET Total 12 months to 30.06.2018 \$
500,164					
	10087 Kai Iwi facilities	121,581		121,581	150,000
	10707 Tractor		45,480	45,480	50,000
	10706 Taharoa Domain - implement Reserve Man	agement Plan	49,876	49,876	100,000



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KAIPARA DISTRICT COUNCIL

File number:	4702.24.0	05			Approved for agenda	\square
Report to:	Taharoa Domain Governance Committee					
Meeting date:	10 May 2	2017				
Subject:	Kai lwi L	akes [Dune Lakes G	alaxia	s Working Group update	
Date of report:	27 April 2	2018				
From:	Mark Sch	nreurs;	Policy Analyst	t		
Report purpose		\boxtimes	Decision		Information	
Assessment of significa	nce		Significant	\boxtimes	Non-significant	

Summary

Northland's Kai lwi Lakes are the only home of the Dune Lakes Galaxias (*Galaxias sp.*) (a threatened native fish hereafter referred to as the DLG). To ensure the survival of this species it is necessary to better understand its ecology and its interactions with other species.

In response to this problem, the Kai Iwi Lakes Dune Lakes Galaxias Working Group (Working Group) is making a co-ordinated effort to better understand the DLG, its ecology, interactions with other species and what management actions will be successful in protecting it. This work supports a co-operative relationship with Mana Whenua and is focused on progressing a series of actions agreed under the Dune Lakes Galaxias Monitoring Strategy (**Attachment 1**).

This report gives an update on recent progress made by the Working Group (the notes of 23 March 2018 Working Group meeting are included as **Attachment 2**). A key issue is that much remains unknown about the DLG's spawning behaviour, including when and where they spawn. The Working Group is currently seeking to undertake a number of actions to learn more about this crucial part of the DLG's lifecycle. This research requires taking a sample of DLG from the Lakes.

The Committee will therefore need to grant permission under section 50 of the Reserves Act 1977 if these DLG are to be taken from the Lakes. The aspirations of Te Roroa and Te Kuihi in their role as Kaitiakitanga will be fundamental to this decision.

Recommendation

That the Taharoa Doman Governance Committee:

- 1 Receives the Policy Analyst's report 'Kai lwi Lakes Dune Lakes Galaxias Working Group update' dated 27 April 2018; and
- 2 Believes it has complied with the decision-making provisions of the Local Government Act 2002 to the extent necessary in relation to this decision; and in accordance with the provision of s79 of the Act determines that it does not require further information prior to making a decision on this matter; and
- 3 Receives the information in the above-mentioned report and the presentations made in support of this report giving an update on the work of the Kai Iwi Lakes Dune Lakes Galaxias Working Group and its members; and



4 **Either** authorises **or** denies authorisation under section 50 of the Reserves Act 1977 for the Northland Fish and Game Council, NorthTec and the Department of Conservation to take a sample of dune lakes galaxias from the Kai Iwi Lakes as part of their research. This decision not to be contrary to the wishes of Mana Whenua. In either case, any authorisation given shall apply only where actions are not in contravention of the Wildlife Act 1953; and

2

5 Asks Council staff to prepare in co-operation with Mana Whenua a draft Research Protocol that gives effect to kaitiakitanga rights.

Reason for the recommendation

The proposed studies will support Mana Whenua to build their capacity as Kaitiaki and help to provide valuable information on the population structure of DLG and identify when they spawn. The number of DLG taken would not be significant within the context of this species' ecology.

Reason for the report

To update the Committee on the work of the Working Group and seek approval for the Northland Fish and Game Council, NorthTec and the Department of Conservation to take a sample of dune lakes galaxias from the Kai Iwi Lakes as part of their ongoing research.

Background

The Dune Lakes Galaxias (Galaxias *sp.*) (hereafter referred to as the DLG) is found only in the Kai Iwi Lakes and there are fears its population is declining. In response to this problem, Te Kuihi, Te Roroa, Kaipara District Council (KDC), Northland Fish and Game Council (Fish and Game), Northland Regional Council (NRC) and the Department of Conservation (DOC) have formed the Kai Iwi Lakes Dune Lakes Galaxias Working Group (Working Group). The members of this group are making a co-ordinated effort to better understand the DLG, its ecology, interactions with other species and what management actions will be successful in protecting it. This work is focused on progressing a series of actions agreed under the Dune Lakes Galaxias Monitoring Strategy (**Attachment 1**) which was endorsed by the Taharoa Domain Governance Committee on 10 August 2017. The Monitoring Strategy is the fulfilment of an action under the Kai Iwi Lakes (Taharoa Domain) Reserve Management Plan 2016 (RMP). It contributes to Aim 3 of the RMP: "Complete knowledge about Kai Iwi Lakes will enable effective protection and enhancement of its natural environment and pristine waters."

Issues

The notes of the 23 March 2018 Working Group meeting are attached (**Attachment 2**). A summary of the work being undertaken by the Working Group is as follows:

- NorthTec has been searching for DLG eggs and spawning activity. They were unsuccessful in finding any eggs or spawning activity, however the presence of young fish indicated that this activity was taking place somewhere.
- NorthTec has also been monitoring the depth of Gambusia in Lakes Kai lwi and Waikare to determine the difference in depth distribution between and within these lakes.
- Te Roroa is working with schools on the possibility of the students getting involved in Gambusia



control.

- KDC has had some prototype fish traps constructed. These are designed to catch gambusia (*Gambusia affinis* also known as mosquito fish) which are a pest fish present in the Lakes and a threat to the DLG. NorthTec is currently trialling the traps in the field. Once the best method of trapping has been identified, the traps will be passed over to DOC who will begin a trapping programme to try reduce the Gambusia population in the Lakes.
- DOC has been exploring methods of surveying DLG abundance. They have found that spotlighting remains the most reliable and non-invasive method.
- Fish and Game has been undertaking a study of how trout diet varies over the course of a year and at different stages in their development. Fish and Game has also been monitoring the abundance of eels as well as experimenting with larval fish netting (this provides a sample of what larval fish are present in the water column). This larval fish sampling offers the opportunity to gain a better understanding of when DLG are spawning.

Much remains unknown about the DLG's spawning behaviour, including when they spawn and where/in what habitat they lay their eggs. The Working Group is currently seeking to undertake a number of actions to learn more about this crucial part of the DLG's lifecycle. The focus of the last meeting (Friday 23 March 2018) was for Working Group members to plan and co-ordinate these actions in anticipation of what is suspected to be the DLG's spawning season from April to June.

DOC is going to increase their spotlighting over this suspected spawning season in the hope of recording a DLG spawning event.

DOC, in partnership with NorthTec, is also proposing to undertake a study of DLG otoliths (a bony structure in the ear/gill of the fish) to determine the age of the fish and therefore when they hatched. This will identify when the fish are spawning (otoliths have growth rings, similar to trees; counting these under a microscope can tell the fish's age). However, undertaking this research requires a sample of DLG otoliths and that requires killing a sample of DLG. This requires approval from the Taharoa Domain Governance Committee and Mana Whenua and must consider the aspirations of Te Roroa and Te Kuihi in the exercise of their kaitiakitanga.

Fish and Game has offered to instigate a regular programme of larval fish sampling using a larval fish net. This would provide valuable information on the population structure of DLG and when spawning is occurring. There was consensus in the Working Group that this research would be valuable however, it was noted that the larval fish caught do not survive being caught. Therefore, approval must first be sought from the Committee and Mana Whenua.

In both these cases (DOC/NorthTec and Fish and Game) the Working Group considered that the number of DLG required to be caught was relatively few in the context of the ecology of the Lakes. Furthermore, any larval DLG caught by Fish and Game would also provide a source of otoliths to be used in the otolith study by DOC/NorthTec. DOC, NorthTec and Fish and Game are therefore seeking permission from the Committee and Mana Whenua to progress these studies.

The Committee will need to consider if and to what extent to allow permission for studies which require the taking of DLG from the Lakes. The aspirations of Te Roroa and Te Kuihi in their role as



kaitiakitanga will be fundamental to this decision.

A good working relationship with Mana Whenua and their Kaitiaki will support the capacity of Kaitiaki to fulfil their obligations and responsibilities. All studies therefore need to support Mana Whenua participation in research projects. This includes, but is not limited to; the development of research priorities, design and methodologies used, site selection, monitoring activities, broader community and stakeholder engagement, reporting content and recommended actions.

4

Factors to consider

Community views

The work of the Working Group represents progress towards protecting a threatened species and is therefore likely to be supported by the community.

Te Roroa has raised concerns over research methods which are destructive to DLG. Others in the community are likely to share these concerns. The Committee will need to consider these concerns and be confident that any destruction of DLG is for the greater good of this species, not its detriment.

Policy implications

The Working Group is progressing a series of actions agreed under the Dune Lakes Galaxias Monitoring Strategy which was endorsed by the Committee on 10 August 2017. The Monitoring Strategy is the fulfilment of an action under the Kai Iwi Lakes (Taharoa Domain) Reserve Management Plan 2016 (RMP). It contributes to Aim 3 of the RMP: "Complete knowledge about Kai Iwi Lakes will enable effective protection and enhancement of its natural environment and pristine waters."

Financial implications

There are no financial implications for Kaipara District Council.

Legal/delegation implications

Kaipara District Council as the administering body of the Taharoa Domain has the power to grant or deny permission for DLG to be taken for scientific research under section 50 of the Reserves Act 1977. The Committee, which includes Mana Whenua (Te Kuihi and Te Roroa), is the appropriate body to approve the proposed research actions having been given the appropriate delegations by Kaipara District Council under its Terms of Reference.

Options

The Committee has the following options:

Option A: Grant permission for NorthTec, DOC and Fish and Game to take a sample of DLG as part of their larval fish monitoring and otolith research.

Option B: Refuse to allow any DLG to be taken.

Option C: Permit a more limited programme of study which involves taking fewer DLG.

Assessment of options

Option A: granting permission for NorthTec, DOC and Fish and Game to take a sample of DLG as part of their larval fish monitoring and otolith research, would provide valuable information on the



population structure of DLG and would identify when they spawn. The number of DLG taken is considered not to be significant within the context of this species' ecology. That is, DLG naturally have many young with only a few surviving to reproduce as adults. Removing a sample of young DLG as proposed is therefore not expected to have a lasting impact on their numbers. In making this decision, the Committee should consider the aspirations of Te Roroa and Te Kuihi in their role as Kaitiakitanga.

Option B: refusing to allow the taking of DLG, would protect this species in the short term but would prevent the Working Group from gaining the knowledge to advise management actions that would protect the species over the long term.

Option C: permitting a more limited programme of study which involves taking fewer DLG, would need to be negotiated with the agencies proposing this research. It could be that reducing the number of DLG taken for these studies would invalidate the results e.g. too smaller sample size to give statistically significant results. Discussion with these agencies may identify a compromise between Options A and B.

Assessment of significance

This decision does not trigger Council's Significance and Engagement Policy.

Recommended option

The recommended option is Option A.

Next step

The members of the Working Group will proceed with the actions set out in the minutes of the their last meeting, the Dune Lakes Galaxias Monitoring Strategy, and the research detailed in this report to the extent approved by the Committee.

Attachments

- Dune Lakes Galaxias Monitoring Strategy
- Kai lwi Lakes Dune Lakes Galaxias Working Group meeting notes 23 March 2018



Dune Lakes Galaxias Monitoring Strategy

Abstract

Northland's Kai Iwi Lakes are the only home of the Dune Lakes Galaxias (DLG) (a threatened native fish). To ensure the survival of this species it is necessary to better understand its ecology and its interactions with other species. In particular, the DLG shares the lakes with two introduced fish species; trout and Gambusia (Gee & Franklin 2017). As trout are known to predate the DLG, it has been suggested that their removal will result in an increase in the numbers of DLG (Gee & Franklin 2017). However, Gambusia are also a threat. They are aggressive, are known to compete with DLG for food and habitat and are suspected to predate the DLG's young (Rowe 1998; Pingram 2005). It has been suggested that the threat of predation by trout is keeping the population of Gambusia in check through interactive segregation (Rowe, Champion & de Winton 1999). It is therefore, unknown if the exclusion of trout will be beneficial or detrimental to the DLG.

In addition, other questions have also been raised over to what extent environmental conditions and the extent of littoral vegetation may be affecting the abundance of DLG. DLG abundance has been found to vary considerably from year to year. The relative effects of environmental variables and interactions with other species will need to be understood before management actions to protect this species can confidently be taken.

This study seeks to explore the ecology of the DLG, its interactions with other species and its environment. It is hoped that the understandings gained through this study will advise management actions which will help conserve this species. The study design is based on the recommendations of a recent literature review by Gee & Franklin (2017), advice from a number of independent scientists, input from staff from the key agencies involved in managing the fish populations of the Lakes and has also been informed by the principals of mātauranga māori (indigenous Māori knowledge).

1 Introduction

The Dune Lakes Galaxias (*Galaxias sp.*) (here after referred to as the DLG) is currently recognised as a subspecies of dwarf inanga (*Galaxias gracilis*), however work is currently being undertaken to describe it as a separate species. The DLG is endemic to the three Kai Iwi Lakes (Taharoa, Waikare and Kai Iwi) on the west coast of Northland, New Zealand (Allen & Turner 1971).

Rainbow Trout (*Oncorhynchus mykiss*) were introduced to the Kai lwi Lakes in 1968 by the then Acclimatization Society; now the Northland Fish and Game Council (Anon 1973; McEwan 2016). Regrettably, within a few years of trout being released, an unauthorised individual released Gambusia (*Gambusia affinis*) into the lakes as well (Gee & Franklin 2017). It is understood the individual intended the Gambusia to be a food source for the trout.



The introduction of these two species soon resulted in an observable decline in the numbers of DLG (Anon 1973; Gee & Franklin 2017). Since then DLG have become extinct in Lake Kai Iwi and there are concerns for the survival of the remaining populations in Lake Waikare and Lake Taharoa (Gee & Franklin 2017).

In response to this problem, Te Kuihi and Te Roroa (local iwi), Kaipara District Council, Northland Fish and Game Council, Northland Regional Council and the Department of Conservation are seeking to identify what actions can be taken to save this species.

One of the management solutions proposed was to cease releasing trout into the lakes. This is a comparatively simple solution because, as trout cannot breed in the lakes (they require flowing water), the population would naturally die out if the annual stocking of trout fingerlings was to cease (Kaipara District Council 2016; Gee & Franklin 2017). As trout are a predator of DLG it was hoped that removing the trout would result in an increase in the population of DLG (Kaipara District Council 2016).

However, the Gambusia are a complicating factor. They are known to compete with the DLG for habitat and food and are suspected to predate the DLG's young (Gee & Franklin 2017). Hence while some studies have hypothesised that removing trout will result in an increase in the DLG population through removal of a predator (e.g. Rowe and Chisnall 1995 and Allen and Turner 1971), others (e.g. Rowe 1998 and Rowe, Champion & de Winton 1999) have argued that the trout are also keeping the Gambusia population in check through interactive segregation (i.e. Gambusia do not use the full range of habitats for fear of predation by trout). This leads to the competing hypotheses that exclusion of trout could result in an increase in Gambusia and a consequent decline in the population of DLG (Rowe et al. 1999). To complicate matters further, it has been suggested that environmental factors, such as the extent of littoral vegetation, rainfall, lake levels, water temperature and the abundance of zooplankton may also be significant contributors to fluctuations in the populations of both DLG and Gambusia (Gee & Franklin 2017).

Because of this uncertainty, a recent literature review by Gee & Franklin (2017) recommended that trout stocking not be ceased immediately but rather that a detailed study be designed and undertaken which recognises these competing hypotheses as well as the underlying environmental variability.

A working group comprising Te Kuihi, Te Roroa, Kaipara District Council, Northland Fish and Game Council, Northland Regional Council and the Department of Conservation has identified that the three priorities for this study are to:

- 1 Better understand the ecology and life history of the DLG including their abundance and where and when they spawn. The design of this study and especially the outcomes sought will be clearly linked to possible management actions;
- 2 Explore interactions between DLG, trout and Gambusia e.g. do Gambusia exclude DLG from their preferred habitat, compete with them for prey, predate their young or force the DLG to spend more time in parts of the lake inhabited by trout? Do trout have an interactive segregation effect on Gambusia? How great is trout predation pressure on DLG?
- 3 Identify management options which will benefit the DLG e.g. this could include control of Gambusia or altering the release patterns for trout.



This study will therefore seek to better understand the ecology of the DLG, its interactions with other species, the effect environmental variables have on its survival and actions which can be taken to protect it.

The findings of this study are needed by the managers of these lakes (Kaipara District Council and Local lwi) and the fish populations therein (Northland Fish and Game Council and the Department of Conservation) to guide management decisions (Kaipara District Council 2016).

Due to the complexity of this matter, this strategy shall be a working document and will be updated and further refined as new information comes to light. For this reason, the strategy has been kept reasonably high level at this stage rather than drilling down into detail over methods and deliverables. The Working Group shall continue to refine the individual actions of the study as it progresses.

2 Research Design and Methods

The research design is desired to draw on both mātauranga māori (indigenous Māori knowledge and epistemologies) and western science approaches to generating knowledge. The execution of the study shall therefore be informed by a soon to be commissioned Cultural Report.

This research will support cultural values by incorporating traditional Maori collection methods to complement more widely used scientific monitoring tools. This study will use whakaweku (bracken fern bundles) which is a component of Tau Koura, a traditional harvesting method used by tangata whenua of Te Arawa and Ngati Tuwharetoa. The Tau Koura method has been successfully used as a monitoring tool for koura (freshwater crayfish, *Paranephrops planifrons*) in the Te Arawa Lakes (Kusabs and Quinn, 2009), however recent studies have shown that this can be an effective monitoring tool for freshwater fish species in shallow lake fringes and running stream habitats (Kusabs, in press). We also intend to adapt this method and use whakaweku as an artificial habitat for DLG to see if they use this habitat at any particular time in their lifecycle or whether they utilise this as a spawning substrate. This method produced initial positive results as an effective spawning habitat for inanga species in a trial conducted in the lower Waipoua River (Taylor pers. com., 2017). By incorporating this method into the design we can actively introduce a Matauranga Maori element into this proposal.

This study has been informed by recommendations from Gee & Franklin (2017), the findings of other previous studies and advice from a number of independent scientists. The study will consist of:

2.1 Review reliable methods for estimating DLG and Gambusia abundance at various lifecycle stages

Why? - Without this understanding we cannot measure the effects of any treatment.

Research questions:

- What is an effective method for estimating DLG abundance?
- What is the population size and trend for all species in the Lakes which do and do not undergo manipulations?



Problems:

- For each method of estimating abundance it needs to be asked; is it destructive or non-destructive, especially to DLG?
- Even given a reliable method of relative abundance estimate, how will inter-annual variability be accounted for in a scenario where a manipulation is involved (e.g. destocking trout, trout stocking numbers progressively lowered, Gambusia control). Natural inter-annual variability may mask the year-to-year effects of a manipulation.
- It could also be that what is currently perceived as "inter-annual variability" is actually a function of the difficulty of measuring the abundance of a rare species with a correspondingly patchy distribution. If this is the case, a more reliable monitoring method may better reveal the true extent of any actual inter-annual variability. Eleanor Gee notes, "In the datasets I looked at (primarily Pingram/DoC, but also Rowe 1999), the variability in catch/observation numbers throughout the year and from year to year made it hard to have confidence in estimation of numbers." (Eleanor Gee, pers. comm.).

Research approaches:

- Gee minnow trap transects give a catch per unit effort (CPUE) for Gambusia, giving a standardised estimate of abundance.
- DLG have been assessed using plankton nets for larvae, and fyke nets for later stages. Each of these is destructive (some or all of the fish caught are killed). Visual assessment by snorkel survey or on-shore observation has also been used in the littoral zone and is non-destructive.
- · Camera transects could be set up reasonably affordably using a Go-Pro Camera.
- A mark-recapture approach might give a reliable estimate.
- A new monitoring method based on traditional Maori fishing practices is being developed. It is understood this method is non-destructive and, if successful, could be applied to the DLG. This method would be very affordable and could be useful as a preliminary study.
- Inter-annual variability might be monitored by doing a manipulation in only one lake (Waikare) and observing the population modes in Taharoa to account for effects of environmental drivers. The two lakes are not comparable units, but environmental effects should be seen in pattern if not in magnitude.
- Environmental DNA could be used as a monitoring method, however this is an expensive method.
- Acoustic dopplers (fish finders) could be used to monitor the abundance of DLG providing they can distinguish between species.
- As we know DLG numbers are potentially both difficult to quantify and temporally variable across years, any response to a manipulation would need to allow several years to determine if the population will rebound or not.

2.2 Identify DLG spawning sites and timing

Why? - The location and timing of DLG spawning using straw bales or bundles of bracken fern as an artificial substrate is prompted by a hypothesis that lower water levels in the lakes result in less reed bed being available for spawning in the littoral margin. Whether that is relevant or not, understanding



the timing of spawning in each lake will provide information into the population model (see 2.3 below) and it will inform manipulation such as the timing of release of trout.

In terms of the driving hypothesis, NRC long term lake level data shows an increase in water level trend for Lake Waikare and a decrease for Lake Taharoa. Lake Taharoa has had a 30+ year relatively stable period of water level with a drop apparent as of mid-2013. This would mean that the reed beds had time to recolonise from initial water level drops since 1980. Waikare would not be subject to the hypothesis of lost reed belt.

Research questions:

- · Is lake level responsible for loss of reed belt habitat for DLG spawning?
- · Do DLG spawn on the reed belt?
- · Do DLG spawn on other plant species at a lower zone in the lake?
- · What is the period of DLG spawning in each lake and when is peak spawning?

Problems:

- The cause of recent water level decline in Lake Taharoa needs to be determined.
- Spawning success was not the problem in the Rowe (1997) study, recruitment to adult phase was.

Research approaches:

- Use straw-bales or bundles of bracken fern to promote spawning in a known area to determine timing of spawning.
- At determined time of spawning, survey reed belts and submerged plant zones for sign of eggs.
- Examine historic photographs for reed belt extent and position.
- Assess the effect of the canal between Lake Taharoa and Lake Kai Iwi for its effect on water level in Lake Taharoa.

2.3 Creating a population model for each species

Why? – The timing of lifecycle stages (e.g. what time of year the fish spawn and at what age they reach certain size class) and their distribution is critical towards understanding the usefulness of interventions. As information becomes available from other studies in this Strategy, this can be added to the model (e.g. DLG spawning timing, predation removal rates by trout, etcetera). Models are flexible and can be altered as new information becomes available. This population model shall therefore be compiled over time as various aspects of the necessary data become available through other aspects of this study.

Research questions:

- What is the timing of lifecycle stages of each species (DLG, trout and Gambusia)?
- · What is the spatial distribution leading to interactions between each species?
- · How does spawning differ across the Lakes?
- What are the preferred prey of each species and are they exclusive at various lifecycle stages of the predator?

- · What is the role of phytoplankton and zooplankton in driving the food web?
- · How does trout condition/growth-rate back-calculate in terms of prey consumed?



Problems:

• Models are only as good as the input data. Acquiring the input data may be expensive. It is therefore intended that the data for the model shall be compiled as it comes to light through implementing other aspects of this study.

Research approaches:

- Employ a modeller to build the model from simple to complex.
- Reprioritise other research to the needs of the model.
- Baker and Rowe have already completed a study looking at competition for food between riverine inanga and Gambusia. The results of this study can be reviewed and potentially fed into the model.

2.4 Observe interactive segregation between Gambusia and trout

Why? – If the presence of trout in the Lakes is forcing an interactive segregation approach on the Gambusia, then removing the trout could cause a boom in the Gambusia population. This in turn could impact negatively on the DLG. Mesocosm studies of interactive segregation were proposed by Dave Rowe. Nick Ling notes that mesocosm studies are confounded by lack of habitat complexity and small spatial scale that greatly exacerbates interactions. The design of the study should therefore consider such aspects as scale and habitat availability.

Research questions:

- · Does the presence of trout cause Gambusia to seek refuge in littoral vegetation?
- If so, does being crowded into the littoral zone cause Gambusia to predate their own young?

Problems:

• Mesocosm studies are costly and can be artificial compared to interactions in the wild.

Research approaches:

- Interactive segregation would be tested by Gambusia transects of depth and distance from shore. Ideally the test should be undertaken in the same lake to exclude other variables. This could be done by introducing trout into a lake which has an established Gambusia population and observing Gambusia behaviour before and after the trout are introduced. Lake Kai Iwi or Shag Lake could be possible study sites. Furthermore, Fish and Game also have a lake/pond which could be used.
- Conversely, Lake Waikare could be used with observations made in the current trout presence compared with observations made after de-stocking the lake of trout. This would essentially be repeating the late 1990s Rowe experiment. If Gambusia move deeper and further out in the absence of trout, there is a case for this hypothesis.

2.5 Seasonal study of trout diet

Why? – Predation by trout on DLG and common bully (*Gobiomorphus cotidianus*) is a known impact. Initial declines of DLG were noted in the late 1960s when trout were first released, but Gambusia had yet to fully establish. Predation by trout on Gambusia has not been documented. If a population model is to be developed, we need to know the total removal of each species/trout/day/seasonal month. Since trout change prey preference by season and age; an understanding of their energy budget by species

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will inform a population model. Better understanding at what times of the year and at what size trout show a preference for certain prey species may help inform management decisions such as at what time of the year or at what size trout should be released.

Research questions:

- · What prey do different size/age classes of trout prefer and is this exclusive?
- What prey species do trout show a preference for at different times of the year?
- What lifecycle stages of DLG are predated on by trout, when and what level?
- Where in the lake is this predation occurring?
- Do trout eat Gambusia, when and where and what size/age class of trout prey on them? Is this sufficient predation pressure to reduce Gambusia populations?

Problems:

- Visual gut analysis is hampered by some prey material being digested or fractured. This makes identification of prey difficult and it makes a count by prey species impossible.
- Trout caught in different depths, different offshore distances and at different times of day may have different prey composition in gut content. Trout of different age/size classes have different prey preference.
- Relying on angler-caught trout for this study gives no statistical confidence and is random as to catch depth/offshore distance.
- Assumptions of "some" predation should not be taken as an impact on population levels of Gambusia, or even DLG for that matter. We need to quantify removal rates to see true impact.

Research approaches:

- As the diet and seasonal feeding behaviour of trout is well studied, a general understanding of the seasonal variation of trout diets in the Kai Iwi Lakes could likely be gained from a literature review. This review could also provide information on how trout diet varies across size classes. Such a review would likely be reasonably in-expensive and could be followed by field studies if needed, possibly using the following approaches:
- Use otoliths as a species ID and number estimate.
- Use genetic identification for all species consumed. This requires reference genome of all likely prey species (including insects and fish).
- Use fatty acid signatures to identify all species consumed. Requires reference samples of all species.
- Conduct monthly surveys for one year by catching a statistically meaningful number of trout from standardised transects of depth and offshore distance and time of day and at several size classes of trout, based on literature of prey preference at age/size.
- Concentrate study of Gambusia predation by trout in summer and autumn due to peak Gambusia numbers.
- Use isotope analyses to look at food web interactions.
- Fish and Game should be able to provide all historic trout release and catch return (condition, size, age, weight) data to assess stocking rates vs condition index.



• Review literature for information on trout diet at size/age. Is Gambusia ever recorded? Does piscivorism cease completely after trout are yearlings?

2.6 Gambusia control

Why? – Gambusia are hypothesised to affect DLG. This may be occurring by resource competition for food, from aggression-related displacement from key habitat (vegetated littoral zone), from attacks leading to death (fin pecking) and from eating of DLG eggs.

Gambusia are prolific breeders, with a single female at the start of the breeding season (November) giving rise to nearly quarter of a million more fish by the end of the season (March). Therefore, any control attempts are best made prior to the breeding season and at the end of the season, in order to reduce numbers of breeding females from the population. This should reduce pressure on DLG.

Research questions:

- · Do Gambusia solely inhabit the vegetated littoral zone in Lakes Waikare and Taharoa?
- As Gambusia are both light and heat attracted, can modifications to Gee minnow traps including these features increase capture rate?
- Are DLG less apt to enter a minnow trap?

Problems:

- · Gambusia may still reproduce in numbers sufficient to have an impact.
- Gambusia distribute to 9m depths in Kai Iwi requiring traps set over a wider area.
- · Common bully may enter traps.
- DLG may enter traps if trialled in Lakes Waikare and Taharoa (although Pingram found they did not).

Research approaches:

- Trialling control methods are best done in Lake Kai lwi as there are no DLG.
- Use heat and light as an attractant.
- Trial flow as an attractant as it may be possible to "vacuum up" large numbers of fish if it does prove successful.
- Trail brown bread baits.
- Trial daytime only trapping in lakes with DLG as it is understood adult DLG are absent from the shallows during the day.
- Combine any de-stocking of trout in Lake Waikare with Gambusia control to minimise pressures on DLG.

2.7 Supporting studies

Depending on the availability of funding and the potential for involving PHD and Masters students, there are also a number of supporting studies which could be incorporated into the overall study design. These could include exploring the potential for translocating DLG to establish a new population in a lake which has no Gambusia or trout. This will provide an additional refuge for the species should the populations in the Kai Iwi Lakes fail.



It would also be advantageous to monitor changes in the populations of other species, particularly the eels (*Anguilla dieffenbachii* and *Anguilla australis*) and koura (*Paranephrops*) (Gee & Franklin 2017). This could be undertaken annually using gill or fyke netting for the eels and bundles of bracken fern (after the method of Kusabs & Quinn 2009) for the koura to record catch per unit effort (Gee & Franklin 2017). This monitoring could be undertaken by local iwi who have an interest in harvesting these species and a desire to exercises their mana whenua status over the Lakes.

3 Timetable

By December 2017 it is hoped to have completed working with the various parties involved to agree on:

- A monitoring programme for 2018 including the scope, who will undertake it and how it will be funded.
- A final design for the study.

4 Funding

This research will be undertaken collaboratively by Te Kuihi and Te Roroa (local iwi), Kaipara District Council, Northland Fish and Game Council, Northland Regional Council and the Department of Conservation with each contributing as they are able and in accordance with their strengths and statutory obligations. Contributions may be in cash or in kind. In addition, external funding shall also be sought as will collaborative arrangements with research institutes and education providers such as NorthTec.

5 Presentation

Study results are to be made available to all parties as they become available.

A written annual report on monitoring results and the progress of the study is to be prepared, circulated to all parties and made available to the public. This could be combined with the regular lake reporting currently undertaken by the Northland Regional Council.

The results of the study are to be presented within five years as a written report outlining the findings and recommendations for future monitoring, management actions and study.



6 References

Allen, P.J., Turner, D.J.P. New Zealand (Eds.) 1971: A survey of the Kai iwi Lakes to examine: (a) (b): The condition of the trout stocks relative to the available food supply; and The suitability of the lake for an additional food supply for trout (in the form of a forage fish) if necessary, Investigation report North Island job. Freshwater Fisheries Advisory Service, Wellington, N.Z.

- Anon 1973: A survey of Lake Taharoa and Kai-Iwi. Ministry of Agriculture and Fisheries.
- Gee, E. Franklin, P. 2017: Dune lake galaxias in the Kai Iwi Lakes: Review of status and development of a long term monitoring plan (No. 2017 HN). NIWA.
- Kaipara District Council 2016: Kai lwi Lakes (Taharoa Domain) Reserve Management Plan. Kaipara District Council.
- Ian A Kusabs, Brendan J. Hicks, John M Quinn (in press). Adaptation of a traditional Maori harvest method for guantitative sampling of crayfish (koura; Paranephrops planifrons) and small benthic fish (Gobiomorphus spp.) in New Zealand streams. In press.
- Kusabs, I. A., Quinn, J. M. 2009: Use of a traditional Maori harvesting method, the tau koura, for monitoring koura (freshwater crayfish, Paranephrops planifrons) in Lake Rotoiti, North Island, New Zealand. New Zealand Journal of Marine and Freshwater Research 43, 713 – 722.
- McEwan, A. 2016: Technical review to inform the Kaipara District Council's Draft Kai lwi Lakes Management Plan (No. DOCDM-2759954). Department of Conservation.
- Pingram, M.A. 2005: Ecology of freshwater fish in the littoral zone of Lake Waikere, Kai lwi Lakes, Northland, New Zealand: for the conservation of the dune lakes galaxias (Galaxias sp.) Masters Thesis, University of Otago.
- Rowe, D.K. 1998: Management trials to restore dwarf inanga show mosquitofish a threat to native fish. Water & Atmosphere 6, 10-12.
- Rowe, D.K., Champion, P.D., de Winton, M.D. 1999: Lake management trials for dwarf inanga (Galaxias gracilis) and a rare plant (Hydatella inconspicua) in Northland dune lakes (No. DOC90202). NIWA.
- Rowe, D.K., Chisnall, B.L. 1995: Conservation status of dwarf inanga (Galaxias gracilis) and recommendations for its future management. NIWA science and technology series. NIWA and Department of Conservation, Hamilton, NZ.



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Meeting Notes

Kai lwi Lakes Dune Lake Galaxias Working Group

Date	:	Friday 23	March	2018
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- Time : 1.12pm start, concluded at 2.28pm
- Venue : Northern Wairoa War Memorial Hall, Dargaville

Attendance

Will Trusewich	Northland Regional Council
Tom Drinan	Department of Conservation
Andrew Knock	Department of Conservation
Rudi Hoetjes	Northland Fish and Game Council
Ric Parore	Te Kuihi
Mark Schreurs	Kaipara District Council
Apologies	
Tanya Cook	NorthTech
Carol Nicholson	Northland Regional Council
Taoho Patuawa	Te Roroa

Karakia

Mark welcomed everyone and invited Ric to give a karakia. Ric opened the meeting at 1.12pm.

Updates

Mark thanked everyone for the e-mail updates they had circulated in February and asked if there were any further updates to add.

Will mentioned how he is progressing with a population model and energy budget for the key species in the Lakes. He is mostly focused on background research at this stage and is looking at how to add spatial, temporal and trophic interactions into the model. His reading so far suggests dragonflies might be a good indicator of ecosystem health as they are a key prey species for many of the fish. He suggests that if the dragonfly population was to decline then the fish populations would follow.

Tom said he had sought advice on the possibility of using environmental DNA to measure Dune Lakes Galaxias (DLG) abundance (investigating this was an action of the 02 November 2017 meeting). The advice given to him (from Jonathan Banks of Cawthron) is that quantitative measures using eDNA still needs further research. Environmental DNA can identify if a species is present or absent in an environment but cannot accurately measure its abundance. Tom went on to explain how the Department of Conservation (DOC) has been trialling fyke netting in support of their spotlighting as a method of monitoring DLG abundance. This was an action of the 02 November 2017 meeting. The intention was to use fyke netting to get a more robust measure of DLG abundance. However, Tom and the team have found that fyke netting is not very effective at catching DLG (they only captured a



single DLG from six fyke nets). They have decided to discontinue the use of fyke nets and proceed with spotlighting alone. There was some discussion over the use of fyke nets and if baiting the nets would increase their effectiveness. Baiting the traps is common practice; however, DOC does not bait their traps as this adds another variable as the quality of baits can vary day to day. Tom also noted that DLG tended not to go into fyke nets once other species were present in the nets.

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There was some discussion over when exactly the DLG spawning season might be. Past spotlighting by DOC has detected larval fish around June. Trout fishermen have reported shoals of larval DLG during the trout fishing competition in late June and into July. However Rudi noted that he found larval DLG in his recent sampling conducted on 12 December 2017 and 07 March 2018. This raises further questions over when the spawning season is, if there are multiple spawning seasons or even if there are co-ordinated spawning events at all.

Andrew noted that adult DLG are seen in the shallows during the day in early summer but then become scarce in the shallows as the season progresses. It was considered that this might be because of the Gambusia population increasing as the water temperature begins to warm.

It was asked what data Northland Regional Council (NRC) has on water level and temperature.

Action:

• Will is to investigate what data NRC holds on water temperature and Lake levels and share this with DOC and the group.

It was noted that there had been a rise in Lake levels, altering the habitat available to DLG and Gambusia. There was some discussion over the extent to which Gambusia exclude DLG from the shallows.

Rudi presented some of his findings from the recent monitoring Fish and Game has undertaken (this monitoring was an action agreed at the 02 November 2017 meeting). This included showing some pictures of Fish and Game's larval fish netting and trout stomach content sampling. In addition to the regular surveys of trout stomach contents agreed at the 02 November 2017 meeting, Rudi has also been able to undertake some sampling of larval DLG using a larval fish net. This larval fish sampling offers the opportunity to gain a better understanding of when DLG are spawning. Fish and Game are able to instigate a regular programme of larval fish sampling however, Rudi stated he wanted to seek the Group's support for this sampling first as it is destructive of those fish it catches. The Group was supportive, noting that the number of fish being caught was relatively few in the context of the ecology of the lakes and that it would give much needed data on the population structure and spawning time of this species. The DLG captured would also provide a source of otoliths (a bony structure in the ear/gill of the fish) to be used in the otolith study which the Group is seeking to undertake. However the Group noted the absence of Te Roroa at this meeting (who together with Te Kuihi have Mana Whenua status over this species) and agreed that approval should be gained from them as well before progressing this monitoring.

23.03.2018 DLG Working Group Meeting Notes-draft

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Actions:

- Rudi will discuss the larval fish monitoring with Taoho Patuawa at Te Roroa and seek approval from Te Roroa for larval fish monitoring over the period until the next Taharoa Domain Governance Committee meeting; and
- Rudi will present to the next Taharoa Domain Governance Committee meeting on 10 May 2018 and seek approval for ongoing larval fish monitoring. Mark is to put this on the agenda for the next Committee meeting.

There was further discussion about Fish and Game's research and the opportunities it presented. Consideration was given to using a fish-finder to validate what is seen on the sonar with what is being pulled up in the net. Another suggestion was to put a camera down with the net to capture images of what fish are there. Based on the findings to date we are questioning when or how many times a year the DLG are spawning. There is a need for the otolith study to confirm this. There was also consideration of looking at the fish's reproductive organs to see what stage of development the eggs are at, to get an idea of when they will spawn. Tom said this is not the preferred solution as it will be less accurate than otoliths (and will require more time). He stated that the eggs, once ripe, can be retained in the female for some time before spawning occurs (this is known in many fish).

Mark presented the Gambusia traps which Kaipara District Council has had constructed (this was an action of the 02 November 2017 meeting).

Actions:

- Mark gave the fish traps to Will who will pass these on to Tanya Cook of NorthTech.
- NorthTech will undertake field trials of the traps to determine what kinds of attractants work best. They will then report this back to the Group.
- Once the best method of attracting Gambusia into the traps has been identified, the traps will be passed on to DOC who will instigate a Gambusia trapping programme in the Lakes.

It was noted that there is some interest from schools in making additional traps as a project for their students.

Preparations for the spawning season

The primary purpose of this meeting had been to discuss what actions the members would undertake over the suspected DLG spawning season (April, May, and June) and how the members can collaborate.

Action:

• DOC agreed to increase their spotlight surveying over this period in the hope of recording a spawning event.

There was some discussion over the otolith study that is needed to determine the age of the fish and therefore when spawning is occurring (this was an action of the 02 November 2017 meeting). It was noted that this study will involve taking some DLG in order to obtain their otoliths. Approval from the Taharoa Domain Governance Committee will be needed for this. At this stage it is considered a couple of hundred fish will be needed over the course of a year. The Group considered this is not a lot



in the context of the Lakes' ecology. Fish and Game would provide all the fish from the larval fish sampling if approval is given for this to proceed.

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Actions:

- Tom will continue to progress this project, including putting in an application for Envirolink funding;
- Mark will put this matter on the agenda for the next Taharoa Domain Governance Committee meeting on 10 May 2018; and
- Fish and Game will continue the three monthly monitoring programme of trout diet, eel abundance, water clarity etcetera they began following the 02 November 2017 meeting. This will include monitoring over the suspected DLG spawning season.

Will raised that the Auckland University of Technology (AUT) have a robotic boat that can do surveys of fish at low cost. There was some discussion on this.

Action:

• Will is to explore this possibility further and report back.

It was identified that April and May are the best time of the year to undertake Gambusia control measures as they will have their greatest impact at this time. As the Gambusia traps KDC constructed will not be field ready in time for this period in 2018, the Group considered alternatives. It was noted that Gambusia shoals are relatively easy to scoop up with a net. It was suggested to explore with Taoho Patuawa of Te Roroa whether schools could organise Gambusia fishing trips. The children could be involved and use butterfly nets to scoop up the little fish. This would potentially help to reduce the number of fish surviving the winter to breed again in the spring and would likely be fun for the children as well.

Action:

• Mark to write to Taoho about this idea.

Next meeting

The Kai lwi Lakes Dune Lake Galaxias Working Group will meet again in late June 2018. This will give the member organisations time to take action on the ground. The next meeting will be proceeded by a series of e-mail updates so members can continue to co-ordinate their actions.

Mark invited Ric to close the meeting at 2.28pm with a karakia.



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KAIPARA DISTRICT COUNCIL

File number:	4702.24.	05			Approved for agenda 🖂
Report to:	Taharoa Domain Governance Committee				
Meeting date:	10 May 2	2017			
Subject:	Northlan	d Fish	n and Game C	ounci	I request to liberate trout in Lakes
	Taharoa	and V	Vaikare in 201	9	
Date of report:	27 April 2	2018			
From:	Mark Sch	nreurs;	Policy Analys	t	
Report purpose		\boxtimes	Decision		Information
Assessment of significa	nce		Significant	\boxtimes	Non-significant

Summary

The Taharoa Domain Governance Committee (the Committee) has received a letter from the Northland Fish and Game Council (Fish and Game) dated 20 March 2018 (**Attachment 1**). In this letter, Fish and Game requests permission to release young trout into Lake Taharoa and Lake Waikare in 2019. This proposed release is part of a regular programme of annual releases which keeps the trout population in these Lakes at a consistent level. As trout cannot breed in the lakes, without these annual releases of young trout, the trout population would gradually die out.

The Committee must now consider whether to approve or deny this proposed release of trout.

The Committee faced a similar decision last year at its 23 June 2017 meeting. At that meeting it resolved to allow the release to proceed but the Committee retained the right to control how the trout would be released based on any new knowledge that might become available.

It is recommended the Committee takes a similar approach this year and it is noted that the Kai Iwi Lakes Dune Lakes Galaxias Working Group (Working Group) is working to make more information available.

Recommendation

That the Taharoa Doman Governance Committee:

- 1 Receives the Policy Analyst's report 'Northland Fish and Game Council request to liberate trout in Lakes Taharoa and Waikare in 2019' dated 27 April 2018; and
- 2 Believes it has complied with the decision-making provisions of the Local Government Act 2002 to the extent necessary in relation to this decision; and in accordance with the provision of s79 of the Act determines that it does not require further information prior to making a decision on this matter; and
- Gives permission for the release of trout in 2019. This is based on concerns expressed in the Gee and Franklin (2017) report to the effect that it would be advisable to address the ambiguity over the effects of trout on the Dune Lake Galaxias (DLG) population before ceasing trout stocking, and that further research proposed by the Dune Lake Galaxias Monitoring Strategy is desirable to better understand that relationship; and



4 Reserves the right to control if and how trout are released in 2019, based on any new knowledge that may be gained, including that from implementation of the Dune Lake Galaxias Monitoring Strategy.

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Reason for the recommendation

This recommendation is consistent with the decision taken by the Committee in 2017 and with the scientific information currently available.

Reason for the report

To seek approval from the Committee for the Northland Fish and Game Council (Fish and Game) to proceed with the annual release of trout into Lakes Taharoa and Waikare in 2019.

Background

The Dune Lakes Galaxias (*Galaxias sp.*) (here after referred to as the DLG) is currently recognised as a subspecies of dwarf inanga (*Galaxias gracilis*), however it is so unique that work is being undertaken to describe it as a separate species. The DLG is found only in the Kai lwi Lakes.

Rainbow Trout (*Oncorhynchus mykiss*) were introduced to the Kai lwi Lakes in 1968 by the then Acclimatization Society; now the Northland Fish and Game Council. Regrettably, within a few years of trout being released, an unauthorised individual released Gambusia (*Gambusia affinis*) into the Lakes as well. It is understood the individual intended the Gambusia to be a food source for the trout.

The introduction of these two species soon resulted in an observable decline in the numbers of DLG. Since then DLG have become extinct in Lake Kai lwi and there are concerns for the survival of the remaining populations in Lake Waikare and Lake Taharoa.

In response to this problem, the Kai Iwi Lakes (Taharoa Domain) Reserve Management Plan (RMP) included the direction that trout releases cease from 2018. This is a comparatively simple solution because, as trout cannot breed in the Lakes (they require flowing water), the population would naturally die out if the annual stocking of trout fingerlings were to cease. As trout are a predator of DLG it was hoped that removing the trout would result in an increase in the population of DLG.

However, the Gambusia are a complicating factor. They are known to compete with the DLG for habitat and food and are suspected to predate the DLG's young. Hence while some studies have hypothesised that removing trout will result in an increase in the DLG population through removal of a predator (e.g. Rowe and Chisnall 1995 and Allen and Turner 1971), others (e.g. Rowe 1998 and Rowe, Champion & de Winton 1999) have argued that the trout are also keeping the Gambusia population in check through interactive segregation (i.e. Gambusia do not use the full range of habitats for fear of predation by trout). This leads to the competing hypotheses that exclusion of trout could result in an increase in Gambusia and a consequent decline in the population of DLG. To complicate matters further, it has been suggested that environmental factors, such as the extent of littoral vegetation, rainfall, lake levels, water temperature and the abundance of zooplankton may also be significant contributors to fluctuations in the populations of both DLG and Gambusia. It is therefore, unclear whether the exclusion of trout will be beneficial or detrimental to the DLG.



Because of this uncertainty, a recent literature review by Gee & Franklin (2017) suggested that the wholesale exclusion of trout from the Lakes, beginning in 2018 as is directed by the RMP, should not be undertaken until more information were available on what effect this would have. It was instead suggested that a detailed study be designed and undertaken which recognises these competing hypotheses as well as the underlying environmental variability.

In response, Te Kuihi, Te Roroa, Kaipara District Council, Northland Fish and Game Council, Northland Regional Council and the Department of Conservation have formed a Kai lwi Lakes Dune Lakes Galaxias Working Group (Working Group) and are working to undertake a study to identify what actions can be taken to save this species.

The Working Group is progressing this study however have yet to identify if excluding trout from the lakes would be beneficial or detrimental to the DLG. This work is focused on progressing a series of actions agreed under the Dune Lakes Galaxias Monitoring Strategy which was endorsed by the Committee on 10 August 2017. The Monitoring Strategy is the fulfilment of an action under the RMP. It contributes to Aim 3 of the RMP: "Complete knowledge about Kai Iwi Lakes will enable effective protection and enhancement of its natural environment and pristine waters."

Issues

The Committee has received a letter from Fish and Game dated 20 March 2018 (**Attachment 1**). In this letter, Fish and Game request permission to release approximately 2,000 trout fingerlings into Lake Taharoa and 300 into Lake Waikare. If approved these releases will take place in May 2019 however Fish and Game is seeking permission now because they need to place the order for the fish well ahead of time as it takes time to grow them. This proposed release for 2019 is part of a regular programme of annual releases which keeps the trout population in these Lakes at a consistent level. Without these annual release, the trout population would decline and disappear from the lakes.

The Committee must now consider whether to approve or deny this proposed release of trout.

As we have seen from the background information provided above, it is currently unknown if the presence of trout in the Lakes is beneficial or detrimental to the DLG population. However, it is recommended that whatever balance currently exists between DLG, trout and Gambusia not be disturbed until more is known about what effect such management interventions would have. Given the current lack of knowledge, there is the concern that removing trout at this point may prove detrimental to DLG. The report by Gee & Franklin (2017) recommends a comprehensive monitoring and research programme be undertaken before changing the current fish stocking and management regime. The Working Group is actively working on this monitoring and research programme. However to date there is still insufficient evidence available to recommend ceasing trout releases.

Based on progress made by the Working Group, and collaboration between the different parties towards the long term survival and abundance of DLG, the Committee is being asked to allow the release of trout in the lakes in 2019. This is an interim course of action until sufficient information is available to recommend what management interventions would be in the best interests of the DLG. Departure from the direction in the RMP is considered warranted, because new evidence has been provided (Gee & Franklin 2017 report) and further investigation is ongoing (the work of the Working



Group under the Dune Lakes Galaxias Monitoring Strategy).

It is considered prudent for the Committee to reserve the right to control if and how trout are released in 2019, based on knowledge which may come to light from the Dune Lakes Galaxias Monitoring Strategy. For example, numbers released, timing of release, which lakes they are released into and the like could be decided closer to the time.

4

Factors to consider

Community views

This decision is likely to receive a high level of public interest. Submissions to the Draft RMP showed that trout fishing is a popular recreational pursuit and is considered to be beneficial to the local economy as it attracts visitors during the "off season" (winter).

Submissions to the Draft RMP also showed a high level of respect for the environment, its flora and fauna, from all interest groups. If sufficient information to recommend ceasing trout releases comes to light between when this decision is made and the scheduled release date (May 2019), then it is likely the community at large will support excluding trout.

Policy implications

The Committee at its 23 June 2017 meeting resolved that it:

"...Supports the release of trout in 2018. This is based on concerns expressed in the April 2017 NIWA report to the effect that it would be advisable to address the ambiguity over the effects of trout on the Dune Lake Galaxia population before ceasing trout stocking, and that further research proposed by the Fish Monitoring Programme is desirable to better understand that relationship; and

Reserves the right to control how trout are released in 2018, based on knowledge from the proposed Fish Monitoring Programme."

As the information made available by the Working Group to date has as yet not identified if ceasing trout releases would be beneficial or detrimental to DLG, it could be recommended that the Committee make a similar decision this year.

The RMP is considered to have sufficient flexibility with regards to the release of trout to permit this approach.

Financial implications

There are no financial implications for Kaipara District Council.

Legal/delegation implications

Kaipara District Council as the administering body of the Taharoa Domain has the power to grant or deny permission for trout to be released into the lakes. The Committee, which includes Mana Whenua (Te Kuihi and Te Roroa), is the appropriate body to approve or deny this request.

It should be noted that, following the adoption of the RMP which included the direction that trout releases cease from 2018; Fish and Game presented Council with a draft Statement of Claim regarding a judicial review of the RMP process and outcome that would stop the release of trout by

4702.24.05



2018. This Claim, however, was not lodged with the Courts. Rather a meeting was held with representatives of Fish and Game and the Committee on 02 May 2017. The outcome of that meeting was:

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- Agreement by both parties of the importance of the abundance and long term survival of DLG;
- That a research monitoring programme needed to be designed and funded, which included input from Fish and Game, Te Roroa, Te Kuihi, Kaipara District Council, Northland Regional Council and the Department of Conservation, and that a working group be set up for this purpose; and
- That cessation of trout stocking in Lakes Waikare and Taharoa from 2018 would be deferred in light of new information received from NIWA (Gee & Franklin 2017 report), and provided the Committee was satisfied with progress with the research monitoring programme.

Options

The Committee has the following options:

- **Option A:** Grant permission for trout to be released into Lakes Taharoa and Waikare in 2019.
- **Option B:** Refuse to grant permission for trout to be released into Lakes Taharoa and Waikare in 2019.

Assessment of options

Option A: granting permission for trout to be released into Lakes Taharoa and Waikare in 2019 would be consistent with the approach taken by the Committee at the 23 June 2017 meeting. It would allow for the existing balance between trout, DLG and Gambusia to continue undisturbed for the present. This arrangement could be altered ahead of the trout actually being released in May 2019 if new information were to come to light from the work of the Working Group. In such case, trout could be released in lower numbers or at a different time of the year or not at all. The Working Group is continuing to explore the relationships between DLG, trout and Gambusia in the hope of being able to make management recommendations. In making this decision, the Committee should consider the aspirations of Te Roroa and Te Kuihi in their role as Kaitiakitanga.

Option B: refusing to grant permission for trout to be released into Lakes Taharoa and Waikare in 2019 would be consistent with the direction set out in the RMP. However, there is considered to be sufficient flexibility in the RMP to allow a deviation from this direction given the new information which has come to light in the Gee & Franklin (2017) report. According to this report, ceasing trout releases could result in a boom in Gambusia numbers resulting in the decline or even extinction of the DLG.

Assessment of significance

This decision does not trigger Council's Significance and Engagement Policy.

Recommended Option

The recommended option is Option A.



Next step

The Kai lwi Lakes Dune Lakes Galaxias Working Group will continue to work on better understanding the relationships between DLG, trout and Gambusia. Information from their discoveries will be made available to the Committee and used to inform management actions. This could include later directing Fish and Game to alter their planned trout release for 2019.

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Attachments

Letter from the Northland Fish and Game Council dated 20 March 2018



Kaipara District Council 26 MAR 2018 RECEIVED

March 20, 2018

Taharoa Domain Governance Committee Private Bag 1001 Dargaville 0340

Dear Sir/Madam,

Re: Request to liberate trout in Lake Taharoa and Lake Waikare 2019

Under the current Kai Iwi Lakes (Taharoa Domain) Reserve Management Plan 2016, Northland Fish & Game are required to seek approval to carry out their annual Rainbow trout liberations into Lakes Taharoa and Waikare.

Northland Fish & Game requests permission to release approximately 2,300 trout fingerlings in Lakes Taharoa (2000) and Waikare (300). If approved, this release will take place in May 2019.

Northland Fish & Game is required to order the Rainbow trout fingerlings 12 months in advance of their fish liberations for all of the waters which have annual releases. The trout are all reared at the Ngongotaha Trout Hatchery and are transported in tanks on trailers for release in the Kai Iwi Lakes and other reservoirs in the Northland region

At the June 2017 meeting, the Taharoa Governance Committee gave approval for Northland Fish & Game to release trout into the lakes for May 2018. This release will take place in mid May 2018.

Yours sincerely,

Rudi Hoetie **Regional Manager**

Statutory managers of freshwater sports fish, game birds and their habitats

Northland Region

Unit A5, 7-11 Nell PI, Raumanga, Whangarei PO Box 25003 New Zealand. Telephone (09) 438 4135 Email northland@fishandgame.org.nz www.fishandgame.org.nz



6 Closure

Kaipara District Council Dargaville