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北米の大学における海洋管理教育の現状

平成 15 年度「世界の海洋管理教育に関する調査研究」事業
海外調査報告書

２００４年３月

財団法人 シップ・アンド・オーシャン財団

はじめに

本報告書は、競艇の交付金による日本財団の助成を受け、平成15年度「世界の海洋管理教育に関する調査研究」で実施したアメリカのワシントン大学、カナダのブリティッシュ・コロンビア大学およびダルハウジー大学の海洋管理教育関連プログラムの調査結果をとりまとめたものであります。

1994年に発効した国連海洋法条約では、広大な管轄海域を沿岸国に認めましたが、その反面、各国が自国の管轄海域を自ら管理していくことを求めています。的確な海洋管理を行うには、国際水準の海洋管理教育を行い、必要な人材を育成する必要があります。四面を海に囲まれている我が国は、世界で６番目に広い排他的経済水域を有しています。しかしながら、我が国においては、海洋を総合的に管轄する省庁がなく、また、大学においても海洋管理に関する教育コースはありません。諸外国では、まだ少数ではありますが海洋管理に関する大学院レベルのコースを設けて海洋管理に関する教育を実施しています。一度社会に出て実務を経験した人達もここで学び、再び社会に出て海洋に関する専門知識を必要とする仕事に就いています。

海洋に係わる分野での的確な国際関係を築くためにも国連海洋法条約の解釈やその運用並びにリオの地球サミットで採択されたアジェンダ21の第17章に謳われている海洋及び沿岸域の統合的管理及び持続可能な開発、海洋環境保護、海洋生物資源の持続可能な利用及び保全等に関する行動計画に関する知識と理解を深めることが必要であり、国としての統一した理解と実行が重要です。そのためにも我が国は、国際的な動向を把握して国連海洋法条約等を的確に運用できる人材を積極的に育成して、将来に備えていかなければなりません。

このような観点から、人と海洋の共生を基本理念として研究活動を行っているSOF海洋政策研究所では、我が国における海洋管理に関する高等教育がどうあるべきかを検討することとし、平成15年度においてはその初年度として、海洋管理教育に関する調査と資料の収集を行いました。そのなかから、北米地域の海洋及び環境等に関する優れた学際的プログラムを有し、世界的にも評判が高い大学の海洋管理教育プログラムについての調査結果をとりまとめたのが本報告書であります。

この調査報告書を我が国の海洋管理教育のあり方を検討する際の基礎資料の一つとして役立てていただければ幸いです。

平成16 年3 月

財団法人ｼｯﾌﾟ・ｱﾝﾄﾞ・ｵｰｼｬﾝ財団

会　長　　秋　山　昌　廣

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（著者：SOF 海洋政策研究所　田中祐美子）

1 海外調査の概要

1.1 海洋管理教育海外調査の目的

国連海洋法条約の発効により、全海洋の4割以上の海域はいずれかの沿岸国の管理するところとなった。広大な管轄海域を沿岸国に認めた国連海洋法条約の下では、各国が自国の管轄海域を自ら総合的に管理していくことが求められている。さらに、海洋の開発利用や陸上活動による海洋環境への影響が無視できないところまで来た結果、私たち人類は、リオ地球サミットで「持続可能な開発」原則を採択し、国連海洋法条約とアジェンダ 21 を法的・政策的枠組みとして海洋の統合的管理に取り組んでいくこととしている。

そのためには各国が自国で国際水準の海洋管理教育を行い、必要な人材を育成することができるようにする必要がある。しかしながら、世界各国の大学における海洋管理教育の現状を見ると、海洋管理に関するコースを設けている大学は極めて少ない。わが国を含めて大多数の国の大学では、個別の専門分野の教育・研究は行っていても、新しい法的・政策的枠組みを踏まえた海洋管理についての総合的な教育・研究は行っていない。また、教育プログラムやコースの開発も行われていない。これからは各沿岸国が海洋の統合的管理について研究し、それに必要な人材の教育・訓練をしていく必要がある。

このため、わが国における海洋の統合管理に関する教育・研究のあり方について、研究を行うことは重要である。米国やカナダなどの先進的な海洋管理やガバナンスに関する教育プログラムを調査することは、わが国の海洋統合管理教育のモデルプログラムを作成するためにも重要となる。本調査では、以上のことから、わが国における海洋の総合管理に関する人材育成のあり方を検討する際の基礎資料を得ることを目的とした。

1.2 訪問先大学およびスケジュール

2004 年 1 月に、以上の認識に基づき、米国のワシントン大学、カナダのブリティッシュ・コロンビア大学およびダルハウジー大学を訪問し、海洋関連プログラムの調査を行った。いずれの大学も、海洋、環境、水全般に関する優れた学際的プログラムを有しており、世界的にも評判が高い。

訪問先大学およびスケジュールは以下の通りである。

（＊ なお、面会者の所属および連絡先については、3.1 参照。）

日付	時間	訪問先	面会者および内容
1月21日	9:00	ワシントン大学 海洋問題学部* (School of Marine Affairs; SMA)	前ディレクターProf. Hershman とのインタビュー (調査表に関する説明および SMA 施設見学)
	11:00		法学部教授 Prof. Allen とのインタビュー (Law School における海洋法プログラムの閉鎖について)
1月23日	10:00	ブリティッシュ・ コロンビア大学	資源・環境・持続可能性に関する研究所 (IRES) ディレクター Dr. Lavkulich およびアシスタント・ディレクターMs. Stephenson とのインタビュー (調査表に関連する事項の説明、ディスタント・ラーニングの取組みおよび施設見学)
	12:00		ランチミーティング (Dr. Lavkulich、Prof. Healey, Dr. Alder, Mr. Swartz；学生からみた IRES プログラムについて)
	14:00		水産センター (Fisheries Center) 研究員 Dr. Alder とのインタビュー (調査表に関する説明)
	15:00		IRES 教授 Prof. Healey および Environment Canada の Mr. Fraser との懇談 (Georgia Basin プロジェクトについて)
1月26日	10:00	ダルハウジー大学 海洋問題プログラム* (Marine Affairs Program; MAP)	MAP ディレクターDr. Hatcher および IOI 研究員 Dr. Bailet 訪問 (海洋問題プログラムの歴史および概要、IOI について)
	12:00		Dr. Hatcher, Dr. Fanning, Mr. Angulo とのランチ・ミーティング (Dr. Fanning の学際的アプローチを取り入れた博士論文などについて)
	13:00		政治学部教授 Prof. Jerome Davis および大学院 (Faculty of Graduate Studies) 学部長 Dr. Jan Kwak 挨拶 (訪問の趣旨説明など)
	14:00		海洋問題プログラム学生、教員とラウンド・テーブル・ディスカッション (訪問の趣旨、日本における海洋管理教育の実情説明後、海洋管理に関するディスカッション)
1月27日	10:00	ダルハウジー大学 法学部海洋・環境法プログラム (Marine and Envt'l Law Program; MELP)	法学部 Prof. McConnell とのインタビュー (訪問の趣旨説明および施設、図書館見学)
	11:00		法学部学部長 Prof. Russell 訪問挨拶
	11:30		法学部教授との懇談会 (カナダと日本の海洋法教育比較、ハリファックスと法曹界の関係などについて)
	14:00		MELP 教授 Dr. VanderZwaag および Dr. McConnell とのインタビュー (調査表に関する説明・質問)

* "Marine Affairs" の訳語については、「海事」が一般的であるが、学部の内容・設立趣旨から「海事」のみならず環境、政策、ツーリズムなど海洋問題全般を取り扱っていることから"Affairs"を問題と訳し「海洋問題」としている。

1.3 調査表概要

海外調査にあたっては、事前に調査表（Survey）を準備し、訪問先に配布した。

調査表には、以下の内容を含めた。

① プログラムの歴史および概略
② プログラムの内容（重点課題、コースの内容、卒業要件、教員、インターンシップ）
③ 学生およびその選考方法（学生数・比率、入学審査の要件、授業料など）
④ 卒業後の進路（就職先および卒業生の貢献度）
⑤ 施設（図書館、実験施設など）
⑥ 研究およびその他の活動について（パートナーシップ、ディスタント・ラーニング、社会との関係）
⑦ その他の質問事項（プログラムの特色、改善点、重要課題など）

調査表には、ワシントン大学海洋問題学部（Prof. Hershman による）、ブリティッシュ・コロンビア大学水産センター、ダルハウジー大学法学部海洋・環境法プログラムから回答を得ることができた。その他の学部からは、訪問時に調査表の内容に関する資料および情報を提供していただいた。

訪問時のインタビューにあたっては、上記の調査表の質問事項以外にも、プログラムの運営方法や学生のクオリティー・コントロールの方法についても質問を行った。

（＊ 調査表の回答については 3.3 参照。）

2 海外調査報告

以下の調査報告は、調査表の回答、インタビューの内容、入手資料などをもとに、訪問先の大学の海洋関連プログラムをまとめたものである。

2.1 ワシントン大学 海洋問題学部

ワシントン大学（University of Washington）海洋問題学部（School of Marine Affairs; SMA）は、米国・ワシントン州シアトルに所在する州立大学である。

(1) 海洋問題学部の概要

ワシントン大学では、海洋問題に関する学際的トレーニングの必要性を認識し、海洋学、水産学、行政学、法学、経済学、工学部の教員が集まり、海洋研究所（Institute for Marine Studies; IMS）を 1972 年に設立した。1981 年に、IMS は、海洋・水産科学部（College of Ocean and Fishery Sciences）の研究ユニットの一部となった。また、1980 年から海洋問題に関する学位を授与するプログラムを提供することになった。1990 年に、海洋問題および教育に関して国内でのリーダーシップが認識され、海洋・水産科学部から独立し、SMA となった。

IMS および SMA の設立の背景には、国連海洋法条約の交渉・発展や米国内における海洋関連法の制定が大きく影響している。国内での動きとしては、1969 年のストラットン委員会の報告書“Our Nation and Sea”や海洋大気局（NOAA）の設立も影響している。他にも、ロードアイランド大学、デラウエア大学、バージニア大学、マイアミ大学、オレゴン州立大学などが海洋関連プログラムを発展させてきたことも様々な影響を及ぼしている。

SMA は、2 年間の修士プログラムであり、海洋問題修士号（Master of Marine Affairs）の学位を授与している。修士号の取得には、コースワークと修士論文の双方が必要である。しかし、2004 年 9 月より、論文が必要ない 1 年間の修士プログラムを提供する予定である。これは、ロードアイランド大学など同じ学位を授与する他大学のプログラムが 1 年であるため、コストや仕事の面で 2 年の修学期間が難しい学生を獲得するためである。とくに沿岸警備隊の職員などの Mid-Career の修学希望者の獲得をねらっている。海洋問題に関して深く学ぶためには、修士論文作成が非常に重要であるが、他大学との競争上 1 年間のプログラムも必要である。

博士課程（PhD）へ進学したい学生のために、Collaborative PhD プログラムが用意されている。これは、水産学部、海洋学部、地学部などの学部が非公式合意により協力し、学際的な海洋研究が行えるよう用意されたプログラムである。SMA の外に位置づけられている。

(2) 調査内容

a. コースについて

SMA のコースは、海洋政策、海洋科学、漁業管理、沿岸域管理、法、経済、運輸、ツーリズム、気候変動などの分野を重点的にフォローするプログラムになっている。設立当初は、国連海洋法条約などが中心テーマであったが、1976-1985 年は沿岸域管理および漁業、1985-1995 年は汚染管理、港湾･運輸、レクリエーションおよびツーリズム、1995 年以降はエコシステム･マネージメント、海洋保護区、国際的な統合沿岸域管理、気候変動、持続可能な開発、学際分野の統合など、時代により重点分野を拡大･変更してきている。このように、海洋および沿岸に関して総合的かつ学際的な教育および研究を行うことが SMA の特色といえる。

学生は、59 単位を取得しなければならないが、そのうち 26 単位はコアー･コースから、23 単位は選択科目から取得する。残りの 10 単位は論文単位である。その他にも、「キャリア･スキル」が必要とされるが、これは単位のあるコースではなく、海洋関連の就職のために就職相談員と学生が個別に面談し、履歴書作成やインタビュー方法などを学ぶものである。

2004 年 9 月から、1 年間の修士プログラムが開始するが、論文単位の 10 単位分をコース単位に振り当てる予定である。

◇ SMA 開講科目概要

	科目 (単位)			教官	内容
Core	SMA 500	海洋問題 (Marine Affairs)	5	Hershman	人間と海洋･沿岸の相互作用に関する学問領域と実際問題を広く調査する
Core	SMA 501	統合的な海洋問題に関する実践 (Integrated Marine Affairs Practice)	3		ケーススタディーおよびグループ研究を通して海洋問題に関する統合的なアセスメントの実践
	SMA 433	熱帯域における環境劣化 (Envt'l Degradation in the Tropics)	5		
	SMA 476	環境法およびプロセス入門 (Introduction to Envt'l Law and Process)	3	Bryant & Hershman	海洋生物資源管理に関する主要な法律の適用。行政法とその手続。
	SMA 480	海洋資源保存と管理 (Marine Resources Conservation & Management)	3	Gallucci & Miller	海洋生物資源の保存、管理、開発の技術と哲学。
	SMA 485	太平洋におけるレクリエーションと観光問題 (Pacific Recreation & Tourism Issue)	3	Miller	マリン･ツーリズムが人と環境をどのようにリンクさせているかを検証する。文化人類学、社会学、政治科学、倫理、地学、生態学、開発計画などからコンセプトを用いる。

	SMA 499	学部における研究 (Undergraduate Research)			
Core	SMA 506	海洋法 (Int'l Law of the Sea)	3		
Core	SMA 507	国際組織と海洋管理 (International Organization and Ocean Management)	3	Miles	国際レジームおよび国際機関が海洋の利用を管理、規制する方法を調査する。レジームおよび手続の実効性を分析。
Core	SMA 508	国家海洋政策決定プロセス (National Marine Policy Processes)	3	Miles	海洋政策の決定プロセスを組織的側面において比較する。
	SMA 509	統合沿岸管理 (Integrated Coastal Management)	3	Christie, Hershman	沿岸水域と接続地の多岐に渡る利用の管理。空間と資源の競争から生じる紛争、沿岸管理に付随する組織的、科学的、経済的問題、米国および東南アジアにおける計画および管理の経験。
	SMA 510	海洋生態学に関するトピック (Topics in Marine Ecology)	3	Klinger	海洋生物やエコシステムに応用できる生態学の原則を学ぶ。
Core	SMA 512	聴取り調査法と環境トピック (Interviewing Methods and Environmental Topics)	3	Miller	インタビューを行う際に、社会科学系の学者や他の研究者により用いられている定性技術を学ぶ。学生は、官、民、NGO などの人々とインタビューを行うことが求められる。
	SMA 514	海洋汚染管理・政策 (Marine Pollution Management and Policy)	3	Leschine	海洋環境保護に関する管理や政策的側面を、環境管理者と環境および政策関連の科学者との間での対話に重点を置き学ぶ。
Core	SMA 515	米国の沿岸・海洋法 (U.S. Coastal and Ocean law)	3	Hershman	沿岸・海洋資源の分配と使用を規律する米国の法的枠組みを学習。沿岸域管理、漁業管理、海洋ほ乳類および絶滅危惧種の保護、海洋汚染、海底油田、海上交通など。
	SMA 516	港湾管理 (Seaport Management)	3		海洋利用管理における港湾当局の役割について。
	SMA 517	海商と政策 (Maritime Commerce & Policy)	3	Hershman	人および物資の輸送における海洋の役割、船舶のデザインおよびターミナル施設の特徴と傾向、など。

Core	SMA 519	海洋政策分析 (Marine Policy Analysis)	3	Leschine	政策分析に用いるテクニックの理解と知識。海洋政策に関する現実問題に適用できるよう開発する。
	SMA 521	地球気候変動に対する政府の対応 (Governmental Responses to Global Climate Change)	3	Miles	地球気候変動の問題に関する科学、政策、法律問題を学ぶ。レジームデザイン、気候モデルの使用、地下水資源や森林の影響を含む。
	SMA 523	国際的な科学技術政策 (Int'l Science and Tech. Policy)	3	Miles	先進国と途上国のための開発計画、能力、国家の技術戦略と研究との関係を分析。
	SMA 525	海洋保護区の管理 (Management of MPAs)	3	Fluharty & Klinger	MPA のデザイン、設置、運営、維持に関する管理および科学的問題を検証する。
Core	SMA 536	海洋問題に対するミクロ経済 (Microeconomics for Marine Affairs)	3	Huppert	政策分析に一般的に用いられるミクロ経済の手法を学ぶ。海洋政策に用いる基本コンセプト、定義、モデルをマスターする。
Core	SMA 537	海洋政策の経済学的側面 (Economics Aspects of Marine Policy)	3	Huppert	海洋政策の決定プロセスにおける経済コンセプトを発展させ、いくつかのトピックにそれを適用する。
	SMA 538	海洋生物資源の経済学 (Economics of Living Marine Resources)	3	Huppert	経済コンセプトを発展させ、漁業および他の生物資源の保存、規制、回復に適用する。とくに漁業資源の管理。
Core	SMA 540	海洋資源に対する国際的戦略計画 (Int'l Strategic Planning for Marine Resources)	3	Kaczynski	海洋経済は、資源の減少、人口増加、経済のグローバル化により影響を受けている。第三世界と移行経済からのケーススタディーにより、戦略的経済計画を見いだす。
	SMA 550	特別トピック (Special Topics)		Snover & Leschine	学生の興味により異なる。
	SMA 555	ロシアの海洋政策 (Russian Ocean Policy)	3	Kaczynski	ペレストロイカおよびソビエトの崩壊後のロシアの海洋政策。
	SMA 570	論文発表 (Thesis Presentation)	1		

	SMA 581	漁業管理：ケーススタディー（Fishery Management: Case Studies）	3	Huppert	特定の漁業管理問題を示す歴史的に重要なケースを分析する。
	SMA 585	北西太平洋への気候の影響（Climate Impacts on the Pacific Northwest）	4	Mantua & Snover	北西太平洋の資源管理を改良するための気候のパターンを学習する
Core	SMA 591	沿岸域における海洋科学（Marine Science in the Coastal Zone）	4	Heath & Klinger	沿岸域における海洋・沿岸プロセス、人間活動への影響。海洋プロセスの蓄積された知識を理解、利用方法と、その意思決定プロセスへの適用。生物学、化学、地学、海洋学。
	SMA 600	個別研究 Independent Study or Research			

SMA には、多くの海洋関連のコースがあり学際的であるが、学生のバックグラウンドが異なるため、レベルの差が生じてしまうこともコースによってはある。たとえば、コアー・コースである海洋法の授業は、法学部（Law School）で行っているのだが、SMA の学生と法学部の学生では、法律の基礎知識や教材の理解力に差が出てしまう。SMA の学生の中でも行政・法分野に明るい者もいればそうでない者もいる。このため、評価の方法を試験でなくリサーチ・ペーパーにすることにより、各個人への指導方法、レベルを調整している。しかし、様々なバックグラウンドを有する学生が集まることにより、同じ問題でも様々な角度から検討する機会が増えるため、学生にとっても学際的なコースは有益である。

SMA のコースはその時代の国内・国際関心事項を取り込みながら発展してきたが、コースの設定には全ての新しいトレンドを取り入れているわけではない。各教員の関心や研究領域から新たなコース作りが発生することが多い。また、学生のリサーチ・ペーパーや修士論文の中で、そうした新たな問題へ取り組む重要性が訴えられており、そうしたニーズを取り入れてコース設定を行っている。

他大学との単位互換制度は、学生からの要望はあるものの様々な手続上・実体上の理由により困難な状況にある。

b. 学生について

【入学資格と学生について】　SMA には、毎年 20~25 名の学生が入学している（全在籍者数は 50 名弱）。毎年プログラムへの応募は 70 名前後あり、そのうち 35~40 名程度に入学許可を与えている。実際の入学登録者は 20 名前後になるが、その数が学生の指導にはもっとも適している。平均年齢は 30~34 歳であり、Mid-Career が中心であるため、学部を卒業したばかりの学生はほとんどいない。国内からは、沿岸警備隊からの学生が毎年含まれている。通常、

SMA ではワシントン州出身の学生は 50%以下であり、留学生を多く受け入れているが、2003 年の学生内訳はワシントン州 72%、その他の米国の地域 24%、留学生 4%である。留学生のうち、80%が先進国から 20%が途上国からである。留学生の中でも、アジアからの学生が最も多く、その中でも韓国、日本、台湾、中国が中心である。インドネシアやマレーシアからの学生もいるが、非常に稀である。ヨーロッパやアフリカ諸国からは、今までに 2~3 人程度しかいなかった。先進国からの留学生が多いのには、SMA およびワシントン大学の授業料・生活費が年間 36,917 ドル必要となるからである。ビザ取得のためには、2 年分約 70,000 ドル必要となる。

【入学規準と審査】　SMA の入学規準は、ワシントン大学大学院と SMA の双方の要件を満たしていなければならない。大学院の規準としては、①学士を有していること、②3.0（B）以上の学業成績、③高い大学院進学適性試験（Graduate Record Examination; GRE）のスコアがある。SMA の入学審査では、①海洋関連科目の良い成績、②高い GRE スコア、③教育・研究・政府・ビジネスなどにおける優秀な経験、④学部時代の教授や上司などからの推薦状、⑤明確なキャリアおよび将来のビジョンが考慮される。それらを総合して入学許可が与えられる。SMA の学生選考は 4 名の教員からなる選考委員会により行われるが、他大学のように学生のリサーチ・プロポーザルをもとにその学生を指導できる教員がいるか否かにより決定するのではなく、上記の各規準を点数化し、その総合得点で上位から学生を選考する。このため、完全に競争ベースで学生は選考されることになる。

入学選考の際、学士の種類（理学士、文学士）は問わないが、多くの学生は社会科学や環境テクノロジーなどの自然科学のバックグラウンドを有している。SMA の学生のうち約 85%が海洋関連の職歴を有しているが、選考過程でそのことがすぐに有利になることはない。その時の選考委員会のメンバーにより重視することもあるが基本的には選考基準ではない。問題は、その時の就職経験よりも、卒業後の就職に関する志願者のビジョンである。

奨学金については、3~4 名程度しか受けることはできないため、ほとんどの学生がリサーチアシスタントやティーチングアシスタントとして学費を稼いでいる。

【卒業後の進路について】　SMA の卒業生の約 90%が海洋関連の仕事に就いている。2003 年秋までに行われた調査では、卒業生のうち、46%が公的機関に、25%が民間機関、8%が NPO・NGO、8%が国際機関や外国の機関、3%が学術機関に就職している（374 名卒業、317 名回答）。公的機関には、NOAA や沿岸警備隊、港湾関連機関などが含まれている。民間機関は、船舶・運輸関連、環境関連の機関が多い。NGO には、WWF、Natural Conservancy などもある。国際的なセクターでは、日本の外務省や EC、韓国の海洋・漁業省などが含まれている。

卒業生には、現在海洋関係のリーダーとして活躍している者が多くいる。ポートオーソリティーや NOAA の Director も SMA の卒業生である。

c. 教員について

SMA には、現在 14 名の教員が所属している。多くの教員が、SMA だけでなく、水産学部、経済学部、法学部などの兼任教授である。

◇ SMA 教員リスト

名前	地位	研究領域など
Beth Bryant	Research Associate	環境法。海洋生物資源管理に関する法の分析。海洋資源管理および意思決定における科学の役割、科学と法の社会学など。
Patrick J. Christie	Assistant Prof.	アジアにおける珊瑚礁およびその魚種個体群に関する海洋保護区の影響。統合沿岸域管理など。
Terrie Klinger	.	海洋生態学および保全生物学、海洋保護区、侵入生物種など。
Andrea E. Copping	Affiliate Associate Prof.	環境管理および意思決定プロセスにおける科学の役割。外来種とエコシステムの崩壊、統合沿岸域管理、MPA、海洋ツーリズムなど。Northwest Straits Commission 議長および Washington Sea Grant Program の Assistant Director。
Robert F. Goodwin		ウォーターフロントの回復、沿岸域管理、沿岸における危険要因の軽減、都市港湾の管理、沿岸･海洋ツーリズムおよびレクリエーション Washington Sea Grant Program の沿岸資源スペシャリスト。
David Fluharty	Associate Prof.	海洋生物資源管理と政策、海洋保護区の管理と政策、統合沿岸･海洋管理、海洋資源の国際管理と開発、気候変動の統合アセスメント。
Daniel D. Huppert		商業水産管理、沿岸エコシステム管理、シャケの保護と河川の管理、気象予報に関する経済学。水産学部および経済学部の兼任教授。
Vlad M. Kaczynski		国際経済統合評価、海洋環境変化の人的側面に関する分野横断的研究、途上国の海洋政策の比較評価など。UNEP、世界銀行などのコンサルタント。
Thomas M. Leschine		海洋管理と政策決定、海洋管理への公衆の関与、油濁損害評価および防止、湿地保護など。水産学部兼任教授。
Vincent F. Gallucci	Adjunct Prof.	School of Aquatic and Fishery Sciences 教授。海洋生物個体群の管理と保存、管理政策形成など。
Marc L. Miller		海洋レクリエーションおよびツーリズム、統合沿岸域管理、海洋漁業および生物学的個体群、海洋環境教育など。文化人類学部および School of Aquatic and Fishery Science 教授。

Marc J. Hershman	Prof.	統合沿岸域管理、港湾管理、国家海洋政策、MPA など。現在、U.S. Commission on Ocean Policy のメンバー。法学部の兼任教授。
Edward L. Miles		国際海洋政策および海洋法、海洋政策プロセスの比較検討、国際科学技術政策、国際海洋レジームデザインと履行、気候変動など。水産学部兼任教授。
Warren S. Wooster	Prof. Emeritus	気候変化の海洋エコシステムへの影響、人間活動の管理、政策および管理に関する意思決定における科学の役割など。水産学部名誉教授。

d. 法学部における海洋法プログラムの閉鎖について（以下、法学部 Prof. Allen 談）

2003 年、ワシントン大学大学院法学部（Law School）における海洋法プログラム（修士課程：LL.M.)が閉鎖された。直接の原因は、海洋法プログラムへの応募が 3~4 名であり、プログラムの維持が困難であったからである。さらに、全て米国内からの応募であり、本来海洋法プログラムがアジア・太平洋の学生をターゲットにしたコース作りであったため、存在意義がなくなったからである。

現在、米国内で海洋関連のプログラムを有しているロースクールは、デラウエア大学、ロードアイランド大学、テュレイン大学、マイアミ大学くらいである。テュレイン大学の場合は、海洋法というよりも海事法に特化したプログラムである。デラウエア大学は他学部とのジョイント・プログラムであり、またロードアイランド大学などほとんどの大学は修士課程レベルでなく修了証書（Certificate）程度でしかない。

このように、米国内で海洋法に特化したプログラムを有するロースクールが少ないのは、国連海洋法条約の採択以降、米国が批准しなかったこともあるが、海洋法に大きな動きがなくダイナミクスが失われたためである。最近では、国連海洋法条約に反する条約が作成され、条約そのものの意義が薄れてきているように感じられることもある。こうした中で、「海」の法律に学生を引きつけるのは非常に難しい。法学部では「国際海洋法」と「米の海洋・沿岸法」の二つのコースを隔年で開講しているが、後者のコースの方は受講生が多く、前者の海洋法コースは受講生が減ってきている（Prof. Allen は両コースを担当）。

米国のロースクールにおいて海洋法プログラムが発展していない他の要因としては、ハーバード大学やイェール大学といった一流と呼ばれているロースクールが、今日では海洋法教育を重要視していないことがあげられる。これらのロースクール卒業生は、政治の中枢に関与しまた連邦裁判所の判事になる者が多いのであるが、これらの者が海洋法教育を受けていないため米国の政策や判決に海洋問題が反映されにくいのである。結果として、ロースクールの教育面にも影響を及ぼしている。

経済的要因としては、ロースクールの学生は、弁護士や判事などの法律家を第一に目指し、そうした職業が高給とりであるため、海洋問題よりも弁護士業務に集中してしまうことも関係している。また、ロースクールの学費・生活費は年間 200~500 万円ほどかかり、多くの学生が弁

護士や法律家になることを担保にローンを組んで修学している。このため、海洋関連のマーケットよりも弁護士や判事といったマーケットの方が学生には魅力的なのである。

今後、海洋法に特化したプログラムを米国のロースクールに設けることは需要の観点からも困難であろう。むしろ、環境全般や持続可能性といったプログラムに海洋法プログラムが統合されていくことが多いのではないか。ワシントン大学の場合も、このようなプログラムへ変貌を遂げていくのではないか。

e. その他

【SMA の研究活動】　研究面では、韓国のインハ大学やノルウェーの Fridtjof Nansen Institute と共同研究を行っている。また、SMA の中に、Coastal Management Journal や MPA News の編集委員がある。

その他に、大学内での研究だけでなく、市民講座のようなパブリック・レクチャー・シリーズを不定期に行っている。たとえば、2004 年 1 月には、韓国のインハ大学と共同で、パブリック・ワークショップ（Public Workshop comparing the ports of Incheon, ROK and the ports of Seattle-Tacoma）を行った。このような大学外との交流は、シアトルという港湾関係の発達した都市では重要である。

【今後のプログラムの行方】　今年度、1 年間の修士コースを設けるなど大きなプログラムの変更を行ったが、2005 年に 10 年に 1 度のプログラム・レビューが行われる予定である。この際には、今年春に出版予定の、U.S. Commission on Ocean Policy のレポートが少なからず影響するであろう。とくに、SMA のハーシュマン(Hershman)教授は、当委員会のメンバーであるため、影響は少なくない。

【オーシャン・ガバナンス】　オーシャン・ガバナンスを学ぶためには、沿岸・海洋地域における組織的調整の歴史、進化、評価、デザインが重要となる。しかし、近年では単に社会科学や政策的判断だけでなく、科学や技術の役割が重要である。

2.2 ブリティッシュ･コロンビア大学

ブリティッシュ･コロンビア大学（Univ. of British Columbia; UBC）は、カナダのブリティッシュ･コロンビア州バンクーバーにある国立大学である。ブリティッシュ･コロンビア大学には、環境･資源･水管理に関する学際的な教育プログラムを有する資源･環境･持続可能性に関する研究所（Institute for Resources, Environment and Sustainability; IRES）がある。海洋関連で学際的な研究を行っている機関としては、水産センター（Fisheries Center）がある。IRES と水産センターは、大学院の機関であり、教育･研究面で相互に協力･提携している。

2.2.1 資源･環境･持続可能性に関する研究所

(1) IRES の概要

IRES は、2002 年に、資源管理･環境研究、森林経済･政策分析研究ユニット、ウェストウォーター研究所、持続可能な開発研究所などのいくつかの学際的な大学院プログラム･研究所を統合して設立された。IRES は、①資源管理および環境研究に関する学際的な大学院プログラムを提供･促進すること、②環境資源と持続可能性の現実的かつ新たな問題に関する研究を開始･促進･発展させることを主な目的としている。

教育プログラムとしては、IRES は資源管理･環境研究（Resource Management and Environmental Studies; RMES）プログラムを提供している。RMES プログラムは、生物学、社会･経済学、政治学などを統合したコースを設置し、人間の活動と生態学的原則の相互理解を高めることを目的としている。

RMES プログラムには、修士課程と博士課程（PhD）がある。修士課程は、一つのプログラムでありながら、文学修士（Master of Arts）と理学修士（Master of Science）の二つの修士号を与えている。

RMES プログラムは、海洋が中心でなく資源･環境全般を対象としている。また、過去の実績から流域圏管理の研究･教育に力を入れている。海洋のみを専門とする学際的プログラムを設けることができなかったのは、カナダ政府が 1970 年代中頃から海洋に保護区域（sanctuary）を設けたため、様々な面で研究が進まなかったからである。このため、UBC ではオーシャン･ガバナンス関連の講座そのものを設けることができなかった。しかし、今後、沿岸域管理などの分野に力を入れていくため、海洋問題についても多くの教育･研究が期待できる。

(2) 調査内容

a. コースについて

RMES プログラムのコースは、エコシステム管理、陸水学、流域圏管理、土地利用、計画･管理の交渉、科学と政策、リスクアセスメント、資源経済、天然資源法およびガバナンス、統合アセスメント、持続可能性といったテーマを学際的に学ぶことを目的に設置されている。

修士課程の学生は、1 年目には必要とされる単位数のコースをとり、2 年目は研究（修士論文の作成）に当てられる。修士号取得のためには 36 単位を取得しなければならないが、そのうち 12 単位は RMES プログラムの必修および選択必修科目から、12 単位は大学院レベルの科目（RMES および他学部のコース）から取得しなければならない。残りの 12 単位は修士論文単位である。基本的に、学生はリサーチ・プロポーザルに沿ったコース選択を行うことが認められているため、RMES のコースだけでなく研究に関連する学部からコースを取得できるようになっている。PhD の学生は、基本的には単位を取得する必要はないが、RMES500A、501、502 のコースを取得していなければならない。

◇ RMES プログラム 2003~2004 年開講科目

科目（単位）				教員	内容
必修科目	RMES 500A	研究手法および計画入門（Intro to Research Methods and Design）	3	Kandlikar, Satterfield	
	RMES 501	環境問題（Envt'l Perspectives）	3	Lavkulich	天然資源や環境問題に関する概念、管理手法、ケーススタディー
	RMES 502	大学院セミナーシリーズ（Graduate Seminar Series）	3	Lavkulich	学生およびゲストスピーカーによる環境および資源管理のゴールと問題についてセミナー形式で講義を行う。
	RMES 500N	沿岸域管理（CZM）	3	Healey	カナダおよび米国の沿岸域管理に関する生態学的、法的、組織的基礎を学ぶ。
	RMES 500Q	科学技術・持続可能な人間開発（Science Tech. & Sustainable Human Development）	3	Kandlikar	人間開発における科学技術の役割について。
選択必修科目	RMES 515	統合流域圏管理（Integrated Watershed Management）	3	Schreier	流域圏評価、陸水、水路学の重要な問題、水質および水中生物相、土地利用の水資源への影響、コミュニティーとの関係、多岐に渡る土地利用活動と蓄積された影響
	RMES 516	都市における流域圏管理（Urban Watershed Management）	3	Schreier	都市における土地利用が水資源にもたらす影響。不透水地表、雨水管理、非点源汚染、蓄積効果、水質、都市流水の回復およびベストマネージメントプラクティスの適用。

必修科目	RMES 517	農業における流域圏管理 (Agricultural Watershed Management)	3	Schreier	水の需要、利用、および水資源への影響に着目した集約農業と粗放農業について。非点源汚染、栄養モデリング、土壌および土地のデグラデーション、緩衝地帯を含めた流域圏の保護とリハビリ、湿地、ベストマネージメントプラクティス。
	RMES 518	国際開発における水 (Water in International Development)	3	Schreier	国際開発に関連している重要な水の問題。地球的な水の需要、不足、効率的な利用、商品としての水、水管理の生物物理学的および政策的側面、水と健康、土地利用の影響、収穫、灌漑の改良、汚染防止。
	RMES 520	21 世紀における気候変動 (Climate Change in the 21st Century)	3	Cohen	21 世紀における気候変動の、歴史的、方法論的、政策的側面。自然科学と社会科学の文献を、気候科学へ適用。
	RMES 530	リスクおよび資源管理における知識、政策、価値 (Knowledge, Policy and Values in Risk and Resource Management)	3	Satterfield	価値、科学の役割と代替的知識システムの実効性。科学、不確実性、適応できる科学のプラクティス。
	RMES 542	統合アセスメント (Integrated Assessment)	3	Dowlatabadi	公共政策の複雑な問題を技術的かつ科学的に解く、学際的なアプローチ
	RMES 550	環境政策分析：リスクと価値 (Environmental Policy Analysis: Risks and Values)	3	McDaniels	環境および技術的な健康リスクに関するリスクアセスメント、リスクマネージメントおよび意思決定の分析
	RMES 586	漁業資源保存と管理 (Fish Conservation and Management)	3	Hinch	漁業資源の保存と管理に必要な生物学、個体群、コミュニティーエコロジー。現状、手法、組織を概観。

1 年目に優秀な成績を残し博士課程への進学を望む者は、修士課程から博士課程へと移ることができる。

学生は、修士号取得のために必ず修士論文を書かなければならない。IRES の教育方針として、「研究」を重視しているからである。とくに、学際的に何かを収得するためには、それを取り入れる「研究」が重要になり、修士論文は欠かすことができない。研究に関して、学生は、

IRES だけでなく、水産センターや森林経済･政策分析（Forest Economics and Policy Analysis）ユニットに所属し研究を行っている者が多い。これらの、センターは、複数の学部から学生を受け入れて研究を行っているため、学際的な研究と専門研究の双方を追求できるというメリットがある。たとえば、水産センターには、動物学、IRES、海洋学、水産学部などから多くの学生が集まっている。指導教官についても、IRES の教員だけでなく、人類学、農学、植物学、化学、MBA、海洋科学、法、工学など多くの学部から関連する教員を選ぶことができる。

現在は、上記のようなコース設定であるが、今後、エコシステム･ヘルスと人間の健康、ビジネスのグリーニング、商業のエコロジー化、環境リスクマネージメント、環境持続性といった問題に焦点を当てたプログラムとコース作りを行っていく予定である。

b. 教員について

IRES の教員は、歯学部を除く全ての学部の教員から構成されている。

◇ IRES 教員リスト

名前	研究領域
A.H.J. Dorcey	水資源に関する政策、組織、交渉に関する研究
Stewart Cohen	気候変動の影響および適応反応
Hadi Dowlatabadi	科学が関与する問題に関する公共政策のシステムアプローチ、エネルギー･環境･公衆衛生など。
Ken H. Hall	水に関する毒性研究、水質汚染、モデリングなど
M.C. Healey	沿岸域、生息地、水産関連
Scott G. Hinch	魚種の生息地、モデリング、水質汚染、林業
Milind Kandlikar	科学技術政策、技術と開発、科学的地球環境アセスメントの役割
Les M. Lavkulich	土壌化学および汚染、土壌資源管理
Timothy L. Mcdaniels	リスクアセスメント
Richard Kyle Paisley	蓄積効果、環境法、水資源法
John Robinson	持続可能理論と実行、持続可能性モデリング、持続可能なエネルギーシステム、意思決定における科学の利用
Terre Satterfield	環境紛争に関する社会学的研究、環境価値と公共政策、環境正義、リスクと回復など
Hans E. Schreier	土地と水の相互作用、非点源汚染、蓄積効果、流域圏管理、GIS モデリング
Sandra J. Brown	リサーチ･アソシエイツ。GIS、コンピューターモデリング、土地利用および土壌プロセスなど。

c. 学生について

【学生】　　IRES および RMES プログラムは、文学修士と理学修士の二つの修士号を与えているが、2002-2003 年に修士課程に在籍中の学生 42 名のうち、7 名が文学修士、35 名が理学修士コースである。博士課程の学生は 47 名である。学際的な IRES および RMES プログラムの人気は非常に高まっている。2000 年には 65 名の応募であったが、2002 年には 122 名が応募している（受け入れは 31 名）。この 122 名という数は応募書類を正式に受け入れた数である。書類不備や問い合わせなどを含めると、毎年 600 件近くに登っている。学生は、職業経験がある者もいれば、学部を卒業してすぐの者もいる。平均年齢は 28 歳くらいである。

【入学要件・審査】　　応募に際しては、申請書、推薦書（3 通）、成績表、リサーチ・プロポーザルが必要である。世界各地から RMES プログラムに応募があるが、本プログラムで重視するのはいかに学際的な視点で「研究」を行うことができるかである。IRES が政治・社会科学的アプローチとエコロジー的アプローチの統合および学際的視点を高めることを目的として設立されているため、リサーチ・プロポーザルは、入学選考で最も重要な要素となる。プロポーザルには、研究課題とその説明、論点、研究手法、理論的・分析的フレームワークなどが含まれていなければならない。プロポーザルの中で、学際的な検討が必要と考えられないものは、他の学部（生物学、海洋学、水産学など）に申し込むよう勧められ、RMES プログラムには受け入れることはできない。プロポーザルに対して指導できる教員がいない場合も、他大学および他学部への申請を勧めることがある。

IRES は、理学修士と文学修士の両方の学位を出しているが、リサーチ・プロポーザルの段階でどちらの学位を与えるかが決定される。

【卒業後の進路について】　　卒業後の進路については、多くの学生はその専門領域に進んでいるようだ。IRES としては、就職課などは設けていない。学生は、インターンを通じて仕事を見つける者が多い。また、セミナーシリーズが必修であるので、ゲストスピーカーを通じて仕事が広がることもある。学生の就職に関しては、卒業後の所在が不明の者が数名いるだけで、95%以上が専門職に就いている。

d. インターンシップ・プログラム

コースの他にも、インターンシップ・プログラムを設けている。2002 年 3 月から IRES/SDRI International Youth Internship Program が IRES の主導により開始した。このプログラムは、ブリティッシュ・コロンビア大学とカナダの様々な機関や外国の機関との間で相互に利益となる長期的なパートナーシップを促進することを目的としている。このインターンシップ・プログラムは、人間、環境、国際協力および持続可能な開発を促進するためにエコロジー的かつ社会的に責任あるカナダ人の新たな世代を育てるものである。インターンは、国際的な職業経験を積むことができる。

このインターンシップ･プログラムは、IRESやUBCの学生だけに限られているわけではないが、IRES の学生に積極的に応募するよう働きかけている。インターンに応募する者は、大学院生で 30 歳以下でなければならない。様々な学部の学生が対象であるが、環境と国際開発問題にとくに興味を持っていなければならない。インターンに採用された学生は、IRES で派遣前に研修を受けなければならない。採用された学生は、インターン終了後、就職活動の際にこのプログラムから支援を受けることができる。昨年、インターンを行った学生 12 名のうち、9 名がその後採用されており、3 名は大学院に進学している。

本年、このインターンシップ･プログラムは、Human Resources Development Canada (HRDC) から150,000ドル（10名の受入）およびCanadian International Development Agency (CIDA)から 45,000 ドル（3 名の受入）の支援を受けている。ホンジュラス、ブラジル、イギリス、ブルガリア、インド、タイ、中国、カンボジアに派遣されている。

e. ディスタント･ラーニング

IRES では、現在ディスタント･ラーニングに積極的に取り組んでいる。ディスタント･ラーニングのプログラムでは、学位でなく修了証書（Certificate）を与えている。

現在、流域圏管理（Watershed Management）のプログラムを設けている。このプログラムの受講のためにはUBCの大学院の学生として受け入れられることは必要ではないが、理学士もしくは同等の経歴が必要とされる。このプログラムは、政府関係機関や産業界からの要望が強く、環境コーディネーター、土地計画プランナー、コンサルタント、漁業関係者、エンジニアなどMid-Career のスキルアップのためのものである。

学生は、5 つのコース（3 コース必修、2 コース選択）を取得しなければならない。必修科目は、「統合流域圏管理（Integrated Watershed Management）」、「都市流域圏管理（Urban Watershed Management）」、「農業水域管理（Agricultural Watershed Management）」である。選択科目には「国際開発における水管理」、「地下水水文学」などがある。その他にも、「沿岸域管理」などのコースも取得できるが、それらのコースは講義への出席が要件となることがある。各コースでは、30~35 時間の指導が行われ、修学期間は 12~13 週間である。受講は、CD-ROM、E-mail、インターネット、ビデオを通して行われる。コースは、大学院レベルの正式なコース（大学院での正規のコース）である。

2004 年から、沿岸域管理に関するプログラムが設けられる予定である。

f. その他

【学際的教育について】　　学際的教育は、学生だけでなく教員にとっても難しいものである。とくに、研究を重視するIRESの場合、研究面においても学際的な指導ができなければならない。学際的なプログラムを立ち上げるためには、大きな傘（フィロソフィーなど）を設けて、それに対して取組が必要だと感じる多くの学者がボランティアに集まることにより、進めていくのがもっとも理想的なのではないか。

2.2.2 水産センター

(1) 水産センターの概要

水産センター（Fisheries Center）は 1992 年にピーター・ラーキン（Peter Larkin）教授のイニシアティブにより大学院の一研究ユニットとして設立された。水産に関する学際的プログラムのニーズに対応し、漁業管理と漁業資源の減少の問題に取り組むために設立された。生物学、海洋学、工学、経済学、数学、社会学、および政策に関する統合的アプローチを、漁業資源問題へ適用することを目的としている。水産センターの主要な目的は、①エコシステム、沿岸、地球レベルでの漁業インパクトの評価に対するアプローチおよびソフトウエアーを発展させること、②エコシステム回復のための新たなエコシステム・アーキテクチャーを適用するために、漁業コミュニティーや自然科学・社会科学の学者と協働することである。

水産センターは、ブリティッシュ・コロンビア大学における水産研究および政策研究に関するアウトプットを行うことを中心に活動している。水産センターの中には、Sea Around Us Project、Marine Mammals Research Unit、Project Seahorse、Fisheries Economics Research Unit などの研究プロジェクトが存在している。これらのユニット、プロジェクトを中心に、学術的研究、市場調査契約、パブリック・セミナー、プロフェッショナル・セミナー、ワークショップ、出版のスポンサーといったアウトプットが行われている。

研究活動だけでなく、水産関連のコースの開設や大学院生の指導などの大学院教育にも従事している。ただし、水産センターは、独自のプログラムおよび学位は提供しておらず、IRES や動物学部に所属する学生の修士論文や博士論文の「研究指導機関」として指導にあたる。学位に関しては、IRES など学生が所属する学部やプログラムが与える。水産センターに所属する学生の場合、修士号取得には平均 3 年、博士号取得には 3~4 年を要する。

(2) 調査内容

a. コースについて

水産センターは、6 つのコースを提供している。コースの取得方法や制限単位数に関しては、学生はその所属学部、プログラムの要件に従う。各コースとも、受講者は 7 名～10 名である。

◇水産センター開設コース一覧

科目名（単位）			担当者など
Fish 500	水産研究に関する問題：セミナー（Issues in Fisheries Research: Seminars）	3	水産問題に関する広い視野を提供し、学生の研究成果を報告し、水産問題に対する議論を行う。2 学期に渡るセミナー。
Fish 501	水産研究に関する問題：エコシステムモデリング（Issues in Fisheries Research: Ecosystem Modeling）	3	Daniel Pauly 担当。

Fish 502	水産研究に関する問題：海洋および淡水域（Issues in Fisheries Research: Marine & Freshwater）	3	2003 年未開講。
Fish 503	水産研究に関する問題：政策および評価（Issues in Fisheries Research: Policy and Evaluation）	3	Amanda Vincent 担当。エコロジーの観点から自然科学と政策プロセスの関係を学ぶ。
Fish 504	水産ダイナミックスおよび政策（Fisheries Dynamics and Policy）	3	Carl Walterz 担当。2 コース 6 単位を統合。水産に関する政策、モデリング、アセスメント、管理などを統合的に学ぶ。
505		3	
Fish 506	漁業開発に関する重要問題（Critical Issues in Fisheries Development）	3	Andrew Trites 担当。水産研究に関する視野とフォーカスを学ぶ。

Fish500「水産研究に関する問題：セミナー」のコースでは、学生がコーディネーターとなってセミナーが開かれる。このセミナーでは、水産関連の様々な分野から講師を招いて話を聞いたり、学生が研究報告を行ったりしている。このゼミナールは、関連する研究者や政府機関などにも案内を出しているので、学生だけでなく多くの者が集まり研究面および実務面で有意義なものとなっている。また、水産センターに所属する学生のほとんどが、単位に関係なくこのセミナーコースを聴講している。

b. 水産センター教員・研究員

水産センターには、8 名の教員および研究員が所属している。他にも、教育学、環境社会学、養殖、水産教育、水産社会学、水産文化人類学、政策・経済学、水産エンジニアリング、先住民漁業の教員が水産センターのプロジェクトや研究に関与している。

◇ 水産センター専属教員リスト

地位	名前	研究分野
Director	Daniel Pauly	熱帯性および地球的な漁業問題
Facutly	Michael Healey	流域圏管理
	Rashid Saumaile	水産経済
	T.J. Pitcher	漁業評価、政策、レジリエンス
	Andrew Trites	海洋ほ乳類および水産
	Amanda Vincent	海洋環境保護
	Carl Walters	モデリングおよびアセスメント
Research Associate	Jacqueline Alder	

c.　学生について

【受入条件と在学生について】　水産センターの教員による研究指導を希望する学生は、IRES や動物学部、経済学部、畜産学部などの大学院プログラムに入学が認められることが前提となる。水産センターの教員の指導を受けたい志願者は、大学院プログラムへの応募の際に、水産センターの教員から指導教官となる合意を取り付けておかなければならない。このため、志願者は各プログラムの応募の前に水産センターの教員と研究分野に関して連絡・相談をしておかなければならない。基本的に水産センターでの指導を希望する学生は、理学士が必要とされるが、経済学や数学などの文学士でも良い。それ以外の学部でも、水産に関する政策や社会学を学び、水産関連で多くの経歴を有していれば認められる。指導の合意を与える際には職歴や年数を考慮することもあるが、基本的には学生の成熟度（maturity）を重要視している。

学生のうち 10~15％が、過去に海洋関連の職歴を有している。そのうちの 70~80%が水産関連である。職歴を有する学生のうち、50%が政府機関、30%が民間機関、20%が NGO からである。

水産センターでは、毎年、修士課程 10 名、博士課程 10 名の学生の指導に当たっている。現在は、研究スペースの問題から各課程から 10 名程度しか受け入れていない。学生の多くは IRES の学生である。水産センターの学生の 50%がカナダ人であり、留学生のうち 65%は先進国からである。

【卒業後の進路について】　水産センターに所属する学生は、センターが主催するパブリック・セミナーや共同プロジェクトに参加することにより興味が明確になり、そうしたプロジェクトの人脈を通じて職を得ている。90%以上の学生が共同プロジェクトを通じて職を得ている。水産センターの学生のうち、10~20%が海洋関連の仕事に就いている。80~90％が水産関連の仕事に就いている。

2.3 ダルハウジー大学

ダルハウジー大学（Dalhousie Univ.）は、カナダのノバ・スコッシア州ハリファックスにある国立大学である。ダルハウジー大学には、法学部の海洋・環境法プログラム（Marine and Environmental Law Program; MELP）と海洋問題プログラム(Marine Affairs Program; MAP)の二つの海洋関連のプログラムがある。いずれも大学院（Faculty of Graduate Studies）のプログラムである。

2.3.1 法学部海洋・環境法プログラム

(1) 海洋・環境法プログラムの概要および歴史

海洋・環境法プログラム（MELP）は、ダルハウジー大学大学院法学部に設けられた海洋法および環境法に特化したプログラムである。1974 年にダグラス・ジョンストン（Douglas Johnston）教授のイニシアティブをもとに、①当時交渉中であった国連海洋法条約に関して優秀な研究機関を設けること、②海洋技術が進歩し海洋資源利用が増加する問題に直面し、海洋環境保護をサポートする法律家の組織を発展させることを目的として設立された。約 10 年前に、MELP は海洋・環境法コースの修了証書（Certificate）を学部（LL.B.）レベルで与えるようになり、修士（LL.M.）、博士（JSD）レベルでも海洋・環境法に特化した学位を提供するようになった。（注：北米における法学教育は全て大学院レベルであるため、LL.B.は大学院である。しかし法律に関する最初の学位（Bachelor）であるため学部と呼ばれる。）

2004 年 9 月に、MELP は、国際的な海洋ガバナンスに関する教育・研究協力を促進するために、海洋・環境法政策研究所（Marine and Environmental Law and Policy Institute）に変わる。これは、デビット・バンダーツワーグ（David VanderZwaag）教授が、Canada Research Chair in Ocean Law and Governance に任命されたことにより、新たなオフィススペースや研究所を維持するための資金が政府から提供されたからである。（カナダ政府は、近年、大学へのファンディングシステムに大きな変更を加えた。とくに、米国への優秀な研究者の流出を防ぐ目的で、教員の研究内容をベースにして各大学・学部に資金を提供するようになった。Chair に任命された場合、教職の要件が緩和されより研究に時間を費やすように求められる。）

MELP のコースおよび学位は、学部、修士、博士課程の学生が取得できる。

(2) 調査内容

a. コースについて

MELP のコースは、大きく「海洋法」と「環境法」のコースに分かれている。学部（LL.B.）の場合、MELP のコースを受講するためには、「国際法」の単位を取得していることが前提となっている。「海洋法」コースを選択した学生は、「海事法と実務」および「（国際）海洋法」の科目が必修であり、その他に 2 科目を MELP コースから取得しなければならない。「環境法」のコースを選択した学生は、「環境法 I」と「国際環境法」が必修であり、同じくその他 2 科目を MELP コ

ースから取得しなければならない。学生は、MELP の修了証書を取得するためには、平均して B 以上の成績をとらなければならないが、一つでも C 以下の科目がある場合、修了証書は与えられない。

修士課程（LL.M.）の場合、学生は「Graduate Seminar on Legal Education and Legal Scholarship」という基礎科目の他に、MELP コースから 2 科目取得し、MELP の教員の指導により海洋･環境法に関する修士論文を書くことが求められる。修士論文を書かない学生は、代わりに MELP コースから 3 科目をさらに取得しなければならない。修士課程の学生のうち、論文を書かずにコースのみをとる学生は LL.M.全体の 20%くらいである。修士課程は、1 年（3 学期）のコースである。

◇ MELP 開講科目

		科目名（単位数）		教員	内容
海洋法	必修	海事法と実務 （Maritime Law & Practice）	3	M. McConnell	海事法と実務の入門。歴史、事物管轄権、請求権、連邦の管轄権など。
		海洋法 （Law of the Sea）	3	D. VanderZwaag	海洋法の歴史を学び UNCLOS を詳しく検討する。航行の問題、資源、海洋環境保護、技術、紛争解決など。特に、カナダの利益および直面する問題にフォーカスを当てる。
	選択	ファーストネーション法 （First Nations Law）	3	C. MacIntosh	カナダの先住民の法的地位。先住民に関する法律、憲法規定、居住区、権原と権利、条約、税務など。
		漁業法 （Fisheries Law）	2	W. Moreira	漁業および漁業管理に関するカナダの公法、私法を学ぶ。基本的に法および規則の枠組みで議論を行うが、政策の問題にも触れる。
		国際貿易法 （Int'l Trade Law）	3	G. Winham	国際貿易に関する様々な取引とその法的枠組みを学ぶ。売買契約、運送契約、信用状の支払いなど。
		海洋環境保護法 （Marine Envt'l Protection Law）	3	Not offered	海洋環境保護に関する法の発展と現状を学ぶ。国際法における取組を第一に学ぶが、それがどのようにカナダで履行されているかも検証する。海洋環境の法的地位、船舶起因汚染、ダンピング問題、大陸棚における活動の規制など。
		海事法と政策 (Maritime Law ＆ Policy)	3	Not offered	海事法と政策に関する上級コース。年度により内容が異なる。過去のテーマは、海上物品運送。
		海洋法と政策 （Ocean Law and Policy）	3	P. Saunders	毎年内容が異なるが、官民の海洋利用管理のアプローチの関係、人間活動との関係など。

		石油･ガス法 (Oil and Gas Law)	2	V. Penick	石油やガス産業の規制に関して政府により用いられている法律テクニックおよび開発や生産に関する問題を学ぶ。
環境法	必修	環境法 I (Environmental Law I)	3	M. Doelle	6つのテーマに分け、持続可能な開発のための環境法を学ぶ。環境法の基礎と原則、環境汚染防止のためのコモンローの役割、憲法上の問題、環境アセスメント法など。
		国際環境法 (Int'l Environmental Law)	3	D. VanderZaag	慣習法から条約まで国際環境法の発展を学ぶ。とくに、国家責任と環境、ソフトローと環境原則、海洋環境保護に関する法、大気圏に関する国際法、有害物資の移送、森林、北極･南極問題など。
	選択	ビジネス･環境法 (Business and Environmental Law)	3	D. Harper	企業と環境問題について。国内･国際的局面における規律、企業責任、環境に関する監査、国際貿易問題、投資、汚染など。
		沿岸域管理 (CZM)	3	Not offered	沿岸域に関する法律、行政の問題を取り扱う。
		環境法 II (Envt'l Law II)	3	M. Doelle	環境法の分野におけるいくつかの分野横断的な問題をより深く見ていく。その年によりトピックは異なるが、過去には気候変動、環境アセスメント、環境法と経済の関係が取り扱われた。
		土地利用計画 (Land Use Planning)	3	H. Epstein & A. Ruffman	都市および地方における土地利用の規制および法的枠組みを通して、土地利用計画のプロセスを学ぶ。計画に関する基礎的な法の枠組みを学ぶ。
		動物の権利 (Animal Rights)		Offered 2004-2005	TBA

これらのコースの他に、Directed Research Course (3 単位) があり、これは現在設置していないコースや問題を学生が独自に研究したい場合に、教官の承認･指導のもとで個別研究を行うものである。通常、50 ページ程度のリサーチ･ペーパーが要求される。

コースの取得要件は、担当教員により異なるが、法学部の方針として、学生の 20%以上に A (80%以上) の成績を与えてはならないことが決まっている。このため、誰もが A をとれないように、クオリティー･コントロールが及ぼされている。採点に関しても、無記名方式で行わなければならず、コース担当者だけでなく、第三者に採点結果の承認を得なければならない。このようにして、コース･レベルの相互チェックが行われている。

数年ごとにコースの内容にギャップやオーバーラップがないか検討している。本年、「海洋環境保護法 (Marine Environmental Protection Law)」のコースが開講されなかったのは、「海

洋法」や「環境法」と内容が重複しており、その中に組み込むことができたからである。海洋および環境問題に関しては新たな国際問題が多く生じているが、コースの新設には内部手続上 1 年は要するため、各科目の中に少しずつ新たなトピックを入れることにより対応している。

b. 教員

法学部全体としては 44 名の教員がいるが、そのうち MELP 担当は 8 名（他 2 名の名誉教授）である。また、MELP には 8 名の非常勤講師がいる。MELP に携わる教員はそれぞれ海洋法・海事法の専門家であるが、基本的に全ての教員が海洋法のコースを担当できる能力を有している。

◇MELP 担当教員リスト

名前		担当科目	主な研究分野・経歴など
Aldo Chircop	Associate Prof.	「海事法と実務」、「海洋環境保護法」、「海洋の開発および管理に関する今日の問題」	海洋法、海洋管理およびレジーム・ビルディング、地中海と海洋法の問題。元 IOI ディレクター。MAP ディレクター。
Meinhard Doelle	Assistant Prof.		環境法（気候変動および環境アセスメント）。気候変動枠組条約交渉に関するカナダ代表団の一員。
Hugh M. Kindred	Prof.	国際法と貿易、海上輸送、商法など	国際法、海事法、商法。“Marine Cargo Delays”(1990), “Multimodal Transport Rules” など共著。カナダおよび NS 州の多くの委員会に関与。
Constance Macintosh	Assistant Prof.	「ファーストネーション法」など	ファーストネーションの権利および資源管理。“Task Force on Newcomer Access to Health Care”のメンバー。
Moira L. McConnell	Prof.	「海事法と実務」など	MELP ディレクター。海事法、海洋法、海洋環境保護、ICZM、紛争解決法など。ILO の海洋部門のアドバイザーなど。
Dawn Russell	Dean	「国際法」、「海洋法と政策」	会社法、海洋法、国際法、海洋境界画定、国連問題。カナダ国際法委員会メンバー他。
Phillip M. Saunders	Associate Prof.	「海洋法」、「環境法」、「国際漁業法」、「不法行為法」	国際環境法、海洋資源問題、森林問題など。
David VanderZwaag	Prof.	「海洋法」、「国際環境法」など	海洋法、国際環境法、持続可能な開発法など。Specialist Group on Ocean Law and Governance のチェアー。
Christian L. Wiktor	Emeritus	Law Librarian	図書館司書。とくに、条約法のコレクション。

Douglas M. Johnston	Emeritus		MELP 創始者。Maritime Awards Society of Canadaのプログラム･コーディネーターおよび SEAPOL プログラム･ディレクター

c. 学生

【学生について】　ダルハウジー大学法学部は、全体として約 500 名の学生を有している。毎年、LL.B.150 名、LL.M.15 名、JSD1~4 名程度を受け入れている。LL.B.の学生のほとんどがカナダ人であるが、LL.M.の学生は 70%が留学生である（北米 30%、南米 10%、アジア 20%、ヨーロッパ 10%、アフリカ 30%）。留学生のうち 60%が途上国からである。学費（1 年間）は、カナダ国内の学生は 9,492 カナダドル、留学生は 13,992 ドルである。

ダルハウジー大学法学部には多くの奨学金制度があるが、その中でも海洋･環境法関連では、Fielding Sherwood Memorial Fund と CMLA がある。前者の奨学金では、1 年間に 1 名 2,500 カナダドルが支給される。この奨学金は、環境問題、漁業および海洋研究に興味のある LL.M.または JSD の学生に支給される。CMLA の方は、1 年間に 1 名 1,000 カナダドルが支給され、CMLA のメンバーシップが与えられる。CMLA は、海事法を学ぶ MELP の学生（大学院レベル）に支給される。

【入学規準および審査】　法学部の学生の選考は、基本的には大学院（Faculty of Graduate Studies）の入学規準･審査から離れ、法学部独自の規準で決定することができる。MELP の修了証書（Certificate）を得るためには、LL.B.の学生として入学が認められることが前提となっている。LL.B.は、学士（Bachelor of Arts/Science）を有していること、および高い法科大学院進学適性試験（LSAT）スコアがあることが要件である。1 年次に法律基礎科目の単位を優秀な成績で取得した学生だけが、MELP に進むことができる。MELP の修了証書を取得するためだけのコースはなく、必ず LL.B.に入学が認められていなければならない。コースの性質上、LL.B.2 年目以降の学生が取得できる。

LL.M.に入学する場合、法学の学位（LL.B.もしくは外国の法学士）が必要である。JSD の学生は、LL.M.を取得していなければならない。JSD は毎年優秀な学生を 1~3 名程度しか受け入れていない。

選考過程では、リサーチ･プロポーザル、過去の学業成績、職歴などが重視される。職歴があることは好ましく、推薦状は上司からのものがあると良い。LL.M.の学生の場合、約 25%が海洋関連の分野での職歴を就学前に有しており、そのうち 20%が政府、民間、NGO から派遣されている。LL.M.の場合、選考過程で学生の地理的配分にも考慮が払われている。

【卒業後の進路】　法学部にはキャリア･プレイスメント･オフィスがあり、2 名のスタッフがいる。MELP 専門のオフィスはない。

LL.B.で MELP の修了証書を受けた学生の多くは、司法試験（Bar Exam）を受け、法律家になり法律実務に従事することになる。カナダの場合、司法試験を受け合格した場合、1 年程度

の司法修習（州により異なる）に行かなければならないため、卒業後即座に海洋関連の職に就くのは稀なことである。しかし、卒業後すぐに政府、国際組織、NGO で海洋関連の仕事につく者もいる。法律実務に従事する卒業生で専門領域に進む者は、海商法、漁業法、石油・ガス法など海洋と関連する分野を扱う法律事務所に就職している。しかし、実際には、実務を経験して海商法、海事法の重要性・必要性を認識する者の方が多い。とくに、ハリファックスで法律業務を行う場合、海事法、海商法、売買法などが重要となってくる。

LL.M.や JSD を卒業した学生の中には、海洋・環境法関連の学者になる者も多い。カナダ以外でも、オーストラリア、ニュージーランド、中国、フィジー、ドイツ、インドネシア、韓国、スコットランド、シンガポール、パプアニューギニア、フィリピン、米国、イギリスなどの大学で教鞭をとっている卒業生が多くいる。

現在、ダルハウジー大学法学部出身で海洋関連のリーダーとなっている者に、ジェフ・レーガン（Geoff Regan）氏がいる。レーガン氏は、現在カナダの漁業・海洋省の大臣である。それ以外にも、多くの卒業生が海洋法や政策の発展に関与・貢献している。

d. 他大学・機関との連携・交流

ダルハウジー大学法学部は、多くの大学と交換留学制度を含めた教育面での連携・交流を行っている。シンガポール国立大学、Queensland Univ. of Technology（オーストラリア）、Lund Univ.（スウェーデン）、マーストリヒト大学（オランダ）、The Free Univ. of Amsterdam（オランダ）、Bucerius Law School（ドイツ）などと国際的な交流を行っている。また北米地域では、North American Consortium on Legal Education を通して交流を行っている。

研究面でも政府機関、国際機関（ILO、UNEP、IMO など）、大学との共同研究を多く行っている。たとえば、Canadian International Development Agency (CIDA)の支援のもとで、ベトナム国立大学、農林業大学（ベトナム）、フィリピン大学水産・海洋科学研究所とともに、“Putting Principles of Ocean Governance in Practice” という 5 年間のキャパシティー・ビルディングおよび研究プログラムを行っている。また、バンダーツワーグ教授を中心に、オーストラリア・カナダ海洋研究ネットワーク（ACORN）を設立し、Environment Australia とカナダ漁業・海洋省の支援のもとでカナダとオーストラリアのオーシャン・ガバナンス機関の間で学際的な海洋法・政策研究を行っている。バンダーツワーグ教授が、World Conservation Union's Specialist Group on Ocean Law and Governance の議長になったことにより、今後世界各地の NGO や環境法プログラムとのオーシャン・ガバナンスの連携がさらに深まることが期待される。

e. その他

【図書館について】　法学部は図書館を有しており、206826 冊の蔵書がある。学術雑誌も、1523 冊ある。オーシャン・ガバナンス関連の蔵書も充実している。

MELP など専門性の高いプログラムや研究所を有する場合には、図書館の司書の役割が重要である。良いプログラムを提供するためには、コースの取得要件も厳しくなり、リーディングやリサーチが多く必要とされる。ダルハウジー大学法学部の場合、セミナー形式のコース

を一科目（3 単位）取得するためには、50 ページ以上のリサーチ・ペーパーを書かなければならない（MELP のほとんどのコースが単位取得要件としてリサーチ・ペーパーを要求）。このため、コースに関連する資料や学生が必要とする資料などを、多くそろえておく必要がある。また、新しい問題に対して学生が興味を有する場合、司書を通して資料をすぐに揃えておかなければならない。コースを充実させるためには、司書の役割は重大である。

論文やリサーチ・ペーパーの脚注（Footnote）形式は、学術領域により大きく異なるため、学際的なプログラムの場合は脚注の統一などに関して司書の役割が大きくなる。

MELP は、司書として Christian L. Wiktor 名誉教授がおり、海洋法教育に大きく貢献している。

【プログラムのターゲットについて】　特殊なプログラムを設立する場合には、そのプログラムのターゲット、すなわちマーケッティングを考えなければならない。ダルハウジー大学の場合、ハリファックスという土地柄、海上輸送・貿易と石油・ガスの採掘（海底油田など）が重要問題であった。コースの中に複数の海事法のコースや石油・ガス法のコースが含まれており、地元の企業で働く者にとっても必要とされてきた。このように、地元のニーズと密接に関係するプログラムを有することが成功の鍵を握る。カナダの場合、先住民の問題は避けて通れない。海洋問題でも、先住民の伝統的漁法を脅かす最新技術による漁法の問題や乱獲による先住民の生存権の問題などがある。

【政府との関連】　カナダの大学は全て国立大学であるが、政府が学部設立やコース設定に干渉することはほとんどない（ただし、医学部や法学部など特殊な専門領域の場合、地域ごとの設置数の制限は行うことはある）。大学および学部は、自らの判断と興味でコース設定を行うことができるが、最近はファンディングシステムの変更により研究単位で予算が振り分けられるため、教員の研究レベルの向上が重要な課題である。

2.3.2 海洋問題プログラム

(1) 海洋問題プログラムの概要および組織

ダルハウジー大学の海洋問題プログラム（Marine Affairs Program; MAP）は、1986 年に法学部のダグラス・ジョンストン教授を中心に、海洋問題に関心がある複数の学部の教員が集まり学際的に海洋問題に取り組むことを目的として法学部の中に設立された。International Center for Ocean Development (ICOD) の支援により設立されたことが成功の大きな要因となった。1992 年に、大幅なカリキュラムの変更を加え、正式に海洋管理修士（Master of Marine Management）の学位を与えることになった。同時に、法学部から大学院（Faculty of Graduate Studies）へと母体を移した。これは、MAP の学際的な視点を高めるために多くの学部の協力が必要であったからである。

MAP は、海洋管理者のための高等教育・トレーニングコースを提供することを目的としている。「海洋問題」修士号（Master of Marine Affairs）でなく「海洋管理」修士号（Master of Marine Management）にしたのは、そうした専門性や訓練的要素を重視したからである。このため、MAP は、修士論文をなくし 2 年ではなく 1 年のプログラムにしている。MAP は博士課程を設けてないが、博士課程への進学を希望する場合、Interdisciplinary PhD プログラムに進学することにより海洋問題を扱うことができる。この PhD プログラムは、MAP が提供するものでなく大学院全体の学際的プログラムである。

MAP は、ダルハウジー大学大学院機構の中で特殊な地位にあり、プログラムでありながら、いずれの学部にも属していない。また、ファンディングシステムも他学部と異なる。MAP の場合、大学以外からその資金のほとんどを提供してもらっている。1992 年までは ICOD による財政支援があったが、組織母体の移動により、Canadian International Development Agency(CIDA)による支援となった。CIDA との契約では、CIDA の指定する途上国（フィリピン、キューバなど）から毎年約 13 名の留学生を MAP が受け入れる代わりに、CIDA が資金を提供することになっている。CIDA は、留学生の授業料、生活費、渡航費、パソコン購入費を負担している。昨年、さらに 5 年の契約延長を行った。また、カナダ漁業・海洋省（Department of Fisheries and Oceans; DFO）からも支援を受けている。DFO との契約では、DFO から 2 名を毎年受け入れること、および共同研究プロジェクトを行うことが要件として盛り込まれている。

MAP の成功は、MAP が外の世界とのコネクションを強めて成長したことにある。コース作りに関しては International Ocean Institute（IOI）の長年の実績によるトレーニングプログラムが良い影響を及ぼしている。CIDA や DFO などの機関との連携も重要な要素となっている。

(2) 調査内容

a. コースについて

【コースワーク】　MAP の学生は、①統合沿岸・海洋管理、②海洋環境管理、③海洋法と政策、④水産に関する政策と管理、⑤海上輸送管理の 5 つのテーマのうち、いずれかもしくは複数を研究主題とする。それに基づき、コースの選択が行われる。MAP のコースは、①

知識（knowledge）、②技術（Skills）、③姿勢（attitude）を学ぶことを理念としている。

学生は、MAP の必修コース（5 単位分）を取得し、各自の研究テーマに沿って、MAP が提供する他のコースや他学部の海洋関連コースから残りの単位（2・1/2 単位）を取得する。コースは、自然科学と社会科学の双方の知識が必要であり、学際的に研究を行うことが求められる。MAP は、Mid-Career のトレーニングを主な目的としているため、いわゆる学術的な修士論文を学位要件としていないが、代わりに学生はリサーチ・ペーパーを書くことが求められている。学生は、プログラム・コーディネーターと相談の上テーマを決定する。

◇ MAP 開講科目

	科目（単位数）			内容
必修	MARA 5001.06	海洋の開発および管理に関する今日の問題（Contemporary Issues in Ocean Development and Management）（＊コース概要については 3.4 参照）	1	前期は、沿岸・海洋管理のための統合的アプローチにフォーカスを当て、海洋問題を学ぶ。特に、紛争管理や法・政策の問題に取り組む。後期は、事実やケーススタディーを通じて、漁業管理、海上輸送、資源の利用、環境保護、ツーリズムといった問題に取り組む。
	MARA 5002.06	大学院研究プロジェクト（Graduate Research Project）	1	コースワークを通じて学んだ知識と技能を、特定の問題のプランニングと管理に適用させることを学ぶ。指導教官の下で、小論文の作成とインターンシップの双方が求められる。
	MARA 5003.03	科学に基づく管理（Science-based Management）	0.5	海洋科学技術を海洋管理のプロセスに統合することを学ぶ。空と海の相関関係と地球温暖化、EEZ、水質、漁業、コーラルリーフ、生態系など。自然科学の知識がない学生は海洋学のコースをとることを勧められる。
	MARA 5004.03	管理プラクティス（Management Practices）	0.5	海洋管理者が海洋開発および管理に関する意思決定者やステークホールダーと効果的に働くために必要な知識と技術を学ぶ。意思決定支援ツール、リスク分析、プロジェクトマネージメント、情報処理、危機管理など。
選択	MARA 5005.03	個別研究 （Independent Readings / Special Topics）	0.5	他のコースで取り扱わない問題について、個別に研究を行いたい学生のためのコース。
	MARA 5008.03	統合海洋エンフォースメント（Integrated Marine Enforcement）	0.5	統合プランニングおよび管理における海洋エンフォースメントの役割を理解することにより、沿岸・海洋管理の枠組み内における海洋エンフォースメントの難しさを学ぶ。

選択	MARA 5012.03	コミュニティーを軸とした共同管理（Community-Based Co-Management）	0.5	コミュニティーを軸とした共同管理が、海洋資源管理のアプローチにどの程度影響を及ぼすことができるかを検証する。
	MARA 5013.03	海洋保護区（Marine Protected Area）	0.5	開発からのレフュジア（refugium）を海洋環境に設けることは、生態学理論およびエコシステム・マネージメントの応用である。生態学の研究、水産、公園管理および政策といった問題を総合的に取り扱う。
	MARA 5014.03	統合海洋・沿岸計画（Integrated Ocean & Coastal Planning）	0.5	沿岸および海洋の国土計画に関する基礎コース。環境デザイン、計画、政策管理を統合して学ぶ。フィールドワーク、分析、統合が求められる。
	MARA 5015.03	海上輸送に関する政策と行政（Maritime Transportation Policy & Administration）	0.5	海上輸送を総合的に理解する。グローバリゼーション、技術の発展、安全問題、環境損害など海上輸送が直面する問題についても議論。政府の政策の役割に注目する。

* その他、生物学、MBA、エンジニアリング、地球科学、経済、環境、地学、法、海洋学、政治学、行政学などの学部から関連科目を選択可能。また、St. Mary 大学（ハリファックス）などと単位互換制度を行っており、ダルハウジー大学にはないコースで、他大学にある海洋関連のコースを取得することができる。

【インターンシップ・プログラム】　学生は、コースワークだけでなく、インターンをプログラムの一環として行うことが求められる。インターンシップは、大学で学んだ理論を学際的に実践する場として重要である。インターンは、コースが終了した 5 月ぐらいから開始し、MAP のスタッフが学生の専門領域にあわせて責任を持って斡旋するが、学生は自らインターンを見つけてもよい。派遣先は通常地元の政府機関や民間機関である。期間は受入先により異なるが、最低 4 週間は行わなければならない。3~4 ヶ月が好ましい期間である。インターン制度は、学生の研究成果を補う役割とコースが提供されてない期間の奨学金（生活費）対策である。

◇過去のインターン受け入れ先

連邦政府機関：　Environment Canada, Fisheries and Oceans, Canadian Coast Guard, Transport Canada, etc.

州政府機関：　Environment, Fisheries and Aquaculture, Economic Development and Tourism

民間機関：　Canadian Fishery Consultants Limited, Canadian Seabed Research Ltd., Jacques Whitford Enviroment Ltd.

NGOs：　Halifax Harbour Solutions Project, International Ocean Institute, Lester Pearson International etc.

国際: Philippine Association for Intercultural Development,
Mission of Norway to the European Union, etc.

b. 教員について

MAP は、大学院のいずれの学部にも所属していないことから、専任教員は少ない。MAP の講義や教育を担当している教員の多くは、他学部に所属し MAP の学生の教育･指導に当たっている。MAP は他学部と契約を結び、各学部から数名が MAP の指導にあたるようになっている。通常、複数の学部を兼任する場合、それぞれの学部からその教員への給与の支払いが行われるが、MAP の場合、教員の所属学部が全てを支払う。ほぼボランティアという形で MAP のコースを教えている仕組みになっている。St. Mary 大学や政府機関とも教員派遣の提携を行っている。

◇ MAP 担当教員リスト

名前	地位	所属学部	研究領域など
Bruce G. Hatcher	Director	MAP および生物学部	海洋生物学。沿岸･海洋エコシステムにおける大型水生生物の生産性に関する研究。
R. Apostle	Faculty Member	社会学･社会文化人類学部	
M. Binkley		社会学･社会文化人類学部。	
M. Brooks		経営管理学部 (MBA)	国際マーケティング論、国際輸送。
E. Cavanagh		建築学部	
A. Charles		St. Mary 大学金融･経営科学部	水産養殖経済学、水産社会経済学、水産投資モデル、漁業政策など。
A. Chricop		法学部	
R. Cote		School of Resource and Envt'l Studies	海洋環境保護ストラテジー、科学物資の管理、産業エコロジー。
A. Dwire		社会学･社会文化人類学部	沿岸コミュニティーにおける水産養殖の開発に関する紛争、コミュニティーを軸とした管理についての研究。
L.M. Fanning		MAP	
R. Fournier		海洋学部	
E. Gold		法学部	
K.R. Gustavson		Jacques Whitford Environment Ltd.	
J.R. Hodgson		MAP	

O. Hertzman		ブリティッシュ・コロンビア大学 Adjunct Prof.	
L. Hildebrand		Environment Canada	沿岸域管理、コミュニティー・マネージメント、政策。
P.A. Lane		生物学部	環境影響・リスク評価、バイオレメディエーションなど。
R.A. Myers		生物学部・海洋学部	個体群生態学、水産科学、漁業管理、メタ分析など。
R.I. McAllister		経済学部	災害救助・防止・開発、持続可能な開発と海外援助、地域開発。
R. McCalla		St. Mary 大学地学部	
M.L. McConnell		法学部	コーポレートガバナンス、国際法、環境法、女性学、海洋法など。
E. Meltzer		カナダ漁業・海洋省	沿岸域管理、海事法・政策、MPA、国際法、ストラドリング魚種問題。
G.F. Newkirk		生物学部、MAP、Lester Pearson International	途上国におけるコミュニティーを軸とした沿岸資源管理、食糧生産システムとしての水産・養殖の統合。
M. Rudd		カナダ漁業・海洋省	
C. Taggart		海洋学部	水産海洋学
D. VanderZwaag		法学部	国際環境法、海洋法、汚染コントロール、漁業管理など。
P.G. Wells		Environment Canada, School for Resource and Envt'l Studies	海洋汚染、毒物学、陸上起因汚染。
J.H.M. Willison		生物学部	自然保護政策と実行、植物ストレス生理学、保護区管理。
A. Evans	Lecturer	建築学部	
D.P. MacLellan		MAP	
H. Williamson		MAP	
F.N. Bailet	Research Associate	IOI	
M.J.A. Butler		Atlantic Coastal Zone Information Steering Committee	
H. Wang	Post-Dr.	MAP	

c. 学生について

【学生】　　MAP は、毎年約 20 名の学生を受け入れている（そのうち約 13 名が CIDA 指定国からの留学生）。現在までに 40 カ国以上から 168 名の卒業生を出している。落第率は、3.8％程度である。MAP の目的が、Mid-Career の育成であるため、多くの学生が海洋関連の職に従事している、もしくは従事した経験がある。とくに、CIDA 対象国からの留学生は、水産庁、環境庁、沿岸警備など政府機関で働いている者が多く、卒業後もそのポジションに戻る者が多い。

【入学要件・審査】　　MAP の入学審査は、申請書（大学院用）、過去の学業成績、推薦状（3 通）、MAP 申請書（リサーチ・プロポーザルなど含む）の総合評価にて行われる。また、CIDA 助成対象国の学生は、申請時に奨学金を申し込まなければならない。文学士もしくは理学士（Bachelor of Arts/Science）を有していることが入学の前提条件である。

はじめに MAP 内部で学生の選考が行われるが、審査の上でリサーチ・プロポーザルが非常に重要となる。MAP の審査を通過した者は、その後大学院の審査を受ける。そこでは、ダルハウジー大学大学院の設定する語学、学業成績、大学院進学適性検査試験（GRE）スコアなどの基準を満たしているか、研究能力があるかなどの形式的審査が行われる。

MAP に応募してくる学生の多くは、職場の同僚や上司などが MAP 出身であり、それらの薦めにより応募してくる。このため、他大学の同じようなプログラムに比べ志願者の競争率は低いが、確実に学生を確保することができている。

【卒業後の進路】　　多くの学生が、職務を継続（休止）して修学しているため、80%以上の学生は卒業後、そのポジションもしくは関連業務に戻っている。それ以外の学生であっても、ほとんどが海洋関連の職に従事することになる。インターン制度をプログラムの一部に組み込んでいるため、多くの学生はインターンを通じて仕事を得ることができる。

d. その他

【MAP の共同プロジェクト】　　MAP は、CIDA との関係が強いため、単にコースを留学生に提供し教育するだけでなく、CIDA 指定国における海洋管理教育の拡充に関する支援も行っている。

たとえば、University Partnership in Cooperation and Development (UPCD)が資金提供を行っているキューバのサンティアゴ大学における統合沿岸域管理教育プロジェクト（カナダ大学連合運営、CIDA 支援）にも参加している。このプロジェクトは、1999 年から 2004 年の期間で行われ、キューバにおける学際的プログラム・教育のためのカリキュラム作りを目的としている。今までに、学際教育のセミナーや大学教員の受入を MAP では行ってきた。

【カナダ政府と大学について】　　1990 年後半に、カナダ政府の大学への予算配分に関して大きな変更があった。以前は、大学の予算のうち 88%が政府からの拠出であったが、1990 年

後半より 44%だけになった。このため、ほとんどの大学が残りの予算を授業料や自らのビジネス業務で得なければならなかった。こうした中、MAP が二つのカナダの政府機関から支援を受けることができたのは大きなことである。

また、MAP の場合、志願者の 90%以上が過去の卒業生や上司による評判・推薦により応募してくるため、他のプログラムが直面する学生獲得のためのビジネスを行わなくて良い。

3 資料

3.1 訪問先機関･面会者連絡先

(1) ワシントン大学 SMA

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a. IRES

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b. MAP

◇ MAP

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Dr. Gary F. Newkirk (Coastal Resource Research Network, Coordinator)	同上	+1-902-494-2284 gary.newkirk@dal.ca
Dr. Francois Bailet (IOI, Deputy Executive Director)	International Oceans Institute of Canada 1266 LeMarchant St. Halifax, NS B3H 3P7	+1-902-494-1979 f.bailet@dal.ca

3.2 入手資料リスト

大学･機関名	資料
ワシントン大学 SMA	① 調査表 ② SMA コース一覧表 ③ 教員略歴リスト ④ SMA 入学案内 ⑤ 卒業生就職リスト ⑥ Strategic Plan 2000-2001 ⑦ SMA パンフレット
ブリティッシュ･コロンビア大学 IRES	① RMES プログラム学生用ハンドブック（2003~2004 年） ② IRES Annual Report 2002-2003 ③ 入学願書キット ④ Michael Healey 著『Seeking Sustainability in the Lower Fraser Basin』
ブリティッシュ･コロンビア大学 水産センター	① 調査表 ② 水産センター志願者用パンフレット
ダルハウジー大学 法学部 MELP	① 調査表 ② コース一覧 ③ 教員略歴リスト
ダルハウジー大学 MAP	① MAP パンフレット ② MAP 入学願書キット ③ 2003 年開講コース「海洋の開発および管理に関する今日の問題（Contemporary Issues in Ocean Development and Management）」教材一式 ④ Interdisciplinary Teaching に関する MAP 主催 WS およびプロジェクト資料･論文
その他	① Environment Canada、Georgia Basin におけるプロジェクトのパンフレット ② IOI トレーニングプログラムパンフレット ③ ダルハウジー大学 Lester Pearson International、Ocean Governance のプロジェクトパンフレット

3.3　調査表回答

3.3.1　ワシントン大学海洋問題学部

回答調査表

Attachment 1: SMA Courses

Attachment 2: SMA Faculty

Attachment 3: Application Procedure

Attachment 4: Alumni Employment Profile

SURVEY ON OCEAN GOVERNANCE EDUCATION

* Thank you for taking time to fill out this survey. Information such as history of the program, course descriptions and teaching staff might be available on line or in registration materials. In these situations, in order to save time, please provide us with the appropriate web address or attach bulletin or documents related on this survey.

* Important Notice: These responses to the survey are from Prof. Marc Hershman personally as one of the SMA faculty members and not a response of the entire faculty nor the director of the faculty.

Department/Faculty/ College: School of Marine Affairs
University: University of Washington
Address: 3707 Brooklyn Ave. NE
Seattle, WA 98105

e-mail: uwsma@u.washington.edu
ULR: www.sma.washington.edu

****

Name of the Program: School of Marine Affairs

Degree offered:

☐ Undergraduate

○ Certificate ○ Diploma ○ Degree

○ Others (Please explain) ( )

✔ Masters

☐ Masters of Science (course work only / course work + thesis / both)

☐ Masters of Arts (course work only / course work + thesis / both)

☐ LL.M. (course work only / course work + thesis/ both)

✔ Others (Please explain)

Master of Marine Affairs (course work + thesis)
* Non-Thesis track (1 year) program will start from next September.

☐ PhD * Informal arrangement to PhD. Program. "Collaborate Ph.D." with SAFS (Fisheries), SOO (Oceanography), and Geography

History of the Program:

1. When was your program established?

   1972 Institute of Marine Studies (IMS)
   1980 Authorization to offer degree
   1990 School of Marine Affairs

2. Who and which faculty / college / institutions took the initiative to establish your program?

   Ad hoc group of interested faculties from Oceanography, Fisheries, Public Affairs, Law, Economic, Engineering, etc.

3. What motivated the establishment of your program? What was the main concern at the time of establishment?

   - Evolution of the Law of the Sea and U.S. Law
   - Stratton Commission Report: 1969 U.S. Government
   - Report: Blue Ribbon Commission
   - Establishment of NOAA
   - Other Universities: University of Rhode Island, University of Delaware, University of Virginia, University of Miami, Oregon State University

4. Have you revised the program since its establishment? ✔ Yes ☐ No

   * If Yes, why did you have to revise? What was the original program? Please explain.

   Early emphasis: Law of the Sea
   1976-1985: Coastal Zone Management, Fisheries
   1985-1995: Pollution, Ports and Transportation, Recreation and Tourism
   1995- today: Ecosystem management, MPA, International Integrated Costal Zone Management, Climate Change, Sustainable Development, Integration of disciplines and themes

About the Program:

1. How many years does it take to complete your program?

   Undergraduate _____ years
   Masters 2 years
   PhD _____ years
   Others ( )

2. Which areas does the program concentrate on? Which areas do you have teaching strengths in?

   - ✔ Ocean Policy
   - ✔ Marine Science
   - ✔ Fisheries Management
   - ✔ Integrated Coastal and Ocean Management
   - ✔ Marine Conservation
   - ✔ Ocean Laws
   - ✔ Social Aspects of Ocean/Coastal Management
   - ✔ Marine Resource Management
   - ☐ Environment in general
   - ✔ Economics
   - ✔ Other (Please specify)

     Ports and Transportation, Tourism and Recreation
     Regional Climate Variability and Change

3. What courses do you offer? *(If this information is already available, please note web site location or attach documents related.)*

Course Title	Instructor	Type of Course*	Credits	Maximum Enrollment	Others**
* See **Attachment 1**					

* Type of Course: Lecture, Seminar, Experiment, Field Work etc.

** Others: Compulsory or not, Prerequisites etc.,

4. How many credits do you require to fulfill your degree requirements?

Undergraduate _____ credits

Masters (course work only) 59 credits

Masters (course work + thesis) course work 49 credits

thesis preparation course 10 credits

* For Master's program only: If you offer both "course work + thesis" program and "course work only" program, what proportion of students take the "course work only" program?

_____ %

Unknown- The non-thesis track began next September

5. Do you have a credit transfer system with other programs and universities? ☐ Yes ✔ No

* If Yes, maximum credits of transfer allowed. Undergraduate _____ credits

Masters _____ credits

* The name of programs and universities

6. How many teachers do you have? What are the background and specialization of your teaching staff?

* No. of teaching staff full time 8

part time 6

* See **Attachment 2** (Faculty Bio's) and website

(If this information is already available, please note web site location or attach documents related etc.)

Name	Position	Specialization	Background*

* Background: Academia, Practitioner, Governmental Officials, etc.

7. Do you implement an internship as part of the curriculum? ☐ Yes ✔ No

* If Yes, in which areas?

It's not a part of the curriculum but students can implement an internship as "Independent Study or Research" (SMA 600). Career Services Officer assists students in finding internship and Research Assistants.

8. Do you have an internship placement service? ✔ Yes ☐ No

See Above (Question 7)

About Admission Procedures and Students:

1. How many people apply to your program every year?

   Undergraduate _____
   Masters 60-70
   PhD _____
   Others ( )

2. How many students do you accept each year?

   Undergraduate _____
   Masters 35-40 offers, about 20-25 register
   PhD _____
   Others ( )

3. Total number of enrolment: 45-50

4. Percentages of students enrolled: (2003 entering class)

   Local (State/Province) 72 %
   National 24 %
   International 4 %

   * Regions
   ☐ North America _____ %
   ☐ South America (including Caribbean) _____ %
   ✔ Asia (including Australia and Pacific islands)
   _____ %
   *Korea, Japan, China, Taiwan etc.
   ☐ Europe _____ %
   ☐ Africa _____ %

   * Developed Countries 80 % Developing Countries 20 %

   * Most years less than 50 % are local.

5. What are the admission requirements (including international students)?

   * See **Attachment 3** : "Application to the University of Washington and the School of Marine Affairs"

6. What do you place most emphasis on in evaluation of candidates?

   Faculty Committee of 4 professors who rank candidates: Admission based on merit.

   * See above

7. How do you evaluate the job experience of candidates in ocean related fields?

No formal evaluation (depending on the members of Faculty Committee)

8. What proportion of your students have working experience in ocean related fields?

85 %

* Of the students who have working experiences in ocean related field, what proportion are sent by governments, private sectors, and NGOs? 25 %

9. How much is your tuition fee?

Local (State/Province) $ 2,357/ quarter
National $ 5,598/ quarter
International $ 5,598/ quarter
($ 36,917/year including living expenses)

10. What kind of scholarships do you offer?

Name of Scholarship	No. of Students	Amount	Purpose and Aim of the Scholarship
Alan Blankenship	1		Marine Recreation & Tourism
Wedell Joss Fellowship	2		Marine Studies
Wendy Graham	Varies		Student travel to Marine Affairs related conferences
Donald McKernan	1	$500	Outstanding Thesis

* Most students seek Research Assistant or Teaching Assistant to earn money and get experience.

Career Placement:

1. Do you have your own career placement office? ✔ Yes ☐ No
2. How many people in your office? 1/2
3. What kind of job offers does your career placement office receive? Please specify the field if possible.

   * See **Attachment 4**: "Alumni Emplyoment Profile"

   ☐ Governmental _____ %

   ☐ Private Sector _____ %

   ☐ NGOs _____ %

   ☐ Academia _____ %

   ☐ Others _____ %

4. Of the students who go through your program, what proportion work in ocean related fields?

   90 %

5. Have any graduates from your program gone on to become leaders in their field?

   ✔ Yes ☐ No ☐ Don't know

   * If yes, who are these graduates and what do they do now?

   Examples:

   Directors of Port Authorities and agencies
   Directors of NOAA ocean and coastal programs: e.g. ocean sanctuaries
   Leader of NGO's: Nature Conservancy and others

6. How do you think that your graduates contribute to the development of your program and ocean governance?

   Work for agencies and programs.
   Small numbers contribute research, writing, and teaching.

Facilities:

1. Does your program have its own library? ☐ Yes ✔ No

   * If Yes, the name of the library.

   Fisheries/Oceanography Branch Library of UW libraries is in our College.

2. Do you have a librarian who is familiar with ocean related fields? ✔ Yes ☐ No
3. How many volumes do you have in your library? * See branch library

   Books # _____

   Periodicals # _____
4. Is the library catalogue accessible through the internet? ✔ Yes ☐ No
5. Does your library have resources specific to ocean governance? ✔ Yes ☐ No
6. Do you afford the use of your library to people from other universities, institutions, and organizations? ✔ Yes ☐ No

   * If Yes, which universities and institutions use your library the most frequently?

   "Interlibrary Loan" system

7. Do you have experimental laboratories or vessels? ☐ Yes ✔ No

   * If Yes, what kind?

   Many labs and vessels are in college but not in our School.

Research and other activities:

1. Do you offer e-learning courses or distant learning courses? ☐ Yes ✔ No
   * If Yes, please explain.

2. Do you offer training courses other than degree program above? ☐ Yes ✔ No
   * If Yes, please explain.

3. Do you have joint research programs or partnership with other institutions? ✔ Yes ☐ No
   * If Yes, which institutions and what kind?
   Examples : Inha University (Incheon, Korea)
   Fidjtof Nansen Institute (Norway)

4. Do you ~~publish~~ EDIT journals or periodicals? ✔ Yes ☐ No
   * If Yes, name of the journal
   Coastal Management Journal (Editorial Board and Offices)
   MPA News (Editorial Offices)

5. Do you have students' clubs and associations to develop friendships and skills that might benefit your graduates throughout their careers? ✔ Yes ☐ No
   * If Yes, names of clubs and associations, etc.
   Marine Affairs Student Association (MASA)
   UW SMA Coastal Society

6. What do you do to increase public awareness of marine affairs? Do you have programs for the public? ☐ Yes ✔ No
   * If Yes, please explain.
   Occasional public lecture series: "Public Workshop on Emerging Themes in Port-city Development" (Jan. 21, 2004)) etc.
   SMA works with Washington Sea Grant Office

General Questions about your Program:

1. What do you think is the key feature of your program?

   Integrated study of oceans and coasts

2. Do you think that your students are satisfied with your program? ✔ Yes ☐ No
3. Are you planning to revise your program in the near future? ☐ Yes ✔ No

   * If Yes, why, how, and when?

   We just went through a major revision. Ten-year review occurs next year.

   Ocean Commission Report will influence our future direction.

4. Do you think that your program needs to be improved?

   We can always improve.

5. What do you think the most important thing for ocean governance education in general?

   History, evolution, assessment and design of institutional arrangements for coastal and ocean regions.

   Most of effort has been in the science and technology; not enough in social science and policy dimensions!

Thank you very much for your cooperation!

(January 2004)

SMA Courses

SMA 500 Marine Affairs (credits: 5) Survey class introducing students to substantive problems pertinent to the relation of humankind and the world's oceans and coasts. Topics and interrelationships of ocean uses (e.g., management and exploitation of living/nonliving resources, shipping, scientific research, pollution, recreation, and others) are discussed via lecture and discussion by invited specialists.

SMA 501 Integrated Marine Affairs Practice (credits: 3) Introduction to the practice of integrated assessment in marine affairs through the use of case studies and group analysis projects.

SMA 433 Environmental Degradation in the Tropics (credits: 5) Considers theories and controversies of environmental degradation in the tropics, ecological and social case studies of Central American rain forests and Southeast Asian coral reefs, and implications of environmental management techniques.

SMA 476 Introduction to Environmental Law and Process, (credits 3) Use and application of key statutes in marine living resources management. Overview of administrative law and process. Basic legal research, reading and briefing selected judicial opinions. Participatory case study component. Designed for non-law graduate and advanced undergraduate students.

SMA 480 Marine Resources Management (credits: 3) Techniques and philosophy for conservation, management and development of harvested marine populations. Emphasis on integration of ecological, sociological, and economic dimensions of institutional decision making for policy formation in uncertain environments.

SMA 485 Pacific Recreation & Tourism Issues (credits: 3) Course examines how marine tourism links people to one another and to the environment. Utilizes concepts from cultural anthropology, sociology, political science, geography, ecology, conservation biology and planning. Topics include: ecotourism, ethnic tourism, marine parks and protected areas, fisheries, sustainable development, tourism ethics, and marine environmental education.

SMA 499B African Population, Development and Marine Environment (credits:3) Development of coastal and sea resources, increased supplies of sea-originated protein, port development and expansion coastal fisheries and marine eco-tourism are new directions of the economic future of the Sub-Saharan Africa. Reforms in resource policy and management and systemic changes in the coastal states are the key measures that must be taken in order to sustainably use these last-frontier resources. This course will familiarize students with important links between population growth, development and marine environmental factors affecting future growth of the African societies and economies.

SMA 506 International Law of the Sea (credits: 3) Examination of the way nation-states regulate activities on and under the ocean. Covers the international regulations and institutions concerned with fishery exploitation, pollution, transit rights, scientific research, energy and mineral development, military uses, emplacement of installations, and the boundary issues involved in these various ocean uses.

SMA 507 International Organization & Ocean Mgmt (credits: 3) Survey of the manner in which international organizations attempt to manage and regulate the uses of the ocean. Primary emphasis is on the analysis of processes that support or constrain these organizations and on the search for alternative policies and organizations.

SMA 508 National Marine Policy Processes (credits: 3) Fosters an appreciation for the institutional dimensions of marine policy processes on a comparative basis. Students gain an understanding of the marine policy context at the national level and a sophisticated appreciation of the dynamics that drive policy formulation and policy implementation. Participation in a group project is required. The project is designed to provide students with a "hands-on" experience in planning and developing a national ocean policy for a specific country.

SMA 509 Integrated Coastal Management (credits: 3) Managing multiple uses of coastal waters and the adjacent land; conflicts arising from competition for space and resources; organizational, scientific and economic problems associated with coastal management; planning and management experience in the United States and S.E. Asia.

SMA 510 Topics in Marine Ecology (credits: 3) Study of ecological principles as they apply to marine species, populations, and ecosystems using current examples from the primary literature, including contemporary issues such as species declines, species additions, pollution, and global change.

SMA 512 Interviewing Methods and Environmental Topics (credits: 3) This course focuses on qualitative techniques employed by social scientists and other researchers (e.g., sociologists, cultural anthropologists, political scientists, journalists, reporters) to elicit information in interview situations. Students will conduct interviews with people in the public, private, and activist sectors in the context of studying environmental issues of their choice.

SMA 514 Marine Pollution Management and Policy (credits: 3)
Current marine pollution management and policy issues are explored with emphasis on policy development and implementation. Topics include issues associated with pollution in bays and estuaries, offshore oil and gas development, and deliberate waste disposal in the seas. The impacts of social conflict on pollution control policies are also explored. Undergraduates welcome with permission of instructor.

SMA 515 U.S. Coastal and Ocean Law (credits:3) Analysis of the legal and policy framework that determines how shoreland, intertidal, estuarine, nearshore and ocean resources are conserved and managed by public agencies in the U.S. Emphasis is on multiple uses of coastal waters and the adjacent land; conflicts arising from competition for ocean space and resources; problems associated with overlapping jurisdiction and conflicting legal norms; the use of judicial, administrative and statutory methods for the resolutions of conflicts.

SMA 516 Seaport Management (credits: 3) Interdisciplinary study of the functions and values of the modern seaport. How trade,waterborne commerce, marine transportation, maritime industry and waterfront labor influence the portcity environment. Role of managers in balancing port development, waterfront land use, recreation, environmental protection and city amenities. Examples from the US, Korea, the Baltic and the Middle East.

SMA 517 Maritime Commerce and Policy (credits: 3) Globalization is a growing theme of the 21st Century. Ocean shipping is inherently a global industry which accounts for a sizable portion of international commerce. This course presents an overview of the global system of ocean trade, its components, operations, management of commodity and passenger shipping and explores relationships between ocean shipping policy, merchant marine promotion, shipbuilding and national economic development. Attention also is given to the evolution and present state of US policy and regulation aimed toward safety at sea, security, and protection of the marine environment. The course concludes with discussion of future issues in global maritime commerce, emphasizing the need for fitting US systems and policies to the global system.

SMA 519 Marine Policy Analysis (credits: 3) Systematic approaches to identifying and analyzing problems in marine policy formulation and implementation are explored. The emphasis is on decision and economic analysis and related approaches. Problems in marine resources and environmental policy are highlighted. The limitations of analysis in public policy are also discussed.

SMA 521 Governmental Responses to Global Climate Change (credits: 2) Sensible responses to the challenges of global climate change will of necessity combine the knowledge and judgment of persons from many disciplines and backgrounds. This course is intended for students interested in making global environmental change a significant part of their future work: the environmental sciences and their related disciplines; the social sciences and related professional programs; and natural resource management. As a unifying theme of the course, Prof. Miles will focus on how organizations learn. Visiting lecturers will be asked to focus on the questions of governance raised by the wide range of climate changes that may occur over the next century.

SMA 523 International Science and Technology Policy (credits: 3) The purpose of this seminar is twofold: first, to analyze the relationships between R&D policy, capabilities and national technological strategies for advanced industrial and less-developed countries; and, second, to analyze the implications of particular technologies as countries try to make policy for them in regional and global organizations.

SMA 525 Management of Marine Protected Areas (credits: 3) The surge of interest in protecting marine biodiversity and the concern over marine habitats leads to a very active consideration of the role that MPAs can play in maintaining and restoring marine resources as well as providing for social and economic benefits associated with recreation, tourism and sustainable use of marine resources. This course examines major management and scientific issues involved with establishment, operation, monitoring and maintenance of MPAs, the policies that support them and the management problems experienced. While the prime focus will be on the management issues in the United States, the international perspective will be provided and cases studied as well.

SMA 536 Microeconomics for Marine Affairs (credits: 3) Course acquaints students with microeconomics tools commonly employed in policy analysis. Emphasis is placed on mastery of basic concepts, definitions, and models useful to marine policy. These include determinants of price and outputs in competitive markets; effects of other market structures; market failure; and applied welfare economics.

SMA 537 Economics of Marine Policy (credits: 3) The course applies economic concepts and methods to selected topics in marine policy and resource management. Students examine 1) U.S. policies regarding marine transportation -- Jones Act and cabotage rules; 2) economics of seaports -- rationales for and against subsidies; 3) offshore minerals -- lease sale program of the Minerals Management Service; 4) living marine resource management -- fisheries and endangered species.

SMA 538 Economics of Living Marine Resources (credits: 3) This course covers topics in the conservation and management of living marine resources, emphasizing a) bio-economic models of fisheries, b) economics of resource management regulations, including enforcement and compliance issues, c) recreational versus commercial allocation, and d) assessment of economic "impacts" of marine fisheries.

SMA 540: International Strategic Planning for Marine Resources (credits: 3) Market forces, differences in income and availability of cheap labor have induced unprecedented international flow of capital, commodities and growing integration of many markets. Importance of the private sector and international flow of investment capital to marine economies of the III World countries are also increasing. This class will study these trends and changing national and international policies that affect the way and patterns of use of the marine resources in the world ocean. Student research will focus on marine environmental policies and responses of the private sector, providing balanced assessment of the public sector concerns and private business views.

SMA 550 Special Topics (credits 1-3) Various courses offered on new or topical subjects.

SMA 555 Russian Ocean Policy (credits: 3) Assesses principal factors contributing to the decline of the Soviet Union's political and strategic importance as an ocean power and to the future potential of the Russian Federation as a global player in the world ocean affairs. How the process of democratization and transition to the market system affects Russian navy, merchant marine, fishing and oceanographic research activities. Emphasis on commercial cooperation between the U.S. marine industry and the Russian Far East.

SMA 570 Thesis Presentation (credits: 1) Completion of the thesis requirement for SMA. Perpare a professional presentation to a peer audience.

SMA 581 Fishery Management: Case Studies (credits: 3) In this interdisciplinary course in fisheries management, students will study and develop case histories for various types of fisheries. During the first half of the quarter, several faculty will present case histories. During the last half of the quarter, each student, under faculty supervision, will write a case history and present it to the class.

SMA 585 Climate Impacts on the Pacific Northwest (credits: 4) Knowledge of past/future patterns of climate to improve Pacific Northwest resource management. Topics include the predictability of natural/human-caused climate changes; past societal reactions to climate impacts on water, fish, forest, and coastal resources; how climate and public policies interact to affect ecosystems and society.

SMA 591 Marine Science in the Coastal Zone (credits: 3) Presentation and analysis of marine science of estuaries, coastal zone, and open ocean. The course will focus on the use of scientific information in decision-making for natural resource management, coastal zone management, and the regulation and management of terrestrial and aquatic-based sources of marine pollution. Lectures and discussion will stress the importance of considering natural processes in management decisions, and will involve the biological, chemical, geological, and physical oceanography of estuaries, the coastal zone, and the open ocean.

SMA 600 Independent Study or Research

SMA 700 Master's Thesis

SMA
Faculty

Beth Bryant
Research Associate

Professional training and experience:

- B.S., Environmental Policy Analysis and Planning, with specialization in Fisheries Biology, U.C. Davis, 1989
- M.M.A., School of Marine Affairs, University of Washington, 1994
- J.D., University of Washington School of Law, 1999
- Founding Member, Student Editorial Board, Coastal Management Journal, 1992-93
- Articles Editor, Washington Law Review, 1997-99

Research approach and methods:

Legal Analysis: Interpretation of statutes and common law, particularly in the environmental context; examining and analyzing environmental documents produced by government agencies (most notably the EIS); multi-statutory resource management regimes.

Interdisciplinary Analysis: Examining the interaction of science, policy, and law using a variety of techniques such as legal analysis, policy analysis, sociology of science, and theories of agency behavior and organization.

Topical areas of interest:

Multi-Statutory Marine Living Resource Management: Marine resource managers and scientists must comply with a complicated array of laws, including NEPA, ESA, MMPA, and the Magnuson-Stevens Act, the Regulatory Flexibility Act, and more. Research in this area focuses on how these laws interact; areas of conflict; opportunities for integration; and legal compliance with the required environmental documents.

Use of science in marine resource management and decisionmaking: Institutional forces shaping the collection, interpretation, and use of scientific information in marine resource management; role of science in the management process; integrating new ideas on ecosystem management and adaptive management into existing environmental laws; role of scientific uncertainty in decisionmaking process.

Sociology of science and law: "Culture clash" between science, law, and politics; how differing values, methodology, and ways of knowing impede communication between scientists and judges/lawyers; social construction of scientific knowledge.

Patrick J. Christie
Assistant Professor

Professional training and experience:
M.S., Conservation Biology, University of Michigan, 1993
Ph.D., Natural Resources and Environment, University of Michigan, 1999
Peace Corps, Marine Fisheries Volunteer, 1987-1990.
Associate Editor, *Coastal Management*, 1999-present.
Consultant to the Inter-American Development Bank, various international NGOs
Member of Board of Directors, Coastal Conservation and Education Foundation, the Philippines.
Associate Researcher with the Center for the Investigation and Documentation of the Atlantic Coast (CIDCA), Nicaragua. 1992-current.

Research approach and methods:
I conduct research on the impacts of marine protected areas on coral reefs and associated fish populations in Asia. I am also interested, however, in developing an understanding of how scientific information is used and the political implications of its use for non-scientists. Therefore, I also employ research methods, such as participatory research, that are inclusive of local knowledge of non-scientists that may complement scientific information. I also conduct interdisciplinary research, with others, using social science methods such as interviews, participant observation and text analysis. I lean toward qualitative social science research methods, but am not afraid to use statistics.

Topical areas of interest:

Integrated Coastal Management: Currently, I am leading a comparative research project that investigates factors that influence integrated coastal management sustainability in 9 sites in the Philippines and Indonesia (pls see http://www2.mozcom.com/~icm_proj/). Findings from the Integrated Coastal Management Sustainability Research Project are being used to develop educational materials for practitioners, government leaders, and donors. I also lead a project that links a Filipino university and coastal management project to SMA. This includes internet-mediated linkages, internships, faculty exchanges and joint planning.

Marine protected areas: Prior to my academic work, I was involved in the implementation of a community-based marine sanctuary in the Philippines as a Peace Corps Volunteer. I now conduct research on the impacts of MPAs on coastal communities and artisanal fisheries in many locations in the Philippines and Indonesia. I am interested in cross-sectoral conflicts – for example, the conflict between tourism and fisheries sectors. I plan to develop research on the social dimensions of MPAs in Puget Sound.

Participatory research: I conducted my graduate research on the Caribbean Coast of Nicaragua where I studied the potential of participatory action research for coastal monitoring, planning and management. I studied the political ecology of different forms of knowledge generation. Embedded in this agenda is the consideration of liberating forms of education.

Andrea E. Copping
Affiliate Associate Professor of Marine Affairs
Assistant Director, Washington Sea Grant Program

Professional Training and Experience

Ph.D. in Biological Oceanography, University of Washington 1982
Monitoring & Research Program Manager, Puget Sound Water Quality Authority, 1987-1991
Chair, BC/WA Marine Science Panel, 1993-
PNCERS Management Team, 1996-
Chair, Northwest Straits Commission, 1999-
Washington State Aquatic Nuisance Species Committee, 2000-

Research Approach and Methods

Use of Science in Environmental Management and Decision-Making: Interpretation of scientific findings and their application to natural resource management needs; analysis of environmental management and policy decisions for scientific relevance; analysis of scientific needs in management.
Communicating Science: Use of outreach and education methods to reach audiences with scientific information of importance to them economically, socially and esthetically; communication and interpretation of management and social needs to marine scientists;

Topical Areas of Interest

Non-Indigenous Species: Introductions of non-native species have the potential for wide-spread ecosystem disruption. Studies in this area include the elucidation of pathways of introduction, risk assessment to determine the probability of any single species becoming a nuisance species, development of management strategies and communicating the results for maximum effectiveness.
Ecosystem Integrity, Integrated Coastal Management: Studies in this area include determining impacts of myriad human-caused and natural changes to the ecosystem and the impact they have on the resources, including habitat loss, contamination and coastal hazards, and examining integrated methodologies for their mitigation.
Marine Protected Areas: MPAs are rapidly becoming a popular tool for fisheries and environmental management. Studies in this area can help provide basic knowledge about MPA design and effectiveness.
Environmental Education: The diffused nature of many environmental problems makes education the most cost-effective management tool. Studies in this area apply scholarly research in education and extension fields to problems in the marine environment.
Recreation and Tourism: This industry has profound impacts on the marine environment world-wide as well as the potential to encourage people to values the marine realm. Studies in this area focus on the coastal and estuarine impacts of ecotourism and solution that maximize recreational appreciation of marine resources while protecting the ecosystem.

David Fluharty
Associate Professor (WOT)*

Professional Training and Experience

- Ph.D. in Natural Resource Conservation and Planning, University of Michigan, Ann Arbor 1977
- Associate Editor, *Coastal Management Journal*, 1982 - present
- Vice-Chair, Puget Sound Water Quality Authority, 1983 - 1985
- Voting Member, North Pacific Fishery Management Council 1994 - present
- Chair, NMFS Ecosystem Principles Advisory Panel 1997-1999
- Member, National Research Council, Committee on Marine Reserves and Protected Areas 1997 -
- Murray-Metcalf Northwest Straits Advisory Commission 1997-1999

Research Approach and Methods

Policy Analysis: Application of policy analysis to natural resource management questions. Empirically, this requires an interdisciplinary approach wherein all aspects of a particular management problem [biogeophysical, social considerations, economics, legal] are examined with respect to the development or implementation of a policy.

Topical Areas of Interest

Marine Living Resource Management and Policy: Management of marine living resources is responding to multiple conflicting demands from resource users and society. Commercial, recreational, and subsistence fisheries are struggling to develop sustainable policies. Marine habitat protection and management of resources with respect to ecosystem processes are increasingly important. Designation of species as threatened or endangered poses new problems to management in the marine environment.

Marine Protected Area Management and Policy: MPAs are receiving a surge of interest as a management tool that can be applied locally, regionally and nationally to assist in achieving various management objectives. Analysis of when, where and how to apply MPAs opens many new areas of study.

Integrated Coastal and Ocean Management: Single purpose management of coastal and ocean space can be efficient and adequate under limited circumstances. Increasingly, to achieve benefits or to avoid costs, it is necessary to consider how uses can be prioritized or integrated through management.

International Management and Development of Marine Resources: Comparison of national policies for resource management as well as collective measures taken by governments to coordinate management of border and transboundary resources merit analytical attention.

Integrated Assessment of Climate Variability and Change: Coupled ocean/land models of climate show their interdependence. As we begin to understand the way climate varies and how this affects marine resources, there is need to study policy responses.

Marine Mammal Management and Policy: Marine mammal management and policy occupy a unique position in US marine affairs and offer some particularly vexing problems for study.

Offshore Oil and Gas and Marine Minerals Policy: Approximately 20% of oil is produced offshore and locally abundant minerals can have significant economic importance. In addition, deep seabed resources are at early stages of exploration and development.

* WOT means Without Tenure. Persons having this designation are not full-time tenure track employees. The University commitment to generally represents less than 25% of the person's time during the school year. The rest of the time is supported by research or consulting.

Vincent F. Gallucci
Professor, School of Aquatic and Fishery Sciences
Adjunct Professor, School of Marine Affairs
Professor, Center for Quantitative Science and
Professor, Quantitative Ecology and Resource Management

Personal Training and Experience
Ph.D., Statistics and Biomathematics, University of North Carolina
M.Sc., Biophysics and B.Sc., Physics, State University of N.Y. Stony Brook
Visiting Professor at:
Institute for Demography and Ecology, University of Parma, Italy
Department of Fisheries and Marine Biology, University of Bergen, Norway
Institute of Evolut. Ecology and Fisheries, Academy of Science, Moscow

Research Interests
Management and Conservation of Marine Biological Populations.
-- *Developing country, artisanal fisheries management*
--*Quantitative methods* of analysis and mathematical modeling of marine stocks for harvest and for conservation: risk analysis,
Management policy formulation: with the help of quantitative analysis and *institutionalization* for implementation.
Shark species: stock dynamics and conservation: tropics to the arctic.
Benthic population dynamics: invertebrates and fish.

Specific Projects:
1. The management of *artisanal* [small-scale family operated] fisheries in *developing countries* where the quantitative and socio-economic methodologies are different from those usually employed in industrial fisheries in developed countries. I have had projects in three Central American countries, two African countries and three South American countries, supporting theses and dissertations in over half of these cases. Currently writing papers on the fisheries in Costa Rica and in Nicaragua.

2. The dynamics of *shark populations* in environments from the tropics to Alaska. Activities include work with local aquaria, National Marine Fisheries Service and colleagues in Alaska and other countries along the eastern Pacific continental rim. Currently developing a project with the Seattle and Tacoma aquaria for public education about the sharks in Puget Sound. A second project is on the coastal sharks of Washington and Oregon with the National Fisheries Service and a third is involves the three states: Oregon, Washington and Alaska to study the unusual patterns of appearance and abundance in recent years. Additional projects under development involve the use of sharks as indicators of climate change and the comparison of tropical and local dogfish species.

Robert F. Goodwin
Affiliate Associate Professor of Marine Affairs
Coastal Resources Specialist, Washington Sea Grant Program

Professional Training and Experience

B. Arch., University of Washington, 1969
M.A. (Geography), University of Washington, 1972

Research Approach and Methods

Geographical Analysis: understanding coastal communities, economies and resources through their spatial distributions, differentiation and interactions; mapping and spatial analysis of communities and regions

Extension: conducting needs assessments of critical coastal planning and marine resource management issues and opportunities; putting research findings into the hands of coastal and marine resource users and managers; conducting educational programs for coastal and marine resource users and managers

Topical Areas of Interest

Waterfront Revitalization: waterfront redevelopment planning; shoreline policies for urban waterfronts; public access to waterfronts for recreation; special issues of small cities' waterfronts

Coastal Management: current issues and trends in Washington and adjacent state and provincial shorelines management

Mitigating Coastal Hazards: identification and mitigation of chronic and episodic hazards affecting coastal areas of the Pacific Northwest, including landslides, erosion, earthquakes and tsunamis, volcanism and flooding

Urban Harbor Management: trends in urban harbor development; industrial and land use change in marine shorelines; urban waterfront planning and policy

Coastal and Marine Tourism and Recreation: tourism and community economic development; tourism best management practices; recreational boating facilities planning and siting

Marc J. Hershman
Professor of Marine Affairs
Adjunct Professor of Law

Professional Training and Experience

Juris Doctor, Temple University, 1967
Executive Director, Louisiana Advisory Commission on Coastal and Marine Resources (1972 – 1974)
Editor-in-Chief, *Coastal Management* journal (1973 to present)

Research Approach and Methods

Legal Analysis: interpretation of legislative and judge-made law in US legal system; legislative intent; history and evolution of legislation; constitutional issues in federalism, property rights, and due process

Public Affairs: process and outcome evaluation of public programs; public enterprise theory and practice; policy analysis; institutional design; intergovernmental relations; negotiation and mediation techniques

Topical Areas of Interest

Integrated Coastal Management: trends in the evolution of ICM programs in Pacific Rim countries; the evolution of ICM in Washington State;

Port and Harbor Management: trends in seaport development; Seaport management functions; dredging, dredged material disposal and reclamation; environmental mitigation in port development projects;

Waterfront Revitalization: waterfront redevelopment planning; shoreline policies for urban waterfronts; public access to waterfronts for recreation

National Ocean Policy: Trends in national ocean policy in developed countries of Pacific Rim; progress of US Oceans Commission; Role of the states and localities in US ocean policy

Marine Protected Areas: US marine protected area programs;

Seagrass protection, management and restoration: Seagrass policy in Washington State

US Maritime Policy: Shipping, cabotage, merchant marine, subsidies, and related laws and policies; the Marine Transportation System initiative

Daniel D. Huppert
Associate Professor of Marine Affairs
Adjunct Associate Professor in Fisheries and in Economics

Professional Training and Experience

- Ph.D. in Economics, University of Washington, 1975
- Program Leader in Fisheries Management, National Marine Fisheries Service, 1975-89
- Scientific and Statistical Committees, Pacific and North Pacific Fishery Management Councils, 1980 - 1995
- Associate Editor, Marine Resource Economics, 1999-present
- Member, Northwest Power Planning Council's Independent Economic Advisory Board, 1997 - present

Research Approach and Methods

Economic Analysis: use of economic models to conceptualize and predict outcomes of policies and other changes in institutions or resources. This includes estimation of non-market values, integration of ecological and economic factors, and integration of institutional rules with economic performance and outcomes.

Policy Analysis: this incorporates some specific analytical techniques in evaluating policy options, including economic impact assessment, cost-effectiveness analysis, cost-benefit analysis, and quantitative & stochastic modeling.

Topical Areas of Interest

Management of Commercial Fisheries: This covers a wide variety of studies, including setting annual harvest quotas, bycatch regulation, enforcement/monitoring systems, individual catch quota systems, fishing cooperatives, and bioeconomic modeling.

Coastal Ecosystems Management: Integrative research on bio-physical-social-economic dynamics in Pacific Northwest Coastal estuaries under the PNCERS project. Focus on institutional regimes, economic values, and ecological-economic linkages in Grays Harbor, Willapa Bay, Tillamook Bay, Yaquina Bay, and Coos Bay.

Salmon Protection and River Management: Economic and social aspects of policy for salmon restoration and management under the Endangered Species Act, and evaluation of multi-purpose water developments in light of salmon ESA listings.

Economics of Climate Forecasts: Evaluation of improved climate forecasts for salmon fisheries management, forest management, and hydroelectric power system operation.

Vlad M. Kaczynski
Associate Professor of Marine Affairs
Adjunct Associate Professor
in Jackson School of International Studies

Seattle, September 20, 2000

Professional Training and Experience

- Ph.D. in Fisheries Economics, University of Gdansk, Poland, 1973.
- Merchant Marine Academy, Gdynia, Poland (1956).
- Commercial Attaché in the Embassy of Poland in Chile (1965 – 1969).
- Consulting for the World Bank, US Agency for International Development, United Nations Development Program (1984 – present)).
- Professional support of corporate investment and business in Russia, Latin America and NE Asia (1989 – present)
- Member of the University of Washington Partners for Education Team for academic and professional cooperation with Sub-Saharan Africa (2000).

Contemporary Global Vision of Oceans and Coasts

- For the first time in history, almost all of the World's people are bound together in a global free market system. Democracy, economic freedom and global integration offer unlimited possibilities of growth and improvement of human lives in the developed and developing countries.
- Natural environment, however, is a limiting factor for this expansion and ocean and coastal zones are seen as a source of last frontier-resources. They are primarily of international character and their sustainability must be addressed as regional and global problems.
- Rapid growth of the III World population and urbanization of the seacoasts cause increased demand for aquatic food, space and other coastal resources. This results in depletion and declining biodiversity of aquatic living resources, disappearance of mangroves, urban pollution, poor sanitation, declining quality and availability of water and health problems.
- Nearly 75% of the World population lives in the III World and tropical zone. Half of these people are struggling with economic decline. If managed prudently marine and coastal resources could become an engine of growth and reduction of poverty in many coastal developing states.
- The toughest implication of failure in dealing with the global poverty is that the World may have to contemplate vastly larger flow of migrants to the coasts and to overseas countries. The deep-rooted crisis of tropical development and population pressures are likely to pose the greatest challenges to global stability in the coming decades.

Topical Areas of Interest

Evaluation of International Economic Integration. Impacts on marine economies of capital flow, international trade, foreign investment and aid programs, joint ventures and migration of skilled workforce in marine sectors such as shipping, fisheries, ports and shipbuilding industries between industrialized and III World countries.

Interdisciplinary Research on Human Dimensions of the Marine Environmental Change. Special focus on the North Pacific and North East Asia. Includes demographic changes and coastal migration, coastal urbanization and land use and its environmental consequences, sustainability of food production and consumption systems, coastal resource use, management and conservation, policy measures to assure international coordination of regional arrangements.

Analysis of the Economic and Social Systems in Transition (Russia, Central Europe, China) with special attention to the ocean and coastal resource use and management and marine environmental implications of their former command economies.

Comparative Assessment of the Ocean Policy in Developing Countries: Trends in coastal nations of Africa and Latin America. International relations, resource management schemes, development strategies, privatization and resource protection (marine surveillance and environmental control). Policy implications.

Terrie Klinger
Assistant Professor of Marine Affairs

Professional Training and Experience
Ph.D., Scripps Institution of Oceanography, 1989

Research Approach and Methods
Applied Ecology: Application of genetic, population, and ecosystem-based studies for use in marine environmental decision-making

Topical Areas of Interest
Marine Ecology and Conservation Biology: Effects of habitat loss, biological extraction, global change, and other stressors on marine biological diversity and ecosystem function; management strategies to reduce the impacts of environmental stressors on the structure and function of marine communities

Marine Protected Areas: Scientific design criteria for marine protected area network design; designation, implementation, and management of marine protected areas

Invasive Species: Pathways of introduction, ecological effects, and management strategies for invasive marine species

Genetically Engineered Organisms: Risk assessment and policy development concerning the release of genetically engineered organisms in the marine environment

Thomas M. Leschine
Associate Professor of Marine Affairs
Adjunct Associate Professor of Fisheries

Professional Training and Experience

Ph.D. in Mathematics, University of Pittsburgh, 1975

Marine Policy Fellow and Policy Associate, The Woods Hole Oceanographic Institution, 1975-1983

Scientific Visitor, Environmental and Societal Impacts Group, National Center for Atmospheric Research, 1982-83

Historian, U.S. Coast Guard (under Intergovernmental Personnel Act), assigned to *T/V Exxon Valdez* oil spill Federal On-Scene Coordinator, 1991-93

Associate Editor, *Coastal Management*, 1994-1997

Chair, National Research Council, Committee on Remediation of Buried and Tank Wastes (under Board on Radioactive Waste Management), 1996-2000.

Research Approach and Methods

Policy Research and Policy Analysis: My approach is broad, incorporating elements of public administration theory, welfare economics, implementation analysis, and collective choice frameworks; survey research methods sometimes used.

Risk Analysis and Risk Management: I consider environmental risks (including both ecological risks and risks associated with environmental hazards) and technological risks (in relation to failures of technology systems or their safeguards; technology and hazard assessment frameworks sometimes employed.

Topical Areas of Interest

Environmental management and decision making: This covers a wide variety of topical areas in recent work, with emphasis on how decisions are made and the role that scientific and technical analysis and information plays. Current or recent topical areas include watershed planning and restoration (Cedar River salmonid protection, rural non-point pollution control), integrated environmental management and planning (Grays Harbor and other coastal estuaries), planning and technology development approaches for environmental cleanup (radioactive wastes at the Hanford Site, sediment management for Puget Sound) and long-term "stewardship" of environmental hazards (U.S. nuclear sites).

Public participation in environmental management: Recent work with students has included incentives for participation in oil spill preparedness planning under OPA 90, and stakeholder participation in cleanup decisions at the Hanford site (citizen participation in planning to protect the Columbia River and to remove radioactive wastes).

Oil spill damage assessment and prevention: Numerous studies in relation to *Exxon Valdez*; approaches to valuing oil spill damages and maritime safety practices, including pilotage.

Wetlands protection: Roles of technical assessment in valuing and protecting wetlands.

Edward L. Miles
Virginia and Prentice Bloedel Professor of Marine
Studies and Public Affairs
Joint Appointment, Evans Schoolof Public Affairs
Adjunct Professor of Fisheries
Senior Fellow, Joint Institute for the Study of Atmosphere and Ocean(JISAO)
Principal Investigator and Team Leader, JISAO/SMA Climate Impacts Group

Professional Training and Experience

- Ph.D. in International Relations/Political Science, Graduate School of International Studies, University of Denver, 1965.
- James P. Warburg Fellow, Center for International Affairs, Harvard University, 1973-1974.
- Senior Fellow , Woods Hole Oceanographic Institution, 1973-1974.
- Chairman, Ocean Policy Committee, National Academy of Sciences/National Research Council, 1974-1979.
- Member, Scientific and Statistical Committee, North Pacific Fishery Management Council, 1976-1982.
- Joint Appointee, Micronesian Maritime Authority, 1979-1983; Chief Negotiator, 1981-1992.

Research Approach and Methods

Policy Analysis
Comparative Analysis of Social Decision Processes
Application of Organizational Theory
Integrated Analysis combining the natural sciences, the social sciences, and law.

Topical Areas of Interest

International Marine Policy/International Law of the Sea.
Comparative National Ocean Policy Process.
International Science and Technology Policy.
Design and Implementation of International Environmental Regimes.
The Impacts of Climate Variability and Change at Regional and Global Levels.

Marc L. Miller
Professor, School of Marine Affairs
Adjunct Professor, Department of Anthropology
Adjunct Professor, School of Aquatic and Fishery Sciences

Professional Training and Experience

- Ph.D. in Cultural Anthropology, University of California, Irvine, 1974
- Associate Series Editor, *Qualitative Research Methods Series*, Sage Publications, 1986 to present
- Associate Editor, *Coastal Management*, 1983-1993
- Member of the Scientific and Statistical Committee, Pacific Regional Fishery Management Council, 1982-1990
- Member of the Scientific and Statistical Committee, North Pacific Regional Fishery Management Council, 1990-1995
- Advisory Board Member, Oceans Blue Foundation, 1999 to present

Research Approach and Methods

Sociological/Cultural Anthropological Research: This work addresses the social and cultural values of (often competing) activities that constitute marine affairs.

Qualitative Research Methods: Tools of social science include participant observation and elite interviewing, and many supporting ethnographic techniques.

Case Analysis: Work in this area seeks to identify the problems and opportunities of marine affairs as "cases" illustrating fundamental (inter)disciplinary (*e.g.*, social science, humanistic, natural science) concepts.

Topical Areas of Interest

Marine Recreation and Tourism: A need exists for responsible management of marine recreational/tourism systems that link humankind to the marine environment.

Integrated Coastal Zone Management: Topics here concern multiple-use conflicts, policies, and interactions involving such entities as marine parks and protected areas and fisheries.

Marine Fisheries and Biological Populations: Topics here concern the interplay of societal values and management objectives associated with commercial, recreational and subsistence fisheries.

Marine Environmental Education: Human conduct can be shaped by educational programs in non-school settings. Work in this area increasingly concerns nongovernmental organizations (NGOs), marine industry groups, and marine conservation organizations.

Marine Environmental Ethics and Aesthetics: Topics here include matters of environmental justice and appreciation, and frameworks prominent in such disciplines as environmental philosophy, art history, and aesthetics.

Warren S. Wooster
Professor Emeritus of Marine Affairs
Professor Emeritus of Fisheries

Professional Training and Experience

- Ph.D. in Oceanography, University of California, 1953
- Director of Investigations, Peru Council of Hydrobiological Investigations, 1957-1958
- Director, Unesco Office of Oceanography, 1961-1963
- Professor, Scripps Institution of Oceanography, 1963-1973
- Dean, Rosenstiel School, University of Miami, 1973-1976
- Director, Institute for Marine Studies, University of Washington, 1979-1981
- President, Scientific Committee on Oceanic Research, 1968-1972
- President, International Council for the Exploration of the Seas, 1982-1985
- Chairman, North Pacific Marine Science Organization (PICES), 1992-1996

Research Approach and Methods

Scientific Analysis: integration and interpretation of physical and biological observations and measurements in the ocean and their application to management of human activities affecting marine ecosystems and the marine environment.

Public Affairs: study of the design and function of international organizations concerned with marine science and its applications.

Topical Areas of Interest

- Effects of climate variations on marine ecosystems; implications for management of related human activities
- Role of science in policy and management decisions: activism vs objective analysis.
- Psychology and pathology of international marine science organizations.

Application to the University of Washington and the School of Marine Affairs

The two-year course sequence leading to the M.M.A. degree begins each Autumn quarter, and students normally are admitted to the program *only* during that quarter. We are now accepting applications for AUTUMN QUARTER 2003.

All applications must be received by the School of Marine Affairs by February 1, 2004 for US students, and November 1, 2003 for international students.

Applicants to the Master of Marine Affairs (M.M.A.) degree program must meet the admission standards of ***both***the University of Washington Graduate School ***and*** The School of Marine Affairs. **Separate application is made to both units.** *The application to the Graduate School of the University of Washington is available at* https://www.grad.washington.edu/application/

To be accepted by the Graduate School, an applicant must have:

- completed an undergraduate program of study recognized as appropriate preparation for graduate work;
- have a minimum of a 3.0 (B) grade point average for coursework taken during the last 60 semester or 90 quarter hours if the cumulative GPA is less than 3.0;
- have taken the general (Verbal, Analytical, Quantitative) Graduate Record Examination (GRE) and have requested test results be sent to the UW Graduate School (UW Code: 4854 and SMA Code 5199);
- have the ability as determined by the University to make satisfactory progress toward a graduate degree.

International Applicants

An international applicant is anyone who is NOT a United States citizen or permanent resident. If you fit this definition, please check the Graduate Admissions Information site for important information about admission and application requirements.

At the University of Washington, international applicants must meet several requirements in addition to those required of US applicants in order to be admitted to the Graduate School. All international applicants should complete the Preliminary Evaluation Process (PEP) **before** applying to the School of Marine Affairs.

All international applicants must complete the GRE test. International applicants must also take the TOEFL exam. *The exception is applicants from Australia, Canada, Ireland, New Zealand, or the United Kingdom, and those who have received a bachelor's degree or higher from an accredited U.S. institution or from an institution in the countries listed. These applicants are exempt from the TOEFL exam.*

Application to the School of Marine Affairs

Admission Criteria

Admission to the School of Marine Affairs is highly competitive due to the limited number of places available and the high quality of applicants. Successful applicants typically rank highly on some of the following:

- A demonstrated ability to maintain high grades, particularly in areas pertinent to the marine affairs field.
- High GRE scores.
- Significant practical/professional experience in teaching, research, government, business, or industry.
- Strong recommendations from undergraduate instructors, advisors, professional supervisors or colleagues
- A thoughtfully considered and clearly stated career objective.

While there is no undergraduate major preferred as a prerequisite to graduate study at the School, many students enter the program from backgrounds in the social, technological, and environmental sciences. Individuals with major experience in the humanities are encouraged to apply as well, particularly if there is evidence of special interests and aptitudes supporting a career objective in the marine affairs area. For example, a communications background may support a career goal in marine affairs journalism; strength in one or more foreign languages may support an interest in international aspects of marine policy or resource management.

The total background of the individual is evaluated as well as particular strengths and weaknesses and, in some cases, a strong background in one area (such as professional experience in the field) may balance out a less satisfactory performance in another (such as undergraduate studies).

SMA Admission Process

Download the following PDF or Word forms:

- SMA Supplementary Information Form [WORD DOC (22K)] [PDF(22K)]
- Three (3) copies of Letter of Recommendations Form [WORD DOC (22K)] [PDF (22K)]
- (Optional) Assistantship and Fellowship Application [WORD DOC (59K)]

Submit the following documents to the School of Marine Affairs:

- A paper printout of the on-line Graduate School application
- The completed SMA Supplementary Information Form, including a statement, not exceeding two pages, of your career objectives.

  Optional: Copies of publications or professional reports prepared or contributed to by the applicant may be included. (Term papers or other materials prepared as a class requirement or for academic credit are not acceptable)
- Three letters of recommendation. Letters of recommendation can in some cases have a significant effect on the admissions decision. The strongest recommendations are those submitted by an instructor or advisor who knows your work well and can give a well-substantiated assessment of your academic potential. For applicants who have been out of school for some time, professional recommendations are appropriate.

  The letters of recommendation should be enclosed in sealed envelopes with the author's signature across the seal. Please ask your references to submit their letters directly to you, so that you may forward them with the rest of your application.
- Copies of official, sealed transcripts of any undergraduate and graduate work completed at the time of application.
- (Optional) Assistantship and Fellowship Application
- (Optional) Resume

- *International Applicants only* - a copy of TOEFL scores. Unofficial copies are acceptable

In one mailing, send these items, by February 1, 2004 for US applicants and November 1, 2003 for international applicants, to:

Graduate Program Assistant
School of Marine Affairs
University of Washington
Box 355685
Seattle, WA 98105-6715

Note: All records become part of the official file. They will not be returned or forwarded to other departments.

Evaluation Process

The evaluation of applicants and the selection of prospective students is the responsibility of a four-member Admissions Committee composed of School of Marine Affairs faculty members. Applicants are evaluated individually and in competition with one another, and offers of admission are extended to top-ranking applicants within the departmental admissions quota assigned by the Graduate School.

Evaluation is based solely on information submitted by the applicant for inclusion in his/her admissions file. Therefore, it is to the applicant's advantage thoroughly to prepare and promptly to submit all application material.

Offers of Admission

Following the evaluation process, the SMA Admissions Committee will notify candidates of admission or denial to the graduate program. Notification will generally begin the first week in March and continue through mid to late April.

Offers of admission may not be deferred to a later quarter or year. Applicant files will be held for one year and individuals may re-apply at any time. The results of previous evaluations will not enhance or jeopardize an applicant's chances for future admission.

Equal Opportunity

The University of Washington is committed to providing access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation in the application process contact the School at (206) 543-4326 or the Disability Services Office at least ten days in advance at: (206) 543-6450 or access@u.washington.edu.

Admissions Procedure | SMA Masters Program | Degree Requirements | Financial Information | Additional Information

UW School of Marine Affairs
3707 Brooklyn Ave. NE
Seattle, WA 98105-6715
uwsma@u.washington.edu
Last Modified:

Alumni Employment Profile

Updated Fall 2003

Public Sector = 46%

Many of our graduates go on to positions in policy, management and/or research with local, state or the federal government. Jobs in the public sector are well suited for graduates who want to influence policy and enjoy working on long-term projects and programs. Examples of alumniplacement include:

- Alaska Department of Fish and Game - Deputy Commissioner
- California Sea Grant College Program - Deputy Director
- King County Department of Natural Resources - Program Analyst, Water and Land Resources
- NMFS - Associate Director, National Marine Mammal Lab
- NMFS - Deputy Director, Alaskan Fisheries Science Center
- NMFS - Executive Officer, Office of Science and Technology
- NOAA - Assistant Manager, Olympic Coast National Marine Sanctuary
- NOAA - Deputy Director, Office of Ocean Exploration
- NOAA - Federal Regulatory Coordinator
- NOAA - Resource Protection Coordinator
- Oregon Ocean Coastal Management Program - Coastal Program Coordinator
- Port of Seattle - Environmental Planner
- Port of Tacoma - Deputy Executive Director
- Snohomish County Public Works - Principal Planner, Surface Water Management
- U.S. Coast Guard - Chief, Environmental Standards Division
- U.S. Fish and Wildlife - Chief, National Wildlife Refuge System
- Washington Department of Natural Resources - Assistant Division Manager, Aquatic Resources

* NMFS = National Marine Fisheries Service, NOAA = National Oceanic and Atmospheric Administration

Private Sector = 25%

Graduates working in the private sector are typically employed by environmental consulting firms and marine industry-related corporations. In addition, a growing amount of our alumniare self-employed as independent consultants. Consulting is well suited for graduates who enjoy working on a variety of short term projects. Examples of alumni placement include:

- American Ship Management - Captain
- Exponent - Senior Managing Scientist
- Foss Environmental - Project Manager, Marine Services
- Foss Maritime - Manager, Performance Enhancement
- Herrera Environmental Consultants - Environmental Scientist
- Holland-America Line - Senior Manager, Revenue Planning
- Parametrix - Policy Analyst
- Tetra Tech - Senior Biologist
- Triton Container International - Manager, Process Management
- URS Corporation - Project Scientist and Ecologist

Non-Profit Sector = 8%

A growing number of our graduates work for non-profit organizations or non-governmental organizations (NGOs). Non-profits give graduates opportunities to work on projects and programs that are not provided by, or are not addressed by, government or corporations. Graduates employed in the non-profit field often work on marine and environmental education, advocacy and/or research. Projects and programs vary from short-term to long-term in length. Examples of alumni placement include:

- National Fish and Wildlife Foundation - Manager, National Whale Conservation Fund
- Natural Resources Defense Council - Ocean Policy Analyst
- Santa Barbara Maritime Museum - Executive Director
- Save Our Wild Salmon - Associate Director
- Skagit Fisheries Enhancement Group - Executive Director
- The Aspen Institute - Executive Vice President
- The Nature Conservancy - Director, Community Relations, South Florida
- The Ocean Conservancy - Ocean Governance Program Manager
- World Wildlife Fund - Living Planet Campaign Coordinator

International Sector = 8%

Many of our alumniin the international sector are working for government agencies of their native countries. There are also opportunities with non-profit organizations, consulting firms and corporations, although these jobs can be more difficult to secure. To be competitive internationally, it is recommended that you become proficient in more than one language. Examples of alumni placement include:

- Conservation Council of New Brunswick - Executive Director
- European Commission - Administrator/Scientific Officer, Fisheries
- Embassy Of Japan, Ministry of Foreign Affairs - First Secretary
- Fisheries Agency of Japan - Assistant Director, Whaling Section
- Instituto Espanol de Oceanografia, Spain - Researcher
- Korea Ministry of Maritime Affairs & Fisheries - Assistant Director, Planning and Management
- Korea Ministry of Maritime Affairs & Fisheries - Deputy Director, Marine Environment
- Korea Ministry of Maritime Affairs & Fisheries - Director General, Marine Safety Management

Working in Schools, Colleges, Universities = 4%

Ph.D./J.D. Student = 2%

Other = 6%

Number of graduates: 374
Number of responses: 317
Percent graduates tracked: 85%

For more information, call (206) 543-0106 or email uwsma@u.washington.edu.

Alumni Employment Profile | **2001 Graduate Employment Profile** | **Fellowships & Scholarships** | **Job Links**

UW School of Marine Affairs
3707 Brooklyn Ave. NE
Seattle, WA 98105-6715
uwsma@u.washington.edu
Last Modified:

3.3.2　ブリティッシュ・コロンビア大学
水産センター

回答調査表

Attachment 1: Graduate Program at Fisheries Center

Attachment 2: Members of Fisheries Center

Attachment 3: Information for Applicants

Attachment 4: Previous Training and Workshops

SURVEY ON OCEAN GOVERNANCE EDUCATION

* Thank you for taking time to fill out this survey. Information such as history of the program, course descriptions and teaching staff might be available on line or in registration materials. In these situations, in order to save time, please provide us with the appropriate web address or attach bulletin or documents related on this survey.

Department/Faculty/ College: Fisheries Center, Faculty of Graduate Studies
University: University of British Columbia
Address: 2259 Lower Mall Rd
Vancouver, BC V6T 1Z4 CANADA

e-mail: office@fisheries.ubc.ca
ULR: www.fisheries.ubc.ca

****

Name of the Program: NONE

Degree offered: **(EDUCATION & RESEARCH, Not Degree offered from Fisheries Center)**

☐ Undergraduate

○ Certificate ○ Diploma ○ Degree

○ Others (Please explain) ( )

✔ Masters

✔ Masters of Science (course work only / course work + thesis / both)

✔ Masters of Arts (course work only / course work + thesis / both)

○ LL.M. (course work only / course work + thesis / both)

○ Others (Please explain)

✔ PhD

Institute for Ocean Policy, Ship and Ocean Foundation
Kaiyo Senpaku Bldg., 1-15-16 Toranomon, Minato-ku, Tokyo 105-0001 Japan
Tel: 81-3-3502-1953 Fax: 81-3-3502-2127
E-mail: y-tanaka@sof.or.jp
URL: http://www.sof.or.jp

History of the Program:

1. When was your program established?

   1992

2. Who and which faculty/college/institutions took the initiative to establish your program?

   Peter Larkin

3. What motivated the establishment of your program? What was the main concern at the time of establishment?

   - The need for multidisciplinary program for fisheries
   - Fisheries management and declining stocks

4. Have you revised the program since its establishment? ✔ Yes ☐ No

   * If Yes, why did you have to revise? What was the original program? Please explain.

   Minor changes in courses offered.

About the Program:

1. How many years does it take to complete your program?

   Undergraduate _____ years
   Masters 2-4 years (3 years average)
   PhD 3-4 years
   Others ( )

2. Which areas does the program concentrate on? Which areas do you have teaching strengths in?

   ☐ Ocean Policy
   ☐ Marine Science
   ✔ Fisheries Management (Sea around Us Project)
   ☐ Integrated Coastal and Ocean Management
   ☐ Marine Conservation
   ☐ Ocean Laws
   ☐ Social Aspects of Ocean/Coastal Management
   ✔ Marine Resource Management
   (Marine Mammals Research Unit & Project Seahorse)
   ☐ Environment in general
   ✔ Economics (Fisheries Economics Research Unit)
   ☐ Other (Please specify)

3. What courses do you offer? *(If this information is already available, please note web site location or attach documents related.)*

   *** See website <www.fisheries.ubc.ca/grad/> and Attachment 1.**

Course Title	Instructor	Type of Course*	Credits	Maximum Enrollment	Others**

* Type of Course: Lecture, Seminar, Experiment, Field Work etc.
** Others: Compulsory or not, Prerequisites etc.,

4. How many credits do you require to fulfill your degree requirements?

*** See website for Faculty of Graduate Studies for more details. Credit requirements depend on the faculty that students belong to.**

Undergraduate _____ credits

Masters (course work only) _____ credits

Masters (course work + thesis) course work _____ credits

thesis preparation course _____ credits

* For Master's program only: If you offer both "course work + thesis" program and "course work only" program, what proportion of students take the "course work only" program?

_____ %

5. Do you have a credit transfer system with other programs and universities? ✔ Yes ☐ No

* If Yes, maximum credits of transfer allowed. Undergraduate _____ credits

Masters _____ credits

* The name of programs and universities

- Any university in BC as long as course within the program guidelines
- Outside of BC approval required

6. How many teachers do you have? What are the background and specialization of your teaching staff?

* No. of teaching staff full time 7

part time 1 (lecturer)

*** See website <www.fisheries.ubc.ca/grad/> and Attachment 2.**

(If this information is already available, please note web site location or attach documents related etc.)

Name	Position	Specialization	Background*

* Background: Academia, Practitioner, Governmental Officials, etc.

7. Do you implement an internship as part of the curriculum? ☐ Yes ✔ No

* If Yes, in which areas?

8. Do you have an internship placement service? ☐ Yes ✔ No

About Admission Procedures and Students:

1. How many people apply to your program every year?

   Undergraduate _____
   Masters _____
   PhD _____
   Others ( )
   * We don't have this info. We get hundreds of inquiries every year.

2. How many students do you accept each year?

   Undergraduate _____
   Masters 10 * Recently less because of
   PhD 10 accommodation restrictions.
   Others ( )

3. Total number of enrolment: _____

4. Percentages of students enrolled:

   Local (State/Province) / National 50 %
   International 50 %
   * Regions
   ☐ North America _____ %
   ☐ South America (including Caribbean) _____ %
   ☐ Asia (including Australia and Pacific islands) _____ %
   ☐ Europe _____ %
   ☐ Africa _____ %
   * Developed Countries 65 % Developing Countries 35 %

5. What are the admission requirements (including international students)?

   *** See admission requirement for Faculty of Graduate Studies, also Zoology and Institute for Resources, Environment and Sustainability.**

   *** See Attachment 3 for the admission procedures.**

6. What do you place most emphasis on in evaluation of candidates?

   - maturity
   - background: academic and professional
   - funding sources

7. How do you evaluate the job experience of candidates in ocean related fields?

Based on number of years and level of experience.

8. What proportion of your students have working experience in ocean related fields?

10-15 % (but in fisheries 70-80 %)

* Of the students who have working experiences in ocean related field, what proportion are sent by governments, private sectors, and NGOs?

50 % gov., 30% private (incl. self funded), 20% NGOs

9. How much is your tuition fee?

Local (State/Province) _____

National _____

International _____

10. What kind of scholarships do you offer?

Name of Scholarship	No. of Students	Amount	Purpose and Aim of the Scholarship
Morrow	1	~$ 2,500	Travel grant

Note: Canadian students can apply for NSERC + SHERC scholarships. Some students have successful obtained theses.

Career Placement:

1. Do you have your own career placement office? ☐ Yes ✔ No
2. How many people in your office? _____
3. What kind of job offers does your career placement office receive? Please specify the field if possible.

   ☐ Governmental _____ %

   ☐ Private Sector _____ %

   ☐ NGOs _____ %

   ☐ Academia _____ %

   ☐ Others _____ %

4. Of the students who go through your program, what proportion work in ocean related fields?

   10-20 %

   * Fisheries fields 80-90 %

5. Have any graduates from your program gone on to become leaders in their field?

   ✔ Yes ☐ No ☐ Don't know

   * If yes, who are these graduates and what do they do now?

   Research Directors for government research institutes

6. How do you think that your graduates contribute to the development of your program and ocean governance?

   - Broader the scope of research undertaken
   - Explore new areas of research
   - Provide future students via recommendations etc.

Facilities:

1. Does your program have its own library? ✔ Yes ☐ No
   * If Yes, the name of the library. LARKIN

2. Do you have a librarian who is familiar with ocean related fields? ✔ Yes ☐ No
   (part-time)

3. How many volumes do you have in your library?
   Books # thousands
   Periodicals # 30

4. Is the library catalogue accessible through the internet? ☐ Yes ✔ No

5. Does your library have resources specific to ocean governance? ✔ Yes ☐ No
   (just a few)

6. Do you afford the use of your library to people from other universities, institutions, and organizations? ✔ Yes ☐ No
   * If Yes, which universities and institutions use your library the most frequently?
     - other BC institutions
     - visiting scholars
     - consultants

7. Do you have experimental laboratories or vessels? ☐ Yes ✔ No
   * If Yes, what kind?

Research and other activities:

1. Do you offer e-learning courses or distant learning courses? ☐ Yes ✔ No

   * If Yes, please explain.

2. Do you offer training courses other than degree program above? ✔ Yes ☐ No

   * If Yes, please explain.

   - workshops on specific topics such as ECOPAR

   *** See website <www.fisheries.ubc.ca/grad/> and Attachment 4.**

3. Do you have joint research programs or partnership with other institutions? ✔ Yes ☐ No

   * If Yes, which institutions and what kind?

   With – government agencies (prov + federal)

   - other universities, research institutions, NGOs (e.g. WWF, WCMC)

4. Do you publish journals or periodicals? ✔ Yes ☐ No

   * If Yes, name of the journal

   - Report series for the Fisheries Center

5. Do you have students' clubs and associations to develop friendships and skills that might benefit your graduates throughout their careers? ✔ Yes ☐ No

   * If Yes, names of clubs and associations, etc.

6. What do you do to increase public awareness of marine affairs? Do you have programs for the public? ✔ Yes ☐ No

   * If Yes, please explain.

   1) Hold Open House for the public
   2) Public lecture bi-annually
   3) Stuff provide interviews for local media

General Questions about your Program:

1. What do you think is the key feature of your program?
   - Interdisciplinary
   - Dynamic with many collaborators
   - World known staff
   - Students well supported: e.g. computers, library etc.
   - Many social functions

2. Do you think that your students are satisfied with your program? ✔ Yes ☐ No
3. Are you planning to revise your program in the near future? ☐ Yes ✔ No

   * If Yes, why, how, and when?

4. Do you think that your program needs to be improved?

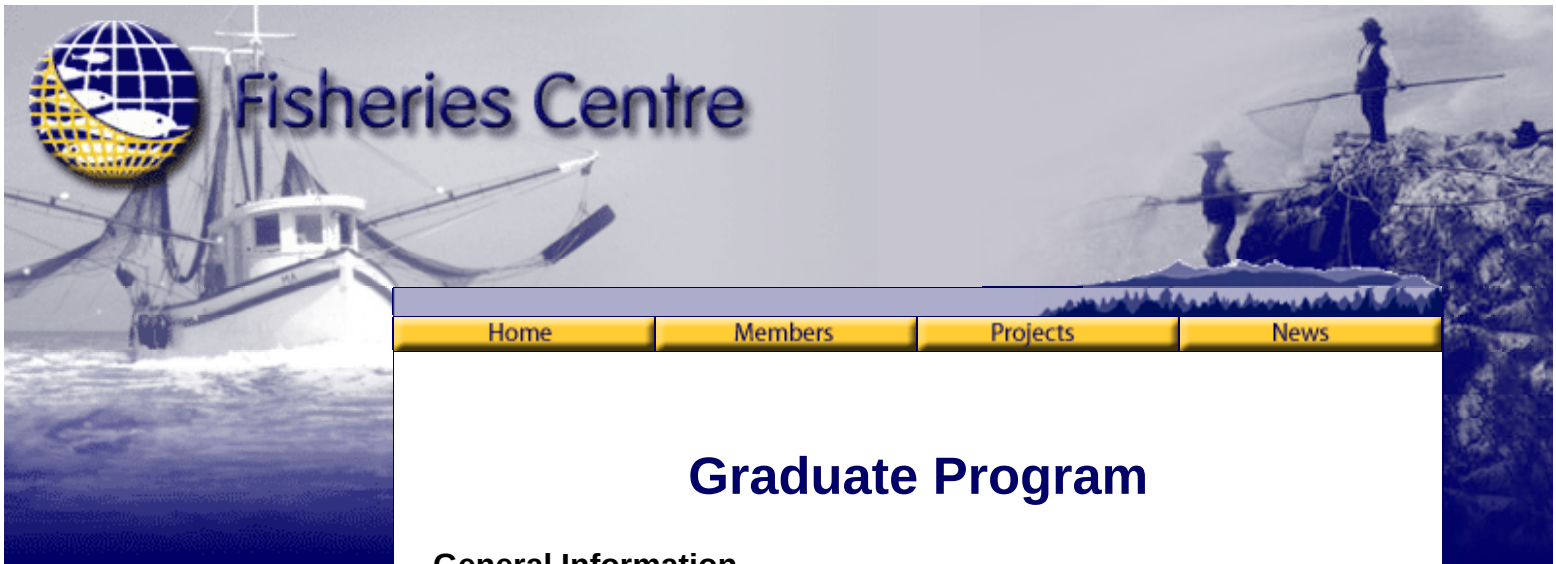
   Yes. We just had a review and changes as being implemented

5. What do you think the most important thing for ocean governance education in general?

   Interdisciplinary approaches taken.

Thank you very much for your cooperation!

(January 2004)



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Graduate Program

General Information

The new Fisheries Centre at UBC was formed as a unit of the Faculty of Graduate Studies and aims to focus and promote the multidisciplinary study of fisheries. Analytical tools developed in a broad spectrum of parent subjects, including biology, oceanography, economics, engineering, mathematics, sociology, planning and policy are employed in order to assess, appraise and forecast the impacts of both human and natural processes on fishery resources. Fisheries policy and management problems under study include assessment and management of artisanal and commercial food capture fisheries, recreational fisheries, coastal and watershed management, aquaculture biology and engineering, conflict resolution and the co-management of shared fishery resources, and the conservation of endangered exploited species in both marine and freshwater environments.

This guideline is to complement the general regulations detailed by the Faculty of Graduate Studies. Students of the Fisheries Centre can be enrolled at various departments under the Faculty of Graduate Studies, e.g. Resource Management and Environmental Studies , or Zoology . The Fisheries Centre and the First Nations House of Learning are also encouraging aboriginal students to apply for graduate studies in Master and PhD programs. More information can be found in the Aboriginal Fisheries Initiatives web page.

Admission Requirements

Students should refer to the admission requirements of the Faculty of Graduate Studies for general information and minimum academic guidelines. In general, a bachelors degree in Science (e.g. Ecology, Biology, Zoology), or in relevant quantitative subjects within Arts (e.g. Mathematics, Economics) will normally be required. Degrees from other disciplines will be considered where an applicant's main background is in policy or sociology of fisheries, and where evidence of quantitative experience can be provided. A master's degree is normally required for admission to the doctoral program.

Courses

Students must discuss course requirements with their admitting department. Additionally, the Fisheries Centre offers a series of fisheries courses, all of which Fisheries Centre students are expected to take for audit or credit at some point during their time at UBC. These courses are

as follows:

- FISH 500 (3 credits) Issues in Fisheries Research: Seminars: Terms 1 and 2
- FISH 501(3 credits) Issues in Fisheries Research: Ecosystem Modeling: Term 1
- FISH 502 (3 credits) Issues in Fisheries Research: Marine and Freshwater: Terms 1 and 2
- FISH 503 (3 credits) Issues in Fisheries Research: Policy and Evaluation: Term 2
- FISH 504/505 (3 credits) Fisheries Dynamics and Policy
- FISH 506 (3 credits) Critical Issues in Fisheries: Research at the FC: Term 1

Courses - Updated August 12, 2003. Please check back for updates.

Timetable for the Ralf Yorque Room:

- Term 1 (Sep 2-Nov 28 2003)
- Term 2 (Jan 5-Apr 8 2004)

Other recommended courses:

- AGEC 421B - Economics of Biodiversity and Nature Conservation
- AGSC 480 - Intensive Fish Production
- AGSC 490 - Aquaculture and the Environment
- ANTH 460/515 - Cultural Ecology
- BIOL 402 - Aquatic Ecology
- BIOL 408 - Principles of Applied Ecology
- CONS 486 - Fisheries Conservation and Management (could be taken as a 500 level course)
- ECON 308 - Introduction to Microeconomics
- ECON 309 - Principles of Economics
- ECON 371 - Environmental Economics
- ECON 472 - Economics of Renewable Resources
- ECON 571 - Economics Analysis and Natural Resources
- FRST 387 - Fish/Forestry Interactions
- FRST 485 - Forest Water Management
- GEOG 539/RMES 500C -  Climate Change in the 21st Century
- RMES 500X - Integrated Coastal Zone Management
- RMES 501 - Perspectives on Resources and Environments
- SOCI 509 - Sociology of the Environment
- ZOOL 523 - Fish Behaviour and Ecology

- ZOOL 527 - Theoretical Population Dynamics

Fisheries Centre Members

The students of the Fisheries Centre can take advantage of the knowledge of the members of the Fisheries Centre who have expertise in various fields ranging from Fish Behavior, Fisheries Assessment and Modelling, Tropical Fisheries, Fisheries Policy and Economics, Aquaculture, and much more. Fisheries Centre members can serve as students' supervisors or in supervisory committees.

Evaluations of Course Organisers

Students are asked to fill out a teaching and course evaluation form to provide the course organisers with feedback on their courses. Currently, the results from the 2002 Winter session are available.

2002 Winter

- FISH 500: Issues in Fisheries Research: Seminars
- FISH 501: Issues in Fisheries Research: Ecosystem Modeling
- FISH 502: Issues in Fisheries Research: Marine and Freshwater
  - Economics
  - Rapfish
  - Global Fisheries
- FISH 503: Issues in Fisheries Research: Policy and Evaluation
- FISH 504: Quantitative Analysis of Fisheries I
- FISH 505: Quantitative Analysis of Fisheries II
- FISH 506: Critical Issues in Fisheries: Research at the FC

Contact Information

Students interested in knowing more about the Fisheries Centre and our graduate program can contact the Fisheries Centre Graduate Secretary, at the address below:

Fisheries Centre
Lower Mall Research Station
2259 Lower Mall
The University of British Columbia
Vancouver, BC
Canada V6T 1Z4
tel:+1 (604) 822-2731
fax:+1 (604) 822-8934
email: office@fisheries.ubc.ca

(To contact individual faculty members, see the members page)

For technical difficulties on the webpage please contact the webmaster.

Members

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Directory

Director

Dr Daniel M. Pauly	Tropical & Global Fisheries Issues

Faculty

Dr Michael C. Healey	Fisheries & Watershed Management
Dr Tony J. Pitcher	Ecosystems, Rapid Appraisal and Schooling
Dr Rashid Sumaila	Fisheries Economics

Dr Andrew W. Trites	Marine Mammals & Fisheries
Dr Amanda Vincent	Fisheries Conservation
Dr Carl J. Walters	Modelling

Lecturer

Rob Ahrens	Modelling, Assessment & Ecosystems

Associated Faculty

Dr Jo-ann Archibald	Education Department
Dr Brian Elliot	Environmental Sociology
Dr Douglas Harris	Fisheries Law, First Nations Law and Legal History
Dr Scott Hinch	Forests & Fisheries
Dr George Iwama	Aquaculture
Dr David (Ralph) Matthews	Fisheries Sociology
Dr Charles Menzies	Fisheries Anthropology
Dr Gordon Munro	Fisheries Economics
Dr Dianne Newell	History of Fishers Communities
Mr. Richard Paisley	Fisheries Law
Dr Royann Petrell	Fishery Engineering
Dr William Rees	Community & Regional Planning
Dr Jim Thompson	Aquaculture
Dr Richard Vedan	First Nations House of Learning

International Advisory Council

Chair: Dr David Policansky	NRC, Washington, DC, USA
Vice Chair: Dr Kevern Cochrane	FAO, Rome, Italy
Dr Anthony Charles	St Mary's University, Halifax, Canada
Dr Pamela Mace	NMFS, Woods Hole, USA
Dr Cornelia Nauen	EU, Brussels, Belgium
Dr Andrew Rosenberg	University of New Hampshire, Durham, USA

Senior Research Fellows

Dr Villy Christensen	Ecosystem Modelling
Dr Reg Watson	Fisheries Modelling

Research Associates

Dr Jackie Alder	Coastal Zone Management
Dr Sylvie Gu駭ette	Marine Mammal Research Unit
Mr. Nigel Haggan	Cooperative ecosystem management initiatives
Mr. Charles Hu	Marine Mammal Research Unit
Mr. Russ Jones	Haida Fisheries Management
Dr Maria (Deng) Palomares	Sea Around Us Project - FishBase Liaison Officer

Dr David Rosen	Marine Mammals
Dr Dom Tollit	Improving estimation methods of population and diet of Stellar sea lions
Dr Tonny Wagey	Indonesian marine ecosystems and their fisheries
Dr Ben Wilson	Sea lion behaviour@sea project
Dr Dirk Zeller	Ecosystem Modelling, MPAs, telemetry, tagging

Postdoctoral Researchers

Mr. Volker Deecke	Marine Mammal Research Unit
Dr Gordon Hastie	Open Water Marine Mammals
Dr Sheila Heymans	Foodweb modelling
Dr Mary-Anne Lea	Sea lion behaviour@sea project
Dr Jean Marcus	Project Seahorse

Management and Professional Researchers

Mr. Edward Gregr	Marine Mammal Research Unit
Ms. Ruth Joy	Marine Mammal Research Unit
Mr. Fredelito Valdez	Sea Around Us Database
Mr. Arliss Winship	Marine Mammal Research Unit

Research Assistants

Ms. Rebecca Barrick	Marine Mammal Research Unit
Mr. Jordan Beblow	Marine Mammal Research Unit
Ms. Karin Bodiker	Marine Mammal Research Unit
Mr. Shawn Booth	Sea Around Us Database
Ms. Sarah Foster	Project Seahorse Research Biologist
Mr. Brian Giles	Project Seahorse Senior Research Assistant
Ms. Susan Heaslip	Marine Mammal Research Unit
Mr. Minh Huyn	Marine Mammal Research Unit
Mr. Adrian Kitchingman	Sea Around Us Project
Mr. Chad Nordstrom	Marine Mammal Research Unit
Ms. Lisa Skinner	Marine Mammal Research Unit
Mr. Graham Wallace	Marine Mammal Research Unit

Emeritus Members

Dr Paul LeBlond	Fisheries Oceanography
Dr Don Ludwig	Fisheries Mathematics
Dr Patricia Marchak	Political Economics
Dr Gordon Munro	Fisheries Economics
Dr William E. Neill	Fisheries Limnology
Dr Tom Northcote	Fisheries Biology

Support Staff

Ms. Rosalie Casison	IT Tech Assistant
Ms. Shannon Charney	Project Seahorse Operations Assistant
Ms. Janice Doyle	Director's and Graduate Secretary
Ms. Robyn Forrest	FishBytes Editor
Ms. Jackie Hancox	Research Technician (Marine Mammal)
Mr. James Hrynyshyn	Project Seahorse Communications Co-ordinator
Ms. Renee LaRoi	MMRU Website Designer
Ms. Sue Mulligan	Project Seahorse Administration Assistant
Ms. Jorma Neuvonen	Project Seahorse Operations Director
Mr. Gerard O'doherty	IT support
Ms. Grace Ong	Accounts Officer
Ms. Amy Poon	FC Webpages Support Officer
Ms. Pamela Rosenbaum	Marine Mammal Unit Administration
Ms. Heidi Shuter	Project Seahorse Administration Assistant (on leave)
Mr. Wilf Schwartz	Seminars & Graduate Course Officer
Ms. Ann Tautz	Fisheries Centre Administration
Mr. Pablo Trujillo	FC Information Support Officer

Adjunct Professors

Dr Claire W. Armstrong	Fisheries Economics, Department of Economics, Norwegian College of Fisheries Science, University of Tromsoe
Dr Martin Castonguay	DFO, Quebec, Fisheries Biology
Dr Ratana Chuenpagdee	St Francis Xavier University, Nova Scotia, Socioeconomics of fisheries
Dr Edward Donaldson	DFO, West Vancouver, Aquaculture
Dr John K.B. Ford	DFO, Nanaimo, Marine Mammals
Dr Martin A. Hall	IATTC, La Jolla, CA, Fisheries & Ecosystems
Dr Douglas E. Hay	DFO, Nanaimo, Pelagic Fisheries
Dr Michael A. Henderson	DFO, Vancouver, Fisheries Policy
Dr Charles Hollingworth	Lachine, Quebec, Scientific Writing
Dr Glen S. Jamieson	DFO, Nanaimo, Invertebrate Fisheries
Dr Rosemary Ommer	Memorial University, Fisheries Sociology
Dr Evelyn Pinkerton	Simon Fraser University, Fisheries Co-management
Dr Jordan Rosenfeld	BC Fisheries, stream ecology
Dr Laura Richards	DFO, Nanaimo, Fisheries Assessment
Dr John Spence	BC Science Council, Industry & Fisheries
Dr Max Stocker	DFO, Nanaimo, Fisheries Assessment

Dr John G. Stockner	DFO, West Vancouver, Food Chain Dynamics
Dr Arthur Tautz	BC Fisheries Research Branch, Vancouver, Habitat, Sports Fisheries
Dr John Volpe	Univ Alberta, Edmonton, Sustainable Aquaculture
Dr Daniel M. Ware	DFO, Nanaimo, Pelagic Fisheries Models
Dr Jane C. Watson	Bamfield Marine Research Centre, Marine Mammals

Visiting Scientists

Ms. Catriona Day	CephBase
Mr. Keith Martin-Smith	Project Seahorse
Dr. Marvin Roseneau	Catch Statistics

Fisheries Centre Phone Directory

Fisheries Centre
Lower Mall Research Station
2259 Lower Mall
The University of British Columbia
Vancouver, BC
Canada V6T 1Z4
tel:+1 (604) 822-2731
fax:+1 (604) 822-8934
email: office@fisheries.ubc.ca

(To contact individual faculty members, see the members page)

For technical difficulties on the webpage please contact the webmaster.

THE UNIVERSITY OF BRITISH COLUMBIA
Fisheries Centre

6660 NW Marine Dr.
Vancouver, BC V6T 1Z4

Acting Director: Dr. Daniel Pauly

Tel: (604) 822-2731
Fax: (604) 822-8934
E-Mail: office@fisheries.ubc.ca

Thank you for your inquiry about graduate studies at the University of British Columbia Fisheries Centre (FC). The following pages contain information about FC and the University. These pages have been copied here from various websites for your convenience but you should refer to the original sites for the most up to date information.

If you have web access, you should look at the Fisheries Centre website http://www.fisheries.ubc.ca/.), and the sites for UBC (http://www.ubc.ca), for the Faculty of Graduate Studies (http://www.grad.ubc.ca), and for the departments through which Fisheries Centre students are admitted to the University. The UBC Calendar is at http://www.student-services.ubc.ca/publications/pub/calreg/index.htm.

Most commonly admission is via the interdisciplinary program in Resource Management and Environmental Studies (administered by the Institute for Resources and the Environment, or IRE). Students are occasionally admitted through the Departments of Zoology, Economics, Oceanography or Animal Science. The application deadline for September admission to IRE is February 28; the Zoology deadlines are March 31 for international students and April 30 for Canadian. *For students wishing to apply for University Graduate awards the application deadline is earlier (see* http://www.grad.ubc.ca/prostudents/admiss/deadlines.htm).

UBC admission standards are high and financial assistance is very limited. Candidates without an excellent academic record, a TOEFL score of at least 600, and adequate independent funding are unlikely to be admitted. *In addition to meeting the admission standards, a student wishing to study at the Fisheries Centre must have obtained agreement from a Fisheries Centre faculty member to serve as his or her thesis supervisor.* You are encouraged to identify the faculty whose research interests might fit best with yours and to contact them directly by e-mail. (At Fisheries Centre, most e-mail addresses are formed as follows:

.....page 2

firstinitial.lastname@fisheries.ubc.ca. For example, mine is j.doyle@fisheries.ubc.ca). When contacting faculty, you should provide a one-page attachment containing the following information:

1. full name, mailing address, e-mail address;
2. country of citizenship;
3. degree (M.A., M.Sc., Ph.D.) for which you wish to apply;
4. department to which you will apply (IRE, Zoology, etc.);
5. TOEFL exam score if written;
6. your available sources of funding if you do not receive financial aid from UBC;
7. details of your complete university record (no transcripts required at this point), including:
    - all institutions attended
    - dates attended
    - major course of study
    - degree and date received or expected
    - standing obtained (e.g. 3/4, 7/10, etc.) and rank in class if known.

On a separate page, you should provide a statement of your proposed research topic.

I would appreciate your keeping me informed as your application develops. You may wish to obtain agreement from a thesis supervisor before you go to the expense and effort involved in the formal application process. However, you are certainly free to begin that formal application process at any time; be sure to allow sufficient time to meet the various deadlines. Please indicate you are interested in "Fisheries" in the section of the application headed "Proposed Specialization". You can obtain a hard copy of the form either from me, or from the department through which you are applying. The on-line application form is available at http://www.grad.ubc.ca/application/index.html.

Good luck with your future studies.

Janice Doyle, Graduate Secretary
UBC Fisheries Centre

General Information

The Fisheries Centre at UBC was formed as a unit of the Faculty of Graduate Studies and aims to focus and promote the multidisciplinary study of fisheries. Analytical tools developed in a broad spectrum of parent subjects, including biology, oceanography, economics, engineering, mathematics, sociology, planning and policy are employed in order to assess, appraise and forecast the impacts of both human and natural processes in fishery resources. Fisheries policy and management problems under study include assessment and management of artisanal and commercial food capture fisheries, recreational fisheries, coastal and watershed management, aquaculture biology and engineering, conflict resolution and the co-management of shared fishery resources, and the conservation of endangered exploited species in both marine and freshwater environments.

This guideline is to complement the general regulations detailed by the Faculty of Graduate Studies. Students of the Fisheries Centre can be enrolled at various departments under the Faculty of Graduate Studies, most commonly through the interdisciplinary program at Resource Management and Environmental Studies, though some are admitted via other departments such as Zoology, Economics or Animal Science. Brief information sheets about Resource Management and Zoology are enclosed; please consult their websites for more details.

Admission Requirements

Students should refer to the admission requirements of the Faculty of Graduate Studies for general information and minimum academic guidelines. In general, a bachelors degree in Science (e.g. Ecology, Biology, Zoology), or in relevant quantitative subjects within Arts (e.g. Mathematics, Economics) will normally be required. Degrees from other disciplines will be considered where an applicant's main background is in policy or sociology of fisheries, and where evidence of quantitative experience can be provided. A masters degree is normally required for admission to the doctoral programme.

NOTE: the application deadline for fall admission to Resource Management is February 28; for the Department of Zoology the deadline is April 30 (March 31 for international applicants). December 1 is the deadline for applicants wishing to be considered for financial assistance.

Applicants should have been in contact with Fisheries Centre faculty well in advance of those dates in order to establish whether a Fisheries Centre faculty member is willing to serve as their research supervisor.

Program Structure

Students should check with the department where they are registered for course requirements. Additionally, the Fisheries Centre offers a series of fisheries courses which students are encouraged to take. These courses are:

Fish 500 (3 credits) Fisheries Management
Fish 501 (3 credits) Issues in Fisheries Research: Freshwater
Fish 502 (3 credits) Issues in Fisheries Research: Marine
Fish 503 (3 credits) Issues in Fisheries Research: Policy
Fish 504 (3 credits) Quantitative Analysis of Fisheries I
Fish 505 (3 credits) Quantitative Analysis of Fisheries II
Fish 506 (3 credits) Critical Issues in Fisheries Development

Fisheries Centre Members

The students of the Fisheries Centre can take advantage of the knowledge of the members of the Fisheries Centre who have expertise in various fields ranging from Fish Behaviour, Fisheries Assessment and Modelling, Tropical Fisheries, Fisheries Policy and Economics, Aquaculture, and much more (see brochures). In order for a student to be associated with the Fisheries Centre, a Fisheries Centre faculty must agree to serve as supervisor for the student's research.

More Information

Students interested in knowing more about the Fisheries Centre and our graduate program can visit the Fisheries Centre's website: www.fisheries.ubc.ca or contact:

Graduate Secretary, Fisheries Centre
University of British Columbia
6660 NW Marine Drive
Vancouver, B.C. V6T 1Z4
Tel.: (604) 822-2731; Fax (604) 822-8934
e-mail: office@fisheries.ubc.ca

A list of internal & external **Graduate Awards and Fellowships** with detailed summaries of eligibility requirements is now available at the Faculty of Graduate Studies website at http://www.grad.ubc.ca/prospdents/awards.htm . The UBC Students Services site (http://www.student-services.ubc.ca) gives costs a student at UBC might incur.

Other useful website addresses include:

University of British Columbia: www.ubc.ca
UBC Faculty of Graduate Studies: www.grad.ubc.ca
UBC Zoology Department: www.zoology.ubc.ca
UBC Resource Management: www.ire.ubc.ca/y2k/

Fisheries Centre

Acting Director, Professor: Daniel Pauly (Tropical & Global Fisheries Issues)

Faculty: Michael Healey (Watershed Management), Rashid Sumaila (Fisheries Economics), T.J. Pitcher (Fisheries Evaluation, Policy & Resilience), Andrew Trites (Marine Mammals & Fisheries), Amanda Vincent (Marine Conservation), Carl Walters (Modelling & Assessment)

Associated Faculty: Jo-ann Archibald (Education), Brian Elliot (Environmental Sociology), Scott Hinch (Forests & Fisheries), George Iwama (Aquaculture), Les Lavkulich (Fisheries Education), Ralph Matthews (Fisheries Sociology), Charles Menzies (Fisheries Anthropology), Diane Newell (History of Fishery Communities), Peter Pearse (Policy & Economics), Rayann Petrell (Fishery Engineering), William Rees (Community & Regional Planning), Jim Thompson (Aquaculture), Richard Veden (Aboriginal Fisheries)

Emeritus Members: Paul LeBlond (Fisheries Oceanography), Don Ludwig (Fisheries Mathematics), Patricia Marchak (Political Economics), Gordon Munro (Fisheries Economics), William Neill (Fisheries Limnology), Tom Northcote (Fisheries Biology)

The Fisheries Centre aims to focus and promote the multidisciplinary study of fisheries. Analytical tools developed in a broad spectrum of parent subjects, including biology, oceanography, economics, engineering, mathematics, sociology, planning and policy are employed in order to assess, appraise and forecast the impacts of both human and natural processes on fishery resources.

Fisheries policy and management problems under study include assessment and management of artisanal and commercial food capture fisheries, ecosystem impacts of fishing, multidisciplinary evaluation of the health of fisheries, recreational fisheries, coastal and watershed management, conflict resolution and the co-management of shared fishery resources, and the conservation of endangered exploited species in both marine and freshwater environments. Major objectives are to establish a fully international, multidisciplinary perspective, and to provide a forum for the foundation of concepts of management and sustainable development of fisheries appropriate for the next century.

The Fisheries Centre organises grant and contract-based research, courses, seminars, workshops, professional training courses and publications that aim to promote a deeper understanding of management and development of fisheries resources around the globe. The Fisheries Centre forms a base for a research community of faculty, research associates, postdoctoral fellows, graduate students and off-campus adjuncts. It provides a Resources Centre and Local Area Network comprising reference material and computing facilities for analysis and assessment of fisheries

At present, two further research units are based within the Fisheries Centre. The BC Fisheries Research Section (Director, Dr Art Tautz) works on freshwater management, mitigation and recreational fisheries in the province. The Marine Mammal Research Unit (Director, Dr Andrew Trites) is concerned with the interactions between mammal and fish resources in the North Pacific and in harbour seals. Dr. Amanda Vincent will join Fisheries Centre in the summer of 2002, with her Project Seahorse group (previously at McGill).

The Director is directly responsible to the Dean of the Faculty of Graduate Studies. Students within the Fisheries Centre are currently attached to the Institute for Resources and Environment program, or to Zoology, Economics, Animal Science or other disciplinary programs as appropriate to their research project. The Fisheries Centre organises a series of core and modular graduate courses on fisheries topics and issues: full details are available on request.

Welcome to Resource Management and Environmental Studies at the University of British Columbia!!! (check with RMES directly for updated information)

Resource Management and Environmental Studies (RMES) is an interdisciplinary graduate program that offers M.A., M.Sc. and Ph.D. degrees. The academic program is flexible and to a large extent tailored to the educational goals of the candidate. *A thesis proposal is required at the time of formal application to the program.* The thesis proposal facilitates the selection of an appropriate supervisor, supervisory committee and academic courses. The program draws from faculty members' expertise from across the University.

The RMES program research activities address a range of topics related to fisheries management, land management, environmental assessment, policy analysis, coastal zone management, agroforestry, water resource management, hydrology, energy, negotiation issues, risk perception and assessment, issues of governance, science and policy, and community development.

The program's aim is to integrate the socioeconomic (political) and biophysical (ecological) approaches to resource and environmental issues. To achieve these aims, workshops and seminars are common academic formats.

The Thesis - is a fundamental and essential component of the RMES program. It is the major evidence available to assess the candidate's abilities to understand, synthesize and integrate the "disciplines" of the biophysical and socioeconomic sciences.

Although there is debate about "how" research is done, the concept of the thesis research in RMES is, in general, the same as in any other graduate program. That is, there is a statement of an issue, a rationale of the significance of the issue, a set of research questions (these may be presented as hypotheses, objectives, questions, propositions . . .), a set of methods or tools from various disciplines that will be brought to bear to address the research questions, a discussion of theoretical and analytical frameworks relevant to the issue and tools selected, results, a summary and/or conclusions of the research and a discussion of how the research has contributed to the overall issue. Specifics among the various sections will vary by the nature of the research topic, the graduate student and the supervisor/supervisory committee.

There are various forms of financial assistance available to graduate students in the form of research assistantships and fellowships. These awards are competitive. Research assistantships are awarded through negotiation between the applicant/graduate student and a faculty member, usually the supervisor. Graduate Fellowships are awarded by the University on recommendation from the Resource Management and Environmental Studies program. These competitive awards are based on previous academic performance and are awarded only to those candidates with high academic achievement.

Canadian citizens and landed immigrants must make application to NSERC or SSHRC, if they are eligible, prior to their being considered for the University of British Columbia University Graduate Fellowship (UGF).

There is an English proficiency requirement for some international students. For these students a TOEFL score of 600 (paper-based) or 250 (computer-based), or an IELTS minimum score of 6.5 with no component less than 6.0, is required for the RMES program. GRE is not required for admission to the Resource Management and Environmental Studies program.

Once students are accepted into the Resource Management and Environmental Studies program, the office will make every effort to recommend candidates for financial awards for which the individual is eligible

Please note that deadlines for consideration for fellowships/scholarships vary and may not coincide with the deadlines set for receipt of application to the Resource Management and Environmental Studies program.

For students wishing to apply for the University Graduate Fellowship, the deadline for receipt of complete application to the Resource Management & Environmental Studies program is December 1st. For those students not requesting financial assistance, the deadline is the end of February.

Admission to the program is on the recommendation of the Admission Committee (RMES) to the Dean, Faculty of Graduate Studies.

Individuals wishing to apply to the Resource Management and Environmental Studies program are required to fill out an application form. To go to the online application form now, click here. Should you wish to obtain hard copies of the application form, contact the institute as noted below.

For further information, write to: Administrative Assistant, The Institute for Resources and Environment, The University of British Columbia, Rm 436E - 2206 East Mall, Vancouver, BC V6T 1Z3 Canada Tel: (604)822-9249, fax 822-9250, email ire@interchange.ubc.ca

THE UNIVERSITY OF BRITISH COLUMBIA DEPARTMENT OF ZOOLOGY

Programs of Study The Department of Zoology offers graduate programs leading to M.Sc. and Ph.D. degrees. Original research supervised by a faculty member constitutes the major component of work toward each degree. Students pursing a Ph.D. degree need take only courses as are required by their thesis committee. In addition, they are required to pass a comprehensive examination on their research area within 18 months of arriving in the department. M.Sc. students who complete 18 credits of coursework of which 10 credits must be at the 500 level and 10 credits at first class standing and maintain a first-class average during their first year are allowed to transfer directly into a Ph.D. program and must subsequently comply with regulations for the Ph.D. degree.

There are currently 44 professors on the department's faculty. Current research activities in the department fall into four broad categories: 1) molecular, cell and developmental biology, 2) comparative physiology and biochemistry, 3) community and population biology, and 4) evolutionary biology, with a healthy interaction and overlap of interest among the different groups. In addition, there are several special interdisciplinary programs in which the zoology department participates with other department and facilities. The department's excellent facilities and breadth of research interest are reflected in the wide spectrum of activities.

Research Facilities The Department of Zoology has excellent research facilities. Most major types of equipment used in biological and environmental research are available. Certain marine courses are offered at the Western Canadian Marine Biological Societies Laboratory at the Bamfield Marine Station on the west coast of Vancouver Island.

Financial Aid Natural Sciences and Engineering Research Council Scholarships (NSERC) $15,600/$17,400) and Graduate Research, Engineering and Technology (GREAT) awards ($17,500) are open to Canadian students and landed immigrants only. GREAT awards are designed to encourage a practical level of cooperation between UBC and companies and organizations throughout British Columbia. Commonwealth Scholarships are awarded in Canada to students from other Commonwealth countries. University Graduate Fellowship ($13,500) are open to all students. Students must have the commitment of a faculty supervisor and have been offered and accepted admission into the department before they can be nominated for a University Graduate Fellowship (UGF). Teaching Assistantships (M.Sc. $8,494 & Ph.D. $8,827) are available from September to April. Research Assistantships (M.Sc. & Ph.D. $1,250/month) are allocated by their supervisor from May to August..

Housing Most students live off-campus. Adequate housing is available within 5 miles of the University. Some campus housing is available for both single and married students.

Students The student population of the University is approximately 31,000 including 6,000 graduate students. The zoology department has approximately 40 research associates and postdoctoral fellows and more than 150 graduate students from all parts of the world.

The City Vancouver, a seaport with over a million people, is the largest city in western Canada. Vancouver has a cosmopolitan atmosphere with a special charm for visitors and residents alike. The mountainous terrain and fjord coastline of British Columbia are readily accessible for skiing, camping, hiking, mountaineering, swimming, sailing, and fishing. A mild climate allows year-round participation in these activities.

The University UBC is situated on the west side of the City of Vancouver on 1,000 acres of wooded land adjacent to the ocean. Since the University established itself in this location in 1925, it has become one of Canada's major research centres, and is currently second in Canada in research funding. There are ample facilities for sports and recreation, including hiking trails, swimming pools, gymnasiums, and playing fields. The Graduate Student Centre and Student Union Building are available for social activities.

Application The process of admission into the Department of Zoology includes review by the Faculty of Graduate Studies and the Department.

A student is accepted into the graduate program only if an application is approved and a faculty member indicates a willingness to supervise the student's research. Thus, students are advised to research their areas of interest, identify faculty members who do work in these areas of interest, and write directly to these faculty members. Only rarely are students taken on by a supervisor without this first contact being made.

Admission to the Department of Zoology is highly competitive. Therefore, when requesting application material the applicant should enclose information on grade point average/degree or copies of transcripts. Application deadline for September admission is April 1 for International Students and April 30 for North American students. For those requiring financial assistance, deadline is December 31.

Correspondence and Information: Graduate Secretary, Department of Zoology, University of British Columbia, 2318 - 6270 University Boulevard, Vancouver, BC V6T 1Z4 Canada Tel (604)822-5807, Fax: (604)822-2416, e-mail gradsec@zoology.ubc.ca

Previous Training & Workshops

WHAT'S NEW?
Announcements Updated March 16, 2004

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- 6-7 July 2000 International Conference on the Economics of Marine Protected Areas
  Venue: Forest Sciences Centre, UBC, Vancouver, Canada
- 17 - 20 July 2000 Workshop on the Use of Ecosystem Models to Investigate Multispecies Management Strategies for Capture Fisheries
  Venue: Green College, UBC, Vancouver, Canada
- 11-12 Sept. 2000 Back to the Future Workshop - West Coast
  Venue: St. John's College Social Lounge, UBC, Vancouver, Canada
- 29-30 Sept. 2000 Back to the Future Workshop - East Coast
  Venue: Alexander Murray Building, Memorial University, Newfoundland
- 6-10 Nov. 2000 Ecopath with Ecosim Training Course
  Venue: Fisheries Centre, UBC, Vancouver, Canada
- 19-23 Feb. 2001 Scientific Writing Course
  Venue: Fisheries Centre, UBC, Vancouver, Canada
- 26-27 Mar. 2001 Education for Aboriginal Fisheries Science and Ecosystem Management
  Venue: First Nations Longhouse, UBC, Vancouver, Canada
- 27-31 Aug. 2001 Putting Fisher's Knowledge to Work
  Venue: Fisheries Centre, UBC, Vancouver, Canada
- 20-22 Feb. 2002 Back to the Future: Methods and Results Symposium
  Venue: Graduate Student Centre Penthouse, UBC, Vancouver, Canada
- April 8-11, 2002 Programming in Visual Basic
  Venue: Fisheries Centre, UBC, Vancouver, Canada
  - Course Material
- Jun 20-22, 2002 A North American Practitioners Workshop for Marine Reef Research and Monitoring by Volunteer Divers
  Venue: Institute of Ocean Sciences, Sidney, BC
  - Registration Form
  - Information for travelers
  - List of Participants
  - Agenda

- Dec 2-5, 2002 Programming in Visual Basic with special reference to Fisheries Sciences
  Venue: Fisheries Centre, The University of British Columbia, 2204 Main Mall, Vancouver, Canada V6T 1Z4
  Full Announcement
- Feb 18-21, 2003: International Advisory Council Meeting

  Venue: Fisheries Centre, The University of British Columbia, 2204 Main Mall, Vancouver, Canada V6T 1Z4

  Workshop details - Updated February 11, 2003
  Schedule - Updated February 11, 2003
- Apr 15-17, 2003: Modelling Antarctic Ecosystems

  Venue: Fisheries Centre, The University of British Columbia, 2204 Main Mall, Vancouver, Canada V6T 1Z4

THE UNIVERSITY OF BRITISH COLUMBIA

Fisheries Centre
Lower Mall Research Station
2259 Lower Mall
The University of British Columbia
Vancouver, BC
Canada V6T 1Z4
tel:+1 (604) 822-2731
fax:+1 (604) 822-8934
email: office@fisheries.ubc.ca
(To contact individual faculty members, see the members page)

For technical difficulties on the webpage please contact the webmaster.

3.3.3　ダルハウジー大学法学部
海洋・環境法プログラム

回答調査表

Attachment 1: MELP Courses

Attachment 2: MELP Faculty

SURVEY ON OCEAN GOVERNANCE EDUCATION

* Thank you for taking time to fill out this survey. Information such as history of the program, course descriptions and teaching staff might be available on line or in registration materials. In these situations, in order to save time, please provide us with the appropriate web address or attach bulletin or documents related on this survey.

Department/Faculty/ College: Dalhousie Law School
University: Dalhousie University
Address: Weldon Law Building
6061 University Avenue
Halifax, NS B3H 4H9
Canada
e-mail: melp@dal.ca
ULR: http://www.dal.ca/law/melp

****

Name of the Program: Marine & Environmental Law Programme

Degree offered:

✔Undergraduate

✔ Certificate ○ Diploma ✔ Degree

○ Others (Please explain) ( )

✔ Masters

○ Masters of Science (course work only / course work + thesis / both)

○ Masters of Arts (course work only / course work + thesis / both)

✔ LL.M. (course work only / course work + thesis / **both**)

○ Others (Please explain)

✔ PhD

Institute for Ocean Policy, Ship and Ocean Foundation
Kaiyo Senpaku Bldg., 1-15-16 Toranomon, Minato-ku, Tokyo 105-0001 Japan
Tel: 81-3-3502-1953 Fax: 81-3-3502-2127
E-mail: y-tanaka@sof.or.jp
URL: http://www.sof.or.jp

History of the Program:

1. When was your program established?

1974

2. Who and which faculty/college/institutions took the initiative to establish your program?

- Douglas Johnston led the formation of MELP within the Faculty of Law.

3. What motivated the establishment of your program? What was the main concern at the time of establishment?

- Two main factors motivated the program, the need to establish a centre of national excellence in Law of the Sea which was in the process of negotiation and the need to develop a cadre of lawyers to support marine environmental protection in the face of expanding ocean technologies and marine resource uses.

4. Have you revised the program since its establishment? ✔ Yes ☐ No

* If Yes, why did you have to revise? What was the original program? Please explain.

- The program was originally a loose collection of courses which law students could elect to take. About a decade ago, MELP began to offer certificates in Marine Law and Environmental Law at the LL.B. level and adopted a more coherent and strategic offering of courses in the marine and environmental law field. The program will become a formal institute, the Marine & Environmental Law and Policy Institute, in the next few months in order to facilitate international oceans governance educational and research collaborations. The appointment of Professor VanderZwaag as Canada Research Chair in Ocean Law and Governance has provided major funding to support new office space, a research centre for ocean law and governance and offices for visiting fellows.

About the Program:

1. How many years does it take to complete your program?

Undergraduate	3 years
Masters	1 years
PhD	2-4 years
Others	(our doctoral degree is referred to as the J.S.D.)

2. Which areas does the program concentrate on? Which areas do you have teaching strengths in?

- ✔ Ocean Policy
- ☐ Marine Science
- ✔ Fisheries Management
- ✔ Integrated Coastal and Ocean Management
- ✔ Marine Conservation
- ✔ Ocean Laws
- ☐ Social Aspects of Ocean/Coastal Management
- ✔ Marine Resource Management
- ✔ Environment in general
- ☐ Economics
- ☐ Other (Please specify)

3. What courses do you offer? *(If this information is already available, please note web site location or attach documents related.)*

Course Title	Instructor	Type of Course*	Credits	Maximum Enrollment	Others**
http://www.registrar.dal.ca/calendar	(choose **faculty of law**, then choose **classes offered: LLB and LLM**)				
See Attachment 1					

* Type of Course: Lecture, Seminar, Experiment, Field Work etc.

** Others: Compulsory or not, Prerequisites etc.,

4. How many credits do you require to fulfill your degree requirements?

Undergraduate	____29_____ credits	
Masters (course work only)	_____6_____ courses	
Masters (course work + thesis)	course work	____3_____ courses
	thesis preparation course	_____1_____ course

* For Master's program only: If you offer both "course work + thesis" program and "course work only" program, what proportion of students take the "course work only" program?

_____20_____ %

NOTE: The Masters program offers a degree by the number of courses/thesis that are taken, not credits.

5. Do you have a credit transfer system with other programs and universities? ✔ Yes ☐ No

* If Yes, maximum credits of transfer allowed.	Undergraduate	_____15____ credits
	Masters	_____?_____ credits

NOTE: we do offer a transfer for the Master's program, however each student would be looked at individually for qualifications for acceptance.

* The name of programs and universities

- Educational linkages, including student exchanges, exist with the National University of Singapore, Queensland University of Technology (Australia), Lund University (Sweden), Maastricht University (The Netherlands), The Free University of Amsterdam (The Netherlands), Bucerius Law School (Germany) and through the North American Consortium on Legal Education (University of Arizona, James E. Rogers College of Law, University of Houston Law Centre, George Washington University National Law Centre, Universidad Panamericana (Mexico City), Instituto Tecnológico y de Estudios Superiores de Monterrey (Monterrey Mexico), McGill Law School, University of Ottawa Law School).

6. How many teachers do you have? What are the background and specialization of your teaching staff?

* No. of teaching staff	full time	___44 (8 MELP)_____
	part time	___47 (8 MELP)_____

(If this information is already available, please note web site location or attach documents related etc.)

Name	Position	Specialization	Background*
http://www.dal.ca/law/melp	(choose **people**, then choose **faculty**)		
http://www.dal.ca/law/melp	(choose **MELP Faculty & Associates)**		
Also see Attachment 2			

* Background: Academia, Practitioner, Governmental Officials, etc.

7. Do you implement an internship as part of the curriculum? ☐ Yes ✔ No
   * If Yes, in which areas?

8. Do you have an internship placement service? ☐ Yes ✔ No

About Admission Procedures and Students:

1. How many people apply to your program every year?
   - Undergraduate 1,300 (approx.)
   - Masters 100
   - PhD 20
   - Others ( )

2. How many students do you accept each year?
   - Undergraduate 150
   - Masters 15
   - PhD 1-4
   - Others ( )

3. Total number of enrolment: 500

4. Percentages of students enrolled: (graduate)
   - Local (State/Province) 10 %
   - National 20 %
   - International 70 %
     - * Regions
       - ✔ North America 30 %
       - ✔ South America (including Caribbean) 10 %
       - ✔ Asia (including Australia and Pacific islands) 20 %
       - ✔ Europe 10 %
       - ✔ Africa 30 %
     - * Developed Countries 40 % Developing Countries 60 %

5. What are the admission requirements (including international students)?
   - For LL.B., an undergraduate arts or sciences degree
   - For LL.M., completion of an undergraduate law degree
   - For J.S. D., completion of LL.M.

6. What do you place most emphasis on in evaluation of candidates?
   - Research proposal relevance and originality
   - Geographical representation
   - Academic performance
   - Practical experiences

7. How do you evaluate the job experience of candidates in ocean related fields?
   - Work experience is highly favored and employment references are encouraged.

8. What proportion of your students have working experience in ocean related fields? (graduate)
   ____25_____ %

   * Of the students who have working experiences in ocean related field, what proportion are sent by governments, private sectors, and NGOs? _____20____ %

9. How much is your tuition fee?

   Local (State/Province) ___$ 9,492_____ **NOTE:** Fees are per year
   National ___$ 9,492_____
   International ___$13,992_____

10. What kind of scholarships do you offer?

Name of Scholarship	No. of Students	Amount	Purpose and Aim of the Scholarship
James Robinson Johnston Graduate Scholarship	1 scholarship awarded each yr	$11,750 LL.M. $14,000 J.S.D.	Available to Black Canadian students in the Master's thesis or Ph.D. programmes
Eliza Ritchie Doctoral Scholarship	1 scholarship awarded each yr	$19,000	Awarded to Canadian women, preference given to candidate from Atlantic Provinces, and those underrepresented
Law Foundation of NS Millennium Graduate Fellowship	7 scholarships, renewable in the second year	$20,000	Grad Studies Committee allocates fellowships to students who have demonstrated superior academic performance.
The Roy A. Jodrey Scholarship in Law	1 scholarship awarded each yr	$15,000	Given to a student deemed by the faculty to be outstanding
Fielding Sherwood Memorial Fund	1 award made yearly	$2,500	Awarded to a LL.M. or J.S.D. student whose work concerns the environment, or relates to fisheries or ocean research studies.
The George C. Thompson Fellowship in Law	1 award made yearly	$ 10,000	Awarded to graduate student enrolled in the LL.B. or LL.M. programme, who combines scholarly achievement & athletic involvement throughout their university career
The H.A.J. Wedderburn Scholarship in Law	1 award made yearly	$2,000	Awarded to a Black Nova Scotian enrolled in the LL.M. or J.S.D. programme
CMLA	1 award made yearly	$1,000 + CMLA membership	To support a graduate student in MELP who is studying maritime law
CIDA Scholarships	3 scholarships per year	$25,000	Given to students with the highest academic standing and meeting the Marine Scholarship Program priorities and objectives

Career Placement:

1. Do you have your own career placement office? ✔ Yes ☐ No

2. How many people in your office? _____2_____

3. What kind of job offers does your career placement office receive? Please specify the field if possible.

   ✔ Governmental _____ %

   ✔ Private Sector _____ %

   ✔ NGOs _____ %

   ✔ Academia _____ %

   ☐ Others _____ %

   NOTE: We offer all these placements, however we were unable to obtain a breakdown.

4. Of the students who go through your program, what proportion work in ocean related fields?

   (graduate) ____25_____ %

5. Have any graduates from your program gone on to become leaders in their field?

   ✔ Yes ☐ No ☐ Don't know

   * If yes, who are these graduates and what do they do now?

   - Graduates are practicing in law firms around the globe in the fields of shipping law, fisheries law, oil & gas law and other related ocean law areas. Many have attained senior positions in government departments or agencies, e.g. the present minister of Fisheries and Oceans Canada, Mr. Geoff Regan, is a graduate of Dalhousie Law School. MELP has also fostered numerous professors and lecturers in maritime and environmental law in countries such as, Australia, New Zealand, China, Fiji, Germany, Indonesia, South Korea, Scotland, Singapore, Papua New Guinea, the Philippines, the United States, and the United Kingdom.

6. How do you think that your graduates contribute to the development of your program and ocean governance?

   - Many graduates are invited to lecture in courses and to the broader community
   - Many graduates highly recommend the program to interested candidates
   - Graduates are involved in ocean law and policy development around the globe at the international, regional and national levels

Facilities:

1. Does your program have its own library? ✔ Yes ☐ No
   * If Yes, the name of the library.

2. Do you have a librarian who is familiar with ocean related fields? ✔ Yes ☐ No

3. How many volumes do you have in your library?

   Books # 206826
   Periodicals # 1523

4. Is the library catalogue accessible through the internet? ✔ Yes ☐ No

5. Does your library have resources specific to ocean governance? ✔ Yes ☐ No

6. Do you afford the use of your library to people from other universities, institutions, and organizations? ✔ Yes ☐ No
   * If Yes, which universities and institutions use your library the most frequently?

   - Memorial University
   - University of Toronto
   - University of New Brunswick
   - University of British Columbia
   - University of Victoria
   - Marine Affairs Program, Dalhousie University
     (Visiting scholars from Europe, North America, Asia and the Caribbean also often request library access)

7. Do you have experimental laboratories or vessels? ☐ Yes ✔ No
   * If Yes, what kind?

Research and other activities:

1. Do you offer e-learning courses or distant learning courses? ☐ Yes ✔ No
   * If Yes, please explain.

2. Do you offer training courses other than degree program above? ✔ Yes ☐ No
   * If Yes, please explain.

- Numerous short courses have been offered in various developing committees in such areas as integrated coastal management, maritime boundary delimitation, marine environmental protection.

3. Do you have joint research programs or partnership with other institutions? ✔ Yes ☐ No
   * If Yes, which institutions and what kind?

- Research collaborations have been forged with various international organizations, including ILO, UNEP and IMO or well as regional organizations such as the North American Commission for Environmental Cooperation the Organization of Eastern Caribbean States and the South Pacific Forum Fisheries Agency.

- A 5-year capacity-building and research program funded by CIDA "Putting Principles of Ocean Governance into Practice" is just beginning with the Faculty of Law, Vietnam National University, the University of Agriculture and Forestry (Vietnam) and the College of Fisheries and Ocean Science, University of the Philippines, Visayas.

- MELP Faculty, led by Professor VanderZwaag, co-founded the Australian-Canadian Oceans Research Network (ACORN) including interdisciplinary ocean law and policy research among Canadian and Australian academic ocean governance institutions with support from Environment Australia and Fisheries and Oceans Canada.

- Research collaborations and faculty exchanges have also occurred with the World Maritime University.

- Research linkages in ocean governance among NGOs and leading environmental law programs around the globe will be facilitated by the recent appointment of Professor VanderZwaag as the Chair of the World Conservation Union's Specialist Group on Ocean Law and Governance that will include a Mediterranean Sub-group on Marine Law.

- MELP has also led an aquaculture law and policy research program under the AquaNet Centres of Excellence linking universities across Canada and has been leading efforts to develop an Oceans Governance Node under the Ocean Management Research Network (a Canadian Oceans Management Network).

- MELP also undertakes research projects with various governmental departments and agencies including Transport Canada, Fisheries and Oceans Canada, Environment Canada and Parks Canada.

- MELP faculty co-founded the Dalhousie Marine Affairs Program, directed its curriculum development and will be involved in collaborative research projects with MAP.

4. Do you publish journals or periodicals? ✔ Yes ☐ No

   * If Yes, name of the journal

- Ocean Yearbook
- Dalhousie Law Journal
- Dalhousie Journal of Legal Studies

5. Do you have students' clubs and associations to develop friendships and skills that might benefit your graduates throughout their careers? ✔ Yes ☐ No

   * If Yes, names of clubs and associations, etc.

- Environmental Law Students Society
- John Read International Law Society

6. What do you do to increase public awareness of marine affairs? Do you have programs for the public? ✔ Yes ☐ No

   * If Yes, please explain.

- MELP has an annual speaker series including an annual lecture on maritime law supported by the Canadian Maritime Law Association.

General Questions about your Program:

1. What do you think is the key feature of your program?

   - MELP facilitates world-class, leading edge research into the theoretical and practical challenges of ocean governance and through the mix of students from numerous developing countries encourages cross-cultural learning and questioning of globalization trends.

2. Do you think that your students are satisfied with your program? ✔ Yes ☐ No

3. Are you planning to revise your program in the near future? ✔ Yes ☐ No
   * If Yes, why, how, and when?

   - As mentioned previously MELP will become a formal institute to further strengthen research and educational capacities.

4. Do you think that your program needs to be improved?

   - We will be undertaking a curriculum review in the near future to assess possible gaps and to address potential overlaps in course contents.

5. What do you think the most important thing for ocean governance education in general?

   - To provide firm foundations in the international law and governance frameworks and to introduce students to the theoretical and practical challenges surrounding the global journey towards principled oceans governance where marine ecosystem integrity is upheld while meeting social and economic needs.

Thank you very much for your cooperation!

(January 2004)

MELP COURSES

Dalhousie Law

School

Course Title	Instructor 2002-03	Instructor 2003-04	Type of Course	Credits	Maximum enrollment	Others
Marine & Environmental Law Specialization						
Maritime Law and Practice	Aldo Chircop	Moira McConnell	Lecture	3	60	Compulsory
Law of the Sea	Phillip Saunders	David VanderZwaag	Seminar / Paper	3	16	Compulsory
First Nations Law	Constance MacIntosh	Constance MacIntosh	Seminar / Paper	3	16	Elective
Fisheries Law	William Moreira	William Moreira	Seminar / Paper	2	60	Elective
International Trade Law	Not offered	Gilbert Winham	Seminar / Paper	3	16	Elective
Marine Environmental Protection Law	Not offered	Not offered	Seminar / Paper	3	20	Elective
Maritime Law and Policy	Not offered	Not offered	Paper	3	20	Elective
Ocean Law and Policy	Phillip Saunders	Phillip Saunders	Seminar / Paper	3	16	Elective
Oil and Gas Law	Van Penick	Van Penick	Lecture	2	60	Elective
Environmental Law I	David VanderZwaag	Meinhard Doelle	Lecture	3	60	Compulsory
International Environmental Law	David VanderZwaag	David VanderZwaag	Seminar / Paper	3	16	Compulsory
Business and Environmental Law	Duff Harper	Duff Harper	Seminar / Paper	3	16	Elective
Coastal Zone Management	Not offered	Not offered	Seminar / Paper	3	16	Elective
Environmental Law II	Moira McConnell	Meinhard Doelle	Seminar / Paper	3	16	Elective
Land Use Planning	H. Epstein / A. Ruffman	H. Epstein / A. Ruffman	Lecture	3	30	Elective

Note: For each Marine Law and Environmental Law Specializations require two compulsory courses along with two elective courses.

*International Law is a prerequisite or co-requisite for a number of MELP courses

ALDO CHIRCOP
LL.D. (Malta); LL.M.; J.S.D. (Dalhousie).

Associate Professor

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Biography

On Leave until June 30, 2005

Assistant Professor at Dalhousie Law School, and Director of the Marine Affairs Program at the Faculty of Graduate Studies; Former director of the International Ocean Institute, and the Mediterranean Institute at the University of Malta; Teaching and training experience in marine law, policy and management in Canada, the Mediterranean, Caribbean, Southeast Asia and South Pacific; Affiliated to several professional organizations, including the Canadian Maritime Law Association, American Society of International Law, The International Centre for Coastal and Ocean Policy Studies (Italy) and the Marine Affairs and Policy Association (US).

Publications:

Research, conference papers and book reviews published in Ocean Development and International Law, Ocean Yearbook, A World Handbook of Marine Affairs, Journal of Maritime Law and Commerce, Natural Resources Journal, Marine Policy, Dalhousie Law Journal, International Insights, and various conference proceedings.

Research Areas

Law of the sea, marine law and policy, ocean management and regime-building. Current research focuses on the Mediterranean and the law of the sea (with forthcoming publications in 1997).

Development Activities

Active in international development projects, training and educational program development in marine law and policy, fisheries and coastal zone management in Southeast Asia.

Teaching Areas

Maritime Law and Practice; Law of Marine Environment Protection; Contemporary Issues in Ocean Development and Management

Graduate Student Supervision

Currently supervising doctoral candidates working on comparative marine environmental law in East and West Africa, Asian contributions to the international environmental law of watercourses, and the common heritage of humankind. Reader of masters theses in maritime law, law of the sea, and marine law and policy.

MEINHARD DOELLE
LL.M. (Osgoode), LL.B. (Dalhousie), B.Sc. (Dalhousie), JSD (expected 2004) (Dalhousie)

Assistant Professor

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Biography

Previously taught at the University of New Brunswick, Acadia University, and the University of Prince Edward Island in the field of environmental law. Served as Executive Director of Clean Nova Scotia from 1996 to 2001. Member of the Nova Scotia Bar since 1990 and associated with the law firm of Stewart McKelvie Stirling Scales in the practice of environmental law. Non-governmental member of the Canadian Delegation to the negotiations under the United Nations Framework Convention on Climate Change since 2000.

Recent Publications

- *Using Law as a Tool to Ensure Meaningful Public Participation in Environmental Assessment* (2003), 12 Journal of Environmental Law and Practice 27 (joint publication with A. John Sinclair)

- *From Kyoto To Marrakech; A Long Walk Through The Desert: Mirage Or Oasis*; Accepted for publication in Dalhousie Law Journal (2003) Volume 25 no. 1

- *The Quiet Invasion, Law and Policy Responses to Invasive Species in North America* (2003), 18 International Journal of Marine and Coastal Law 261

- Contributor to *Guide to Environmental Law for Nova Scotians*, 2nd Edition, 2000

Research Interests

Environmental Law, with a particular focus on climate change and environmental assessment processes

HUGH M. KINDRED
LL.B. (Bristol), LL.M. (London), LL.M. (Illinois)

Professor

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Biography

A member of the Bars of England and Nova Scotia, Hugh Kindred is Professor of Law at Dalhousie University where he has taught since 1971 in the areas of international law and trade, marine transportation, commercial law and consumer protection. During 1978-79 he was a Butterworths (U.K.) Overseas Legal Fellow at the Institute for Advanced Legal Studies in London, and from 1985-86 he worked as a Senior Legal Officer in the Shipping Division of the United Nations Conference on Trade and Development (UNCTAD) in Geneva. During 1996-97 and again in 2001 he was the Director of the Marine and Environmental Law Programme at Dalhousie Law School. In 1998 he was a Parsons Scholar and visiting professor in Maritime Law at the University of Sydney, Australia, and in 2001 he chaired an Ad Hoc Expert Meeting on the regulation of multimodal transport for UNCTAD at Geneva. In 2003 the Canadian Association of Law Teachers presented Professor Kindred with its Award for Academic Excellence.

Among his published work in international, maritime and commercial law is a book he wrote with Max Ganado on Marine Cargo Delays (1990) and another he produced with Dr. Mary Brooks on Multimodal Transport Rules (1997). Together with Dr. Edgar Gold and Dr. Aldo Chircop he also prepared a new text on Canadian Maritime Law (2003). In addition, on two occasions he has received awards for his papers to the Canadian Transport Research Forum. Hugh Kindred was the project coordinator and co-author of a study in 1982 for Transport Canada on The Future of the Canadian Carriage of Goods by Water Law and subsequently he assisted the Department in the preparation of the Canadian Carriage of Goods by Water Act 1993. In 1995 he collaborated in developing and delivering the initial course on the Legal Framework of Modern Peacekeeping at the Lester B. Pearson Canadian International Peacekeeping Training Centre in Cornwallis NS. He is also the general editor and a co-author of the widely used volume International Law Chiefly as Interpreted and Applied in Canada, now published in its 6th edition (2000) together with a documentary supplement and supporting web site.

Professor Kindred has advised governments and other public bodies, including Transport Canada (regarding shipping legislation), the N.S. Department of Natural Resources (maritime boundaries), the N.S. Department of Consumer Affairs (consumer protection law), and the P.E.I. Department of the Attorney-General (court re-organization). He was a founding director of the Public Legal Education Society of Nova Scotia (now the Legal Information Society of NS) and a participant in several Working Groups of the Uniform Law Conference of Canada. He is a member of the Canadian Maritime Law Association and past chair of its Carriage Documentation Committee, and he serves on the Board of Directors of the Canadian Council on International Law. He has also collaborated with the Center for International Business Studies at Dalhousie University in teaching, publishing and research, and he assists on the editorial boards of the Canadian Yearbook of International Law, International Insights, the Ocean Yearbook, the Baltic Maritime Law Quarterly and the Dalhousie Law Journal.

CONSTANCE MACINTOSH
B.A. (Concordia) Honours, Class Gold Medalist, 1992; M.A. (University of Alberta) 1996; L.L.B. (Osgoode Hall Law School, York University) Class Gold Medalist, 1999.

Assistant Professor

Telephone - (902) 494-3554
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Biography

Assistant Professor of Law, Dalhousie University, since 2002. Associate lawyer, Mandell Pinder (2000-2002) (boutique firm specializing in First Nation rights and resource management). Articled student, Faskens (1999-2000). Task Force on Newcomer Access to Health Care in Nova Scotia, Task Force Advisor

Publications and Commissioned Reports

- Constance MacIntosh, *Shifting Connections: A Report on Emerging Federal Policy Relating to Women's Health, the New Genetics and Biotechnology* (Toronto: Centre of Excellence for Women's Health at York University, 1999).

- Constance MacIntosh, *"Conceiving Fetal Abuse"* (1998) 15 Can. J. Fam. L. 178.

- David Young, Grant Ingram & Constance MacIntosh, *"The Dilemma Posed by Minority Medical Traditions in Pluralist Societies: The Case of China and Canada"* (1995) 18(3) J. of Ethnic & Racial Studies 75.

MOIRA L. MCCONNNELL
Moira McConnell, BA (U. Vic. 1978); LLB (Dal. 1984); Ph.D. (Law. U.Sydney (Au.) 1989). Barrister and Solicitor (N.S., 1990).

Professor

Telephone - (902) 494-2776
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Biography

Moira McConnell is the Director of the Marine & Environmental Law Programme (MELP) at Dalhousie Law School. She has been a member of the Law School Faculty since January 1989. Between June 2000 and June 2002, she was on secondment to the World Maritime University, a post graduate University created by the International Maritime Organization, located in Malmö, Sweden. Professor McConnell has also been a Co-director of Dalhousie University's Marine Affairs Programme, and a founder and facilitator for its Negotiation and Conflict Management Programme. She has also held the position of Executive Director of the Law Reform Commission of Nova Scotia for its first five years. Dr. McConnell is a member of a number of organizations including the International Commission of Jurists (Vice-President (Atlantic) Canadian Council), Lawyers for Social Responsibility and the IUCN, Commission on Environmental Law.
In 1999 –2000, she chaired a national working group of the Canadian Bar Association developing recommendations for improving legal education to ensure more effective dispute resolution. Her current teaching and research interests are in the fields of shipping, law of the sea, marine environmental protection, biosecurity, integrated coastal and ocean management, business and environmental law/management, public and corporate governance, regulatory design, dispute resolution processes, international trade and environment, contract law, and feminist theory. She is currently advising the Maritime section of the International Labour Organization on the development of a consolidated maritime labour convention (2005). She is also on the IMO list of legal experts, and was Lead Consultant and Coordinator for a six country Legislative Review Project under the GEF/UNDP/IMO Global Ballast Water Management Programme. She is a co-editor of the international interdisciplinary Ocean Yearbook and has published widely in the fields of international law and governance systems, corporate governance, administrative and constitutional law, environmental law, maritime law and policy, social justice and human rights.

DAWN RUSSELL
B.A. (St. Thomas Univ.) 1977; LL.B. (Dalhousie) 1981; LL.M. (Cambridge) 1985.

Dean

Telephone - (902) 494-2114
E-mail - dawn.russell@dal.ca

Biography

Dean, Dalhousie Law School, 1996-present; Acting Dean, 1995-1996; Associate Professor, 1992-present; Assistant Professor 1987-1992; Associate Lawyer, Stewart McKelvey Stirling Scales, 1983-1987 and associated on a part-time basis with the same firm until July 31, 1995. Admitted to the New Brunswick Bar, August 1982, and to the Nova Scotia Bar, February 1983; Co-Chair of the Nova Scotia Law Reform Commission, 1995-2002.

Teaching subjects:

International Law, Business Associations, Law of the Sea and Oceans Law and Policy.

Publications in Scholarly and Professional Journals, including:

- "Managing Fisheries Resources Beyond 200 Miles: Canada's Options to Protect Northwest Atlantic Straddling Stocks", Oceans Institute of Canada, 1990;

- co-author of *Supreme Court of Canada Decision-Making: The Benchmarks of Rand, Kerwin and Martland* (Carswell, 1990);

- "Paedophilia: The Criminal Responsibility of Canada's Churches" (1992) 15 *Dalhousie Law Journal* 380.

Research interests:

Corporate Law; Law of the Sea, International Law; Maritime Boundary Limitation, UN Reform, UN Enforcement Actions.

Professional Activities

Editorial Board, Ocean Yearbook; Executive Board, Canadian Council on International Law; Member, Nova Scotia Barristers' Society Bar Council; Director, Oxford Frozen Foods; Public Director, Canadian Investor Protection Fund.

PHILLIP M. SAUNDERS
B.A. (Hon.), M.A., LL.B. (Dal)

Associate Professor

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Biography

Acting Dean (July 1, 2001 - June 31, 2002) Assistant Professor, Dalhousie Law School and School for Resource and Environmental Studies at Dalhousie; Research Fellow at the Centre for Foreign Policy Studies.

Teaching subjects:

Law of the Sea, Environmental Law, International fisheries Law, Judicial Remedies, International Advocacy and Torts.

Publications:

- "Development Cooperation and Compliance with International Environmental Law: Past Experience and Future Prospects" in American Society of International Law, Trilateral Perspectives on International Legal Issues - 1996 (in press, 1996);

- The Management of South Pacific Marine Resources: Regional Institutions and Canadian Development Assistance", with Richard Herr, in Ocean Law and Policy in the Post-UNCED Era: Australian and Canadian Perspectives (in press, 1996);

- Development Assistance Issues Related to a Convention on Forests"; in CCIL, Global Forests and International Law;

- "Moving on From Rio: Recent Initiatives on Global Forest Issues"; 32 Canadian Yearbook of International Law (1995).

DAVID VANDERZWAAG
Professor, Dalhousie Law School. B.A. 1971 Calvin College; M.Div. 1974 Princeton; J.D. 1980, University of Arkansas; LL.M. 1982, Dalhousie; Ph.D. 1994, University of Wales, Cardiff.

Professor and Canada Research Chair in Ocean Law and Governance

Telephone - (902) 494-1045
E-mail - david.vanderzwaag@dal.ca

Biography

Teaching subjects:

Law of the Sea, International Environmental Law, Environmental Law.

Book Publications:

• The Fish Feud: The U.S. and Canadian Boundary Dispute (1982);

• Environmental Decision-making in a Transboundary Region, 1986 (co-editor);

• Transit Management in the Northwest Passage: Problems and Prospects, 1986 (co-editor);

• The Challenge of Arctic Shipping: Science, Environmental Assessment and Human Values, 1990 (co-editor);

• Canadian Ocean Law and Policy, 1992 (editor); Law and the Environment: Problems of Risk and Uncertainty, 1993 (co-editor);

• Canada and Marine Environmental Protection: Charting a Legal Course Towards Sustainable Development, 1995;

• Oceans Law and Policy in the Post-UNCED Era: Australian and Canadian Perspectives, 1996 (co-editor).

Research interests:

Law of the Sea, International Environmental Law, Sustainable Development Law, Ocean Development and Management, Protection of the Marine Environment, Regional Cooperation, U.S. - Canada Relations, Legal Regimes of Polar Areas, Biodiversity Protection and Global Forests, and Fisheries Law and Policy.

Professional Activities

Chair, Specialist Group on Ocean Law and Governance, World Conservation Union (IUCN); Member, Canadian Council on International Law; Editorial Board, Ocean Yearbook, Member, Nova Scotia Barristers Society.

Christian L. Wiktor
Former Law Librarian and Professor Emeritus

LL.M. University of Wroclaw
M.S.L.S. Columbia University
Email: cwiktor@dal.ca

Professor Wiktor has retired as the Sir James Dunn Law Librarian. Before working at Dalhousie Law Library, he spent ten years in library positions at the New York Public Library in Manhattan, and the State University of New York at Buffalo, Faculty of Law and Jurisprudence. In addition to his formal degrees he was a doctoral candidate in international law at the University of Paris, specializing in the law of treaties. He continued this interest in producing a number of research tools such as the collection of Unperfected Treaties of the United States, 1776-1976, and the Canadian Treaty Calendar, 1928-1978, both published by Oceana, and a new publication, *Multilateral Treaty Calendar 1648-1995*, published by Nijhoff in April of 1998. His previous training as a bibliographer at the New York Public Library caused him to produce the first *Canadian Bibliography of International Law* published by the University of Toronto Press in 1984. In 1980, he initiated the *Marine Affairs Bibliography*, a current comprehensive index of marine law and policy literature, co-edited now with the University of Virginia Law Library, where it is published. Professor Wiktor is also an associate of the Oceans Institute of Canada.

Douglas M. Johnston

M.A. St. Andrews University
LL.B. St. Andrews University
M.C.L. McGill University
LL.M. Yale University
J.S.D. Yale University

Professor Johnston, a Professor Emeritus at the University of Victoria, was the founding Director of MELP, co-founder of Dalhousie's Oceans Studies Programme (DOSP) and the Southeast Asian Programme in Ocean Law, Policy and Management (SEAPOL). Professor Johnston was formerly North American governor of the International Council on Environmental Law and a member of the Board of the Law of the Sea Institute (LSI). He is author or editor of numerous works in the field of international law and policy, with special emphasis on fisheries, marine pollution, ocean boundary-making and treaty-making. Between 1987 and 1995, he held the Chair in Asia-Pacific Legal Relations at the University of Victoria. After his retirement from the University of Victoria, he held teaching and administrative positions at the National University of Singapore before his return to Canada in 1999. Currently, he is active as Programme Coordinator of the Maritime Awards Society of Canada (MASC), and he continues as Programme Director of SEAPOL.

III. Part-time Faculty

Howard M. Epstein

B.A. Carleton University
LL.B. Dalhousie University

Howard Epstein has been directly involved in the practice, teaching and political process of both environmental and municipal law. In his private law practice, he has represented clients challenging planning decisions before appeal tribunals and in the courts. In 1994 he was elected to Halifax City Council and then in 1996 to the Halifax Regional Council after amalgamation. In 1998 he was elected MLA for Halifax Chebucto and serves as Finance Critic for the opposition. His experience has involved many years of volunteer work for the Ecology Action Centre, Nova Scotia's main citizens' environmental advocacy organization, as well as a term as its Executive Director. He has appeared on its behalf in environmental assessments and before regulatory tribunals. He has been a member of the Board of Directors of Greenpeace Canada. He taught Environmental Law at Acadia University (1995, 96, 97) in addition to Land Use Planning within MELP at Dalhousie University.

David S. MacDougall

B.Sc. Mount Allison University
LL.B. Dalhousie University
M.B.A. Dalhousie University
LL.M. Reading University, England

David MacDougall practices corporate/commercial and natural resources law in Halifax, Nova Scotia and St. John's, Newfoundland with the prominent regional firm of McInnes Cooper & Robertson. Previously, he taught at the Centre for Petroleum and Mineral Law and Policy, University of Dundee, Scotland, practiced law in Toronto, Ontario, and worked as an exploration geologist in Nova Scotia. Mr. MacDougall is the Canadian topic editor of the *Utilities Law Review*, current survey editor for the Journal of Energy and Natural Resource Law and the lead editor of *European Community Energy Law: Selected Topics*. Mr. MacDougall has published numerous articles on various aspects of the energy and natural resource sectors and is particularly interested in the development of the East Coast offshore. He currently represents both industry participants and governmental regulators active in the offshore area, and in respect of regulatory matters regarding gas and electricity developments in Atlantic Canada.

A. William Moreira

B.A. Saint Mary's University
LL.B. Dalhousie University

Will Moreira is a partner in the Halifax office of Stewart McKelvey Stirling Scales. He has practiced for more than 20 years in Admiralty and commercial litigation, public law litigation and energy regulatory law, representing industry, government and regulators' interests in the marine transportation, fishing and petroleum industries throughout Atlantic Canada, and appearing before all levels

of court in Nova Scotia, the Federal Court of Canada, the Supreme Court of Canada, the National Energy Board and the Nova Scotia Utilities and Review Board. He has written and presented papers on a variety of subjects at industry and CLE seminars in Canada and the United States, and at judicial education seminars of the Federal Court. Will is vice-president of the Canadian Maritime Law Association, former Chair of the Canadian Bar Association's national maritime law section, a titulary member of Comité Maritime International, and Chair of the Maritime and Energy Law Committee of the International Association of Defense Counsel. He teaches Fisheries Law in MELP and is past Chair of the Board of the Mission to Seafarers in Halifax.

Van Penick

LL.B. Dalhousie University
A.B. Princeton University

Van Penick is a partner in the Atlantic Canada law firm of McInnes Cooper and chair of its Energy Group. He is a member of both the Nova Scotia (1977) and Newfoundland (1992) Bars. He has been involved in hydrocarbon development on eastern Canada's continental shelf ever since initial discoveries were announced in 1979. He drafted the Nova Scotia Petroleum Resources Act and assisted in evaluating Nova Scotia's claim to the offshore area. He has acted for PanCanadian Petroleum Limited, the operator of the Cohasset-Panuke oil field, for the Province of Nova Scotia in its disposition of the Crown corporation Nova Scotia Resources Limited, for Hunt Oil in connection with its interests off the west coast of Newfoundland, and for both the Canada-Nova Scotia and the Canada-Newfoundland Offshore Petroleum Boards. He acted for several Nova Scotian large industrial consumers of power in the environmental assessment hearings into the Sable Gas project and for the Province of Nova Scotia in connection with the preparation of regulations under the Gas Distribution Act. Mr. Penick is a director of the Canadian Petroleum Law Foundation and has published articles about offshore resources rights, security interests in the offshore area, labour relations offshore Newfoundland, administering rights offshore British Columbia and the regulatory process for approving offshore projects, and he has been involved in MELP since 1982 in the teaching of Oil and Gas Law at Dalhousie University Law School.

Alan Ruffman

B.Sc. (hons.)University of Toronto
M.Sc. Dalhousie University
P.Geo.

Alan Ruffman is a marine geologist and geophysicist who has mapped the offshore of eastern Canada for some 30 years. He is President of the consulting firm Geomarine Associates Ltd. in Halifax. He is not a lawyer, and he never got closer than 46 votes to being elected as a County Councilor in two tries. His consolation prize was to be appointed as a member of the Halifax County Planning Advisory Committee for two years; he also served as the Chair and Co-Chair of the District 5 (Chebucto Peninsula) Detailed Area Planning Committee that developed the first planning strategy for the area, as well as the accompanying zoning by-law, over about a 3 ½ year period. He has taken six

appeals to the Utility and Review Board, or to its predecessors; he lost his first appeal but won the war, won his next three on the Halifax waterfront, and has lost two, one of which he had the audacity to appeal to the Nova Scotia Court of Appeal; he lost. In the course of these appeals, he had precipitated three legislative amendments to Provincial or Municipal statutes.

His community involvement over 30 years has regularly touched on planning issues, whether it concerned the long, long overdue Halifax Harbour Cleanup, where he served on the Fournier Task Force, the Harbour Solutions Task Force, and coordinated the Metro Coalition for Harbour Cleanup, Inc. wherein they proposed a mega project that eventually died of its own weight, or whether it has concerned the use of Nova Scotia's wilderness areas or its coastline areas. He is a charter member of the Ecology Action Centre. He has co-represented the Ecology Action Centre during the Environmental Assessment of the Sable Island offshore gas project, and the onshore pipeline to the US across the maritime provinces. He is an Honourary Research Associate at Dalhousie University's Department of Earth Sciences, and is a registered Professional Geoscientist (P.Geo.). He has participated with Howard Epstein in the Land Use Planning course within MELP at Dalhousie Law School for four years now.

Gilbert R. Winham
Department of Political Science

A.B., Bowdoin College, 1959
Diploma in International Law, University of Manchester, England, 1965
Ph.D., University of North Carolina at Chapel Hill, 1968
Second language: French (working knowledge)

Gilbert Winham is the Eric Dennis Memorial Professor of Government and Political Science. His current research interests include Theories of International Relations (esp. International Political Economy); American Foreign Policy; Diplomacy and Negotiation; and International Trade Law.

Recent Publications

- "The Role of NAFTA Dispute Settlement in the Management of Canadian, Mexican and U.S. Trade and Investment Relations" (with G. Vega), Ohio Northern University Law Review, Vol. 28:3 (2002).
- "The Performance of the WTO Since 1995" Transactions of the Royal Society of Canada, Vol. 11, Series 6 (2001).
- "The World Trade Organization: Institution-Building in the Multilateral Trade System", The World Economy, Vol. 21:3 (May 1998).
- The Halifax G-7 Summit: Issues on the Table, (co-edited with Sylvia Ostry), Halifax: Dalhousie University, Centre for Foreign Policy Studies, 1995.
- The Evolution of International Trade Agreements, Toronto: University of Toronto Press, 1992.
- International Trade and the Tokyo Round Negotiation, Princeton: Princeton University Press, 1986.

3.4　ダルハウジー大学
海洋問題プログラム

:「海洋の開発および管理に関する今日の問題」コース概要

ダルハウジー大学 Marine Affairs Program

海洋管理および開発に関する今日の問題

(2003-2004 年秋学期)

【担当教官】Bruce G. Hatcher, Lucia M. Fanning, Douglas Johnston

【クラスの課題】

① ハリファックスの港湾利用に関するグループ研究
沿岸および海岸利用に関するマッピング、Complementarities およびコンフリクトの特定（明確化）を、小グループで行う。（9/26 に成果を報告）

② 統合的な海洋政策に関するペーパー作成
グループ毎に、統合的な海洋政策を発展させ、ペーパーを書きクラスで報告する。（11 月 14 日にペーパー提出および報告）

③ コンフリクト管理に関するシミュレーション・エクソサイズ
沿岸の開発および管理に関する仮設のシナリオに基づき、ロール・プレイイング交渉エクソサイズを行う。（Winter Term へ継続）

【クラス・スケジュールおよびリーディング】

日付	トピックおよび課題	担当教官
9/5	**海洋問題入門** ・ コースの目的、方法論、評価について ・ 海洋問題の性質、海洋管理とは何か、海洋管理者の輪郭	Hatcher
9/12	**海洋問題への統合的アプローチの明確化** - ストックホルム宣言（1972 年）＆リオ宣言（1992 年） - アジェンダ 21 第 17 章（1992 年） - 持続可能な開発に関するヨハネスブルグ宣言（2002 年） - 持続可能な開発に関する世界サミット：Plan of Implementation (para. 29-34) - *The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management*, 6(3) ECOLOGICAL APPLICATIONS 665-691 (1996). - R. Costaza et al, *Principles for Sustainable Governance of the Oceans*, 281 SCIENCE 198-199 (1998). - C.L. Mitchell, *Sustainable Oceans Development: The Canadian Approach*, 22 MARINE POLICY 393-412 (1998). - GEORGES BANK REVIEW PANEL REPORT 7-10 (Natural Resources Canada & Nova Scotia Petroleum Directorate, 1999). - D.G. Shaw et al., *The Role of Environmental Scientists in Public Policy: A Lesson from Georges Bank*, 40 (9) MARINE POLLUTION BULLETIN 727-730 (2000).	Fanning

9/19	**統合の実施** - A. Chircop, *Teaching Integrated Coastal Management: Lessons from the Learning Arena*, 43 OCEANS & COASTAL MANAGEMENT 343-359 (2000). - C.M. Duarte & O. Piro, *Interdisciplinary Challenges and Bottlenecks in the Aquatic Species*, 10 LIMNOLOGY & OCEANOGRAPHY BULLETIN, 57-61 (2000). - E.L. Miles, *Concept, Approaches, and Applications in Sea Use Planning and Management*, 20 OCEAN DEVELOPMENT AND INTERNATIONAL LAW 213-238 (1989). - M. Nissani, *Ten Cheers for Interdisciplinarity: The Case for Interdisciplinary Knowledge and Research*, 34 (2) SOCIAL SCIENCE JOURNAL 201-216 (1997). - A. VALLEGA, SUSTAINABLE OCEAN GOVERNANCE: A GEOGRAPHICAL PERSPECTIVE (2001). - A.I. Weinstein, *Interdisciplinary Research: What Makes it "Interdisciplinary?"*, 5 OCEANOGRAPHY 131-132 (1992). **港湾見学および港湾利用に関する課題のためのリーディング** - Mann K, *The Living Estuary*, *in* PRESERVING THE ENVIRONMENT OF HALIFAX HARBOUR 9-15 (A. Ducharme ed., 2000). - G.B.J. Fader, *Halifax Harbour: Marine Geology, Anthropogenic Characteristics and Management*, *in* PRESERVING THE ENVIRONMENT OF HALIFAX HARBOUR 28-35 (A. Ducharme ed., 2000). - A.I. Hatcher & B.J. Hatcher, *The Benthic Habitats of the Halifax Harbour Ecosystem: What Has been Lost?*, *in* PRESERVING THE ENVIRONMENT OF HALIFAX HARBOUR (A. Ducharme & G. Turner eds, 2001).	
9/26	**統合の実施（続）** **＊港湾見学および港湾利用に関する課題の成果報告**	
10/3	**統合の実施（続）** - L.M. Fanning, *The Co-Management Paradigm: Examining Criteria for Meaningful Public Involvement in Sustainable Marine Resource Management*, 14 OCEAN YEARBOOK 80-113 (2000). - B. Shindler & K.A. Cheek, *Integrating Citizens in Adaptive Management: A propositional Analysis*, 3(1) CONSERVATION ECOLOGY (1999), *available from* <www.consecol.org/vol3/iss1/art9>.	
10/10	**海洋レベルでの統合（国連海洋法条約の枠組み）** - 国連海洋法条約 - OSCAR SHACHTER, INTERNATIONAL LAW IN THEORY AND PRACTICE 274-299 (1991).	Douglas Johnston
10/17	**海洋法のグリーニング** - 国連海洋法条約（漁業および汚染コントロールに関する条文）、漁業管理関連の条約、環境関連の条約、ポート・ステート・コントロール MOUs - Agenda 21, Chapter 17 - ALEXANDRA KISS & DINAH SHELTON, INTERNATIONAL ENVIRONMENTAL LAW 168-202 (1991). - Christopher J. Carr & Harry N. Scheiber, *Dealing with a Resources Crisis: Regulatory Regime for Managing the World's Marine Fisheries*, 21 STANFORD ENVIRONMENTAL LAW JOURNAL 45 (1991). - LAKSHMAN GURUSWAMY ET AL., INTERNATIONAL ENVIRONMENTAL LAW AND WORLD ORDER: A PROBLEM-ORIENTED COURSEBOOK 542-579 (1994).	Douglas Johnston

10/24	**海洋管理のためのレジーム・ビルディングのアプローチ** - CHRISTINE CHINKIN, NORMATIVE DEVELOPMENT IN THE INTERNATIONAL LEGAL SYSTEM, IN COMMITMENT AND COMPLIANCE: THE ROLE OF NON-BINDING NORMS IN THE INTERNATIONAL LEGAL SYSTEM 21-42 (Shelton ed., 2000). - EDWARD MILES ET AL., ENVIRONMENTAL REGIME EFFECTIVENESS: CONFRONTING THEORY WITH EVIDENCE 452-464 (2002). - Douglas M. Johnston, *Southeast Asia: Lessons Learned*, *in* MARITIME REGIME BUILDING: LESSONS LEARNED AND THEIR RELEVANCE FOR NORTHEAST ASIA 73-82 (Valencia ed., 2001).	Douglas Johnston
10/31	**履行と遵守の問題** - THE LAW OF THE SEA: PRIORITIES AND RESPONSIBILITIES IN IMPLEMENTING THE CONVENTION (World Conservation Union, 1995).	Douglas Johnston
11/7	**2003 年-海洋法の再考** - DOUGLAS M. JOHNSTON, REVISITING THE LAW OF THE SEA (2003). - Douglas M. Johnston, *The Future of the Arctic Ocean: competing Domain of International Public Policy*, 17 OCEAN YEARBOOK 596 (2003).	Douglas Johnston
11/14	**統合海洋管理：ジレンマと機会** - Jens Sorensen, *National and International Efforts at Integrated Coastal Management: Definitions, Achievements and Lessons*, 25 COASTAL MANAGEMENT 3 (1999). - Judith Kildow, *The Roots and Context of the Coastal Zone Movement*, 25 COASTAL MANAGEMENT 231 (1997). - Lawrence Juda & Timothy Hennessey, *Governance Profiles and the Management of the Uses of Large Marine Ecosystems*, 32 OCEAN DEVELOPMENT AND INTERNATIONAL LAW 43 (2001). - DOUGLAS M. JOHNSTON, THE CHALLENGE OF INTERNATIONAL OCEAN GOVERNANCE: INSTITUTIONAL, ETHICAL AND CONCEPTUAL DILEMMAS (In Press now). **＊統合的な海洋政策に関するペーパー提出**	Douglas Johnston
11/21	**沿岸および海洋環境におけるコンフリクト** - CONFLICT MANAGEMENT AND CONSENSUS BUILDING FOR INTEGRATED COASTAL MANAGEMENT IN LATIN AMERICA AND THE CARIBBEAN (Frank Rijsberman ed., Delft Netherlands 1998). - Daniel Suman, *Case Studies of Coastal Conflicts: Comparative US/European Experiences*, 44 OCEAN & COASTAL MANAGEMENT 1-13 (2001). **＊シミュレーション・エクソサイズ課題配布** **シミュレーション・エクソサイズ&ケース・スタディーのためのリーディング** - Ann Dwire, *Paradise under Siege: A Case Study of Aquacultural Development in Nova Scotia, in* AQUACULTURAL DEVELOPMENT: SOCIAL DIMENSION OF AN EMERGING INDUSTRY (Conner Bailey et al. eds.) - Paola Salmona & Debora Verardi, *The Marine Protected Area of Portofino, Italy: a Difficult Balance*, 44 OCEAN & COASTAL MANAGEMENT 39-60 (2001). - Juan C.R. Mateos, *The Case of the Aznalcollar Mine and its Impacts on Coastal Activities in Southern Spain*, 44 OCEAN & COASTAL MANAGEMENt 105-118 (2001).	
11/22	**シミュレーション・エクソサイズ** - Easty Typicus Management Board 面会	
11/28	**シミュレーション・エクソサイズの報告およびコース総括**	

海洋管理および開発に関する今日の問題

(2003-2004 年冬学期)

【担当教官】　Richard Apostle

【コースの構成】

秋学期に学んだ統合的な海洋管理レジームの実施に関する様々な問題点を、統合的な海洋管理プロセスを強調した哲学的・社会学的問題の検討を行い、学際的ストラテジーを用いて、発展させる。

① 海洋資源の保護、開発、利用に関する社会科学的問題検討（1/16～1/13）
② 様々な学術分野から 6 人のゲストスピーカーを迎える
③ 統合的沿岸域管理に関する、社会経済的な事例の役割に注目し、グループ研究を行う。（報告は 3/23 および 30）

【コース・スケジュールおよびリーディング】

日付	内容
1/6	**正義、正当性、所有権と海洋管理レジームの類型** - DANIEL BROMLEY, PROPERTY RIGHTS AND PROPERTY REGIMES IN NATURAL RESOURCE POLICY (1991). - *Chapter 13: Fishery Conflicts and the Co-management Approach, in* ANTHONY CHARLES, SUSTAINABLE FISHERY SYSTEMS (2001).
1/13	**コンフリクトの性質、コンフリクト解決のためのアプローチ、社会科学研究の方法論** - GEORGE SIMMEL, CONFLICTS AS SOCIATION - *Conflict- the Unifier, in* LEWIS COSER, THE FUNCTIONS IN SOCIAL CONFLICTS (1956). - *Part II: Strategies of Social Research, in* CHARLES RAGIN, CONSTRUCTING SOCIAL RESEARCH: THE UNITY AND DIVERSITY OF METHOD (1994).
1/20	**水産養殖、漁業、資源管理の統合** Guest Speaker: John Phyne (St. Francis Xavier 大学社会学・文化人類学部)
1/27	**沿岸ツーリズム、開発および管理の問題** Guest Speaker: Ann Marie Powers (Acadia 大学社会学部)
2/3	**陸上における活動と陸上起因汚染の管理** Guest Speaker: Peter Wells (Environment Canada)
2/10	中間試験
2/24	**統合沿岸域管理および Eastern Scotia Shelf Integrated Management (ESSIM) Forum**
3/2	**エコシステムに基づく漁業管理** Guest Speaker: Bob O'boyle (Department of Fisheries and Oceans)
3/9	**海上輸送** Guest Speaker: Richard Hodgson (MAP)
3/16	**海洋エネルギー** Guest Speaker: Carey Ryan (Atlantic Canada Petroleum Institute)
3/23	**社会経済事例研究プロジェクトのプレゼンテーションおよびディスカッション**
3/30	同上

MARA 5001: PART I (FALL TERM) 2003-2004
Contemporary Issues in Ocean Management and Development

PRINCIPLES OF INTEGRATED POLICY-MAKING, PLANNING AND MANAGEMENT FOR COASTS AND OCEANS

Schedule of Classes: Thursdays, 08.30-11.30
Venue: Rm 308, Weldon Law Building

COURSE DESCRIPTION AND OBJECTIVES

Contemporary Issues in Ocean Management and Development is a two-term required course (fall, winter terms) for the Master of Marine Management (MMM) degree. This course provides an introduction to marine affairs and, together with MARA 5003: Marine Science and Technology, sets out the intellectual framework for the next 12 months. The major issues underlying integrated coastal and ocean development and management, including selected major ocean sectors and marine regions, will be surveyed and assessed. At the end of the course, students will have a basic understanding of coastal and marine policy, issues and processes, and major planning and management concerns.

The course is organized in two parts.
Part I: Principles of Integrated Policy-Making, Planning and Management for Coasts and Oceans is co-taught by Drs. Bruce Hatcher, Lucia Fanning and Douglas Johnston.
Part II: Coastal and Ocean Management: Sectoral and Integrative Concerns is coordinated by Dr. Richard Apostle. As a central required course, the curriculum of MARA 5001 is intensive during both academic terms.

Specifically, the objectives of this course are the following:
- to define the multi-and interdisciplinary framework for coastal and ocean development and management;
- to provide a basic foundation in marine policy-making;
- to develop an understanding of the integrated approach to planning and management for coasts and oceans;
- to facilitate appreciation of the major issues confronting coastal and ocean managers;
- to enable students to refine analytical, organizational, communication, team-building and other skills;
- to enable students to explore issue areas of interest; and
- to set out a broad context for the Graduate Project and choice of elective classes for completion of MMM requirements.

METHODOLOGY

The course is primarily interdisciplinary in Part I, and multi- and interdisciplinary in Part II. Interdisciplinarity is proposed as a blending of perspectives and methodologies from different disciplines. To enable the development of an interdisciplinary perspective, Part I employs a range of methods:
- the emphasis is on problems and the field of marine affairs, not on discipline-based knowledge;
- seminar-style classes, with participatory approaches (students are encouraged to contribute their perspectives);
- small-group work in class (not for assessment) and outside class or in the field (assessed); group work is designed in a way to draw on different bodies of knowledge;
- use of role-playing simulation exercise.

COURSE REQUIREMENTS FOR PART I

The course requirements are set out as follows in order to enable orderly course progression and clarify expectations.

- Students will be expected to attend all seminars and participate actively throughout the course. Non-attendance of a class may result in a substantial knowledge-gap for the student concerned. Every effort should be made to turn up for class punctually. Latecomers may disrupt the seminar under way.

- Regular reading of weekly reading assignments, in advance of scheduled seminars. At the graduate level reading materials are assigned either for actual class discussion or to provide a background for students to enable them to better participate in class discussion.

- Active participation in class discussions. Given the very substantial experience and seniority many of the students will bring to the classroom, the learning environment tends to be collegial and highly stimulating year after year. Students are asked to respect the diversity in the seminar room and to share airtime with their colleagues.

- Active participation in all group assignments. Team work is essential for interdisciplinary work in the marine affairs professions. Accordingly, this course has a heavy emphasis on group assignments and every student is required to participate actively in group work. Grouped students will bring individual strengths and consequently collegiality and flexibility are very important. Please bear in mind that the course instructor may mark down non-participating students. It is the students' responsibility to inform a professor of any difficulties encountered in group work.

- Complete all class and field requirements by the stated deadlines. Please bear in mind that late submission of written assignments may be marked down.

- Although not technically a course requirement, course evaluation forms will be distributed at the end of each term. The professors will also request student cooperation in the evaluation of individual seminars. Students are encouraged to provide feedback to the professors. This enables the professors to better respond to student learning needs, and improve course design and delivery for subsequent years. All completed evaluation forms are treated confidentially.

- Students are enrolled in the Faculty of Graduate Studies (FGS) and are expected to be conversant with the academic and administrative rules of both MAP and FGS. Please refer to the MAP handbook and the FGS calendar.

ASSESSMENT

Students have to complete all academic requirements during the term in which they are assigned (i.e. fall term assignments may not be handed in during the winter term, nor winter term assignments during the summer term. A provisional grade for the fall term is issued at the end of term following approval by the MAP Programme Management Committee. At the end of the winter term, a final grade will be issued on the basis of the cumulative grades received for all fall and winter assessment components, again following MAP-PMC approval. Each term accounts for 50% of the final grade.

The fall term components will be assessed individually in both numerical and letter grades as follows:
Halifax Harbour Uses: The first exercise is an intensive field exercise over a period of one week. Students will work in teams in a selected area of Halifax Harbour with the task of mapping coastal and inshore uses, and identifying complementarities and conflicts. This exercise accounts for 15% of the overall course grade. Students will need to organize themselves and assign internal responsibilities, including reporting in class. Completion of the Harbour Survey for the Halifax Regional Planning Process forms part of the group project outputs. Assessment will be on a small-group basis (grade issued for the whole group based on the assessment of the knowledge base, presentation, analytical and team skills). More detailed instructions and explanations will be issued in class.

Integrated Ocean Policy Paper: This is a small group exercise in which students will develop an integrated national ocean policy, produce a written policy statement and present it in class. The exercise accounts for 20% of the overall course grade and will require teamwork over a two-week period. The knowledge base, presentation and team skills will be assessed. More detailed instructions and explanations will be issued in class.

Conflict Management Simulation Exercise: The third exercise is a conflict management simulation which ends the fall term. It will consist of a role-playing negotiating exercise based on a fictitious coastal development and management scenario. Most of the exercise will by played over two seminar sessions. Every student will be assigned a role to play. Detailed instructions will be issued when the exercise is distributed. Students will be required to write a five-page report providing an assessment of the process and outputs of the exercise. This exercise accounts for 15% of the overall course grade. Assessment will be on an individual basis (knowledge base, communication, negotiation and analytical skills assessed).

Details of the winter term components for assessment will be provided at the start of term.

Graduate students are assessed according to the Faculty of Graduate Studies letter + numerical grade scale. Please refer to the FGS calendar. Explanatory notes will accompany grades issued in this course. Students are encouraged to discuss their academic progress with the professors.

COURSE MATERIALS

Course materials will consist of weekly handouts (readings and exercises), which will be placed in student mailboxes a week in advance of each seminar. There will be no reading materials assigned for the first class of term. A photocopying charge will be announced and levied by Ms. Becky Field, the MAP Administrator. Students are expected to consult current literature on a regular basis. In particular, students should periodically check the following journals:
Coastal Managemen, Marine Policy, Ocean Development and International Law,
Ocean and Coastal Management Journal, Ocean Yearbook, Coastal Zone Canada Proceedings,
Coastal Zone USA Proceeding, Coastal Society Proceedings.

There are also useful materials in the MAP Library, in particular newsletters on a wide range of marine affairs subjects which are not normally available in the main university libraries. Also, students will find that accessing the world wide web on a regular basis can further enhance learning in the program.

CLASS SCHEDULE

September 5 Introduction to Marine Affairs

- Ojectives, methodology and evaluation of class
- Nature of marine affairs as a field of knowledge
- What is "management" in marine affairs?
- Profile of the coastal/marine manager (knowledge, skills, attitudes) (assignment of unassessed small group exercise)

September 12 Defining the Integrated Approach in Marine Affairs

- Principles of sustainable development in a coastal/marine environment context
- Integration as a central unifying principle
- Identification and Context of the problem (problematique and issues)
- Context of problem -- geographical, ecosystemic, socio-economic, political, cultural, historical, legal (two different case studies will be explored in detailed)

September 19 Implementing Integration

- Integrated knowledge base
- Disciplinarity and interaction among disciplines (multi/inter/cross)
- Panel debate: social vs. natural origins of interdisciplinarity
- Human uses of coastal and marine areas: analytical approaches
  - The usefulness of taxonomy
  - Ways of categorizing coastal and ocean uses
  - The users
  - Interactions between uses
  - Using the coastal use/user interaction matrix
- **Assignment of Phase I of Harbour Exercise**
- Halifax Harbour tour (1300h)

September 26 Implementing Integration (continued)

- Presentation of harbour exercise reports
- Analysis of coastal use complexity

October 3 Implementing Integration (continued)

- Process questions -- diversity of actors, values and interests
- The inclusive approach to participation

October 10 Integration at the ocean level: The UNCLOS III Framework

- The Process (1967-1982): scale, interests, issues
- The Outcome:
  - extended coastal state jurisdiction (Parts II, IV, V, VI, and VII)
  - supranational regulation of deep ocean floor (Part XI and 1994 Implementation Agreement)
  - cooperative responsibilities (Parts III, VII, IX, X, XII, XIII, and XIV)
  - dispute settlement (Part XV)
- Questions and Clarifications
- Discussion Issues: Ratification, Compliance, Implementation, Dispute settlement

October 17 — The Greening of the Law of the Sea

- The Environmental Provisions of UNCLOS III Convention
  - fisheries (Parts V and VII)
  - pollution control (Part XII)
- Subsequent Fishery Management Treaties (and other instruments)
- Subsequent Environmental Treaties (and other instruments)
- Port State Control MOUs
- Questions and Clarifications
- Discussion Issues:
  - Status of international environmental law principles (e.g. sustainability, precautionary approach/principle, integrated ocean management)
  - Utility of "civil society" initiatives
  - Environmental ethics versus economic benefits
  - Climate change
  - Biodiversity conservation
- Assignment of Integrated Ocean Policy Paper

October 24 — The Regime-Building Approach to Ocean Management

- The UNEP Regional Seas Programme
- Other Cooperative Regimes
- Sub-regional Initiatives
- Questions and Clarifications
- Discussion Issues:
  - Role of non-binding norms and informal arrangements
  - Problem of evaluation
  - International development assistance strategy

October 31 — Problems of Implementation and Compliance

- National Legislation
  - repeal or amendment
  - constitutional blockage
  - special federal complications
- Duty to Cooperate/Negotiate
- Roles and Limitations of International Organizations
  - FAO, IMO, UNEP, ISA
  - Commission on the Limits of the Continental Shelf
  - Regional organizations (e.g. ASEAN, South Pacific Forum, CARICOM, OAS, OAU) c.f. "track two" (e.g. SEAPOL)
- Questions and Clarifications
- Discussion Issues:
  - Foreign policy and national politics: fishing, environment, boundary claims
  - Vague provisions: straddling stocks, boundaries
  - Rigorous provisions: baselines
  - Ambitious provisions: transfer of technology, land-based marine-pollution

November 7 **Revisiting the Law of the Sea in 2003**

- New Uses of the Ocean
  - post-UNCLOS discoveries
  - bioprospecting
  - ocean energy technologies
- Security Concerns
- The Arctic Ocean
- Vessel Concerns
  - alien species
  - tanker transit (e.g. Prestige)
  - ship inspection (e.g. port state control)
- Questions and Clarifications
- Discussion Issues:
  - Freedom of the high seas
  - Is the Arctic Ocean a special case?

November 14 **Integrated Ocean Management: Dilemmas and Opportunities**

- The Concept and its Origins, Practices, Results
- Questions and Explanations
- Discussion Issues:
  - Coastal zone management
  - Community-based ocean management
  - Large marine ecosystem management
  - The case for sectoral approaches
- **Delivery of Integrated Ocean Policy Paper**

November 21 **Conflicts in the Coastal and Marine Environment**

- Types of conflicts to expect in the coastal and marine environment
- Negotiation and consensus-building
- Range of options in conflict management
- Living with intractable conflicts
- **Assignment of roles for the Simulation exercise**

November 22 **Simulation exercise in class**

- Meeting of the East Typicus Management Board

November 28 **Debriefing on the Simulation Exercise and Term Overview**

- Analysis of process of negotiations.
- Analysis of substance of negotiations.
- Overview of term

COURSE PROFESSORS (first term)

Bruce G. Hatcher, PhD, is Director of the Marine Affairs Programme and holds an academic appointment as Professor in the Department of Biology. In the MAP he teaches Marine Protected Areas. He is also affiliated with Canadian Fishery Consultants-CBCL Ltd., where he is their Principal Marine Ecologist. Dr. Hatcher has extensive international experience and is currently involved in research and development projects in the Maldives, SW Red Sea (Eritrea) and the Meso-American Barrier Reef System (Central America). Dr. Hatcher is an editor of the international journal: *Coral Reefs*.

Lucia M. Fanning, Ph.D. Lucia recently completed interdisciplinary doctoral research at Dalhousie, focusing on the influence of actors in policy networks and their ability to affect public policy decisions in the Maritimes Region coastal and ocean policy domain. One of decisions she has analyzed in detail for her thesis is the 1999 Georges Bank Moratorium decision. Lucia has a Master's in Marine Management from Dalhousie and BSc.(Hons) in Biochemistry from the University of Guelph. Prior to commencing her PhD studies, Lucia worked as an advisor to the Government of Belize on environmental and coastal zone management issues, including impacts arising from energy generation and multiple-user conflicts in the marine environment.

Douglas Johnston is currently Emeritus Professor of Law at the University of Victoria and Adjunct Professor at Dalhousie University, after a 30-year career in various Canadian, US and Singapore universities. Between 1972 and 1987 he founded the Marine Environmental Law programme (MELP) and was co-founder of DOSP at Dalhousie, organized various other initiatives such as The Northern Waters Project, and chaired the Graduate Studies Programme at Dal Law School during its early expansion and addition of the JSD. Since 1993 he has been active in developing programmes for the Maritime Awards Society of Canada (MASC), and is currently a member of its National Board of Directors. In 1980 Edgar Gold and he took the first steps that led to the founding of the Southeast Asian Programme in Ocean Law, Policy and Management (SEAPOL) and since then he has been continuously involved in the direction of that long-running project. Numerous publications in the field of ocean and environmental affairs include "The International Law of Fisheries", "The Theory and History of Ocean Boundary Making", "Canada and the New International Law of the Sea", and (with Mark J. Valencia) "Pacific Ocean Boundary Problems"; and of course numerous publications edited for SEAPOL. Recent works in the field of international law and international relations include: "Consent and Commitment in the World Community".

Marine Affairs Programme
Dalhousie University
Course Outline

MARA 5001 Part II (winter term)
Contemporary Issues in Ocean Management and Development:

Sectoral and Integrative Concerns
Tuesday: 10:05 - 12:55
Weldon Law Building 429

Instructor: Richard Apostle
Office: 3118 FASS
Office Hours: Wednesday
10:00 - 12:00
(Or by appointment)

Email: apostle@dal.ca

COURSE DESCRIPTION AND OBJECTIVES

In the Fall term of this course we covered major issues and challenges raised by the implementation of an integrated ocean management regime, while trying to sustain an interdisciplinary and global perspective. During the Winter term we will explore these issues using a *multidisciplinary* strategy, beginning with an examination of some philosophical and sociological problems that underlie the integrated ocean management process. Over the course of the term, six guest speakers coming from a wide range of academic disciplines will discuss the specific interests and concerns of important ocean-using sectors and 'stakeholders'. In the latter half of the term we will focus our attention on the role of socio-economic case materials in ICZM.. The Scottish Coastal Socio-Economic Scoping Study, produced to help in the development of Scottish national integrated coastal zone framework, and the Eastern Scotia Shelf Integrated Management (ESSIM) Forum, Canada's first attempt at an integrated ocean management plan, will be primary foci of interest. We will build case studies around the socio-economic aspects of the ESSIM plan.

The first two classes deal with basic social scientific issues related to the protection, development and use of marine resources. In the first class we will discuss what constitutes a just or fair ocean management regime, who really 'owns' the ocean resources and who has a 'right' to use them, and upon what bases a management regime might be constructed. In the second class we will take up the theme of conflict, considering the positive contributions that properly understood conflicts of interest can make to the integrated ocean management process. We will then discuss research methodologies that may be used to discover and define the nature and dimensions of conflicts that arise in the construction and implementation of ocean management policy. Following presentations by guest speakers in the next three classes there will be an in-class problem-solving exercise that will serve as the mid-term examination.

After the Reading Break we will turn our attention to the ESSIM and the Scottish Scoping Study. Students working in teams, will begin preparing for class presentations at the end of the term. There will be three more presentations by guest speakers, followed by presentation of socioeconomic projects during the last two classes.

Student evaluation is as follows:

Midterm test: 50%
Presentation and submission of the socio-economic case study project: 50%

Grading structure recommended by Faculty of Graduate Studies which we will follow is:

A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72

Class 1 – January 6

Justice, fairness, and property rights, and a typology of ocean management regimes. At the end of class I will ask you to write a paragraph on what you hope to gain from the MMM program in general and from this class in particular, and on your career aspirations. Your responses will influence the direction I take in the classes that follow.

Readings:
Daniel Bromley "Property Rights and Property Regimes in Natural Resource Policy"
Anthony Charles "Fishery Conflicts and the Co-management Approach"

Class 2 – January 13

The nature of conflict, approaches to conflict resolution, and social science research methodologies.

Readings:
Georg Simmel "Conflict as Sociation"
Lewis Coser "Conflict – the Unifier"
Charles Ragin "Strategies of Social Research"
Note: The Ragin reading consists of three chapters. Only the first sections of each chapter ("Introduction", "Contrasts", "Goals", and "Process") are required reading. The longer "Methods" sections are provided as supplementary information for those who are interested.

Class 3 – January 20

Integrating aquaculture, fisheries, and resource management.
Guest Speaker: John Phyne, Sociology and Anthropology, St. Francis Xavier University

Class 4 – January 27

Coastal tourism, development and management issues
Guest Speaker: Ann Marie Powers, Sociology, Acadia University

Class 5 – February 3

Management of land-based activities/sources of pollution
Guest Speaker: Peter Wells, Environment Canada

Class 6 – February 10

Midterm: in-class problem-solving test. A number of management/user conflict scenarios will be offered. The student will choose three of the suggested scenarios, identify stakeholders and their conflicts, and recall historic precedents. Scenarios will be derived from presentations by the guest speakers.

Class 7 – February 24

ICZM and the ESSIM Forum
Guest Speaker: Scott Coffen-Smout and Glen Herbert, Fisheries and Oceans Canada, Maritimes Region

Class 8 – March 2

Ecosystem-based management of fisheries.
Guest Speaker: Bob O'Boyle, Department of Fisheries and Oceans

Class 9 – March 9

Marine transport
Guest Speaker: Richard Hodgson, Marine Affairs Programme

Class 10 – March 16

Offshore energy.
Guest Speaker: Carey Ryan, Atlantic Canada Petroleum Institute

Class 11 – March 23

Class presentations of socioeconomic case study projects. Discussion will follow.

Class 12 – March 30

Class presentations of the remaining case study projects.

平成１５年度
「世界の海洋管理教育に関する調査研究」事業海外調査報告書
北米の大学における海洋管理教育の現状

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