**ACTIVITY: Ethics in conservation science**

**Activity idea**

In this activity, students consider the conservation of native frogs from a number of different perspectives.

By the end of this activity, students should be able to:

* examine the conservation of native frogs from a range of different value perspectives
* use their growing science knowledge to make an informed decision on a New Zealand conservation issue
* give reasons for the decline in the number of native frogs
* describe some of the methods used in species recovery in New Zealand.

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**Introduction/background**

In this activity, students examine an ethical issue: Should money and effort be spent trying to save our native frogs? They discuss their ideas within an ethical framework and make decisions based on these discussions.

***Native frogs***

Sub-fossil records indicate there were at least seven species of native frogs in New Zealand before the arrival of people approximately 1,000 years ago. Habitat change and the introduction of non-native mammals have caused the three largest frog species to become extinct. The remaining four native frog species have severely reduced distributions and population sizes and are all vulnerable to extinction. They face a number of threats including:

* introduced predators
* disease
* habitat loss
* competition with introduced frogs.

See the article [Native frogs](https://www.sciencelearn.org.nz/resources/1380-native-frogs) and the video clip [Threats to frogs](https://www.sciencelearn.org.nz/videos/621-threats-to-frogs) for more information.

***Conservation***

A number of New Zealand agencies, including universities, zoos and government departments, are working together to save our native frogs. The Department of Conservation administers the Native Frog Recovery Group and Native Frog Recovery Plan.

More information on the following species recovery methods is available throughout the Hub or on the [Department of Conservation website](http://www.doc.govt.nz/conservation/):

* [Captive management](https://www.sciencelearn.org.nz/resources/1189-captive-management-for-conservation)
* [Mainland islands](https://www.sciencelearn.org.nz/resources/1383-orokonui-ecosanctuary-a-mainland-island)
* Offshore islands
* [Translocation](https://www.sciencelearn.org.nz/resources/1378-translocation)
* [Conservation rankings](https://www.sciencelearn.org.nz/resources/1379-conservation-rankings)
* [Treatment of disease](https://www.sciencelearn.org.nz/resources/1181-investigating-frog-disease)
* Habitat restoration
* Pest eradication
* Species recovery plans.

***Links to New Zealand research***

[Phil Bishop](https://www.sciencelearn.org.nz/resources/1384-dr-phil-bishop), [Alison Cree](https://www.sciencelearn.org.nz/resources/1385-assoc-prof-alison-cree) and [Kelly Hare](https://www.sciencelearn.org.nz/resources/1396-dr-kelly-hare) are scientists based at the University of Otago. Their research focuses on the conservation of native reptiles and amphibians.. You might find it useful to watch some of the video clips to facilitate student discussion.

***Common ethical approaches***

There are a number of ethical approaches used for discussing ethical issues. Below are two common ones that could be used to discuss the issues around conservation – consequentialism and rights and responsibilities. The questions are examples of what might be asked within each approach. To explore the issue of the value of conservation of native frogs, you may wish to use one or both approaches, depending on the ability of the students and the time you have to explore the issue.

*Consequentialism:* Consequentialism is to do with the consequences of actions. Using this ethical approach, we weigh the benefits and harms resulting from our actions:

* Who/what is affected by this issue?
* What are the benefits for those involved?
* What are the harms for those involved?
* Which option will produce the most good and the least harm?
* If one is harmed and another benefits, how do you decide who or what matters most?

*Rights and responsibilities:* Rights and responsibilities are closely related – the rights of one imply the responsibilities (or duties) of another to ensure those rights.

* Who/what is affected by this issue?
* What groups have rights associated with this issue? What are their rights?
* Do these same groups also have responsibilities? What are their responsibilities?
* Do we value some rights more than others? Whose rights do we want to protect?
* Do any codes, declarations and/or conventions relate to this issue?

**What you need**

* 2 A4 size signs: ‘strongly agree’ and ‘strongly disagree’.
* Optional: chalk or string/ribbon.
* Pens and paper.
* [PMI worksheets](#PMIs) (reproduced in A3 size if possible) and Blu-Tak.

**What to do**

***Warm-up activity***

1. Set up a continuum line – you can use chalk/ribbon or string to make the line clear if necessary – and place one A4 sign at each end.
2. Explain to the students that they are going to hear a statement. When they have thought carefully about the statement, they should move to a position on the line that represents their view. For example, if they agree strongly, they should move to that end of the line and stand as close to the card as possible. If they disagree with the statement, they might position themselves a couple of metres away from the ‘strongly disagree’ card. If students are unsure or don’t know, they should stand in the middle. Make it clear to the students that there is no right or wrong answer and they should make up their own mind. If appropriate, demonstrate by moving along the line and discussing different positions with the students.
3. Read out this statement: Trying to save our native frogs is a waste of time and money. Give students enough time to position themselves on the line.
4. Ask students to share their reasons for their place on the line and explain how they made their decision.

***Introduction***

1. Divide the class into 6 groups and ask each group to create a mind map:

* 2 groups should focus on threats to native frogs and reasons for their decline.
* 2 groups should focus on different species recovery methods (conservation strategies).
* 2 groups should focus on identifying who is involved in/affected by frog conservation (identifying stakeholders).

Before starting this activity, students may wish to refer to some of the articles and video clips from the context. See [background notes](#Introduction) for more information.

1. Display this question: Should money and effort be spent trying to save our native frogs? Have the students feed back from their mind map discussions. Use the questions from the [common ethical approaches](#common) to facilitate this discussion. Further research may be required at this point. Students could research in small groups and report back to the class. Useful videos from the context include [Threats to frogs](https://www.sciencelearn.org.nz/videos/621-threats-to-frogs), [Translocating animals](https://www.sciencelearn.org.nz/videos/619-translocating-animals), [Fat skink, thin skink](https://www.sciencelearn.org.nz/videos/702-fat-skink-thin-skink), [Captive management](https://www.sciencelearn.org.nz/videos/628-captive-management) and [Orokonui Ecosanctuary](https://www.sciencelearn.org.nz/videos/618-orokonui-ecosanctuary). See also the articles [Native frogs](https://www.sciencelearn.org.nz/resources/1380-native-frogs) [Threats to native reptiles and amphibians](https://www.sciencelearn.org.nz/resources/1185-threats-to-native-reptiles-and-amphibians), [Extinction](https://www.sciencelearn.org.nz/resources/1188-extinction), [Captive management for conservation](https://www.sciencelearn.org.nz/resources/1189-captive-management-for-conservation), [Translocation](https://www.sciencelearn.org.nz/resources/1378-translocation) and [Conservation rankings](https://www.sciencelearn.org.nz/resources/1379-conservation-rankings).

***Round robin activity***

1. Divide the class back into the 6 groups. Spread them out around the room and give each group one of the [PMI worksheets](#PMIs). (Note: The 6 stakeholders on the PMI worksheets can be changed to align them with stakeholders your class identified during discussions.)
2. When you say ‘frog’ (or some other word that gives the signal), the students have 2–3 minutes to discuss and think of an idea or two (harms and benefits) for the stakeholder on the PMI worksheet. A writer for the group records the idea(s) on the sheet. When you call ‘frog’ again, the groups move to the next piece of paper (the paper stays at each station) and so on until they have added to all of the sheets. Ideas cannot be repeated so students cannot copy what is already there.
3. When the groups are back at their original stations, a representative from each should feed back to the class. Compile a list of reasons for and against saving our native frogs on the board.

***Conclusion***

1. Ask students to position themselves on the value continuum line again in response to the statement: Trying to save our native frogs is a waste of time and money. Has anyone’s position changed? Why? Why not?

**Discussion questions**

* Are some species more important than others?
* How do we decide? Are conservation rankings useful?
* What do we need to know about a species before we can try to save it?
* What are some of the potential impacts of the loss of native frogs?
* Do you think conservation science research is important? Why? Why not?

**Extension ideas**

There are a number of important cultural considerations in the conservation of native species in New Zealand. For example, translocation requires consultation and consent of local iwi at the capture and release sites. This is recognition of the kaitiaki (guardian) relationship of the iwi and the animals being translocated. You may wish to explore the issue of frog conservation with your students from a multiple perspectives ethical framework.

***Multiple perspectives***

Ethical decisions are viewed differently by different people. When considering an issue, it is important to explore a range of world views and respect diversity, for example, cultural, socioeconomic and spiritual or religious diversity.

* Which groups have opinions about this issue? What are their opinions?
* Why do groups of people think this way? Have they always thought this way?
* Which groups voice opinions about this issue? (Not all groups that have an opinion voice them in a public forum.)
* Do the opinions of all groups have equal weighting? How do you decide?
* Can all the groups agree? Do they need to?

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| --- | --- | --- |
| **1. I am a mammalian predator (for example, rat, stoat or ferret). Saving native frogs means that I may experience the following…** | | |
|  |  |  |
| **Benefits (PLUS):** |  | **Harms (MINUS):** |
|  |  |  |
| **An INTERESTING thought or idea (possible outcomes of taking the action):** | | |

|  |  |  |
| --- | --- | --- |
| **2. I am a native frog. Saving native frogs means that I may experience the following…** | | |
|  |  |  |
| **Benefits (PLUS):** |  | **Harms (MINUS):** |
|  |  |  |
| **An INTERESTING thought or idea (possible outcomes of taking the action):** | | |

|  |  |  |
| --- | --- | --- |
| **3. I am a native bird. Saving native frogs means that I may experience the following…** | | |
|  |  |  |
| **Benefits (PLUS):** |  | **Harms (MINUS):** |
|  |  |  |
| **An INTERESTING thought or idea (possible outcomes of taking the action):** | | |

|  |  |  |
| --- | --- | --- |
| **4. I am a native lizard. Saving native frogs means that I may experience the following…** | | |
|  |  |  |
| **Benefits (PLUS):** |  | **Harms (MINUS):** |
|  |  |  |
| **An INTERESTING thought or idea (possible outcomes of taking the action):** | | |

|  |  |  |
| --- | --- | --- |
| **5. I am a scientist. Saving native frogs means that I may experience the following…** | | |
|  |  |  |
| **Benefits (PLUS):** |  | **Harms (MINUS):** |
|  |  |  |
| **An INTERESTING thought or idea (possible outcomes of taking the action):** | | |

|  |  |  |
| --- | --- | --- |
| **6. I am a person who lives in New Zealand. Saving native frogs means that I may experience the following…** | | |
|  |  |  |
| **Benefits (PLUS):** |  | **Harms (MINUS):** |
|  |  |  |
| **An INTERESTING thought or idea (possible outcomes of taking the action):** | | |