

Attachment 4. Future Work Plan of the ISC4 Swordfish Working Group

| Objective | Research Project | Collaborators |
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| 1. Conduct biological and oceanographic research in support of improved stock assessment | AGE AND GROWTH: a) Continue to evaluate regional differences in age and growth b) Expand collection of data on size- and sex-composition of catch | Humphreys, Sun Skillman, Sun, Yokawa |
| | MOVEMENT: a) Estimate patterns of movement and growth rates using conventional tags b) Determine patterns of movement and behavior using archival and PSAT tags | Holt, Yokawa, NTU Musyl, Yokawa, Saito, NTU |
| | STOCK STRUCTURE: a) Set priorities for reanalysis of genetics samples and collect samples of young swordfish from specific areas b) Assess the use of otolith elemental composition to uniquely identify geographically separate nursery areas in juvenile swordfish | Hinton, Yokawa, Sun, Humphreys, Chow Humphreys, Yokawa |

Attachment 4. Future Work Plan of the ISC4 Swordfish Working Group (continued).

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| 2. Develop and apply stock assessment models | a) Develop and apply integrated, spatially-explicit models of stock and fishery dynamics incorporating effects of environment, gear, fishing practices, fleet dynamics, and other factors. b) Develop sex-specific age-structured model | Kleiber, Bigelow, Yokawa, Hinton |
| 3. Develop, test, and apply basin-scale swordfish simulation model | Use simulator to help develop and evaluate stock assessment models | Sun, Yokawa, Conser, Kleiber |
| 4. Develop comprehensive swordfish fishery database | a) Construct abundance indices for major fisheries in the North Pacific b) Incorporate swordfish statistics for all fisheries catching swordfish in the North Pacific but not yet included in the database. | Kleiber, Bigelow, Yokawa, Hinton Hinton, Kleiber, Yokawa, Sun ISC Database Administrator |