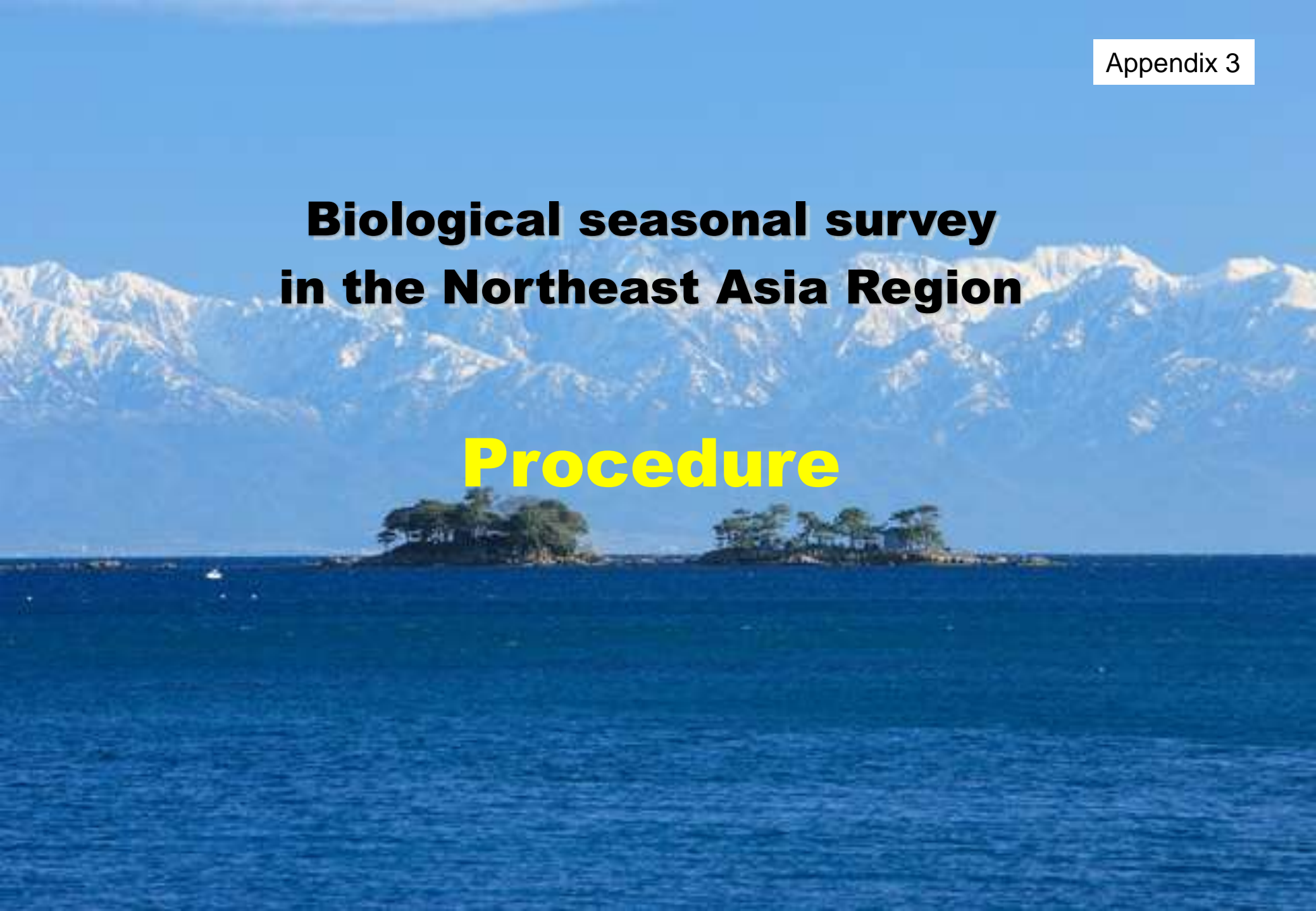


# **Biological seasonal survey in the Northeast Asia Region**

## **Procedure**



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- 2. Target organisms and event**
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# 1. Significance and purpose of the survey

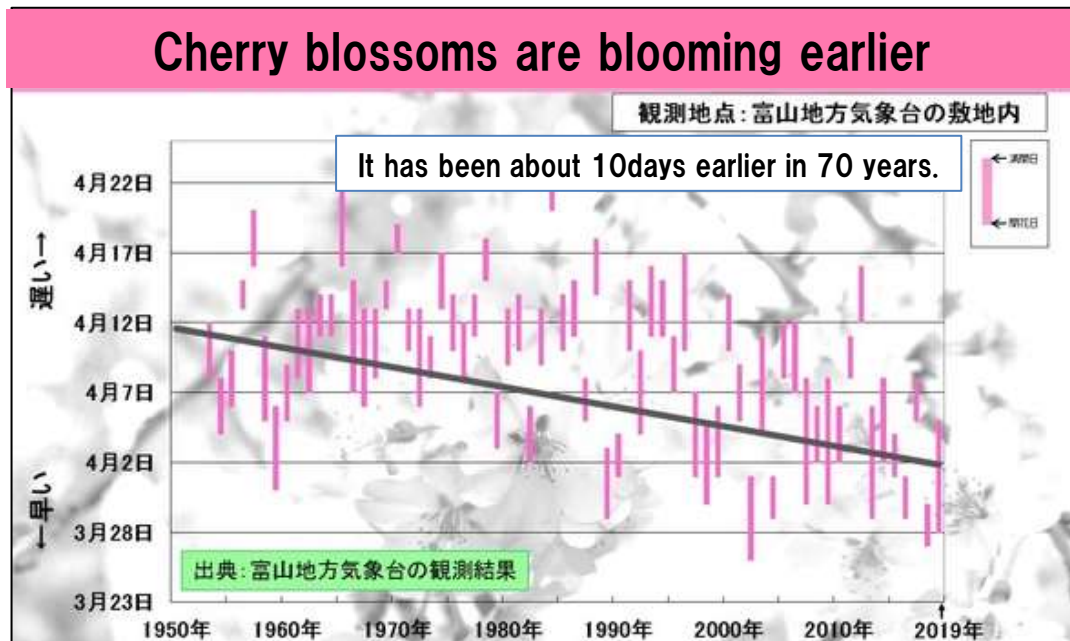
The "Biological Seasonal Survey in Northeast Asia region" focuses on the "biological season" \* where you can feel the effects of climate change, such as the flowering of cherry blossoms and the first look of dragonflies.

The purpose of this project is to get people in this region interested in climate change countermeasures.

\* It is a device to grasp the progress of the season by observing changes in familiar organisms.

**By accumulating data, we can understand the situation of climate change.**

## Ex.) Long-term transition of cherry blossom flowering date in Toyama prefecture, Japan



## 2. Target organisms and event

The organisms to be observed are those that are widely distributed around the living area of the region and that are suitable for knowing the delay and advance of the seasons in the area. (For reference, the table below lists the event that are widely distributed in Japan. )

The **surveyor (or each municipality) selects the organisms that are familiar to each region and can be observed for a long period of time.**

Type	Organisms	Events					
		flowering	full bloom	Autumn leaves	fallen leaves	first looking	first buzzing
Plant	<b>Spring</b> Cherry blossoms	○	○				
	<b>Summer</b> Hydrangea	○					
	<b>Autumn</b> Maple			○	○		
Animal	<b>Spring</b> Swallow					○	
	<b>Spring~Summer</b> Butterfly					○	
	<b>Summer</b> Cicada						○
	<b>Autumn</b> Dragonfly					○	
	<b>Spring</b> <i>Plecoglossus altivelis</i> * run up to river					○	

# 3. Precautions for survey

## (1) Basics of biological seasonal survey

- Biological seasonal survey is conducted visually or hearing, and all surveys are conducted on a daily basis.
- Those with special human intervention (cultivated plants, domestic animals, etc.) are not included.

## (2) Place and sample tree of **plants** observation

- Select one tree that will be continuously observed for a long period of time(= sample tree).
- Select a secondary sample tree in case of illness or unforeseen circumstances.

## (3) Place of **animals** observation

- Select a location (area) that can be continuously observed a long period of time, and observe at same place every year.

## (4) Precautions for survey

- Confirm in advance the “starting date” and “earliest day” of the event to be observed.
- Take all possible measures against heat stroke and COVID-19 infection.

# 4. Specific survey method for each species

## (1) Cherry blossoms

Spring

- ① Select one cherry tree that will be continuously observed for a long period of time(= sample tree).
- ② Observe the flowering date and the full bloom date.
  - The day when 5 or 6 flowers bloom on the sample tree is defined as the flowering date.
  - The day when about 80% or more of the flowers are in bloom on the sample tree is defined as the full bloom date.



flowering date



full bloom date

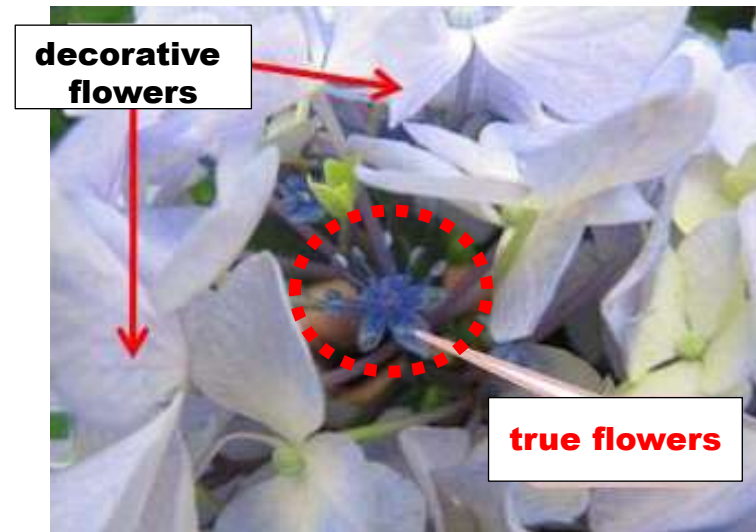
## (2) Hydrangea

Summer

- ① Select one Hydrangea tree that will be continuously observed for a long period of time(= sample tree).
- ② Observe the flowering date.  
The day when 2 or 3 “true flowers” in the decorative flowers of the sample tree bloom is defined as the flowering date.



Hydrangea(whole)



True flowers

### (3) Maple

### Autumn

- ① Select one Maple tree that will be continuously observed for a long period of time(= sample tree).
- ② Observe the Autumn leaves and the fallen leaves.
  - Autumn leaves date is the first day when most of the sample tree turn red, and the green color is hardly recognized.
  - Fallen leaves date is the first day when about 80% leaves of sample tree is fallen.



before autumn leaves



autumn leaves date



Fallen leaves date



## (4) Swallow

## Autumn

- ① Select a location (area) that can be continuously observed a long period of time.
- ② Observe the first looking date. The first looking date is the day when you see the swallows that came to your region.



Swallow (whole)



swallow nesting

photo source : UNESCO school web site  
(<https://www.unesco-school.mext.go.jp/network/external-programs/tsubame/>)

## (5) Butterfly

Spring ~ Summer

- ① Select a location (area) that can be continuously observed a long period of time.
- ② Observe the first looking date. The first looking date is the day when winter is over and the butterfly is seen for the first time.



Ex.) *Pieris rapae*



*Papilio machaon*

## (6) Cicada

## Summer

- ① Select a location (area) that can be continuously observed a long period of time.
- ② Observe the first buzzing date. The first buzzing date is the day when you first hear the cicada buzzing.



Ex.)

*Graptopsaltria nigrofuscata*



*Meimuna opalifera*



*Hyalessa maculaticollis*

## (7) Dragonfly

## Autumn

- ① Select a location (area) that can be continuously observed a long period of time.
- ② Observe the first looking date. The first looking date is the day when you first see the dragonfly.



Ex.)  
*Sympetrum frequens*



*Orthetrum albistylum*

photo source : <http://www.sanmondatsakura.ne.jp/kontyu/kontyu.htm>

(8) *Plecoglossus altivelis* \* run up to river

Autumn

- ① Select a location (area) that can be continuously observed a long period of time.
- ② シオカラトンボは、**初見日**を観測します。シオカラトンボの**初見日**とは、**成熟して、体に白粉を生じた個体（雄）を初めて見た日**です。

《ワンポイント》

シオカラトンボは、雌雄異形。4月ごろから羽化するが、雌雄の体はほぼ同色である。雄は成熟するにしたがい、体色は黒くなり、胸や腹部が塩に覆われたように白くなる。



シオカラトンボ (未成熟)  
(*Orthetrum albistyum*)



シオカラトンボ (成熟)

写真の出展：「荒川昆虫記」

**(8) *Plecoglossus altivelis* \* run up to river**

**Spring**

- ① Select a location (area) that can be continuously observed a long period of time.
- ② Observe the first looking date. The first looking date is the day when winter is over and you first see the *Plecoglossus altivelis* at the river from the sea area.



*Plecoglossus altivelis*  
(Adult fish)



(Juvenile fish)



running up to river



**[Caution]**

**Pay particular attention to safety in the river, and if you are a child, be sure to accompany an adult.**

# 5. Report and view survey results

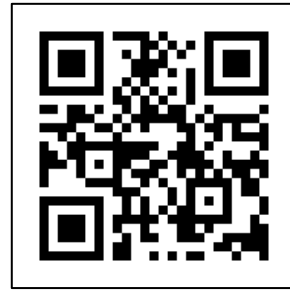
## (1) Install of “iNaturalist”

- The results of the seasonal biological observations will be reported by the web application “iNaturalist”. To use this app, a device such as smartphone, tablet or PC is required.
- First of all, install the web application "iNaturalist" on your smartphone, tablet, etc.

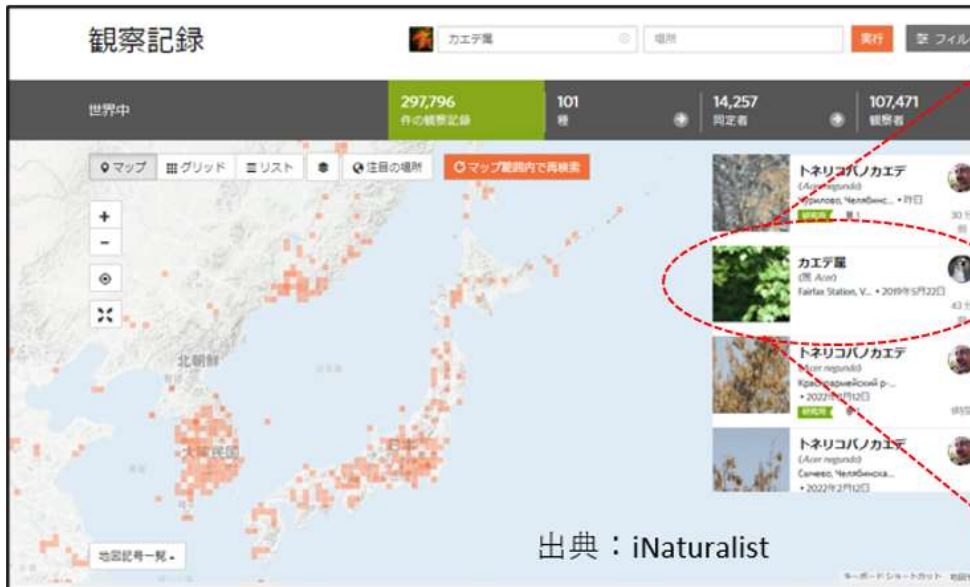
Class	iOS version (iPhone, iPad)	Android version
① <b>For getting the app</b>	 to App Store	 to Google Play
② <b>How to install/use (manual)</b>	 to NPEC website	 to NPEC website

## (2) View survey results

- The collected survey results can be viewed as an observation map from the right Code or URL.
- Note that, you can view not only the results of this project, but also the organisms that are observed at all of the world in “iNaturalist”.



「iNaturalist」website  
(<https://www.inaturalist.org/>)



The screenshot shows the iNaturalist observation map for the genus *Acer*. The map displays numerous orange observation points across Japan. The interface includes a search bar at the top with "カエデ属" (Acer) entered, and a sidebar on the right showing a list of observations. The top of the page displays statistics: 297,796 observations, 101 species, 14,257 identifiers, and 107,471 observers. The source is cited as "出典: iNaturalist".



The screenshot shows a detailed view of an iNaturalist observation record for the genus *Acer*. The record includes a photograph of a building, a map showing the location in Japan, and a list of identifiers. The user's name is "naturalist64817". The record is dated "11月 12, 2021 - 09:50 JST". The observation is identified as "カエデ属 (属 Acer)". The user's profile information is visible on the right, including their name and a link to their profile.



## 《Note》

To extract and view the survey results of this project, select a project by the following operation.

- ① Enter “**Near env**” in the search window (bug glasses mark on the upper left.)
- ② select “**Biological seasonal survey in the Northeast Asia (NEAR Environmental Project)**”.



### (3) Summary of survey results (in future)

- The survey results are stored on the “iNaturalist” app.
- In the future, when surveys are carried out in each region based on this project over a long period of time and a considerable amount of date is accumulated, the situation of climate change can be easily grasped visually, such as by compiling the secular change of the biological season in a graph.
- We will upload timely the information of this project to NPEC website

**<https://www.npec.or.jp/bioseason/>**



To NPEC website

