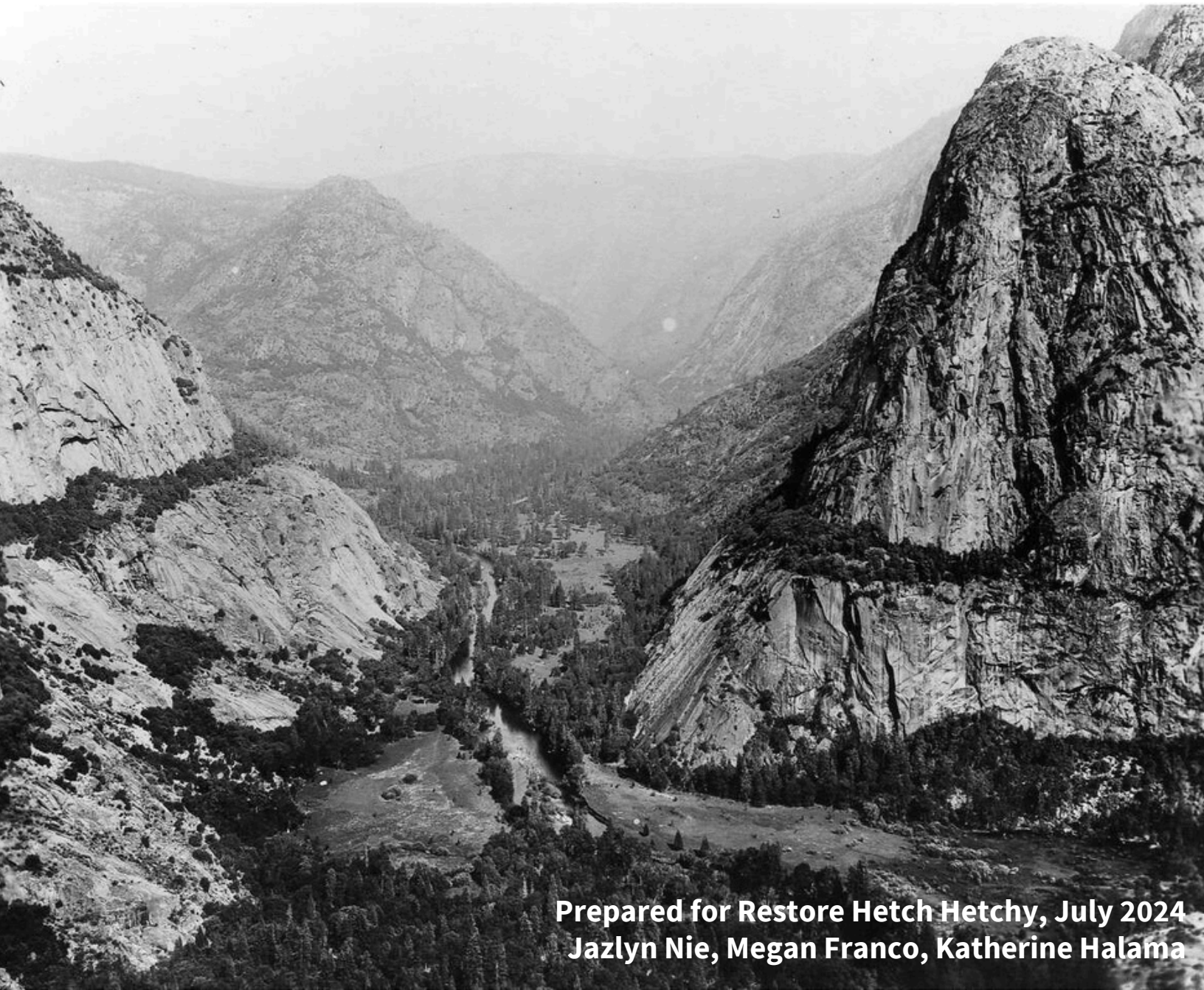




Masters of the Environment
UNIVERSITY OF COLORADO BOULDER

Water Taste Test

A Methodology for Comparing Hetch Hetchy Water to Other Bay Area Sources



Prepared for Restore Hetch Hetchy, July 2024
Jazlyn Nie, Megan Franco, Katherine Halama

Water Taste Test Methodology: Comparing San Francisco Regional Water System

Supplies Water to Other Bay Area Sources

Prepared for Restore Hetch Hetchy, July 2024

Jazlyn Nie, Megan Franco, Katherine Halama

This supplemental document provides Restore Hetch Hetchy with detailed information on how we conducted our water taste test and documentation of our study limitations and survey. Our Water Taste Test Report contains our results, discussion, conclusion, and recommendations to Restore Hetch Hetchy. For questions regarding the taste test methodology and initial results, contact the Restore Hetch Hetchy capstone team:

Jazlyn Nie - jazlyn.nie@colorado.edu

Megan Franco- megan.franco@colorado.edu

Katherine Halama - katherine.halama@colorado.edu

Table of Contents

Water Taste Test Methodology: Comparing San Francisco Regional Water System

Supplies Water to Other Bay Area Sources	2
Research Questions & Hypotheses	2
Materials	3
Procedure.....	4
Data Analysis.....	6
Taste Test Survey	7

Research Questions & Hypotheses

Our study will attempt to answer two research questions:

1. Can residents of the San Francisco Bay Area identify a difference in taste between different local water sources without knowing the source of each sample?
2. Do residents consistently rank three unidentified water sources (with one being from the San Francisco Regional Water System or Hetch Hetchy Reservoir) in the same way?

Hypothesis 1: If participants try three different water samples without knowing each sample's source, they will not be able to distinguish taste differences between local water sources.

Hypothesis 2: If we ask participants to rank three water samples without knowing where each sample came from (with one of the water samples from the San Francisco Regional Water System or Hetch Hetchy Reservoir), they will not consistently rank the sources in the same way.

Materials

Our study will require the following materials:

- Table
- 3 chairs
- Water taste test flier or sign
- Paper copies of survey with test questions
- QR code with link to survey (printed or on phone)
- 300 paper 3-ounce cups (100 are extras)
- 3 sharpie markers
- Masking tape
- Glass containers for samples
- Three gallons of water (one from each water source)
- Cooler
- Thermometer
- Extra paper
- Extra pens
- RHH (Restore Hetch Hetchy) flyers, information, cards, and other outreach materials

Procedure

Day Before Taste Test

1. First, Restore Hetch Hetchy's Executive Director, Spreck Rosenkrans, collected three water samples. The samples were sourced from the San Francisco Regional Water System, East Bay Municipal Utility District (East Bay MUD), and Marin Municipal Water District. Spreck collected one gallon of water from each location at the same time in large glass containers.
2. When collecting the samples, Spreck "flushed the tap," or allowed water to flow freely through the tap for five minutes, allowing the tap water temperature and flavor to normalize. Water samples were stored in a refrigerator until the test.
3. A person not involved in the taste test labeled the containers with "A," "B," and "C," so only they knew which samples correlated to each sample location. The samples' corresponding locations were withheld from Spreck and the test team until the taste test was completed, following double-blind methodology.

Arrival and Set-Up

4. On the day of the taste test, Spreck provided the test team with the three water samples labeled "A," "B," and "C."
5. The test team arrived at the Rockridge BART Station in Oakland, California, and set up the table and test materials. Rockridge Station was chosen because it is a busy transit station with many visitors and there are often other tables set up for various promotional

activities and information. RHH worked with BART staff to obtain permission to use the site beforehand.

6. Flyers, signs, and other promotional materials were placed on the table to attract participants. The team recruited people walking by to participate in our study by asking if they wanted to sample local water sources.

Test Procedure

7. Once a participant was recruited, approximately 1.5 ounces of Water Sample A was poured into a 3-ounce paper cup. The test team poured water up to a line on the paper cup to ensure the proper amount of each water sample was provided to participants.
8. The previous step was repeated for Samples B and C.
9. The test team asked the participant to use their phone to scan a QR code with a link to our survey to answer test questions or fill out a provided paper copy of the survey.
10. Participants read the introduction to the survey and answered the first question asking for the participant's age (answering this question was not required).
11. The participant sampled Samples A, B, and C in any order.
12. The participants noted what order they tried the samples on the survey.
13. For each sample, the participant ranked the sample according to the following scale:

4	I would be happy to accept this water as my everyday drinking water.
3	I am sure that I could accept this water as my everyday drinking water.
2	I could accept this water as my everyday drinking water.
1	I could not accept this water as my everyday drinking water.

14. The participant ranked each of the three samples as: “Favorite,” “Second Favorite,” and “Least Favorite.”
15. Finally, the participants provided their email address if they wanted to be informed of the survey results. This was optional.
16. Steps 7-15 will be repeated for 3 hours for as many participants as possible.

Data Analysis

17. After the test, the team entered all paper versions of the survey into the Google Form.
18. The test team analyzed the data to exclude any incomplete answers or other discrepancies.
19. The team used the Google Form to produce several charts and graphics visualizing the data and noted any interesting or relevant findings.
20. The person who labeled the water samples sent the key identifying the corresponding location of each water sample to the test team.

Taste Test Survey

Water Taste Test - June 14th, 2024

You'll taste three different water samples from:

1. San Francisco Regional Water System
2. East Bay Municipal Utility District
3. Marin Municipal Water District

You will be told the label (A, B, or C) of the sample you are currently tasting, which corresponds to one of the sources above. To ensure the objectivity of the experiment, we as the experimenters do not know which sample comes from which source. Please take your time and answer the questions below:

kaha4475@colorado.edu [Switch account](#)



Not shared

* Indicates required question

Contact us:

Jazlyn.Nie@colorado.edu

Katherine.Halama@colorado.edu

Megan.Franco@colorado.edu



MENV

**MASTERS OF THE
ENVIRONMENT
GRADUATE PROGRAM**

University of Colorado Boulder

If you don't mind sharing, what is your age range?

- <18
- 18-34
- 35-54
- 55-64
- 65 or over
- Prefer not to answer

Which sample are you trying first?

A

B

C

Which sample are you trying second?

A

B

C

Which sample are you trying last?

A

B

C

How would you describe **Sample A** if it were your daily drinking water?

- I would be very happy to accept this water as my everyday drinking water.
- I am sure that I could accept this water as my everyday drinking water.
- Maybe I could accept this water as my everyday drinking water.
- I could not accept this water as my everyday drinking water.

How would you describe **Sample B** if it were your daily drinking water?

- I would be very happy to accept this water as my everyday drinking water.
- I am sure that I could accept this water as my everyday drinking water.
- Maybe I could accept this water as my everyday drinking water.
- I could not accept this water as my everyday drinking water.

How would you describe **Sample C** if it were your daily drinking water?

- I would be very happy to accept this water as my everyday drinking water.
- I am sure that I could accept this water as my everyday drinking water.
- Maybe I could accept this water as my everyday drinking water.
- I could not accept this water as my everyday drinking water.

Please rate the three samples. *

	Favorite	Second Favorite	Least Favorite
A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We appreciate your interest in our project! If you would like to receive updates and the results of our study, please provide your email address below.

Your answer _____

Submit

Clear form