

*Mallard Lodge use training for group leaders**

Module 1: Lodge features, safety & use guidelines



* required for group leaders who use the Lodge for aquatic-education focused field programs, and who have not attended an ARE-approved, (August 2014 or later) facilities use workshop

About Delaware's Aquatic Resources Education (ARE) Program



- *now into its third decade of operation*
- *has grown and diversified to encompass a wide variety of initiatives & audiences*
- *strong emphasis on getting children and families outdoors & connected to nature*
- *fishing, wetlands & horseshoe crabs are key areas for educational programming*
- *benefits from solid working relationship between educators and biologists*
- *relies heavily on volunteers, partnerships & other supplementary support sources*

How Delaware ARE is supported and funded

Delaware's Aquatic Resources Education (ARE) Program is a Federal Aid to Sport Fish Restoration project, funded by excise taxes on fishing tackle and boat motor fuels.

The “matching funds” required by the federal grant agreement come almost entirely from the per-hour value established for ARE Program volunteers, including educators, youth program leaders and field trip chaperones. People like YOU!!



How the ARE Center came to be ...

Formerly operated as the M&M Hunting Lodge, the property was purchased in 1991 by the Division of Fish & Wildlife for development of an educational complex with a focus on communicating the value of Delaware's aquatic resources.



By way of extensive renovations - in addition to housing aquatic education staff and exhibits - the ARE Center was set up to provide office and laboratory space for environmental scientists from the Division's Fisheries, Wildlife and Natural Heritage Programs.

Mallard Lodge

After extensive renovations to meet Public Health, ADA and Fire Safety standards, the Mallard Lodge was opened to visiting group use in the fall of 1995.



In the time since, thousands of visitors have enjoyed environmental education experiences through stays at the Lodge, including hundreds of school, youth and other groups from around the state and region.

Lodge amenities



The Lodge offers six separate bedrooms (with a total overnight capacity of 40), seven bathrooms, large living and dining rooms, a full kitchen and a newly added, fully accessible two-person handicapped-access bedroom and bath on the ground floor level.

Lodge bed & bath arrangements as of 2015

Floor	Room Name/Location	Beds	Sleeps
1 st	Ground floor handicapped access bedroom & bathroom	2 single (Murphy)	2
2 nd	Bufflehead - small room at end of hallway near bathrooms	4 single beds	4
	Shoveler – small room that connects to Drakes bathroom	2 single beds	2
	Mallard - small room left of stairs (connects to Shoveler)	3 double bunks	6
	Drakes – male bathrooms (2 sinks, 2 toilets, 2 showers)	no beds	0
	Hens – female bathroom (2 sinks, 2 toilets, 2 showers)	no beds	0
	Widgeon - large room at south end of hall near fire escape	6 double bunks	12
	Pintail - large room at top of stairs facing out to route 9	4 double bunks	8
3 rd	Old Squaw - large open room, with two attached/separate bathrooms, each with single sink, toilet and shower stall	6 single beds	6
TOTAL (all rooms)		40	40

Visiting groups must supply ...

- * Food, beverages, and cooking utensils*
- * Cleaning supplies, including dish washing soap*
- * Sheets, pillows and blankets or sleeping bags*
- * Towels, washcloths, soap & personal care items*
- * First Aid kit*
- * Bait (for fishing programs)*
- * Firewood and / or charcoal (for fireplace, fire pit, grill)*
- * Staffing & supervision for all activities*

ARE Staff provides ...

TRAINING and a wide range of RESOURCE MATERIALS to help educators plan and deliver environmental education programs that are engaging & appropriate for their students.

ACCESS to the facilities, packaged educational activities and field equipment (more on that later).

Due to funding limitations, ARE cannot provide staff to lead (or assist in conducting) Lodge programs or field trip activities for visiting groups.



HOUSE RULES

- * No food or drinks on 2nd or 3rd floors or 1st floor bedroom*
- * NO SMOKING anywhere in the building!*
- * Fire escapes are for EMERGENCY use only!*
- * No foods, drinks or other items stored in the ice machine (this is a violation of Department of Health standards)*
- * Children MUST be supervised at all times!*
- * The Lodge land line (located in the 1st floor bedroom off the lobby) is 302-653-2847. It should only be used for emergencies. Dial 9 and then the number to call out.*

Fireplace & Fire pit Use

*Thanks to Eagle Scout
Kyle O'Donnell & his crew
from BSA Troop 283 in
Newark, the Lodge now has
totally refurbished fire pit
and outdoor grill areas.*



*Groups may use the fire pit and / or fireplace in the living room,
but only if they use firewood harvested or purchased locally
(in Delaware) due to the risk of introducing wood-boring insects.
Always burn or take back all firewood brought. Do not leave it behind!*

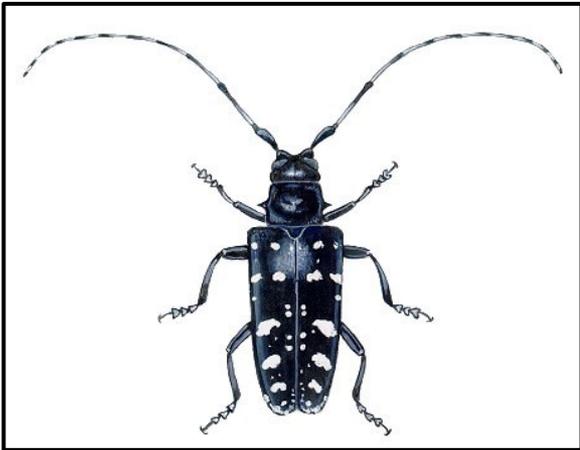
*Use **ONLY** seasoned hardwood. NO pine, scrap lumber or artificial logs!
Do not attempt to adjust the flue and make sure fire screen is in place.*

Why do we require local firewood?



***Emerald Ash Borer** larvae tunnel under the bark of ash trees and disrupt the tree's water and food transport systems, eventually killing the tree.*

Millions of acres of forests have been destroyed.



***Asian Long-horned Beetle** larvae tunneling can attack and destroy many species of trees.*

This is a shiny black beetle (1 to 1.5" long), with white-spots & long, black/white-banded antennae.

They are especially active in summer to early fall.

If you find one of these insects, catch it, freeze it & let AREC staff know. These beetles do not sting or bite and are otherwise harmless to humans.

New Outdoor Grilling Area!



Designed for use with either charcoal or wood.

Features two large adjustable height trays, a wide grilling surface, a fuel and supplies storage area and a wide stone platform for holding utensils and food items for cooking.

Users of the grill, fire pit and fireplace are asked to make sure all fires are extinguished after using (and before departure), and to clean the grill and remove the ashes in consideration of the next user.

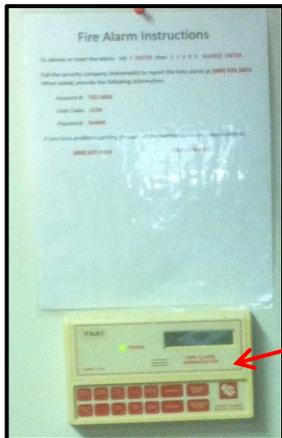
Safety information & considerations

Fire safety is a critical consideration for groups staying at the Lodge. Please attend to that by doing as follows:

- 1. Familiarize yourself and your group with the location of fire escape routes, alarm pulls and fire extinguishers provided on each level.*
- 2. Update the **Emergency Response Info** blackboard in the Lodge lobby with how many youth and adults are sleeping on each level for each night of stay.*



Note location of AED unit (in case of heart problems)

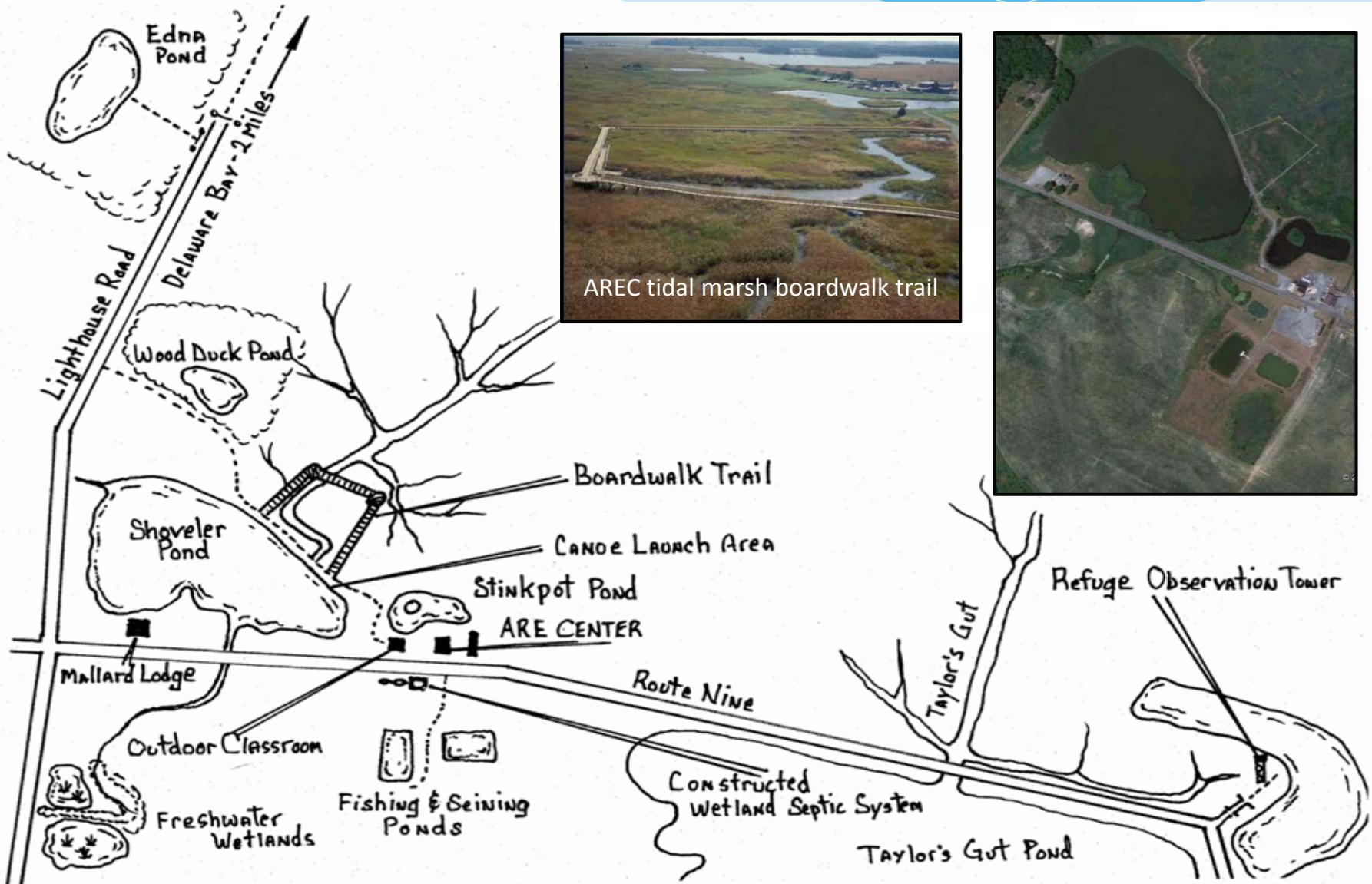


- 3. Should an alarm sound, see that all residents move quickly to a safe outdoor area where they can be accounted for.*
- 4. If a false alarm occurs, follow the instructions above the alarm keypad (located on the wall behind the door to the 1st floor bedroom) for calling in and de-activating it.*

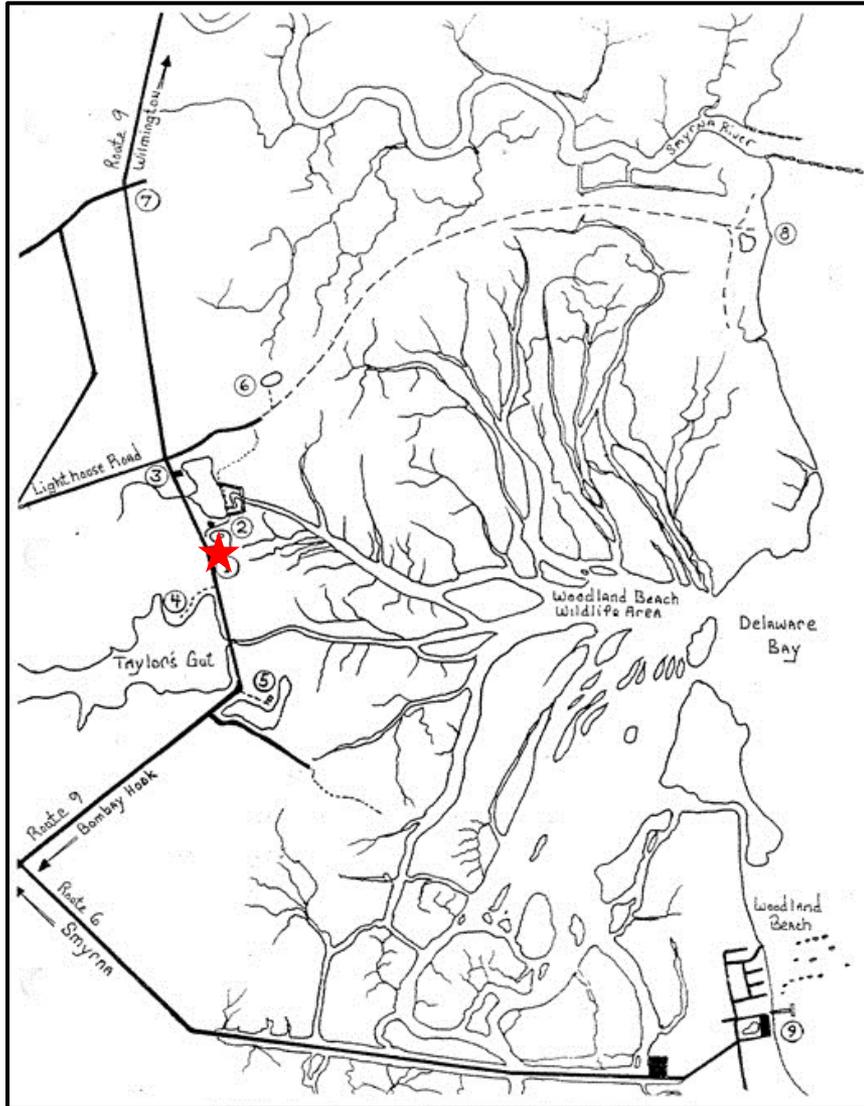
Mallard Lodge use training for group leaders
Module 2: Resources and outdoor amenities
for planning your group's Lodge program



ARE Complex Outdoor Facilities



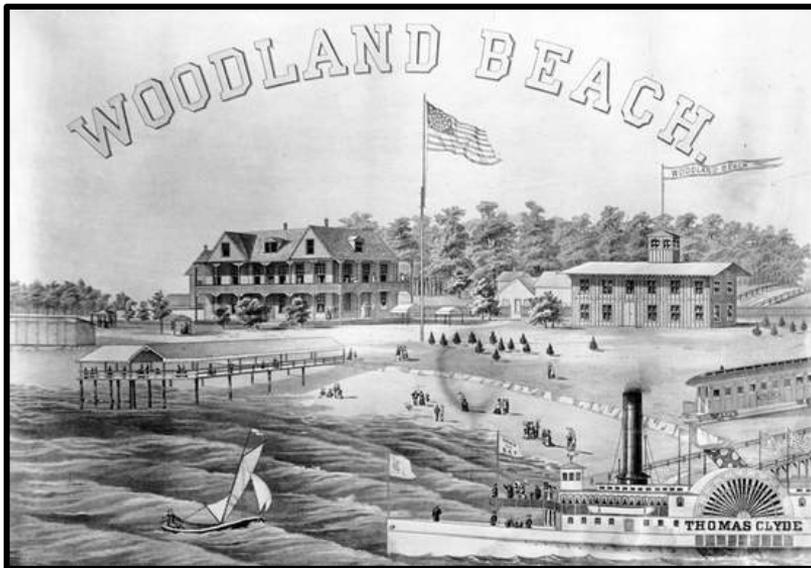
The expanded landscape view ...



A variety of aquatic habitat types are available in and around the ARE Center for groups to explore. This includes: the Delaware Bay, tidal salt marshes, freshwater ponds, hardwood swamps and vernal pools.

This area offers a rich history & heritage ...

Our location on the Delaware Bay marshlands encompasses a rich history of fishing, crabbing, waterfowl hunting, trapping, salt hay farming and other outdoor activities.



Proximity to Woodland Beach, Taylor's Gut, the Bombay Hook National Wildlife Refuge and Bay beaches of global significance to horseshoe crab spawning and shorebird migration makes for a great outdoor education venue.

Images courtesy of Delaware Public Archives

Exploring Delaware Bay at Woodland Beach

Fishing, seining, beachcombing and other such Delaware Bay activities are just a few minutes away at Woodland Beach.



Woodland Beach also features a wheelchair accessible pier for people interested in fishing, crabbing or Bay-watching.

A great venue for birding

Numerous species of water birds utilize the marsh, tidal stream & pond habitats surrounding the AREC at various times of the year. Bird watching kits - complete with binoculars, field guides & checklists - are available in the equipment shed.



An observation tower, located just south of the ARE Complex, looks out on an Osprey nesting platform and provides an excellent view of migrating waterfowl, shorebirds and wading birds.

A special wildlife observation blind near the canoe launch area (refurbished via another Eagle Scout project) is available for using those bird watching kits.

Catch-and-release fishing ponds



One of the ponds also features a wheelchair access ramp and dock from which participants can practice their angling skills.

On-site fishing ponds are stocked with largemouth bass, bluegills and catfish, and managed primarily for youth fishing programs. We provide the rods and reels ... you bring the bait. All fishing is catch-and-release.



Canoeing at AREC

The ARE Center also maintains a “fleet” of 10 Old Towne Camper canoes for use by visiting groups in canoeing the pond behind the Lodge. These canoes are chained to a wooden rack located just off the trail heading out to the boardwalk.



Side trail to canoe rack and launching area

- *Personal Flootation vests (life jackets) (stored w/ canoe paddles in equipment shed) must be worn by all canoers at all times!!!*
- *Canoe use is available only for the months of **April thru November** (weather permitting).*
- *The **Canoe Key** is kept on a hook in the Lodge lobby. Please be sure to lock and secure **all canoes squarely on the rack** when finished.*

ARE Outdoor classroom / Pavilion area



Furnished with several “half” picnic tables, the ARE Pavilion can be used as an outdoor classroom for conducting activities, preparing for (or processing) field activities, or as simply a place to enjoy a nice snack or lunch break.

Important note! *During a good chunk of the fall & spring seasons, the AREC Pavilion, Boardwalk Trail and Canoeing area will be closed between 9:30 AM & 1:30 PM on weekdays (usually Tuesday thru Friday) to reduce space conflicts with 5th grade Eco-Explorers field trip programs. Please take this into account in planning your program agenda!*

Easy access to ARE equipment and resources

The small shed next to the ARE pavilion offers a wealth of resources for use with your outdoor program.

Fishing gear, binoculars, nets, and other forms of field equipment, and 50 ready-to-use hands-on activity kits are stored in the shed for your use. Each of these kits offers a laminated lesson plan and all the props and materials needed to do the activity.



Use and care of these loaner kits and equipment is on the honor system, so we ask that group leaders take care to see that all kits and gear (including tangled fishing lines) are returned in good condition. Should any parts be missing or in need of repair, please indicate so on your Lodge check-out form or by contacting ARE staff. The shed key is on the key ring with the Lodge key.

A summary list of all activity kits is provided in the forms section of the website. Lesson plans for use of these kits are also available by contacting the ARE office.

AREC Activity Kit List for Aquatic Resource Education Center (AREC) Mallard Lodge user groups
(kits available in small shed by pavilion; those highlighted in yellow represent outdoor/seasonal activities)

Level	Kit Title	Kit #	Description
K-3	Birdwatch Jr.	18	Provides simple field guides and 10 pair of Jr. binoculars
K-3	Who's Who in the Wetland	34	students assume the identity of a wetland plant/animal and use clues and questions to guess each other's identity
K-4	Can't we Share?	26	musical chairs style game promoting value of wildlife habitat diversity
K-4	Jingle Frogs	27	students engage in role play by trying to mimic and match the calls made by 10 of our native frog species
K-6	Let the Cattail out of the Bag	25	hands-on, sensory activity challenging younger students to use their sense of touch for identifying assorted wetland objects in a bag
K-8	Lucky Ducky	30	role-playing game that engages students in exploring the hazards that waterfowl face during annual migrations
1-4	Eco-Adventures (Elem)	14	Elementary level (red) version of backpack trail kit offering age-appropriate activities tied to numbered stops along a 1-mile loop starting at the lodge
1-8	Whose clues? Wildlife Detectives	20	students use popsicle sticks to mark animal tracks & signs they find around the AREC grounds for sharing/identifying/interpreting with classmates
1-12	Fishing	1	rods/reels and tackle provided for fishing the AREC ponds (groups must provide their own bait and leave rigs in good repair for the next group)
1-12	Fin Finders	2	students role-play biologist in collecting/identifying fish in AREC waters
1-12	Pond/Marsh Macroinvertebrates	3	gear and id/info cards provided to engage 6 teams of students in sampling and/or comparing the bottom fauna of AREC ponds and/or tidal streams
1-12	Riches in the Ditches	4	same idea as #3, but for sampling the spring time invertebrate fauna of vernal wetland pools located along route 9 about 1 mile north of the Lodge
2-12	Canoeing	0	10 canoes, paddles and PFD's (must be worn); available April-October only
2-6	What can I eat with this Beak?	29	students utilize different utensils to simulate feeding adaptations of birds for picking up different food items in wetlands
2-8	Whale of a Tail	32	students use flagging tape or other materials to make a life-sized outline of any of several great whale species in grass (requires prior set up by adult)
2-12	Do You Dig Wetland Soils?	21	Color charts, texture key, soil augur and other tools are provided for students to examine characteristics and types of wetland soils
2-12	Wetland Metaphors	47	students brainstorm ways to relate everyday objects to wetland values
3-6	Salt Marsh Players	36	role-play on how plants and animals adapt to changing tidal conditions
3-8	Hooks and Ladders	31	interactive role-play that teaches the various life cycles obstacles striped bass must overcome along their journey from fry to adulthood
3-8	Marsh Model	48	students perform hands-on experiments using a dish-pan size marsh model to demonstrate the flood prevention value of wetlands
3-12	Bay Beach Study	13	offers lists and ID guides for beach-combing field trip to Woodland Beach
4-6	Smell your Way Home	38	using their sense of smell, students simulate how anadromous fish rely on scent cues to navigate streams during spawning
4-8	Mini-expedition	24	Students engage in scientific investigation of living and non-living components of the tidal marsh ecosystem
4-8	Who's Who in the Wetland (Upper)	35	clues & questions to guide students in guessing identity of wetland plants/animals (requires higher reading level and problem-solving skills)
4-8	Indra's Net	37	students explore the interconnectedness of salt-marsh ecosystem biota

Level	Kit Title	Kit #	Description
4-12	Salinity Kit	6	students measure salinity using the hydrometer/thermometer method
4-12	pH	8	provides test kits and/or strips for monitoring pH levels in AREC waterways
4-12	Turbidity	10	offers t-stick/Secchi-disk tools for measuring turbidity levels in water
5-12	Dissolved Oxygen	7	more complex water quality test kit for measuring D.O. levels in AREC waters
7-12	Nitrates/Phosphates	9	higher-level, titration-based test kits for monitoring nutrient levels in water
4-12	Water Sampler	11	employs neat device for lowering into a body water from above (e.g. into the tidal stream from the boardwalk bridge) to collect a water sample
4-12	Plankton	12	provides small plankton net, jars and identification materials for catching and observing microscopic life forms from AREC waters
4-12	Birdwatch, Sr.	19	assorted field guides and 10 sets of adult binoculars for bird-watching
4-12	Wetland Wheel	22	use of a picture/clue wheel to ID 16 wetland plants found along AREC trail
4-12	Fun with Fiddlers	23	engages students in observing and collecting data on marsh fiddler crabs
5-8	Eco-Adventures (MS)	15	MS (lt. blue) version of backpack trail kit offering age-appropriate activities tied to numbered signpost/stops along a 1-mile loop starting at the lodge
5-8	Marsh Munchers	39	students role-play food web connections of muskrats to learn about nutrient and energy flow in a wetland
5-8	Wetlands the name, adaptations the game	49	game that challenges students to match selected aquatic organisms with their respective adaptations
5-12	Marsh Mystery	40	uses a "Mystery of Sandy Bottom Creek" story to involve groups of 15-20 students in learning about the bioaccumulation of pollutants
5-12	Macro BINGO	44	BINGO-style game teaching identification of aquatic macroinvertebrates
5-12	Insectia	50	engages students in using real specimens and a ARE staff-develop dichotomous key to build basic insect identification and observation skills
7-12	Tale of Two Ponds	5	provides equipment, data sheets and guidelines for comparing water quality conditions in freshwater vs. brackish water ponds behind AREC
7-12	Water Webs	41	board game that emphasizes aquatic food web connections
7-12	It's about time, Delaware	42	through measurement, math and observation, students explore the rate at which wetlands are lost as they consider the impacts of such loss
7-12	Wetland Pursuit	45	Trivial-pursuit type game to test knowledge of wetlands
9-12	Eco-Adventure (HS)	16	HS (dk. blue) version of backpack trail kit offering age-appropriate activities tied to numbered signpost/stops along a 1-mile loop starting at the lodge

New Boardwalk Discovery Kits! (for mobile use in walking the boardwalk area and trails around AREC)			
4-8	How do We Connect?	A	food "webbing" activity demonstrating connectivity of salt marsh biota
4-12	Interpretive marsh boardwalk guide	B	set of colorful, readable, laminated signs for interpreting key tidal marsh ecosystem features keyed to 10 numbered stops along the AREC boardwalk
4-12	Salt Marsh Plant Tour	C	flip-guide for discovering and learning about several key plant species found along the AREC tidal marsh trail (includes assessment quiz!)
6-12	Geocaching@	D	challenges students in use of map, compass and smartphone GPS features in precisely locating a series of pre-set waypoints along the AREC grounds
6-12	Wetland Wastewater Treatment Tour	E	provides laminated booklet for touring and learning about AREC's unique constructed wetland wastewater treatment system (w/assessment quiz)

The AREC tidal marsh boardwalk loop

A popular destination for visitors to the Lodge and AREC is the 940-foot tidal marsh boardwalk loop. The walkway is wheelchair accessible, and features a raised observation deck, sitting area with benches, bridge over the tidal gut that connects to the Delaware Bay, and marsh level water sampling platform.



New Boardwalk Discovery Kits!

*A set of new activity kits (stored in backpacks in a tub that is housed in the equipment shed, see photo at right) have been developed for groups to get more out of their exploration of the AREC boardwalk and grounds. This includes a **Geocaching Challenge activity (Kit D)** designed to engage students in using their smart phone GPS capabilities to locate different waypoints on the AREC grounds and learn about the natural history of the area. An example of one of the waypoints follows.*



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Wetlands, including this portion of Delaware's estuarine salt marsh, provide homes for many rare and endangered plants and animals. One such species is the rare skipper, a small butterfly that depends entirely on big cord grass, during the nursery portion of its life. Big cord grass is the tall plants surrounding the marsh monitoring platform. The adult skipper lays her eggs on the stem of big cordgrass. After the eggs hatch, the young depend entirely on the plant to supply food and shelter during their larval stage. The Delaware Bay Salt Marsh between the Smyrna and Leipsic River is one of the very few locations in the world where the rare skipper is known to exist.

A laminated *interpretive guide* tied to 10 stops along the ARE tidal marsh boardwalk is available in the **kit B** backpack stored in the equipment shed

Interpretive Guide to the AREC Tidal Salt Marsh Boardwalk



This trail guide is designed to acquaint the Aquatic Resources Education Center visitor with one of Delaware's most abundant and productive habitat types - the tidal salt marsh. Begin your tour where the gravel trail behind the AREC meets access to the boardwalk deck, and look for the stops indicated by numbers at the tops of the boardwalk rails. There are 10 stops along the 940' length of boardwalk, corresponding to the numbered pages to follow, each enlightening on key aspects of marsh features, ecology and values. At the end, test your Marsh IQ with the quiz provided. Enjoy the tour & come back often!

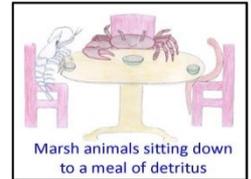
Stop 2: Dining on Detritus



Direct your gaze down to the soft brown soils of the marsh. If you were able to take apart this mud, you would see that it's made up of bits and blobs of decaying plant material.

Scientists call this stuff 'DETRITUS'. We think of it as "nature's compost". From it are derived the nutrients and energy that fuel the tidal salt marsh food chain year-round.

Detritus is eaten directly by plankton, larval fish, grass shrimp and fiddler crabs, but the energy flow doesn't stop there! Fish, raccoons and wading birds in turn consume these detrital feeders, transforming that energy to fish and wildlife growth. So, next time you sit down to dine on blue crabs or a flounder fillet, consider that the good things you get from that meal trace back to the detrital riches found in marshes like this!



Stop 4: Listening to the Marsh



At this stop - a favorite for our 5th grade Eco-Explorers field trip program - we ask students to sit back, close their eyes, and open their ears to the many sounds of the marsh. We encourage you to do the same, and experience the sense of wonder and tranquility it offers.

As the seasons change, the salt marsh may appear to be little more than a sea of green grasses or a vast area of mud flats and winding tidal creeks. But, no matter what time of year it is, the salt marsh is teeming with life. Take a few minutes at this stop to sit quietly, and just listen to the symphony of the salt marsh. From the melodic trill of marsh wrens proclaiming territory during the spring nesting season, to the cacophony of a thousand snow geese winging overhead on their fall southward migration. The sounds that fill these tidal wetlands are delightful reminders of the richness and variety of life they support.

TESTING YOUR TIDAL MARSH IQ

- Which of the following statements about fiddler crabs is not true? (circle the letter for your answer choice)
 - A) males and females can be distinguished by their claws
 - B) they feed on small fish and other shellfish
 - C) an acre of tidal marsh can hold millions of them
 - D) their burrows help aerate the marsh mud

- What is **detritus** and how is it important to tidal marsh ecology?

- Write the letter of the correct clue from the list below inside the picture of the plant that the clue describes.

- A. once used as cattle feed
- B. valued as a healing herb
- C. helps treat septic wastes
- D. home to a rare butterfly



- True/False: the term **brackish** refers to the typically murky, dirty appearance of tidal marsh waters
- The tidal stream running along the AREC boardwalk feeds into what body of water? (circle your answer choice)
 - A. Atlantic Ocean
 - B. Taylor's Gut
 - C. Chesapeake Bay
 - D. Delaware Bay
 - E. Smyrna River
- What are three important benefits that tidal wetlands provide ?

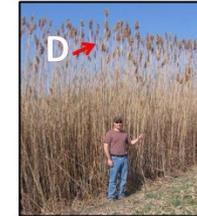
Plants of the Delaware Aquatic Resources Education Center boardwalk area/salt marsh tour



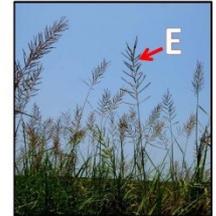
A field guide to plants of the AREC marsh trail is available in the **kit C** backpack in the shed

WHAT PLANT AM I? – PART 1 ANSWER KEY

The arrows in the photos below point to plants you learned about in this activity. Write the letter of each plant pointed to next to the name of the plant you think it is. Note: the name of the one plant that is not pictured here should be left blank.



- Left blank Eastern red cedar
- B High tide bush
- D Phragmites
- E Big cordgrass
- A Smooth cordgrass
- C Salt meadow hay



SALT MEADOW HAY



I grow low-to-the-ground in higher, flatter areas of the marsh, where you can recognize me by my matted down stalks and leaves. If you were a deer or other animal who visits these marshlands, do you think you would find these mats a nice place for resting?



If you could see my leaf blades close-up, you would find them to be thin (2-3 mm wide), tapering and with the edges in-rolled (an adaptation for conserving water). My purplish flowers (right) are borne in spikes.



Because I can't tolerate the lower oxygen and higher salinity levels that my cousin smooth cordgrass can, I am confined to the higher (less flooded) parts of the marsh.

In pioneer times, farmers grazed their cattle in marshy meadows made up of members of my kind. Salt hay harvesting (for livestock feed) still occurs in some New England and Mid-Atlantic states.



In addition to providing cover for songbirds and other small animals, my coarse stems also provide lodge-building material for muskrats.

Plants of the AREC salt marsh tour

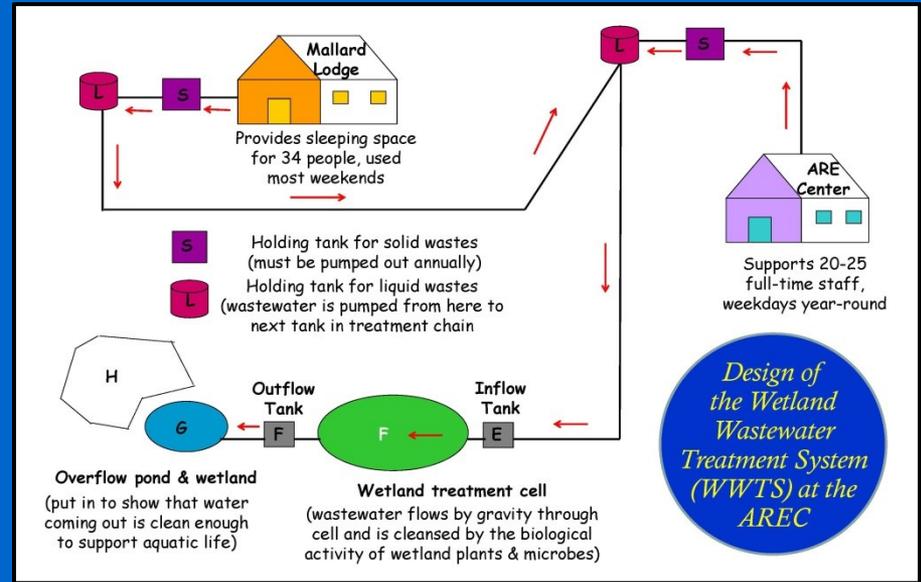
Salt meadow hay



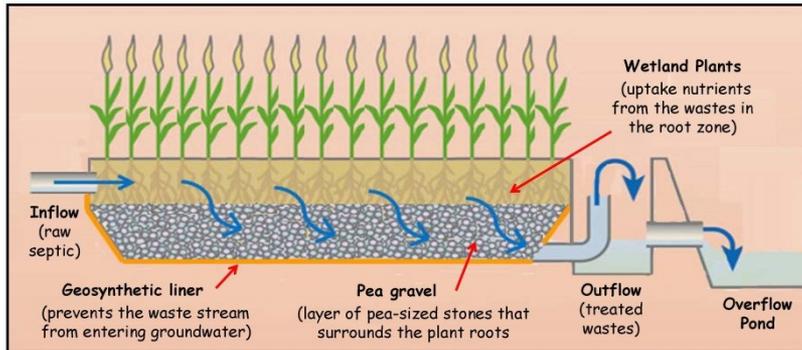
As you look out along the sides of the boardwalk, you may notice several large strange-looking areas of low-lying vegetation – appearing almost as crop circles or bedding areas for animals. These beds are made up of another *Spartina* species: **salt meadow hay** (*Spartina patens*) with a smattering of **spike grass** (*Distichlis spicata*) sprinkled in. These two plants grow in dense mats in the higher (less flooded) parts of the marsh. Flip over this card to learn something neat about these plants and the early history of this area.

An interpretive guide to AREC's unique Wetland Wastewater Treatment System (stored in backpack kit E of the shed) is also available for your use

**Treating septic wastes the "natural" way:
a guide to the alternative wetland wastewater
treatment system at the Delaware Aquatic
Resources Education Center**



Movement of water through the wetland treatment cell



Wetland plants, along with bacteria living on and around the plant roots and the surrounding pea gravel, provide biochemical breakdown of the waste water as it passes through the wetland. The nutrients released in the process are taken up by the wetland plants and microbes to help them grow and multiply

WHAT'S YOUR WETLAND TREATMENT IQ? ANSWER KEY

The questions to follow test your listening & learning on the AREC Wetland Wastewater Treatment System (WWTS). Circle the best answer(s) to the true/false and multiple choice questions (there may be more than one right answer). For those questions requiring longer answers, please use what you've learned to provide your best.

- What body organ are wetlands sometimes likened to? Why?
Kidneys, because they are very good at cleaning and filtering unclean water that passes through them.
- A key advantage of wetland wastewater treatment systems (WWTS) over conventional systems is that they:
a) tend to be cheaper to install b) utilize parts of the environment that are already there
c) clean the water a lot faster d) require less space to carry out the breakdown of wastes
- True/False: The main reason we use constructed wetlands to treat human septic wastewater is because natural wetland systems do not have an especially good capacity for cleaning water.
Natural wetlands clean water too, but we need to preserve them for other reasons, especially for habitat value.
- Which of the following statements about the p-gravel used in the AREC WWTS is/are true?
a) This is where the wastewater goes, allowing breakdown to occur below the surface with minimal odors.
b) The gravel allows wastewater to move quickly down through the wetland and out to the groundwater.
c) The small stone size supports waste breakdown by providing a large surface area for bacterial growth.
d) It is called "pee" gravel in recognition of the kind of liquids it receives in great volumes.
- What are two important functions that plants in wetland wastewater treatment systems perform?
Uptaking and absorbing nutrients that can cause algal blooms, fish kills and other water pollution problems.
Breaking down or binding up toxic substances so that they are not in a form that is harmful to aquatic life.

Mallard Lodge use training for group leaders
Module 3: Lodge reservation policies & procedures



Key things to know about Mallard Lodge use

- * Reservations are required! Please don't surprise us!*
- * Use of the Lodge and AREC's outdoor amenities is limited to school groups, youth groups and other education / conservation entities. **These facilities cannot be used for private parties!***
- * **Education Programs are given priority** during peak use periods (September - November and March - June).*
- * Use for non-aquatic education meetings is restricted to weekdays during the March-November period of opening, and are subject to higher rental fee rates.*
- * All reservations (whether on-line or by phone or email) are made through the AREC administrative assistant, **Pearl Franklin** (302-735-8689; pearlie.franklin@state.de.us)*

Major changes to program & process for 2015

- * Effective 2014, due to budget challenges and increased facility operating costs, the Lodge will be closed to use from Thanksgiving through March 1.*
- * Also for the first time, ARE will be charging a nominal fee of \$50 per day (+ \$50/night) for groups using the Lodge for aquatic-education programs.*
- * Non-aquatic education groups will be limited to weekdays, with fees increasing to \$175 per full day/night stay and \$100 for day only use.*
- * All groups will be required to submit a damage deposit check of \$100 as part of the reservation requirements.*
- * A re-orientation process for past-trained (pre-2014) group leaders (to bring them up to speed on these and other changes) will also be introduced.*
- * A new set of forms (designed to enable streamlined electronic fill-out and send-in of reservation forms) will also be initiated.*

Reserving the Lodge for your group



Delaware Aquatic Resources Education Center Mallard Lodge Facility Reservation Request Form

To request a reservation, this form must be completed and mailed, emailed or faxed to AREC staff (see below):

Contact Person: _____

Group/Organization: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Work phone #: _____ Cell phone #: _____

Email address (please print neatly!): _____

Type of Facility Use (Check one): Aquatic-Education related* Non-Aquatic-Education related
(weekdays or weekends, Mar. 1 – Nov. 30) (weekdays only, Mar. 1 – Nov. 30)

Group Level (check): Elementary Middle School High School College Adult

Number of participants in group: _____ Adults _____ Students/Youth

Requested Dates: 1st choice _____ 2nd choice _____

Number of days: _____ Number of nights: _____ Arrival time (day 1): _____ Departure time (last day): _____

* Our Federal grant funding requires that Aquatic Education approved users of the facilities feature an agenda that is geared in large measure to activities focused on the aquatic environment, such as fishing, wetland studies, water quality sampling, and other such activities. Approved aquatic-education users pay a reduced group fee (\$50/day + \$50/night) for use of the facilities relative to non-aquatic education users (\$75/day + \$100/night). Aquatic education group leaders are required to attend an orientation workshop as a condition for use of the facilities. ARE Facilities are not available for use in convening parties, family reunions or other such activities.

As soon as possible after submission of your request, an AREC staff person will notify you (typically by email) regarding availability of facilities for the dates requested. At that time additional information and forms will be sent to you to clarify what is required for confirmation/completion of your reservation.

Please direct questions or inquiries to Pearl Franklin at (302) 735-8689; pearlie.franklin@state.de.us

This form should be sent to Pearl's attention via email, FAX (302-653-3431) or US Mail to:

Aquatic Resources Education Center, 4876 Hay Point Landing Road, Smyrna, DE 19977

Signature: _____ Date: _____

New policies, electronic fill-in forms and a more streamlined process have been developed for making a Lodge reservation.

The key form for making a Mallard Lodge reservation request is shown at left; a typeable copy of this form is available on the forms section of the ARE website.

Upon completion of the form, hit "send" to automatically route the form to ARE staff.

This graphic summarizes the process for reserving the Lodge facilities (forms underlined in blue are available from the forms section of the ARE website)

Read the [FAQs for Mallard Lodge Facilities Use](#) to familiarize yourself with the procedures and guidelines described therein

If those guidelines allow for your group's use of the Lodge, complete/return the [Mallard Lodge Reservation Form](#) and/or contact Pearl Franklin, pearlie.franklin@state.de.us 302-735-8689, to inquire about dates available

Once dates for your group's visit have been established, you will be sent (by way of and email from Pearl), a complete [Lodge use application packet](#). To secure your reservation, you need to return the [Mallard Lodge Facility Use Agreement](#), along with separate checks for the Lodge use rental fee and \$100 damage deposit (payable to DE Division of Fish and Wildlife)

Non-aquatic-ed.
user groups

Your part in the reservation process has been completed. Await message from Pearl confirming your reservation.

Aquatic education
user groups

To receive approval for aquatic education use, complete and submit also an [Aquatic-ed activity planner & reduced fee request form](#) + Detailed agenda and make sure at least one group leader has received training for Aquatic-Educator Lodge use* within the time period beginning August 2014.

* Although Lodge use dates can be booked ahead of time (prior to receiving training), arrangements should be made to ensure that at least one adult group leader has (if a first time Lodge leader) attended one of the new (August 2014 or later) Mallard Lodge Facilities Use workshops, or (if a prior-to-August-2014-trained leader) has completed the on-line [Mallard Lodge Use Orientation Modules](#) before the actual dates of group stay at the Lodge (or risk forfeit of reservation).

For inquiries about facilities use workshops and training opportunities, contact: [Pearl Franklin](#).

The Mallard Lodge Use Agreement form has also been revised for ease of electronic completion & submission



Delaware Division of Fish and Wildlife
AQUATIC RESOURCES EDUCATION CENTER (AREC)
MALLARD LODGE FACILITY USE AGREEMENT



The Mallard Lodge is operated by the Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Fish & Wildlife, as an environmental education facility for its Aquatic Resources Education (ARE) Program. Located adjacent to the Woodland Beach Wildlife Area, the Lodge borders several small ponds, a 940-foot interpretive boardwalk on the tidal salt marsh, and offers magnificent views of Delaware Bay coastal wetlands and the numerous wildlife species that inhabit them. The Lodge was opened in 1995 as a host facility for environmental education programs, with amenities including sleeping accommodations for as many as 36 individuals. The Lodge is also available for conferences, workshops and other meetings, when not being used for aquatic education programs. Lodge use is restricted to educational, governmental, non-profit and natural resources related functions. It is **NOT** available for private parties. Teachers providing on-site ARE programs for students are afforded the highest priority in scheduling, and may preempt other reservations. All users are required to pay a nominal fee to use the facility. Use of the Lodge by any qualified group will be contingent upon their compliance with conditions outlined below.

Reservations & Rentals: A Mallard Lodge Facility Reservation Request Form must be received and approved for reservation by any group. Although aquatic-education-related functions have priority and may preempt other reservations, such changes will not occur without at least two weeks advance notice to the scheduled group. Likewise, any group wishing to cancel or change a reservation are required to provide ARE with at least two weeks' notice. Failure to do so, or to not show up for a scheduled reservation without prior notification to ARE, will result in forfeiture of the group's damage deposit. Fees for aquatic-education related use of the Lodge are \$50 per day and \$50 per night. Fees for non-aquatic education use of the Lodge are \$75 per day, with an additional \$100 fee for overnight use. Beginning 10/1/2014, a reservation/damage deposit of \$100 will be collected from all user groups. The deposit will be returned once it is determined that the group has left the Lodge clean and all equipment in good working order. The deposit (and all other required documents) must be received two (2) weeks prior to your visit.

Access & Accessibility: On-site sleeping (two twin Murphy beds) and bathroom accommodations are available on the first floor to visitors who are wheelchair-bound or otherwise have difficulty navigating the stairs to the upper level bedrooms. ADA access to all first level meeting and kitchen facilities is also provided. Keys to the facility can be obtained (by using the combination code provided) from the lockbox located next to the front door. The large key on the ring opens both Lodge front doors and the small key provides access to the small equipment shed next to the AREC pavilion area. Check-in should be at the time specified on your Facilities Use Request Form.

Kitchen: Kitchen facilities are provided for your convenience, including a refrigerator, gas-oven/range, toaster, microwave, 3-compartment commercial-grade sink and stand-alone sink. All food, beverages, cookware, utensils, flatware, cups, etc. must be supplied by the user. Users are responsible for cleaning the kitchen area and all kitchen equipment, prior to departure. Catering arrangements, if required, are the responsibility of the user group. Caterers are expected to thoroughly clean the food prep area and discard all kitchen trash in the dumpster at the end of each meal, as a condition of their service.

Furnishings: The conference/dining area is furnished with tables and chairs for as many as 50 individuals. It is the responsibility of Lodge users to return the chairs and tables to the form and location they found them in when they came – which typically is tables folded up and stacked against the back wall and chairs stacked on the cart provided. Adjacent to the conference room is an informal, living room furnished with cushioned chairs and sofas. A television set (no cable), DVD and VCR players, and stereo system are available. Pull-down screens (for projecting programs) are provided in both the living and dining area, but visitors will need to supply their own LCD projector (and any other A/V equipment required). 6 bunkrooms, located on the 2nd and 3rd floors, provide sleeping accommodations for 36, in rooms furnished with 2 to 12 twin-sized beds. Visitors are expected to bring their own pillows, sheets (twin-size), blankets and/or sleeping bags. Bathrooms with sinks, toilets and shower facilities are available on all three Lodge levels. All Lodge amenities are provided and maintained for your comfort and we ask that you care for them well, with attention to leaving them in the best possible condition for the next group. Should you experience any problems with any aspect of the facilities, please indicate so in the space provided on your check-out form.

Heating & Cooling: To conserve energy and comply with state law, thermostats will be set for a maximum of 67 degrees (during cold weather use) and a minimum of 78 degrees (when in summer use). To provide added comfort during cold weather times, a working fireplace is provided in the living room. Lodge users must provide their own firewood (seasoned hardwood only please), and – to reduce risks of introducing invasive tree pests and/or diseases – it is required that any firewood brought in should be locally harvested or obtained from local suppliers (sources available by contacting the ARE offices). In addition, all firewood brought in should be burned.

Clean-up & check-out: At the end of your visit, it is your responsibility to see that all floors are swept or vacuumed, chairs and tables returned to their original positions, trash and recyclables deposited in the outside dumpsters (the large dumpster for trash, the smaller one for recyclables), and that the facility is otherwise left in the same condition as which it was found. Completion/return of the Mallard Lodge check-out checklist form is required of all groups using the facility. For groups using the Lodge under reduced fees for aquatic education-focused programs, submission of volunteer timesheet forms are also required. Forms should be placed in the designated black box located on the lobby wall near the front door. Prior to exiting the premises, it is imperative that all faucets and lights be turned off, doors and windows securely locked, and keysets returned to the lockbox by the front door.

Telephone & Internet: Cell phone coverage in and around the Lodge tends to be unreliable. Messages and routine calls should not be directed to the ARE Center office phones. In case of emergency need to make an outside call, a land-line phone is available for group leader use in the handicapped access bedroom (adjacent to the Lodge lobby). Users must dial '9' to get an outside line before dialing the call-out number. The number for this phone (in case of emergency need for calls coming into a Lodge visitor from outside) is 302-653-3441. Also located in this bedroom for group leader use, is a desktop PC that offers Internet access, Outlook web access for state email users and limited software applications. Wi-Fi is available for visitors bringing their own electronics. A laminated instruction sheet for visitor use of Lodge computer, WiFi and phone systems is posted in this room.

Safety: The conference area has been approved by the Fire Marshall's Office for occupancy of no more than 50, and the upstairs bedrooms for no more than 34 individuals total. To ensure that all visitors are accounted for in the event of a fire, group leaders are required to write in the exact number of overnight guests staying on each level of the Lodge (for each night of their stay) on the chalkboard provided on the lobby wall next to the front door. Dry chemical fire extinguishers are available in every room. Exit signs light the nearest access routes out of the building. Emergency phone numbers are posted next to the pay phone. In the event of a false fire alarm, instructions for calling in and cancelling the alarm are posted on the wall behind the door to the handicapped access first floor bedroom. Smoking is prohibited in all indoor parts of the facility.

Sign-off (required): In order to secure your Mallard Lodge facility reservation, this form needs to be returned, with the requisite boxes to follow checked, required elements attached, and signature line content provided.

I have read all the information and agree to abide by all of the conditions contained in the above Use Agreement.

I have also read and agree to abide by all of the conditions contained in the attached FAQs for Mallard Lodge use.

I understand that my reservation has been established for the following dates and times:

arriving on _____ at _____ and departing on _____ at _____
Date of arrival Time Date of departure Time

I have enclosed a check (payable to the 'Delaware Division of Fish and Wildlife') for \$ _____ to cover the costs of _____ days and _____ nights stay as a (check one): aquatic-ed. non-aquatic-ed. user group.

I have also enclosed a separate damage deposit check for \$100 (also payable to 'DE Division of Fish and Wildlife') and understand that failure to comply with the procedures specified above could result in forfeiture of this deposit.

(for aquatic-ed groups only): I agree to complete and return the activity checklist provided, along with a copy of our agenda for implementing those activities, within 2 weeks prior to our visit, or risk forfeiture of the reservation.

Signature

Date

User Group

New forms for agenda planning (aquatic education groups only) and check-out (all user groups) are also being implemented.



Agenda template for groups using the ARE Center's Mallard Lodge for aquatic education field programs*

Our ability to provide reduced fees for aquatic-education approved facilities use requires that we keep accurate records of group activities. To meet that need, the group leader must complete and return this form (as part of their facilities reservation package) showing activities planned for their group during their visit to the ARE Center. A detailed agenda should also be attached indicating days and times when various activities are scheduled.

Group name:	Group leader name:
Group leader phone:	Group leader e-mail:
Group type (check one): <input type="checkbox"/> school <input type="checkbox"/> youth <input type="checkbox"/> other (please specify):	
Grade level(s): <input type="checkbox"/> Elem. (K-4) <input type="checkbox"/> Middle (5-8) <input type="checkbox"/> H.S. (9-12) <input type="checkbox"/> College <input type="checkbox"/> Adult	
Date(s) of program:	Length of program: ___ days ___ nights
Total number of participants (including chaperones):	Number of participants who are minorities:
Youth: ___ Adults: ___ TOTAL: ___	Youth: ___ Adults: ___ TOTAL: ___

Activities: Check all boxes for corresponding to activities planned for your group during their stay at the AREC. Use the "Other" boxes to write in additional activities planned, such as names of any other ARE activity kits used.

<input type="checkbox"/> Boardwalk Trail Guide	<input type="checkbox"/> Macroinvertebrate studies	<input type="checkbox"/> Other: specify in boxes below
<input type="checkbox"/> Birdwatching	<input type="checkbox"/> Reptile/Amphibian studies	1.
<input type="checkbox"/> Canoeing	<input type="checkbox"/> Salt marsh plant studies	2.
<input type="checkbox"/> DNC visit/tour	<input type="checkbox"/> Seining at Woodland Beach	3.
<input type="checkbox"/> Fishing	<input type="checkbox"/> Vernal Pool studies	4.
<input type="checkbox"/> Geocaching	<input type="checkbox"/> Water quality monitoring	
<input type="checkbox"/> Horseshoe crab field trip	<input type="checkbox"/> Wildlife observations	
<input type="checkbox"/> Horseshoe crab program	<input type="checkbox"/> Wetland learning kit*	

* Group leader training at a WADE (Wetland Activities for Delaware Educators) workshop is a pre-requisite for kit use.

Comments (use the space below to provide additional information regarding activities planned for your group):

This form, along with an agenda showing dates/times for the various activities needs to be submitted by all aquatic-ed groups in order to secure a reservation.

* Note: groups using the AREC facilities for non-aquatic education meetings are not required to submit this form.

Check-out procedures for Mallard Lodge users (revised August 2014)

Lodge group leaders are required to complete and return this form as part of the check-out process for your visit. Your attention to this process is not only critical to the capacity of the ARE Center to offer ongoing use of these facilities, but also ensures that the next user group will find conditions as they should for their program. Failure to comply with this protocol may result in loss of the damage deposit and revocation of future Lodge use privileges.

LIVING ROOM & ENTRANCE AREA	✓
Floors swept	
Fireplace (if used) cleaned of ash and debris	
Furniture in place (as you found it)	
Sliding doors closed and locked	
Lights turned off	
Thermostat reset to 50° (winter) or 80° (summer)	

DINING ROOM	✓
Tables clean (and in place as you found them)	
Chairs stacked or placed upside down on tables	
Floors swept (after chairs are stacked or placed)	
Sliding doors closed and locked	
Lights turned off	
Trash taken out and fresh garbage bags inserted	

KITCHEN	✓
Stove & grill clean w/drip pans upside down on top	
Coffee-maker(s) turned off and cleaned	
Dishes, pots, utensils, etc. cleaned & put away	
Refrigerator cleaned & removed of perishables	
Sink, countertops & microwave cleaned	
Floors swept and wiped of any pooled water	
Trash taken out and fresh garbage bag inserted	

UPPER LEVEL DORMS	✓
Beds and other furnishings in place	
Windows closed	
Floors swept or vacuumed	
Trash bins emptied	
Lights turned off	
Emergency exit doors closed securely	
Thermostats reset to 50°	

BATHROOMS (1 near entrance, 1 in bedroom off foyer, 2 in back hall, 2 on second level, and 2 on third floor level)	✓
Floors swept and wiped of any pooled water	
Toilets cleaned and checked so not running	
Sink faucets turned off	
Shower faucets turned off (all levels)	
Wastebaskets emptied	
Lights turned off	

OTHER EXIT TASKS	✓
All loaner kits & field gear returned to source	
Fires out in firepit and outdoor grill area	
Volunteer forms completed and signed by group leader(s) & chaperones and placed in hall box	
This checklist completed and placed in hall box	
All three lower level exit doors locked	
Keys returned to lock box	

Other details: The closet at the front of the dining room is stocked with paper towels, garbage bags and cleaning supplies (brooms, dustpan & brush, etc.). Toilet paper rolls are provided in the "Hens" bathroom on the second floor. Please use these items as needed and return all cleaning supplies to the closet for the next group. Should any of these materials be missing, indicate so in the space below. Any other facilities-related problems, including items found or left broken or in need of repair, should also be noted in the space below.

Group Leader Name _____	Email (please print neatly) _____	Date _____
To be completed by ARE staff	Checked by: _____ Date checked: _____	Comments: _____

Checklist of responsibilities for using & exiting the Mallard Lodge facilities

(forms underlined in blue are available from the forms section of the ARE website)

About a week or so prior to a group's stay at the Lodge, the reserving group leader will receive an email from Pearl providing the numerical combination code for opening the Lodge lock box. Upon arriving at the Lodge, the leader should adjust the dials on the lock box to that code, in order to retrieve the keys for entrance to the Lodge.

Prior to the first night's stay, the group leader should review the [Mallard Lodge Ground Rules & Safety Procedures](#) with the group, including pointing out fire escape exits at each sleeping level and procedures for using them in the event of an emergency. As a key fire safety precaution, for each night of stay, the group leader should update the numbers on the blackboard located on the Lodge lobby wall to indicate the respective number of youth and adults that will be sleeping on each of the 3 levels. Should any emergency arise during the group's stay, a list of numbers to call is posted next to the living room pay phone.

When it's time to prepare for departing the Lodge, the group leader is responsible for seeing that all tasks on the [Mallard Lodge Check-out Checklist](#) are completed - including making note of any problems with Lodge conditions when they arrived, as well as any issues, damages or repair needs that occurred or were observed during their stay. Before leaving, this checklist should be signed and deposited in the black box located below the Lobby blackboard.

Non-aquatic-ed.
user groups

Prior to vacating the building, make sure all windows are closed and doors secured, prior to returning the keys to the Lockbox and resetting all the numbers to zero.

Aquatic education
user groups

In addition to completing the [Mallard Lodge Check-out Checklist](#), the group leader should see that all [Mallard Lodge Aquatic-Ed Volunteer Log](#) forms (a separate one for each day of stay) are filled in by all adult aquatic-education program helpers (in total accordance to instructions) and that those forms are signed at the bottom by the group leader and deposited in that same black box located on the Lodge lobby wall. All doors and windows should be secured and keys returned to the lockbox.

Volunteer Hours reporting is vital!

As mentioned earlier, use of the Lodge is funded by USFWS Federal aide grants.

***You, as group leaders** (as well as any other adults in your group who guide students in aquatic-ed activities) **are volunteers** – supporting our mission of Aquatic Education - and therefore, are asked to complete a volunteer timesheet for the hours you contribute.*

*As such, your volunteer hours count as “in-kind match” to these Federal grant monies. **Every hour of volunteer time contributed by group leaders such as you matches nearly \$40 of funding to the ARE Program!***

Please note that only hours spent guiding (or preparing to guide) students in aquatic education activities can be counted as match (not time spent sleeping, eating or doing other activities with the group!) A limit of 12 hours per day is allowed for time claimed.

To qualify as match, each adult volunteer must fill out his/her own separate line on the volunteer form (including name print, signature and hours volunteered).

Please read all instructions carefully before completing these forms. If those instructions are not followed to the letter, the match cannot be used by our program.

When completed, deposit your group’s volunteer forms, along with your completed Lodge Check-out Checklist in the black box provided near the ARE front door lobby.

This is the volunteer form needed from group leaders. Blank copies are kept in the black box hanging in the Lodge lobby. See the forms section of the ARE website for E copies.

DE ARE Center/Mallard Lodge Group Leader's Volunteer Form



The Department of Natural Resources and Environmental Control is committed to affirmative action, equal opportunity, and the diversity of its workforce.



Group _____

Program Dates _____

Please read before signing! By signing below, I acknowledge and agree to the following:

- That I understand the risks involved in being a volunteer for the Division of Fish and Wildlife (DFW) and that neither the State of Delaware, nor the Department of Natural Resources and Environmental Control (DNREC), nor the DFW, nor any state employee or contractor, will assume any financial liability for any injury or illness that I, or any family member or friend in attendance with me, might incur while performing voluntary service for the DFW.
- Volunteers are not considered employees of the State of Delaware. DFW does not provide Worker's Compensation or any other insurance coverage for volunteers.
- I agree to provide service as a volunteer without compensation and to adhere to DFW rules and procedures and will not attempt work that is beyond my abilities or for which I have not been assigned, trained, or authorized.

Continued funding for free use of the Mallard Lodge for groups doing aquatic education-based programs requires your help in recording all volunteer hours contributed by group leaders and chaperones. **Hours can only be counted if they are filled in and signed by each volunteer for each separate day** (charts below) **of your stay**. This form must be completed by all groups receiving a fee waiver for using the Lodge for aquatic education programs.

All information must be recorded in ink. Any changes or corrections should be made by drawing a line through the error and correcting the error in ink. The person making the correction must also initial it. **Count only those hours spent supervising your group in educational activities (12 hours per day limit), not those spent eating, sleeping or in other forms of free time.** Travel time and hours spent preparing to lead an educational activity may also be counted.

Date of service	Volunteer name (print please)	Volunteer signature	Total Hours volunteered

The volunteer hours reported above are confirmed to be accurate and true by:

_____ Date _____
Group Leader signature

OFFIC E USE ONLY	_____	_____
	ARE Project Leader certification signature	Date
	Date hours entered _____	Hours entered by _____