

AIS Mini-Poster Project

PROJECT CHALLENGE: Design your own “MOST UNWANTED AIS” poster for an aquatic invasive species that is a threat to Montana lakes, rivers, ponds, and streams.



FIRST: Select ONE of the following to research. Check the box for the topic you selected.

- | | |
|--|---|
| <input type="checkbox"/> Asiatic clam (<i>Corbicula fluminea</i>) | <input type="checkbox"/> Northern pike (<i>Esox lucius</i>) |
| <input type="checkbox"/> Chinese mysterysnail (<i>Cipangopaludina chinensis</i>) | <input type="checkbox"/> Northern snakehead (<i>Channa argus</i>) |
| <input type="checkbox"/> New Zealand Mudsnail (<i>Potamopyrgus antipodarum</i>) | <input type="checkbox"/> Snapping turtle (<i>Chelydra serpentina</i>) |
| <input type="checkbox"/> Quagga Mussel (<i>Dreissena rostriformis bugensis</i>) | <input type="checkbox"/> Brazilian waterweed (<i>Egeria densa</i>) |
| <input type="checkbox"/> Red-rim melania (<i>Melanoides tuberculatus</i>) | <input type="checkbox"/> Curly-leaf pondweed (<i>Potamogeton crispus</i>) |
| <input type="checkbox"/> Zebra mussel (<i>Dreissena polymorpha</i>) | <input type="checkbox"/> Didymo (<i>Didymosphenia germinata</i>) |
| <input type="checkbox"/> Virile crayfish (<i>Orconectes virilis</i>) | <input type="checkbox"/> Eurasian watermilfoil (<i>Myriophyllum spicatum</i>) |
| <input type="checkbox"/> Bloody red shrimp (<i>Hemimysis anomala</i>) | <input type="checkbox"/> Flowering rush (<i>Butomus umbellatus</i>) |
| <input type="checkbox"/> Red swamp crayfish (<i>Procambarus clarkii</i>) | <input type="checkbox"/> Hydrilla (<i>Hydrilla verticillata</i>) |
| <input type="checkbox"/> Rusty crayfish (<i>Orconectes rusticus</i>) | <input type="checkbox"/> Parrot Feather Water-milfoil (<i>Myriophyllum aquaticum</i>) |
| <input type="checkbox"/> Spiny waterflea (<i>Bythotrephes longimanus</i>) | <input type="checkbox"/> Yellowflag iris (<i>Iris pseudacorus</i>) |
| <input type="checkbox"/> Bighead carp (<i>Hypophthalmichthys nobilis</i>) | <input type="checkbox"/> Starry stonewort (<i>Nitellopsis obtusa</i>) |
| <input type="checkbox"/> Asian swamp eel (<i>Monopterus albus</i>) | |
| <input type="checkbox"/> American Bullfrog (<i>Lithobates catesbeianus</i>) | |

SECOND: Research your AIS topic, complete the AIS Poster Research Guide worksheet, and create a mini-poster on an 8.5” x 11” paper or Google Slide. Please include the following:



- Common name** of the organism (and scientific name if it has one).
- Mug shot** – A photo, which must be properly cited (see example below), or draw a sketch.
- What to Look For** – Physical appearance and any other distinguishing characteristics.
- Modus operandi** – Police jargon for “mode of operation.” What physical, chemical, and/or behavioral traits make it an invasive species.
- Last Known Location** - Last know locations? Where could it be found in Montana?
- Hide out** – What is its preferred habitat?
- Armed and dangerous?** – How so? How does it harm the environment and/or economy?
- Tips for capture** – Suggest weapons that can be used against it, as well as, ways to detect and prevent it.
- Contact** – An agency or appropriate authority to contact if organism is found.
- Miscellaneous** – At least two other unique facts that could help lead to its capture.



Photograph of American bullfrog. (Alan D. Wils, 2006)

THIRD: Create a **Poster Reference List**

- At least two sources (ex. a website, book, or encyclopedia, etc.).
- Source material MUST have an author’s name or be from a reliable organization (.gov, .org, or .edu), otherwise do NOT use it.
- A.P.A. formatted. See provided formatting guide.
- Alphabetized.
- You must submit it separately from your poster.



Most Unwanted AIS Poster

LAST: Review your poster to make sure the following criteria are met:

- Typed OR neatly hand written.
- Limit the number of words. Not too wordy, nor too sparse!
- ‘Wow’ factor that engages the viewer and helps them to learn about your AIS topic!
- ‘Mug shot’ is sketched, or copied and pasted from the web source (but make sure you cite the source directly beneath the image and include the source in your Reference List).

Poster Grading Rubric

Use the following rubric as a guide as you complete your poster.

	Exceeds	Meets	Does Not Meet
Content	<input type="checkbox"/> Common and scientific name included <input type="checkbox"/> Mugshot clearly depicts the organism <input type="checkbox"/> Physical appearance and distinguishing traits are clearly identified in detail <input type="checkbox"/> Explains in detail why the species is invasive <input type="checkbox"/> Hide out clearly identified <input type="checkbox"/> Impacts to the environment and economy described in detail <input type="checkbox"/> Accurate tips for detection and/or prevention provided <input type="checkbox"/> Contact listed <input type="checkbox"/> Three or more unique facts included	<input type="checkbox"/> Common name included <input type="checkbox"/> Mugshot is included but the organism is difficult to see <input type="checkbox"/> Physical appearance described <input type="checkbox"/> Briefly explains why the species is invasive <input type="checkbox"/> Hide out identified <input type="checkbox"/> Provides potential impacts <input type="checkbox"/> Minimal tips for detection and/or prevention provided <input type="checkbox"/> Contact listed <input type="checkbox"/> Two unique facts included	<input type="checkbox"/> Organism name not included <input type="checkbox"/> Mugshot was either inaccurate or not included <input type="checkbox"/> Physical appearance vague or inaccurate <input type="checkbox"/> Invasive traits unclear <input type="checkbox"/> Hide out not identified <input type="checkbox"/> Impacts unclear <input type="checkbox"/> Detection and/or prevention tips not included <input type="checkbox"/> Contact not listed <input type="checkbox"/> Unique facts not included
Format	<input type="checkbox"/> Typed or artistically hand-written <input type="checkbox"/> Poster design elicits a ‘WOW’ <input type="checkbox"/> Text is not too wordy or sparse	<input type="checkbox"/> Neatly hand-written <input type="checkbox"/> Basic poster design <input type="checkbox"/> Text is too wordy	<input type="checkbox"/> Writing messy or unclear <input type="checkbox"/> Text is too sparse
Reference List	<input type="checkbox"/> Three or more reliable sources provided in correct A.P.A format <input type="checkbox"/> Mugshot properly cited and included in reference list	<input type="checkbox"/> Two sources provided in A.P.A. format <input type="checkbox"/> Mugshot cited and included in reference list	<input type="checkbox"/> Less than two sources provided or not in A.P.A format <input type="checkbox"/> Mugshot not cited

Comments:



AIS Poster Research Guide

Online resources that you may use to find information about your AIS topic:

Montana Field Guide: <http://fieldguide.mt.gov/>

Montana Fish, Wildlife and Parks Aquatic Invasive Species website: <http://fwp.mt.gov/fishAndWildlife/species/ais/>

Yellowstone Coordinating Committee Aquatic Invasive Species Pocket Guide:

https://docs.wixstatic.com/ugd/a0f00b_398521b0c8fc42acbc1226ea9c7a3110.pdf

Complete the following as you research your AIS topic:

Common name: _____ **Scientific name:** _____

Mug shot (Find a photo or create a sketch) **Source/website:** _____

Physical Description: _____

Other distinguishing (unique) characteristics: _____

Modus operandi (what makes it invasive): _____

Who/what it associates with: _____

Armed and dangerous?

How it harms the environment: _____

How it harms the economy: _____

Where it is found in Montana: _____

Hide out (preferred habitat): _____

Tips for capture: Weapons that can be used against it, as well as, ways to detect and prevent it: _____

Contact if found: _____

Miscellaneous (At least two other unique facts that could help lead to its capture):

1. _____

2. _____

References (record the websites that you get information from):



Most Unwanted AIS Poster

Student Worksheet (4 of 5)

Use this space to plan your poster design and layout:

A.P.A Referencing Guide

What follows is how to cite the most commonly used sources in APA format and how to make an in-text citation for each example.

Website:

Author last name, first initial OR organization's name. (Year of publication). *Title of document*. Retrieved from: URL

Example of a person as author:

How to in-text cite: (Campellone, 2007)

Campellone, J. (2007). *Huntington's disease*. Retrieved from: <http://www.nlm.nih.gov/medlineplus/en.htm>

Example of organization as author:

How to in-text cite: (UCMP, 2005)

University of California Museum of Paleontology, Understanding evolution (2005). *"Superweed" discovered in Britain?* Retrieved from <http://evolution.Berkeley.edu/evolibrary>

Article in a magazine or journal:

Author last name, first initial. (Year, month, day). Title of article. *Name of periodical*, issue number, pages. Retrieved from [database name].

Example:

How to in-text cite: (Decaestecker, 2007)

Decaestecker, E., et al. (2007, Dec 6). Host-parasite 'Red Queen' dynamics archived in pond sediment. *Nature*, 7171, 870-873. Retrieved from Science Reference Center.

Book:

Author last name, first initial. (Year of publication). *Title of work: Capital letter also for subtitle*. Location: Publisher.

Example:

How to in-text cite: (Percival, 1965)

Percival, M. (1965). *Floral biology*. Oxford: Pergamon Press.



**FLATHEAD LAKE
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