



## Monarch Butterfly Management



We are conducting this survey to better understand how North American residents feel about different management strategies for the conservation of the monarch butterfly. Your feedback will contribute to knowledge of the public's interests regarding the monarch butterfly which can be used by decision-makers to manage this and other migratory species across North America

**This survey will take about 15 minutes to complete. Please answer the questions in sequence.**

**The survey's intent is to capture your initial response in the order given. Please DO NOT press the "back button" on your browser to revisit or change any of your answers.**

To view the privacy policy, please click [here](#). By clicking 'Begin', you acknowledge that you have read and agree to the privacy policy.

Once you proceed with the survey, it is assumed that you understood the above details of the experiment, and freely consent to participate.

I AGREE. begin the survey

I DECLINE. Exit



## Monarch Butterfly Management

*Several programs and initiatives have been set forth in order to protect the Monarch. Here, a selection of them will be explained and explored, hoping to get feedback from you regarding the specific details and usefulness of each one of them.*

Next





➡ Monarch butterfly populations have decreased in the past few years. How familiar are you with this situation?

*[Please select one]*

- ☐ Not at all familiar
- ☐ Moderately familiar
- ☐ Extremely familiar

➡ How do you feel about the decline of the monarch butterfly over the past few years?

*[Please select one]*

- ☐ Not at all concerned
- ☐ Slightly concerned
- ☐ Moderately concerned
- ☐ Very concerned
- ☐ Extremely concerned

➡ Milkweed is a crucial food source for the monarch butterfly and other pollinators. How familiar are you with this fact?

*[Please select one]*

- ☐ Not at all familiar
- ☐ Moderately familiar
- ☐ Extremely familiar



➡ Would you agree to planting milkweed in your garden to provide food for monarchs and other pollinators?

*[Please select one]*

- ☐ Agree
- ☐ Undecided
- ☐ Disagree
- ☐ Strongly disagree
- ☐ I already have milkweed in my garden
- ☐ I would do it, but don't have the space

Next



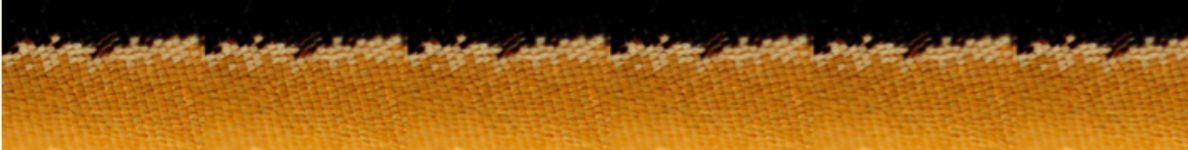


What kind of interaction have you had with the monarch butterfly?

*[select all that apply]*

- ☐ Visited the monarch butterfly sanctuaries in Mexico
- ☐ Participated in educational activities with monarch butterflies
- ☐ Read about the monarch butterfly in the news
- ☐ Watched movies or documentaries about the monarch butterfly
- ☐ Participated in conservation activities for the monarch butterfly
- ☐ Visited monarch butterfly gardens
- ☐ Have a monarch-friendly garden in my backyard
- ☐ No direct interaction
- ☐ Other

Next



- ➡ Do you participate in any conservation or citizen science activities related to the monarch butterfly?
- ☐ Yes
  - ☐ No



**Please watch the next video.**

**The rest of the survey will be based on  
things shown there**

*(You may replay it as many times as you like)*

I have high speed connection

**If your internet connection is slow, or if you are on a mobile  
device, you can watch the "light version" here**

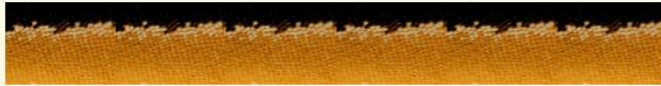
I have mobile device or slow connection



Please view entire video before continuing.



# (If Slow Connection)



The Monarch Butterfly

Almost the entire North American population of the Monarch overwinters in very specific Mexican forests



Most of the North American population gathers in a few patches of forest, a good way of measuring the population size on any specific year is by measuring the area of their colonies (in hectares)



TSScientists recommend a minimum of 6 hectares to ensure the colonies' survival

The smaller the area, the higher the probability of extinction



When Spring Arrives...

Monarchs will start mating and then migrate north, spreading all over eastern North America throughout the year

The young of the Monarch can ONLY feed on one particular type of plant, the Milkweed



During the late summer, the fifth and final generation is born. When they reach adulthood, they will migrate back to Mexico, where the migration began the year before

The size of the colonies has decreased over the last decade affecting the Monarch's chance of survival...  
Conservation programs for the monarch may have different features. We will explain some of those features and then ask your opinion about them

Country(ies) where the program is applied

The monarch flies across Canada, The US, and Mexico. Thus, a program may be focused on any of them (or all

Country(ies) where the program is applied

The monarch flies across Canada, The US, and Mexico. Thus, a program may be focused on any of them (or all of them), addressing the particular elements of that country



Institution leading the program

There are Non-Governmental Organizations (NGO's), educational institutions, and governments that may lead any given program

The flexibility, enforceability, fund-raising method, effectiveness, etc. may depend on who is leading the program



Fund-raising mode

How funds are gathered may depend on the institution leading the program (Taxes or donations)

Fund-raising may also affect the outcome of the program



Funds contributed

Each program has different funds requirements. Some of them are more expensive than others

This feature refers to the amount you would be willing to contribute for a specific program

Percentage dedicated to research and citizen science activities

Every program may dedicate a certain amount of resources for funding research and citizen science activities related to the monarch conservation

Citizen science is the collection of data by members of the general public, typically as part of a project with professional scientists



The present survey seeks to explore your opinion about programs intergating all of these features...



The next section will ask you to make a choice about different monarch conservation programs

You will be asked to select the program that you support

The following pages will provide some more instructions

Next





### Instructions

The exercise will consist of four screens like the one shown here:

The current size of the Monarch colonies is 0.5 hectares, which is 0.30 hectares less than 5 years ago

*"Keep in mind that scientists recommend a minimum size of 6 hectares, below which the likelihood of extinction increases"*

[click on images or descriptions below for more details](#)

|                                                                                                                                                    | Management Program A    | Management Program B  | Option C              |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------|-----------------------|
|  Country(ies) in which the funds would be <u>applied</u>          | Canada                  | US                    | Do Nothing            |
|  Probability of reaching conservation goal in 10 years            | 90%                     | 50%                   |                       |
|  Institution coordinating the program                             | Educational Institution | International NGO     |                       |
|  Funds contributed <u>by you</u>                                  | \$ 50 USD/year          | \$ 50 USD/year        |                       |
|  Fund-raising mode                                                | Donation                | Donation              |                       |
|  Percentage dedicated for research and citizen science activities | 0%                      | 25%                   |                       |
| Choose your preferred option                                    | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> |

Next





## Instructions

A different hypothetical "Current Situation" will be described to you every time

Take into account this information when going through the exercise



The current size of the Monarch colonies is **0.5 hectares**, which is **0.30 hectares less than 5 years ago**

*"Keep in mind that scientists recommend a minimum size of 6 hectares, below which the likelihood of extinction increases"*

*click on images or descriptions below for more details*



Country(ies) in which the funds would be applied



Probability of reaching conservation goal in 10 years



Institution coordinating the program



Funds contributed by you



Fund-raising mode



Percentage dedicated for research and citizen science activities

Management Program A

Canada

90%

Educational Institution

\$ 50 USD/year

Donation

0%

Management Program B

US

50%

International NGO

\$ 50 USD/year

Donation

25%

Option C

Do Nothing

Choose your preferred option



Next



## Instructions

Each row will have information related to the five features described in the video

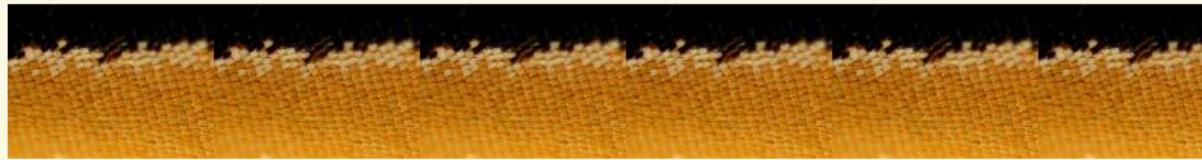
The current size of the Monarch colonies is 0.5 hectares, which is 0.30 hectares less than 5 years ago

*"Keep in mind that scientists recommend a minimum size of 6 hectares, below which the likelihood of extinction increases"*

[click on images or descriptions below for more details](#)

|                                                                                                                                                    | Management Program A    | Management Program B  | Option C              |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------|-----------------------|
|  Country(ies) in which the funds would be <u>applied</u>          | Canada                  | US                    | Do Nothing            |
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|  Institution coordinating the program                             | Educational Institution | International NGO     |                       |
|  Funds contributed <u>by you</u>                                  | \$ 50 USD/year          | \$ 50 USD/year        |                       |
|  Fund-raising mode                                                | Donation                | Donation              |                       |
|  Percentage dedicated for research and citizen science activities | 0%                      | 25%                   |                       |
| Choose your preferred option                                      | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> |

Next



### Instructions

Each column will describe a management program for the monarch conservation based on the six features

Taking into account the features of the programs described, select the program that you would choose

If you would prefer to stay with the current situation and trend of the monarch, you may choose the third column (Option C)

The current size of the Monarch colonies is 0.5 hectares, which is 0.30 hectares less than 5 years ago

*"Keep in mind that scientists recommend a minimum size of 6 hectares, below which the likelihood of extinction increases"*

*click on images or descriptions below for more details*

|                                                                                     |                                                                  |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------|
|    | Country(ies) in which the funds would be <u>applied</u>          |
|    | Probability of reaching conservation goal in 10 years            |
|    | Institution coordinating the program                             |
|  | Funds contributed <u>by you</u>                                  |
|  | Fund-raising mode                                                |
|  | Percentage dedicated for research and citizen science activities |

| Management Program A                                                                  | Management Program B                                                                  | Option C                                                                              |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Canada                                                                                | US                                                                                    | Do Nothing                                                                            |
| 90%                                                                                   | 50%                                                                                   |                                                                                       |
| Educational Institution                                                               | International NGO                                                                     |                                                                                       |
| \$ 50 USD/year                                                                        | \$ 50 USD/year                                                                        |                                                                                       |
| Donation                                                                              | Donation                                                                              |                                                                                       |
| 0%                                                                                    | 25%                                                                                   |                                                                                       |
|  |  |  |

Choose your preferred option



Next





You will have four **different** pairs of management programs to compare, each one of them is based on a **different** hypothetical "Current Situation"

Please take your time to evaluate each one of them.

Next



(Respondent presented with 4 choice sets like this one)

Based on the situation below, select the option that you would choose:

The current size of the Monarch colonies is 0.5 hectares, which is 0.30 hectares less than 5 years ago

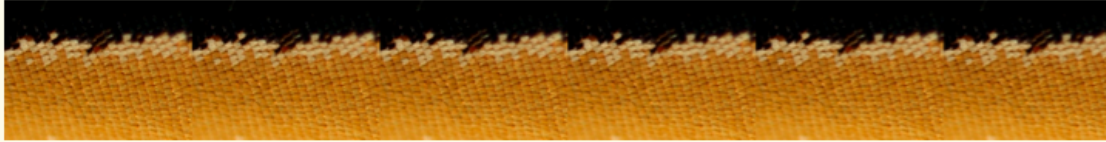
*"Keep in mind that scientists recommend a minimum size of 6 hectares, below which the likelihood of extinction increases"*

[click on images or descriptions below for more details](#)

|                                                                                                                                                     | Management Program<br>A | Management Program<br>B | Option<br>C           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-----------------------|
|  Country(ies) in which the funds would be <u>applied</u>           | Canada                  | US                      | Do Nothing            |
|  Probability of reaching conservation goal in 10 years             | 90%                     | 50%                     |                       |
|  Institution coordinating the program                              | Educational Institution | International NGO       |                       |
|  Funds contributed <u>by you</u>                                   | \$ 50 USD/year          | \$ 50 USD/year          |                       |
|  Fund-raising mode                                                 | Donation                | Donation                |                       |
|  Percentage dedicated for research and citizen science activities | 0%                      | 25%                     |                       |
| Choose your preferred option<br>                                 | <input type="radio"/>   | <input type="radio"/>   | <input type="radio"/> |

Next





## Distribution of your contributions

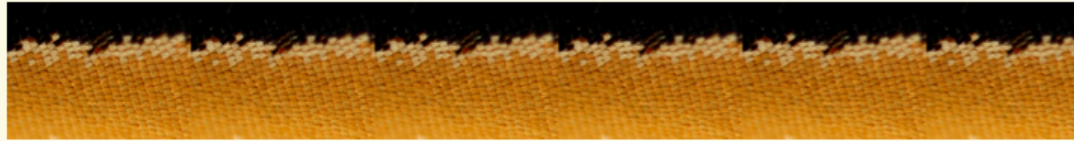
Please adjust the sliding bars to indicate how you would like your contributions to be distributed amongst different conservation activities used to manage monarch populations

*[The "Next" button will appear once the total adds up to 100%]*

|                                                                                        | Less<br>(0%)          | More<br>(100%)        |                                  |
|----------------------------------------------------------------------------------------|-----------------------|-----------------------|----------------------------------|
| Planting milkweed in<br>(private) backyards                                            | <input type="range"/> | <input type="range"/> | <input type="text" value="0"/> % |
| Planting milkweed along<br>roads                                                       | <input type="range"/> | <input type="range"/> | <input type="text" value="0"/> % |
| Providing a source of<br>income for inhabitants of<br>the Monarch Reserve in<br>Mexico | <input type="range"/> | <input type="range"/> | <input type="text" value="0"/> % |
| Reforestation in Mexico                                                                | <input type="range"/> | <input type="range"/> | <input type="text" value="0"/> % |
| Compensating farmers for<br>growing herbicide-free<br>crops                            | <input type="range"/> | <input type="range"/> | <input type="text" value="0"/> % |

Please adjust sliders until total equals 100%:  
Or, you can skip this question by   %





To what extent do you think environmental Non-Governmental Organizations (NGO's) should take the initiative to conserve the monarch butterfly?

- ☐ To a great extent
- ☐ Somewhat
- ☐ Very Little
- ☐ Not at all



To what extent do you think educational institutions should take the initiative to conserve the monarch butterfly?

- ☐ To a great extent
- ☐ Somewhat
- ☐ Very Little
- ☐ Not at all



To what extent do you think The Government should take the initiative to conserve the monarch butterfly?

- ☐ To a great extent
- ☐ Somewhat
- ☐ Very Little
- ☐ Not at all



This question is intended to filter respondents that are not reading thoroughly every question. Please select the option *Very Little* as your answer. Another question like this one will be placed further in the survey.

- ☐ To a great extent
- ☐ Somewhat
- ☐ Very Little
- ☐ Not at all

Next





Do you participate in any nature conservation/citizen science activities?

*[Citizen science is defined as the collection and analysis of data relating to the natural world by members of the general public, typically as part of a collaborative project with professional scientists]*

- ☐ Yes
- ☐ No



If you had the option of participating in one of the following activities in order to protect the monarch butterfly, which one would you choose?

*[If you are already participating, please select the activity that you are currently doing. If you are doing several of them, select the one you enjoy the most]*

- ☐ Tag monarchs
- ☐ Plant "monarch-friendly" plants in your backyard
- ☐ Report sightings
- ☐ Egg and larvae monitoring
- ☐ Milkweed seed production
- ☐ Political lobbying
- ☐ Give seminars
- ☐ Take seminars
- ☐ Report/detect monarch's parasites
- ☐ Other. Please specify:
- ☐ None

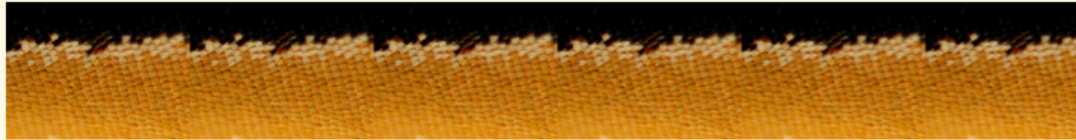


Please indicate the amount of money you would be willing to invest each year in the activity that you chose

*[If you chose 'none' in the previous question, please skip this question]*

Please Select Amount

*[The Next button will be available once Question 1 is answered]*



➞ I identify my gender as...

*[Please select one]*

- ☐ Male
- ☐ Female
- ☐ Other

➞ Please indicate your age.

*[Please select one]*

- ☐ Under 21
- ☐ 21 - 24
- ☐ 25 - 34
- ☐ 35 - 44
- ☐ 45 - 54
- ☐ 55 - 64
- ☐ 65 +

➞ Please indicate your ethnicity.

*[Please select one]*

- ☐ White
- ☐ Hispanic
- ☐ African American
- ☐ Native American
- ☐ Asian
- ☐ Other

➞ What is the State/Province where you currently live?

Please Select one ▼

➞ Please indicate the highest level of education you have completed

*[Please select one]*

- ☐ Elementary or middle school graduate (grades 1-8)
- ☐ High school graduate (grades 9-12)
- ☐ Some post-secondary education
- ☐ College or trade certification
- ☐ Bachelor's degree
- ☐ Graduate, post-doctoral or professional degree

Next



➡ Are you member of, or donor to, an environmental organization (e.g. David Suzuki Foundation, Greenpeace, WWF, Local environmental organizations, etc.)?

*[Please select one]*

- ☐ Yes
- ☐ No

➡ In the last two years, have you attended an environmentally related meeting, lecture or protest?

*[Please select one]*

- ☐ Yes
- ☐ No

➡ Which of the following categories best represents your annual household income before tax?

*[Please select one]*

- ☐ Less than \$24,999
- ☐ \$25,000 to \$34,999
- ☐ \$35,000 to \$49,999
- ☐ \$50,000 to \$74,999
- ☐ \$75,000 to \$99,999
- ☐ \$100,000 to \$149,999
- ☐ \$150,000 to \$199,999
- ☐ \$200,000 or more

➡ How many children live with you in your household?

*[Please select one]*

- ☐ None
- ☐ 1 kid
- ☐ 2 children
- ☐ 3 children
- ☐ 4 children
- ☐ 5 children
- ☐ More than 5 children

➡ What is your marital status?

*[Please select one]*

- ☐ Single, never married
- ☐ Married or domestic partnership
- ☐ Widowed
- ☐ Separated

Next



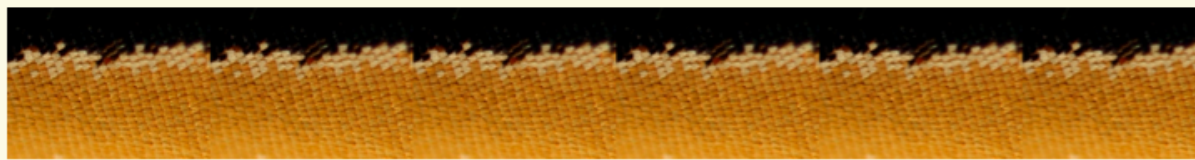


For each of the following statements, please check the option that best corresponds to your opinion:

|                                                                                                                                                                    | <b>Strongly agree</b> | <b>Somewhat agree</b> | <b>Neither agree nor disagree</b> | <b>Somewhat Disagree</b> | <b>Strongly disagree</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------------------|--------------------------|--------------------------|
|  We are approaching the limit of the number of people the earth can support.      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  The earth has plenty of natural resources if we just learn how to develop them.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  Plants and animals have as much right as humans to exist.                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  Despite our special abilities, humans are still subject to the laws of nature.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  The so-called "ecological crisis" facing humankind has been greatly exaggerated. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |

Next





For each of the following statements, please check the option that best corresponds to your opinion:

|                                                                                                                                                                                 | <b>Strongly agree</b> | <b>Somewhat agree</b> | <b>Neither agree nor disagree</b> | <b>Somewhat Disagree</b> | <b>Strongly disagree</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------------------|--------------------------|--------------------------|
|  Humans have the right to modify the natural environment to suit their needs.                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  When humans interfere with nature it often produces disastrous consequences.                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  Human ingenuity will insure that we do not make the Earth unlivable.                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  Humans are seriously abusing the environment.                                                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  The balance of nature is strong enough to cope with the impacts of modern industrial nations. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |

Next



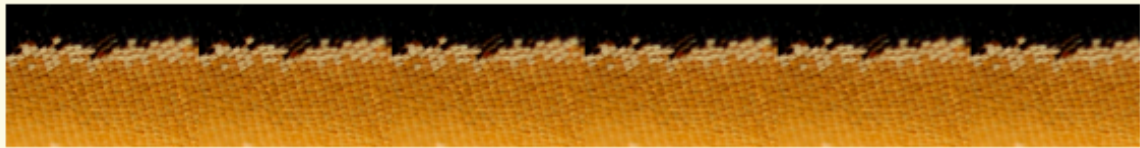


For each of the following statements, please check the option that best corresponds to your opinion:

|                                                                                                                                                                                       | <b>Strongly agree</b> | <b>Somewhat agree</b> | <b>Neither agree nor disagree</b> | <b>Somewhat Disagree</b> | <b>Strongly disagree</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------------------|--------------------------|--------------------------|
|  Humans were meant to rule over the rest of nature.                                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  The balance of nature is very delicate and easily upset.                                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  If things continue on their present course, we will soon experience a major ecological catastrophe. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  The Earth is like a spaceship with very limited room and resources.                                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |
|  Humans will eventually learn enough about how nature works to be able to control it.                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/>    | <input type="radio"/>    |

Next





If you wish to receive the results of this project, you should contact Rodrigo Solis (rsolis@sfu.ca)

Thank you for your participation in this study, the information you just provided is very important for the means of this project

To provide any additional feedback or comments please use the following space:

Submit comment

If you want further information about Monarch Butterfly Conservation you may follow the next links:

