

SITKA

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A Thesis

Submitted to the Graduate College of Bowling Green  
State University in partial fulfillment of  
the requirements for the degree of

MASTER OF MUSIC

May 2015

Committee:

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Mikel Kuehn

## ABSTRACT

Elainie Lillios, Advisor

*Sitka* is a twelve-minute work for piano and seasonally variable electronics that explores the relationship between music, technology, and nature. Since Steinway piano soundboards are made exclusively from Sitka spruce, the trees and the forests in which they grow served as the conceptual material for many of the piece's musical components. Environmental elements including forest density, weather, and the Sitka tree's shape informed the composition's structure, density, frequency spectrum, rhythmic activity, and live electronics.

The composition's form models the United States Geological Survey species range map for Sitka spruce trees, which grow throughout Alaska, Canada, and the United States. Curiously, when the map is rotated ninety degrees it becomes a fitting graphical depiction translatable into musical form. The piece's growth and rhythmic density mirror this graphic, as does the rhythmic language, with more active rhythms appearing at times when tree growth is denser in corresponding map regions. In addition to conceptual translations, I connect the piece to Sitka, Alaska, in real time via an audio software program I developed using Cycling 74's Max/MSP. The program polls real-time weather data from a weather station in Sitka, Alaska during performance, which in turn influences the piece's accompanying live electronics. For example, when polling on a sunny summer day, the software generates higher pitched sonorities to create a light, open sounding accompaniment. Conversely, on a cold winter day the live electronics exhibit a darker, denser tone. These and other live electronics are projected over small speakers placed in front of the piano, mixing with the acoustic sound and emanating from the same physical space.

## ACKNOWLEDGEMENTS

I would like to thank the members of my thesis committee, Dr. Elaine Lillios and Dr. Mikel Kuehn, for all of their help in putting this project together.

Performance Notes:

- The conceptual basis of this *Sitka* is tightly tied to Steinway soundboards, so if possible please perform it exclusively on a Steinway piano.
- This piece employs a click track (see details below.)
- The seasonally variable electronics occur between rehearsal marks C-D and L-P. Be aware that during these sections the electronics change for each performance.

Technical Notes:

## Equipment:

- 1 laptop computer
- Internet connection
- 1 audio interface with at least 3 outputs
- 1 mixing board with at least 5 inputs
- 2 condenser microphones
- 2 medium sized studio monitor speakers
- Stereo house speaker system
- 1 headphone amplifier
- 1 set of over ear headphones for the pianist (click track)
- Cycling 74's Max/MSP 7 (<https://cycling74.com/downloads/>)
- To obtain the Max/MSP patch please contact me through my website at [www.thomasrexbeverly.com](http://www.thomasrexbeverly.com).

## Technical Setup:

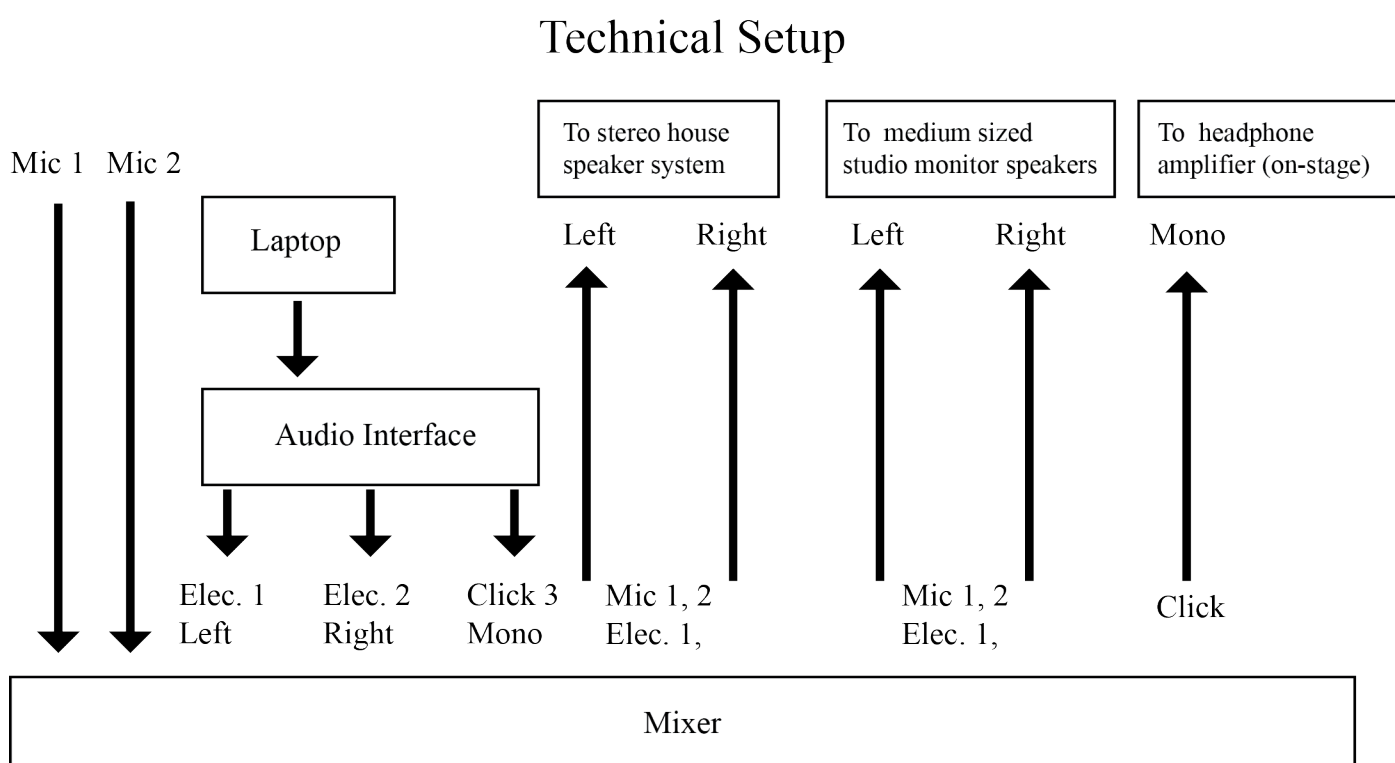
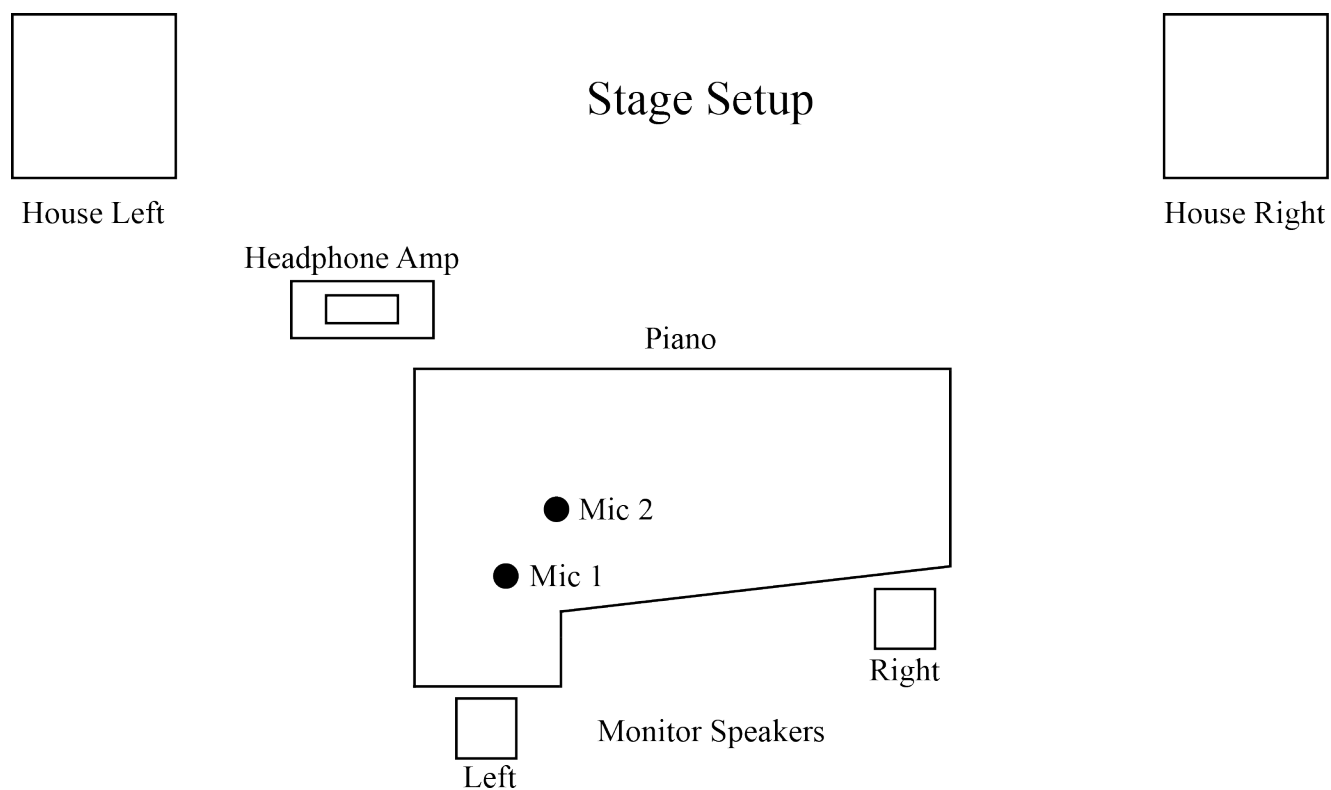
- The two microphones connect directly into the mixer and then route to both the medium sized studio monitor speakers and the stereo house speaker system.
- Place the two microphones near the middle and high registers of the piano to capture primarily higher frequency sounds.
- The two medium sized studio monitor speakers should be placed on stands directly in front of the piano as shown in the following diagram.
- Channels 1 and 2 from the Max/MSP patch connect from the audio interface into the mixer and the route to both the medium sized studio monitor speakers and the stereo house speaker system.

## Click Track:

- Channel 3 includes a click track and mono mix of the electronics for the pianist. It should connect from the audio interface into the mixer and then route to the pianist's headphones via an on-stage headphone amplifier.
- The click track changes to a higher tone four beats before each rehearsal mark to give the pianist a warning about the upcoming arrival.

### Audio Engineer:

- This piece requires an audio engineer to adjust the levels at the mixing console during the performance. Please follow the directions listed below.
- From the beginning to rehearsal mark A, the electronics are meant to be incredibly subtle. These electronics should be fine-tuned from the mixing console to fit within the resonating sound of the acoustic piano. During this section, the electronics should sound mostly from the monitor speakers with a slight boost from the house speakers.
- After rehearsal mark A, the house speakers should be brought up to boost the overall volume of the electronics.
- The electronics from mm. 176-190 consist of recorded piano sounds. They should be mixed so that the recorded and live pianos are indistinguishable during the performance and work together to create one “super piano”.



for Jeff Manchur  
**Sitka**

for piano and seasonally variable electronics

Thomas Rex Beverly

$\text{♩} = 80$  Spacious, resonant

Piano

depress silently *ffff* (sempre)

Ped. Rhythm *f*

Sost.Ped.  $\wedge$

10

19

29

*p*

39

Musical score for measures 39-46. The system consists of a grand staff with a treble clef on the top staff and a bass clef on the bottom staff. The bass staff contains a rhythmic pattern of eighth notes with accents, and each note is marked with an 8vb (8va below) symbol. A fermata is placed over the eighth note in measure 46. Below the grand staff, a pedal point is indicated by a horizontal line with a triangle pointing up, labeled "(Sost. Ped.)".

47

Musical score for measures 47-56. The system consists of a grand staff with a bass clef on the top staff and a treble clef on the bottom staff. The bass staff contains a rhythmic pattern of eighth notes with accents, and each note is marked with an 8vb (8va below) symbol. A fermata is placed over the eighth note in measure 56. Below the grand staff, a pedal point is indicated by a horizontal line with a triangle pointing up.

57

Musical score for measures 57-66. The system consists of a grand staff with a treble clef on the top staff and a bass clef on the bottom staff. The bass staff contains a rhythmic pattern of eighth notes with accents, and each note is marked with an 8vb (8va below) symbol. A fermata is placed over the eighth note in measure 66. Below the grand staff, a pedal point is indicated by a horizontal line with a triangle pointing up.

67

Musical score for measures 67-76. The system consists of a grand staff with a treble clef on the top staff and a bass clef on the bottom staff. The bass staff contains a rhythmic pattern of eighth notes with accents, and each note is marked with an 8vb (8va below) symbol. A fermata is placed over the eighth note in measure 76. Below the grand staff, a pedal point is indicated by a horizontal line with a triangle pointing up.

77

Musical score for measures 77-86. The system consists of a grand staff with a treble clef on the top staff and a bass clef on the bottom staff. The bass staff contains a rhythmic pattern of eighth notes with accents, and each note is marked with an 8vb (8va below) symbol. A fermata is placed over the eighth note in measure 86. Below the grand staff, a pedal point is indicated by a horizontal line with a triangle pointing up.

85 **A** Steady

ppp  
ff  
8vb



91

(8)



**B** Lush, full

97

mf  
p  
8vb



104

(8)



111

Musical score for measures 111-116. The system consists of three staves: a grand staff (treble and bass clefs) and a separate bass clef staff below. The grand staff contains complex chordal textures with many notes beamed together. The lower bass clef staff has a few notes, including a dotted half note. A dashed line with a circled '8' is at the bottom, indicating an 8-measure repeat.



117

Musical score for measures 117-121. The system consists of three staves: a grand staff and a separate bass clef staff. Dynamics include *mf*, *cresc. poco a poco*, and *f*. There are accents (>) over some notes. The lower bass clef staff has a few notes. A dashed line with a circled '8' is at the bottom, indicating an 8-measure repeat.

(end Sost. Ped.) Ped. ad lib.



122

Musical score for measures 122-126. The system consists of two staves: a grand staff and a separate bass clef staff. The grand staff contains complex chordal textures. The lower bass clef staff has a few notes.



127

Musical score for measures 127-131. The system consists of two staves: a grand staff and a separate bass clef staff. Dynamics include *cresc. poco a poco* and *ff*. The grand staff contains complex chordal textures. The lower bass clef staff has a few notes.

**C** Twittering

133 *8va* *mf*



139 *mp*



144 *pp*



149 *p*



153

157



160

*mp*



163



**D** Flying, twinkling

167

*mf*

8va

*f*

*v*



170

*v*

*v*

*ff*

*v*

**E** Booming, aggressive

173

*f* 3

Senza Ped.



176

(EA)

(Electronics Cue)



**F**

179

(EA)



182

(EA)

184

(Senza Ped.)

(EA)

**G** Thunderous, explosive

186

*ff*

(EA)

188

(EA)

**H**

190

(EA)

192

**I** Torrential, unyielding



194

**J**



196



197

**K**