

SLOWING THE SPREAD OF DIDYMO

Web-based science and social sciences dealing with the didymo threat to our rivers and streams brought to you by:



TEACHER PREPARATION

- Prior to starting the unit, visit www.biosecurity.govt.nz > In the 'People always ask us about' section > click on Didymo. On the Didymo page > click on Resources
- Download, print out and photocopy the fact sheet
- Preview the two didymo videos
 - *Fish & Game Introduction to didymo*
 - *Video Tour of Affected Wairaurahiri River*

TUNING INTO RIVERS, STREAMS AND LAKES

- As a class, brainstorm and list the recreational activities that humans engage in on rivers, streams and lakes, **eg**
 - *kayaking* - *fishing*
 - *swimming* - *boating*
 - *camping* - *rafting...*
- Can students think of any other important contributions that rivers, lakes and streams make? **eg**
 - *generation of hydro electricity*
 - *draining flood waters*
 - *providing for irrigation and water supply sources*
 - *they are major tourist attractions*
 - *habitats for native creatures*
- Do students know that there is a threat to our rivers, streams and lakes called didymo? Have students heard of it? What is it? Where is it found?

TAKING A REALLY CLOSE LOOK AT DIDYMO?



- As individuals or as groups, ensure all students view and listen to the two dramatic video sequences of didymo – much of it shot from under the surface of the water. View the videos at: www.biosecurity.govt.nz > select Didymo > on the Didymo page > click on Resources and scroll down to the 2 Didymo videos.

Curriculum Areas: Levels 3-4

Social Sciences:

Place and Environment:

- How places and environments reflect interactions with people.

Social Inquiry:

- How groups of people can make decisions and take actions that will have a positive effect on our environment and society, and the consequences if we do not take these actions.

Science:

Living World: Ecology

- Learning how living things are suited to their particular environment and how they may respond to environmental changes.

English:

- Using appropriate ways of gathering knowledge and communicating these ideas to the wider community:

Links to Technology and Health.

- What is the students' initial reaction to the video footage? Have each student write a short reactive statement to what they saw.
- Remind students of the many recreational uses of our fresh water environments. Have them speculate on any recreational consequences if we do not slow the spread of didymo and other aquatic pests. Would their attitude to their favourite fresh water environment change if it became infected with didymo?
- For further confirmation of the visual pollution that didymo can cause, have students work through the slide show under photos in the Resource section.

WHAT IS DIDYMO?

- Have groups visit www.biosecurity.govt.nz > In the 'People always ask us about' section > click on Didymo. Have students find answers to the following questions:
 - *what is an alga?*
 - *why do you need a large number of didymo cells in the water before didymo is able to be seen?*
 - *how does didymo attach itself and what does it attach itself to?*
 - *what species may be affected by didymo and how?*
 - *what effect can it have on recreation activities, irrigation, and hydro generation?*
 - *how do we tell the difference between didymo and our New Zealand native alga?*
 - *are humans in danger from didymo?*
 - *how can we slow the spread of didymo?*
- Ensure students understand the following:
 - *a single cell of didymo is microscopic – that is unable to be seen with the naked eye*

HELP IS WHAT WE NEED MOST!

- didymo may affect suitable places (habitats) for fresh water fish, insects and plants to live and breed
- the effect it can have on recreational activities, irrigation and hydro generation.
- Distribute fact sheets to students. Discuss the following:
 - how long have we known didymo is in New Zealand and where is it presently found?
 - once established, what does it form?
 - what does didymo feel like to touch?
- Use the *Frequently Asked Questions* section of the Resources page to find answers to the following:
 - where has didymo been found in New Zealand? (South Island schools can download pdf and locate the nearest 'didymo positive' waterway to the school).
 - how did it get into the New Zealand river system?
 - can didymo be eradicated in New Zealand?
 - if I see something in a river, how do I know if it's didymo?
- Have groups summarise all didymo facts they have found as a wall chart.

SLOWING THE SPREAD OF DIDYMO

- Introduce the idea that it is thought to be almost impossible to eradicate didymo from New Zealand and even if there was a way to eliminate it (such as a chemical), this might cause even greater harm than didymo does.
- Remind students that didymo is made up of tiny cells that can't be seen with the naked eye and it only takes one of these cells to survive on clothing or equipment for it to spread to another river or stream. Have students recall the ways we use our waterways for recreation. Brainstorm and list ways that didymo cells could be spread, **eg**
 - on fishing rods
 - on our clothing
 - on the hulls of boats
 - on car tyres or trailers
 - even on the family dog!
- Tell students that MAF Biosecurity New Zealand has a simple but very important message to help slow the spread of didymo and other aquatic pests – Check, Clean, Dry. Have students read carefully through the *Stop the Spread* section of the Didymo Fact Sheet. What does it tell us is the single best way to slow the spread (use equipment exclusively in a single waterway)? What must people do if they are using boats and equipment in different waterways? Highlight the fact that just washing with water will not kill didymo.
- Conduct group research into the special ways that different equipment should be cleaned. Select *Cleaning Methods* > then *Cleaning methods for specific activities*. Report back to the class. Produce brochures for specific equipment.

HOW WE CAN HELP GET THE MESSAGE OUT

- Tell the students that MAF Biosecurity New Zealand would like to enlist their help to get the Check, Clean Dry messages out to everyone in the school and local community. Point out that there are two messages to get out – *the threat that didymo poses to our waterways* and *how to slow the spread of didymo*. Select several of the following activities for students to complete:
 - run a community survey to find out what people know about didymo prevention
 - design poster displays for a local supermarket or shopping centre
 - fridge reminders for each family
 - regular messages at assembly and talks to other classes
 - produce a video showing the Check, Clean, Dry in action for home viewing
 - take family members through the MAF Biosecurity New Zealand didymo pages and videos online
 - print out online posters and brochures for community distribution
 - produce a 'slowing the spread of didymo' page for the school website.



Have students view the powerful poster images used by Biosecurity New Zealand to get the messages out to the community (Resources section). Challenge them to design their own and invent short and effective slogans for the posters.

**POSSIBLE SIGHTINGS OF
DIDYMO SHOULD BE
REPORTED TO
MAF BIOSECURITY
NEW ZEALAND ON:**

0800 80 99 66