

Table of Contents

| | |
|--|-----|
| List of Tables | iii |
| List of Figures | iv |
| Abstract | x |
| Introduction | 1 |
| Background | 5 |
| The Model | 5 |
| Tampa Bay | 12 |
| The Data | 13 |
| Physical Oceanographic Real-Time System | 15 |
| Coastal Ocean Monitoring and Prediction System | 17 |
| Tampa Bay Oceanographic Project (TOP) | 19 |
| Now-cast/Forecast Modeling | 20 |
| Now-cast | 21 |
| Forecast | 23 |
| Hind-cast | 23 |
| TRACKER | 24 |
| Methods | 29 |
| Results | 37 |
| Model Validation | 37 |
| Trajectory Validation | 42 |
| External Lagrangian Model | 43 |
| TRACKER | 45 |
| Long Term Model Performance | 47 |
| Eulerian Monthly Averages | 47 |
| Lagrangian Monthly Averages | 49 |
| Bay Wide Residence Times | 56 |
| Eulerian Spatial Distributions | 56 |
| Lagrangian Spatial Distributions | 58 |
| Third Model and Data Set | 60 |
| Discussion | 79 |
| Caveats | 94 |

| | |
|------------------|----------|
| Conclusion | 96 |
| Future Studies | 98 |
| References | 101 |
| Appendices | 104 |
| Appendix 1 | 105 |
| Appendix 2 | 134 |
| Appendix 3 | 154 |
| Appendix 4 | 167 |
| About the Author | End Page |