



# Teacher's Guide



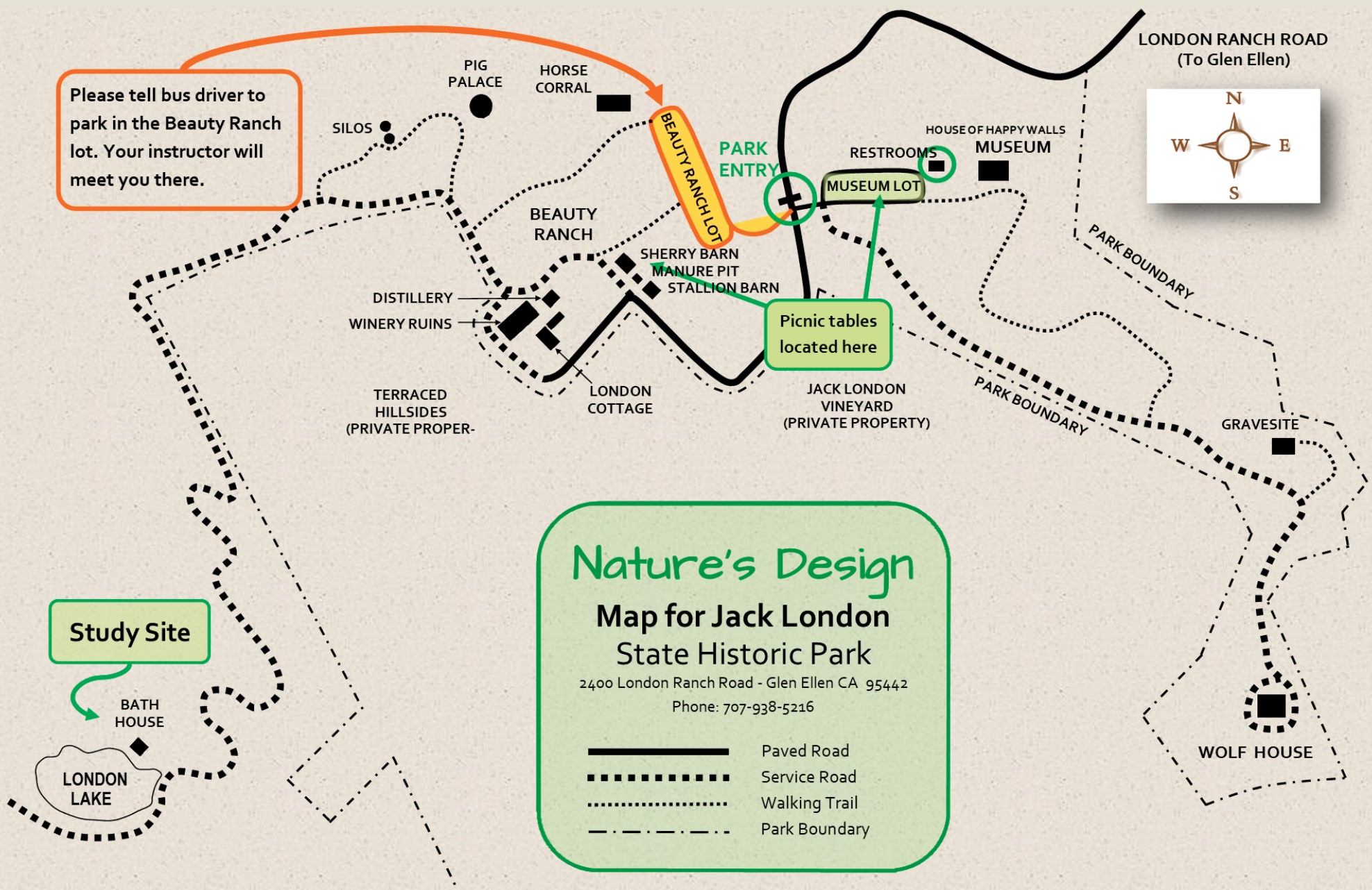
JACK LONDON PARK PARTNERS



JACK LONDON  
STATE HISTORIC PARK

Please tell bus driver to park in the Beauty Ranch lot. Your instructor will meet you there.

LONDON RANCH ROAD  
(To Glen Ellen)



Picnic tables located here

# Nature's Design

## Map for Jack London State Historic Park

2400 London Ranch Road - Glen Ellen CA 95442  
Phone: 707-938-5216

- Paved Road
- Service Road
- Walking Trail
- Park Boundary

Study Site





**Guided by NGSS, Nature's Design is a multiple-visit project-based approach to exploring our local ecosystems first-hand.**



***PROGRAM THEME: By understanding ecosystem dynamics and the role biodiversity plays in nature, we can find meaningful ways to reduce the impacts of climate change on our local ecosystems and in our communities.***

**Developed by Jack London Park Partners (JLPP)**



# Standards & Goals

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## Next Generation Science Standards (NGSS)

### Disciplinary Core Ideas met through the program:

LS2.A: Interdependent Relationships in Ecosystems

LS2.B: Cycle of Matter and Energy Transfer in Ecosystems

LS2.C: Ecosystem Dynamics, Functioning, and Resilience

LS4.D: Biodiversity and Humans

ETS1.B: Developing Possible Solutions

### Correlating Performance Expectations for NGSS:

MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem

MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem

MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services

### Program Goals: Students will...

- explore local ecosystems through inquiry and hands-on learning
- work collaboratively in small teams to collect and compare data on the diversity of flora and fauna found in the park's wild habitat and in their own school yard
- conduct analysis to infer general biodiversity levels within each location and understand the importance of biodiversity in ecosystem health and resilience
- be challenged to re-imagine and re-design their school campus to increase space for nature and biodiversity while still serving the needs of their school

# Before We Start...

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## Program schedule and teacher tasks



### PROGRAM SCHEDULE (3 sessions in total):

- Day 1 – Nature’s Ground Rules; 90 min. at your school
- Day 2 – Biodiversity Bonanza; 4 hr. field trip, Jack London St. Park
- Day 3 – Think Tank; 90 min. at your school

Throughout the program, students will be operating in small science teams. Please organize student teams before our first program session (roughly 5-6 students per team).

We will be conducting our first session in your school yard. Ahead of this, you and your JLPP educator will determine the area(s) of the school yard to be explored with students on Day 1.

At the teacher in-service, you will receive the student field notebooks for all participating students. Feel free to go through them with your classes ahead of time, to get familiar with the content. You can customize which areas to focus on. The only mandatory sections will include the data sheets and project description.

For the field trip to the park, JLPP will provide up to five docents to help manage groups. If you can, please provide additional chaperones to assist on trail (5 or more will be ideal for groups over 50).

JLPP will provide all materials and equipment for all three days of the program. You will need to make sure students have their notebooks ready for each session and are prepared for current weather conditions on the trail.



# DAY 1

## Nature's Ground Rules

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90 minutes at your school

In this opening session we will introduce the core science concepts guiding this program, interdependence and biodiversity. The lesson is conducted on the school yard and students will learn basic field investigation techniques as we explore the plants and animals thriving there. We will also briefly introduce the design challenge that will be explained in detail on day 3. Teachers are always welcome to chime in and make any connections to classroom learning that comes up throughout the program.

1. JLPP educator will meet you and your students in your classroom for a brief introduction. Then we will move to the school yard for the rest of the session.
2. We will conduct a brief bird spotting/identification walk around the school yard.
3. We will introduce the plant quadrat activity and conduct arthropod identification in shrubby area.
5. Students complete scientific illustration of at least one arthropod.
6. Complete team's species lists.



# DAY 2

## Biodiversity Bonanza

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**4 hours at Jack London State Park**

**The second field lesson will take place in the forest at Jack London State Historic Park. Repeating the techniques learned on day 1, students will set up their own field study sites and work cooperatively to create their team's second data set.**

1. Your JLPP educator will meet your group in the Beauty Ranch parking lot. Please note, there is only one portable toilet in this lot, but the museum parking lot has regular bathrooms. We need to begin our lesson by 9:00 am to get back to picnic area by 12:15 pm for lunch. We can adjust start/end times based on distance each school must travel.
2. In the parking lot, we will organize our teams/group leaders, pass out field gear, and briefly review day 1.
3. Arthropod studies will take place first, in and around Beauty Ranch.
4. We will then hike to the London Lake site. It will take approximately 45 minutes (moderately steep hill) and we will conduct the bird identification along the way. Large groups (30+) will be split in two and will re-group at the lake site.
5. Students will conduct the plant mapping activity at the lake site.
6. We will take the last few minutes of the field trip to complete student's species lists.
7. Once we have packed up and cleared our study site, we will head back to the picnic tables next to the Beauty Ranch parking lot. This is where the lesson ends. You can have lunch there and are welcome to stay and enjoy the park as long as you like.



# DAY 3

## Think Tank

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**90 minutes at your school**

**This wrap-up lesson will be conducted back in the classroom where we will reflect on our collective observations and “crunch” the data, comparing the biodiversity found in both study locations. This will lead to a discussion on why biodiversity is so important and how it relates to events happening in our world today. We will wrap this session with the introduction of the *Rewild My School* design challenge.**

1. Your JLPP educator will meet you and your students in the classroom, and the majority of this session will take place inside, with one brief learning game outside. We will begin by reviewing our research and creating a master species list together. Student teams should have already completed their individual lists from days 1 & 2 in their notebooks. The master class list will open a discussion on the importance of biodiversity for ecosystem health and resilience.
2. This segment is guided by a power point presentation and your JLPP educator will need access to AV equipment (they will bring a laptop and flash drive with them).
3. We will explore potential ecosystem solutions that can raise biodiversity levels on your school yard.
4. Finally, we will introduce the project design challenge and the optional contest that is held at the park in May. Students can enter a design in the contest as a team or as individuals. This will wrap-up the program.



**THE CHALLENGE:** Re-design your schoolyard to increase the biodiversity on your campus while also honoring the needs of the school.

Many teachers have turned this challenge into a graded poster assignment for class. Students can go the extra mile and build a 3D model of their design for entry into the Jack London Park Partners contest held in May. Designs should demonstrate a basic understanding of ecosystem dynamics and inter-dependence between living and non-living components of an ecosystem.

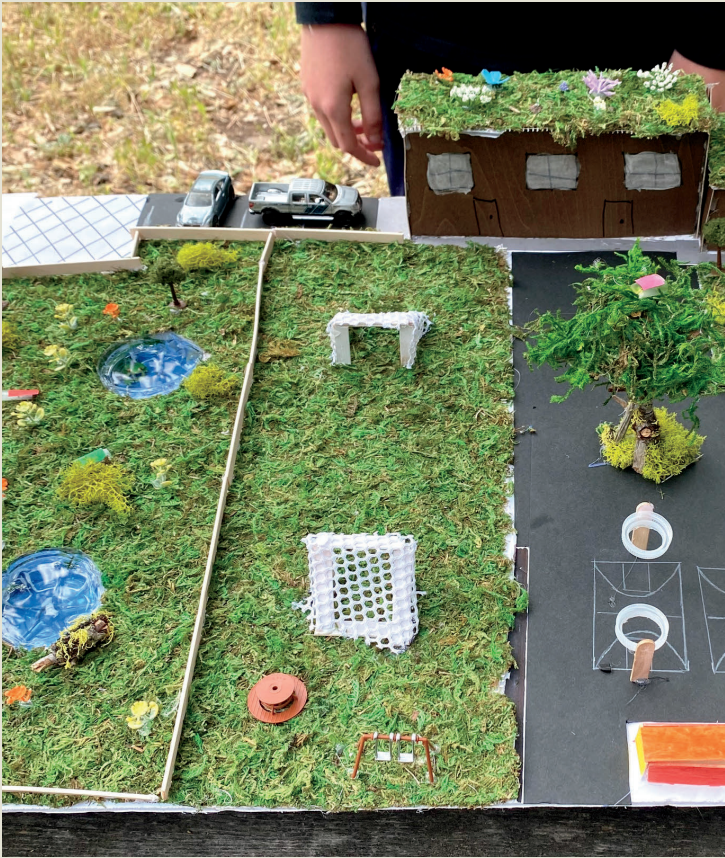
**THE PARK CONTEST:** Contest forms and information are found in the back of the student field notebook. For the contest in May, we will invite students to display their models at an outdoor exhibition at Jack London State Historic Park. Contest judges will include experts in regenerative landscape design and retired science teachers. The judges will examine each project model and interview students about their design process, before selecting the top 3 models. The winners receive cash prizes and their projects will be put on public display in our main museum through the summer. The student's and their progressive visions will be celebrated in the local press and on our website, to inspire all who visit our park to think about building and landscaping in new and innovative ways that support nature and our communities!

## REWILD MY SCHOOL

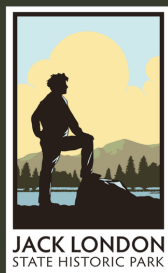
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**Assignment Opportunity and  
Park Contest Option**

**Contest Date:** \_\_\_\_\_







## Contact Us

Jack London State Historic Park  
2400 London Ranch Road

(707) 938-5216

[www.jacklondonpark.com](http://www.jacklondonpark.com)

email: [jacklondonpark@jacklondonpark.com](mailto:jacklondonpark@jacklondonpark.com)

