

Maine Municipal Harbor Management: Case Studies in Adaptive Resource Management

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<https://visitmaine.com/places-to-go/greater-portland-and-casco-bay/cape-elizabeth/>

Summary

1. Introduction to Senior Capstone Project
2. Timeline of Cape Elizabeth
3. Information from Decision Making in Natural Resource Management: A Structured, Adaptive Approach
4. Town of Brunswick Case Study
5. What Can Cape Elizabeth Take from This?
6. Final Points

Introduction

- My senior capstone project about the process of decision making in natural resource management using the text in class.
- Cape Elizabeth and Brunswick were my case studies.

Background

- 1529 nameless headland
- 1765 incorporated
- 1800s town started to grow
- 1835 demand from wide range of users
- 1895 became the present town of Cape Elizabeth
- 1920-1950 slow suburbanization
- 1950-1970 rapid growth, doubling the population in 20 years
- 1970's a tapering off of growth
- 1988 Harbor Management Plan
- 2005 Coastal Waters and Harbor Ordinance
- 2007 Comprehensive Plan
- 2016 Harbors Committee Charge



http://www.wikiwand.com/en/Cape_Elizabeth,_Maine

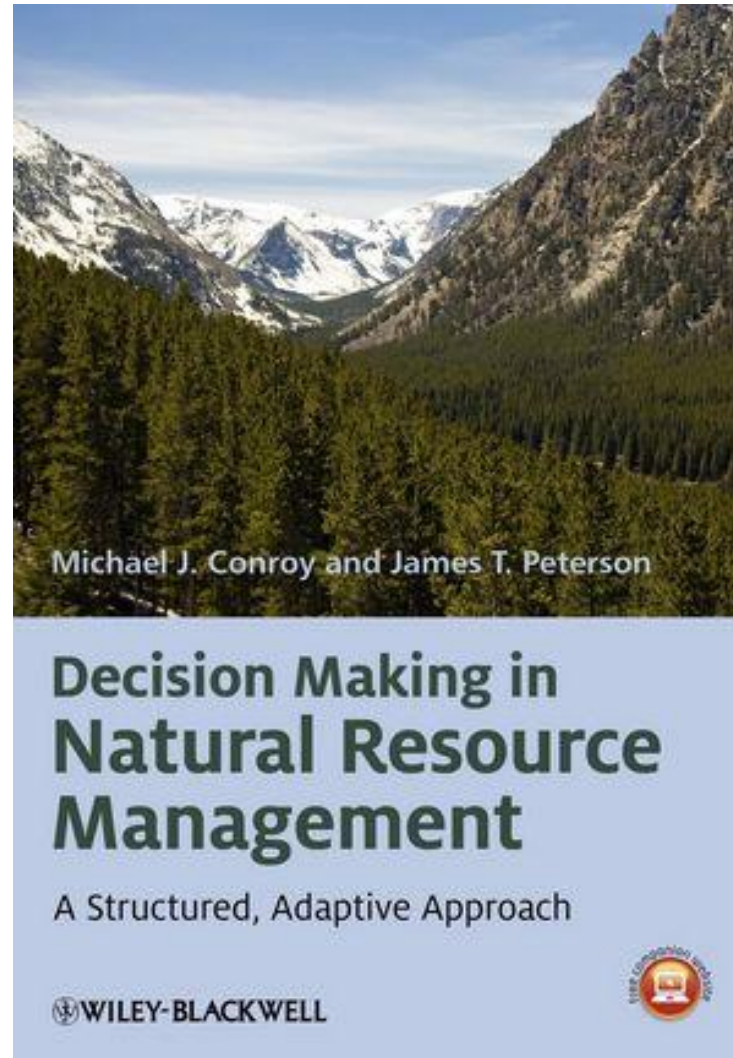
Harbors Committee Charge

Committee Purpose The Town of Cape Elizabeth last conducted a major review of its harbors in the late 1980's with nearly 30 years having passed since the last review of how our coastal water resources are serving our fishing, aquaculture and recreational boating needs, it is an opportune time to review issues relating to our harbors.

The committee shall:

- Review the Town's Coastal Waters and Harbor Ordinance and recommend any changes it deems desirable to the town council.
- Meet with state officials to determine options for boat access in the Kettle Cove/Crescent Beach State Park area and develop a long range plan for access.
- Update the maps utilized by the harbormaster showing potential locations for moorings.
- Inventory public water access.
- Assist the comprehensive plan committee with the marine resources section of the comprehensive plan.
- Consider such other related matters as the town council may request.

Decision Making in Natural Resource Management: A Structured, Adaptive Approach



Defining the decision problem with a concise statement

- Resource State-some measurable conditions of nature (population abundance etc.).
- Objective- Specific, quantifiable outcomes that reflect the values of decision makers and stakeholders and relate directly to the management decisions.

Decision Making in Natural Resource Management

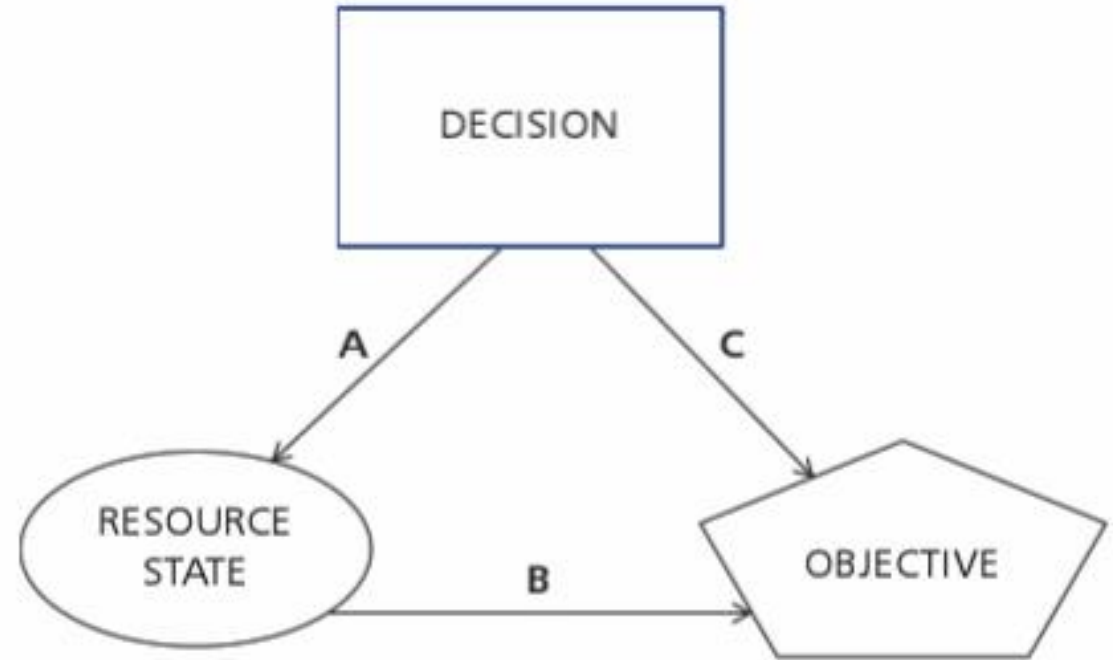
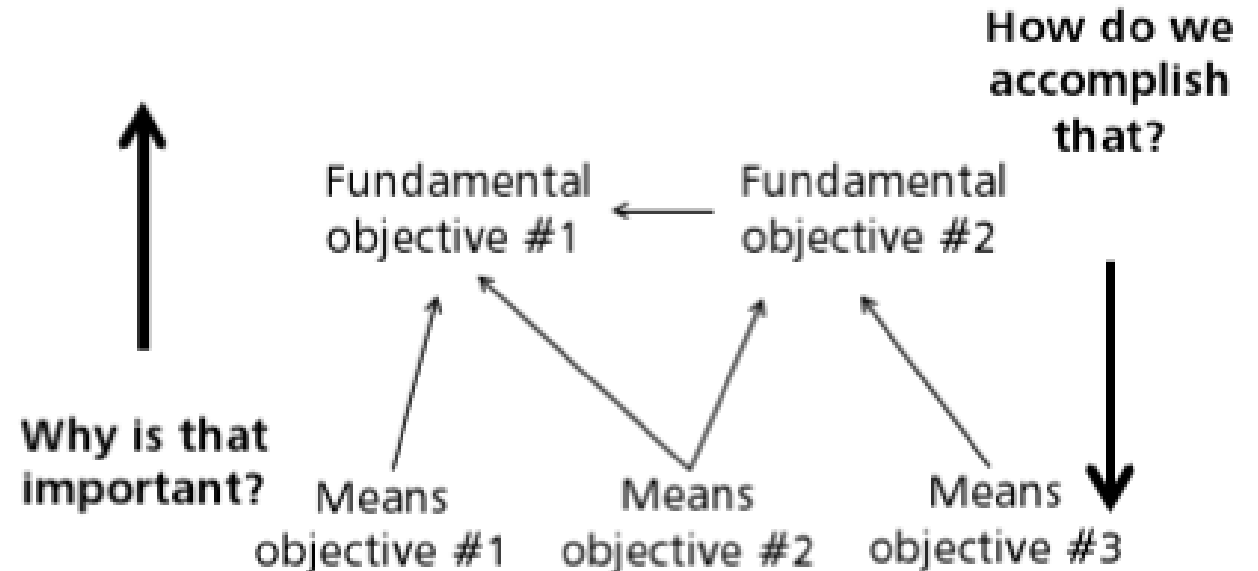


Figure 2.1 Schematic of a generic resource decision problem. Candidate decision might influence a resource state in some manner in order to achieve an objective. A decision also may influence the objective directly (e.g., through costs incurred). Arrows represent direction of causality/ influence: (A) influence of decision on resource state, (B,C) influence of combination of resource state and decision on objective value.

Fundamental and Mean Objectives

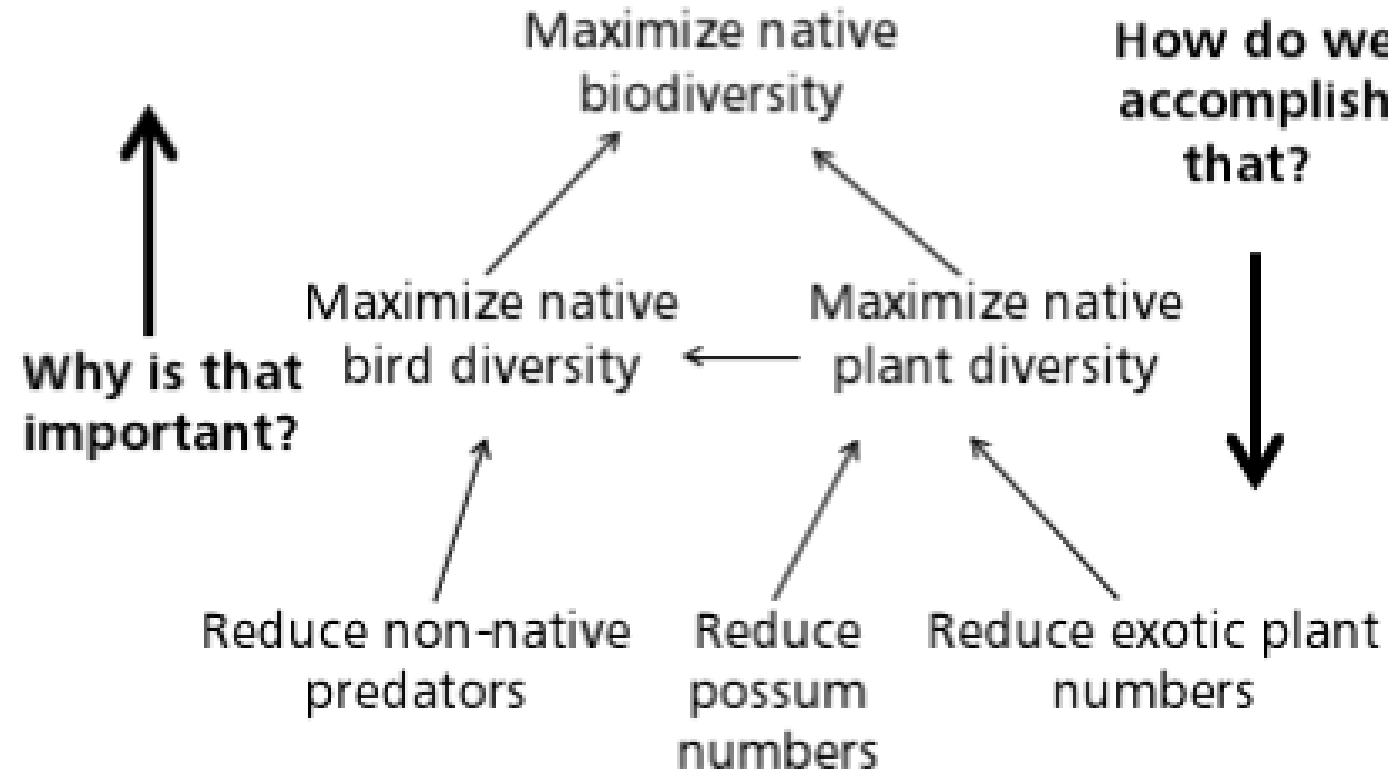
- Fundamental objectives
 - Those things that a decision maker truly values and wants to achieve.
 - Why is that important?
- Mean objectives
 - A means to achieving fundamental objectives.
 - How do we accomplish that?

Identifying and Quantifying Objectives in Natural Resource Management



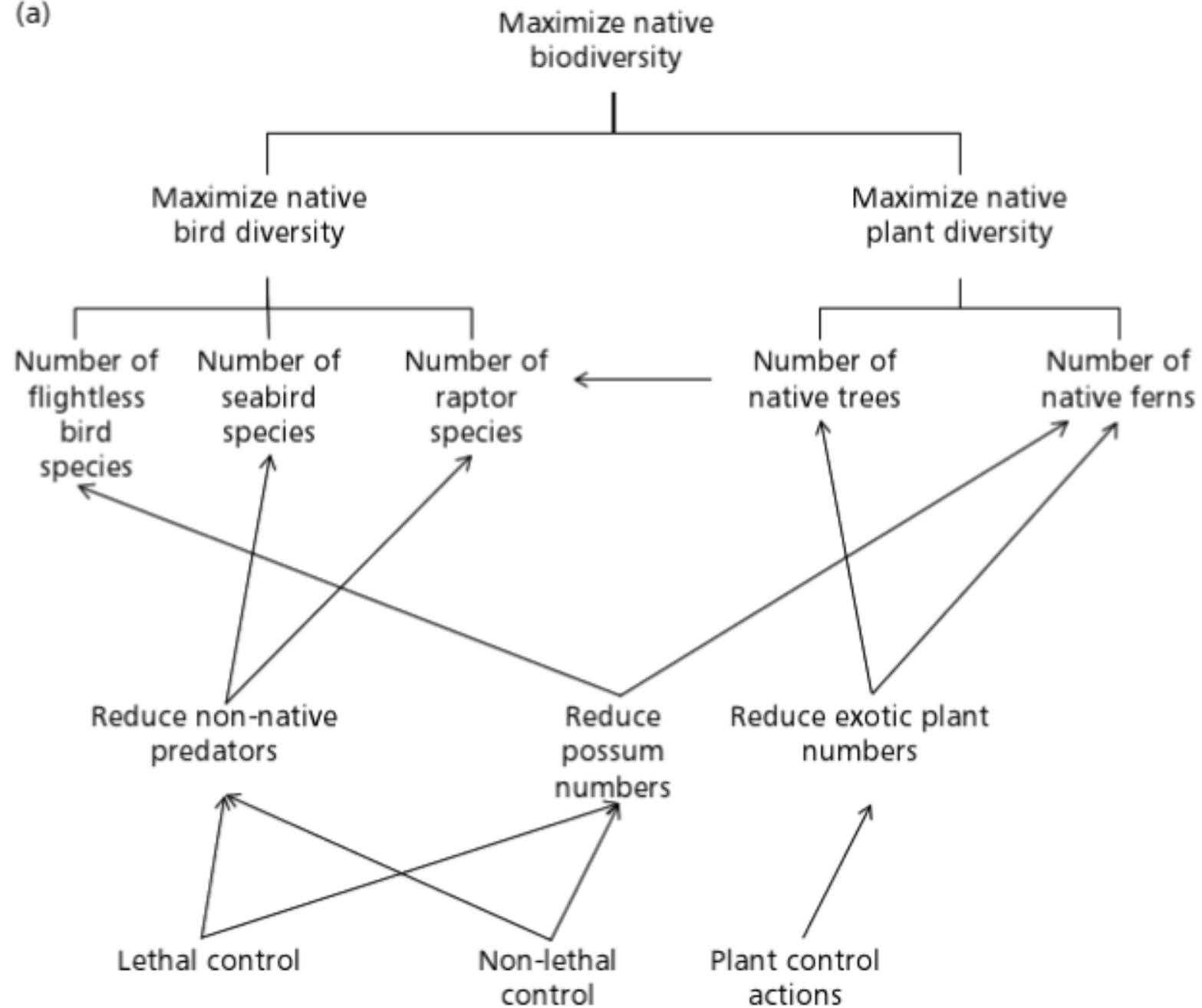
Relationship between fundamental and means objectives in an objective hierarchy. The arrows indicate direction of influence; note that means objectives influence more than 1 fundamental objective, and that a fundamental objective is influenced by more than 1 means objective.

Objectives Network



Objectives network for New Zealand conservation example.

(a)



Stakeholder Involvement

- When thinking about WHO to include?
 - Cast a wide net of stakeholders (consumers, NGOs, political, etc.).
- When thinking about HOW to include multiple stakeholders?
 - Consider the way they interact in the process (democratic decision making, consensus decision making, etc.).

The Town of Brunswick

- A coastal community-nearly all surrounded by water.
- Has seen significant growth in interest and use of Town waters in recent years.
- Access to the water is a critical issue.
 - As coastal development increases, traditional access points tend to be closed or restricted. This places additional pressure on existing public access points, and on the users desiring access.





Brunswick's Plan

- Consultants worked with the Town staff, stakeholders, citizens and other groups to develop a Harbor Management Plan.
 - Baker Design Consultants
 - Normandeau Associates
- January 2013 Request for Proposals from the Town
- January 2014 Harbor Management Plan released



<http://www.bakerdesignconsultants.com/>



<https://patch.com/new-hampshire/bedford-nh/normandeau-associates-inc-announces-leadership-changes>

Project Approach

“The approach taken throughout the project focused heavily on gaining an understanding of existing conditions, issues, and opportunities, to develop a detailed inventory and an informed list of recommendations to guide the Town in future Harbor Management.”

- 5 major components
 - **Inventory**
 - Mapping
 - **Primary goals**
 - **Harbor and waterfront objectives**
 - Harbor ordinance updates

Step 1- Inventory

- Served to identify and document existing conditions and uses of Brunswick's coastal and river waters, and land use near the coastline.
 - Reviewing numerous existing reports
 - Working with the Town to complete a GPS survey (Town's moorings, access points, etc.)
 - Gathering input of stakeholders



Stakeholder Involvement

- The importance of including stakeholders to assist in the decision making process
 - Public forums
 - Public input, review of plan, inventory progress
 - Online surveys
 - Asked how they use the area and the issues they see



Step 2: Primary Goals

- Have a broad goal of improved harbor management.
- Example of four primary goals:
 - 1. Coordinate Harbor & Waterfront Efforts with Town & Regional Programs
 - 2. Balance Shared Uses of Brunswick's Waterfront
 - 3. Pursue a Sustainable Waterfront
 - 4. Manage, Promote, and Preserve Brunswick's Coastal and River Environment



Step 3: Harbor and Waterfront Objectives

- Objectives are ranked in terms of priority based on a 10 year projected implementation timeframe in the following categories:
 - Ongoing
 - 1-3 Year (2014-2017)
 - 1-5 Year (2014-2019)
 - 1-10 Year (2014-2024)
- Split objectives into categories (Waterfront Access, Preserve Working Waterfront, Harbor Ordinance Updates etc.).
- Within each of these categories, specific goals and recommendations are discussed.

Appendix B – Management Objectives and Priorities

Recommendation	PRIMARY GOAL	Target Timeframe for Implementation			
		ONGOING	1-3 YR. 2014- 2017	1-5 YR. 2014- 2019	1-10 YR. 2014- 2024
COASTAL WATERS AND RIVER MANAGEMENT					
<p>Establish a River and Coastal Waters Commission</p> <ul style="list-style-type: none"> • <i>Support the Harbormaster. Set waterfront policy and initiatives and address the broad issues of the waterfront with council approval.</i> • <i>Composed of representatives from MRC, Parks & Rec, Planning, Town Council, etc.</i> • <i>Input from each of the representative groups, ensures established recommendations and goals consistent with Townwide programs.</i> • <i>Meet less regularly than typical committees, e.g. quarterly, semi-annually</i> 	1,2,3,4		X		
<p>Update Harbor Ordinance</p> <ul style="list-style-type: none"> • <i>Review draft prepared by Baker Design Consultants</i> • <i>Incorporate recommendations with Council Approval</i> 	1,2,3,4	X	X		

Response to Climate Change

- While there is much debate over the cause and nature of climate change, the effects are undeniable and must be dealt with.
 - Address coastal erosion
 - Plan for sea level rise



Climate Change Suggestions

- Address Coastal Erosion
 - Promote soft approaches to addressing coastal erosion to limit the impacts to coastal resources.
- Plan for Sea Level Rise
 - Long term planning should include sea level rise projections into town planning efforts and update local ordinances and open space priorities appropriately.



Applications for Cape Elizabeth

- Continued stakeholder involvement
- Separation of fundamental and mean objectives
- Separation of goals and objectives
- Ranking of objectives
- Diagrams
- Climate change

Take Away

- Defining the decision problem and objectives early in the process are key.
- Stakeholders should be included.
 - They can help with the decision making process and objectives
- Climate change could be considered.



References

- Peterson, James T, and Michael J. Conroy. *Decision Making in Natural Resource Management: A Structured, Adaptive Approach*. John Wiley & Sons, 2013.
- Baker Design Consultants. *Town of Brunswick, Maine Harbor Management Plan*. 2014. http://www.brunswickme.org/wp-content/uploads/2014/05/13-06-Brunswick-HMP-05-27-14_Reduced.pdf