

From: [Promise International](#)
To: [FGC](#)
Cc: Hieb_Kathy@Wildlife
Subject: Chinese Mitten Crab Control
Date: Friday, December 20, 2013 9:09:51 AM
Attachments: [Proposal.MittenCrab.docx](#)

To whom it may concern;

We, Promise International Inc., are proposing a program for the management of chinese mitten crab population. We hope this will be helpful for the efforts on controlling mitten crabs.

Sincerely,
Yoohwan Kim
President

PROPOSAL ON

IMPROVING THE MANAGEMENT OF CHINESE MITTEN CRAB

Promise International, Inc.

8383 Wilshire Blvd. Suite 510, Beverly Hills, CA 90211-2406
Phone: 702) 263-7232, E-mail: promiseinternational3@gmail.com

Yoohwan Kim, President

Executive Summary

The overpopulated Chinese mitten crabs in the San Francisco Bay Delta system are causing a great environmental hazard and incurring a substantial removal cost to the state of California. Promise International, Inc. is proposing a plan to remove more than 5 million crabs a year in an environment-friendly manner and allow the state to save substantial cost. The removed mitten crabs from the environment will be slaughtered either by composting or freezing. The crabs slaughtered by composting will be recycled into agricultural fertilizer while the crabs slaughtered by freezing will be exported. This approach has several viable features that lead to an improved process of population control of mitten crabs over the current process. This plan is expected to be financially beneficial not only to Promise International but also to CDFW.

A. BACKGROUND

A1. Chinese Mitten Crab is Detrimental and Harmful

It has been reported that the Chinese mitten crabs have proliferated and widely spread throughout the San Francisco Bay, Sacramento, and San Joaquin Delta system since its arrival in the late 1980s or the early 1990s¹. They're now classified as "invasive", "injurious", "restricted", and "detrimental" by the governmental entities such as USFW and CDFW as they are causing a serious economic loss in the fishing industry and leaving negative impacts on the ecosystem. Mitten crabs are known to have very few natural predators that they are capable of reducing aquatic resources considerably. If no measures are taken in removing the mitten crabs, evidences suggest that their population will continue to increase and further expand its habitats to un-infested fresh water.

A2. Control of Mitten Crab Is Required

¹National Management Plan For the Genus Eriocheir, 2003

PROPOSAL ON

IMPROVING THE MANAGEMENT OF CHINESE MITTEN CRAB

Promise International, Inc.

8383 Wilshire Blvd. Suite 510, Beverly Hills, CA 90211-2406
Phone: 702) 263-7232, E-mail: promiseinternational3@gmail.com

Yoohwan Kim, President

Executive Summary

The overpopulated Chinese mitten crabs in the San Francisco Bay Delta system are causing a great environmental hazard and incurring a substantial removal cost to the state of California. Promise International, Inc. is proposing a plan to remove more than 5 million crabs a year in an environment-friendly manner and allow the state to save substantial cost. The removed mitten crabs from the environment will be slaughtered either by composting or freezing. The crabs slaughtered by composting will be recycled into agricultural fertilizer while the crabs slaughtered by freezing will be exported. This approach has several viable features that lead to an improved process of population control of mitten crabs over the current process. This plan is expected to be financially beneficial not only to Promise International but also to CDFW.

A. BACKGROUND

A1. Chinese Mitten Crab is Detrimental and Harmful

It has been reported that the Chinese mitten crabs have proliferated and widely spread throughout the San Francisco Bay, Sacramento, and San Joaquin Delta system since its arrival in the late 1980s or the early 1990s¹. They're now classified as "invasive", "injurious", "restricted", and "detrimental" by the governmental entities such as USFW and CDFW as they are causing a serious economic loss in the fishing industry and leaving negative impacts on the ecosystem. Mitten crabs are known to have very few natural predators that they are capable of reducing aquatic resources considerably. If no measures are taken in removing the mitten crabs, evidences suggest that their population will continue to increase and further expand its habitats to un-infested fresh water.

A2. Control of Mitten Crab Is Required

¹National Management Plan For the Genus Eriocheir, 2003

There is a positive side on the mitten crabs since they can serve as a possible food source for humans and animals in the U.S. However, it is not likely to be done due to possible accumulation of contaminants and potential transmission of the Asian lung fluke. Thus, the activities related to mitten crab control, in tandem with laws and regulations, are mainly focused on the prevention of its negative impacts. There are organizations, plans, and programs for this purpose but additional efforts and budgets are required to meet this goal, as the mitten crabs are ubiquitous.

A3. Response to the Mitten Crab

To reduce the negative impacts of the existing population of mitten crabs, various alternatives have been suggested, especially with Tracy Fish Collection Facility case (federal fish salvage facility). Alternatives have been developed and evaluated in anticipation of further detrimental impacts by mitten crabs upon fish salvage operation at the TFCF. Those alternatives may also be available in the Bay-delta area. Unfortunately, however, there seem to be few options in implementing those alternatives in the areas other than specific facility. One of the core recommendations by CMCWG is the ‘bounty and harvest program’. Financial incentive is the key for that program. Therefore, it should be more successful with more incentives. However, *it could have unintended consequences by encouraging the release and establishment of the mitten crab into other regions of the U.S.* Researches and investigations are undergoing to overcome this dilemma that may stem from the management side, not from the technology side.

A4. Collateral Issues

Any amount of crabs harvested means the same amount of crabs disposed as they are banned for commercial circulation in the U.S. Without a proper disposal system therefore, any alternatives for population control cannot be fully adopted. At the same time, it may be inefficient to build any disposal system randomly without any forecast of harvest. This may need to be considered for the management plan to control populations of mitten crabs.

B. THE CONCEPT OF THE PROPOSAL

B1. Joint program

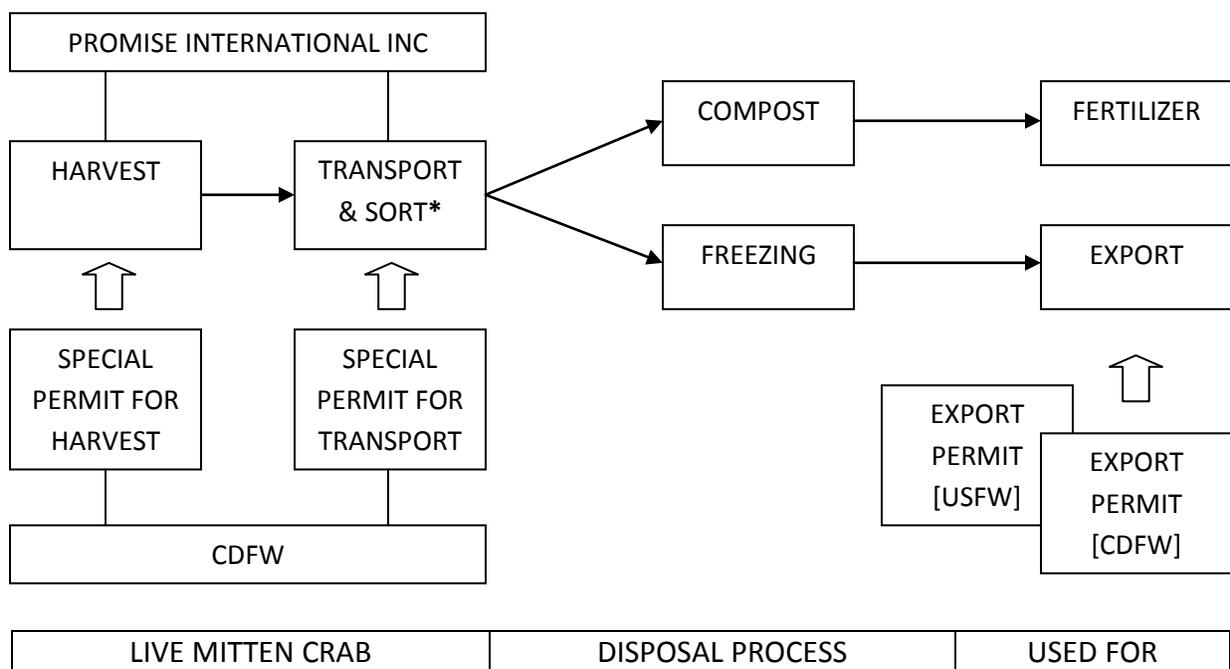
In this joint program proposal, the parties concerned may be able to achieve their goals by focusing on the same activities for the Chinese mitten crab. As CDFW is concerned about the population control of mitten crabs, Promise International wishes to join the management plan. It may be more successful with more crabs harvested for both CDFW and Promise International. This program is based on the features below.

- CDFW gets a physical and financial contribution for the harvest and the disposal through the joint program rather than investing on higher amount of incentives. Promise International does not receive any financial incentive from CDFW.

- Mitten crabs could be turned from a detrimental nuisance into a useful resource for the agriculture: The composting system that produces fertilizer from organic materials is available in the city and the county of San Francisco.
- It is expected that the harvest of substantial amount of mitten crabs will continue for long time as there have been significant demands for them in China and S. Korea. As already known, mitten crabs are culinary delicacies in China and S. Korea and both of them have long been importers of mitten crabs.

On the other hand, California code of regulations(CCR), esp. Section 671, prohibits the transportation as well as commercial fishery of live mitten crabs to prevent their spread into other areas not yet infested. This proposal, however, may not be against the rationale of the regulation. Thanks to the exceptional provision of the CCR, special permits for harvest and transportation of live mitten crabs may be granted for this joint program.

Concept of Joint Program



* Mitten crabs need to be sorted because not all crabs would be exported. Ovigerous female crabs are the priority for export. The rest of the crabs are to be composted.

B2. Permits by CDFW

It is illegal to import, transport, and possess live mitten crab in the State of California [CCR § 671(a) and (c), Title14]. And any commercial fishing or aquaculture is not specified by CDFW. However, special permit for the harvest, transportation of live mitten crabs, and permit for exportation of mitten crabs may be able to be granted by CDFW as an exceptional case with some special purpose [CCR § 671.1 (a)].

B3. Lacey Act May Grant Export Permit

It is unlawful to import or transport injurious specimen like Chinese mitten crab without a proper permit according to the Lacey Act (18USC 42 and 50 CFR part 16). Those injurious species, however, may be exported according to a business guide by USFW describing, *“while the listing of injurious species generally makes it illegal to import live specimens into the United States and move them across state lines for any purpose without a permit, it does not prohibit export provided that certain conditions are met. Aircraft, trucks, or other conveyances carrying injurious wildlife may make stops within the same state in which the wildlife was located and loaded for export. But no conveyance may enter another state during the export process because such entry (i.e., interstate transport) is barred under the injurious species listing.”* Without interstate trafficking, therefore, export permit may be obtained from USFW.

B4. Organic Waste

Physical disposal of mitten crabs that would not be for export may be a real issue for the management of mitten crabs. As an organic waste, mitten crabs should be processed eco-friendly. Landfills around Bay-Delta system may be the most cost-effective place to dispose mitten crabs, however, it may not be an option unless the crabs are dewatered before burial in terms of ecology. Fortunately, the city and the county of San Francisco have established an organic waste processing system.

C. ACTION PLAN

C1. General

All the physical activities of this joint program would be performed by Promise International, Inc. Activities consist of three steps; harvest, transportation, and disposal. The top priority for all activities should be the avoidance of unintended release or spread of mitten crabs. Matured mitten crabs would be the target of harvest, among which ovigerous female crabs are to be selected for export. The sorting process may occur during the transportation at a certain facility that has a special confinement system. The sorted crabs would be transported for freezing or composting that is equivalent to disposal.

C2. Harvest

It is reported that ovigerous females have been collected in November(or September) through May, and are found mainly in South Bay, San Pablo Bay, and Suisun Bay². In consideration of the harvesting methods by Promise International, Inc., however, the slough or canal would be the best locations for harvesting, which makes the east part of Suisun bay a preferable place for this joint program since the entrances of Sacramento River and San Joaquin River have a large

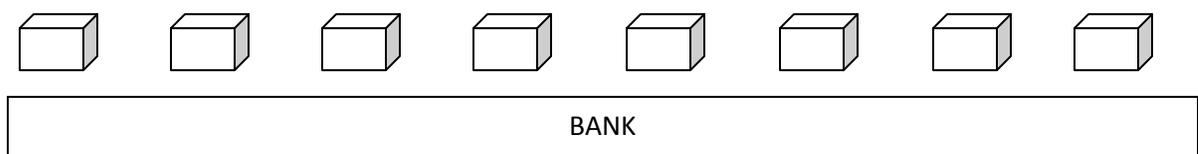
²Veldhizen and Hieb 1998a, CDFG unpublished data

number of slough and canals. Facilities like TFCF or power plants that have been experiencing negative impacts by the massive population of mitten crabs may also be the preferred harvesting points.

(1) Harvesting Method

Promise International would use specially designed traps that have been used in China and S. Korea. Traps may be set linearly along the bank or the slough with equal distances. The length of each set of traps may be 100-300 feet. Each trap has baits inside. Traps would be placed at the time of sunset and pulled up early in the morning next day. This timing is chosen based on the activity pattern of mitten crabs: mitten crabs are nocturnal whereas most fishes are diurnal.

Line of Traps



(2) Long-Term Plan

The annual amount of harvest may increase continuously, even though there are periodic changes of the mitten crab population in the Bay-Delta System. Because it is impossible to forecast the exact population of mitten crabs, the long-term plan for harvesting should be based on the premise that mitten crabs are abundant enough. This program may be feasible on that premise since the demands from China and S.Korea may be constant. Mitten crabs have to be alive before being cooked in China while it is not required in S. Korea due to a different and unique way of cooking; *fermentation*. Accordingly, the demand for mitten crabs in China is mainly seen in the harvesting season whereas there is a year-round demand in S. Korea. The fermentation method also makes it possible to distribute frozen mitten crabs. For this reason, this program would focus its export on the market in S. Korea with frozen mitten crabs. Nevertheless, the full amount of harvest planned here may not be able to satisfy the demand in S. Korea.

For the establishment of the harvesting system, it would take two to three years.

Annual Harvest of Mitten Crabs

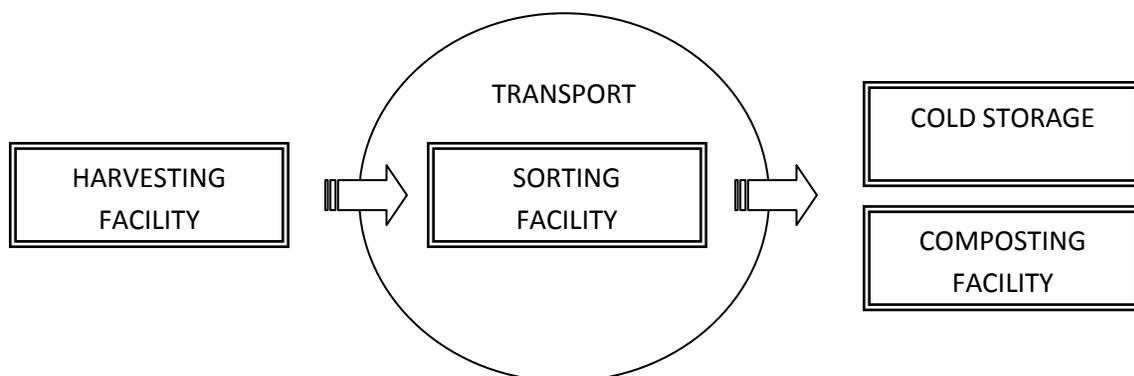
Year	1	2	3	4	5
Male	60,000	300,000	1,200,000	2,400,000	3,000,000
Female*	40,000	200,000	800,000	1,600,000	2,000,000
Total	100,000	500,000	2,000,000	4,000,000	5,000,000

*Female mitten crabs may be less than 30% compared with male crabs.

C3. Transportation

The harvested mitten crabs will be transported to the place where the crabs get sorted for export and disposal, which is the 1st transportation. Female mitten crabs will be packaged in boxes for export and moved to the cold storage while male crabs will be dumped onto trucks for disposal at the composting facility, which is the 2nd transportation. Most of the mitten crabs may be alive during transportation so the special care should be taken to prevent any release of mitten crabs. All the transportations would be performed by Promise International.

Transportation and Destination



(1) Destination & Route

All the destinations will be located around the Bay-Delta System. The sorting facility would be as close to the harvesting facility as possible. In some cases, however, a cold storage or a composting facility may also serve as a sorting facility. This may be done if the cold storage or the composting facility is close enough to the sorting facility. The cold storage may best be located in Oakland, CA, as the export will be handled at the port of Oakland. The composting facility will best be located in Vacaville, CA. so the transportation route would be within the Bay- delta System, which will minimize the impact of the release of live mitten crabs during the transportation, if it ever occurs, although very unlikely.

(2) Confinement

The container for the conveyance would be sleek inside and covered to keep the mitten crabs from climbing. There would be two types of containers at the sorting facility; one for male crabs and the other for female. Female crabs need to be packaged in boxes additionally that would be stored for freezing and export at the cold storage. As the sorting facility will be established in a warehouse, mitten crabs will be efficiently confined during the sorting process.

(3) Immediate Transportation

Even though mitten crabs are strong enough to survive without food for a long time, it may be desirable to process them quickly for its disposal. All the mitten crabs would be moved as quickly as possible through the 1st and 2nd transportation.

(4) Emergency Handling

- In the event of an escape or release of mitten crabs, Promise International reports immediately to CDFW.
- Promise International is responsible for the costs associated with the seizure and destruction of it.
- In case of disease or its possibility, Promise International reports to CDFW and all the crabs that are potentially infected with disease are to be disposed immediately.

C4. Disposal

(1) By composting

Mitten crabs are considered a part of the organic wastes that include a large amount of food waste in San Francisco area from restaurants, but also from grocery stores and other commercial establishments³. There are companies around Bay-Delta System that actively operate composting systems where fertilizers are produced for the agricultural use. This recycling system might be a desirable solution for the disposal of mitten crabs.

(2) By Freezing

The blast freezer at the cold storage would be operating at a sub-zero temperature Fahrenheit, where the crabs get quickly frozen to death.

D. CONCLUSION

D1. Mutual Benefits

The joint program is designed to maximize the efficiency of controlling the population of mitten crabs with the least risk of releasing them. This program, however, would require governmental supports, especially with the special permits for harvest and transportation of live mitten crabs by California department of Fish and Wildlife. The result of this program will be mutually beneficial to both participants: Promise International will benefit from the commerce while CDFW will benefit from the efficient and cost-effective control of mitten crab population.

D2. Financial Contribution

The physical contribution by Promise International may be only a side benefit for CDFW. Thus, it is reasonable to consider that Promise International will be

³Long-Term Biosolids Management Plan, 2009, City and County of San Francisco

making a financial contribution to the mitten crab management plan. The financial contribution could be considered in proportion to the amount of mitten crabs for export. In addition, Promise International will inform CDFW of the data produced through the joint program if requested, which also will be contributive to the CDFW's effort on the mitten crab control.

D3. Long-Term Cooperation

There are many preparations to undertake for the action plan of this proposal, including warehouse, vehicles, and employees. Most of them are fixed costs that should be distributed over multiple years, therefore, this joint program may need to be maintained on a long-term base exclusively to Promise International, Inc.

There is a positive side on the mitten crabs since they can serve as a possible food source for humans and animals in the U.S. However, it is not likely to be done due to possible accumulation of contaminants and potential transmission of the Asian lung fluke. Thus, the activities related to mitten crab control, in tandem with laws and regulations, are mainly focused on the prevention of its negative impacts. There are organizations, plans, and programs for this purpose but additional efforts and budgets are required to meet this goal, as the mitten crabs are ubiquitous.

A3. Response to the Mitten Crab

To reduce the negative impacts of the existing population of mitten crabs, various alternatives have been suggested, especially with Tracy Fish Collection Facility case (federal fish salvage facility). Alternatives have been developed and evaluated in anticipation of further detrimental impacts by mitten crabs upon fish salvage operation at the TFCF. Those alternatives may also be available in the Bay-delta area. Unfortunately, however, there seem to be few options in implementing those alternatives in the areas other than specific facility. One of the core recommendations by CMCWG is the ‘bounty and harvest program’. Financial incentive is the key for that program. Therefore, it should be more successful with more incentives. However, *it could have unintended consequences by encouraging the release and establishment of the mitten crab into other regions of the U.S.* Researches and investigations are undergoing to overcome this dilemma that may stem from the management side, not from the technology side.

A4. Collateral Issues

Any amount of crabs harvested means the same amount of crabs disposed as they are banned for commercial circulation in the U.S. Without a proper disposal system therefore, any alternatives for population control cannot be fully adopted. At the same time, it may be inefficient to build any disposal system randomly without any forecast of harvest. This may need to be considered for the management plan to control populations of mitten crabs.

B. THE CONCEPT OF THE PROPOSAL

B1. Joint program

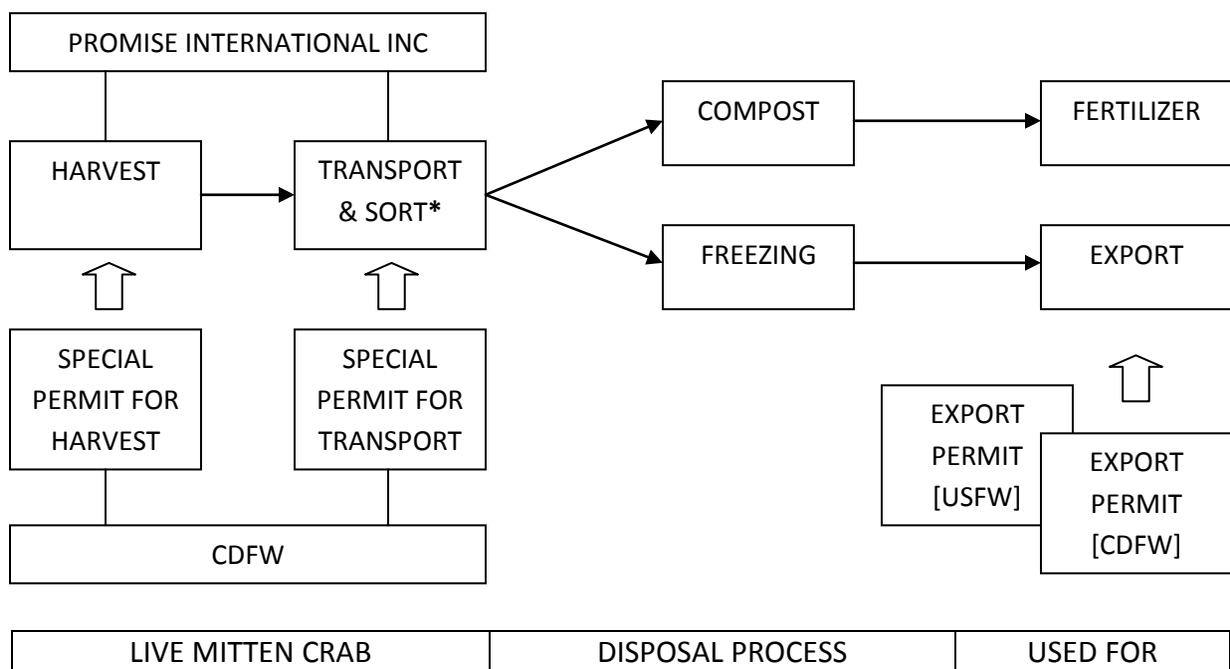
In this joint program proposal, the parties concerned may be able to achieve their goals by focusing on the same activities for the Chinese mitten crab. As CDFW is concerned about the population control of mitten crabs, Promise International wishes to join the management plan. It may be more successful with more crabs harvested for both CDFW and Promise International. This program is based on the features below.

- CDFW gets a physical and financial contribution for the harvest and the disposal through the joint program rather than investing on higher amount of incentives. Promise International does not receive any financial incentive from CDFW.

- Mitten crabs could be turned from a detrimental nuisance into a useful resource for the agriculture: The composting system that produces fertilizer from organic materials is available in the city and the county of San Francisco.
- It is expected that the harvest of substantial amount of mitten crabs will continue for long time as there have been significant demands for them in China and S. Korea. As already known, mitten crabs are culinary delicacies in China and S. Korea and both of them have long been importers of mitten crabs.

On the other hand, California code of regulations(CCR), esp. Section 671, prohibits the transportation as well as commercial fishery of live mitten crabs to prevent their spread into other areas not yet infested. This proposal, however, may not be against the rationale of the regulation. Thanks to the exceptional provision of the CCR, special permits for harvest and transportation of live mitten crabs may be granted for this joint program.

Concept of Joint Program



* Mitten crabs need to be sorted because not all crabs would be exported. Ovigerous female crabs are the priority for export. The rest of the crabs are to be composted.

B2. Permits by CDFW

It is illegal to import, transport, and possess live mitten crab in the State of California [CCR § 671(a) and (c), Title14]. And any commercial fishing or aquaculture is not specified by CDFW. However, special permit for the harvest, transportation of live mitten crabs, and permit for exportation of mitten crabs may be able to be granted by CDFW as an exceptional case with some special purpose [CCR § 671.1 (a)].

B3. Lacey Act May Grant Export Permit

It is unlawful to import or transport injurious specimen like Chinese mitten crab without a proper permit according to the Lacey Act (18USC 42 and 50 CFR part 16). Those injurious species, however, may be exported according to a business guide by USFW describing, *“while the listing of injurious species generally makes it illegal to import live specimens into the United States and move them across state lines for any purpose without a permit, it does not prohibit export provided that certain conditions are met. Aircraft, trucks, or other conveyances carrying injurious wildlife may make stops within the same state in which the wildlife was located and loaded for export. But no conveyance may enter another state during the export process because such entry (i.e., interstate transport) is barred under the injurious species listing.”* Without interstate trafficking, therefore, export permit may be obtained from USFW.

B4. Organic Waste

Physical disposal of mitten crabs that would not be for export may be a real issue for the management of mitten crabs. As an organic waste, mitten crabs should be processed eco-friendly. Landfills around Bay-Delta system may be the most cost-effective place to dispose mitten crabs, however, it may not be an option unless the crabs are dewatered before burial in terms of ecology. Fortunately, the city and the county of San Francisco have established an organic waste processing system.

C. ACTION PLAN

C1. General

All the physical activities of this joint program would be performed by Promise International, Inc. Activities consist of three steps; harvest, transportation, and disposal. The top priority for all activities should be the avoidance of unintended release or spread of mitten crabs. Matured mitten crabs would be the target of harvest, among which ovigerous female crabs are to be selected for export. The sorting process may occur during the transportation at a certain facility that has a special confinement system. The sorted crabs would be transported for freezing or composting that is equivalent to disposal.

C2. Harvest

It is reported that ovigerous females have been collected in November(or September) through May, and are found mainly in South Bay, San Pablo Bay, and Suisun Bay². In consideration of the harvesting methods by Promise International, Inc., however, the slough or canal would be the best locations for harvesting, which makes the east part of Suisun bay a preferable place for this joint program since the entrances of Sacramento River and San Joaquin River have a large

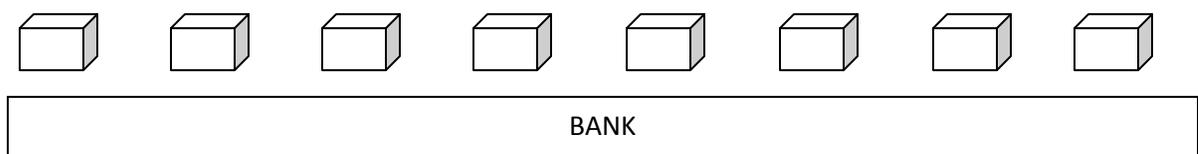
²Veldhizen and Hieb 1998a, CDFG unpublished data

number of slough and canals. Facilities like TFCF or power plants that have been experiencing negative impacts by the massive population of mitten crabs may also be the preferred harvesting points.

(1) Harvesting Method

Promise International would use specially designed traps that have been used in China and S. Korea. Traps may be set linearly along the bank or the slough with equal distances. The length of each set of traps may be 100-300 feet. Each trap has baits inside. Traps would be placed at the time of sunset and pulled up early in the morning next day. This timing is chosen based on the activity pattern of mitten crabs: mitten crabs are nocturnal whereas most fishes are diurnal.

Line of Traps



(2) Long-Term Plan

The annual amount of harvest may increase continuously, even though there are periodic changes of the mitten crab population in the Bay-Delta System. Because it is impossible to forecast the exact population of mitten crabs, the long-term plan for harvesting should be based on the premise that mitten crabs are abundant enough. This program may be feasible on that premise since the demands from China and S.Korea may be constant. Mitten crabs have to be alive before being cooked in China while it is not required in S. Korea due to a different and unique way of cooking; *fermentation*. Accordingly, the demand for mitten crabs in China is mainly seen in the harvesting season whereas there is a year-round demand in S. Korea. The fermentation method also makes it possible to distribute frozen mitten crabs. For this reason, this program would focus its export on the market in S. Korea with frozen mitten crabs. Nevertheless, the full amount of harvest planned here may not be able to satisfy the demand in S. Korea.

For the establishment of the harvesting system, it would take two to three years.

Annual Harvest of Mitten Crabs

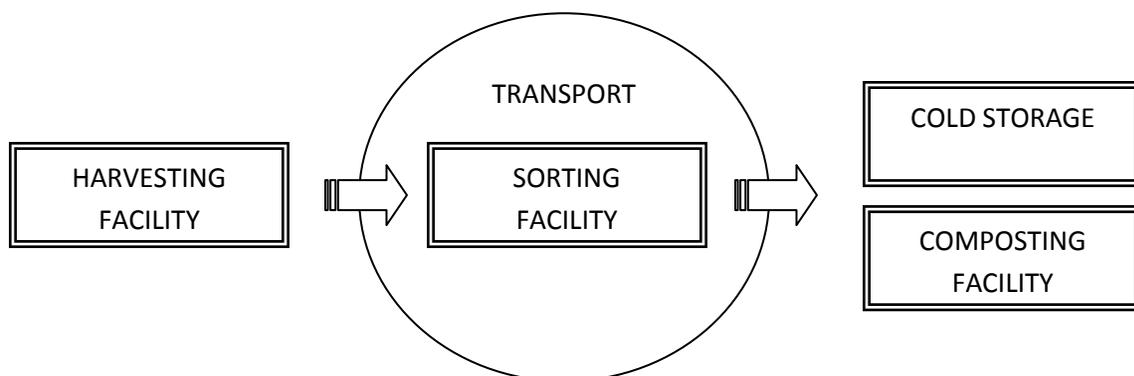
Year	1	2	3	4	5
Male	60,000	300,000	1,200,000	2,400,000	3,000,000
Female*	40,000	200,000	800,000	1,600,000	2,000,000
Total	100,000	500,000	2,000,000	4,000,000	5,000,000

*Female mitten crabs may be less than 30% compared with male crabs.

C3. Transportation

The harvested mitten crabs will be transported to the place where the crabs get sorted for export and disposal, which is the 1st transportation. Female mitten crabs will be packaged in boxes for export and moved to the cold storage while male crabs will be dumped onto trucks for disposal at the composting facility, which is the 2nd transportation. Most of the mitten crabs may be alive during transportation so the special care should be taken to prevent any release of mitten crabs. All the transportations would be performed by Promise International.

Transportation and Destination



(1) Destination & Route

All the destinations will be located around the Bay-Delta System. The sorting facility would be as close to the harvesting facility as possible. In some cases, however, a cold storage or a composting facility may also serve as a sorting facility. This may be done if the cold storage or the composting facility is close enough to the sorting facility. The cold storage may best be located in Oakland, CA, as the export will be handled at the port of Oakland. The composting facility will best be located in Vacaville, CA. so the transportation route would be within the Bay- delta System, which will minimize the impact of the release of live mitten crabs during the transportation, if it ever occurs, although very unlikely.

(2) Confinement

The container for the conveyance would be sleek inside and covered to keep the mitten crabs from climbing. There would be two types of containers at the sorting facility; one for male crabs and the other for female. Female crabs need to be packaged in boxes additionally that would be stored for freezing and export at the cold storage. As the sorting facility will be established in a warehouse, mitten crabs will be efficiently confined during the sorting process.

(3) Immediate Transportation

Even though mitten crabs are strong enough to survive without food for a long time, it may be desirable to process them quickly for its disposal. All the mitten crabs would be moved as quickly as possible through the 1st and 2nd transportation.

(4) Emergency Handling

- In the event of an escape or release of mitten crabs, Promise International reports immediately to CDFW.
- Promise International is responsible for the costs associated with the seizure and destruction of it.
- In case of disease or its possibility, Promise International reports to CDFW and all the crabs that are potentially infected with disease are to be disposed immediately.

C4. Disposal

(1) By composting

Mitten crabs are considered a part of the organic wastes that include a large amount of food waste in San Francisco area from restaurants, but also from grocery stores and other commercial establishments³. There are companies around Bay-Delta System that actively operate composting systems where fertilizers are produced for the agricultural use. This recycling system might be a desirable solution for the disposal of mitten crabs.

(2) By Freezing

The blast freezer at the cold storage would be operating at a sub-zero temperature Fahrenheit, where the crabs get quickly frozen to death.

D. CONCLUSION

D1. Mutual Benefits

The joint program is designed to maximize the efficiency of controlling the population of mitten crabs with the least risk of releasing them. This program, however, would require governmental supports, especially with the special permits for harvest and transportation of live mitten crabs by California department of Fish and Wildlife. The result of this program will be mutually beneficial to both participants: Promise International will benefit from the commerce while CDFW will benefit from the efficient and cost-effective control of mitten crab population.

D2. Financial Contribution

The physical contribution by Promise International may be only a side benefit for CDFW. Thus, it is reasonable to consider that Promise International will be

³Long-Term Biosolids Management Plan, 2009, City and County of San Francisco

making a financial contribution to the mitten crab management plan. The financial contribution could be considered in proportion to the amount of mitten crabs for export. In addition, Promise International will inform CDFW of the data produced through the joint program if requested, which also will be contributive to the CDFW's effort on the mitten crab control.

D3. Long-Term Cooperation

There are many preparations to undertake for the action plan of this proposal, including warehouse, vehicles, and employees. Most of them are fixed costs that should be distributed over multiple years, therefore, this joint program may need to be maintained on a long-term base exclusively to Promise International, Inc.