



## **Volunteer Packet - 2024**

Questions regarding this packet should be directed to:



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# HERON

(Heron Observation Network)  
Monitoring Protocol and Instructions



## **Introduction**

The great blue heron (*Ardea herodias*) is often touted as one of the most widespread and adaptable wading birds in North America, and it certainly is no stranger to Maine. They can be seen foraging in tidal marshes, along riverbanks, and even in open grasslands. Though they tend to forage alone; their nesting habits are the complete opposite. Colonies can contain anywhere from a few pairs to several hundred, and often multiple nests occupy the same tree. Location of a colony is somewhat predator driven, but is also determined by the proximity of quality foraging habitat. In addition, human disturbance can be a real threat to a colony's continued occupancy.

In 2007, MDIFW noted that great blue colonies in Maine may be declining. Colonies that once held scores of active nests, had dwindled to a few pairs or had been abandoned altogether. In addition, the North American Breeding Bird Survey data for Maine indicates a significant declining trend (-5.5,  $P < 0.02$ ,  $N = 35$ ) in the number of birds detected between 1980 and 2007. Due to the apparent decline and observations of predation by an increasing eagle population, MDIFW added the great blue heron to the state's list of Species of Special Concern in 2007. Unlike Endangered or Threatened status, Special Concern is an administrative category established by policy, rather than by regulation, and is used for planning and informational purposes only. Basically, it's a way of saying, "let's keep an eye on this species and make sure it's not really in peril."

In 2009, MDIFW set out to better understand the great blue heron's status by conducting a nearly statewide census of nesting great blue herons. In addition to surveying colonies from the air and the ground in 2009, MDIFW chose to engage volunteers in the process of monitoring active colonies over time. Thus, the Heron Observation Network (HERON) was developed and is now entering its 16<sup>th</sup> year.

HERON is a volunteer-based adopt-a-colony program in which volunteers observe one or more active wading bird colonies one to five times during the breeding season and record information regarding the number of active nests. Great blue herons build large stick platform nests from 6-90 ft up in dead or live trees. Besides the number of active nests for each species, volunteers can record information regarding the nesting stage of the nests and any human or ecological disturbances to the colony. The data collected by HERON volunteers will be used to assess the breeding populations of colonial wading birds over time, identify and prioritize ecologically important areas, inform environmental review and landscape planning activities, and provide insights into nesting habitat selection. In addition, the hours and miles contributed by HERON volunteers will provide an important source of match for leveraging federal funds for future monitoring and research programs.

## **Logistics**

Those interested in becoming a HERON volunteer should contact Danielle D'Auria, who will then assign one or more colonies for adoption, and provide the monitoring protocol, datasheets, and instructions to enter survey data online.

## ***Volunteer Registration***

We have an easy online form for individuals to register as an official volunteer with the MDIFW. It can be accessed here: <https://mdifw-surveyforms.plumsail.io/51476fa6-fe9b-4e36-a641-aa5192450fbf>. The form requires the following information:

- Your name, email, and phone number,
- Your choice to enroll in or opt out of MDIFW's Accident Plan, and
- Your emergency contact's name and phone number(s).

This volunteer form is used by multiple MDIFW projects; thus you will select HERON on the Project Page.

If you completed this form for the HERON project last year you do not need to complete it again. If any of the above information changed, please email [Donald.Katnik@maine.gov](mailto:Donald.Katnik@maine.gov) with those changes. If you have signed up as a volunteer for other MDIFW projects using this form, you still need to do so for the HERON project.

Use of this form will ensure your information goes directly into MDIFW's Volunteer Database. Below are step by step instructions for registering as a HERON volunteer:

1. Go to the URL: <https://mdifw-surveyforms.plumsail.io/51476fa6-fe9b-4e36-a641-aa5192450fbf>
2. On the Welcome / Start page, choose Register as a Volunteer. Click Next to Continue.

**MDIFW Volunteer Registration & Timesheet Submission**  
Version 2023.05.08

WELCOME / START

What do you want to do?

Register as a Volunteer  
 Submit Timesheet Record(s)  
 Both

*IF you have not already registered as a volunteer using this form, please "Register as a Volunteer" ONCE.*

*You will NOT need to register again every year or every time you submit a timesheet.*

*If you need to update your registration information, email donald.katnik@maine.gov.*

NEXT >>

Form Navigation Help

3. The Registration Process page will explain how to use the form. For HERON, you only need to use this form to register as a volunteer. **You should not use this form to submit timesheet records.** Click OK to continue.

**MDIFW Volunteer Registration & Timesheet Submission**  
Version 2023.05.08

REGISTRATION PROCESS

You will be guided through several pages to collect information about you.

After that, you will electronically **Sign the Form** (by checking a box), then **Submit your Registration**.

If you want to submit a Timesheet Record after registering as a Volunteer, check the **Submit Timesheet Record(s)** box on the **Welcome / Start** page.

If you need to return to a previous Form Page, click the **Form Navigation** link at the bottom.

OK

Form Navigation Help

4. On the Contact Information Page, enter your email address and phone number. The email address you use should be the same one you use to correspond with Danielle D'Auria about the HERON program, and will also be the one used to submit your colony survey data online. Click Next to continue.



## MDIFW Volunteer Registration & Timesheet Submission

Version 2023.05.08

### CONTACT INFORMATION

**EMAIL:**

Enter your email address (required)

**PHONE NUMBER:**

Enter your area code and phone number (required)

All formats accepted - but it must be 10 digits (area code plus number)

NEXT >>

Form Navigation

Help

- On the Select Project page, use the drop-down menu to select HERON. Click Next to continue.



## MDIFW Volunteer Registration & Timesheet Submission

Version 2023.05.08

### SELECT PROJECT

**SELECT A PROJECT:**

HERON


Read Project Descriptions

NEXT >>

Form Navigation

Help

- On the Registration - Name page, enter your first and last name and an organization you are affiliated with, if applicable. The organization may be helpful if you are conducting your HERON surveys while working for a land trust or other conservation organization; however it is not required. Click Next to continue.



### MDIFW Volunteer Registration & Timesheet Submission

Version 2023.05.08

**REGISTRATION - NAME**

**FIRST NAME:**


**LAST NAME:**

**ORGANIZATION:**

**NEXT >>**

Form Navigation Help

- On the Registration - Emergency Contact page, enter the name and phone number(s) of your emergency contact. Click Next to continue.



### MDIFW Volunteer Registration & Timesheet Submission

Version 2023.05.08

**REGISTRATION - EMERGENCY CONTACT**

**CONTACT NAME:**

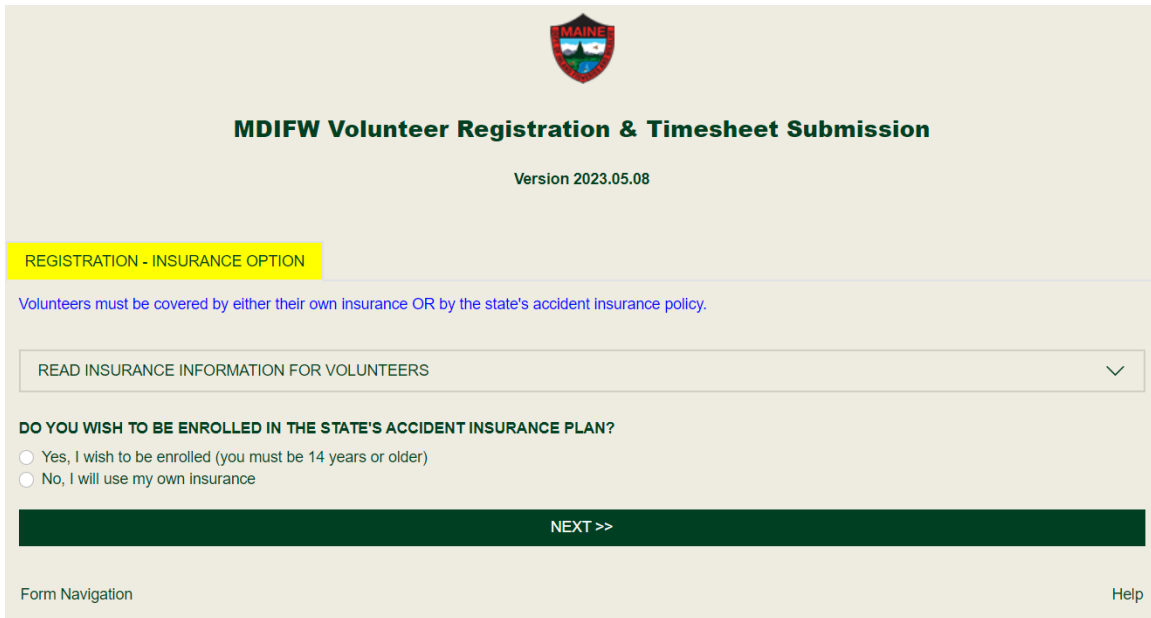
**CONTACT PHONE NUMBER:**  
  
All formats accepted - but it must be 10 digits (area code plus number)

**ALTERNATE PHONE NUMBER:**  
  
All formats accepted - but it must be 10 digits (area code plus number)

**NEXT >>**

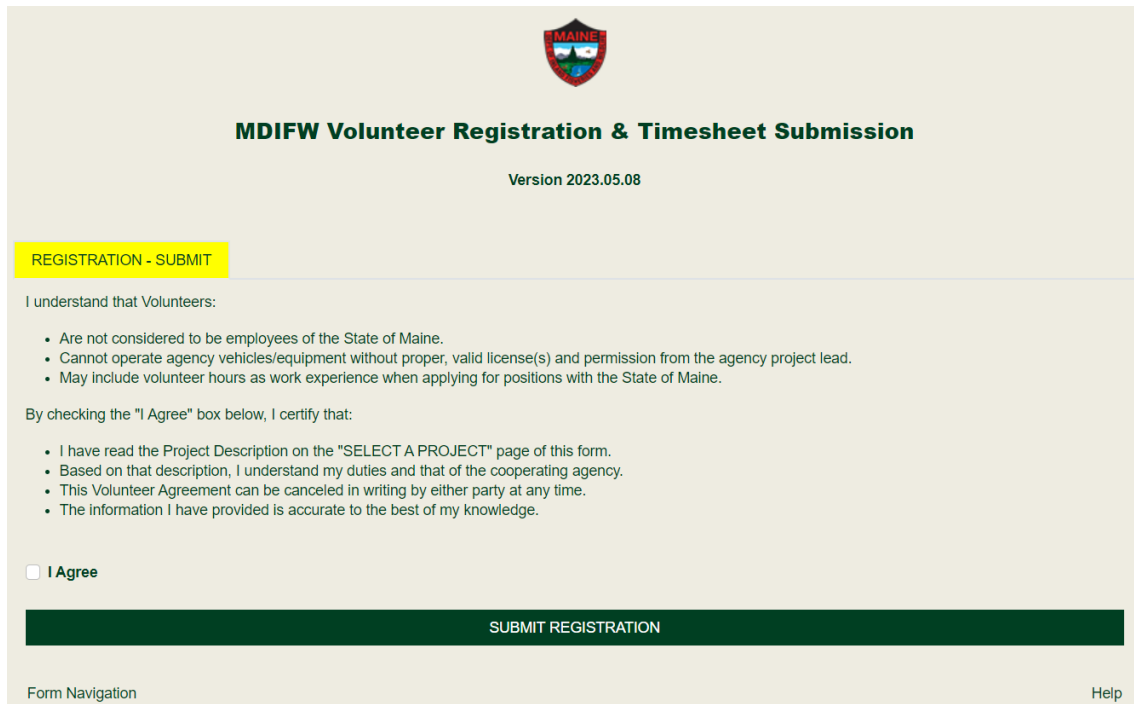
Form Navigation Help

8. On the Registration - Insurance Option page, you can opt in or out of MDIFW's Accident Plan. MDIFW's Accident Insurance Plan is available to the volunteer at no cost. To learn more, click on Read Insurance Information for Volunteers, which will then give you three additional buttons to click on to learn more: Accident Insurance, Liability Insurance, and Reporting Accidents. After you select Yes or No, click Next to continue.



The screenshot shows the 'MDIFW Volunteer Registration & Timesheet Submission' page, version 2023.05.08. The page title is 'MDIFW Volunteer Registration & Timesheet Submission' with the version number 'Version 2023.05.08' below it. A yellow highlight is under the 'REGISTRATION - INSURANCE OPTION' section. Below this, a blue link reads 'Volunteers must be covered by either their own insurance OR by the state's accident insurance policy.' A dropdown menu is set to 'READ INSURANCE INFORMATION FOR VOLUNTEERS'. The question 'DO YOU WISH TO BE ENROLLED IN THE STATE'S ACCIDENT INSURANCE PLAN?' is followed by two radio button options: 'Yes, I wish to be enrolled (you must be 14 years or older)' and 'No, I will use my own insurance'. A green 'NEXT >>' button is at the bottom. 'Form Navigation' and 'Help' links are in the footer.

9. You will lastly come to the Registration - Submit page. Please read and select the box next to I Agree, and then click on Submit Registration.



The screenshot shows the 'MDIFW Volunteer Registration & Timesheet Submission' page, version 2023.05.08. The page title is 'MDIFW Volunteer Registration & Timesheet Submission' with the version number 'Version 2023.05.08' below it. A yellow highlight is under the 'REGISTRATION - SUBMIT' section. Below this, the text 'I understand that Volunteers:' is followed by a bulleted list: 'Are not considered to be employees of the State of Maine.', 'Cannot operate agency vehicles/equipment without proper, valid license(s) and permission from the agency project lead.', and 'May include volunteer hours as work experience when applying for positions with the State of Maine.' Below this, the text 'By checking the "I Agree" box below, I certify that:' is followed by another bulleted list: 'I have read the Project Description on the "SELECT A PROJECT" page of this form.', 'Based on that description, I understand my duties and that of the cooperating agency.', 'This Volunteer Agreement can be canceled in writing by either party at any time.', and 'The information I have provided is accurate to the best of my knowledge.' A checkbox labeled 'I Agree' is present. A green 'SUBMIT REGISTRATION' button is at the bottom. 'Form Navigation' and 'Help' links are in the footer.

10. You will see a confirmation message at the top of the screen that says, "Registration/Timesheet submitted successfully! Thank you for being an MDIFW volunteer." You can now close your browser.

Registration/Timesheet submitted successfully! Thank you for being an MDIFW volunteer.



**MDIFW Volunteer Registration & Timesheet Submission**

Version 2023.05.08

WELCOME / START

What do you want to do?

Register as a Volunteer

Submit Timesheet Record(s)

Both

*IF you have not already registered as a volunteer using this form, please "Register as a Volunteer" ONCE .*

*You will NOT need to register again every year or every time you submit a timesheet.*

*If you need to update your registration information, email donald.katnik@maine.gov.*

NEXT >>

Form Navigation Help

### ***Volunteer Hours and Mileage***

MDIFW relies on several outside funding sources for much of its work; and is often asked to provide a source of matching funds or in-kind services. Volunteer hours and mileage, if documented properly, are considered a valid match.

Volunteers will document their time and mileage when they submit their survey data online (see online data entry section beginning on page 10). Starting last year, MDIFW is asking volunteers to submit their survey observations within 2 weeks after they have done their survey. This is a new requirement by USFWS in order for volunteer time and mileage to be eligible as match.

### ***Choosing an Observation Location***

Most often volunteers will be assigned colonies that are convenient for them to monitor (i.e., within a reasonable distance from their place of residence) or that they have observed themselves in the past. If needed, Danielle will help the volunteer choose an appropriate location from which to observe the colony without causing disturbance to the birds. Nesting herons can be extremely sensitive to human disturbance, and may even abandon a colony as a result of human intrusion. From the onset of courtship behavior through fledging, it is extremely important to keep a distance of 200 m (656 ft) from the colony. For this reason a spotting scope can be extremely helpful for a clear view of the colony. Sometimes a closer distance is ok, but it depends on the colony and how much human disturbance the birds are used to. More than one point of observation may be needed in order to count and age the young in a nest accurately.

### ***Landowner Permission***

Volunteers should obtain landowner permission for any land accessed as part of the Heron Observation Network program, and especially land that is posted. This may require visiting a town office to determine the landowner and his/her contact information. Any landowner information for the colony site or land accessed to get to the colony site should be provided to Danielle D'Auria to keep on record for future



monitoring. If help or advice is needed in obtaining landowner permission, don't hesitate to contact Danielle D'Auria.

### ***Timing of Observations***

Volunteers planning to observe the colony on several separate occasions throughout the breeding season in order to document productivity should try to begin in May and space out their observations such that they are 1-2 weeks apart, ending in August when most young start to fledge and thus increasingly lose their ties to the colony. This will provide useful information regarding the number of nesting attempts and the success of these attempts. If a volunteer plans to visit the colony only once, they should consider the visibility of the colony when deciding when to observe. For instance, if the colony nest trees are mostly live hardwoods, active nests may be difficult to see once the trees have leafed out; therefore, a one-time visit should take place in early May. Conversely, if the colony nest trees are primarily dead and easy to see throughout the season, a visit closer to early June may get a more accurate count of the peak number of active nests.

### ***Submitting Data Sheets and Photos***

Data collected by volunteers and recorded on the HERON data sheets should be submitted online (see online data entry section beginning on page 10) within two weeks of the observation. This is a recent requirement by USFWS in order for volunteer time and mileage to be eligible as match. Any photos of the colony, nest trees, or birds should also be mailed or emailed with a note describing the photo's subject(s), including the colony number, date the photo was taken, photographer's name, and whether or not it can be used by MDIFW with credit to the photographer. Photos can be very useful if there is a question about behavior or age of the birds. For those conducting productivity observations, a map or photo of the colony with labeled nests (numbers) may be helpful for the observer, but it does not need to be submitted to Danielle.

### **Detecting Disturbance**

When nesting herons perceive a threat, they generally defend their nest with a steady escalation in alarm. At first, herons become alert and silent, but as a perceived threat continues to increase they vocalize, first with repetitive "chortle" or "cluck" calls, followed by loud prolonged squawks (depending on the level of perceived threat), or hopping off their nests or flushing from the nest site. They will often circle above the nest trees until the threat has ended. An unusual, loud, or rapid disturbance may cause herons to immediately flee rather than show a progression in alarm.

If the volunteer believes his/her presence is causing birds to leave their nests, alarm call, or flush from the site, they must leave and choose an alternative location for subsequent observations. Some colonies may be impossible to observe without causing disturbance; in such cases, these colonies will not be monitored by volunteers. It is not worth the risk of causing abandonment of a colony.

### **Completing the Data Sheets**

The Data Sheets are for volunteers to take with them into the field and record information they observe. All data will then be entered online (see online data entry section on page 10) once the observer can connect to the internet to access the online survey form. *Note: There is a set of completed data sheets for a hypothetical colony included in this packet as an example.*

### ***Visit Summary***

Observer Name: Your first name and last name.

Colony #: Unique number assigned by MDIFW.

Survey Date: Date of your observation, mm/dd/yyyy. A new set of data sheets will need to be completed for each colony visit. Please do not visit colonies more often than once a week.

Total Survey Mileage: This is the number of miles you drove (to and from) in order to complete the survey. For multiple surveys on the same day (if you visit more than one colony), please divide your mileage across the surveys. (Number must be between 0 and 300)

Hours: This is the number of hours spent to get to and from your colony (by car and on foot), as well as your time observing the colony. For multiple surveys on the same day (if you visit more than one colony), please divide your travel time across the surveys. If your total time is 3 ½ hours, you will record 3 hours in this field and 30 minutes in the next field. (Number must be between 0 and 10)

Minutes: This is the number of minutes (in addition to the hours) spent to get to and from your colony (by car and on foot), as well as your time observing the colony. For multiple surveys on the same day (if you visit more than one colony), please divide your travel time across the surveys. (Number must be between 0 and 59)

### **Observation**

# Inactive Nests: These nests will appear in disrepair or be empty for the entire length of your observation.

# Active Nests: These nests will contain at least 1 adult or young either in the nest or immediately adjacent to it (e.g., adult repairing nest, young getting ready to fledge). If the colony is active, this must be >0. If the colony is inactive, be sure to write in 0.

Note: The number of inactive nests plus the number of active nests should equal the total number of nests you observe. If a nest is occupied by another species such as a great horned owl or osprey, do not include it in the tallies for inactive or active nests. Instead, make a note of the additional nesting species in the Osprey section and/or the Notes section.

# Nests in Incubation Stage: These nests will be characterized by an adult incubating eggs. Both members of the pair incubate the eggs, and incubation begins shortly after the first egg is laid. Incubation may be indicated by the following observations:

- Adult sits very low in nest and remains very still.
- Each incubation shift may last for several hours interspersed with periods of egg turning every few hours.
- Colony tends to be very quiet except for the gurgled greeting of an adult coming in to relieve its mate of incubation duties.
- When mates switch duties, the adult in the nest may rise, step to the rim of the nest and fly off as the incoming adult lands on the edge of the nest.

# Nests with Young Visible: This is the number of nests with young that are visible on this visit date.

- Newly hatched young are quite small (~50 grams) and are mostly naked except for a few sparse patches of down. Although nestlings begin calling (tik-tik-tik sounds) within minutes of hatching, they may not be visible when they are this small, therefore a nest with newly hatched young may be indicated by the following:
  - Adult coming in to nest will likely be coming in to feed the young, and will stand on the edge of the nest first, and will try to regurgitate its food by retching its neck and throat. It will then lean down into the nest to place the regurgitated food into the bill of a young bird. This may take as long as 5 minutes.
  - After feeding very small young, the adult may "arrange" the young with its bill and settle very carefully to brood them.
  - If only coming in to brood the young (and not feed them), the adult may alight on the edge of the nest and look down into the nest for several minutes before carefully settling down to brood.
  - When brooding, the adults appear more active than when incubating. They tend to shift their position, preen and snap their bills more often.
- Older young (2+ weeks old) will likely be visible and audible. Common behaviors you may see include:
  - The young make a clacking noise that usually increases in tempo and volume as an adult approaches the nest.
  - Young will grab at adult's bill as it regurgitates food. When the food is in the throat of the adult, the young may thrust its bill into the throat of the adult.
  - After feeding, adult may brood young or may fly from the nest or perch on a neighboring limb to rest or preen.
  - As young grow, the adults may drop food into the nest rather than feed from the bill.
  - Young may preen themselves and each other, jab each other with their bills, and grasp each other's mandibles and seesaw.

# Nests, Stage Unknown: This is the number of nests for which the nesting stage is unknown due to behavior that is difficult to interpret, or an incomplete view of the nest preventing the determination of the nesting stage.

Note: the number of nests in the incubation stage, plus the number of nests with young visible, plus the number of nests stage unknown, should equal the total number of active nests you observe.

- # Young Visible: This is the total number of young seen in nests for the entire colony.
- # Fledglings: This is the total number of fledglings seen out of nests for the entire colony. Be sure to also include the # fledglings seen within the colony that were not near a nest (that you did not know which particular nest they originated from). About 8 weeks after hatching the herons will fledge and may still be within the colony but not at a nest. They will first “branch out” by moving to the limbs near the nest. Fledglings can be identified by a gray crown, dark upper bill, brownish feathers along the neck (rather than black and gray), rusty brown edging to feathers on wing and back, and a lack of body plumes; whereas adults have a white crown stripe and black plumes that extend from the eye, a yellowish bill, dark flight feathers, and “shaggy” feathers on the neck and back.
- \*# Adults: This is the total number of adults seen in the entire colony – includes adults at nests, perched in other locations, or flying around.
- # Bald Eagles: This is the number of bald eagles detected during your visit.  
Description of bald eagle activity: If one or more bald eagles were seen during your visit, describe their behavior (e.g. flyover at high altitude; flyover just above treetops; perched on edge of colony; stooped toward heron on nest).
- # Ospreys: This is the number of ospreys detected during your visit.  
Description of osprey activity: If one or more ospreys were seen during your visit, describe their behavior (e.g. flyover at high altitude; flyover just above treetops; actively fishing; nesting within colony; antagonizing adult heron).  
Description of heron response to eagle(s) and/or osprey(s): If bald eagles or ospreys were seen during your visit, describe how the herons responded to their presence. This may include reactions such as standing erect as if on alert, flushing, cowering in nest, not affected, vocalizing, etc.
- Notes: Use this space for documenting additional details or other noteworthy observations. Include any observations of human or natural disturbances such as low-flying aircraft, boats (describe type), people on foot, vehicular traffic, nearby construction noise or activity, potential avian or mammalian predators (such as great horned owl, bald eagle, raven, crow, raccoon) and extreme weather events (wind or rain that damages nest trees, blows nests out of trees or young out of nests, etc.). This is where nesting activity by great horned owls within the colony should be noted.

Page # of total # of pages: First blank is the page number; second blank is the total number of pages for this visit on this date. The total number of pages should include any Productivity sheet(s).

### ***Productivity***

Volunteers can choose to collect detailed information regarding colony productivity. Over time, productivity measures can help determine the effects of land use changes, document effects of contaminants or diseases, and measure whether a population is reproducing well enough to sustain itself, given existing rates of survival. Observers may choose to create a map or photograph of the colony with nests labeled to help them keep track throughout the season; this does not need to be submitted to Danielle. For each nest that the observer can see well, the nest status, nesting stage, and the number and age of young will be recorded. In order for productivity data to be useful, it is important to obtain nestling numbers for each nest at 1-2 weeks of age and close to fledging (6-8 weeks of age). Behaviors that characterize the different nest stages are detailed under the instructions for the Observation section of the data sheets.

This Productivity data sheet is entirely optional and should only be completed if the observer is interested in tracking the status of nests throughout the season. A minimum of two colony visits are needed for this type of data collection. During all visits, it is very important to observe each nest from the same location(s) and to keep track of which nest you are viewing so that reliable measures of that nest's productivity can be recorded (i.e., the number of chicks hatched that fledge at the end of the season). (Note: it is not required to record nest status/stage for every nest in a colony – only choose to do those nests you can see well; it is up to you to decide whether you want to observe from more than one location.)

Observer Name: Your first name and last name.

Colony #: Unique number assigned by MDIFW.

Survey Date: Date of your observation, mm/dd/yyyy. A new set of data sheets will need to be completed for each colony visit. Please do not visit colonies more often than once a week.

### ***Colony Maps and Photos***

You are no longer required to submit a photo or hand drawn map of the colony, but you may still want to create one for your own use. On the photo or map, you can label each nest with a number (1, 2, 3, etc...). By keeping the nest numbers constant throughout the breeding season, you can track productivity for that individual nest along the way. If nothing has changed from one visit to the next (no nests have appeared or disappeared), use the same photo or map from the previous visit.

### ***Nest-Specific Information***

There will be one row completed for each nest. If you are tracking productivity for more than 16 nests in a colony, use additional Productivity data sheets.

Nest (#): Nest number, as labeled on your map or photo.

Status: The status of the individual nest is whether the nest is active (**A**) or inactive (**I**). Active nests will contain at least 1 adult or young either in the nest or immediately adjacent to it (e.g., adult repairing nest, young getting ready to fledge). After a nest has fledged, if the adults and fledglings are not near the nest, the nest may be considered inactive.

Stage: If the nest is active, record the nesting stage. Please see the nest stage descriptions under instructions for the first page (Observation). Nest stage codes to be used include:

- INC**    **INC**ubating - a heron is in a continuous crouched position, incubating eggs.
- YNG**    **YOUNG** are in the nest. You can see nestlings, or movement that would indicate nestlings are present. Record the number and age of chicks in separate columns.
- FLN**    **FL**edglings **N**ear nest. Use **FLN** if you observe fledglings near a nest, and then indicate the number in the # of Young column. If there are some young in the nest and some fledglings near the nest, count them all as **YNG**. If there are no young left in the nest, count them all as **FLN**.
- U**        Nest stage is **U**nknown due to behavior that is difficult to interpret, or an incomplete view of the nest preventing the determination of the nesting stage. Nest stage can only be considered unknown if it is also thought to be active. An inactive nest does not receive a nesting stage at all.

# Young in Nest: This is the number of young in the nest and/or fledglings near the nest. It is helpful to count heads or bills of young in the nest.

Age of Young: # weeks old based on the nestling illustrations provided in this volunteer packet. The illustrations give a range such as 1-2 weeks, but online data entry will only take a single number. Thus, do your best to estimate the number of weeks given what you have seen during prior visits and the range given for the illustrations.

### **Online Data Entry**

MDIFW now has a simple online survey form for volunteers to enter their data. The goal of this online form is to make data transfer from volunteers to project leaders quick and easy. Once the data is submitted, the observer will receive an email confirmation with the survey details that were submitted plus a list of other colony visits the volunteer conducted previously this year. This should help the volunteer keep track of when they visited their colony or colonies, and what they saw. The online survey form includes the following features:

- Simple login with just the volunteer's email address. There is no password to remember!
- Ability to record time and mileage on the same survey form as the colony observations.
- Easy navigation between sections, or tabs, to go back to see what was filled in.
- Error notifications when a field is left blank, allowing the volunteer to correct it immediately.
- A final view of the survey data prior to submission, allowing the volunteer the chance to go back to make any necessary changes.

- The volunteer will receive an email confirmation with the survey details that were submitted plus a list of other colony visits the volunteer conducted previously this year. If anything looks amiss, the volunteer can then contact Danielle D’Auria to make any necessary changes.

### ***Reward Band!***

In 2023, to encourage online submission of heron colony observation data, all volunteers who submitted their data in a timely manner (within 2 weeks) received a commemorative HERON Bird Band! The band is the size used to band great blue herons in the wild, has the HERON logo, and a unique number. We still have some remaining for new volunteers and for additional family or friends who accompany you while surveying.



Design for Commemorative HERON Bird Band

### ***Submit a Survey***

If you have submitted heron colony data to Danielle in recent years, you will already be in the system and able to login using the email address you have communicated with Danielle in the past. If you are new to the Heron Observation Network of Maine, Danielle will need to first add you to the system for you to login using your email address. Below are step by step instructions for submitting survey information:

1. Go to the URL: <https://mdifw-surveyforms.plumsail.io/a6d59970-2aaa-4b59-97a2-5e6e255a5f18>
2. Enter your email address.

3. Click on the VISIT SUMMARY tab.



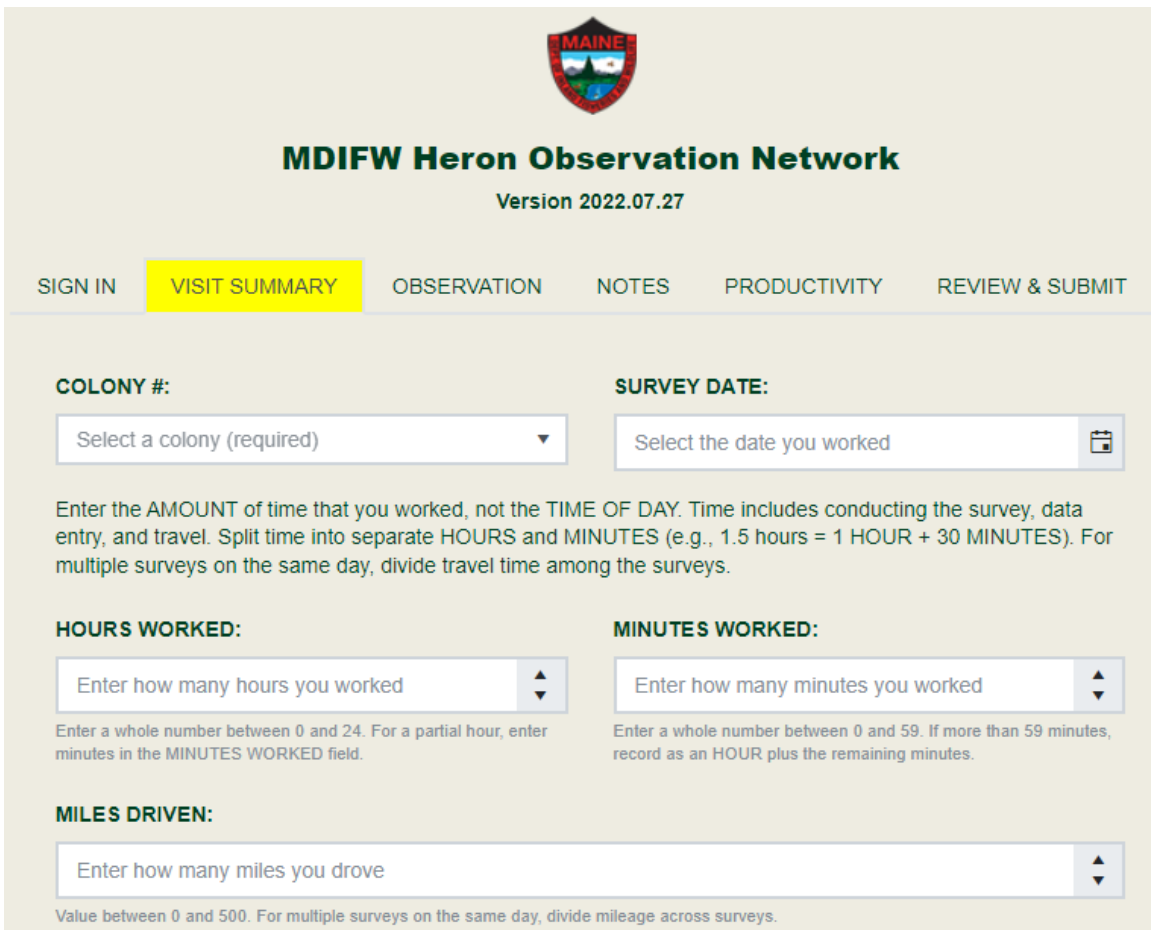
**MDIFW Heron Observation Network**  
Version 2022.07.27

SIGN IN VISIT SUMMARY OBSERVATION NOTES PRODUCTIVITY REVIEW & SUBMIT

**EMAIL:**

Enter your email address (required)

4. Complete all fields on this page. If you leave something blank, you will receive an error warning when you try to go to another tab.



**MDIFW Heron Observation Network**  
Version 2022.07.27

SIGN IN VISIT SUMMARY OBSERVATION NOTES PRODUCTIVITY REVIEW & SUBMIT

**COLONY #:** Select a colony (required)

**SURVEY DATE:** Select the date you worked

Enter the AMOUNT of time that you worked, not the TIME OF DAY. Time includes conducting the survey, data entry, and travel. Split time into separate HOURS and MINUTES (e.g., 1.5 hours = 1 HOUR + 30 MINUTES). For multiple surveys on the same day, divide travel time among the surveys.

**HOURS WORKED:** Enter how many hours you worked

Enter a whole number between 0 and 24. For a partial hour, enter minutes in the MINUTES WORKED field.


**MINUTES WORKED:** Enter how many minutes you worked

Enter a whole number between 0 and 59. If more than 59 minutes, record as an HOUR plus the remaining minutes.

**MILES DRIVEN:** Enter how many miles you drove

Value between 0 and 500. For multiple surveys on the same day, divide mileage across surveys.

5. Click on the OBSERVATION tab and complete all fields on this page. Include zeros instead of blanks.



## MDIFW Heron Observation Network

Version 2022.07.27

SIGN IN   VISIT SUMMARY   **OBSERVATION**   NOTES   PRODUCTIVITY   REVIEW & SUBMIT

**NUMBER OF NESTS BY STATUS:**

**INACTIVE:**  ▲▼

**ACTIVE:**  ▲▼

-

**NUMBER OF NESTS BY STAGE:**

**INCUBATING:**  ▲▼

**WITH YOUNG VISIBLE:**  ▲▼

**STAGE UNKNOWN:**  ▲▼

-

**HERONS OBSERVED:**

**YOUNG:**  ▲▼

**FLEDGLINGS:**  ▲▼

**ADULTS:**  ▲▼

6. Click on the NOTES tab and complete fields as applicable. None of the fields on this page are required, but if you did not observe any eagles or ospreys please include zeros.



## MDIFW Heron Observation Network

Version 2022.07.27

SIGN IN

VISIT SUMMARY

OBSERVATION

NOTES

PRODUCTIVITY

REVIEW & SUBMIT

**EAGLES:**

**EAGLE ACTIVITY:**

255 character limit

**OSPREY:**

**OSPREY ACTIVITY:**

255 character limit

**HERON RESPONSE:**


255 character limit

**NOTES:**

255 character limit








7. Click on the Productivity tab and complete the fields as applicable.

  
**MDIFW Heron Observation Network**  
Version 2022.07.27

SIGN IN   VISIT SUMMARY   OBSERVATION   NOTES   **PRODUCTIVITY**   REVIEW & SUBMIT

I did not collect productivity data for each nest during this visit

Nest	Status	Stage	Young	Age (weeks)	
1	Active				
2	Active				
3	Active				
4	Inactive	N/A	0	0	
5	Inactive	N/A	0	0	


This page will auto-populate a record for each active and inactive nest; however, the order may not match your numbering system. You can edit the status of each nest by highlighting the word Active or Inactive and typing the correct status.

For all Active nests, be sure to choose the correct stage for each nest. If Active nests do not have young in the nest, record 0 for Young, and 0 for Age. If Active nests are in the Incubation stage, choose 0 for both Young and Age.

For all Inactive nests, the stage should be N/A, the # of Young should be 0, and the Age should be 0.

If you do not wish to record information for each nest you can check the box indicating, "I did not collect productivity data for each nest during this visit." This will allow you to move to the next tab without having to fill in the fields for each nest. Otherwise, you are required to record the Status, Stage, Young, and Age for each nest.

- Click on Review & Submit tab to review your entire completed survey form. If you see any errors or areas needing changes, click on the appropriate tab and then make the change(s). If everything looks correct, check the box to digitally sign the survey, then click on green Submit Survey button.



## MDIFW Heron Observation Network

Version 2022.07.27

SIGN IN
VISIT SUMMARY
OBSERVATION
NOTES
PRODUCTIVITY
REVIEW & SUBMIT

---

SIGN IN PAGE

User

danielle.dauria@maine.gov

---

VISIT SUMMARY PAGE

Colony	Survey Date	Hours	Mins	Miles
871	Mon Mar 27 2023	1	30	30

---

OBSERVATION PAGE

Inactive Nests	Active Nests	Incubation Stage	Young Visible	Stage Unknown
2	3	1	0	2
HERONS:		Young	Fledglings	Adults
		0	0	7

---

NOTES PAGE

EAGLES (0):

OSPREY (0):

HERON RESPONSE:

NOTES:

---

PRODUCTIVITY PAGE

Nest	Status	Stage	Young	Age
1	Active	INC	0	0
2	Active	INC	0	0
3	Active	U	0	0
4	Inactive	N/A	0	0
5	Inactive	N/A	0	0

Check the box to digitally sign the survey, then click [Submit Survey](#).

By checking this box, I am certifying that I have worked the indicated hours and traveled the indicated miles as a volunteer conducting this survey for the Heron Observation Network Program and that the survey information I have provided is accurate to the best of my knowledge.

Submit Survey

- You will see the following confirmation message indicating your survey was submitted successfully. You can now close your browser or enter another survey record.

Survey submitted successfully! Thank you for being an MDIFW volunteer.
×



## MDIFW Heron Observation Network

Version 2022.07.27

SIGN IN
VISIT SUMMARY
OBSERVATION
NOTES
PRODUCTIVITY
REVIEW & SUBMIT



---

EMAIL:

Enter your email address (required)

10. You will also receive an email from Donald Katnik thanking you for submitting your data, showing the data you submitted and a list of your recent colony visits. This gives you another chance to review your submission. If any changes are needed, email Danielle. Otherwise, retain this email for your records.

MDIFW HERON Survey Submission

 Katnik, Donald  
To:  D'Auria, Danielle

↩ Reply
↩ Reply All
→ Forward
⋮

Mon 3/27/2023 12:18 PM

Thank you for submitting observation data to the HERON NETWORK. Please review your submission below. If there are any errors, email [danielle.dauria@maine.gov](mailto:danielle.dauria@maine.gov).

VISIT SUMMARY				
Colony	Survey Date	Hours	Mins	Miles
871	3/27/2023	1	30	30

OBSERVATION PAGE				
Inactive Nests	Active Nests	Incubation Stage	Young Visible	Stage Unknown
2	3	1	0	2

HERONS OBSERVED				
Inactive Nests	Active Nests	Incubation Stage		
0	0	7		

**NOTES**

Eagles Observed: 0

Osprey Observed: 0

Heron Response:

Notes:

PRODUCTIVITY PAGE				
Nest	Status	Stage	Young	Age
1	Active	INC	0	0
2	Active	INC	0	0
3	Active	U	0	0
4	Inactive	N/A	0	0
5	Inactive	N/A	0	0

**PREVIOUSLY SUBMITTED RECORDS**  
2023-03-27, Colony: 871

## **Additional Resources**

### ***Fact Sheet***

There is a 1-page Fact Sheet at the end of this packet that can be shared with landowners and anyone from the public that may be interested in the program. Please consider bringing several copies of this fact sheet with you so that when the opportunity arises, you can help educate people you encounter along the way.

### ***Vehicle Sign***

There is a Vehicle Sign that includes Danielle D'Auria's contact info as well as the volunteer's name and phone number. If someone sees what they think is a strange vehicle parked in a strange location, this sign can help alleviate any concerns and provides the person the opportunity to obtain more information.

## ***HERON Website***

The Heron Observation Network has a website ([mefishwildlife.com/heron-network](http://mefishwildlife.com/heron-network)) with a description of the community science project as well as expandable sections with additional information:

Report a Colony – This section includes an online form to report a wading bird colony by providing the town, general directions of where it is located, and information regarding its activity (i.e., species, year, # of active nests).

Join HERON – This section includes instructions for getting involved with the Heron Observation Network.

Meet the Project Leader – This section includes a brief biography for project leader, Danielle D’Auria.

Track Herons Online – This section includes an introduction to the Heron Tracking Project and a link to instructions for tracking Maine’s tagged herons online.

File Cabinet – This section is really geared towards the volunteers, providing one place for all documents relevant to the HERON program, including summary reports, Word and pdf versions of data sheets, the Volunteer Packet, and a link to the online survey form for entering colony observation data.

Teacher Resources – This section describes ways teachers and their students can get involved with the Heron Tracking Project, and provides instructions for tracking the birds’ movements online, research questions to explore with students, and lesson plans for use by educators.

Upcoming Events – This page includes upcoming public presentations about herons or related species by Danielle D’Auria.

## ***HERON Blog***

The Heron Observation Network has a blog ([mefishwildlife.com/heron](http://mefishwildlife.com/heron)) which is our opportunity to give back to our volunteers and the general public by providing them information relevant to colonial wading birds, and an opportunity for them to share their experiences in the field observing colonial wading birds.

## ***Facebook***

The Heron Observation Network has its own Facebook page: <http://facebook.com/maineheron>. This serves a similar purpose as the HERON website and blog, potentially reaching additional members of the public.

## ***Heron Tracking Project***

In 2016, students from seven schools helped locate feeding herons and placed live bait so biologists could capture and tag them with GPS transmitters. The transmitters are solar-powered and will last several years, generating location data for the tagged herons through all seasons. Over the last six years, we have occasionally tagged additional herons as funding and time permitted. Data are now publicly available for use by anyone. Our goal is to gather new information about great blue herons with this cutting-edge technology, while actively engaging students of all ages in every phase of the project, within Maine and beyond.

We welcome all who are interested to explore and use the data generated by the transmitters to answer questions about movements during nesting, migration routes, habitat use, wintering locations, and much more! These data can be easily pulled into Google Earth, Excel, and ArcGIS, and you can even follow the herons on your smartphone. The herons’ transmitters download data every 24 hours to an open source website, [www.movebank.org](http://www.movebank.org). For instructions on how to track Maine’s tagged great blue herons in Movebank, visit: [mefishwildlife.com/trackherons](http://mefishwildlife.com/trackherons).

A high priority of this project is to involve students in every phase; therefore, we have developed several resources for educators interested in getting involved in the field work or tracking the tagged herons by

using the internet or smartphones. These resources have been incorporated into an expandable section on the website labeled, "Teacher Resources." Educators and students can also contact Danielle D'Auria for additional resources and ideas for incorporating the project into their learning environment.

**Questions?**

If you have questions about this document, entering data online, or the HERON program in general, please contact: Danielle D'Auria, Maine Department of Inland Fisheries and Wildlife, 106 Hogan Rd, Suite 1, Bangor, ME 04401; Email: [danielle.dauria@maine.gov](mailto:danielle.dauria@maine.gov); Office: (207) 941-4478; Cell: (207) 485-8386.



## What is HERON?

"HERON" is short for the Heron Observation Network, a network of volunteers across Maine who monitor nesting areas, or colonies, of wading birds such as the great blue heron. HERON is managed by the Maine Dept. of Inland Fisheries and Wildlife.

These volunteers have "adopted" colonies and in doing so, visit them 1-5 times during the breeding season (May-Aug) to determine if a colony is active and the number of active nests.

Data collected by HERON volunteers will be used to assess the breeding populations of these birds over time, identify and prioritize ecologically important areas, and inform environmental review and landscape planning activities.

## What is a colonial wading bird?

Colonial wading birds are medium to large birds with long legs, necks and bills - features specially adapted for capturing prey while wading in shallow water.

Colonial wading birds nest in groups. These colonies can contain a few pairs to several hundred; often multiple nests occupy the same tree.

In Maine, we have several species of colonial wading birds (listed here from most abundant to least): great blue heron, snowy egret, glossy ibis, black-crowned night-heron, great egret, little blue heron, tricolored heron, and cattle egret.



Great blue herons (E. R. Campbell).



Great blue heron (J. Mays), snowy egret (D. Albert), glossy ibis (B. Allen), black-crowned night-heron (D. D'Auria), and great egret (J. Mays).

## Why should we be concerned about colonial wading birds?

Colonial wading birds are important predators that feed near the top of the food chain on a wide variety of fish and aquatic invertebrates. They are also relatively long-lived, making them good indicators of environmental quality, including wetland health, levels of toxic substances, and levels of human disturbance.

Nesting in colonies helps in terms of predator avoidance, but it also makes these birds especially vulnerable to habitat loss. Impacts to a small area (colony) can affect hundreds of breeding pairs of several different species.

Maine's coastal breeding population of great blue herons has experienced a steady downward trend from 1,208 pairs in 1983 to just 430 pairs in 2009. The statewide breeding population also shows evidence of decline, but its extent is unknown and warrants closer monitoring.

The black-crowned night-heron has also experienced a decline in Maine over the past 30-40 years. Its limited nesting distribution and small population warranted its designation as an Endangered species under the Maine Endangered Species Act in 2015.

**For more information, or to report a wading bird colony, please contact:**



Danielle E. D'Auria  
Wildlife Biologist, Bird Group  
Maine Dept. of Inland Fisheries and Wildlife  
106 Hogan Road, Suite 1, Bangor, ME 04401  
(207) 941-4478; [danielle.dauria@maine.gov](mailto:danielle.dauria@maine.gov)



Learn more at [mefishwildlife.com/heron-network](http://mefishwildlife.com/heron-network)

I am a volunteer member of the  
Heron Observation Network of Maine



My vehicle is parked here so I can monitor a  
nesting colony of great blue herons or  
other colonial wading birds.

My name is: \_\_\_\_\_

My phone number is: \_\_\_\_\_

The Heron Observation  
Network of Maine is a group  
of volunteers administered by  
the Maine Department of  
Inland Fisheries and Wildlife.



Questions? Please contact:  
Danielle D'Auria  
Office: 207-941-4478  
Cell: 207-485-8386  
[danielle.dauria@maine.gov](mailto:danielle.dauria@maine.gov)

On the web at [mefishwildlife.com/heron-network](http://mefishwildlife.com/heron-network)



# Heron Observation Network

## Colony Observation Data Sheet



Submit data online at:

<https://mdifw-surveyforms.plumsail.io/a6d59970-2aaa-4b59-97a2-5e6e255a5f18>,

by email ([danielle.dauria@maine.gov](mailto:danielle.dauria@maine.gov)),

or mail to: Danielle D'Auria, MDIFW, 106 Hogan Road, Suite 1, Bangor, ME 04401

### Visit Summary

Observer Name: \_\_\_\_\_ Colony #: \_\_\_\_\_ Survey Date: \_\_\_\_\_

Total Survey Mileage: \_\_\_\_\_ Hours: \_\_\_\_\_ Minutes: \_\_\_\_\_

For multiple surveys on the same day, please divide your total mileage across the surveys. Time includes conducting the survey, data entry, and travel (but divide the travel time across surveys accordingly).

### Observation

# Inactive Nests: \_\_\_\_\_

# Active Nests: \_\_\_\_\_

*(Note: # Inactive Nests + # Active Nests = Total Nests)*

# Nests Incubation Stage: \_\_\_\_\_

# Nests w/Young Visible: \_\_\_\_\_

# Nests Stage Unknown: \_\_\_\_\_

# Young Visible: \_\_\_\_\_

*(Note: # Nests Incubation Stage + # Nests w/Young Visible + # Nests Stage Unknown = # Active Nests above)*

# Fledglings: \_\_\_\_\_

# Adults: \_\_\_\_\_

# Bald Eagles: \_\_\_\_\_

# Ospreys: \_\_\_\_\_

Description of Bald Eagle Activity:

Description of Osprey Activity:

Description of Heron Response to Eagles or Osprey:

Notes:





# Heron Observation Network

## Colony Observation Data Sheet



Submit data online at:

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by email ([danielle.dauria@maine.gov](mailto:danielle.dauria@maine.gov)),

or mail to: Danielle D'Auria, MDIFW, 106 Hogan Road, Suite 1, Bangor, ME 04401

### Productivity

Observer Name: \_\_\_\_\_ Colony # \_\_\_\_\_ Survey Date: \_\_\_\_\_

- ❖ This data sheet is optional and should only be used if you plan to track productivity of individual nests throughout the season (on 2 or more visits).
- ❖ You do not need to track every nest within the colony. Only choose to track those nests that you can see well.
- ❖ Observers may choose to create a map or photograph of the colony with nests labeled to help them keep track throughout the season; however, this does not need to be submitted with your data sheets.
- ❖ Please be sure each nest number corresponds to the same nest across all visit dates within the year.
- ❖ If there are more than 16 nests, use additional Productivity data sheets as needed.

Nest #	Status – check one (Active or Inactive)	Stage* – check one (INC, YNG, FLN, U)	# of Young in Nest	Age of Young** (# of weeks)
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
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	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		

\*Stage: If active, check one of the following codes for nest stage = INC (incubating), YNG (young in nest), FLN (fledglings near nest), or U (unknown).

\*\*Age of Young: # of weeks old; see nestling illustrations in packet.



# Heron Observation Network

## Colony Observation Data Sheet



Submit data online at:

<https://mdifw-surveyforms.plumsail.io/a6d59970-2aaa-4b59-97a2-5e6e255a5f18>,

by email ([danielle.dauria@maine.gov](mailto:danielle.dauria@maine.gov)),

or mail to: Danielle D'Auria, MDIFW, 106 Hogan Road, Suite 1, Bangor, ME 04401

### Visit Summary

Observer Name: Danielle D'Auria Colony #: 999 Survey Date: 6/1/2023

Total Survey Mileage: 50 Hours: 2 Minutes: 30

For multiple surveys on the same day, please divide your total mileage across the surveys. Time includes conducting the survey, data entry, and travel (but divide the travel time across surveys accordingly).

### Observation

# Inactive Nests: 4

# Active Nests: 7

*(Note: # Inactive Nests + # Active Nests = Total Nests)*

# Nests Incubation Stage: 1

# Nests w/Young Visible: 5

# Nests Stage Unknown: 1

# Young Visible: 1

*(Note: # Nests Incubation Stage + # Nests w/Young Visible + # Nests Stage Unknown = # Active Nests above)*

# Fledglings: 0

# Adults: 1

# Bald Eagles: 0

# Ospreys: 2

Description of Bald Eagle Activity:

Description of Osprey Activity:

*Osprey nest at far end of wetland; both adults present.*

Description of Heron Response to Eagles or Osprey:

*No response from herons.*

Notes:

*Nest #3 had adult heron standing on the edge of the edge of the nest but didn't do any of the feeding or rolling of eggs. It never sat low in nest.*



# Heron Observation Network

## Colony Observation Data Sheet



Submit data online at:

<https://mdifw-surveyforms.plumsail.io/a6d59970-2aaa-4b59-97a2-5e6e255a5f18>,

by email ([danielle.dauria@maine.gov](mailto:danielle.dauria@maine.gov)),

or mail to: Danielle D'Auria, MDIFW, 106 Hogan Road, Suite 1, Bangor, ME 04401

### Productivity

Observer Name: Danielle D'Auria Colony # 999 Survey Date: 6/1/2023

- ❖ This data sheet is optional and should only be used if you plan to track productivity of individual nests throughout the season (on 2 or more visits).
- ❖ You do not need to track every nest within the colony. Only choose to track those nests that you can see well.
- ❖ Observers may choose to create a map or photograph of the colony with nests labeled to help them keep track throughout the season; however, this does not need to be submitted with your data sheets.
- ❖ Please be sure each nest number corresponds to the same nest across all visit dates within the year.
- ❖ If there are more than 16 nests, use additional Productivity data sheets as needed.

Nest #	Status – check one (Active or Inactive)	Stage* – check one (INC, YNG, FLN, U)	# of Young in Nest	Age of Young** (# of weeks)
1	<input checked="" type="checkbox"/> A <input type="checkbox"/> I	<input checked="" type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
2	<input checked="" type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input checked="" type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U	3	1
3	<input checked="" type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input checked="" type="checkbox"/> U		
4	<input type="checkbox"/> A <input checked="" type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
5	<input checked="" type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input checked="" type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U	2	1
6	<input checked="" type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input checked="" type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U	4	2
7	<input checked="" type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input checked="" type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U	3	1
8	<input checked="" type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input checked="" type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U	3	2
9	<input type="checkbox"/> A <input checked="" type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
10	<input type="checkbox"/> A <input checked="" type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
11	<input type="checkbox"/> A <input checked="" type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		
	<input type="checkbox"/> A <input type="checkbox"/> I	<input type="checkbox"/> INC <input type="checkbox"/> YNG <input type="checkbox"/> FLN <input type="checkbox"/> U		

\*Stage: If active, check one of the following codes for nest stage = INC (incubating), YNG (young in nest), FLN (fledglings near nest), or U (unknown).

\*\*Age of Young: # of weeks old; see nestling illustrations in packet.

The following was taken from:

Vennesland, R. G. and D. M. Norman. 2006. *Survey protocol for measurement of nesting productivity at Pacific great blue heron nesting colonies*. Unpublished Report.

Note: To show scale, the same 12-inch ruler is used in each illustration.

### **APPENDIX 3 – Nestling Illustrations**

(with approximate scale in inches)

Including:

Age 1-2 weeks

Age 2-4 weeks

Age 4-6 weeks

Age 6-8 weeks

All illustrations are by Donald Gunn

1-2 weeks of age  
Illustration by Donald Gunn



2-4 weeks of age  
Illustration by Donald Gunn



4-6 weeks of age  
Illustration by Donald Gunn



6-8 weeks of age  
Illustration by Donald Gunn

